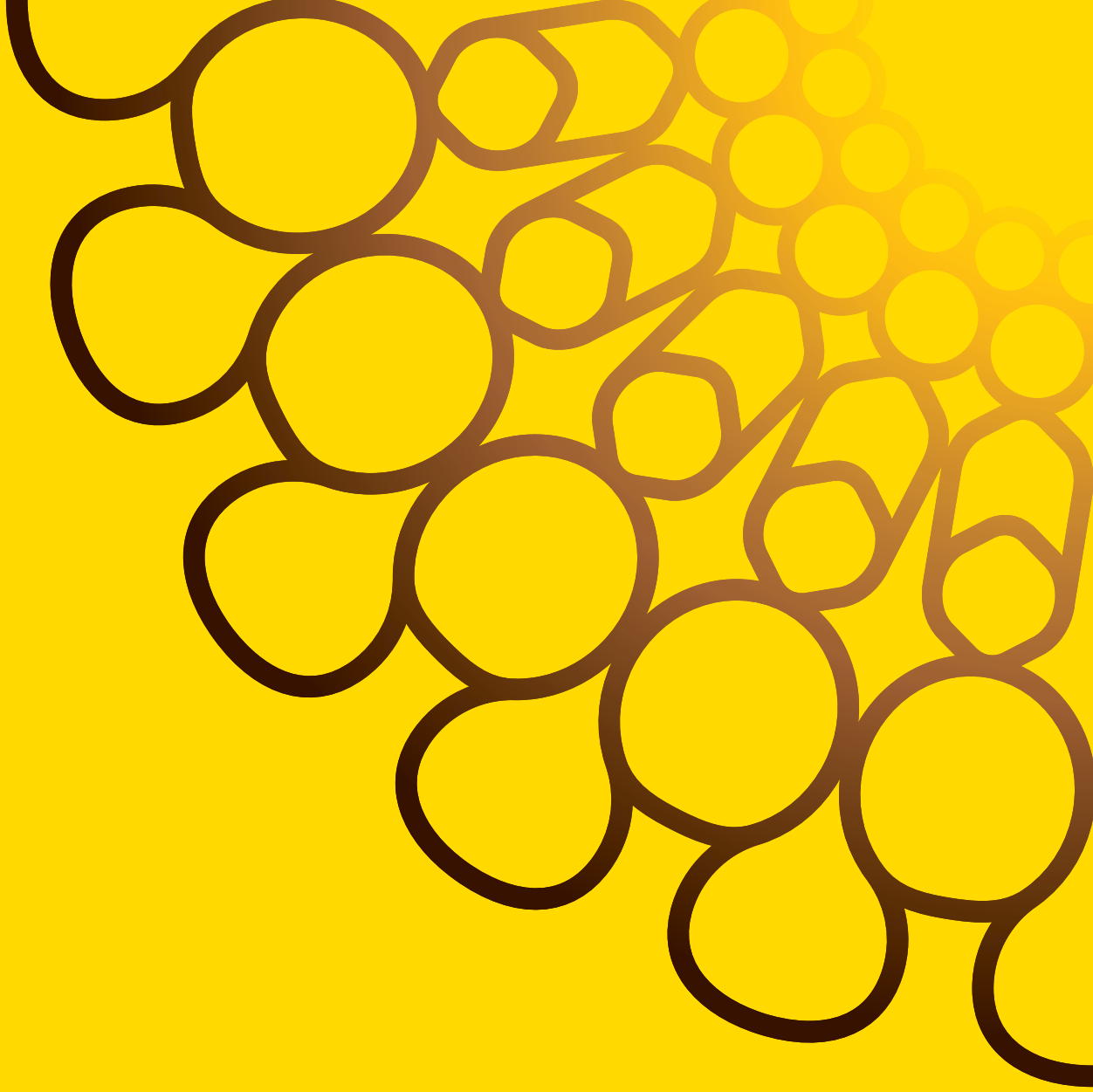
Site-Wide Soil Investigation Report

EXPO 2020 إكسبو
دبي، الإمـــارات العربيـة المتحـدة
DUBAI, UNITED ARAB EMIRATES



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MATRIX LABORATORY L.L.C.

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SOIL INVESTIGATION REPORT
PROPOSED PN1403–DTCJA–EXPO DEVELOPMENT
FOR DUBAI WORLD TRADE CENTER L.L.C.
PLOT NOS. 5219784, 5219785 & 5219786
MADINAT AL MATAAR
DUBAI, U.A.E.

JOB REF. : XSD/15-0143
DATE : 15/09/2015

FOR

M/S. DUBAI WORLD TRADE CENTER L.L.C.

DUBAI

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MATRIX LABORATORY L.L.C.

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1.0 INTRODUCTION

- This report presents the results of the geotechnical investigation for the Proposed PN1403–DTCJA–Expo Development in Madinat Al Mataar, Dubai, U.A.E.
- This investigation was carried out according to our Consultancy Agreement for CP07 – Ground Investigation Services dated 21st May 2015, and subsequent to handing over the site on 08th June 2015.

1.1 Purpose of Study

The purpose of the study is to determine the surface and subsurface conditions at the proposed site and the physical, mechanical and chemical properties of the foundation ground in order to provide the structural engineer with sufficient information for the design of the most suitable and safe foundation.

1.2 Scope of Works

The scope of works consists of the following:

- Collecting information and maps particular to the building site.
- Making inspection visits to the site to collect information about the present land use, surface topography, geological features and surface drainage.
- Drilling of sixty (60) boreholes up to a depth of 20.00m each; sixty-one (61) boreholes up to a depth of 40.00m each; and twenty-nine (29) boreholes up to a depth of 60.00m each below existing ground levels and sampling disturbed and undisturbed samples.
- Excavation of one hundred (100) trial pits to a maximum depth of 4.50m below the existing ground level, refusal or groundwater level.
- Carrying out three hundred (300) Mexe Cone Penetration Tests, three (3) tests at each trial pit location to determine in-situ CBR values.
- Carrying out three hundred (300) Dynamic Penetration Tests, three (3) tests at each trial pit location to determine in-situ CBR values.
- Carrying out forty (40) nos. Permeability Test.
- Installation of eighty (80) nos. piezometer to monitor groundwater table.
- Installation of thirty (30) gas valves at the piezometers to monitor gas.
- Carrying out necessary field and laboratory tests.
- Performing engineering analysis of field and laboratory findings.
- Developing conclusions and recommendations for foundation design and construction.

1.3 Standards and Codes of Practice

Unless otherwise specified in this document, all equipments, materials and procedures associated with this work comply with current editions of following relevant Standards and Codes of Practice.

- BS 1377:1990 Part 9 AMD 8264-95, “Method of Test for Soils for Civil Engineering Purposes”.
- BS 5930: 1999 + A2:2010, “Code of Practice for Site Investigations”.

2.0 PROJECT DESCRIPTION

The proposed project is PN1403–DTCJA–Expo Development. No further structural loading details were provided at the time of preparing this report.

3.0 SITE DESCRIPTION

The site lies in Plot Nos. 5219784 (Zones 1-10), 5219785 (Zone 11) and 5219786 (Zone 12), Madinat Al Mataar, Dubai, U.A.E. The plot locations are shown in Figures 1 to 3, Appendix A. At the time of investigation, the site was uneven and vacant. Ground levels are related Dubai Municipality Datum (DMD).

A general site plan showing the location of the boreholes and trial pits are presented in Figure 4, Appendix A. Detailed location of tests at each zones are presented in Figures 5 to 16, Appendix A.

4.0 REGIONAL GEOLOGY AND PREVAILING WEATHER CONDITIONS

The geology of the United Arab Emirates, and the Arabian Gulf area, has been substantially influenced by the deposition of marine sediments associated with numerous sea level changes during relatively recent geological time. With the exception of mountainous regions shared with Oman in the north-east, the country is relatively low-lying with near-surface geology dominated by Quaternary to late Pleistocene age, mobile Aeolian dune sands, and sabkha/evaporates deposits.

Conditions in Dubai area essentially consist of a linear coastline dissected by channels or creeks. Superficial deposits consist of beach dune sands together with marine sands and silts. In addition, wind erosion, capillary action and evaporation has led to extensive sabkha deposits in certain areas, notably around the creeks. These superficial deposits are underlain by alternating beds of calcarenite, carbonate sandstone, sands and cemented sands.

The site is situated in Dubai where a hot arid climate prevails. A hot arid climate is one where evaporation exceeds precipitation - such as rain, snow and dewfall. This climate regime produces characteristic hot desert terrains. Average annual rainfall may only be a few centimeters (even only a few millimeters in some parts) which usually occurs seasonally and sometimes only from a single cloudburst. Summer shade temperatures are frequently in excess 40°C and humidity may be around 100% near the coast. The contrast between maximum night and day temperatures and between night and day humidity is often great. Strong persistent winds are normal in many areas. This unfavorable climate imposes adverse conditions on the concrete structures, such as:

- High temperature and high seasonal changes.
- High humidity and high change in relative humidity.
- Strong drying winds.
- Condensation at night.
- Windborne salt-laden dust.
- High solar radiation.

5.0 FIELD WORK

5.1 Drilling

From 11th June to 10th August 2015, one hundred fifty (150) boreholes were drilled at the site. The borehole details are given in Table 1 below:

Table 1: BOREHOLE DETAILS

Zone	BH No.	COORDINATES		LEVEL (m)*	DEPTH (m)
		EAST	NORTH		
1	BH-B01	480475.274	2761520.468	+24.860	40.0
1	BH-B02	480510.286	2761680.600	+23.130	40.0
1	BH-B03	480618.961	2761654.077	+24.360	40.0
1	BH-B04	480695.177	2761807.253	+23.690	40.0
1	BH-B05	480568.382	2761865.675	+21.110	40.0
1	BH-B06	480784.352	2761899.788	+26.110	40.0
1	BH-B07	480645.132	2762025.949	+19.770	40.0
1	BH-C01	480766.194	2762083.799	+20.100	60.0
1	BH-C03	480655.338	2762139.952	+18.040	60.0
1	BH-C05	480824.074	2762047.696	+20.740	60.0
1	BH-C07	480855.679	2761992.072	+21.750	60.0
1	BH-C09	480881.420	2761961.175	+22.380	60.0
1	BH-C11	480922.837	2761883.694	+24.360	60.0
2	BH-A55	480894.130	2761293.816	+29.945	20.0
2	BH-A56	480778.118	2761363.040	+28.752	20.0
2	BH-A57	480811.762	2761617.816	+27.536	20.0
2	BH-B15	481198.307	2761786.177	+28.604	40.0
2	BH-B16	481036.038	2761615.331	+31.245	40.0
2	BH-B17	480933.713	2761501.901	+30.382	40.0
2	BH-B60	480628.226	2761437.208	+26.725	40.0
2	BH-C12	481083.114	2761879.362	+25.550	60.0
2	BH-C13	481155.512	2761917.516	+25.280	60.0
3	BH-A01	480929.440	2762736.780	+10.613	20.0
3	BH-A02	481069.527	2762852.077	+9.861	20.0
3	BH-B08	480946.210	2762444.745	+13.226	40.0
3	BH-B09	480841.310	2762585.773	+11.589	40.0
3	BH-B10	481076.343	2762622.146	+11.484	40.0
3	BH-C02	480691.207	2762194.470	+16.720	60.0
3	BH-C04	480778.257	2762142.919	+17.320	60.0
3	BH-C06	480885.486	2762081.788	+20.540	60.0
3	BH-C08	480950.493	2762035.136	+21.588	60.0

Zone	BH No.	COORDINATES		LEVEL (m)*	DEPTH (m)
		EAST	NORTH		
3	BH-C10	480987.549	2761974.641	+22.653	60.0
3	BH-C14	481090.415	2762178.991	+20.470	60.0
3	BH-C15	481122.939	2762255.011	+21.050	60.0
3	BH-C16	481025.926	2762242.869	+19.873	60.0
3	BH-C17	480830.654	2762309.267	+14.436	60.0
3	BH-C18	480723.120	2762322.539	+14.557	60.0
3	BH-C19	480733.103	2762369.553	+13.838	60.0
4	BH-A03	481294.958	2762761.653	+15.049	20.0
4	BH-A04	481441.473	2762727.399	+15.917	20.0
4	BH-A05	481567.847	2762684.821	+16.576	20.0
4	BH-A06	481315.093	2762600.185	+19.345	20.0
4	BH-A07	481387.669	2762514.650	+20.587	20.0
4	BH-A08	481245.577	2762430.678	+20.536	20.0
4	BH-A09	481210.536	2762168.727	+20.570	20.0
4	BH-B11	481368.479	2762270.879	+21.076	40.0
4	BH-B12	481363.394	2762010.168	+23.402	40.0
4	BH-B13	481131.570	2762003.373	+22.950	40.0
4	BH-B14	481309.794	2761892.612	+27.760	40.0
4	BH-C20	481474.133	2762314.461	+20.671	60.0
4	BH-C21	481509.262	2762407.885	+20.263	60.0
5	BH-A10	482046.270	2762458.920	+19.840	20.0
5	BH-A11	482138.550	2762263.750	+25.930	20.0
5	BH-A12	482206.230	2762405.130	+22.060	20.0
5	BH-A13	482289.850	2762211.360	+23.130	20.0
5	BH-A14	482344.740	2762362.890	+23.657	20.0
5	BH-A15	482444.430	2762156.930	+25.060	20.0
5	BH-A16	482495.960	2762311.400	+25.060	20.0
5	BH-A42	482159.260	2761909.030	+23.390	20.0
5	BH-A44	482416.420	2761649.480	+25.355	20.0
5	BH-B56	482480.860	2761701.530	+25.297	40.0
5	BH-B57	482350.160	2761929.550	+24.340	40.0
5	BH-B58	481782.520	2762613.400	+17.308	40.0
5	BH-B59	482163.230	2762046.71	+21.640	40.0
6	BH-B31	482164.020	2761679.48	+25.890	40.0
6	BH-B32	482067.470	2761610.63	+26.337	40.0
6	BH-B33	481939.790	2761673.520	+24.630	40.0
6	BH-B34	481945.880	2761870.640	+20.890	40.0

Zone	BH No.	COORDINATES		LEVEL (m)*	DEPTH (m)
		EAST	NORTH		
6	BH-B35	481987.220	2761973.580	+20.745	40.0
6	BH-B36	481893.000	2762036.210	+21.105	40.0
6	BH-B37	481729.440	2762068.570	+20.306	40.0
6	BH-B38	481782.920	2762224.890	+20.450	40.0
6	BH-B39	481937.080	2762162.320	+20.454	40.0
6	BH-B40	481834.030	2762360.570	+16.101	40.0
6	BH-B41	481668.190	2762368.520	+20.369	40.0
6	BH-B42	481614.730	2762232.470	+21.171	40.0
6	BH-B43	481521.750	2761989.080	+21.136	40.0
6	BH-B61	481725.230	2761905.390	+20.908	40.0
6	BH-C29	481542.860	2762114.470	+20.970	60.0
7	BH-A59	481488.257	2761540.707	+31.403	20.0
7	BH-B18	481069.540	2761385.179	+32.092	40.0
7	BH-B19	481137.302	2761484.625	+33.579	40.0
7	BH-B20	481297.960	2761627.560	+32.214	40.0
7	BH-B44	481619.762	2761717.196	+30.360	40.0
7	BH-B45	481827.091	2761578.376	+25.880	40.0
7	BH-B46	481939.399	2761499.168	+27.176	40.0
7	BH-B47	481446.652	2761631.934	+31.490	40.0
7	BH-C22	481428.097	2761858.311	+29.447	60.0
7	BH-C23	481528.167	2761835.945	+29.500	60.0
7	BH-C24	481409.664	2761745.161	+30.963	60.0
7	BH-C25	481511.051	2761722.793	+30.708	60.0
7	BH-C26	481469.368	2761792.776	+30.061	60.0
7	BH-C27	481220.441	2761555.922	+32.283	60.0
7	BH-C28	481724.947	2761635.852	+28.737	60.0
8	BH-A52	481750.340	2761311.250	+29.103	20.0
8	BH-A53	481181.820	2761062.970	+29.265	20.0
8	BH-A54	481032.900	2761151.390	+30.228	20.0
8	BH-A58	481528.100	2761354.810	+31.010	20.0
8	BH-A60	481624.130	2761422.040	+30.052	20.0
8	BH-B21	481070.060	2761249.810	+30.977	40.0
8	BH-B22	481251.830	2761181.350	+30.148	40.0
8	BH-B23	481289.480	2761348.820	+32.052	40.0
8	BH-B24	481368.500	2761477.810	+32.400	40.0
8	BH-B25	481449.030	2761314.550	+31.499	40.0
8	BH-B26	481592.650	2761265.350	+30.431	40.0

Zone	BH No.	COORDINATES		LEVEL (m)*	DEPTH (m)
		EAST	NORTH		
8	BH-B27	481830.300	2761417.900	+28.372	40.0
9	BH-A48	482145.013	2761063.961	+27.215	20.0
9	BH-A49	481826.301	2760724.739	+27.489	20.0
9	BH-A50	481831.636	2761126.109	+28.911	20.0
9	BH-A51	481497.622	2761161.846	+29.903	20.0
9	BH-B48	481303.010	2761030.305	+29.194	40.0
9	BH-B49	481469.773	2760971.183	+28.498	40.0
9	BH-B50	481551.779	2760892.088	+27.969	40.0
9	BH-B51	481692.607	2761019.604	+28.331	40.0
9	BH-B52	481834.961	2760895.523	+27.963	40.0
9	BH-B53	481969.969	2760908.453	+27.849	40.0
9	BH-B54	482020.224	2761035.603	+27.832	40.0
10	BH-A43	482276.598	2761713.756	+25.985	20.0
10	BH-A45	482384.708	2761536.952	+25.500	20.0
10	BH-A46	482313.972	2761360.994	+25.825	20.0
10	BH-A47	482240.959	2761220.263	+26.324	20.0
10	BH-B28	481938.509	2761257.684	+28.671	40.0
10	BH-B29	482102.007	2761263.860	+27.606	40.0
10	BH-B30	482240.409	2761564.685	+26.515	40.0
10	BH-B55	482187.339	2761425.634	+26.715	40.0
11	BH-A17	482743.670	2762060.880	+27.754	20.0
11	BH-A18	482798.120	2762205.540	+27.930	20.0
11	BH-A19	482848.670	2762300.130	+26.450	20.0
11	BH-A20	482840.620	2761852.510	+26.450	20.0
11	BH-A21	482899.060	2762018.410	+30.548	20.0
11	BH-A22	482952.200	2762153.780	+27.355	20.0
11	BH-A23	483006.140	2762292.770	+24.690	20.0
11	BH-A24	483050.480	2761954.710	+27.960	20.0
11	BH-A25	483106.270	2762107.330	+28.123	20.0
11	BH-A26	483160.720	2762257.300	+31.402	20.0
11	BH-A27	483200.570	2761906.930	+27.741	20.0
11	BH-A28	483256.350	2762054.250	+28.127	20.0
11	BH-A29	483316.120	2762202.890	+28.502	20.0
11	BH-A30	483409.100	2762006.470	+27.161	20.0
11	BH-A31	483468.870	2762157.770	+29.062	20.0
11	BH-A32	483616.300	2762111.310	+28.719	20.0
11	BH-A33	483766.380	2762059.550	+29.973	20.0

Zone	BH No.	COORDINATES		LEVEL (m)*	DEPTH (m)
		EAST	NORTH		
12	BH-A34	483860.521	2761852.869	+28.218	20.0
12	BH-A35	484073.860	2761954.879	+31.162	20.0
12	BH-A36	483990.301	2761810.103	+28.734	20.0
12	BH-A37	484166.785	2761753.477	+29.890	20.0
12	BH-A38	484229.608	2761902.566	+32.645	20.0
12	BH-A39	484323.842	2761699.857	+31.025	20.0
12	BH-A40	484380.124	2761851.561	+32.101	20.0
12	BH-A41	484476.976	2761651.466	+30.821	20.0

With respect to Dubai Municipality Datum (DMD).

The locations of the boreholes were set-out by MATRIX LABORATORY with Consultant's approval and are shown on the site plan (Figure 1, App. A).

The drilling was executed by ACKER, Acker 2, Acker 3, Mobile 40-1, Mobile 40-2, Mobile 40-3, Mobile 53-1, Mobile 53-2, Mobile B-31, Mobile B-34, WIRTH and Wirth 2 type rigs using Rotary Drilling method. The borehole logs are presented in App. B.

5.2 Sampling

Disturbed, undisturbed samples and split spoon samples were obtained from the boreholes. The undisturbed samples were obtained using a double core barrel having 76mm internal diameter. The samples recovered were examined, described and classified by our geotechnical engineers, placed in proper sequence in wooden boxes and were taken to our laboratories for testing. The moist samples were placed in airtight plastic bags before being placed in wooden boxes.

5.3 Field Testing in Boreholes

Standard Penetration Tests (S.P.T.) was performed at various depths in the boreholes to assess the relative densities of the ground materials. The tests were performed in accordance with BS1377:1990 Part 9 AMD8264-95, "Determination of Penetration Resistance Using Split-Barrel Sampler (SPT)".

The SPT consists of driving a Standard 50mm outside diameter thin wall sampler into soil at the bottom of a borehole, using repeated blows of a 63.5kg hammer falling through 760mm. The SPT N value is the number of blows required to achieve a penetration of 300mm, after an initial seating drive of 150mm.

The test results are shown on the boring logs at the respective test depths. Interpretation of the SPT test results can be found in the Legend to Boring Logs (App. B).

5.4 Permeability Test

Forty (40) nos. permeability tests were carried out in the boreholes at depths ranging from 2.00m to 6.00m below the ground level. Readings are presented in Table D-1, App. D.

5.5 Trial Pits

From 26th July to 04th August, one hundred (100) nos. trial pits were excavated mechanically to a maximum depth of 4.00m below ground level, refusal or groundwater level. The trial pits details are given in Table 2 below:

Table 2: TRIAL PIT DETAILS

TP No.	COORDINATES		LEVEL (m)*	DEPTH (m)
	EAST	NORTH		
TP001	480488.402	2761462.843	+25.41	0.5
TP002	480682.711	2761410.495	+27.37	1.5
TP003	480420.430	2761615.561	+23.19	1.5
TP004	480559.779	2761652.344	+24.91	3.0
TP005	480754.407	2761599.469	+26.62	1.0
TP006	480815.832	2761802.008	+24.95	3.0
TP007	480630.568	2761840.222	+22.16	1.0
TP008	480701.372	2762027.646	+19.93	3.0
TP009	480912.139	2761983.785	+21.83	3.0
TP010	480597.974	2762133.942	+17.64	1.5
TP011	480771.242	2762216.22	+15.05	2.0
TP012	480964.922	2762162.926	+20.07	4.0
TP013	480842.904	2762404.097	+13.33	3.0
TP014	481034.918	2762351.131	+20.02	4.0
TP015	480723.600	2762517.349	+14.19	3.0
TP016	481106.371	2762539.483	+18.68	4.0
TP017	480912.966	2762592.187	+11.22	1.5
TP018	480810.391	2762747.089	+12.15	2.0
TP019	481114.089	2762745.374	+10.00	1.0
TP020	480927.054	2762879.218	+13.12	4.0
TP021	481369.898	2762674.953	+17.41	4.0
TP022	481564.337	2762620.753	+17.26	4.0
TP023	481758.067	2762567.856	+17.33	4.0
TP024	481300.562	2762486.105	+21.05	4.0
TP025	481493.842	2762432.948	+20.24	4.0
TP026	481689.970	2762387.547	+19.90	4.0
TP027	481617.333	2762191.037	+20.46	1.0

TP No.	COORDINATES		LEVEL (m)*	DEPTH (m)
	EAST	NORTH		
TP028	481458.412	2762248.825	+18.30	2.0
TP029	481228.583	2762297.103	+18.62	4.0
TP030	481163.003	2762105.584	+20.50	0.5
TP031	481354.529	2762055.308	+21.22	0.5
TP032	481545.796	2762003.853	+20.68	0.5
TP033	481233.342	2761943.971	+25.36	2.0
TP034	481262.884	2761869.97	+27.53	1.0
TP035	481087.041	2761921.41	+24.46	1.5
TP036	481017.270	2761733.766	+28.16	1.0
TP037	481211.546	2761680.671	+30.83	2.0
TP038	481322.574	2761650.772	+31.73	2.0
TP039	481334.488	2761439.277	+32.45	3.0
TP040	481223.651	2761470.441	+33.33	3.0
TP041	481070.051	2761304.600	+31.32	3.0
TP042	480876.233	2761357.539	+29.72	1.0
TP043	480948.480	2761545.760	+30.40	1.5
TP044	481265.321	2761251.958	+30.61	3.0
TP045	481262.741	2761044.314	+29.11	4.0
TP046	481712.510	2760736.490	+27.46	2.0
TP047	481434.059	2760998.427	+29.60	4.0
TP048	481580.660	2760957.410	+28.17	4.0
TP049	481773.878	2760904.791	+28.08	3.0
TP050	481458.149	2761198.772	+30.08	1.0
TP051	481651.655	2761144.988	+29.36	4.0
TP052	481846.233	2761091.566	+28.56	3.0
TP053	481913.863	2761298.832	+28.54	4.0
TP054	481676.814	2761345.836	+29.65	4.0
TP055	481528.337	2761386.196	+30.76	4.0
TP056	481599.578	2761574.650	+30.28	2.0
TP057	481792.377	2761521.035	+28.90	4.0
TP058	482056.968	2761656.637	+26.27	4.0
TP059	481865.281	2761710.506	+19.82	1.0
TP060	481670.011	2761761.291	+29.95	1.5
TP061	482128.248	2761843.877	+25.05	2.0
TP062	481934.133	2761898.151	+20.70	1.0
TP063	481741.150	2761949.290	+21.11	1.0
TP064	482197.895	2762032.125	+21.87	1.0

TP No.	COORDINATES		LEVEL (m)*	DEPTH (m)
	EAST	NORTH		
TP065	482004.850	2762085.580	+21.22	0.5
TP066	481810.733	2762138.832	+21.01	1.0
TP067	481882.800	2762327.422	+19.90	0.5
TP068	482074.398	2762274.544	+24.89	4.0
TP069	482207.361	2762236.271	+21.33	0.5
TP070	482339.648	2762408.537	+22.74	0.5
TP071	482145.821	2762461.657	+20.57	3.0
TP072	481951.440	2762514.414	+18.64	4.0
TP073	482533.064	2762355.109	+24.26	2.0
TP074	482524.524	2762149.187	+26.20	2.0
TP075	482530.223	2761978.540	+25.79	1.5
TP076	482392.063	2761979.924	+23.93	2.0
TP077	482321.521	2761791.326	+25.15	4.0
TP078	482496.001	2761767.599	+25.35	4.0
TP079	482251.281	2761604.150	+26.18	4.0
TP080	482441.878	2761551.880	+24.85	1.0
TP081	482093.548	2761438.442	+26.78	3.0
TP082	482110.706	2761227.891	+27.25	4.0
TP083	482124.970	2760994.570	+27.40	2.0
TP084	481968.120	2760851.020	+27.68	2.5
TP085	481896.948	2760662.708	+27.62	1.0
TP086	482920.156	2762249.369	+26.91	2.0
TP087	482850.478	2762056.045	+27.61	2.0
TP088	483114.291	2762196.459	+27.80	3.0
TP089	483308.140	2762143.932	+28.11	3.0
TP090	483500.507	2762088.418	+28.44	4.0
TP091	483043.960	2762002.700	+28.03	4.0
TP092	483242.890	2761958.220	+27.22	4.0
TP093	482831.363	2761903.742	+26.31	4.0
TP094	483015.000	2761872.541	+27.60	4.0
TP095	484201.989	2761963.128	+31.22	3.0
TP096	483994.283	2761896.701	+30.10	4.0
TP097	484113.112	2761845.959	+30.27	3.0
TP098	484207.400	2761690.194	+29.22	3.0
TP099	484459.550	2761715.730	+31.61	3.0
TP100	484315.640	2761897.420	+32.10	3.0

With respect to Dubai Municipality Datum (DMD).

The trial pits were set-out by Matrix at locations specified by the Consultant. The strata encountered were visually described and representative bulk samples were collected at each change of strata. Sampling was carried out in accordance with ASTM 75-97. The log of trial pits are presented in App. B2.

5.6 Mexe Cone Penetration Test

One hundred eighty four (184) nos. Mexe-cone penetration tests were carried out in the trial pits at depths 0.00m, 0.50m and 1.00m below ground level. Readings are presented in App. D2.

5.7 Dynamic Cone Penetration (DCP) Test

One hundred ninety two (192) nos. dynamic penetration tests were carried out in the trial pits at depths 0.00m, 0.50m and 1.00m below ground level. Readings are presented in App. D3.

5.8 Piezometer

Eighty (80) nos. standpipe piezometers were installed at site in the locations of the boreholes to monitor groundwater levels. Further, historical wells of previous investigations by Geoconsult have been relocated. Readings are presented in App. E.

5.9 Gas Monitoring

Thirty (30) nos. gas valves were installed in the standpipe piezometers to monitor ground gas. Readings are presented in App. F.

6.0 LABORATORY TESTING

In order to determine the physical, mechanical and chemical properties of the ground materials, laboratory tests were performed on selected samples according to the following Standards.

- Chemical Analysis of Soil and Water - BS1377: 1990 Part 3 AMD9028/96 Cl.5, Cl.7
- Particle Size Analysis - BS 1377: 1990 Part 2 Cl.9.2. AMD. 9027/96.
- Hydrometer Test - BS 1377: Part 2:1990 Amd.9028/96,cl.9.2 & 9.5.
- Moisture Content - BS 1377:1990 PART 2 Cl. 3 Amd. 9027-96
- Specific Gravity – BS 1377 : Part 2 : 1990 (Amd. 9027/96), Cl. 8.4
- Organic Matter Content - BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4
- Carbonate Content – BS 1377: Part 3: AMD. 96 Cl 6.3
- Point Load Strength Index of Rock - ASTM D 5731 – 95.
- Unconfined Compressive Strength of Intact Rock Cores - ASTM D 2938-95.
- Shear Strength Tests - BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4
- California Bearing Ratio Test and Proctor Test – BS 1377: Part 4: 1990: Cl. 7.2: Amd. 8259-95.

The laboratory test results are presented in Appendix C & C1.

7.0 GROUND CONDITIONS

7.1 Subsurface Condition

The boreholes drilled show that there are general similarities and continuities of the subsurface materials, in spite of some local variations.

The geologic description of the subsurface materials encountered in the boreholes and the average approximate depths at which they were encountered are presented in Table 3. Classification of the soil has been conducted according to BS 5930: 1999 + A2:2010. The tables given in the legend to boring logs in Appendix B were used to describe the relative density of the coarse grained-soils.

Further information about the materials encountered can be obtained from the logs of borings presented in Appendix B.

7.2 Ground Water

At the time of investigation, ground water table was encountered at depths ranging from of 1.56m to 20.10m below the existing ground level, i.e. at R.L. +8.06m DMD to R.L. +20.02m DMD. However, ground water table is subjected to tidal and weather seasonal variations or by artificial induced effects as well as dewatering and/or irrigations operations if any. Therefore reconfirmation is recommended prior to any works related to the ground water regime.

8.0. FOUNDATION RECOMMENDATIONS

8.1 Choice of the Type of Foundations

The choice of particular type of foundation depends upon the character of the soil, the presence of ground water at the site, the magnitude of the imposed loads, and the project characteristics.

For this particular case, the following prevailing site conditions exist:

- The proposed project is PN1403–DTCJA–Expo Development.
- At the time of investigation, the site was uneven and vacant. Ground levels are related to Dubai Municipality Datum (DMD).
- At the time of investigation, ground water table was encountered at depths ranging from of 1.56m to 20.10m below the existing ground level, i.e. at R.L. +8.06m DMD to R.L. +20.02m DMD.
- The generalized geological strata is as follows:

Table 3: GEOLOGICAL STRATA for ZONE 1

Approximate Reduced Level with Respect to DMD (m)	Geologic Description
R.L. +33.58/ +9.86 to R.L. +32.58/ +8.86	Light brown, slightly gravelly to very gravelly, slightly silty/ silty, SAND. Gravels are made up of medium to fine rock fragments and sandstone pieces.
R.L. +32.58/ +8.86 to R.L. +29.30/ +2.69	Medium dense to dense becoming very dense, light brown/ brown, slightly gravelly/ gravelly, slightly silty to silty, fine SAND. Gravels are subangular medium to fine rock fragments and sandstone pieces.
R.L. +29.30/ +2.69 to R.L. -41.96	Extremely weak to weak becoming medium strong to strong, brown/ light brown/ offwhite, medium to fine grained, calcareous SANDSTONE/ conglomeratic SILTSTONE/ CONGLOMERATE/ siliceous CALCARENITE interbedded with bands of cemented sand/ sandy gravels/ sandy silt, gravels to matrix ratio is 80:20/ 60:40, gravels are subangular fine to medium, matrix is silty sand, partially to distinctly weathered, fractures are extremely close to closely spaced.

Based on the above mentioned points, shallow (isolated/ strip/ raft) / pile foundations are recommended as discussed below:

8.2 Shallow (Isolated/Strip/ Raft) Foundations

According to the general discussion presented above and taking into consideration the type of the proposed structure, it is recommended that **shallow (isolated/ strip/ raft) foundations** be used for the proposed structure. The foundation depth may vary according to architectural requirements. **Due to the uneven nature of the site**, the following method is recommended for the preparation of foundation ground:

- The higher parts of the site shall be excavated to the proposed foundation level and the excavated surface shall be well compacted to not less than 95% of the maximum dry density.
- The low lying parts of the site shall be shall be excavated out to a depth of 0.50m below the site level to remove the top soil layer and the excavated surface shall be well compacted to not less than 95% of the maximum dry density.
- Backfilling shall be carried out up to the proposed foundation level using engineered fill material placed in layers of thickness 150mm to 250mm with each layer compacted to not less than 95% of the maximum dry density.
- In-situ quality control shall be undertaken randomly to confirm the degree of compaction achieved.

The foundation ground shall be inspected by an experienced engineer to confirm that the recommended foundation depth has been reached and that any undesirable materials have been removed.

8.3 Allowable Bearing Pressure For Shallow Foundations

Allowable bearing pressures were determined for shallow (isolated/ strip/ raft) foundations at depths specified below, using practical experiences, the results obtained from the field standard penetrations tests and unconfined compressive strength tests, the empirical equations developed by Terzhagi and Peck, Meyerhof and modified by Bowles and taking into consideration a safety factor of three against shear failure of the soil. Accordingly, allowable bearing pressure values recommended to be used for the design of shallow (isolated/ strip/ raft) foundation are given the tables below:

Table 4: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 1

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B01	Isolated/ Strip of width upto 5.0m	+22.80	2.20 (220)	-
	Raft	+22.30	3.50 (350)	32,800
BH-B02	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	31,300

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B03	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	32,300
BH-B04	Isolated/ Strip of width upto 5.0m	+21.50	2.00 (200)	-
	Raft	+21.00	3.50 (350)	30,000
BH-B05	Isolated/ Strip of width upto 5.0m	+21.00	1.60 (160)	-
	Raft	+20.50	1.80 (180)	15,400
BH-B06	Isolated/ Strip of width upto 5.0m	+21.00	2.50 (250)	-
	Raft	+20.50	4.00 (400)	48,000
BH-B07	Isolated/ Strip of width upto 5.0m	+20.00	1.60 (160)	-
	Raft	+19.50	1.70 (170)	14,500
BH-C01	Isolated/ Strip of width upto 5.0m	+19.80	1.60 (160)	-
	Raft	+19.30	1.80 (180)	16,300
BH-C03	Isolated/ Strip of width upto 5.0m	+19.20	1.60 (160)	-
	Raft	+18.70	1.80 (180)	15,400
BH-C05	Isolated/ Strip of width upto 5.0m	+20.20	1.80 (180)	-
	Raft	+19.70	2.50 (250)	22,700
BH-C07	Isolated/ Strip of width upto 5.0m	+20.60	1.80 (180)	-
	Raft	+20.10	2.50 (250)	25,000
BH-C09	Isolated/ Strip of width upto 5.0m	+20.90	1.80 (180)	-
	Raft	+20.40	2.50 (250)	22,000
BH-C11	Isolated/ Strip of width upto 5.0m	+21.60	2.50 (250)	-
	Raft	+21.10	4.00 (400)	48,000

With respect to Dubai Municipality Datum (DMD).

Table 5: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 2

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A55	Isolated/ Strip of width upto 5.0m	+24.50	2.50 (250)	-
	Raft	+24.00	4.00 (400)	48,000

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A56	Isolated/ Strip of width upto 5.0m	+24.00	2.50 (250)	-
	Raft	+23.50	4.00 (400)	48,000
BH-A57	Isolated/ Strip of width upto 5.0m	+22.00	2.50 (250)	-
	Raft	+21.50	4.00 (400)	48,000
BH-B15	Isolated/ Strip of width upto 5.0m	+22.00	2.50 (250)	-
	Raft	+21.50	4.00 (400)	48,000
BH-B16	Isolated/ Strip of width upto 5.0m	+22.00	2.50 (250)	-
	Raft	+21.50	4.00 (400)	48,000
BH-B17	Isolated/ Strip of width upto 5.0m	+22.50	2.50 (250)	-
	Raft	+22.00	4.00 (400)	48,000
BH-B60	Isolated/ Strip of width upto 5.0m	+23.00	2.00 (200)	-
	Raft	+22.50	3.50 (350)	30,000
BH-C12	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	35,000
BH-C13	Isolated/ Strip of width upto 5.0m	+22.00	2.50 (250)	-
	Raft	+21.50	4.00 (400)	48,000

With respect to Dubai Municipality Datum (DMD).

Table 6: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 3

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A01	Isolated/ Strip of width upto 5.0m	+14.70	1.60 (160)	-
	Raft	+14.20	1.70 (170)	14,500
BH-A02	Isolated/ Strip of width upto 5.0m	+14.60	1.60 (160)	-
	Raft	+14.10	1.70 (170)	15,400
BH-B08	Isolated/ Strip of width upto 5.0m	+18.50	1.80 (180)	-
	Raft	+18.00	2.00 (200)	20,000
BH-B09	Isolated/ Strip of width upto 5.0m	+16.00	1.80 (180)	-
	Raft	+15.50	2.00 (200)	21,400

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B10	Isolated/ Strip of width upto 5.0m	+17.50	1.60 (160)	-
	Raft	+17.00	1.70 (170)	17,000
BH-C02	Isolated/ Strip of width upto 5.0m	+18.80	1.80 (180)	-
	Raft	+18.30	2.00 (200)	22,200
BH-C04	Isolated/ Strip of width upto 5.0m	+20.70	1.60 (160)	-
	Raft	+20.20	1.70 (170)	14,500
BH-C06	Isolated/ Strip of width upto 5.0m	+21.30	1.60 (160)	-
	Raft	+20.80	1.70 (170)	15,000
BH-C08	Isolated/ Strip of width upto 5.0m	+20.70	1.60 (160)	-
	Raft	+20.20	1.70 (170)	15,400
BH-C10	Isolated/ Strip of width upto 5.0m	+21.50	1.80 (180)	-
	Raft	+21.00	2.00 (200)	19,300
BH-C14	Isolated/ Strip of width upto 5.0m	+21.30	1.60 (160)	-
	Raft	+20.80	1.70 (170)	15,900
BH-C15	Isolated/ Strip of width upto 5.0m	+21.50	1.80 (180)	-
	Raft	+21.00	2.00 (200)	18,100
BH-C16	Isolated/ Strip of width upto 5.0m	+20.40	1.60 (160)	-
	Raft	+19.90	1.70 (170)	15,400
BH-C17	Isolated/ Strip of width upto 5.0m	+18.30	1.60 (160)	-
	Raft	+17.80	1.70 (170)	15,000
BH-C18	Isolated/ Strip of width upto 5.0m	+17.70	1.80 (180)	-
	Raft	+17.20	2.00 (200)	17,000
BH-C19	Isolated/ Strip of width upto 5.0m	+17.30	1.60 (160)	-
	Raft	+16.80	1.70 (170)	13,400

With respect to Dubai Municipality Datum (DMD).

Table 7: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 4

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A03	Isolated/ Strip of width upto 5.0m	+17.00	1.60 (160)	-
	Raft	+16.50	1.70 (170)	17,000
BH-A04	Isolated/ Strip of width upto 5.0m	+17.50	1.60 (160)	-
	Raft	+17.00	1.70 (170)	14,500
BH-A05	Isolated/ Strip of width upto 5.0m	+18.00	1.60 (160)	-
	Raft	+17.50	1.70 (170)	15,900
BH-A06	Isolated/ Strip of width upto 5.0m	+20.00	1.60 (160)	-
	Raft	+19.50	1.70 (170)	15,400
BH-A07	Isolated/ Strip of width upto 5.0m	+21.00	1.80 (180)	-
	Raft	+20.50	2.00 (200)	18,100
BH-A08	Isolated/ Strip of width upto 5.0m	+22.00	1.60 (160)	-
	Raft	+21.50	1.70 (170)	17,000
BH-A09	Isolated/ Strip of width upto 5.0m	+22.00	1.80 (180)	-
	Raft	+21.50	2.00 (200)	17,100
BH-B11	Isolated/ Strip of width upto 5.0m	+22.00	1.60 (160)	-
	Raft	+21.50	1.70 (170)	14,500
BH-B12	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	35,000
BH-B13	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	37,500
BH-B14	Isolated/ Strip of width upto 5.0m	+22.00	2.50 (250)	-
	Raft	+21.50	4.00 (400)	48,000
BH-C20	Isolated/ Strip of width upto 5.0m	+21.70	1.80 (180)	-
	Raft	+21.20	2.00 (200)	18,100
BH-C21	Isolated/ Strip of width upto 5.0m	+21.50	1.60 (160)	-
	Raft	+21.00	1.80 (180)	16,300

With respect to Dubai Municipality Datum (DMD).

Table 8: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 5

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A10	Isolated/ Strip of width upto 5.0m	+20.00	1.60 (160)	-
	Raft	+19.50	1.70 (170)	14,500
BH-A11	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	29,100
BH-A12	Isolated/ Strip of width upto 5.0m	+20.70	2.00 (200)	-
	Raft	+20.20	3.50 (350)	31,800
BH-A13	Isolated/ Strip of width upto 5.0m	+22.60	2.00 (200)	-
	Raft	+22.10	3.50 (350)	30,000
BH-A14	Isolated/ Strip of width upto 5.0m	+21.50	2.00 (200)	-
	Raft	+21.00	3.50 (350)	32,800
BH-A15	Isolated/ Strip of width upto 5.0m	+22.80	2.00 (200)	-
	Raft	+22.30	3.50 (350)	30,800
BH-A16	Isolated/ Strip of width upto 5.0m	+21.80	2.00 (200)	-
	Raft	+21.30	3.50 (350)	30,000
BH-A42	Isolated/ Strip of width upto 5.0m	+24.50	1.80 (180)	-
	Raft	+24.00	2.00 (200)	17,600
BH-A44	Isolated/ Strip of width upto 5.0m	+24.40	1.80 (180)	-
	Raft	+23.90	2.00 (200)	20,000
BH-B56	Isolated/ Strip of width upto 5.0m	+23.50	2.00 (200)	-
	Raft	+23.00	3.50 (350)	35,000
BH-B57	Isolated/ Strip of width upto 5.0m	+24.10	2.00 (200)	-
	Raft	+23.60	3.50 (350)	31,800
BH-B58	Isolated/ Strip of width upto 5.0m	+18.80	1.60 (160)	-
	Raft	+18.30	1.70 (170)	15,400
BH-B59	Isolated/ Strip of width upto 5.0m	+23.70	1.60 (160)	-
	Raft	+23.20	1.70 (170)	15,900

With respect to Dubai Municipality Datum (DMD).

Table 9: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 6

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B31	Isolated/ Strip of width upto 5.0m	+26.00	1.70 (170)	-
	Raft	+25.50	1.80 (180)	16,300
BH-B32	Isolated/ Strip of width upto 5.0m	+26.80	1.70 (170)	-
	Raft	+26.30	1.80 (180)	16,800
BH-B33	Isolated/ Strip of width upto 5.0m	+26.70	1.80 (180)	-
	Raft	+26.20	2.00 (200)	18,700
BH-B34	Isolated/ Strip of width upto 5.0m	+25.20	1.70 (170)	-
	Raft	+24.70	1.80 (180)	15,800
BH-B35	Isolated/ Strip of width upto 5.0m	+24.50	1.70 (170)	-
	Raft	+24.00	1.80 (180)	15,400
BH-B36	Isolated/ Strip of width upto 5.0m	+24.70	1.60 (160)	-
	Raft	+24.20	1.70 (170)	14,500
BH-B37	Isolated/ Strip of width upto 5.0m	+25.00	1.80 (180)	-
	Raft	+24.50	2.00 (200)	17,100
BH-B38	Isolated/ Strip of width upto 5.0m	+22.50	1.80 (180)	-
	Raft	+22.00	2.00 (200)	18,100
BH-B39	Isolated/ Strip of width upto 5.0m	+23.00	1.70 (170)	-
	Raft	+22.50	1.80 (180)	16,300
BH-B40	Isolated/ Strip of width upto 5.0m	+21.50	1.70 (170)	-
	Raft	+21.00	1.80 (180)	15,400
BH-B41	Isolated/ Strip of width upto 5.0m	+21.20	1.60 (160)	-
	Raft	+20.70	1.70 (170)	13,700
BH-B42	Isolated/ Strip of width upto 5.0m	+22.40	1.80 (180)	-
	Raft	+21.90	2.00 (200)	17,100
BH-B43	Isolated/ Strip of width upto 5.0m	+22.50	1.80 (180)	-
	Raft	+22.00	2.00 (200)	16,200

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B61	Isolated/ Strip of width upto 5.0m	+24.50	1.80 (180)	-
	Raft	+24.00	2.00 (200)	19,300
BH-C29	Isolated/ Strip of width upto 5.0m	+22.70	1.80 (180)	-
	Raft	+22.20	2.00 (200)	17,100

With respect to Dubai Municipality Datum (DMD).

Table 10: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 7

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A59	Isolated/ Strip of width upto 5.0m	+25.40	2.00 (200)	-
	Raft	+24.90	3.50 (350)	30,000
BH-B18	Isolated/ Strip of width upto 5.0m	+24.70	3.50 (350)	-
	Raft	+24.20	4.00 (400)	48,000
BH-B19	Isolated/ Strip of width upto 5.0m	+24.10	3.50 (350)	-
	Raft	+23.60	4.00 (400)	48,000
BH-B20	Isolated/ Strip of width upto 5.0m	+23.50	3.50 (350)	-
	Raft	+23.00	4.00 (400)	48,000
BH-B44	Isolated/ Strip of width upto 5.0m	+24.50	2.00 (200)	-
	Raft	+24.00	3.50 (350)	35,000
BH-B45	Isolated/ Strip of width upto 5.0m	+26.80	1.60 (160)	-
	Raft	+26.30	1.70 (170)	14,100
BH-B46	Isolated/ Strip of width upto 5.0m	+27.80	1.60 (160)	-
	Raft	+27.30	1.70 (170)	15,400
BH-B47	Isolated/ Strip of width upto 5.0m	+24.00	3.50 (350)	-
	Raft	+23.50	4.00 (400)	48,000
BH-C22	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	30,000
BH-C23	Isolated/ Strip of width upto 5.0m	+22.50	2.00 (200)	-
	Raft	+22.00	3.50 (350)	31,800

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-C24	Isolated/ Strip of width upto 5.0m	+22.50	2.00 (200)	-
	Raft	+22.00	3.50 (350)	30,800
BH-C25	Isolated/ Strip of width upto 5.0m	+23.00	3.50 (350)	-
	Raft	+22.50	4.00 (400)	48,000
BH-C26	Isolated/ Strip of width upto 5.0m	+22.00	2.00 (200)	-
	Raft	+21.50	3.50 (350)	32,800
BH-C27	Isolated/ Strip of width upto 5.0m	+24.00	3.50 (350)	-
	Raft	+23.50	4.00 (400)	48,000
BH-C28	Isolated/ Strip of width upto 5.0m	+25.60	2.00 (200)	-
	Raft	+25.10	3.50 (350)	31,800

With respect to Dubai Municipality Datum (DMD).

Table 11: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 8

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A52	Isolated/ Strip of width upto 5.0m	+28.00	1.80 (180)	-
	Raft	+27.50	2.00 (200)	18,100
BH-A53	Isolated/ Strip of width upto 5.0m	+27.00	1.80 (180)	-
	Raft	+26.50	2.00 (200)	20,000
BH-A54	Isolated/ Strip of width upto 5.0m	+26.00	1.80 (180)	-
	Raft	+25.50	2.00 (200)	18,700
BH-A58	Isolated/ Strip of width upto 5.0m	+27.00	1.80 (180)	-
	Raft	+26.50	2.00 (200)	17,100
BH-A60	Isolated/ Strip of width upto 5.0m	+26.80	1.80 (180)	-
	Raft	+26.30	2.00 (200)	19,300
BH-B21	Isolated/ Strip of width upto 5.0m	+26.00	3.50 (350)	-
	Raft	+25.50	4.00 (400)	48,000
BH-B22	Isolated/ Strip of width upto 5.0m	+27.00	3.50 (350)	-
	Raft	+26.50	4.00 (400)	48,000

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B23	Isolated/ Strip of width upto 5.0m	+26.50	3.50 (350)	-
	Raft	+26.00	4.00 (400)	48,000
BH-B24	Isolated/ Strip of width upto 5.0m	+25.50	3.50 (350)	-
	Raft	+25.00	4.00 (400)	48,000
BH-B25	Isolated/ Strip of width upto 5.0m	+27.40	3.50 (350)	-
	Raft	+26.90	4.00 (400)	48,000
BH-B26	Isolated/ Strip of width upto 5.0m	+27.80	1.80 (180)	-
	Raft	+27.30	2.00 (200)	16,600
BH-B27	Isolated/ Strip of width upto 5.0m	+28.00	1.70 (170)	-
	Raft	+27.50	1.80 (180)	15,000

With respect to Dubai Municipality Datum (DMD).

Table 12: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 9

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A48	Isolated/ Strip of width upto 5.0m	+25.10	1.80 (180)	-
	Raft	+24.60	2.00 (200)	18,700
BH-A49	Isolated/ Strip of width upto 5.0m	+26.50	1.70 (170)	-
	Raft	+26.00	1.80 (180)	16,800
BH-A50	Isolated/ Strip of width upto 5.0m	+27.80	1.80 (180)	-
	Raft	+27.30	2.00 (200)	18,700
BH-A51	Isolated/ Strip of width upto 5.0m	+27.50	1.70 (170)	-
	Raft	+27.00	1.80 (180)	15,400
BH-B48	Isolated/ Strip of width upto 5.0m	+27.70	1.70 (170)	-
	Raft	+27.20	1.80 (180)	15,000
BH-B49	Isolated/ Strip of width upto 5.0m	+27.50	1.80 (180)	-
	Raft	+27.00	2.00 (200)	17,600
BH-B50	Isolated/ Strip of width upto 5.0m	+28.00	1.70 (170)	-
	Raft	+27.50	1.80 (180)	15,800

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-B51	Isolated/ Strip of width upto 5.0m	+27.70	1.60 (160)	-
	Raft	+27.20	1.70 (170)	15,400
BH-B52	Isolated/ Strip of width upto 5.0m	+26.60	1.80 (180)	-
	Raft	+26.10	2.00 (200)	17,600
BH-B53	Isolated/ Strip of width upto 5.0m	+25.90	1.80 (180)	-
	Raft	+25.40	2.00 (200)	19,300
BH-B54	Isolated/ Strip of width upto 5.0m	+26.00	1.80 (180)	-
	Raft	+25.50	2.00 (200)	18,100

With respect to Dubai Municipality Datum (DMD).

Table 13: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 10

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A43	Isolated/ Strip of width upto 5.0m	+25.00	1.70 (170)	-
	Raft	+24.50	1.80 (180)	16,300
BH-A45	Isolated/ Strip of width upto 5.0m	+24.50	1.70 (170)	-
	Raft	+24.00	1.80 (180)	17,400
BH-A46	Isolated/ Strip of width upto 5.0m	+24.00	1.80 (180)	-
	Raft	+23.50	2.00 (200)	19,300
BH-A47	Isolated/ Strip of width upto 5.0m	+24.50	1.80 (180)	-
	Raft	+24.00	2.00 (200)	16,200
BH-B28	Isolated/ Strip of width upto 5.0m	+27.50	1.80 (180)	-
	Raft	+27.00	2.00 (200)	18,100
BH-B29	Isolated/ Strip of width upto 5.0m	+25.50	2.00 (200)	-
	Raft	+25.00	2.50 (250)	15,700
BH-B30	Isolated/ Strip of width upto 5.0m	+25.50	1.80 (180)	-
	Raft	+25.00	2.00 (200)	17,600
BH-B55	Isolated/ Strip of width upto 5.0m	+25.70	1.70 (170)	-
	Raft	+25.20	1.80 (180)	15,800

With respect to Dubai Municipality Datum (DMD).

Table 14: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 11

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A17	Isolated/ Strip of width upto 5.0m	+19.00	3.50 (350)	-
	Raft	+18.50	4.00 (400)	48,000
BH-A18	Isolated/ Strip of width upto 5.0m	+22.00	3.50 (350)	-
	Raft	+21.50	4.00 (400)	48,000
BH-A19	Isolated/ Strip of width upto 5.0m	+25.00	1.60 (160)	-
	Raft	+24.50	1.70 (170)	15,000
BH-A20	Isolated/ Strip of width upto 5.0m	+22.00	1.80 (180)	-
	Raft	+21.50	2.00 (200)	17,600
BH-A21	Isolated/ Strip of width upto 5.0m	+20.00	3.50 (350)	-
	Raft	+19.50	4.00 (400)	48,000
BH-A22	Isolated/ Strip of width upto 5.0m	+24.00	2.00 (200)	-
	Raft	+23.50	2.50 (250)	25,000
BH-A23	Isolated/ Strip of width upto 5.0m	+26.50	1.70 (170)	-
	Raft	+26.00	1.80 (180)	15,800
BH-A24	Isolated/ Strip of width upto 5.0m	+24.00	1.80 (180)	-
	Raft	+23.50	2.00 (200)	17,600
BH-A25	Isolated/ Strip of width upto 5.0m	+26.00	1.80 (180)	-
	Raft	+25.50	2.00 (200)	18,100
BH-A26	Isolated/ Strip of width upto 5.0m	+27.50	1.80 (180)	-
	Raft	+27.00	2.00 (200)	17,100
BH-A27	Isolated/ Strip of width upto 5.0m	+26.30	1.80 (180)	-
	Raft	+25.80	2.00 (200)	19,300
BH-A28	Isolated/ Strip of width upto 5.0m	+28.00	1.60 (160)	-
	Raft	+27.50	1.70 (170)	16,400
BH-A29	Isolated/ Strip of width upto 5.0m	+27.50	1.80 (180)	-
	Raft	+27.00	2.00 (200)	18,100
BH-A30	Isolated/ Strip of width upto 5.0m	+28.00	1.60 (160)	-
	Raft	+27.50	1.70 (170)	15,400

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A31	Isolated/ Strip of width upto 5.0m	+28.30	1.60 (160)	-
	Raft	+27.80	1.70 (170)	14,500
BH-A32	Isolated/ Strip of width upto 5.0m	+28.60	1.70 (170)	-
	Raft	+28.10	1.80 (180)	15,400
BH-A33	Isolated/ Strip of width upto 5.0m	+28.50	1.80 (180)	-
	Raft	+28.00	2.00 (200)	17,100

With respect to Dubai Municipality Datum (DMD).

Table 15: BEARING CAPACITY & SUBGRADE MODULUS for ZONE 12

For Zone of Borehole	Foundation Type	Foundation Level (m)*	Allowable Bearing Pressure kg/cm^2 (kN/m^2)	Modulus of Subgrade Reaction (kN/m^3)
BH-A34	Isolated/ Strip of width upto 5.0m	+27.50	1.70 (170)	-
	Raft	+27.00	1.80 (180)	15,400
BH-A35	Isolated/ Strip of width upto 5.0m	+29.50	1.80 (180)	-
	Raft	+29.00	2.00 (200)	17,100
BH-A36	Isolated/ Strip of width upto 5.0m	+28.50	1.60 (160)	-
	Raft	+28.00	1.70 (170)	15,400
BH-A37	Isolated/ Strip of width upto 5.0m	+29.30	1.60 (160)	-
	Raft	+28.80	1.70 (170)	16,400
BH-A38	Isolated/ Strip of width upto 5.0m	+30.50	1.80 (180)	-
	Raft	+30.00	2.00 (200)	17,100
BH-A39	Isolated/ Strip of width upto 5.0m	+30.00	1.80 (180)	-
	Raft	+29.50	2.00 (200)	18,100
BH-A40	Isolated/ Strip of width upto 5.0m	+31.00	1.80 (180)	-
	Raft	+30.50	2.00 (200)	16,600
BH-A41	Isolated/ Strip of width upto 5.0m	+29.70	1.70 (170)	-
	Raft	+29.20	1.80 (180)	16,300

With respect to Dubai Municipality Datum (DMD).

Note: Foundation level was determined considering the Finished Ground Level at each borehole locations from Consultant's issued drawing Ref.: **OA-SK-029**.

8.4 Foundation Settlements

Using the recommended allowable bearing pressure value and the obtained N Values from the standard penetration tests and unconfined compressive strength tests, the anticipated differential and total settlements were estimated and found to be within 10.0mm and 25.0mm respectively for isolated/ strip foundation; and. 20.0mm and 50.0mm respectively for raft foundation. Most of the settlement will take place during the construction period.

8.5 Soil Parameters for Shoring System / Basement / Retaining Structures

The following soil parameters may be adopted for the design of shoring system, basement and retaining walls:

Soil Parameters	Level (DMD)	
	R.L. +33.58/ +9.86 to R.L. +18.00	Below R.L. +18.00
Angle of Shearing Resistance	36°	41°
Unit Weight of Soil (above water table) (kN/m^3)	18.5	18.5
Unit Weight of Soil (below water table) (kN/m^3)	9.2	9.2
Earth Pressure Coefficients		
• Active earth pressure coefficient (k_a)	0.260	0.208
• Passive earth pressure coefficient (k_p)	3.852	4.815
• Earth pressure at rest (k_o)	0.412	0.344

8.6 Seismic Design Parameters

Shear wave velocity has been estimated based on the correlations related to SPT Values for the soil strata and published literature for the rock strata.

Based on the average shear velocity and the classification based on uniform building code 1997, the following seismic parameters shall be adopted.

- Soil profile type S_C is recommended unless otherwise verified by direct seismic logging testing.
- Based on seismic activity, U.A.E. has been grouped under Zone 2B with a seismic zone factor (Z) of 0.20.
- The seismic coefficient Ca and Cv were obtained as 0.24 and 0.32 respectively as per UBC 97 Code – Table 16Q and 16R.

8.7 Pile Foundations

Based on the type of the proposed structure and the subsoil conditions encountered, pile foundations can also be used. It is considered that **bored cast-in-situ piles** could be used for the ground conditions encountered at the site.

The ultimate axial pile capacity has been estimated based on the established design methods. The axial pile capacity is a combination of the load resisted in skin friction along the pile shaft and end bearing.

However, it may be noted that for bored cast-in-situ piles, settlements of the order of 1% of the pile diameter is normally required to mobilize full skin friction whereas full end bearing is developed at much higher settlements (usually at about 10% to 20% of pile diameter). Hence, the pile capacity will be based on full skin friction and partial end bearing.

Pile load tests are considered the most satisfactory method to assess the carrying capacity of a pile. It is therefore recommended that such tests be performed either on specially constructed piles installed before the start of the general construction works or during the foundation construction period. However, if pre-contract testing is carried out, significant savings may result from a more economical pile design based upon specific test data.

The design piles capacities determined using the theoretical design methods should be confirmed and supplemented as work progresses by results of pile load tests, pile installation and driving and if considered necessary, by in-situ tests. The design length of piles represents the design requirements but this may be varied to suit site conditions.

Care should be taken when drilling for cast in place piles not to disturb or loosen the end bearing strata, and to maintain direct and firm contact between this strata and the piles. Otherwise excessive unaccounted settlement may occur on initial loading.

With any form of the pile, it is recommended that specialist contractors are consulted as to the cost and performance characteristics of their particular form of pile with particular reference to the proposed method of installation in the ground conditions encountered at the site. The piling construction should be carried out by specialist well-experienced and equipped piling contractor, who must submit a method statement for the construction of the piles and should be requested to confirm the actual working loads for his particular piling system before foundation design is finalized. Since the theoretical design methods provide an approximate working load, the contractor should also demonstrate by load test the piles performance and its load settlement characteristics.

Under the prevailing ground condition and the type of the structure envisaged at the site, it is recommended to use bored cast in-situ piles.

8.7.1 Allowable Load Capacity of Pile in Compression for +23.00m DMD Cut-off Level

The allowable working loads in compression for different pile diameters and depths based on the factor of safety (3.0) are presented in Table 16.

Table 16

Toe Level of Piles (m)*	Allowable working loads in Compression (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
15.00	903	1178	1649	1822	2191	2592	3487	5066	8325
14.00	1021	1320	1826	2011	2403	2827	3770	5419	8797
13.00	1139	1461	2003	2199	2615	3063	4053	5773	9268
12.00	1257	1602	2180	2388	2827	3299	4335	6126	9739
11.00	1374	1744	2356	2576	3040	3534	4618	6480	10210
10.00	1492	1885	2533	2765	3252	3770	4901	6833	10681
9.00	1610	2026	2710	2953	3464	4006	5184	7186	11153
8.00	1728	2168	2886	3142	3676	4241	5466	7540	11624
7.00	1846	2309	3063	3330	3888	4477	5749	7893	12095
6.00	1964	2450	3240	3519	4100	4712	6032	8247	12566
5.00	2081	2592	3417	3707	4312	4948	6315	8600	13038
4.00	2199	2733	3593	3896	4524	5184	6597	8954	13509
3.00	2317	2875	3770	4084	4736	5419	6880	9307	13980
2.00	2435	3016	3947	4273	4948	5655	7163	9660	14451
1.00	2655	3280	4277	4624	5344	6095	7691	10320	15331
0.00	2875	3544	4606	4976	5740	6535	8218	10980	16211
-1.00	3095	3808	4936	5328	6136	6974	8746	11640	17090
-2.00	3314	4072	5266	5680	6531	7414	9274	12299	17970
-3.00	3534	4335	5596	6032	6927	7854	9802	12959	18850
-4.00	3754	4599	5926	6384	7323	8294	10330	13619	19729
-5.00	3974	4863	6256	6736	7719	8734	10857	14279	20609
-6.00	4194	5127	6586	7087	8115	9174	11385	14938	21489
-7.00	4414	5391	6915	7439	8511	9613	11913	15598	22368
-8.00	4634	5655	7245	7791	8906	10053	12441	16258	23248
-9.00	4854	5919	7575	8143	9302	10493	12969	16918	24127
-10.00	5074	6183	7905	8495	9698	10933	13496	17577	25007
-11.00	5294	6447	8235	8847	10094	11373	14024	18237	25887
-12.00	5514	6710	8565	9199	10490	11812	14552	18897	26766
-13.00	5733	6974	8895	9550	10886	12252	15080	19556	27646
-14.00	5953	7238	9225	9902	11282	12692	15607	20216	28526
-15.00	6173	7502	9554	10254	11677	13132	16135	20876	29405
-16.00	6393	7766	9884	10606	12073	13572	16663	21536	30285
-17.00	6613	8030	10214	10958	12469	14012	17191	22195	31165
-18.00	6833	8294	10544	11310	12865	14451	17719	22855	32044
-19.00	7053	8558	10874	11662	13261	14891	18246	23515	32924
-20.00	7273	8822	11204	12014	13657	15331	18774	24175	33804
-21.00	7493	9086	11534	12365	14052	15771	19302	24834	34683
-22.00	7713	9349	11863	12717	14448	16211	19830	25494	35563

Toe Level of Piles (m)*	Allowable working loads in Compression (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-23.00	7933	9613	12193	13069	14844	16650	20358	26154	36443
-24.00	8152	9877	12523	13421	15240	17090	20885	26814	37322
-25.00	8372	10141	12853	13773	15636	17530	21413	27473	38202
-26.00	8592	10405	13183	14125	16032	17970	21941	28133	39081
-27.00	8812	10669	13513	14477	16427	18410	22469	28793	39961
-28.00	9032	10933	13843	14828	16823	18850	22997	29452	40841
-29.00	9252	11197	14173	15180	17219	19289	23524	30112	41720
-30.00	9472	11461	14502	15532	17615	19729	24052	30772	42600
-31.00	9692	11724	14832	15884	18011	20169	24580	31432	43480
-32.00	9912	11988	15162	16236	18407	20609	25108	32091	44359
-33.00	10132	12252	15492	16588	18802	21049	25635	32751	45239
-34.00	10352	12516	15822	16940	19198	21489	26163	33411	46119
-35.00	10572	12780	16152	17291	19594	21928	26691	34071	46998
-36.00	10791	13044	16482	17643	19990	22368	27219	34730	47878
-37.00	11011	13308	16811	17995	20386	22808	27747	35390	48758
-38.00	11231	13572	17141	18347	20782	23248	28274	36050	49637
-39.00	11451	13836	17471	18699	21178	23688	28802	36710	50517
-40.00	11671	14100	17801	19051	21573	24127	29330	37369	51397
-41.00	11891	14363	18131	19403	21969	24567	29858	38029	52276

With respect to Dubai Municipality Datum (DMD).

Notes:

- The idealized subsoil profile has been assumed for design incorporating the findings of boreholes.
- The working loads in compression have been evaluated using the following allowable unit stress values. These values have been provided based on the standard penetration tests and unconfined compressive strength test results of rock cores.

Depth (m)	R.L. +23.00m* to R.L. +18.00m*	R.L. +18.00m* to R.L. +2.00m*	R.L. +2.00m* to R.L. -41.00m*
Allowable unit skin friction FS (kN/m²)	20	75	140

With respect to Dubai Municipality Datum (DMD).

- The cut off level of piles is taken as +23.00m DMD.
- The center to center distance between the piles shall be at least 2.5 times the pile diameter.
- Allowable unit end bearing stress : 2000 kN/m^2

ALLOWABLE WORKING LOADS IN COMPRESSION (kN)

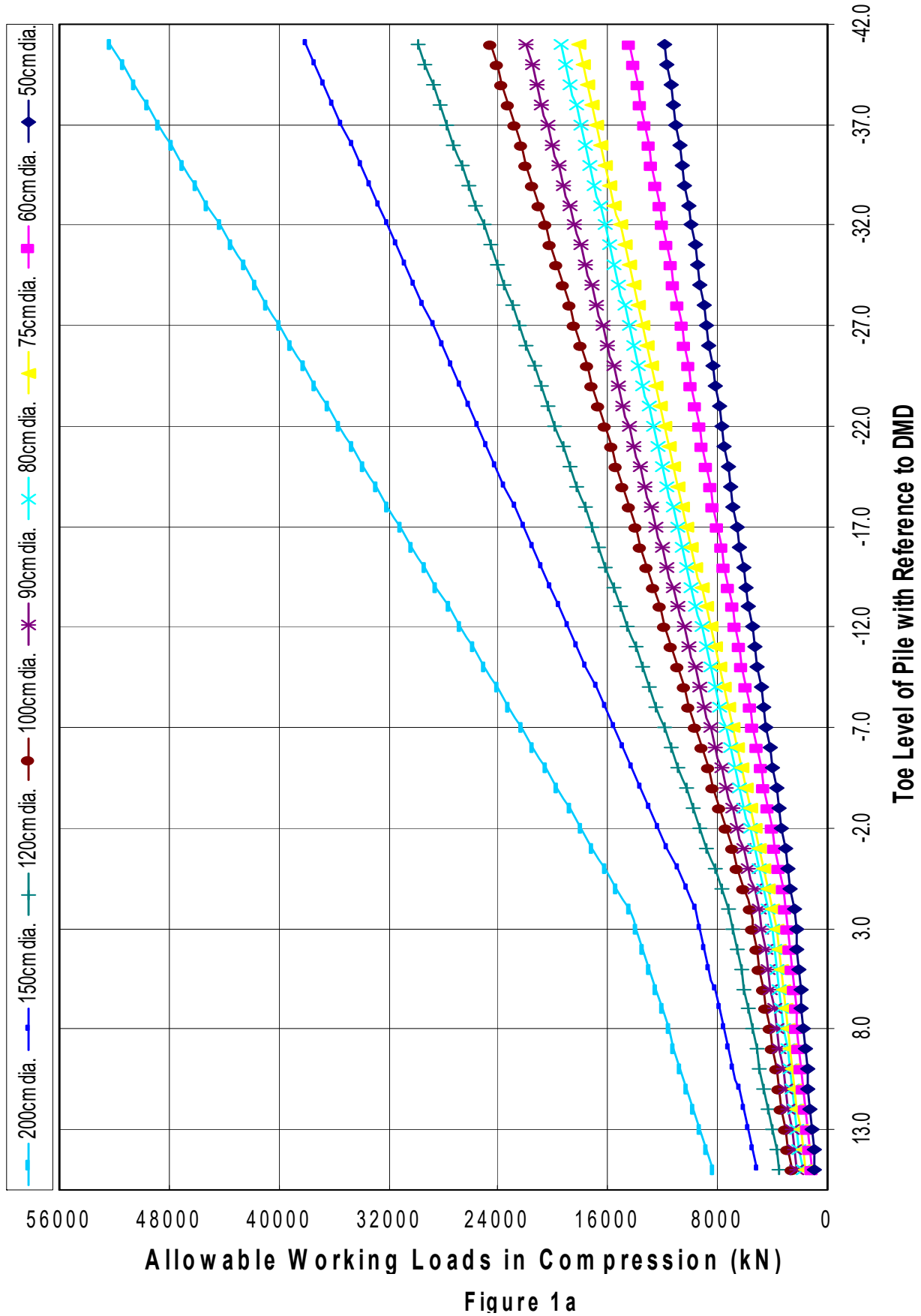


Figure 1a

8.7.2 Allowable Load Capacity of Pile in tension (Uplift) for +23.00m DMD Cut-off Level

The allowable uplift load capacities of pile for different pile diameters and depths based on factor of safety (3.0) are presented in Table 17.

Table 17

Toe Level of Piles (m)*	Allowable working loads in Uplift (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
15.00	511	613	766	817	919	1021	1225	1532	2042
14.00	628	754	943	1005	1131	1257	1508	1885	2513
13.00	746	895	1119	1194	1343	1492	1791	2238	2985
12.00	864	1037	1296	1382	1555	1728	2074	2592	3456
11.00	982	1178	1473	1571	1767	1964	2356	2945	3927
10.00	1100	1320	1649	1759	1979	2199	2639	3299	4398
9.00	1217	1461	1826	1948	2191	2435	2922	3652	4870
8.00	1335	1602	2003	2136	2403	2670	3204	4006	5341
7.00	1453	1744	2180	2325	2615	2906	3487	4359	5812
6.00	1571	1885	2356	2513	2827	3142	3770	4712	6283
5.00	1689	2026	2533	2702	3040	3377	4053	5066	6754
4.00	1806	2168	2710	2890	3252	3613	4335	5419	7226
3.00	1924	2309	2886	3079	3464	3849	4618	5773	7697
2.00	2042	2450	3063	3267	3676	4084	4901	6126	8168
1.00	2262	2714	3393	3619	4072	4524	5429	6786	9048
0.00	2482	2978	3723	3971	4467	4964	5957	7446	9927
-1.00	2702	3242	4053	4323	4863	5404	6484	8105	10807
-2.00	2922	3506	4383	4675	5259	5843	7012	8765	11687
-3.00	3142	3770	4712	5027	5655	6283	7540	9425	12566
-4.00	3362	4034	5042	5378	6051	6723	8068	10085	13446
-5.00	3581	4298	5372	5730	6447	7163	8595	10744	14326
-6.00	3801	4562	5702	6082	6842	7603	9123	11404	15205
-7.00	4021	4826	6032	6434	7238	8043	9651	12064	16085
-8.00	4241	5089	6362	6786	7634	8482	10179	12724	16965
-9.00	4461	5353	6692	7138	8030	8922	10707	13383	17844
-10.00	4681	5617	7022	7490	8426	9362	11234	14043	18724
-11.00	4901	5881	7351	7841	8822	9802	11762	14703	19604
-12.00	5121	6145	7681	8193	9217	10242	12290	15362	20483
-13.00	5341	6409	8011	8545	9613	10681	12818	16022	21363
-14.00	5561	6673	8341	8897	10009	11121	13346	16682	22243
-15.00	5781	6937	8671	9249	10405	11561	13873	17342	23122
-16.00	6000	7201	9001	9601	10801	12001	14401	18001	24002
-17.00	6220	7464	9331	9953	11197	12441	14929	18661	24881
-18.00	6440	7728	9660	10304	11593	12881	15457	19321	25761
-19.00	6660	7992	9990	10656	11988	13320	15984	19981	26641
-20.00	6880	8256	10320	11008	12384	13760	16512	20640	27520
-21.00	7100	8520	10650	11360	12780	14200	17040	21300	28400
-22.00	7320	8784	10980	11712	13176	14640	17568	21960	29280

Toe Level of Piles (m)*	Allowable working loads in Uplift (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-23.00	7540	9048	11310	12064	13572	15080	18096	22620	30159
-24.00	7760	9312	11640	12416	13968	15520	18623	23279	31039
-25.00	7980	9576	11970	12767	14363	15959	19151	23939	31919
-26.00	8200	9840	12299	13119	14759	16399	19679	24599	32798
-27.00	8420	10103	12629	13471	15155	16839	20207	25258	33678
-28.00	8639	10367	12959	13823	15551	17279	20735	25918	34558
-29.00	8859	10631	13289	14175	15947	17719	21262	26578	35437
-30.00	9079	10895	13619	14527	16343	18158	21790	27238	36317
-31.00	9299	11159	13949	14879	16738	18598	22318	27897	37197
-32.00	9519	11423	14279	15230	17134	19038	22846	28557	38076
-33.00	9739	11687	14608	15582	17530	19478	23373	29217	38956
-34.00	9959	11951	14938	15934	17926	19918	23901	29877	39835
-35.00	10179	12215	15268	16286	18322	20358	24429	30536	40715
-36.00	10399	12478	15598	16638	18718	20797	24957	31196	41595
-37.00	10619	12742	15928	16990	19113	21237	25485	31856	42474
-38.00	10839	13006	16258	17342	19509	21677	26012	32516	43354
-39.00	11058	13270	16588	17693	19905	22117	26540	33175	44234
-40.00	11278	13534	16918	18045	20301	22557	27068	33835	45113
-41.00	11498	13798	17247	18397	20697	22997	27596	34495	45993

With respect to Dubai Municipality Datum (DMD).

Notes:

- The idealized subsoil profile has been assumed for design incorporating the findings of boreholes.
- The working loads in uplift have been evaluated using the following allowable unit stress values. These values have been provided based on the standard penetration tests and unconfined compressive strength test results of rock cores.

Depth (m)	R.L. +23.00m* to R.L. +18.00m*	R.L. +18.00m* to R.L. +2.00m*	R.L. +2.00m* to R.L. -41.00m*
Allowable unit skin friction FS (kN/m²)	20	75	140

With respect to Dubai Municipality Datum (DMD).

- The cut off level of piles is taken as +23.00m DMD.
- The center to center distance between the piles shall be at least 2.5 times the pile diameter.

ALLOWABLE WORKING LOADS IN UPLIFT (kN)

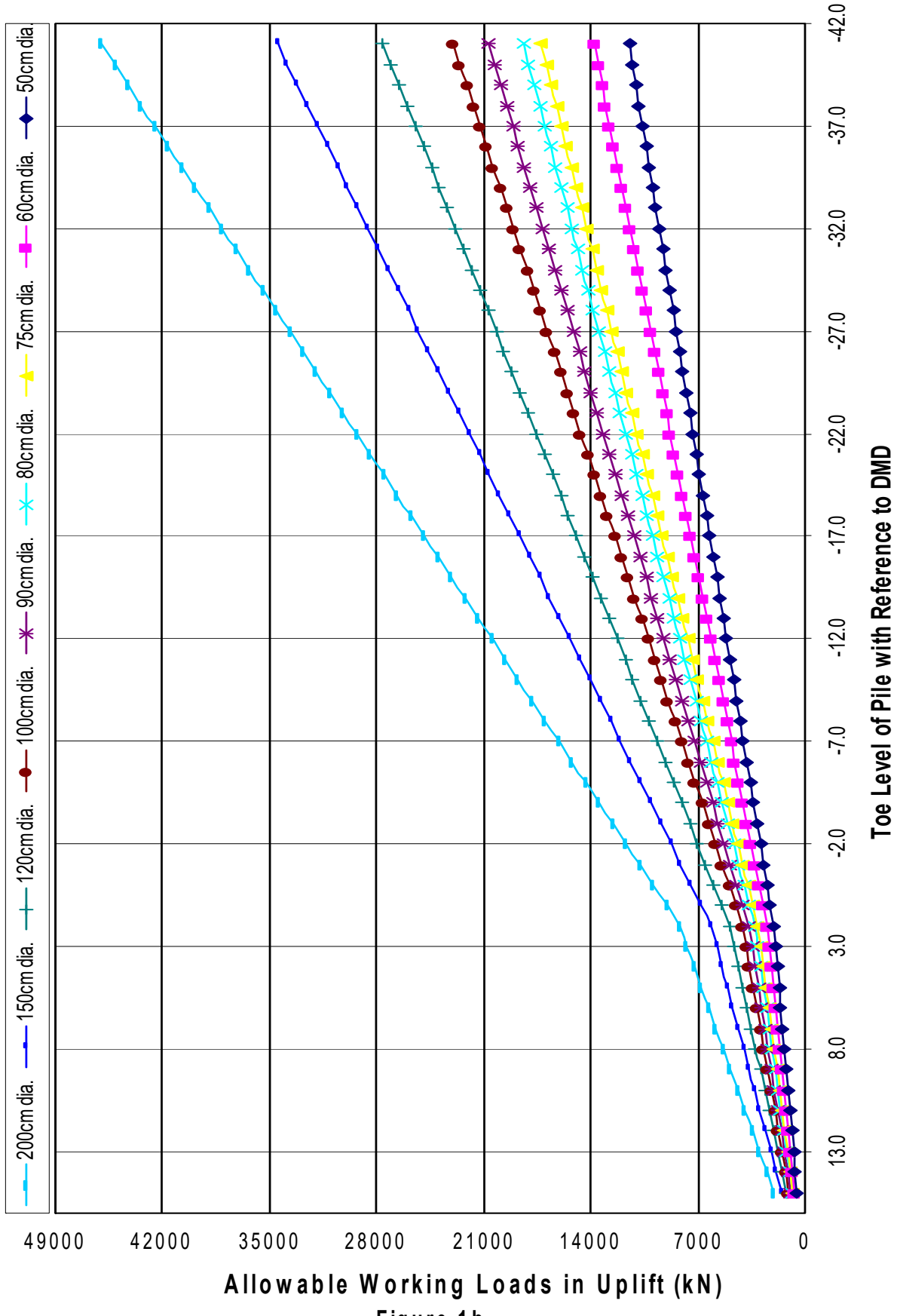


Figure 1b

8.7.3 Settlement of Piles for +23.00m DMD Cut-off Level

Settlement of piles have been evaluated for different pile diameters, toe levels and working loads provided in Table 16 based on the method proposed by Braja M. Das.

Total settlement has been evaluated as summation of elastic settlement of pile, settlement of pile caused by the load at the pile tip and settlement of pile caused by the load transmitted along the pile shaft.

i.e. $S = S_1 + S_2 + S_3$

S = Total pile settlement.

S_1 = Elastic settlement of pile.

S_2 = Settlement of pile caused by the load at the pile tip.

S_3 = Settlement of pile caused by the load transmitted along the pile shaft.

The results are presented in the following table 18 and graphically represented in Figure 1c.

Table 18

Toe Level of Piles (m)*	Settlement (mm)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
15.00	2.5	2.8	3.3	3.5	3.8	4.1	4.8	5.8	7.6
14.00	2.7	3.0	3.4	3.6	3.9	4.3	4.9	6.0	7.7
13.00	2.9	3.2	3.6	3.8	4.1	4.4	5.1	6.1	7.8
12.00	3.1	3.4	3.8	3.9	4.2	4.6	5.2	6.2	7.9
11.00	3.4	3.6	4.0	4.1	4.4	4.7	5.4	6.4	8.1
10.00	3.6	3.8	4.2	4.3	4.6	4.9	5.5	6.5	8.2
9.00	3.9	4.0	4.4	4.5	4.8	5.0	5.7	6.6	8.3
8.00	4.2	4.3	4.6	4.7	4.9	5.2	5.8	6.8	8.4
7.00	4.5	4.5	4.8	4.9	5.1	5.4	6.0	6.9	8.6
6.00	4.8	4.8	5.0	5.1	5.3	5.6	6.2	7.1	8.7
5.00	5.1	5.1	5.3	5.4	5.6	5.8	6.3	7.2	8.8
4.00	5.5	5.4	5.5	5.6	5.8	6.0	6.5	7.4	9.0
3.00	5.9	5.7	5.8	5.9	6.0	6.2	6.7	7.6	9.1
2.00	6.2	6.1	6.1	6.1	6.3	6.5	6.9	7.7	9.3
1.00	6.8	6.6	6.5	6.5	6.6	6.8	7.2	8.0	9.5
0.00	7.5	7.1	6.9	7.0	7.0	7.2	7.5	8.3	9.7
-1.00	8.1	7.7	7.4	7.4	7.4	7.5	7.9	8.6	10.0
-2.00	8.8	8.3	7.9	7.9	7.8	7.9	8.2	8.8	10.2
-3.00	9.5	8.9	8.4	8.3	8.3	8.3	8.5	9.1	10.5
-4.00	10.3	9.5	8.9	8.8	8.7	8.7	8.9	9.5	10.7
-5.00	11.1	10.2	9.5	9.4	9.2	9.2	9.3	9.8	11.0
-6.00	11.9	10.9	10.1	9.9	9.7	9.6	9.7	10.1	11.3
-7.00	12.8	11.6	10.7	10.5	10.2	10.1	10.1	10.4	11.6
-8.00	13.7	12.4	11.3	11.1	10.7	10.6	10.5	10.8	11.9

Toe Level of Piles (m)*	Settlement (mm)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-9.00	14.6	13.2	11.9	11.7	11.3	11.1	10.9	11.2	12.1
-10.00	15.5	14.0	12.6	12.3	11.8	11.6	11.4	11.5	12.5
-11.00	16.5	14.8	13.3	12.9	12.4	12.1	11.8	11.9	12.8
-12.00	17.6	15.7	14.0	13.6	13.0	12.7	12.3	12.3	13.1
-13.00	18.6	16.6	14.7	14.3	13.6	13.2	12.8	12.7	13.4
-14.00	19.7	17.5	15.4	15.0	14.3	13.8	13.3	13.1	13.7
-15.00	20.8	18.4	16.2	15.7	14.9	14.4	13.8	13.5	14.1
-16.00	22.0	19.4	17.0	16.5	15.6	15.0	14.3	14.0	14.4
-17.00	23.2	20.4	17.8	17.2	16.3	15.6	14.8	14.4	14.8
-18.00	24.4	21.4	18.7	18.0	17.0	16.3	15.4	14.9	15.1
-19.00	25.6	22.5	19.5	18.8	17.7	16.9	15.9	15.3	15.5
-20.00	26.9	23.6	20.4	19.7	18.5	17.6	16.5	15.8	15.9
-21.00	28.3	24.7	21.3	20.5	19.2	18.3	17.1	16.3	16.3
-22.00	29.6	25.8	22.2	21.4	20.0	19.0	17.7	16.8	16.7
-23.00	31.0	27.0	23.2	22.3	20.8	19.8	18.3	17.3	17.1
-24.00	32.4	28.2	24.1	23.2	21.6	20.5	19.0	17.8	17.5
-25.00	33.9	29.4	25.1	24.1	22.5	21.3	19.6	18.4	17.9
-26.00	35.4	30.7	26.2	25.1	23.3	22.0	20.3	18.9	18.3
-27.00	36.9	31.9	27.2	26.0	24.2	22.8	20.9	19.5	18.7
-28.00	38.4	33.2	28.2	27.0	25.1	23.6	21.6	20.0	19.2
-29.00	40.0	34.6	29.3	28.1	26.0	24.5	22.3	20.6	19.6
-30.00	41.7	35.9	30.4	29.1	27.0	25.3	23.0	21.2	20.1
-31.00	43.3	37.3	31.6	30.2	27.9	26.2	23.8	21.8	20.6
-32.00	45.0	38.8	32.7	31.2	28.9	27.0	24.5	22.4	21.0
-33.00	46.7	40.2	33.9	32.3	29.9	27.9	25.3	23.0	21.5
-34.00	48.5	41.7	35.1	33.5	30.9	28.9	26.0	23.6	22.0
-35.00	50.3	43.2	36.3	34.6	31.9	29.8	26.8	24.3	22.5
-36.00	52.1	44.7	37.5	35.8	32.9	30.7	27.6	24.9	23.0
-37.00	54.0	46.3	38.8	37.0	34.0	31.7	28.4	25.6	23.5
-38.00	55.9	47.9	40.1	38.2	35.1	32.7	29.3	26.3	24.0
-39.00	57.8	49.5	41.4	39.4	36.2	33.7	30.1	26.9	24.6
-40.00	59.7	51.1	42.7	40.6	37.3	34.7	31.0	27.6	25.1
-41.00	61.7	52.8	44.0	41.9	38.4	35.7	31.8	28.3	25.7

With respect to Dubai Municipality Datum (DMD).

SETTLEMENT (mm) FOR DIFFERENT PILE DIAMETER

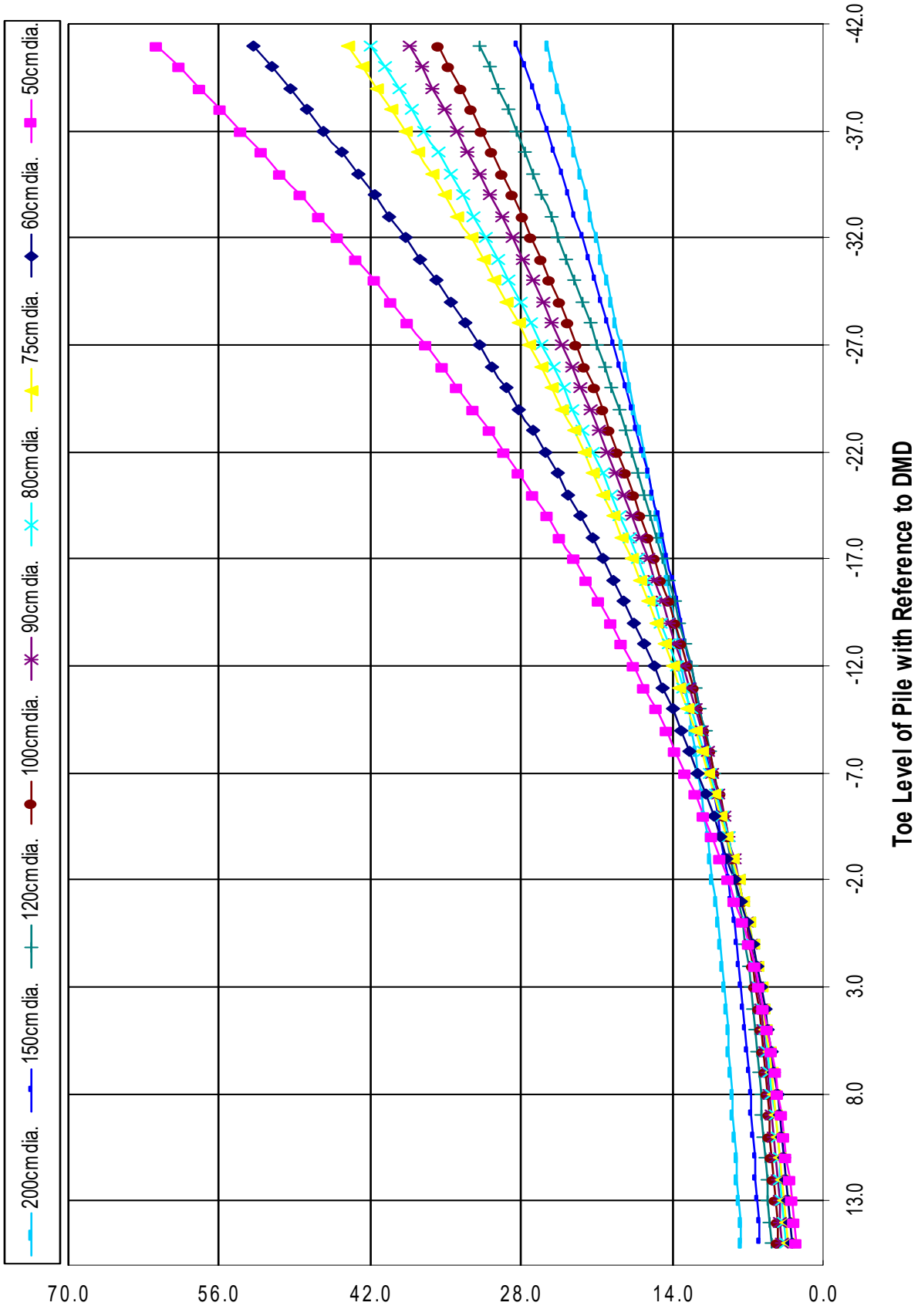


Figure 1c

8.7.4 Toe Level vs. Pile Spring Stiffness for +23.00m DMD Cut-off Level

Pile spring stiffness has been evaluated as allowable working load in compression divided by the total settlement as given in Table 19 below.

Table 19

Toe Level of Piles (m)*	Pile Stiffness (kN/m)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
15.00	359841	419253	501307	526618	578179	629078	726500	868919	1099762
14.00	378148	442785	530843	558500	611527	663709	764686	909262	1143888
13.00	392690	462278	556333	584867	641029	696159	799349	947898	1185128
12.00	402756	476845	578117	609082	668416	724989	833731	984904	1226562
11.00	410269	489775	596506	628317	692369	751979	863196	1020394	1266774
10.00	414528	498677	610337	645935	711488	774107	891073	1054475	1304200
9.00	416047	504055	622897	660649	729179	796322	917451	1085559	1342082
8.00	415361	507658	632961	671282	745578	814050	940861	1113708	1377239
7.00	413834	509735	640816	681002	757836	829037	961388	1142301	1411330
6.00	410774	509439	645378	687227	767753	843005	980797	1166436	1442755
5.00	406504	508196	648292	692916	775504	854577	997567	1191150	1474842
4.00	401296	505213	650942	695643	782682	863933	1013410	1211570	1502647
3.00	396051	501675	651105	696945	786711	871254	1025350	1231085	1531227
2.00	390176	496853	649112	698137	790415	876729	1036585	1249728	1557252
1.00	388099	498450	657923	708178	806003	897599	1066657	1291627	1612093
0.00	385335	498411	663746	716014	817621	913916	1092872	1327678	1664333
-1.00	381096	496428	666154	720988	826887	927434	1114166	1361357	1712455
-2.00	376209	492918	666595	723567	833087	937320	1132357	1391324	1756588
-3.00	370472	488221	665398	723249	836618	945126	1147752	1417845	1798626
-4.00	364485	483120	662841	722138	838843	950034	1160629	1441143	1836983
-5.00	358350	477252	659189	719615	838100	953450	1169968	1461464	1871826
-6.00	352141	470808	654632	715899	836567	954579	1177363	1479040	1905009
-7.00	345646	463941	648724	710535	833555	953700	1183009	1494061	1934957
-8.00	339473	457146	642884	705077	829274	951998	1185958	1506738	1961840
-9.00	332908	450099	636037	698970	824672	948725	1187592	1517265	1987430
-10.00	326703	442887	628878	691767	819096	944918	1188055	1525799	2008602
-11.00	320436	435869	621033	684729	812713	939884	1187477	1532513	2030329
-12.00	314160	428506	613524	676865	805668	933787	1185008	1536317	2047927
-13.00	308247	421408	605487	669264	798065	927494	1180861	1539874	2064675
-14.00	302351	414322	597442	661035	790021	920377	1177029	1542037	2079133
-15.00	296646	407501	589414	652718	782137	912571	1171765	1542934	2091415
-16.00	290992	400516	581424	644742	773917	904780	1166060	1541560	2101666
-17.00	285540	393816	573182	636347	764969	896449	1159191	1540278	2111423
-18.00	280271	387199	565362	627968	756753	887672	1152055	1536994	2117925

Toe Level of Piles (m)*	Pile Stiffness (kN/m)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-19.00	275074	380681	557345	619639	747924	879050	1144693	1533907	2124123
-20.00	270063	374431	549470	611374	738988	870091	1136453	1529070	2130025
-21.00	265228	368281	541484	603185	730369	861322	1128106	1523577	2133038
-22.00	260561	362239	533906	595096	721688	852292	1119689	1517500	2135904
-23.00	255970	356312	526254	586843	712968	843058	1110611	1510907	2137390
-24.00	251462	350504	518774	578986	704247	834080	1101545	1503842	2137577
-25.00	247189	344935	511460	571244	695538	824946	1091948	1496362	2136566
-26.00	242995	339367	504126	563406	686868	815701	1082432	1488519	2135596
-27.00	238878	334131	497160	555933	678538	806382	1073004	1480344	2132396
-28.00	234966	328902	490177	548384	669980	797360	1063176	1471884	2129338
-29.00	231127	323788	483373	540991	661764	788610	1053480	1462467	2125339
-30.00	227362	318879	476582	533746	653614	779502	1043924	1453562	2120458
-31.00	223726	314074	470117	526655	645548	770692	1034068	1443803	2115796
-32.00	220211	309375	463673	519712	637789	762160	1024382	1433932	2110338
-33.00	216811	304781	457396	512913	629896	753354	1014460	1423961	2106094
-34.00	213477	300362	451278	506261	622311	744835	1004731	1413915	2096300
-35.00	210253	295970	445196	499749	614620	736343	995190	1403815	2089738
-36.00	207089	291745	439392	493378	607230	728128	985474	1393672	2081648
-37.00	204064	287612	433619	487009	599935	719949	975958	1383503	2073905
-38.00	201060	283630	427998	480915	592913	711813	966312	1373326	2064775
-39.00	198184	279677	422418	474830	585823	703941	957198	1362639	2056036
-40.00	195363	275866	417081	468880	578838	696117	947654	1352486	2046854
-41.00	192628	272137	411785	463067	572115	688352	938626	1341884	2038055

With respect to Dubai Municipality Datum (DMD).

PILE STIFFNESS

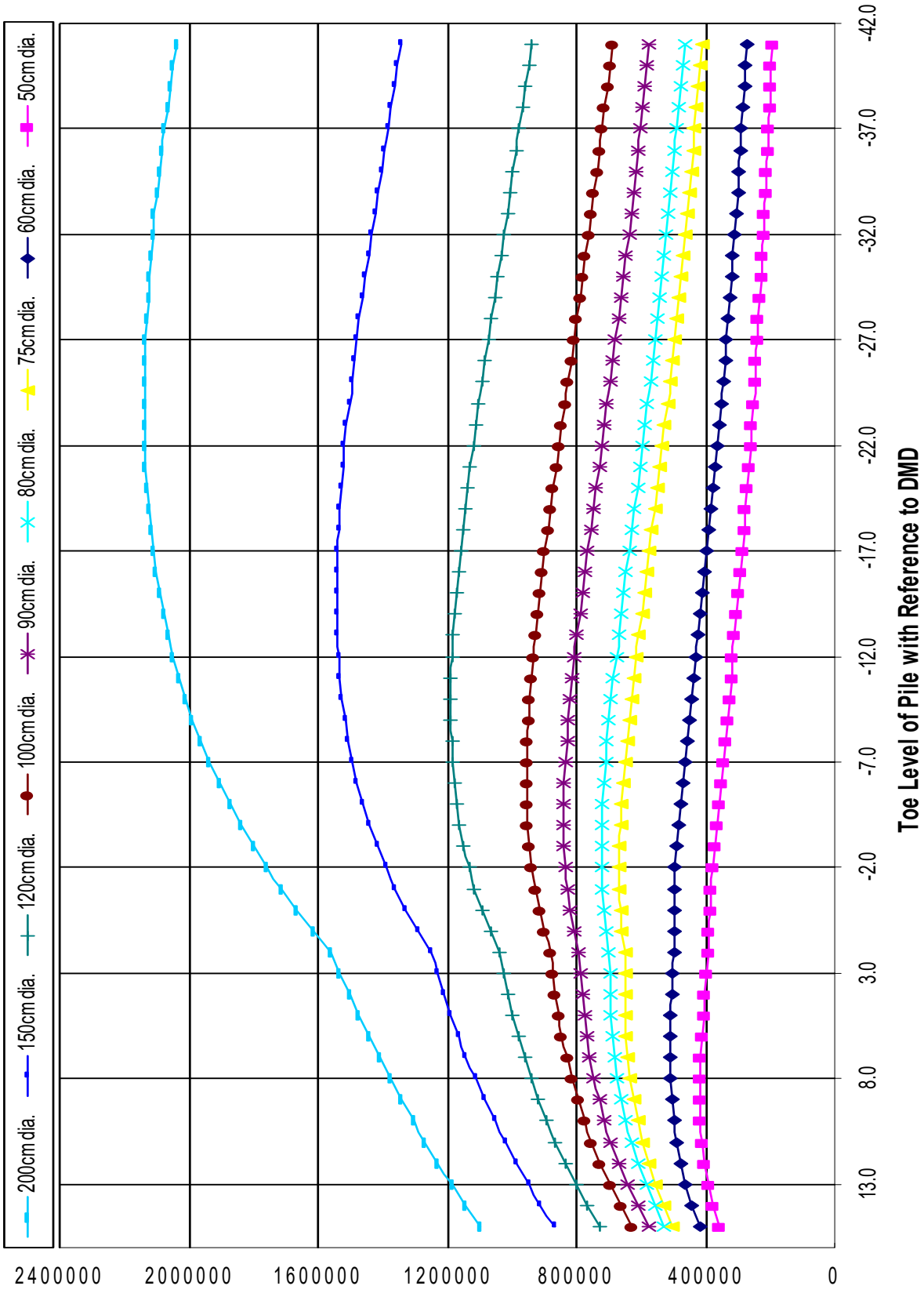


Figure 1d

8.7.5 Horizontal Subgrade Modulus for +23.00m DMD Cut-off Level

Horizontal subgrade modulus (K) shall be evaluated from the following expression.

K= n_h * x/B (Ref Tomlinson)

Where,
n_h = co-efficient of modulus variation
x = shaft length
B = diameter of pile

Table 20 below represents the horizontal subgrade modulus for different pile diameters at different depth.

Table 20

Depth (m) DMD	Shaft Length (m)	Coefficient of Subgrade Modulus Variation (MN/m³)	Horizontal Sub grade Modulus (k) (MN/m³)								
			Pile Diameter (m)								
			0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
15.0	8.0	45	720.0	600.0	480.0	450.0	400.0	360.0	300.0	240.0	180.0
14.0	9.0	45	810.0	675.0	540.0	506.3	450.0	405.0	337.5	270.0	202.5
13.0	10.0	45	900.0	750.0	600.0	562.5	500.0	450.0	375.0	300.0	225.0
12.0	11.0	45	990.0	825.0	660.0	618.8	550.0	495.0	412.5	330.0	247.5
11.0	12.0	45	1080.0	900.0	720.0	675.0	600.0	540.0	450.0	360.0	270.0
10.0	13.0	45	1170.0	975.0	780.0	731.3	650.0	585.0	487.5	390.0	292.5
9.0	14.0	45	1260.0	1050.0	840.0	787.5	700.0	630.0	525.0	420.0	315.0
8.0	15.0	45	1350.0	1125.0	900.0	843.8	750.0	675.0	562.5	450.0	337.5
7.0	16.0	45	1440.0	1200.0	960.0	900.0	800.0	720.0	600.0	480.0	360.0
6.0	17.0	45	1530.0	1275.0	1020.0	956.3	850.0	765.0	637.5	510.0	382.5
5.0	18.0	45	1620.0	1350.0	1080.0	1012.5	900.0	810.0	675.0	540.0	405.0
4.0	19.0	45	1710.0	1425.0	1140.0	1068.8	950.0	855.0	712.5	570.0	427.5
3.0	20.0	45	1800.0	1500.0	1200.0	1125.0	1000.0	900.0	750.0	600.0	450.0
2.0	21.0	45	1890.0	1575.0	1260.0	1181.3	1050.0	945.0	787.5	630.0	472.5
1.0	22.0	45	1980.0	1650.0	1320.0	1237.5	1100.0	990.0	825.0	660.0	495.0
0.0	23.0	45	2070.0	1725.0	1380.0	1293.8	1150.0	1035.0	862.5	690.0	517.5
-1.0	24.0	45	2160.0	1800.0	1440.0	1350.0	1200.0	1080.0	900.0	720.0	540.0
-2.0	25.0	45	2250.0	1875.0	1500.0	1406.3	1250.0	1125.0	937.5	750.0	562.5
-3.0	26.0	45	2340.0	1950.0	1560.0	1462.5	1300.0	1170.0	975.0	780.0	585.0
-4.0	27.0	45	2430.0	2025.0	1620.0	1518.8	1350.0	1215.0	1012.5	810.0	607.5
-5.0	28.0	45	2520.0	2100.0	1680.0	1575.0	1400.0	1260.0	1050.0	840.0	630.0
-6.0	29.0	45	2610.0	2175.0	1740.0	1631.3	1450.0	1305.0	1087.5	870.0	652.5
-7.0	30.0	45	2700.0	2250.0	1800.0	1687.5	1500.0	1350.0	1125.0	900.0	675.0
-8.0	31.0	45	2790.0	2325.0	1860.0	1743.8	1550.0	1395.0	1162.5	930.0	697.5
-9.0	32.0	45	2880.0	2400.0	1920.0	1800.0	1600.0	1440.0	1200.0	960.0	720.0
-10.0	33.0	45	2970.0	2475.0	1980.0	1856.3	1650.0	1485.0	1237.5	990.0	742.5
-11.0	34.0	45	3060.0	2550.0	2040.0	1912.5	1700.0	1530.0	1275.0	1020.0	765.0
-12.0	35.0	45	3150.0	2625.0	2100.0	1968.8	1750.0	1575.0	1312.5	1050.0	787.5

Depth (m) DMD	Shaft Length (m)	Coefficient of Subgrade Modulus Variation (MN/m³)	Horizontal Sub grade Modulus (k) (MN/m³)								
			Pile Diameter (m)								
			0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-13.0	36.0	45	3240.0	2700.0	2160.0	2025.0	1800.0	1620.0	1350.0	1080.0	810.0
-14.0	37.0	45	3330.0	2775.0	2220.0	2081.3	1850.0	1665.0	1387.5	1110.0	832.5
-15.0	38.0	45	3420.0	2850.0	2280.0	2137.5	1900.0	1710.0	1425.0	1140.0	855.0
-16.0	39.0	45	3510.0	2925.0	2340.0	2193.8	1950.0	1755.0	1462.5	1170.0	877.5
-17.0	40.0	45	3600.0	3000.0	2400.0	2250.0	2000.0	1800.0	1500.0	1200.0	900.0
-18.0	41.0	45	3690.0	3075.0	2460.0	2306.3	2050.0	1845.0	1537.5	1230.0	922.5
-19.0	42.0	45	3780.0	3150.0	2520.0	2362.5	2100.0	1890.0	1575.0	1260.0	945.0
-20.0	43.0	45	3870.0	3225.0	2580.0	2418.8	2150.0	1935.0	1612.5	1290.0	967.5
-21.0	44.0	45	3960.0	3300.0	2640.0	2475.0	2200.0	1980.0	1650.0	1320.0	990.0
-22.0	45.0	45	4050.0	3375.0	2700.0	2531.3	2250.0	2025.0	1687.5	1350.0	1012.5
-23.0	46.0	45	4140.0	3450.0	2760.0	2587.5	2300.0	2070.0	1725.0	1380.0	1035.0
-24.0	47.0	45	4230.0	3525.0	2820.0	2643.8	2350.0	2115.0	1762.5	1410.0	1057.5
-25.0	48.0	45	4320.0	3600.0	2880.0	2700.0	2400.0	2160.0	1800.0	1440.0	1080.0
-26.0	49.0	45	4410.0	3675.0	2940.0	2756.3	2450.0	2205.0	1837.5	1470.0	1102.5
-27.0	50.0	45	4500.0	3750.0	3000.0	2812.5	2500.0	2250.0	1875.0	1500.0	1125.0
-28.0	51.0	45	4590.0	3825.0	3060.0	2868.8	2550.0	2295.0	1912.5	1530.0	1147.5
-29.0	52.0	45	4680.0	3900.0	3120.0	2925.0	2600.0	2340.0	1950.0	1560.0	1170.0
-30.0	53.0	45	4770.0	3975.0	3180.0	2981.3	2650.0	2385.0	1987.5	1590.0	1192.5
-31.0	54.0	45	4860.0	4050.0	3240.0	3037.5	2700.0	2430.0	2025.0	1620.0	1215.0
-32.0	55.0	45	4950.0	4125.0	3300.0	3093.8	2750.0	2475.0	2062.5	1650.0	1237.5
-33.0	56.0	45	5040.0	4200.0	3360.0	3150.0	2800.0	2520.0	2100.0	1680.0	1260.0
-34.0	57.0	45	5130.0	4275.0	3420.0	3206.3	2850.0	2565.0	2137.5	1710.0	1282.5
-35.0	58.0	45	5220.0	4350.0	3480.0	3262.5	2900.0	2610.0	2175.0	1740.0	1305.0
-36.0	59.0	45	5310.0	4425.0	3540.0	3318.8	2950.0	2655.0	2212.5	1770.0	1327.5
-37.0	60.0	45	5400.0	4500.0	3600.0	3375.0	3000.0	2700.0	2250.0	1800.0	1350.0
-38.0	61.0	45	5490.0	4575.0	3660.0	3431.3	3050.0	2745.0	2287.5	1830.0	1372.5
-39.0	62.0	45	5580.0	4650.0	3720.0	3487.5	3100.0	2790.0	2325.0	1860.0	1395.0
-40.0	63.0	45	5670.0	4725.0	3780.0	3543.8	3150.0	2835.0	2362.5	1890.0	1417.5
-41.0	64.0	45	5760.0	4800.0	3840.0	3600.0	3200.0	2880.0	2400.0	1920.0	1440.0

8.8.1 Allowable Load Capacity of Pile in Compression for +21.00m DMD Cut-off Level

The allowable working loads in compression for different pile diameters and depths based on the factor of safety (3.0) are presented in Table 21.

Table 21

Toe Level of Piles (m)*	Allowable working loads in Compression (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
13.00	1076	1385	1909	2099	2502	2937	3902	5584	9016
12.00	1194	1527	2085	2287	2714	3173	4185	5938	9488
11.00	1312	1668	2262	2476	2926	3409	4467	6291	9959
10.00	1429	1810	2439	2664	3139	3644	4750	6645	10430
9.00	1547	1951	2615	2853	3351	3880	5033	6998	10901
8.00	1665	2092	2792	3041	3563	4116	5316	7351	11373
7.00	1783	2234	2969	3230	3775	4351	5598	7705	11844
6.00	1901	2375	3146	3418	3987	4587	5881	8058	12315
5.00	2019	2516	3322	3607	4199	4822	6164	8412	12786
4.00	2136	2658	3499	3795	4411	5058	6447	8765	13258
3.00	2254	2799	3676	3984	4623	5294	6729	9119	13729
2.00	2372	2941	3852	4172	4835	5529	7012	9472	14200
1.00	2592	3204	4182	4524	5231	5969	7540	10132	15080
0.00	2812	3468	4512	4876	5627	6409	8068	10791	15959
-1.00	3032	3732	4842	5228	6022	6849	8595	11451	16839
-2.00	3252	3996	5172	5580	6418	7289	9123	12111	17719
-3.00	3472	4260	5502	5931	6814	7728	9651	12771	18598
-4.00	3691	4524	5832	6283	7210	8168	10179	13430	19478
-5.00	3911	4788	6161	6635	7606	8608	10707	14090	20358
-6.00	4131	5052	6491	6987	8002	9048	11234	14750	21237
-7.00	4351	5316	6821	7339	8398	9488	11762	15410	22117
-8.00	4571	5580	7151	7691	8793	9927	12290	16069	22997
-9.00	4791	5843	7481	8043	9189	10367	12818	16729	23876
-10.00	5011	6107	7811	8394	9585	10807	13346	17389	24756
-11.00	5231	6371	8141	8746	9981	11247	13873	18048	25635
-12.00	5451	6635	8471	9098	10377	11687	14401	18708	26515
-13.00	5671	6899	8800	9450	10773	12127	14929	19368	27395
-14.00	5891	7163	9130	9802	11168	12566	15457	20028	28274
-15.00	6110	7427	9460	10154	11564	13006	15984	20687	29154
-16.00	6330	7691	9790	10506	11960	13446	16512	21347	30034
-17.00	6550	7955	10120	10857	12356	13886	17040	22007	30913
-18.00	6770	8218	10450	11209	12752	14326	17568	22667	31793
-19.00	6990	8482	10780	11561	13148	14766	18096	23326	32673
-20.00	7210	8746	11110	11913	13543	15205	18623	23986	33552
-21.00	7430	9010	11439	12265	13939	15645	19151	24646	34432
-22.00	7650	9274	11769	12617	14335	16085	19679	25306	35312
-23.00	7870	9538	12099	12969	14731	16525	20207	25965	36191
-24.00	8090	9802	12429	13320	15127	16965	20735	26625	37071

Toe Level of Piles (m)*	Allowable working loads in Compression (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-25.00	8310	10066	12759	13672	15523	17404	21262	27285	37950
-26.00	8529	10330	13089	14024	15918	17844	21790	27945	38830
-27.00	8749	10594	13419	14376	16314	18284	22318	28604	39710
-28.00	8969	10857	13748	14728	16710	18724	22846	29264	40589
-29.00	9189	11121	14078	15080	17106	19164	23373	29924	41469
-30.00	9409	11385	14408	15432	17502	19604	23901	30583	42349
-31.00	9629	11649	14738	15783	17898	20043	24429	31243	43228
-32.00	9849	11913	15068	16135	18294	20483	24957	31903	44108
-33.00	10069	12177	15398	16487	18689	20923	25485	32563	44988
-34.00	10289	12441	15728	16839	19085	21363	26012	33222	45867
-35.00	10509	12705	16058	17191	19481	21803	26540	33882	46747
-36.00	10729	12969	16387	17543	19877	22243	27068	34542	47627
-37.00	10949	13232	16717	17895	20273	22682	27596	35202	48506
-38.00	11168	13496	17047	18246	20669	23122	28124	35861	49386
-39.00	11388	13760	17377	18598	21064	23562	28651	36521	50266
-40.00	11608	14024	17707	18950	21460	24002	29179	37181	51145
-41.00	11828	14288	18037	19302	21856	24442	29707	37841	52025

With respect to Dubai Municipality Datum (DMD).

Notes:

- The idealized subsoil profile has been assumed for design incorporating the findings of boreholes.
- The working loads in compression have been evaluated using the following allowable unit stress values. These values have been provided based on the standard penetration tests and unconfined compressive strength test results of rock cores.

Depth (m)	R.L. +21.00m* to R.L. +18.00m*	R.L. +18.00m* to R.L. +2.00m*	R.L. +2.00m* to R.L. -41.00m*
Allowable unit skin friction FS (kN/m²)	20	75	140

With respect to Dubai Municipality Datum (DMD).

- The cut off level of piles is taken as +21.00m DMD.
- The center to center distance between the piles shall be at least 2.5 times the pile diameter.
- Allowable unit end bearing stress : 2000 kN/m^2

ALLOWABLE WORKING LOADS IN COMPRESSION (kN)

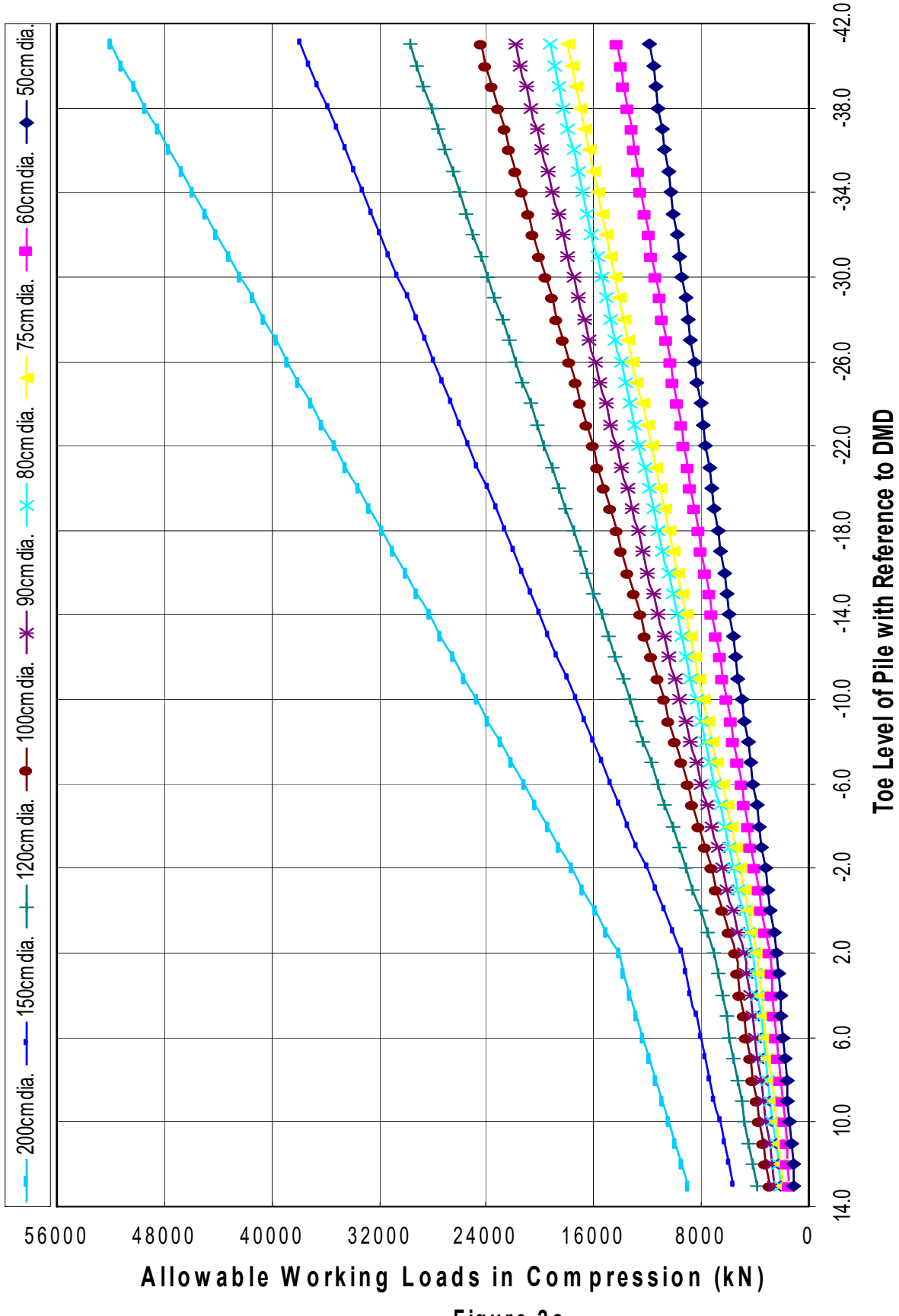


Figure 2a

8.8.2 Allowable Load Capacity of Pile in tension (Uplift) for +21.00m DMD Cut-off Level

The allowable uplift load capacities of pile for different pile diameters and depths based on factor of safety (3.0) are presented in Table 22.

Table 22

Toe Level of Piles (m)*	Allowable working loads in Uplift (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
13.00	683	820	1025	1093	1230	1367	1640	2050	2733
12.00	801	961	1202	1282	1442	1602	1923	2403	3204
11.00	919	1103	1378	1470	1654	1838	2205	2757	3676
10.00	1037	1244	1555	1659	1866	2074	2488	3110	4147
9.00	1155	1385	1732	1847	2078	2309	2771	3464	4618
8.00	1272	1527	1909	2036	2290	2545	3054	3817	5089
7.00	1390	1668	2085	2224	2502	2780	3336	4171	5561
6.00	1508	1810	2262	2413	2714	3016	3619	4524	6032
5.00	1626	1951	2439	2601	2926	3252	3902	4877	6503
4.00	1744	2092	2615	2790	3139	3487	4185	5231	6974
3.00	1861	2234	2792	2978	3351	3723	4467	5584	7446
2.00	1979	2375	2969	3167	3563	3958	4750	5938	7917
1.00	2199	2639	3299	3519	3958	4398	5278	6597	8797
0.00	2419	2903	3629	3870	4354	4838	5806	7257	9676
-1.00	2639	3167	3958	4222	4750	5278	6334	7917	10556
-2.00	2859	3431	4288	4574	5146	5718	6861	8577	11435
-3.00	3079	3695	4618	4926	5542	6158	7389	9236	12315
-4.00	3299	3958	4948	5278	5938	6597	7917	9896	13195
-5.00	3519	4222	5278	5630	6334	7037	8445	10556	14074
-6.00	3739	4486	5608	5982	6729	7477	8972	11216	14954
-7.00	3958	4750	5938	6334	7125	7917	9500	11875	15834
-8.00	4178	5014	6268	6685	7521	8357	10028	12535	16713
-9.00	4398	5278	6597	7037	7917	8797	10556	13195	17593
-10.00	4618	5542	6927	7389	8313	9236	11084	13854	18473
-11.00	4838	5806	7257	7741	8709	9676	11611	14514	19352
-12.00	5058	6070	7587	8093	9104	10116	12139	15174	20232
-13.00	5278	6334	7917	8445	9500	10556	12667	15834	21112
-14.00	5498	6597	8247	8797	9896	10996	13195	16493	21991
-15.00	5718	6861	8577	9148	10292	11435	13723	17153	22871
-16.00	5938	7125	8906	9500	10688	11875	14250	17813	23750
-17.00	6158	7389	9236	9852	11084	12315	14778	18473	24630
-18.00	6377	7653	9566	10204	11479	12755	15306	19132	25510
-19.00	6597	7917	9896	10556	11875	13195	15834	19792	26389
-20.00	6817	8181	10226	10908	12271	13635	16361	20452	27269
-21.00	7037	8445	10556	11260	12667	14074	16889	21112	28149
-22.00	7257	8709	10886	11611	13063	14514	17417	21771	29028
-23.00	7477	8972	11216	11963	13459	14954	17945	22431	29908
-24.00	7697	9236	11545	12315	13854	15394	18473	23091	30788

Toe Level of Piles (m)*	Allowable working loads in Uplift (kN)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-25.00	7917	9500	11875	12667	14250	15834	19000	23750	31667
-26.00	8137	9764	12205	13019	14646	16273	19528	24410	32547
-27.00	8357	10028	12535	13371	15042	16713	20056	25070	33427
-28.00	8577	10292	12865	13723	15438	17153	20584	25730	34306
-29.00	8797	10556	13195	14074	15834	17593	21112	26389	35186
-30.00	9016	10820	13525	14426	16230	18033	21639	27049	36066
-31.00	9236	11084	13854	14778	16625	18473	22167	27709	36945
-32.00	9456	11347	14184	15130	17021	18912	22695	28369	37825
-33.00	9676	11611	14514	15482	17417	19352	23223	29028	38704
-34.00	9896	11875	14844	15834	17813	19792	23750	29688	39584
-35.00	10116	12139	15174	16186	18209	20232	24278	30348	40464
-36.00	10336	12403	15504	16537	18605	20672	24806	31008	41343
-37.00	10556	12667	15834	16889	19000	21112	25334	31667	42223
-38.00	10776	12931	16164	17241	19396	21551	25862	32327	43103
-39.00	10996	13195	16493	17593	19792	21991	26389	32987	43982
-40.00	11216	13459	16823	17945	20188	22431	26917	33647	44862
-41.00	11435	13723	17153	18297	20584	22871	27445	34306	45742

With respect to Dubai Municipality Datum (DMD).

Notes:

- The idealized subsoil profile has been assumed for design incorporating the findings of boreholes.
- The working loads in uplift have been evaluated using the following allowable unit stress values. These values have been provided based on the standard penetration tests and unconfined compressive strength test results of rock cores.

Depth (m)	R.L. +21.00m* to R.L. +18.00m*	R.L. +18.00m* to R.L. +2.00m*	R.L. +2.00m* to R.L. -41.00m*
Allowable unit skin friction FS (kN/m²)	20	75	140

With respect to Dubai Municipality Datum (DMD).

- The cut off level of piles is taken as +21.00m DMD.
- The center to center distance between the piles shall be at least 2.5 times the pile diameter.

ALLOWABLE WORKING LOADS IN UPLIFT (kN)

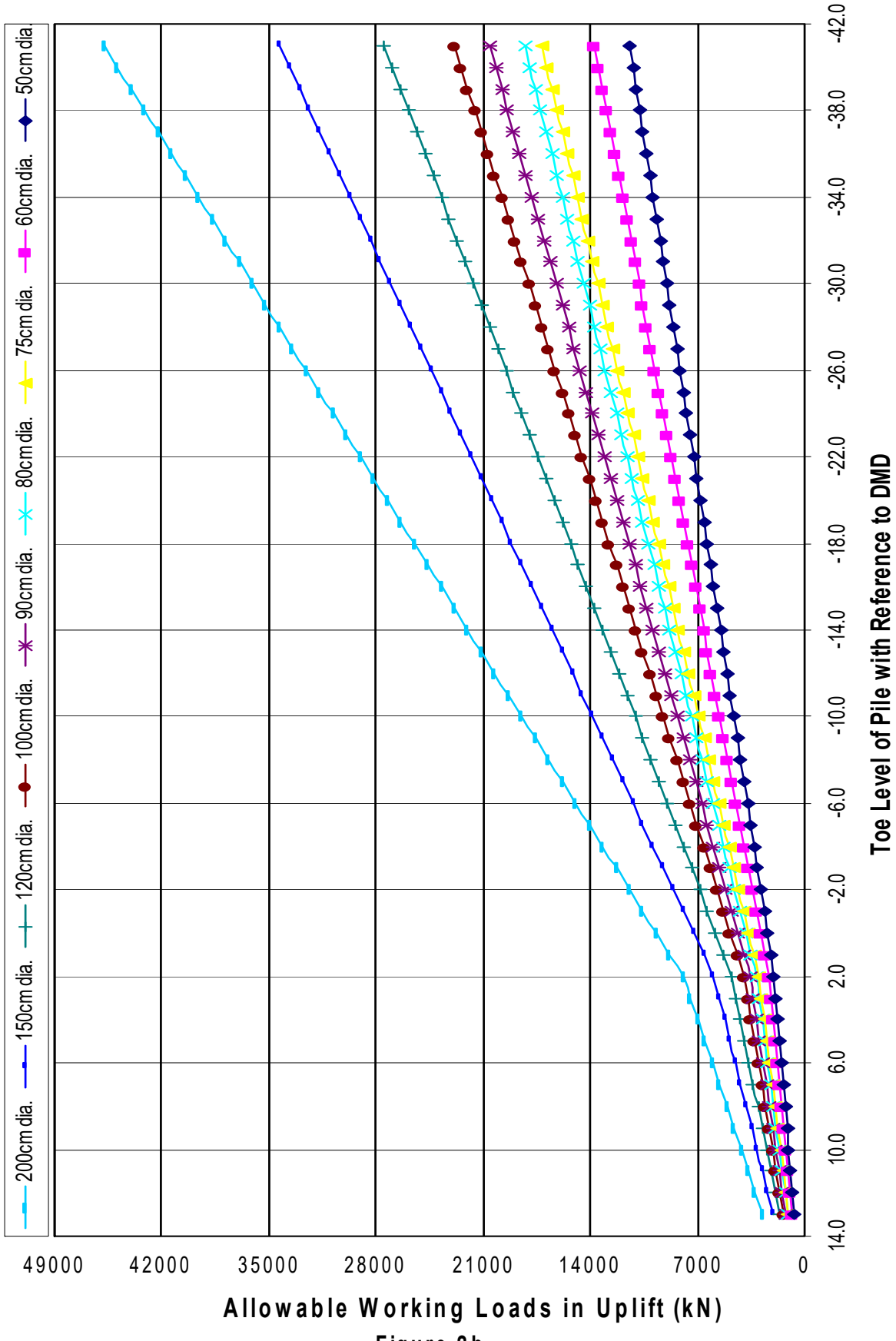


Figure 2b

8.8.3 Settlement of Piles for +21.00m DMD Cut-off Level

Settlement of piles have been evaluated for different pile diameters, toe levels and working loads provided in Table 21 based on the method proposed by Braja M. Das.

Total settlement has been evaluated as summation of elastic settlement of pile, settlement of pile caused by the load at the pile tip and settlement of pile caused by the load transmitted along the pile shaft.

i.e. $S = S_1 + S_2 + S_3$

S = Total pile settlement.

S_1 = Elastic settlement of pile.

S_2 = Settlement of pile caused by the load at the pile tip.

S_3 = Settlement of pile caused by the load transmitted along the pile shaft.

The results are presented in the following table 23 and graphically represented in Figure 2c.

Table 23

Toe Level of Piles (m)*	Settlement (mm)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
13.00	2.7	3.0	3.4	3.6	3.9	4.3	4.9	6.0	7.7
12.00	2.9	3.1	3.6	3.7	4.1	4.4	5.1	6.1	7.9
11.00	3.1	3.3	3.7	3.9	4.2	4.5	5.2	6.2	8.0
10.00	3.3	3.5	3.9	4.1	4.4	4.7	5.3	6.4	8.1
9.00	3.5	3.7	4.1	4.2	4.5	4.8	5.5	6.5	8.2
8.00	3.8	4.0	4.3	4.4	4.7	5.0	5.6	6.6	8.3
7.00	4.1	4.2	4.5	4.6	4.9	5.2	5.8	6.8	8.5
6.00	4.4	4.5	4.7	4.8	5.1	5.4	6.0	6.9	8.6
5.00	4.7	4.7	5.0	5.1	5.3	5.6	6.1	7.1	8.7
4.00	5.0	5.0	5.2	5.3	5.5	5.8	6.3	7.2	8.8
3.00	5.4	5.3	5.5	5.5	5.7	6.0	6.5	7.4	9.0
2.00	5.8	5.7	5.7	5.8	6.0	6.2	6.7	7.5	9.1
1.00	6.3	6.1	6.1	6.2	6.3	6.5	7.0	7.8	9.3
0.00	6.9	6.6	6.5	6.6	6.7	6.8	7.3	8.0	9.6
-1.00	7.5	7.2	7.0	7.0	7.1	7.2	7.6	8.3	9.8
-2.00	8.2	7.7	7.4	7.4	7.5	7.6	7.9	8.6	10.0
-3.00	8.9	8.3	7.9	7.9	7.9	7.9	8.2	8.9	10.3
-4.00	9.6	8.9	8.4	8.4	8.3	8.3	8.6	9.2	10.5
-5.00	10.3	9.6	9.0	8.9	8.8	8.8	8.9	9.5	10.8
-6.00	11.1	10.2	9.5	9.4	9.2	9.2	9.3	9.8	11.1
-7.00	11.9	10.9	10.1	9.9	9.7	9.6	9.7	10.1	11.3
-8.00	12.8	11.6	10.7	10.5	10.2	10.1	10.1	10.5	11.6
-9.00	13.7	12.4	11.3	11.1	10.7	10.6	10.5	10.8	11.9
-10.00	14.6	13.2	11.9	11.7	11.3	11.1	10.9	11.2	12.2

Toe Level of Piles (m)*	Settlement (mm)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-11.00	15.5	14.0	12.6	12.3	11.8	11.6	11.4	11.5	12.5
-12.00	16.5	14.8	13.3	12.9	12.4	12.1	11.8	11.9	12.8
-13.00	17.5	15.7	14.0	13.6	13.0	12.7	12.3	12.3	13.1
-14.00	18.6	16.5	14.7	14.3	13.6	13.2	12.8	12.7	13.4
-15.00	19.7	17.5	15.4	15.0	14.3	13.8	13.3	13.1	13.7
-16.00	20.8	18.4	16.2	15.7	14.9	14.4	13.8	13.5	14.1
-17.00	21.9	19.4	17.0	16.4	15.6	15.0	14.3	14.0	14.4
-18.00	23.1	20.4	17.8	17.2	16.3	15.6	14.8	14.4	14.8
-19.00	24.3	21.4	18.6	18.0	17.0	16.3	15.4	14.9	15.1
-20.00	25.6	22.4	19.5	18.8	17.7	16.9	15.9	15.3	15.5
-21.00	26.9	23.5	20.4	19.6	18.5	17.6	16.5	15.8	15.9
-22.00	28.2	24.6	21.3	20.5	19.2	18.3	17.1	16.3	16.3
-23.00	29.5	25.8	22.2	21.3	20.0	19.0	17.7	16.8	16.7
-24.00	30.9	26.9	23.1	22.2	20.8	19.7	18.3	17.3	17.1
-25.00	32.4	28.1	24.1	23.1	21.6	20.5	18.9	17.8	17.5
-26.00	33.8	29.3	25.1	24.1	22.4	21.2	19.6	18.3	17.9
-27.00	35.3	30.6	26.1	25.0	23.3	22.0	20.2	18.9	18.3
-28.00	36.8	31.9	27.1	26.0	24.2	22.8	20.9	19.4	18.7
-29.00	38.4	33.2	28.2	27.0	25.1	23.6	21.6	20.0	19.2
-30.00	39.9	34.5	29.3	28.0	26.0	24.4	22.3	20.6	19.6
-31.00	41.6	35.9	30.4	29.0	26.9	25.3	23.0	21.1	20.1
-32.00	43.2	37.2	31.5	30.1	27.8	26.1	23.7	21.7	20.5
-33.00	44.9	38.7	32.6	31.2	28.8	27.0	24.5	22.3	21.0
-34.00	46.6	40.1	33.8	32.3	29.8	27.9	25.2	23.0	21.5
-35.00	48.4	41.6	35.0	33.4	30.8	28.8	26.0	23.6	21.9
-36.00	50.2	43.1	36.2	34.5	31.8	29.7	26.8	24.2	22.5
-37.00	52.0	44.6	37.4	35.7	32.8	30.7	27.6	24.9	23.0
-38.00	53.8	46.2	38.7	36.9	33.9	31.6	28.4	25.5	23.5
-39.00	55.7	47.7	40.0	38.1	35.0	32.6	29.2	26.2	24.0
-40.00	57.6	49.3	41.3	39.3	36.1	33.6	30.0	26.9	24.5
-41.00	59.6	51.0	42.6	40.5	37.2	34.6	30.9	27.6	25.1

With respect to Dubai Municipality Datum (DMD).

SETTLEMENT (mm) FOR DIFFERENT PILE DIAMETER

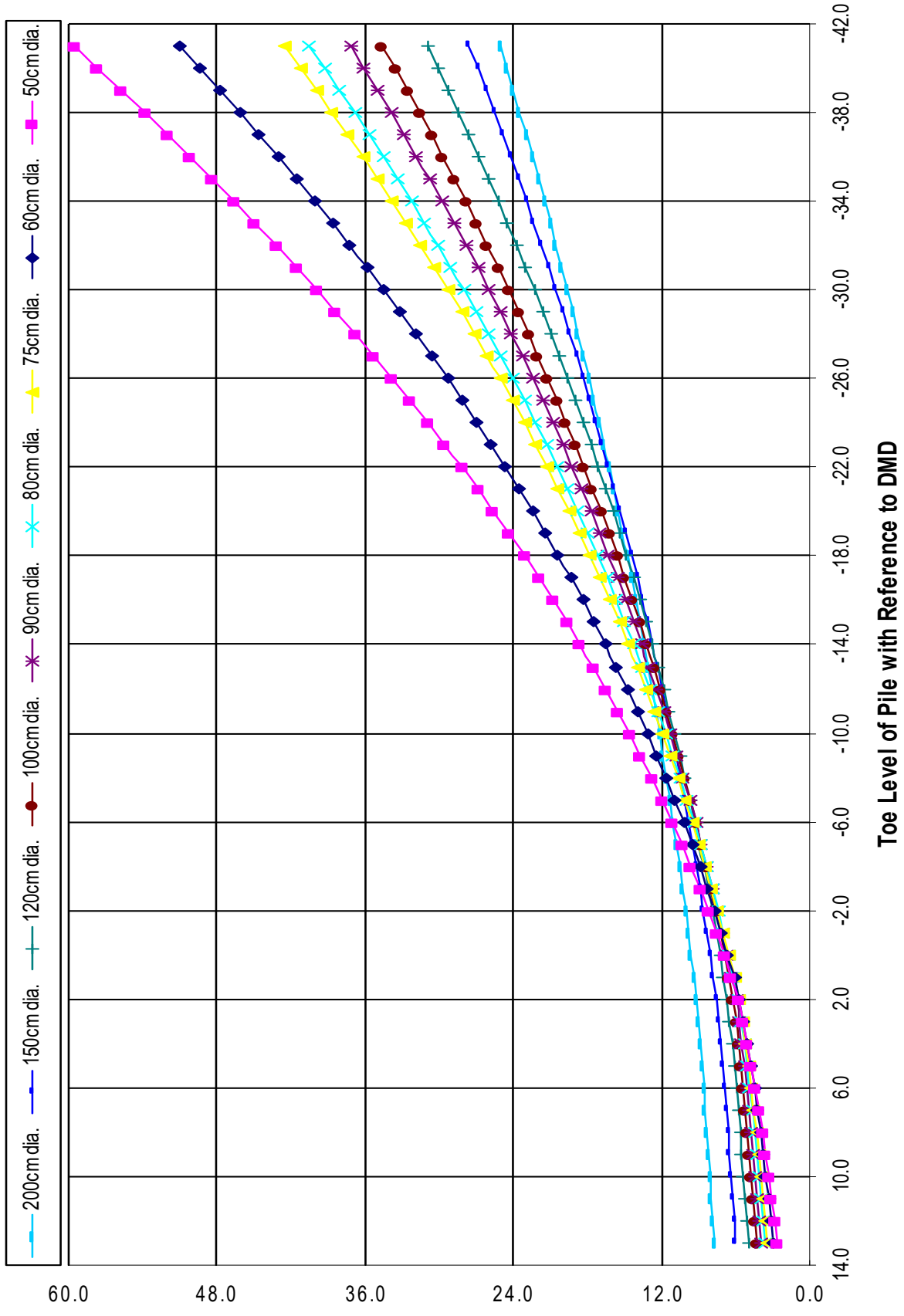


Figure 2c

8.8.4 Toe Level vs. Pile Spring Stiffness for +21.00m DMD Cut-off Level

Pile spring stiffness has been evaluated as allowable working load in compression divided by the total settlement as given in Table 24 below.

Table 24

Toe Level of Piles (m)*	Pile Stiffness (kN/m)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
13.00	404511	469627	558041	584568	638342	691153	789858	933813	1166417
12.00	417413	487796	582458	611524	668547	722779	826996	973377	1208611
11.00	427231	502470	604786	634769	695107	752450	859096	1011415	1249536
10.00	433152	514091	622117	656182	718192	778675	891201	1046378	1290854
9.00	437062	523029	637902	672783	739625	801632	918394	1079923	1329427
8.00	437008	528359	649326	686479	756391	823100	944156	1112148	1366899
7.00	435917	530570	658271	697538	771902	839981	968564	1141452	1401633
6.00	433950	532511	665011	706219	783242	855728	988420	1167855	1436989
5.00	429468	530886	669798	712747	793705	868883	1008805	1193135	1469690
4.00	424712	528390	672865	717391	801964	879652	1024881	1217361	1499717
3.00	418978	525178	673205	720344	806789	889681	1040077	1238927	1530524
2.00	412504	520442	673497	720553	811225	896143	1052853	1259561	1557018
1.00	410745	523595	683366	733209	828970	919723	1084863	1302262	1614518
0.00	407493	523122	689924	742131	843568	938331	1112772	1342214	1667638
-1.00	403138	521257	693696	747868	854241	953858	1136958	1377990	1718255
-2.00	397980	518301	695134	751954	861517	965364	1157766	1409872	1764801
-3.00	391817	513253	693783	752703	865832	974565	1174088	1438131	1809163
-4.00	385726	507733	691767	751579	868675	980564	1187725	1464591	1849753
-5.00	378635	501340	687656	748871	868242	983771	1198936	1486287	1886701
-6.00	371845	494780	682576	744872	866912	985599	1207989	1505082	1921919
-7.00	364719	487223	676706	739798	864830	985213	1213839	1521175	1953781
-8.00	357668	479751	670206	733836	860401	983885	1218028	1536252	1982457
-9.00	350468	472003	663200	727170	855605	980823	1220733	1547549	2009773
-10.00	343676	464433	655268	719923	849734	976251	1220997	1556732	2034166
-11.00	336819	456383	647629	712231	842973	971235	1220167	1563986	2055766
-12.00	329946	448614	639283	704187	835483	965843	1218367	1569480	2074726
-13.00	323480	440824	630853	695869	827381	958617	1215700	1574626	2092796
-14.00	316864	433321	621955	687363	819398	951279	1211332	1576984	2108449
-15.00	310646	425599	613495	678717	810385	943162	1205460	1577986	2121834
-16.00	304488	418195	604694	669567	801609	935049	1200015	1576595	2133068
-17.00	298551	410873	595989	660822	792553	926338	1193277	1575297	2143779
-18.00	292824	403654	587392	651698	783755	917726	1185412	1572977	2152532
-19.00	287182	396740	578926	642998	774299	908087	1178099	1569738	2159458
-20.00	281751	389759	570303	634002	765164	899190	1169077	1564651	2164658

Toe Level of Piles (m)*	Pile Stiffness (kN/m)								
	Pile Diameter (m)								
	0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-21.00	276513	383082	561852	625117	755512	889431	1160673	1559861	2168256
-22.00	271366	376686	553584	616647	746231	879923	1151486	1553438	2171679
-23.00	266408	370260	545496	607993	736913	870184	1142267	1547396	2173640
-24.00	261545	363973	537582	599478	727950	860710	1132414	1539907	2174240
-25.00	256862	357955	529631	591102	718639	850655	1123207	1531988	2173562
-26.00	252349	352065	521878	582880	709376	841311	1112875	1524523	2172921
-27.00	247996	346306	514316	574806	700485	831473	1103208	1515856	2169929
-28.00	243728	340782	506947	566672	691643	821945	1092573	1506895	2167080
-29.00	239614	335380	499585	558918	682874	812365	1082603	1496933	2163224
-30.00	235581	330003	492585	551322	674183	803093	1072284	1487519	2159546
-31.00	231689	324937	485601	543693	665589	793798	1062130	1477914	2153876
-32.00	227931	319895	478650	536410	657330	784496	1052142	1467475	2148466
-33.00	224299	314972	472032	529111	648934	775500	1041889	1457592	2142267
-34.00	220740	310242	465451	521975	640873	766516	1031420	1446964	2135349
-35.00	217254	305619	459048	515003	632911	757564	1021563	1436900	2130670
-36.00	213928	301103	452813	508189	625060	748654	1011132	1426168	2119559
-37.00	210670	296691	446745	501527	617317	740042	1001295	1415420	2111720
-38.00	207475	292444	440721	495019	609870	731712	991311	1404673	2102418
-39.00	204421	288292	434966	488655	602356	723201	981545	1393931	2093524
-40.00	201426	284234	429256	482436	595125	714978	971665	1382696	2084152
-41.00	198491	280267	423596	476237	587846	706813	962011	1372027	2075181

With respect to Dubai Municipality Datum (DMD).

PILE STIFFNESS

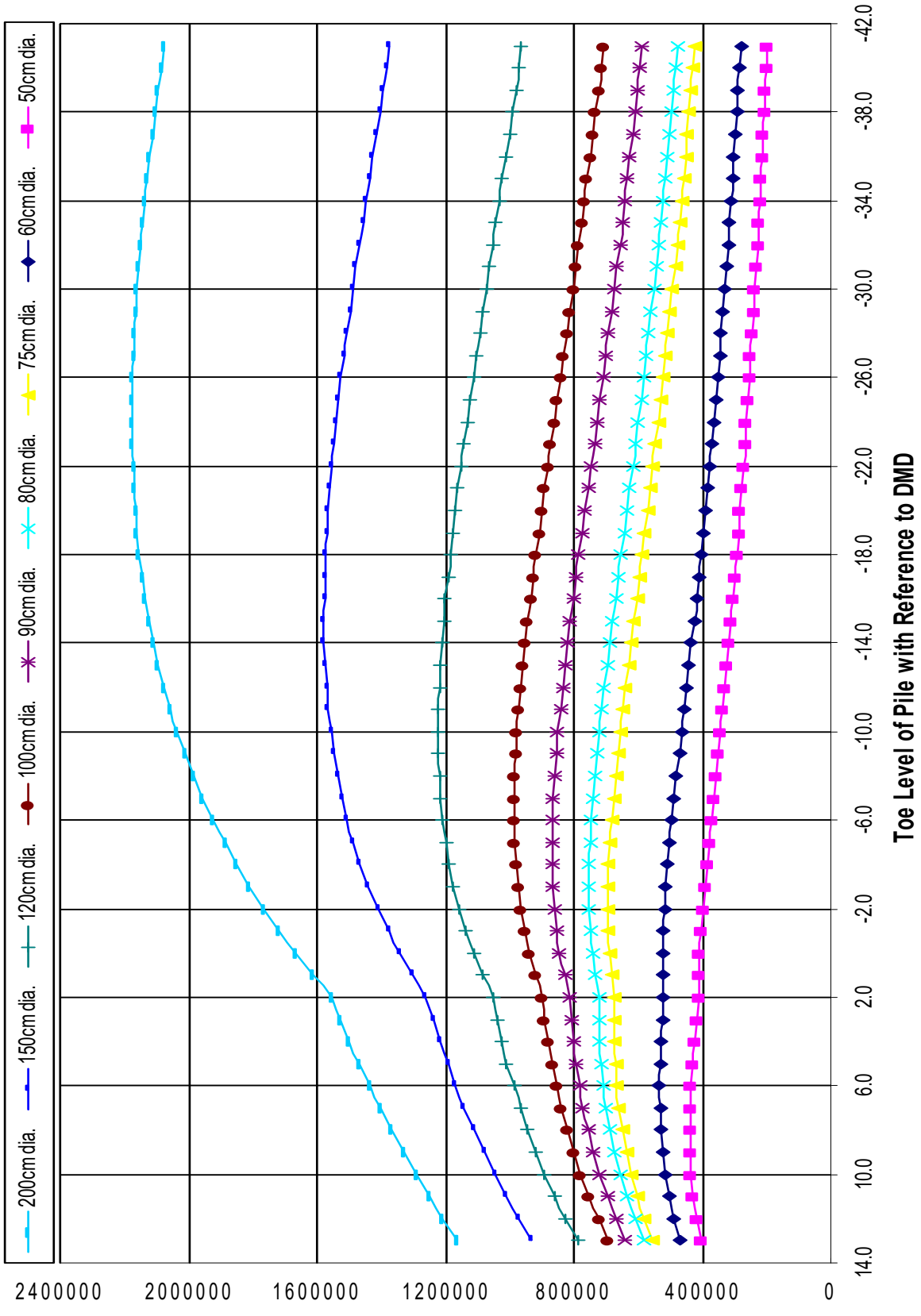


Figure 2d

8.8.5 Horizontal Subgrade Modulus for +21.00m DMD Cut-off Level

Horizontal subgrade modulus (K) shall be evaluated from the following expression.

K= n_h * x/B (Ref Tomlinson)

Where,
n_h = co-efficient of modulus variation
x = shaft length
B = diameter of pile

Table 25 below represents the horizontal subgrade modulus for different pile diameters at different depth.

Table 25

Depth (m) DMD	Shaft Length (m)	Coefficient of Subgrade Modulus Variation (MN/m³)	Horizontal Sub grade Modulus (k) (MN/m³)								
			Pile Diameter (m)								
			0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
13.0	8.0	45	720.0	600.0	480.0	450.0	400.0	360.0	300.0	240.0	180.0
12.0	9.0	45	810.0	675.0	540.0	506.3	450.0	405.0	337.5	270.0	202.5
11.0	10.0	45	900.0	750.0	600.0	562.5	500.0	450.0	375.0	300.0	225.0
10.0	11.0	45	990.0	825.0	660.0	618.8	550.0	495.0	412.5	330.0	247.5
9.0	12.0	45	1080.0	900.0	720.0	675.0	600.0	540.0	450.0	360.0	270.0
8.0	13.0	45	1170.0	975.0	780.0	731.3	650.0	585.0	487.5	390.0	292.5
7.0	14.0	45	1260.0	1050.0	840.0	787.5	700.0	630.0	525.0	420.0	315.0
6.0	15.0	45	1350.0	1125.0	900.0	843.8	750.0	675.0	562.5	450.0	337.5
5.0	16.0	45	1440.0	1200.0	960.0	900.0	800.0	720.0	600.0	480.0	360.0
4.0	17.0	45	1530.0	1275.0	1020.0	956.3	850.0	765.0	637.5	510.0	382.5
3.0	18.0	45	1620.0	1350.0	1080.0	1012.5	900.0	810.0	675.0	540.0	405.0
2.0	19.0	45	1710.0	1425.0	1140.0	1068.8	950.0	855.0	712.5	570.0	427.5
1.0	20.0	45	1800.0	1500.0	1200.0	1125.0	1000.0	900.0	750.0	600.0	450.0
0.0	21.0	45	1890.0	1575.0	1260.0	1181.3	1050.0	945.0	787.5	630.0	472.5
-1.0	22.0	45	1980.0	1650.0	1320.0	1237.5	1100.0	990.0	825.0	660.0	495.0
-2.0	23.0	45	2070.0	1725.0	1380.0	1293.8	1150.0	1035.0	862.5	690.0	517.5
-3.0	24.0	45	2160.0	1800.0	1440.0	1350.0	1200.0	1080.0	900.0	720.0	540.0
-4.0	25.0	45	2250.0	1875.0	1500.0	1406.3	1250.0	1125.0	937.5	750.0	562.5
-5.0	26.0	45	2340.0	1950.0	1560.0	1462.5	1300.0	1170.0	975.0	780.0	585.0
-6.0	27.0	45	2430.0	2025.0	1620.0	1518.8	1350.0	1215.0	1012.5	810.0	607.5
-7.0	28.0	45	2520.0	2100.0	1680.0	1575.0	1400.0	1260.0	1050.0	840.0	630.0
-8.0	29.0	45	2610.0	2175.0	1740.0	1631.3	1450.0	1305.0	1087.5	870.0	652.5
-9.0	30.0	45	2700.0	2250.0	1800.0	1687.5	1500.0	1350.0	1125.0	900.0	675.0
-10.0	31.0	45	2790.0	2325.0	1860.0	1743.8	1550.0	1395.0	1162.5	930.0	697.5
-11.0	32.0	45	2880.0	2400.0	1920.0	1800.0	1600.0	1440.0	1200.0	960.0	720.0
-12.0	33.0	45	2970.0	2475.0	1980.0	1856.3	1650.0	1485.0	1237.5	990.0	742.5
-13.0	34.0	45	3060.0	2550.0	2040.0	1912.5	1700.0	1530.0	1275.0	1020.0	765.0
-14.0	35.0	45	3150.0	2625.0	2100.0	1968.8	1750.0	1575.0	1312.5	1050.0	787.5

Depth (m) DMD	Shaft Length (m)	Coefficient of Subgrade Modulus Variation (MN/m³)	Horizontal Sub grade Modulus (k) (MN/m³)								
			Pile Diameter (m)								
			0.50	0.60	0.75	0.80	0.90	1.00	1.20	1.50	2.00
-15.0	36.0	45	3240.0	2700.0	2160.0	2025.0	1800.0	1620.0	1350.0	1080.0	810.0
-16.0	37.0	45	3330.0	2775.0	2220.0	2081.3	1850.0	1665.0	1387.5	1110.0	832.5
-17.0	38.0	45	3420.0	2850.0	2280.0	2137.5	1900.0	1710.0	1425.0	1140.0	855.0
-18.0	39.0	45	3510.0	2925.0	2340.0	2193.8	1950.0	1755.0	1462.5	1170.0	877.5
-19.0	40.0	45	3600.0	3000.0	2400.0	2250.0	2000.0	1800.0	1500.0	1200.0	900.0
-20.0	41.0	45	3690.0	3075.0	2460.0	2306.3	2050.0	1845.0	1537.5	1230.0	922.5
-21.0	42.0	45	3780.0	3150.0	2520.0	2362.5	2100.0	1890.0	1575.0	1260.0	945.0
-22.0	43.0	45	3870.0	3225.0	2580.0	2418.8	2150.0	1935.0	1612.5	1290.0	967.5
-23.0	44.0	45	3960.0	3300.0	2640.0	2475.0	2200.0	1980.0	1650.0	1320.0	990.0
-24.0	45.0	45	4050.0	3375.0	2700.0	2531.3	2250.0	2025.0	1687.5	1350.0	1012.5
-25.0	46.0	45	4140.0	3450.0	2760.0	2587.5	2300.0	2070.0	1725.0	1380.0	1035.0
-26.0	47.0	45	4230.0	3525.0	2820.0	2643.8	2350.0	2115.0	1762.5	1410.0	1057.5
-27.0	48.0	45	4320.0	3600.0	2880.0	2700.0	2400.0	2160.0	1800.0	1440.0	1080.0
-28.0	49.0	45	4410.0	3675.0	2940.0	2756.3	2450.0	2205.0	1837.5	1470.0	1102.5
-29.0	50.0	45	4500.0	3750.0	3000.0	2812.5	2500.0	2250.0	1875.0	1500.0	1125.0
-30.0	51.0	45	4590.0	3825.0	3060.0	2868.8	2550.0	2295.0	1912.5	1530.0	1147.5
-31.0	52.0	45	4680.0	3900.0	3120.0	2925.0	2600.0	2340.0	1950.0	1560.0	1170.0
-32.0	53.0	45	4770.0	3975.0	3180.0	2981.3	2650.0	2385.0	1987.5	1590.0	1192.5
-33.0	54.0	45	4860.0	4050.0	3240.0	3037.5	2700.0	2430.0	2025.0	1620.0	1215.0
-34.0	55.0	45	4950.0	4125.0	3300.0	3093.8	2750.0	2475.0	2062.5	1650.0	1237.5
-35.0	56.0	45	5040.0	4200.0	3360.0	3150.0	2800.0	2520.0	2100.0	1680.0	1260.0
-36.0	57.0	45	5130.0	4275.0	3420.0	3206.3	2850.0	2565.0	2137.5	1710.0	1282.5
-37.0	58.0	45	5220.0	4350.0	3480.0	3262.5	2900.0	2610.0	2175.0	1740.0	1305.0
-38.0	59.0	45	5310.0	4425.0	3540.0	3318.8	2950.0	2655.0	2212.5	1770.0	1327.5
-39.0	60.0	45	5400.0	4500.0	3600.0	3375.0	3000.0	2700.0	2250.0	1800.0	1350.0
-40.0	61.0	45	5490.0	4575.0	3660.0	3431.3	3050.0	2745.0	2287.5	1830.0	1372.5
-41.0	62.0	45	5580.0	4650.0	3720.0	3487.5	3100.0	2790.0	2325.0	1860.0	1395.0

8.9 Lateral Capacity of the Pile

Lateral capacity of the pile has been evaluated based on elastic analysis using the following equation.

Elastic Analysis

In granular soil-rock environment where the soil modulus is assumed to increase linearly with depth, stiffness factor (T) is given by:

$$T = \sqrt[5]{\frac{EI}{n_h}}$$

Where:

E : Modulus of elasticity
I : Moment of inertia
D : Diameter of pile
n_h : Coefficient of modulus variation where the relationship between the Subgrade modulus variation and the relative density of sand varies between 3.0 - 40.0 MN/m^3
(Reese et. al. - 1974 in Tomlinson)

Based on the stiffness factor, piles are classified as long-flexible members (Tomlinson 1994). The following evaluation is based on the elastic analysis of laterally-loaded fixed pile head (pile cap) and linearly increasing soil modulus (Reese & Matlock in Tomlinson 1994).

Deflection $$y_f = \frac{F_y H T^3}{EI}$$

Bending Moment $$M_f = F_m H T$$

Where

F_y : Deflection coefficient
F_m : Moment coefficient

Lateral capacity is a function of tolerable defection. As both lateral capacity and defection is unknown, the deflections for various pile diameters are calculated for a lateral load of 100KN. Since the relation between lateral capacity & deflection is linear, the lateral capacity for the corresponding tolerable deflection can be estimated.

Maximum Deflection for a horizontal load of 100kN for different pile diameters:

Pile Diameter (mm)	Deflection (mm)
500	2.76
600	2.06
750	1.44
800	1.30
900	1.08
1000	0.91
1200	0.68
1500	0.48
2000	0.30

8.10 Soil Permeability

Permeability tests were carried out within the site-wide investigation at different depths. A summary of the average permeability results are presented in the table below:

Level Range (m)*	Average Permeability (m/sec)
+30.28 to +20.50	8.47×10^{-5}
+20.50 to +10.23	9.01×10^{-5}
+10.23 to +5.86	9.96×10^{-5}

With respect to Dubai Municipality Datum.

8.11 Geotechnical Design Parameters

Design Parameters	Level Range (m)*			
	+33.58 to +29.30	+29.30 to +18.0	+18.00 to +2.00	+2.00 to -41.00
Angle of Shearing Resistance	36°	33°	41°	41°
Unit Weight of Soil (dry) (kN/m^3)	17	17	18	-
Unit Weight of Soil (saturated) (kN/m^3)	9.2	9.2	9.2	-
Unit Weight of Rock (kN/m^3)	-	-	18	21.0
SPT N value	10	20	-	-
UCS (MPa)	-	-	0.80	3.00
Young's Modulus of Rock, E' (MPa)	10	20	36.00-54.40	135.00-204.00
Shear Modulus of Rock, G (MPa)	3.85	7.69	13.85-20.92	51.92-78.46

With respect to Dubai Municipality Datum.

9.0 FOUNDATION CONSTRUCTION

9.1 Excavation Methods

The excavation works should be carried out in accordance with good construction practice, such as BS 6031: 1981, “Code of Practice for Earthworks” or a similar recognized standard. Shallow excavations are expected to be through sandy soil materials. Therefore, conventional excavation equipment such as loaders and dozers will be sufficient for the excavation works.

9.2 Excavation Side Slopes

Where space permits and above the water table, the temporary excavation side slopes should not be made steeper than 35° to the horizontal, as recommended by the CIRIA Report No. 97 “Trenching Practice”.

9.3 Backfill Material and Compaction Criteria

The materials to be used for backfilling purposes shall be of selected fill composed of sand and/or granular mixture free from organic matter or other deleterious substances. The plasticity index of the backfill material shall not exceed 10 percent. The maximum particle size of backfill material shall not exceed 75mm and percentage passing 75µm sieve shall not exceed 20%. The organic matter content should not exceed 2% and the water soluble salt content should not exceed 5%. It shall be placed in layers of 150mm to 250mm compacted thickness with each layer compacted to not less than 95% of the maximum dry density. Road base materials used for backfilling shall be compacted to not less than 98% of the maximum dry density.

9.4 Drainage

It is recommended that proper and efficient surface drainage be provided at the location of the project both during and after construction. Surface water should be diverted away from the edges of the excavation.

10.0 FOUNDATION CONCRETE

The primary cause of serious deterioration in reinforced concrete is corrosion of the reinforcement, due to attack by chlorides, present in concrete either within concrete aggregate and mixing water, or through penetration from surrounding environment. Since chloride induced reinforcement corrosion can only occur in the presence of oxygen and water, the risk of corrosion can be reduced by control of chloride in concreting materials and by ensuring adequacy, integrity and impermeability of the concrete cover.

Sulphate attack to concrete is caused by the presence of a high sulphate content either by the ingress from the sulphate of the surrounding environment such as foundations soils or groundwater, or by the presence of sulphate in the concrete ingredients. The attack results in a considerable internal expansion which may lead to crack and disintegration of the concrete. This effect can be reduced by use of selected cements or by suitable protection of the concrete.

Where sulphate and chloride occur together in high concentrations, sulphate resisting cement provides less protection against the reinforcement corrosion. In such cases the test exposure conditions should be studied in conjunction with modified recommendations for concrete mix design, based on local experience in the Gulf Region and CIRIA C577 (2002), Guide to the Construction of Reinforced Concrete in the Arabian Peninsula.

It may be noted that as per CIRIA C577, there is no widely accepted view on the concentration at which chlorides become significant in soil or ground water, but limited experience in the Gulf Region suggests it maybe as low as 0.05% particularly in situations where wetting and drying or capillary rise effect the concrete.

The results of chemical analysis are given in Appendix C. Classification of the severity of chemical attack as per BS 8500-1:2006 “Concrete – Complimentary British Standard to BS EN 206-1 – Part 1: Method of Specifying and Guidance for the Specifier” is based on the foundation soil sulphate content as well as the type of exposure conditions. Accordingly, Class (DS-3) sulphate condition was encountered. The chloride content of the foundation soil is high.

For the site, sulphate and chloride content is significant. Therefore, it is recommended to use ASTM Type II cement or alternatively a combination of ordinary Portland cement (BS 12) with either GGBS/Microsilica or flyash may be used (Refer Appendix H – Recommendations for Concrete). Further, the foundation concrete shall be protected with water proof membrane or bitumen coating.

It is highly recommended to consult a concrete specialist and an experienced structural engineer prior to the selection and adoption of the proper concrete mix design.

IMPORTANT NOTE

1. It should be noted, however, that ground water levels are subject to variation caused by tidal and weather seasonal variations and by changes of local drainage and or pumping conditions, and may be at times be significantly different to those measured during the investigation.

2. The recommendations and discussions presented in this report are based on the subsurface conditions encountered during the site work at the time of investigation and on the result of the field and laboratory testing on samples obtained from limited number of boreholes. There may be, however, conditions pertaining to the site which have not been into account due to the limited number of boreholes.

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

APPENDIX A

SITE PLAN

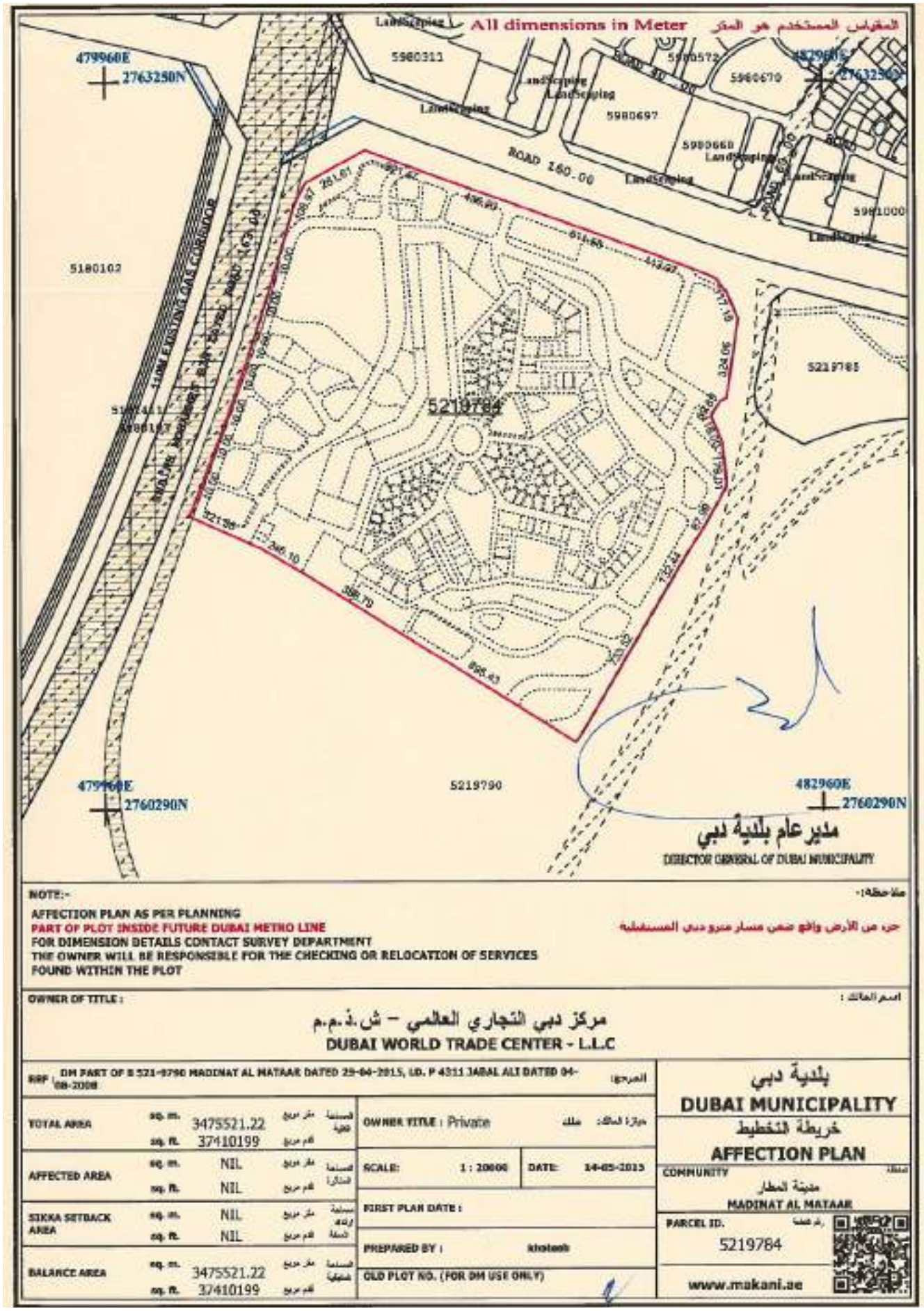
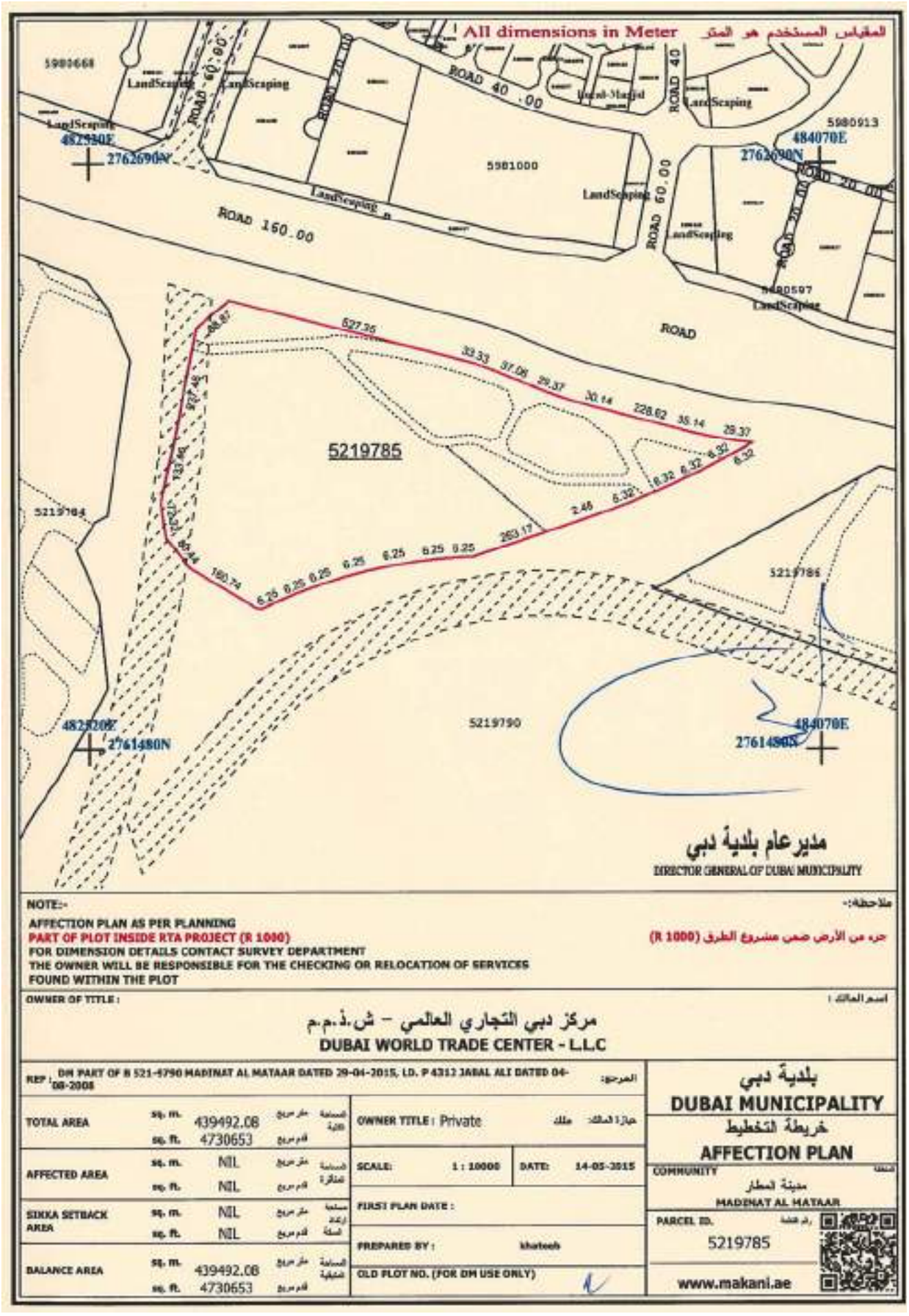


FIG. 1: SITE PLAN



NOTE:-

AFFECTION PLAN AS PER PLANNING
PART OF PLOT INSIDE RTA PROJECT (R 1000)
FOR DIMENSION DETAILS CONTACT SURVEY DEPARTMENT
THE OWNER WILL BE RESPONSIBLE FOR THE CHECKING OR RELOCATION OF SERVICES FOUND WITHIN THE PLOT

ملاحظة:-

جزء من الأرض ضمن مشروع الطرق (R 1000)

OWNER OF TITLE :

اسم المالك :

مركز دبي التجاري العالمي – ش.ذ.م.م
DUBAI WORLD TRADE CENTER - L.L.C

REF : DM PART OF S 521-4790 MADINAT AL MATAAR DATED 29-04-2015, LD. P 4312 JABAL ALI DATED 04-08-2008

المرجع:

TOTAL AREA	sq. m.	439492.08	مساحة كلية	متر مربع
	sq. ft.	4730653		قدم مربع
AFFECTED AREA	sq. m.	NIL	مساحة متأثرة	متر مربع
	sq. ft.	NIL		قدم مربع
SIKKA SETBACK AREA	sq. m.	NIL	مساحة ارتداد السكة	متر مربع
	sq. ft.	NIL		قدم مربع
BALANCE AREA	sq. m.	439492.08	المساحة الصافية	متر مربع
	sq. ft.	4730653		قدم مربع

OWNER TITLE : Private — حيازة المالك: ملك

SCALE: 1 : 10000 — DATE: 14-05-2015

FIRST PLAN DATE :

PREPARED BY : khateeb

OLD PLOT NO. (FOR DM USE ONLY)

بلدية دبي
DUBAI MUNICIPALITY
خريطة التخطيط
AFFECTION PLAN

COMMUNITY: مدينة المطار MADINAT AL MATAAR

PARCEL ID. رقم القطعة: 5219785

www.makani.ae

FIG. 2: SITE PLAN

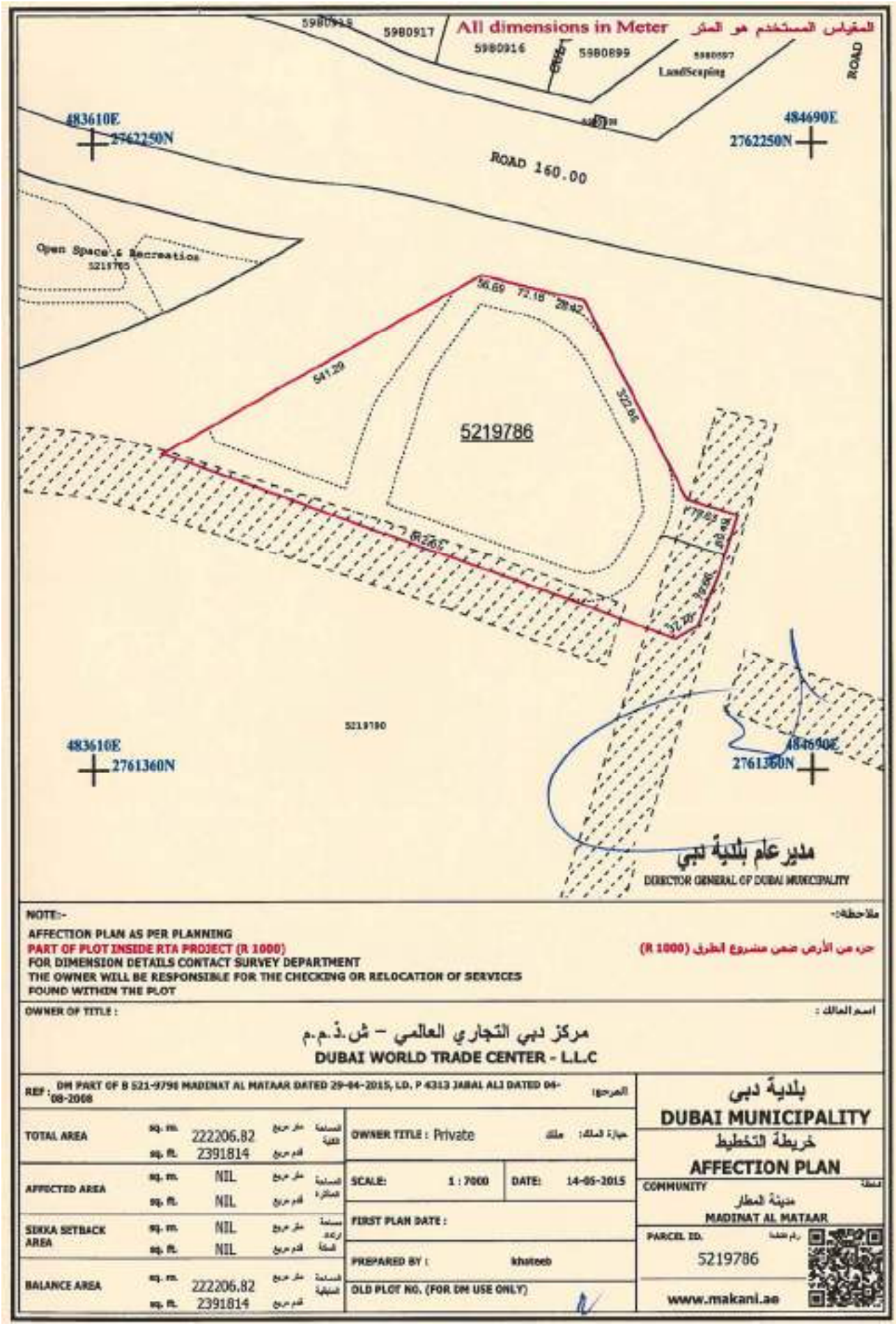
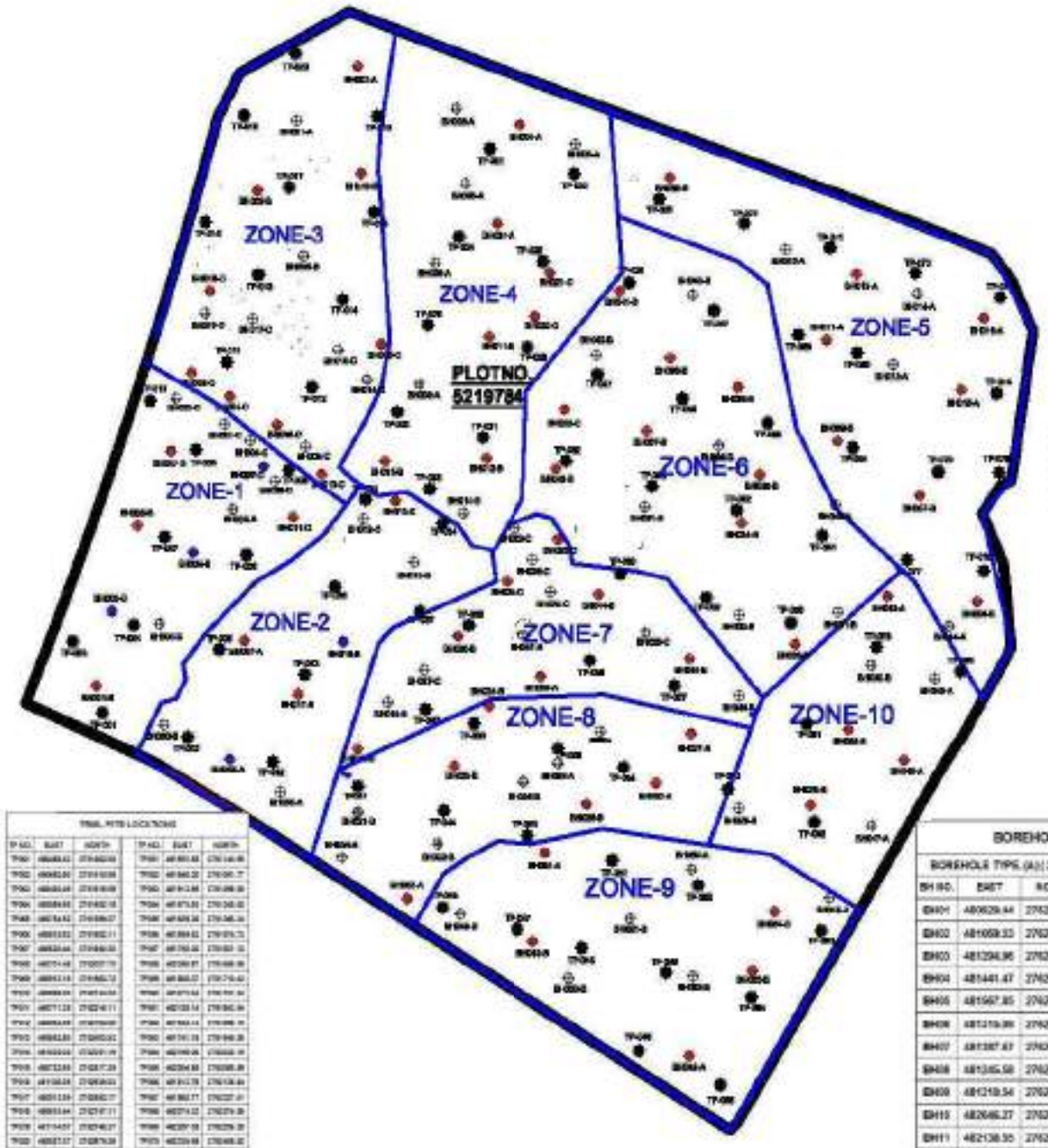


FIG. 3: SITE PLAN



LEGEND

- BOREHOLE
- BOREHOLE & PIEZOMETER
- TRIAL PITS

N W E S

MATRIX LABORATORY L.L.C.
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www.matrixlaboratory.com
matrixlb@emirates.net.ae

PROJECT NUMBER
XSD/15-0143

PROJECT NAME
PN1403-DTCJA-EXPO DEVELOPMENT GROUND INVESTIGATION SERVICES

PROJECT LOCATION
Madinat Al Mataar Dubai, U.A.E.

PROJECT OWNER
DUBAI WORLD TRADE CENTER

PROJECT CONSULTANT
CH2M-MACE JV

Revision no. 1

PLOT NUMBER
5219784, 5219785, 5219786

DRAWING TITLE
BOREHOLE, PIEZOMETER & TRIAL PITS

Document No: CP07-DWG-BH18010-50-00001

Reviewed By: Engr. Rabih

Approved By: Engr. Obaid

Drawn By: Nicholas

Scale: NTS | Drawn: 30/05/2015

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TRIAL PITS LOCATIONS

TP NO.	EAST	NORTH	TP NO.	EAST	NORTH
TP001	480482.62	2762102.59	TP051	481951.82	2761746.06
TP002	480482.50	2761910.58	TP052	481940.32	2761561.77
TP003	480482.49	2761718.58	TP053	481914.84	2761369.39
TP004	480484.50	2761527.15	TP054	481873.80	2761180.32
TP005	480764.62	2761536.07	TP055	481834.62	2760987.46
TP006	480853.53	2761552.11	TP056	481894.62	2760975.73
TP007	480824.44	2761744.03	TP057	481755.62	2760931.32
TP008	480714.48	2761937.70	TP058	481599.97	2761168.09
TP009	480853.18	2761943.72	TP059	481845.07	2761170.42
TP010	480727.23	2762140.11	TP060	482103.54	2761362.94
TP011	480844.49	2761949.91	TP061	481764.14	2761369.15
TP012	480842.83	2762053.01	TP062	481761.76	2761746.20
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TP014	481106.08	2762456.03	TP064	481914.78	2761136.44
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TP027	481384.63	2762460.68	TP077	482531.58	2762316.27
TP028	481384.63	2762460.68	TP078	482531.58	2762316.27
TP029	481384.63	2762460.68	TP079	482531.58	2762316.27
TP030	481384.63	2762460.68	TP080	482531.58	2762316.27
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TP032	481384.63	2762460.68	TP082	482531.58	2762316.27
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TP048	481384.63	2762460.68	TP098	482531.58	2762316.27
TP049	481384.63	2762460.68	TP099	482531.58	2762316.27
TP050	481384.63	2762460.68	TP100	482531.58	2762316.27

BOREHOLES & PIEZOMETER LOCATIONS

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BH02	481059.33	2762652.68	✓	BH32	483610.38	2762111.31	
BH03	481294.96	2762781.65		BH33	483786.38	2762059.59	✓
BH04	481441.47	2762727.49	✓	BH34	483860.62	2761852.87	
BH05	481567.85	2762664.62		BH35	484073.66	2761954.68	✓
BH06	481219.89	2762660.19		BH36	483980.38	2761810.10	✓
BH07	481387.67	2762616.64	✓	BH37	484166.79	2761703.68	✓
BH08	481345.58	2762430.68		BH38	484229.61	2761662.57	
BH09	481219.54	2762168.73		BH39	484123.64	2761599.06	
BH10	482646.27	2762459.80		BH40	484380.12	2761851.56	
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BH17	482163.67	2762080.68	✓	BH47	482360.96	2761220.25	
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BH25	483106.27	2762187.33		BH55	480894.13	2761293.82	
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BH28	483256.20	2762064.25	✓	BH58	481229.19	2761354.81	
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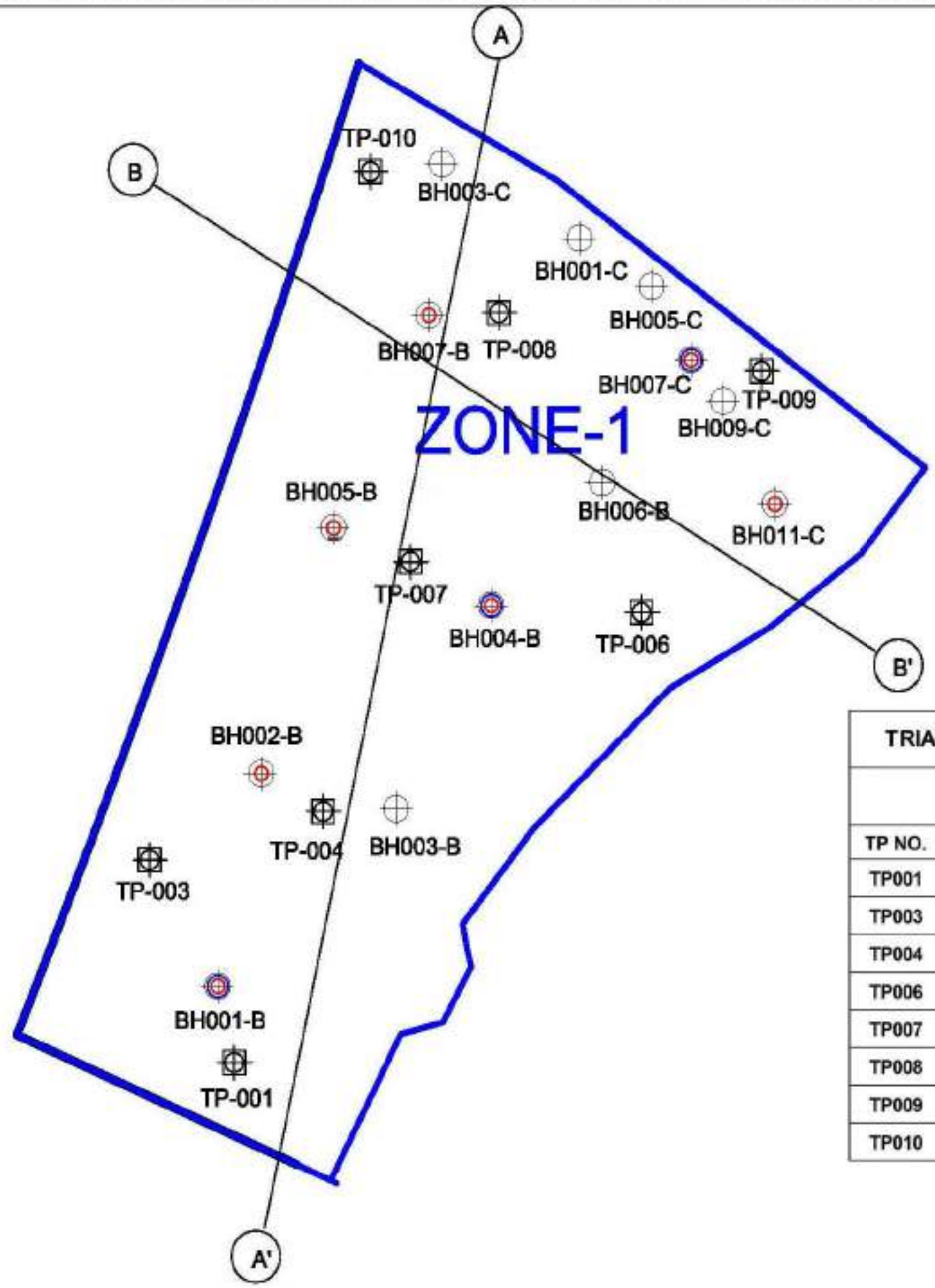
BOREHOLES & PIEZOMETER LOCATIONS

BOREHOLE TYPE: (B) (40m)			PIEZO METER	BOREHOLE TYPE: (B) (40m)			PIEZO METER
BH NO.	EAST	NORTH		BH NO.	EAST	NORTH	
BH01	480475.27	2761530.47	✓	BH31	482164.02	2761879.48	
BH02	480618.29	2761680.80	✓	BH32	482967.47	2761419.60	✓
BH03	480618.06	2761554.68		BH33	481838.79	2761873.52	
BH04	480958.18	2761667.25	✓	BH34	481945.66	2761879.64	✓
BH05	480958.38	2761668.68	✓	BH35	481957.20	2761873.58	✓
BH06	480784.38	2761689.79		BH36	481893.06	2762038.21	
BH07	480648.13	2762025.95	✓	BH37	481729.64	2762268.57	✓
BH08	480848.21	2762444.79		BH38	481782.92	2762224.68	✓
BH09	480861.21	2762585.77	✓	BH39	481837.08	2762162.33	✓
BH10	481876.04	2762552.15	✓	BH40	481834.60	2762349.57	
BH11	481358.48	2762270.89	✓	BH41	481968.10	2762358.52	✓
BH12	481393.28	2762709.17	✓	BH42	481614.73	2762339.47	
BH13	481151.57	2762063.37	✓	BH43	481523.48	2761937.51	✓
BH14	481309.19	2761982.81		BH44	481618.78	2761717.28	✓
BH15	481166.21	2761799.18		BH45	481627.09	2761578.38	✓
BH16	481836.04	2761915.33	✓	BH46	481839.40	2761499.17	
BH17	480892.71	2761581.80	✓	BH47	481448.65	2761531.93	
BH18	481608.54	2761585.19	✓	BH48	481303.01	2761338.31	
BH19	481157.36	2761464.63		BH49	481468.77	2760971.16	✓
BH20	481307.06	2761627.56	✓	BH50	481551.78	2760902.09	
BH21	481678.06	2761240.83		BH51	481802.61	2761179.68	
BH22	481251.63	2761161.35		BH52	481834.96	2760955.52	
BH23	481258.48	2761545.82	✓	BH53	481868.67	2760908.45	✓
BH24	481358.58	2761677.61	✓	BH54	482328.22	2761635.68	✓
BH25	481448.03	2761214.55		BH55	482107.34	2761435.63	✓
BH26	481592.65	2761265.35	✓	BH56	482468.08	2761701.52	✓
BH27	481838.30	2761617.80	✓	BH57	482358.16	2761829.58	✓
BH28	481858.51	2761257.68		BH58	481702.52	2762013.46	✓
BH29	482102.01	2761263.88	✓	BH59	482163.23	2762348.31	✓
BH30	482308.43	2761956.89		BH60	480628.33	2761437.31	
				BH61	481725.23	2761905.38	

BOREHOLES & PIEZOMETER LOCATIONS

BOREHOLE TYPE: (C) (60m)			PIEZO METER
BH NO.	EAST	NORTH	
BH01	480764.19	2762363.80	
BH02	480891.21	2762194.47	✓
BH03	480855.34	2762138.85	
BH04	480779.26	2762142.82	✓
BH05	480824.87	2762047.70	
BH06	480885.49	2762361.79	✓
BH07	480855.85	2761992.87	✓
BH08	480963.49	2762035.14	
BH09	480861.42	2761961.19	
BH10	480987.55	2761974.64	✓
BH11	480922.84	2761963.69	✓
BH12	481083.11	2761979.30	
BH13	481166.51	2761917.52	✓
BH14	481069.42	2762176.89	
BH15	481122.94	2762256.51	✓
BH16	481025.83	2762242.87	
BH17	480833.85	2762306.27	
BH18	480723.12	2762332.54	
BH19	480733.10	2762366.55	✓
BH20	481074.12	2762314.46	✓
BH21	481068.26	2762407.89	✓
BH22	481428.10	2761958.31	
BH23	481328.17	2761936.95	✓
BH24	481488.86	2761748.16	✓
BH25	481511.35	2761732.79	
BH26	481468.37	2761792.70	
BH27	481228.44	2761936.82	
BH28	481724.85	2761818.89	
BH29	481542.80	2762014.47	✓

FIG. 4: MASTER LAYOUT



BOREHOLES, PIEZOMETER & GAS MONITORING LOCATIONS					
ZONE-1					
BOREHOLE TYPE. (A) (20m)			PIEZOMETER	GAS MONITORING	DEPTH (M)
BH NO.	EAST	NORTH			
BH001-B	480475.27	2761520.47	✓	✓	40
BH001-C	480766.19	2762083.80			60
BH002-B	480510.29	2761680.60	✓		40
BH003-B	480618.96	2761654.08			40
BH003-C	480655.34	2762139.95			60
BH004-B	480695.18	2761807.25	✓	✓	40
BH005-B	480568.38	2761865.68	✓		40
BH005-C	480824.07	2762047.70			60
BH006-B	480784.35	2761899.79			40
BH007-B	480645.13	2762025.95			40
BH007-C	480855.68	2761992.07	✓	✓	60
BH009-C	480881.42	2761961.18			60
BH011-C	480922.84	2761883.69	✓		60

TRIAL PITS LOCATIONS		
ZONE-1		
TP NO.	EAST	NORTH
TP001	480488.43	2761462.92
TP003	480420.49	2761615.58
TP004	480559.95	2761652.18
TP006	480815.82	2761802.11
TP007	480630.44	2761840.20
TP008	480701.48	2762027.70
TP009	480912.19	2761983.72
TP010	480598.00	2762134.00

	LEGEND
	BOREHOLE
	BOREHOLE & PIEZOMETER
	BOREHOLE, PIEZOMETER & GAS MONITORING
	TRIAL PITS

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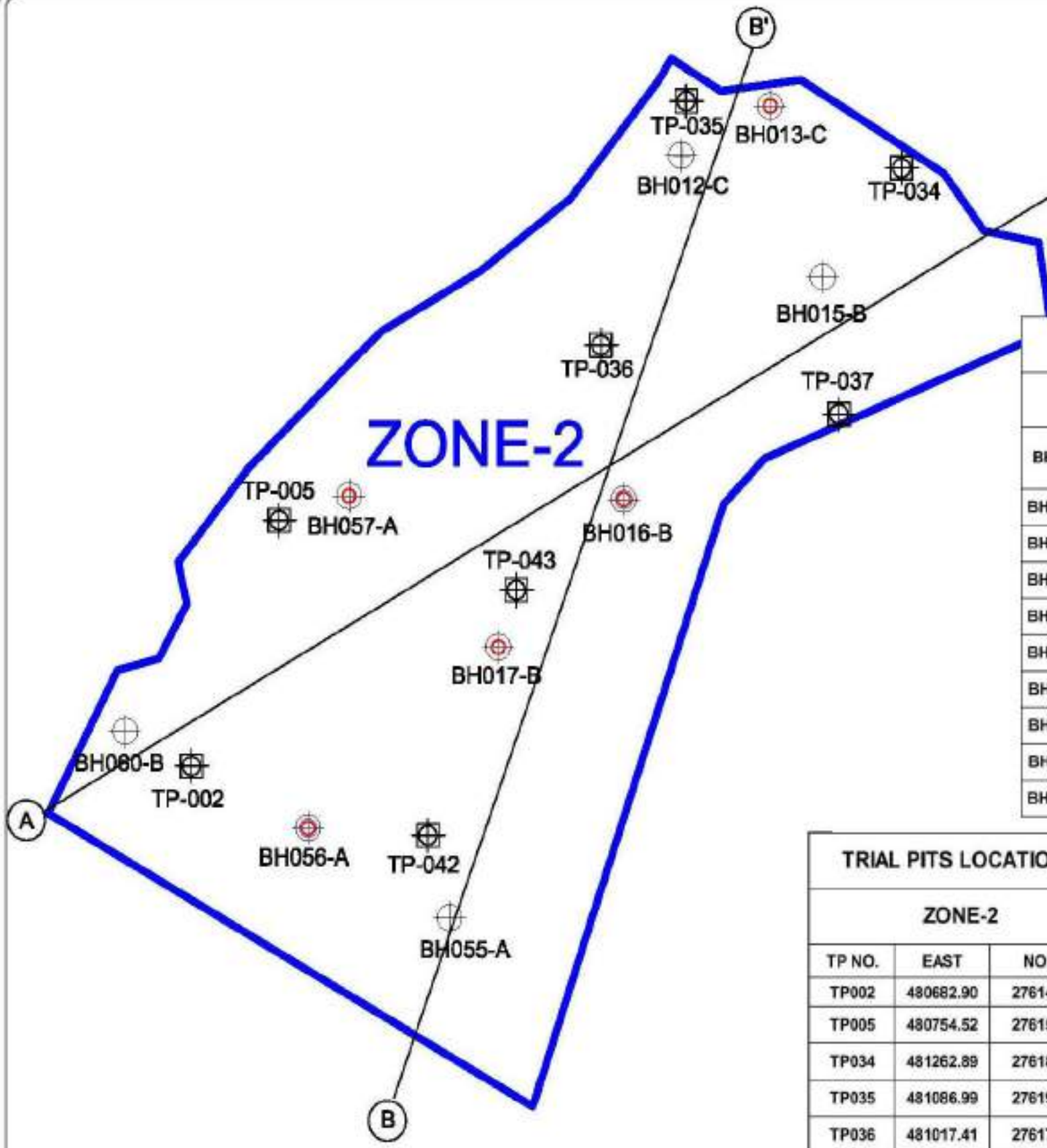
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FIG. 5: BOREHOLE LOCATION

Legend: Borehole

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BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-2					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONITORING	DEPTH (M)
BH012-C	481083.11	2761879.36			60
BH013-C	481155.51	2761917.52	✓		60
BH015-B	481198.31	2761786.18			40
BH016-B	481036.04	2761615.33	✓	✓	40
BH017-B	480933.71	2761501.90	✓		40
BH055-A	480894.13	2761293.82			20
BH056-A	480778.12	2761363.94	✓	✓	20
BH057-A	480811.76	2761617.82	✓		20
BH060-B	480628.23	2761437.21			40

TRIAL PITS LOCATIONS		
ZONE-2		
TP NO.	EAST	NORTH
TP002	480682.90	2761410.58
TP005	480754.52	2761599.27
TP034	481262.89	2761870.00
TP035	481086.99	2761921.30
TP036	481017.41	2761733.76
TP037	481211.53	2761680.73
TP042	480876.28	2761357.31
TP043	480948.48	2761545.76

LEGEND
BOREHOLE
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FIG. 6: BOREHOLE LOCATION

Legend: Borehole



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS

ZONE-3

BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH010-C	480967.55	2761974.64	✓		60
BH008-C	480950.49	2762035.14			60
BH006-C	480885.49	2762081.79	✓		60
BH007-C	480855.68	2761992.07	✓		60
BH002-C	480691.21	2762194.47	✓		60
BH014-C	481090.42	2762178.99			60
BH016-C	481025.93	2762242.87			60
BH017-C	480830.65	2762309.27			60
BH018-C	480723.12	2762322.54			60
BH019-C	480733.10	2762369.55		✓	60
BH015-C	481122.94	2762255.01	✓		60
BH008-B	480946.21	2762444.75			40
BH009-B	480841.31	2762585.77	✓		40
BH010-B	481076.34	2762622.15	✓		40
BH001-A	480929.44	2762736.78			20
BH002-A	481069.53	2762852.08	✓	✓	20

TRIAL PITS LOCATIONS

ZONE-3

TP NO.	EAST	NORTH
TP011	480771.35	2762216.11
TP012	480964.98	2762162.85
TP013	480842.80	2762403.93
TP014	481035.02	2762351.19
TP015	480723.69	2762517.29
TP016	481106.25	2762539.63
TP017	480913.09	2762592.17
TP018	480810.44	2762747.11
TP019	481114.07	2762745.37
TP020	480927.07	2762879.26

	LEGEND
	BOREHOLE
	BOREHOLE & PIEZOMETER
	BOREHOLE, PIEZOMETER & GAS MONITORING
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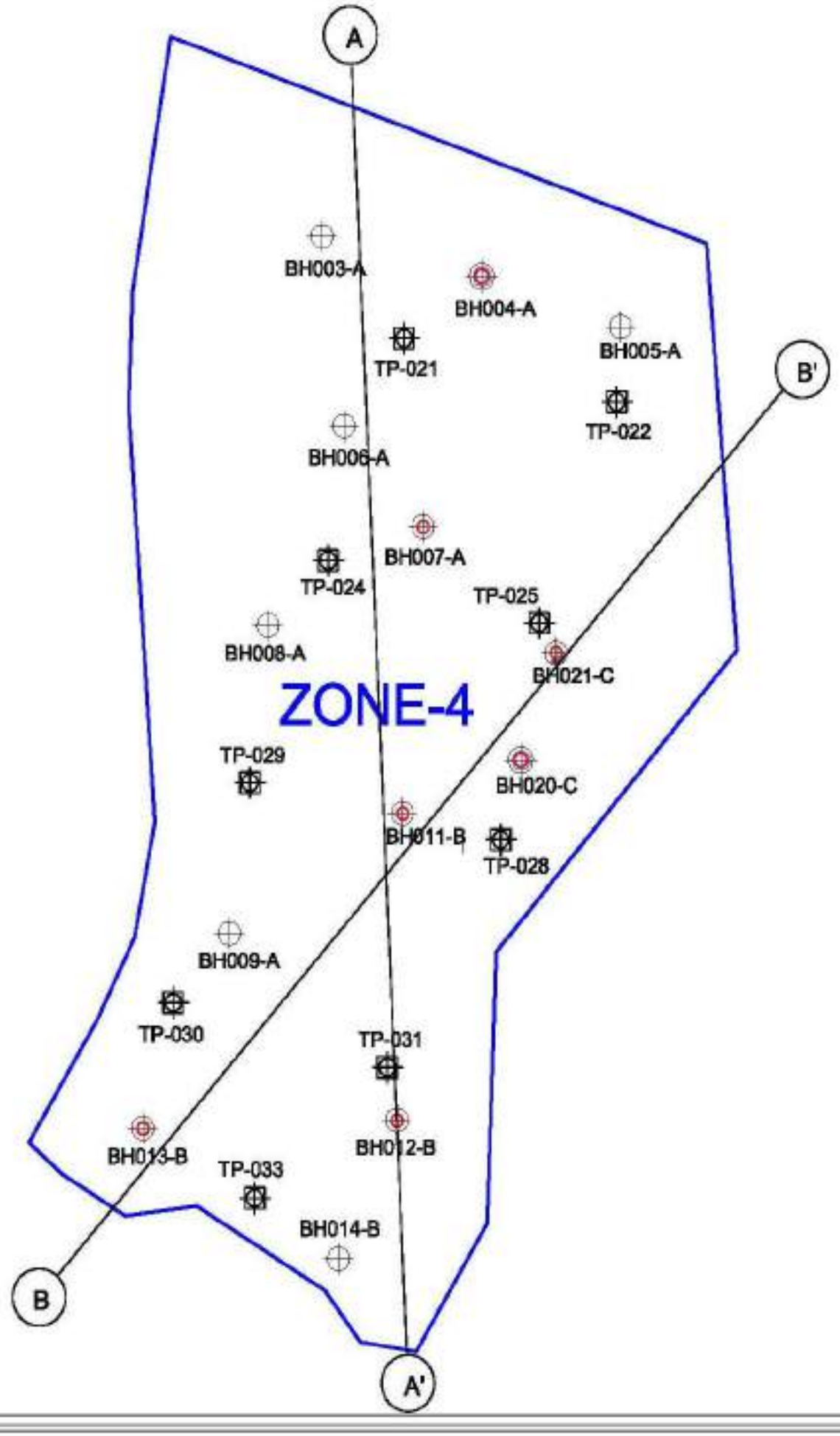
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FIG. 7: BOREHOLE LOCATION

Legend: Borehole

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BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-4					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH014-B	481309.79	2761862.61			40
BH013-B	481131.57	2762063.37	✓		40
BH012-B	481363.39	2762010.17	✓		40
BH009-A	481210.54	2762168.73			20
BH011-B	481368.48	2762270.88	✓		40
BH020-C	481474.13	2762314.46	✓	✓	60
BH008-A	481245.58	2762430.68			20
BH021-C	481509.26	2762467.89	✓		60
BH007-A	481387.67	2762514.65	✓		20
BH006-A	481315.09	2762600.19			20
BH005-A	481567.85	2762684.82			20
BH004-A	481441.47	2762727.40	✓	✓	20
BH003-A	481294.96	2762761.65			20

TRIAL PITS LOCATIONS		
ZONE-4		
TP NO.	EAST	NORTH
TP021	481369.85	2762675.02
TP022	481564.43	2762620.85
TP024	481300.56	2762486.11
TP025	481493.73	2762432.89
TP028	481458.47	2762248.86
TP029	481229.03	2762297.25
TP030	481159.12	2762110.27
TP031	481354.51	2762055.26
TP033	481233.35	2761944.00

LEGEND
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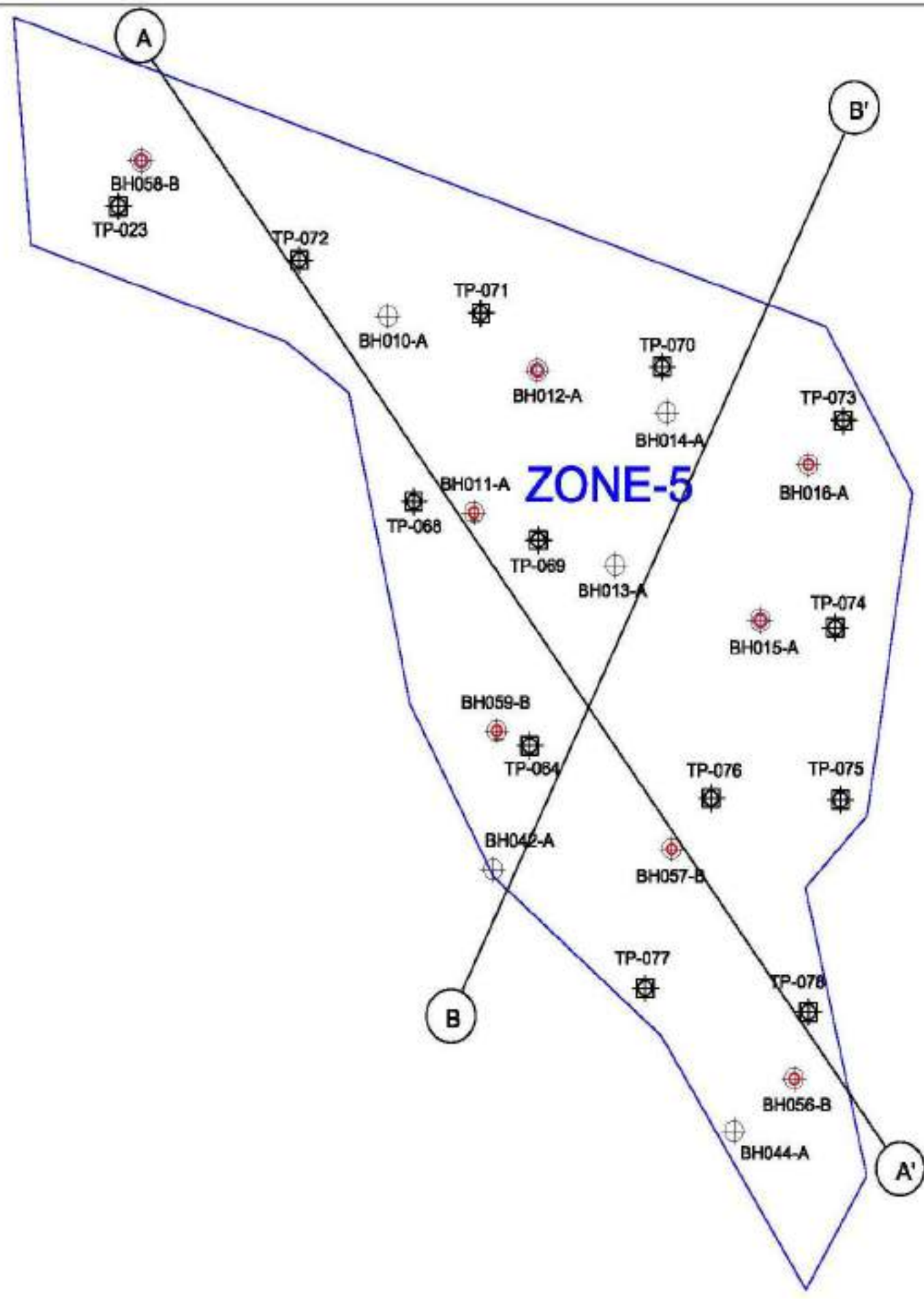
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FIG. 8: BOREHOLE LOCATION

Legend: Borehole



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-5					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH010-A	482046.27	2762458.92			20
BH011-A	482138.55	2762263.75	✓		20
BH012-A	482206.23	2762405.13	✓	✓	20
BH013-A	482269.65	2762211.36			20
BH014-A	482344.74	2762362.89			20
BH015-A	482444.43	2762156.93	✓	✓	20
BH016-A	482495.96	2762311.40	✓		20
BH042-A	482159.26	2761909.03			20
BH044-A	482416.42	2761649.48			20
BH056-B	482480.86	2761701.53	✓		40
BH057-B	482350.16	2761929.55	✓		40
BH058-B	481782.52	2762613.40	✓	✓	40
BH059-B	482163.23	2762046.71	✓		40

TRIAL PITS LOCATIONS		
ZONE-5		
TP NO.	EAST	NORTH
TP023	481758.13	2762567.95
TP064	482198.06	2762032.15
TP068	482074.33	2762274.69
TP069	482207.35	2762236.25
TP070	482339.68	2762408.52
TP071	482145.81	2762461.78
TP072	481951.49	2762514.41
TP073	482533.19	2762355.22
TP074	482524.55	2762149.27
TP075	482530.25	2761978.46
TP076	482392.10	2761980.00
TP077	482321.53	2761791.32
TP078	482496.02	2761767.65

LEGEND
BOREHOLE
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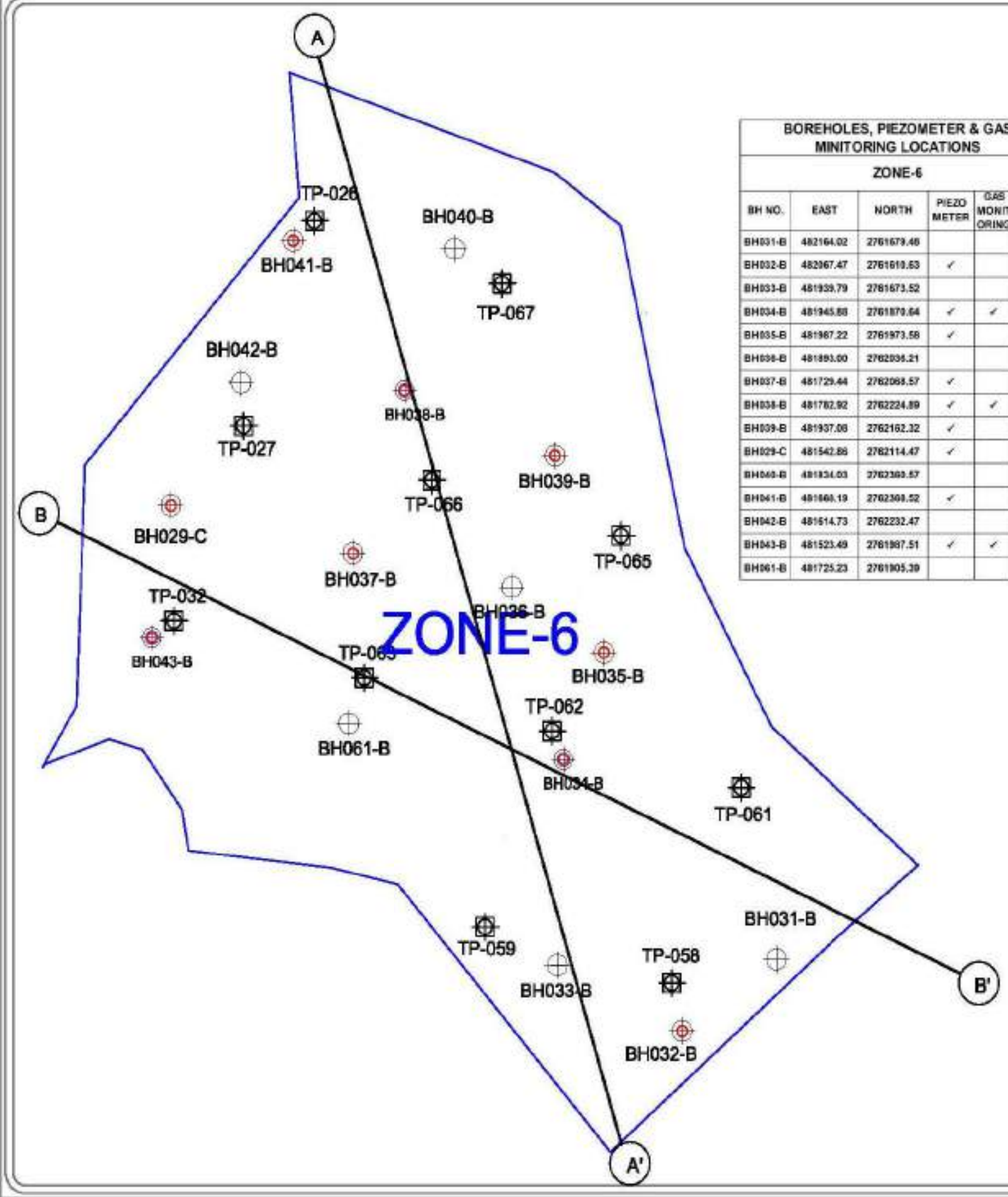
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FIG. 9: BOREHOLE LOCATION

Legend: Borehole



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-6					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH031-B	482164.02	2761679.46			40
BH032-B	482367.47	2761610.63	✓		40
BH033-B	481939.79	2761673.52			40
BH034-B	481945.88	2761879.64	✓	✓	40
BH035-B	481987.22	2761973.58	✓		40
BH036-B	481893.00	2762036.21			40
BH037-B	481729.44	2762068.57	✓		40
BH038-B	481782.92	2762224.89	✓	✓	40
BH039-B	481937.06	2762162.32	✓		40
BH029-C	481542.86	2762114.47	✓		60
BH040-B	481834.03	2762369.57			40
BH041-B	481868.19	2762369.52	✓		40
BH042-B	481614.73	2762232.47			40
BH043-B	481523.49	2761987.51	✓	✓	40
BH061-B	481725.23	2761905.39			40

TRIAL PITS LOCATIONS		
ZONE-6		
TP NO.	EAST	NORTH
TP26	481689.91	2762387.47
TP27	481617.30	2762190.97
TP58	482056.87	2761656.68
TP59	481865.37	2761710.43
TP61	482128.14	2761843.94
TP62	481934.13	2761898.15
TP63	481741.15	2761949.29
TP65	482128.14	2761843.94
TP66	481934.13	2761898.15
TP67	481741.15	2761949.29

LEGEND
BOREHOLE
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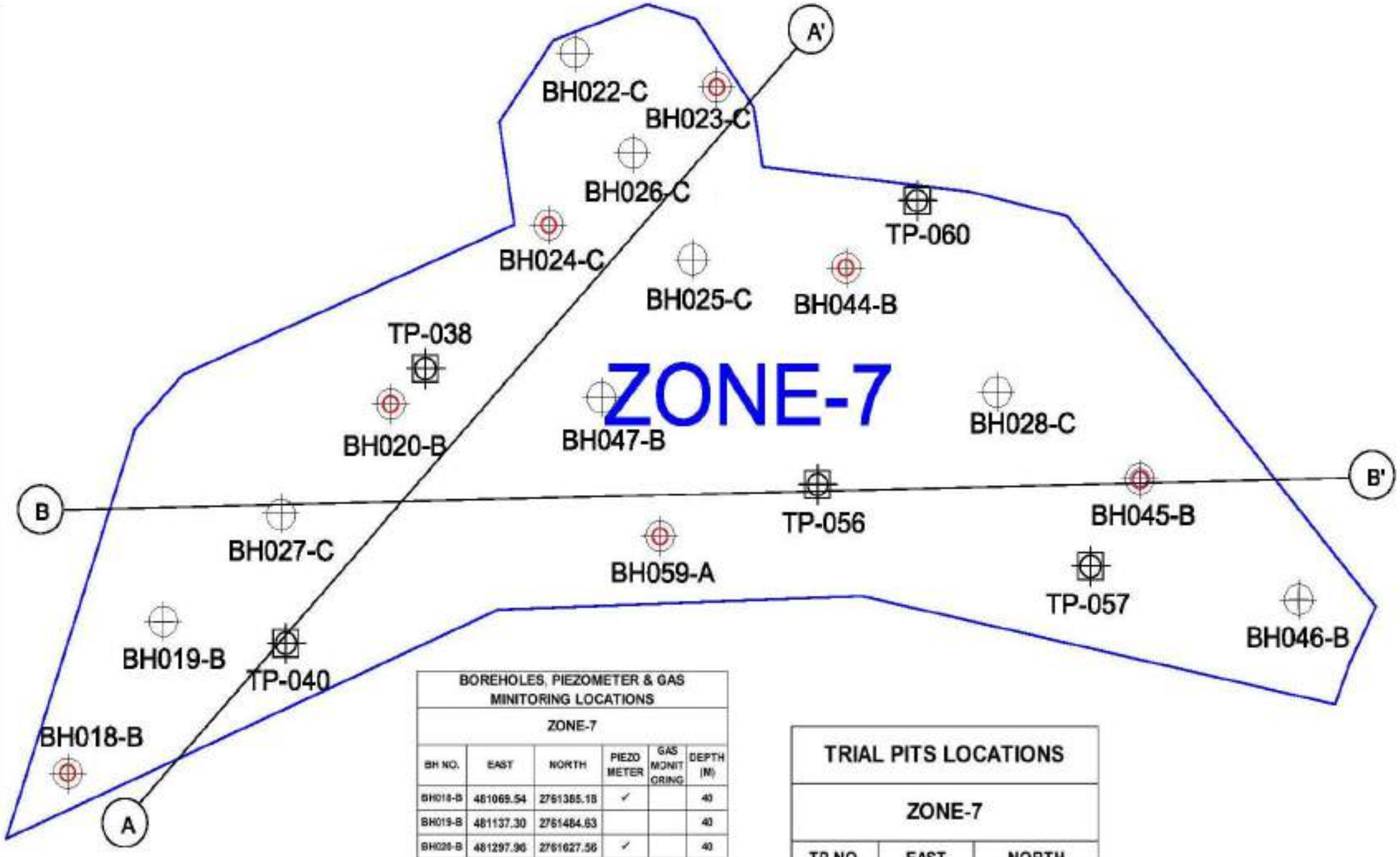
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FIG. 10: BOREHOLE LOCATION

Legend: Borehole

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BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-7					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH018-B	481069.54	2761385.18	✓		40
BH019-B	481137.30	2761484.63			40
BH020-B	481297.96	2761627.56	✓		40
BH022-C	481428.10	2761858.31			60
BH023-C	481528.17	2761835.95	✓		60
BH024-C	481409.66	2761745.16	✓		60
BH025-C	481511.05	2761722.79			60
BH026-C	481469.37	2761792.78			60
BH027-C	481226.44	2761555.92			60
BH028-C	481724.95	2761635.85			60
BH044-B	481619.76	2761717.20	✓		40
BH045-B	481827.09	2761578.38	✓	✓	40
BH046-B	481939.40	2761499.17			40
BH047-B	481446.65	2761631.93			40
BH059-A	481488.26	2761540.71	✓		20

TRIAL PITS LOCATIONS		
ZONE-7		
TP NO.	EAST	NORTH
TP38	481322.52	2761650.91
TP40	481223.73	2761470.44
TP56	481599.63	2761574.73
TP57	481792.30	2761521.12
TP60	481670.04	2761761.24

	LEGEND
⊕	BOREHOLE
⊕	BOREHOLE & PIEZOMETER
⊕	BOREHOLE, PIEZOMETER & GAS MONITORING
⊕	TRIAL PITS

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PROJECT NUMBER
XSD/15-0143

PROJECT NAME
PN1403-DTCJA-EXPO DEVELOPMENT GROUND INVESTIGATION SERVICES

PROJECT LOCATION
Madinat Al Mataar Dubai, U.A.E.

PROJECT OWNER
DUBAI WORLD TRADE CENTER

PROJECT CONSULTANT
CH2M-MACE JV

Revision no. 1

PLOT NUMBER
5219784

DRAWING TITLE
BOREHOLE, PIEZOMETER & TP LOCATIONS

Document No:
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Drawn By: Ashaar

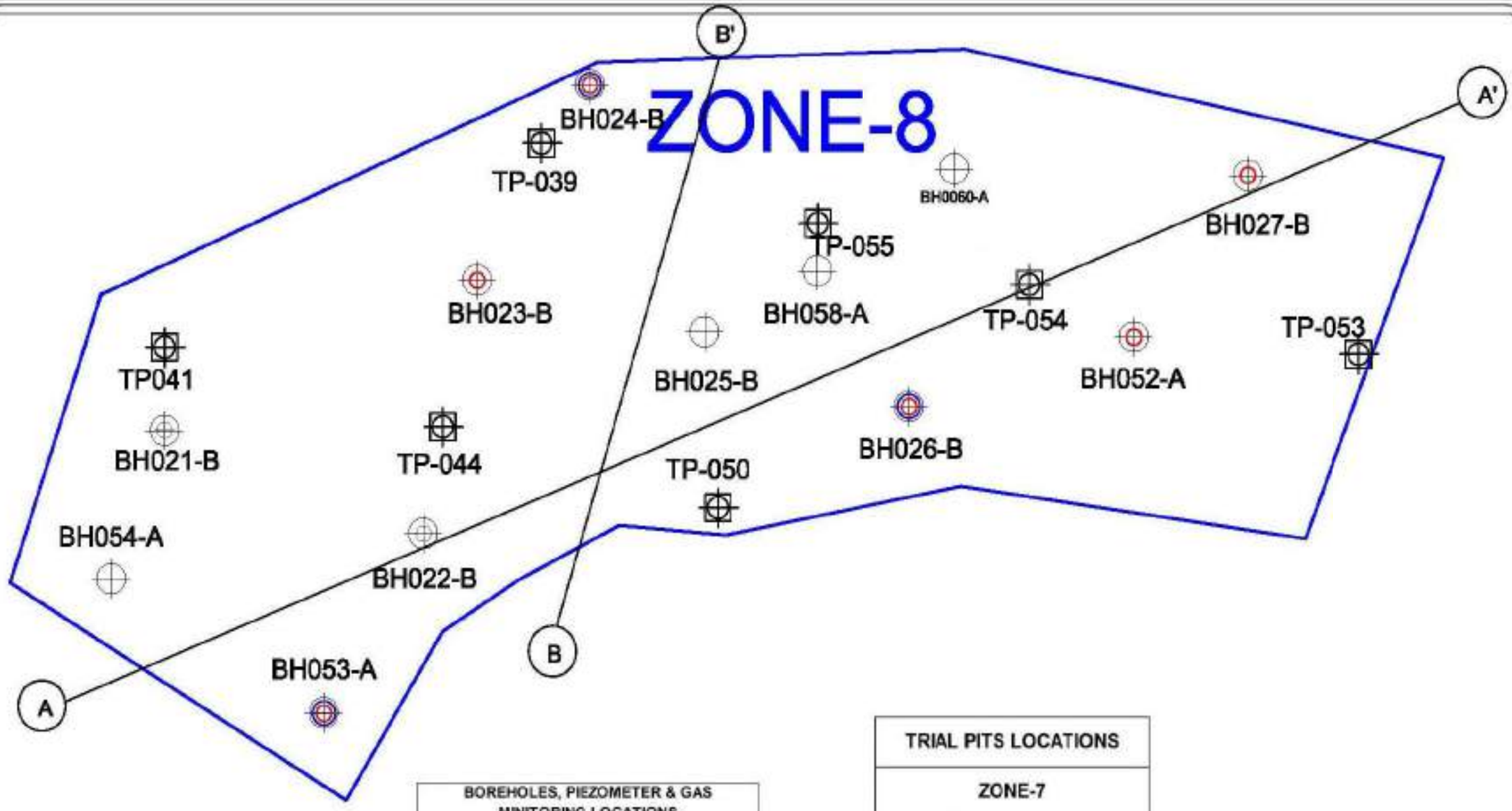
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FIG. 11: BOREHOLE LOCATION

Legend: Borehole

XSD/15-0143-7



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-7					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH021-B	481070.06	2761349.81			40
BH022-B	481251.83	2761181.35			40
BH023-B	481289.48	2761348.82	✓		40
BH024-B	481369.50	2761477.81	✓	✓	40
BH025-B	481449.03	2761314.55			40
BH026-B	481592.65	2761266.35	✓	✓	40
BH027-B	481830.30	2761417.90	✓		40
BH052-A	481759.34	2761311.26	✓		20
BH053-A	481181.82	2761862.97	✓	✓	20
BH054-A	481032.90	2761151.39			20
BH060-A	481624.13	2761422.04			20

TRIAL PITS LOCATIONS		
ZONE-7		
TP NO.	EAST	NORTH
TP39	481334.53	2761439.30
TP41	481070.11	2761304.54
TP44	481265.37	2761251.98
TP50	481458.36	2761198.60
TP53	481913.95	2761298.92
TP54	481676.93	2761345.92
TP55	481528.36	2761386.34

	LEGEND
	BOREHOLE
	BOREHOLE & PIEZOMETER
	BOREHOLE, PIEZOMETER & GAS MONITORING
	TRIAL PITS

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PROJECT NUMBER
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PROJECT NAME
PN1403-DTCJA-EXPO DEVELOPMENT GROUND INVESTIGATION SERVICES

PROJECT LOCATION
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Dubai, U.A.E.

PROJECT OWNER
DUBAI WORLD TRADE CENTER

PROJECT CONSULTANT
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BOREHOLE, PIEZOMETER & TP LOCATIONS

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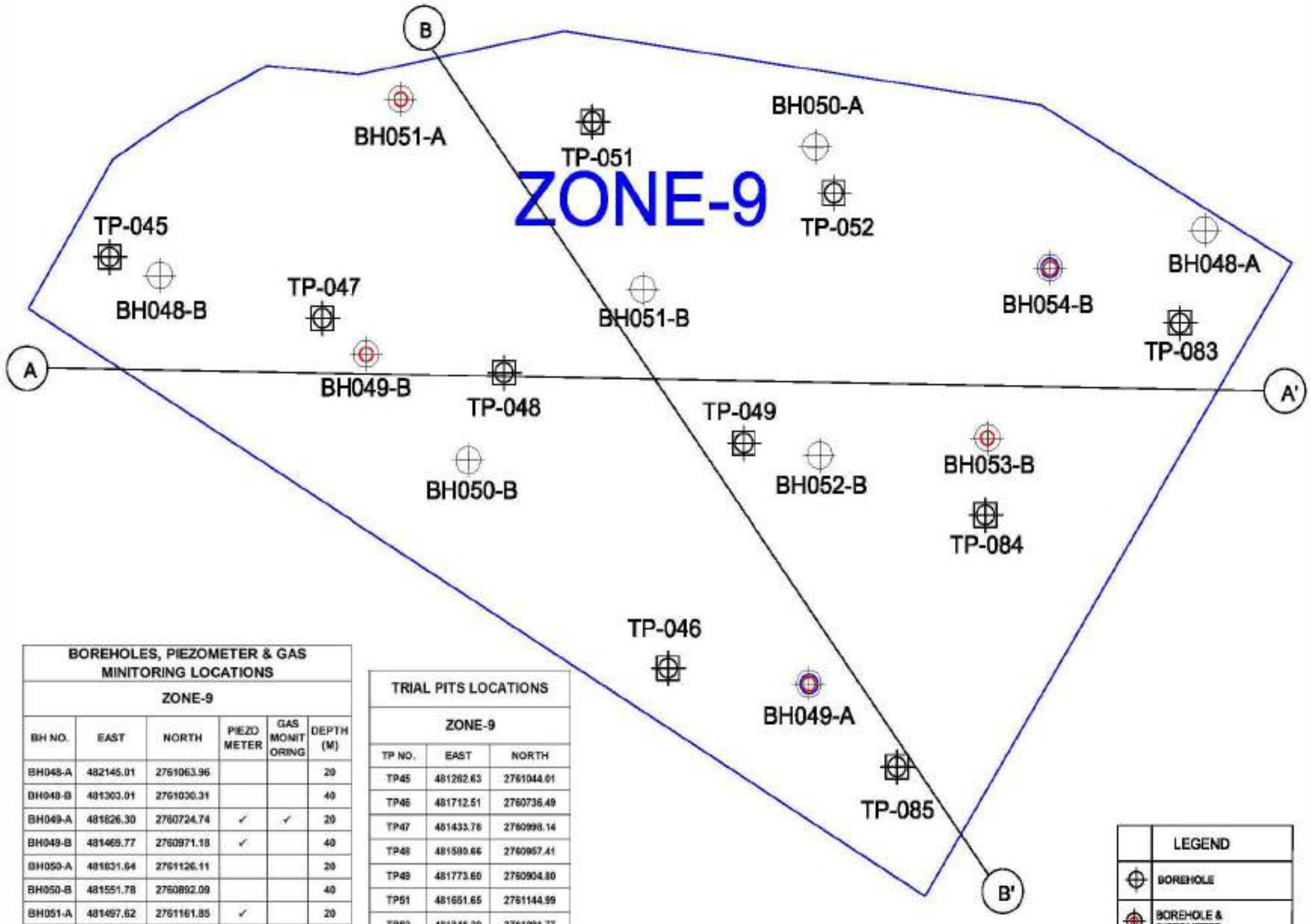
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FIG. 12: BOREHOLE LOCATION

Legend: Borehole

XSD/15-0143-8



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-9					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH048-A	482145.01	2761063.96			20
BH048-B	481303.01	2761030.31			40
BH049-A	481826.30	2760724.74	✓	✓	20
BH049-B	481469.77	2760971.18	✓		40
BH050-A	481631.64	2761126.11			20
BH050-B	481551.78	2760892.09			40
BH051-A	481497.62	2761161.85	✓		20
BH051-B	481692.61	2761019.60			40
BH052-B	481834.96	2760895.52			40
BH053-B	481969.97	2760908.45	✓		40
BH054-B	482020.22	2761035.60	✓	✓	40

TRIAL PITS LOCATIONS		
ZONE-9		
TP NO.	EAST	NORTH
TP45	481262.63	2761044.01
TP46	481712.51	2760736.49
TP47	481433.78	2760998.14
TP48	481589.66	2760957.41
TP49	481773.60	2760904.80
TP51	481651.65	2761144.99
TP52	481846.30	2761091.77
TP83	482124.97	2760994.67
TP84	481968.12	2760851.02
TP85	481897.05	2760662.68

LEGEND
BOREHOLE
BOREHOLE & PIEZOMETER
BOREHOLE, PIEZOMETER & GAS MONITORING
TRIAL PITS

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PROJECT NUMBER
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PROJECT NAME
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PROJECT LOCATION
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Dubai, U.A.E.

PROJECT OWNER
DUBAI WORLD TRADE CENTER

PROJECT CONSULTANT
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PLOT NUMBER
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Drawn By: Abdullah

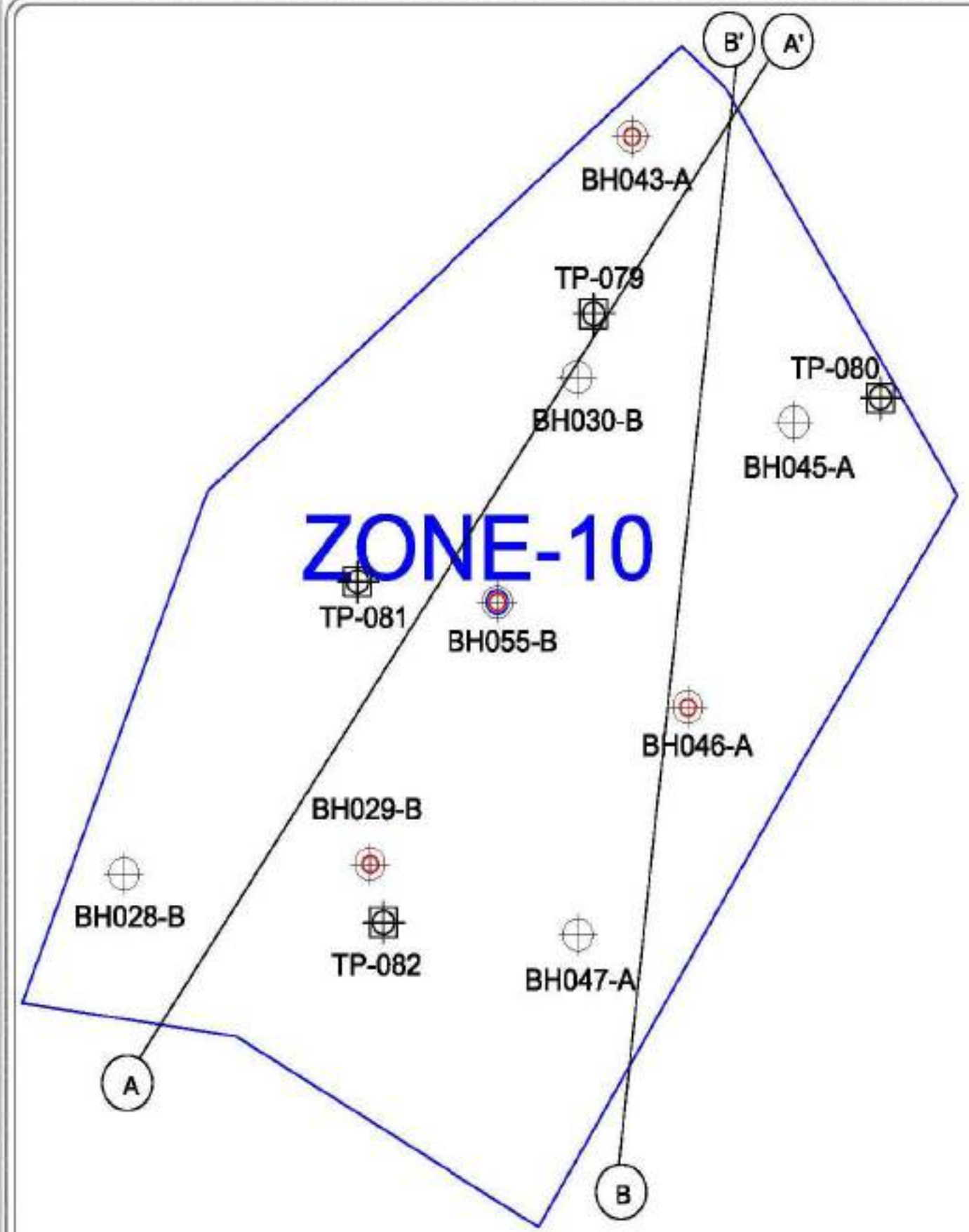
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FIG. 13: BOREHOLE LOCATION

Legend: Borehole

XSD/15-0143-9



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-10					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH028-B	481938.51	2761257.68			40
BH029-B	482102.01	2761263.86	✓		40
BH030-B	482240.41	2761564.69			40
BH043-A	482276.60	2761713.76	✓		20
BH045-A	482384.71	2761536.95			20
BH046-A	482313.97	2761360.99	✓		20
BH047-A	482240.96	2761220.26			20
BH055-B	482187.34	2761425.63	✓	✓	40

TRIAL PITS LOCATIONS		
ZONE-10		
TP NO.	EAST	NORTH
TP79	482251.28	2761604.09
TP80	482441.92	2761551.98
TP81	482093.51	2761438.50
TP82	482110.77	2761227.92

	LEGEND
⊕	BOREHOLE
⊕	BOREHOLE & PIEZOMETER
⊕	BOREHOLE, PIEZOMETER & GAS MONITORING
⊕	TRIAL PITS

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DRAWING TITLE
BOREHOLE, PIEZOMETER & TP LOCATIONS

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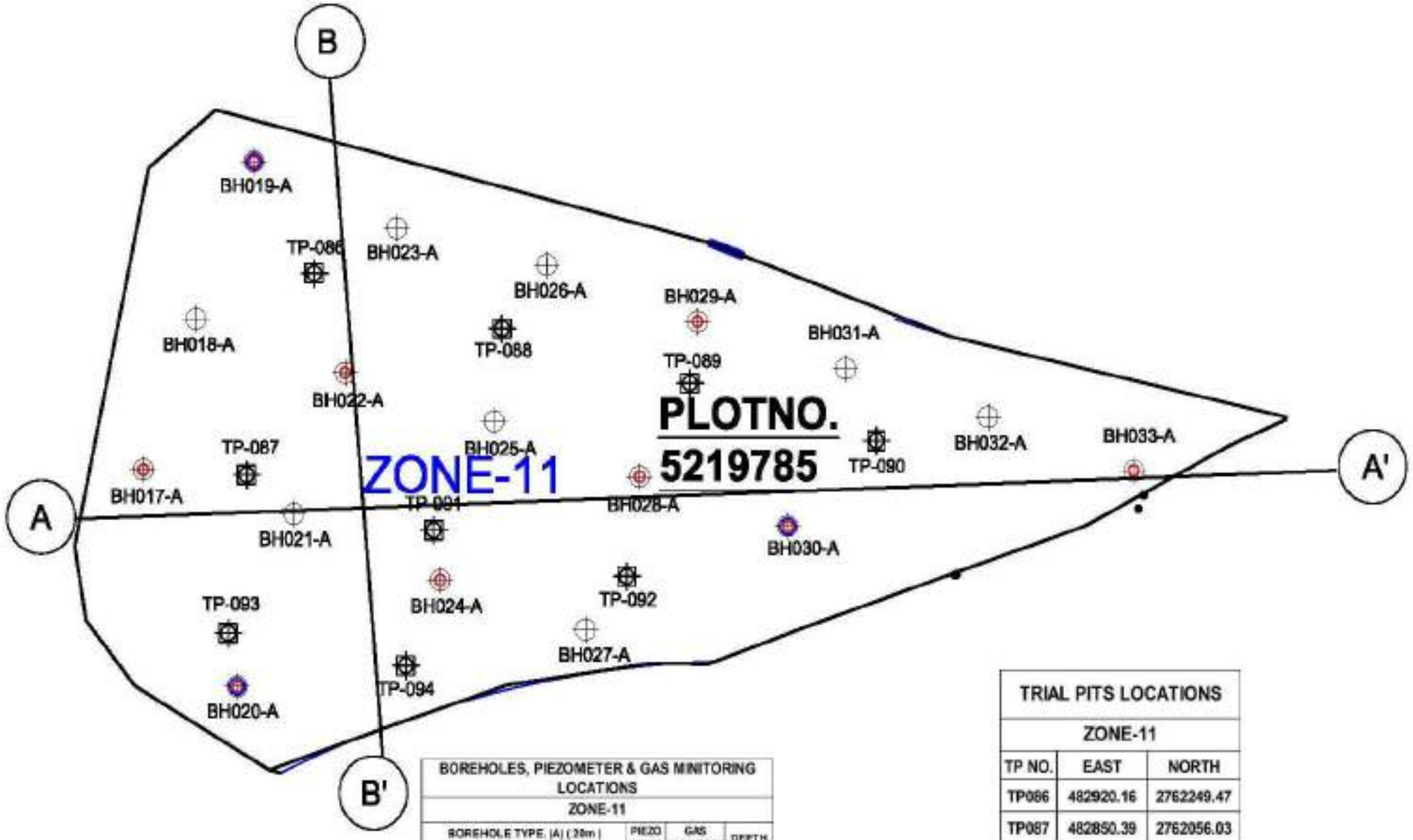
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FIG. 14: BOREHOLE LOCATION

Legend: Borehole



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-11					
BOREHOLE TYPE. (A) (20m)			PIEZO METER	GAS MONITORING	DEPTH (M)
BH NO.	EAST	NORTH			
BH16-A	482495.96	2762311.40	✓		20
BH17-A	482743.67	2762060.88	✓		20
BH18-A	482796.12	2762205.54			20
BH19-A	482857.89	2762356.84	✓	✓	20
BH20-A	482640.62	2761852.51	✓	✓	20
BH21-A	482696.06	2762018.41			20
BH22-A	482962.20	2762153.78	✓		20
BH23-A	483006.14	2762292.77			20
BH24-A	483050.68	2761954.71	✓		20
BH25-A	483106.27	2762107.33			20
BH26-A	483160.72	2762257.30			20
BH27-A	483200.57	2761906.93			20
BH28-A	483256.35	2762054.25	✓		20
BH29-A	483316.12	2762202.89	✓		20
BH30-A	483409.10	2762006.47	✓	✓	20
BH31-A	483468.87	2762157.77			20
BH32-A	483616.30	2762111.31			20
BH33-A	483766.38	2762059.55	✓		20

TRIAL PITS LOCATIONS		
ZONE-11		
TP NO.	EAST	NORTH
TP086	482920.16	2762249.47
TP087	482850.39	2762056.03
TP088	483114.23	2762196.50
TP089	483307.99	2762143.97
TP090	483500.62	2762088.54
TP091	483043.90	2762002.72
TP092	483242.96	2761958.29
TP093	482831.36	2761903.76
TP094	483015.01	2761872.76

	LEGEND
⊕	BOREHOLE
⊕	BOREHOLE & PIEZOMETER
⊕	BOREHOLE, PIEZOMETER & GAS MONITORING
⊕	TRIAL PITS

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PROJECT NUMBER
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PROJECT NAME
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PROJECT LOCATION
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5219785

DRAWING TITLE
BOREHOLE, PIEZOMETER & TP LOCATIONS

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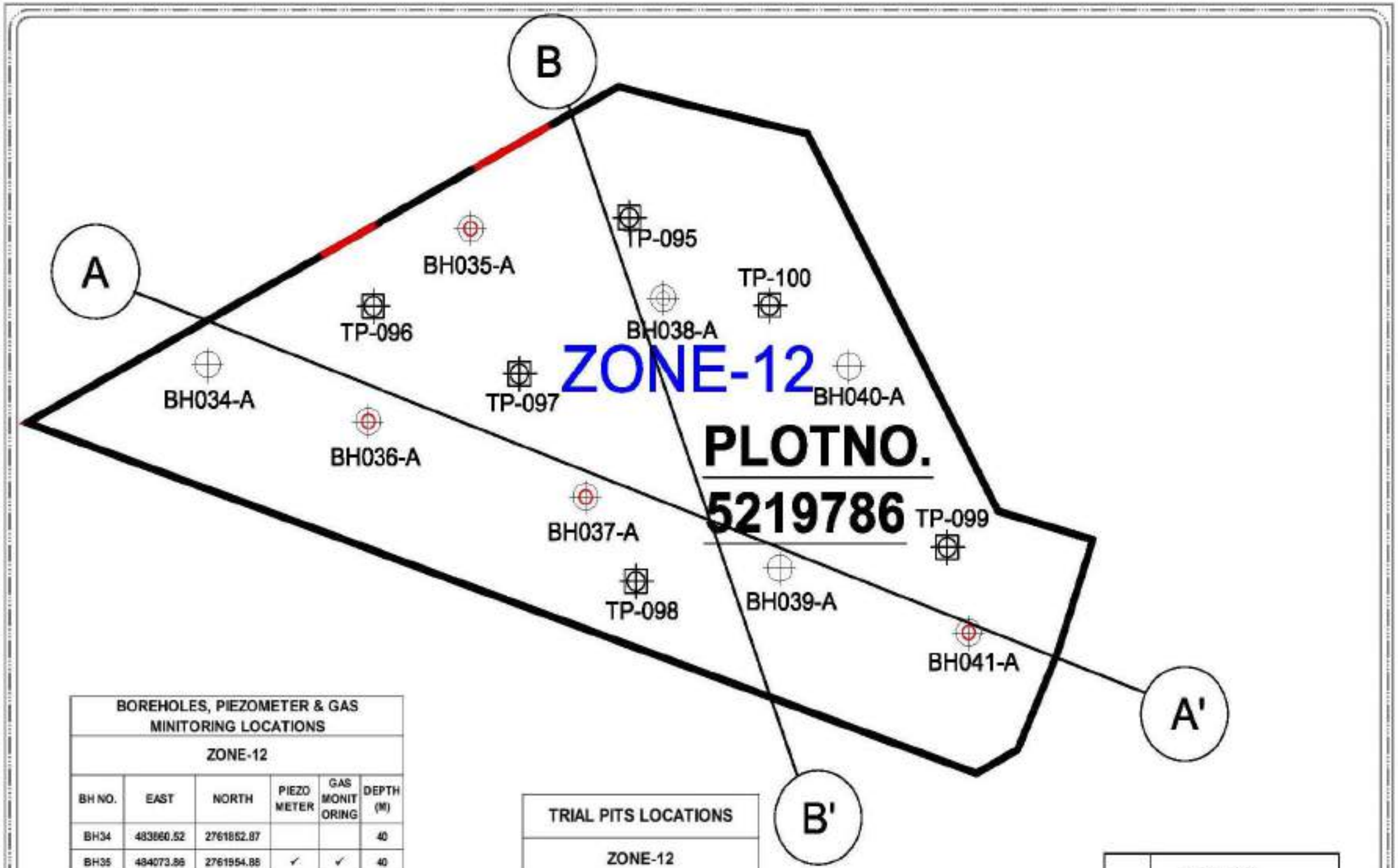
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FIG. 15: BOREHOLE LOCATION

Legend: Borehole

XSD/15-0143-11



BOREHOLES, PIEZOMETER & GAS MINITORING LOCATIONS					
ZONE-12					
BH NO.	EAST	NORTH	PIEZO METER	GAS MONIT ORING	DEPTH (M)
BH34	483860.52	2761852.87			40
BH35	484073.86	2761954.88	✓	✓	40
BH36	483990.30	2761816.10	✓		40
BH37	484166.79	2761753.48	✓		20
BH38	484229.61	2761902.57			20
BH39	484323.84	2761699.86			20
BH40	484380.12	2761851.56			20
BH41	484476.98	2761651.47	✓	✓	40

TRIAL PITS LOCATIONS		
ZONE-12		
TP NO.	EAST	NORTH
TP095	484202.04	2761963.19
TP096	483994.37	2761896.70
TP097	484113.14	2761845.92
TP098	484207.43	2761690.19
TP099	484459.55	2761715.73
TP100	484315.64	2761897.42

	LEGEND
⊕	BOREHOLE
⊕	BOREHOLE & PIEZOMETER
⊕	BOREHOLE, PIEZOMETER & GAS MONITORING
⊠	TRIAL PITS

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PROJECT LOCATION
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Dubai, U.A.E.

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BOREHOLE, PIEZOMETER & TP LOCATIONS

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FIG. 16: BOREHOLE LOCATION

Legend: Borehole

XSD/15-0143-12

APPENDIX B

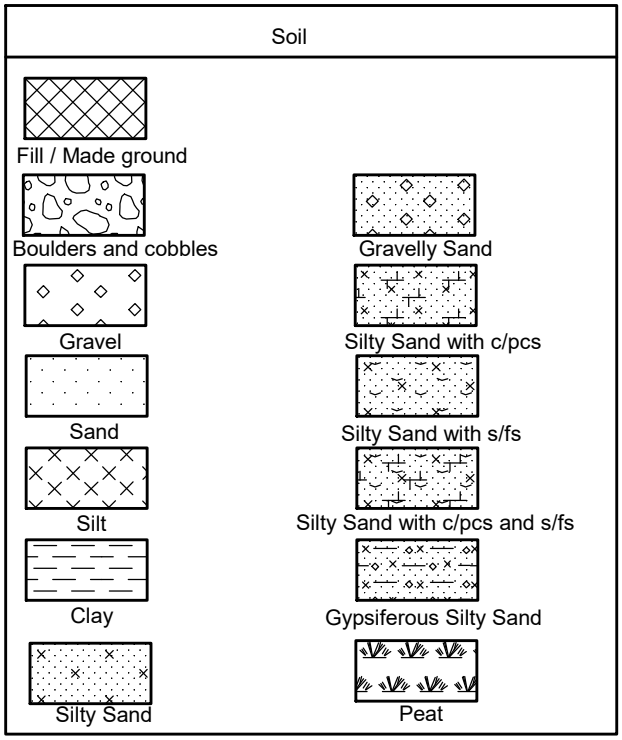
BOREHOLE LOGS

APPENDIX B1

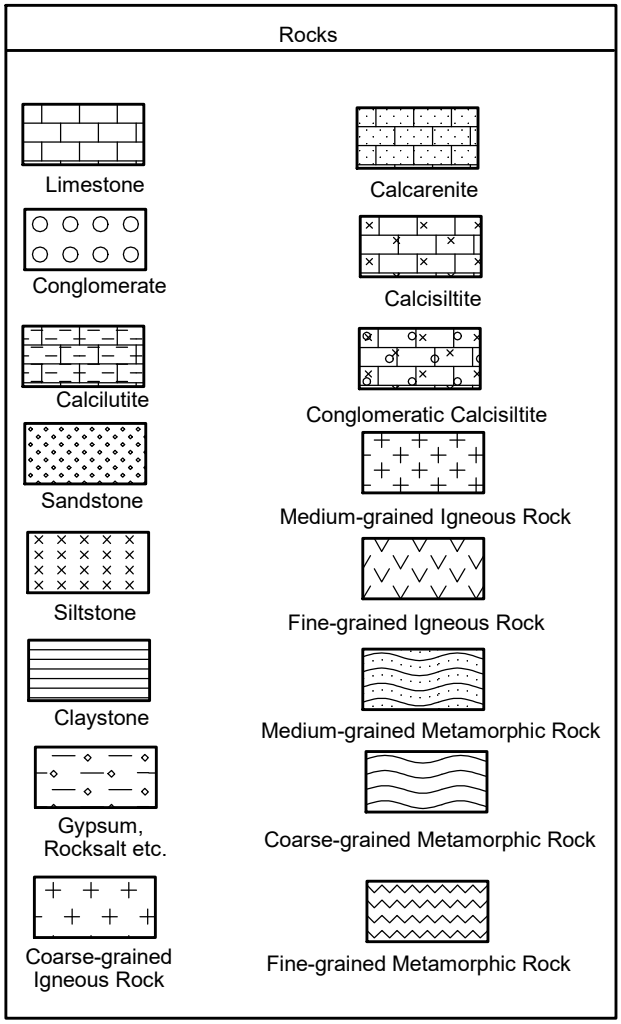
BOREHOLE LOGS (ZONE-1)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B01**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.86DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,761,520.47** E **480,475.27**
Date Started: **21/06/2015** Date Finished: **25/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	10	16	26				Medium dense to very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.86	
2	SPT3	2 - 2.43	19	25	25/13	>50						
3	SPT4	3 - 3.19	25/8	50/11	-	>50						
4	SPT5	4 - 4.15	25/6	50/9	-	>50						
	CORE6	4.15 - 5.15					55	35	6	Very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented sand.	20.71	
5		5.15 - 6.65										
6	CORE7						93	59	27			
		6.65 - 8.15										
7	CORE8						77	78	59			
8		8.15 - 9.65									16.71	
9	CORE9						65	12	0	Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
		9.65 - 10.65										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +12.36m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B01**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.86DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,761,520.47** E **480,475.27**

Date Started: **21/06/2015** Date Finished: **25/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						49	0	0	Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	14.86	
	SPT11	10.65 - 10.9	25/9	93	7/1	>100					14.21	
11		10.9 - 12.4								Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.96	
	CORE12						63	36	0	Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
12		12.4 - 13.9										
13	CORE13						36	0	0			
14	SPT14	13.9 - 14.18	25/8	75	25/9	>100					10.96	
		14.18 - 15.18								Very dense, offwhite/ brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.68	
	CORE15						78	25	11	Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
15		15.18 - 16.52										
16	CORE16						23	10	0			
	SPT17	16.52 - 16.74	25/8	100/14	-	>100					8.34	
		16.74 - 18.24								Very dense, offwhite/ brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.12	
17	CORE18						69	45	18	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
18		18.24 - 19.5										
19	CORE19						28	0	0			
	SPT20	19.5 - 19.78	25/9	76	24/4	>100					5.36	
		19.78 - 21-								Very dense, offwhite/ brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.08	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +12.36m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B01**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.86DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,761,520.47** E **480,475.27**

Date Started: **21/06/2015** Date Finished: **25/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE21						77	50	17	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
21		21 - 22										
	CORE22						65	4	0			
22		22 - 23										
	CORE23						54	18	0			
23		23 - 24										
	CORE24						87	61	41			
24		24 - 25.5										
	CORE25						65	41	0			
25												
		25.5 - 26.5										
26	CORE26						50	29	0			
		26.5 - 28								Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-1.64	
27	CORE27						63	13	0			
28		28 - 29.5										
	CORE28						71	25	0			
29												
		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +12.36m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B01**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.86DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,761,520.47** E **480,475.27**
Date Started: **21/06/2015** Date Finished: **25/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE29						62	38	26	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-5.14	
31		31 - 32.5										
	CORE30						77	35	13			
32		32.5 - 34									-7.64	
33	CORE31						60	33	15	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with silt.		
34		34 - 35										
	CORE32						62	46	40			
35		35 - 36.5										
	CORE33						76	63	47			
36		36.5 - 38										
37	CORE34						30	23	8			
38	SPT35	38 - 38.25	25/8	90	10/2	>100				Very dense, offwhite/ brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.14	
		38.25 - 39.25									-13.39	
	CORE36						78	13	10	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with silt.		
39		39.25 - 40										
	CORE37						64	10	0			
40										END OF BORING	-14.94	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +12.36m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▯ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B02**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.13DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,761,680.60** E **480,510.29**
Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	9	9	18				Medium dense to dense, light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.13	
2	SPT3	2 - 2.45	16	20	21	41						
3	SPT4	3 - 3.32	24	40	10/2	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.13	
4	SPT5	4 - 4.25	25/9	44	6/1	>50						
5	CORE6	4.25 - 5.75					62	53	44	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	18.88	
6	CORE7	5.75 - 7.25					65	43	7			
7	CORE8	7.25 - 8.75					60	30	7			
8	CORE9	8.75 - 10.25					44	0	0			
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.53m below the existing ground level i.e. at R.L. +11.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B02**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+23.13DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Mobile 40-1**	Core Diameter (mm): **76.0**	N **2,761,680.60** E **480,510.29**
Date Started:	**21/06/2015**	Date Finished: **24/06/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	13.13	
	SPT10	10.25 - 10.53	25/10	70	30/3	>100					12.88	
		10.53 - 12									12.60	
11	CORE11						62	31	16	Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces. Weak to medium strong, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are very closely to medium spaced.		
12		12 - 13.5										
	CORE12						52	31	29			
13												
		13.5 - 15										
14	CORE13						53	52	52			
15		15 - 16.5									8.13	
	CORE14						36	5	0	Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
16	SPT15	16.5 - 16.7	25/8	100/12	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.63	
		16.7 - 17.7									6.43	
17	CORE16						58	15	10	Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		17.7 - 19										
18	CORE17						41	0	0			
19	SPT18	19 - 19.15	25/4	100/11	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.13	
		19.15 - 20.65								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely	3.98	
20	CORE19						77	45	12			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.53m below the existing ground level i.e. at R.L. +11.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B02**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.13DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,761,680.60** E **480,510.29**

Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										spaced.	3.13	
		20.65 - 22								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
21	CORE20						33	0	0			
22	SPT21	22 - 22.18	25/7	100/11	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.13	
		22.18 - 23.5								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	0.95	
23	CORE22						68	14	0			
		23.5 - 25										
24	CORE23						39	5	0			
25	SPT24	25 - 25.12	25/3	100/9	-	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.87	
		25.12 - 26								Extremely weak to very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-1.99	
	CORE25						53	45	35			
26		26 - 27										
	CORE26						60	29	21			
27		27 - 28.5										
	CORE27						78	45	11			
28												
		28.5 - 30										
29	CORE28						74	35	15			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.53m below the existing ground level i.e. at R.L. +11.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B02**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.13DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,761,680.60** E **480,510.29**

Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-6.87	
	CORE29						65	41	0			
31		31.5 - 32.5										
	CORE30						74	33	0			
32		32.5 - 34										
	CORE31						59	25	18			
33												
		34 - 35.5										
34	CORE32						64	19	11			
35		35.5 - 37										
	CORE33						78	25	12			
36												
		37 - 38										
37	CORE34						81	33	10			
		38 - 39										
38	CORE35						80	40	19			
		39 - 40										
39	CORE36						77	25	0			
										END OF BORING	-16.67	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.53m below the existing ground level i.e. at R.L. +11.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B03**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.36DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,654.08** E **480,618.96**

Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	8	9	17				Medium dense to dense becoming very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.36	
2	SPT3	2 - 2.45	11	11	22	33						
3	SPT4	3 - 3.37	15	25	25/7	>50						
4	SPT5	4 - 4.32	22	40	10/2	>50					20.36	
		4.32 - 5.32								Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.04	
5	CORE6						100	80	46	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially weathered, fractures are very closely to closely spaced.		
		5.32 - 6.5										
6	CORE7						99	68	21			
		6.5 - 8										
7	CORE8						97	63	37			
8		8 - 9.5									16.36	
	CORE9						52	44	7	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are very closely spaced.		
9		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.40m below the existing ground level i.e. at R.L. +11.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B03**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.36DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,654.08** E **480,618.96**

Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						45	5	0	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are very closely spaced.	14.36	
11	SPT11	11 - 11.17	25/7	100/10	-	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.36	
		11.17 - 12.5					57	26	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	13.19	
12	CORE12											
		12.5 - 13.5					39	0	0			
13	CORE13											
	SPT14	13.5 - 13.72	25/8	85	15/1	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.86	
		13.72 - 14.72					79	25	10	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	10.64	
14	CORE15											
		14.72 - 15.92					41	5	0			
15	CORE16											
16	SPT17	15.92 - 16.1	25/8	100/10	-	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.44	
		16.1 - 17.5					84	11	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, Gravels are subangular medium to fine matrix is silty, distinctly weathered, fractures are very closely spaced.	8.26	
17	CORE18											
		17.5 - 18.5					71	6	0			
18	CORE19											
		18.5 - 19.5					83	66	33			
19	CORE20											
		19.5 - 21								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	5.12	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.40m below the existing ground level i.e. at R.L. +11.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B03**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.36DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**	N **2,761,654.08** E **480,618.96**
Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE21						45	10	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	4.36	
21	SPT22	21 - 21.15	25/5	100/10	-	>100					3.36	
		21.15 - 22.15								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.21	
	CORE23						69	18	11	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
22		22.15 - 22.65										
	CORE24						44	8	0			
	SPT25	22.65 - 22.8	25/5	100/10	-	>100					1.71	
		22.8 - 24.3								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.56	
23	CORE26						65	45	25	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
24		24.3 - 25.5										
25	CORE27						78	25	11			
		25.5 - 27										
26	CORE28						77	35	0			
27		27 - 28										
	CORE29						81	25	19			
28		28 - 29.5										
	CORE30						70	33	10			
29		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.40m below the existing ground level i.e. at R.L. +11.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B03**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.36DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,654.08** E **480,618.96**

Date Started: **21/06/2015** Date Finished: **24/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE31						68	45	20	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-5.64	
31		31 - 32.5										
	CORE32						78	51	25			
32		32.5 - 34										
33	CORE33						84	26	0			
34		34 - 35										
	CORE34						66	36	19			
35		35 - 36.5										
	CORE35						74	45	28			
36		36.5 - 38										
37	CORE36						71	25	14			
38		38 - 39										
	CORE37						81	33	29			
39		39 - 40										
	CORE38						69	29	0			
40										END OF BORING	-15.44	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.40m below the existing ground level i.e. at R.L. +11.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B04**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.69DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,807.25** E **480,695.18**

Date Started: **20/06/2015** Date Finished: **23/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	14	23	37				Dense, light brown, gravelly, slightly silty to silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.69	
2	SPT3	2 - 2.45	15	19	28	47						
3	SPT4	3 - 3.45	19	18	26	44						
4	SPT5	4 - 4.45	17	20	27	47						
5	SPT6	5 - 5.18	25/8	50/10	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.69	
6	SPT7	6 - 6.15	25/5	50/10	-	>50						
7	CORE8	6.15 - 7.5					66	52	37	Very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	17.54	
8	CORE9	7.5 - 9					61	23	13	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	16.19	
9	CORE10	9 - 10					60	30	12	Weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with silt.	14.69	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.32m below the existing ground level i.e. at R.L. +11.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B04**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

Ground Level (m): **+23.69DMD**

Coordinates: N **2,761,807.25** E **480,695.18**

Date Started: **20/06/2015** Date Finished: **23/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with silt.	13.69	
11	CORE11						47	5	0			
	SPT12	11.5 - 11.82	25/9	60	40/8	>100				Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.19	
		11.82 - 13									11.87	
12	CORE13						100	58	39	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
13		13 - 14.5										
14	CORE14						39	10	0			
	SPT15	14.5 - 14.75	25/7	68	32/3	>100				Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.19	
		14.75 - 16.25									8.94	
15	CORE16						48	11	0	Weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with silt.		
16	SPT17	16.25 - 16.49	25/6	80	20/3	>100				Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.44	
		16.49 - 17.99									7.20	
17	CORE18						76	60	33	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
18		17.99 - 19.49										
19	CORE19						61	31	25			
		19.49 - 20.49										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.32m below the existing ground level i.e. at R.L. +11.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B04**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.69DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,807.25** E **480,695.18**

Date Started: **20/06/2015** Date Finished: **23/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE20						29	0	0	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.	3.69	
	SPT21	20.49 - 20.74	25/7	72	28/3	>100				Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.20	
		20.74 - 22.24									2.95	
21	CORE22						78	49	22	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
22		22.24 - 23.74										
23	CORE23						66	28	19			
		23.74 - 25.25										
24	CORE24						19	0	0			
25	SPT25	25.25 - 25.46	25/6	100	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.56	
		25.46 - 26.96									-1.77	
26	CORE26						79	41	19	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
27		26.96 - 28-										
	CORE27						28	0	0			
28	SPT28	28 - 28.24-	25/7	80	20/2	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.31	
		28.24 - 29.74									-4.55	
29	CORE29						84	25	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
		29.74 - 31.24										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.32m below the existing ground level i.e. at R.L. +11.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B04**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.69DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,807.25** E **480,695.18**

Date Started: **20/06/2015** Date Finished: **23/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE30						72	18	11	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-6.31	
31		31.24 - 32.74										
32	CORE31						65	13	0			
33		32.74 - 34.24										
34	CORE32						88	36	25			
35		34.24 - 35.5										
36	CORE33						75	26	19			
37		35.5 - 37 -										
38	CORE34						84	45	30			
39		37 - 38.5 -										
40	CORE35						79	22	10			
		38.5 - 40 -										
	CORE36						88	40	11	Extremely weak to very weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered to destructured, fractures are very close to closely spaced.	-15.06	
										END OF BORING	-16.11	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.32m below the existing ground level i.e. at R.L. +11.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B05**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.11DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,865.68** E **480,568.38**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	11	16	27				Medium dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	20.11	
2	SPT3	2 - 2.45	3	11	24	35				Dense, light brown, gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine rock fragments.	19.11	
3	SPT4	3 - 3.27	25	50/12	-	>50				Very dense, light brown, very gravelly, silty, medium SAND. Gravels are subangular medium to fine rock fragments.	18.11	
4	SPT5	4 - 4.25	25/10	50	-	>50						
		4.25 - 5.5								Received as concrete pieces.	16.86	
5	CORE6						45	13	0			
		5.5 - 6.5								Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	15.61	
6	CORE7						50	14	0			
		6.5 - 8								Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely bound and interbedded with cemented silt.	14.61	
7	CORE8						63	50	29			
8		8 - 9.5										
9	CORE9						55	37	35			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.17m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B05**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.11DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,865.68** E **480,568.38**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						39	11	0	Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely bound and interbedded with cemented silt.	11.11	
11	SPT11	11 - 11.2	25/8	100/12	-	>100					10.11	
		11.2 - 12.2								Brown, slightly silty, gravelly, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	9.91	
	CORE12						87	35	15	Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely bound and interbedded with cemented silt.		
12		12.2 - 13.7										
13	CORE13						78	29	0			
		13.7 - 15										
14	CORE14						44	10	0			
15	SPT15	15 - 15.17	25/8	100/9	-	>100					6.11	
		15.17 - 16.17								Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.94	
	CORE16						39	8	0	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
16	SPT17	16.17 - 16.34	25/7	100/10	-	>100					4.94	
		16.34 - 17.34								Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.77	
	CORE18						64	45	23	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
17		17.34 - 18.84										
18	CORE19						67	25	11			
		18.84 - 20.34										
19	CORE20						71	33	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.17m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B05**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.11DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,865.68** E **480,568.38**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20.34 - 21.84								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.	1.11	
21	CORE21						33	11	0			
22	SPT22	21.84 - 22	25/7	100/9	-	>100				Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.73	
		22 - 23									-0.89	
	CORE23						87	25	0	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
23		23 - 24.5										
24	CORE24						65	45	18			
		24.5 - 26										
25	CORE25						74	25	5			
26		26 - 27.5										
	CORE26						54	33	0			
27		27.5 - 29										
28	CORE27						29	0	0			
29	SPT28	29 - 29.2	25/8	100/12	-	>100				Very dense, offwhite silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.89	
		29.2 - 30.2									-8.09	
	CORE29						74	25	14	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.17m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B05**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.11DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,761,865.68** E **480,568.38**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.	-8.89	
		30.2 - 31.7										
31	CORE30						66	21	10			
		31.7 - 33.2										
32	CORE31						74	45	29			
33		33.2 - 34.7										
34	CORE32						76	22	15			
		34.7 - 36										
35	CORE33						68	11	8			
36		36 - 37.5										
	CORE34						69	0	0			
37												
		37.5 - 39										
38	CORE35						51	18	11			
39		39 - 40										
	CORE36						55	0	0			
40										END OF BORING	-18.69	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.17m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B06**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		Sheet: **1/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.11DMD**
Boring Diameter:	**125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**		Coordinates:
Equipment:	**Mobile 53-1** Core Diameter (mm): **76.0**		N **2,761,899.79** E **480,784.35**
Date Started:	**15/06/2015** Date Finished: **19/06/2015**	Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	17	26	43				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.11	
2	SPT3	2 - 2.18	25/7	50/11	-	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	24.11	
3	SPT4	3 - 3.14	25/4	50/10	-	>50						
4	CORE5	3.15 - 4.5					100	59	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	22.96	
5	CORE6	4.5 - 6					28	10	0	Very weak to weak, brown, medium to fine grained, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are extremely close to closely spaced.	21.61	
6	SPT7	6 - 6.24	25/7	82	18/2	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	20.11	
		6.24 - 7.24									19.87	
7	CORE8	7.24 - 8.5					91	65	43	Very weak to weak, brown, medium to fine grained, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are extremely close to closely spaced.		
8	CORE9	8.5 - 10					100	74	52			
9	CORE10						93	83	59			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +10.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B06**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.11DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment:	**Mobile 53-1**	Core Diameter (mm): **76.0**	N **2,761,899.79** E **480,784.35**
Date Started:	**15/06/2015**	Date Finished: **19/06/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak to weak, brown, medium to fine grained, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are extremely close to closely spaced.	16.11	
	CORE11						98	90	79			
11		11.5 - 13										
	CORE12						92	81	58			
12												
13		13 - 14.5								Extremely weak to very weak, offwhite conglomeratic SILTSTONE, distinctly weathered to destructured, extremely close to medium spaced.	13.11	
	CORE13						78	56	17			
14		14.5 - 16										
	CORE14						39	0	0			
15												
16	SPT15	16 - 16.22	25/7	100	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.11	
		16.22 - 17.5								Extremely weak to very weak, offwhite conglomeratic SILTSTONE, distinctly weathered to destructured, extremely close to medium spaced.	9.89	
	CORE16						97	57	45			
17		17.5 - 19									8.61	
	CORE17						65	20	18	Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced, and interbedded with silty gravel.		
18												
19		19 - 20										
	CORE18						95	38	20			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +10.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B06**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.11DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,899.79** E **480,784.35**

Date Started: **15/06/2015** Date Finished: **19/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21								Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced, and interbedded with silty gravel.	6.11	
	CORE19						97	50	11			
21		21 - 22.5										
	CORE20						28	7	0			
22												
	SPT21	22.5 - 22.74	25/6	80	20/3	>100					3.61	
		22.74 - 24								Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.37	
23	CORE22						100	63	30	Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced, and interbedded with silty gravel.		
24		24 - 25.5										
	CORE23						59	19	17			
25												
		25.5 - 27										
26	CORE24						84	45	11			
27		27 - 28.5										
	CORE25						79	25	0			
28												
		28.5 - 30										
29	CORE26						66	35	19			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +10.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B06**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.11DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,899.79** E **480,784.35**

Date Started: **15/06/2015** Date Finished: **19/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced, and interbedded with silty gravel.	-3.89	
	CORE27						84	45	25			
31		31.5 - 33										
	CORE28						79	25	11			
32												
33		33 - 34										
	CORE29						91	36	24			
34		34 - 35.5										
	CORE30						84	25	0			
35												
		35.5 - 36.5										
36	CORE31						87	46	19			
		36.5 - 38										
37	CORE32						76	44	22			
38		38 - 39										
	CORE33						66	31	11			
39		39 - 40										
	CORE34						71	28	18			
40										END OF BORING	-13.69	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +10.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B07**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+19.77DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,762,025.95** E **480,645.13**
Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	9	10	10	20				Medium dense to dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine rock fragments.	18.77	
2	SPT3	2 - 2.45	13	16	20	36						
3	SPT4	3 - 3.33	20	36	14/3	>50				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	16.77	
4	SPT5	4 - 4.18	25/8	50/10	-	>50						
		4.2 - 5.7								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are very close to closely spaced.	15.57	
5	CORE6						59	18	9			
		5.7 - 7										
6	CORE7						68	55	31			
										Weak to medium strong, offwhite, calcareous SILTSTONE, partially weathered, fractures are very closely to medium spaced.	12.97	
7		7 - 8										
	CORE8						89	71	41			
8		8 - 9.5										
	CORE9						93	73	51			
9												
		9.5 - 11									10.27	
10										Weak to medium strong, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially weathered, fractures are very closely		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.17m below the existing ground level i.e. at R.L. +10.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B07**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.77DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,762,025.95** E **480,645.13**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					67	47	21	to medium spaced. Weak to medium strong, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially weathered, fractures are very closely to medium spaced.	9.77	
11	CORE11	12.5 - 14					65	34	18			
12	CORE12	14 - 15.5					66	44	33			
13	CORE13	15.5 - 17					67	67	66			
14	CORE14	17 - 18.5					65	61	43			
15	CORE15	18.5 - 20					66	61	43			
16	CORE16						63	57	57			
17												
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.17m below the existing ground level i.e. at R.L. +10.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B07**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.77DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,762,025.95** E **480,645.13**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Weak to medium strong, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially weathered, fractures are very closely to medium spaced.	-0.23	
21	CORE17						60	53	51			
		21.5 - 23										
22	CORE18						60	45	32			
23		23 - 24										
	CORE19						60	10	0			
24		24 - 25.5								Extremely weak to very weak, offwhite conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silt.	-4.23	
	CORE20						64	15	0			
25												
		25.5 - 27										
26	CORE21						58	28	21			
27		27 - 28.5										
	CORE22						60	22	9			
28												
		28.5 - 30										
29	CORE23						78	45	10	Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially weathered, fractures are very closely to medium spaced.	-8.73	
30												

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B07**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.77DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,762,025.95** E **480,645.13**

Date Started: **16/06/2015** Date Finished: **20/06/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially weathered, fractures are very closely to medium spaced.	-10.23	
	CORE24						84	25	11			
31		31.5 - 33										
	CORE25						65	33	26			
32												
		33 - 34.5										
33	CORE26						77	45	33			
34		34.5 - 36										
	CORE27						84	25	11			
35												
		36 - 37.5										
36	CORE28						76	22	5			
37		37.5 - 39										
	CORE29						68	33	0			
38												
		39 - 40										
39	CORE30						81	18	11			
										END OF BORING	-20.03	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.17m below the existing ground level i.e. at R.L. +10.60m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C01**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.10DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,083.80** E **480,766.19**
Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	10	14	24				Medium dense to dense, light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.10	
2	SPT3	2 - 2.45	6	10	14	24						
3	SPT4	3 - 3.45	12	16	20	36						
4	SPT5	4 - 4.42	16	20	30/12	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.10	
5	SPT6	5 - 5.25	25/10	50	-	>50				Very dense, brown, very gravelly, silty, SAND. Gravels are subangular medium to fine rock fragments.	15.10	
		5.25 - 6.75									14.87	
6	CORE7						44	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT8	6.75 - 7.02	25	67	33/5	>100					13.35	
7		7.02 - 8								Very dense, brown, slightly gravelly, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	13.08	
	CORE9						62	37	12	Weak to medium strong, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with silt.		
8		8 - 9.5										
	CORE10						36	11	0			
9												
	SPT11	9.5 - 9.77	25/6	66	34/6	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.60	
		9.77 - 10.77									10.33	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +10.90m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C01**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.10DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,083.80** E **480,766.19**
Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE12						48	12	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with silt.		
	SPT13	10.77 - 11.02	25/5	68	32/5	>100					9.33	
11		11.02 - 12.5								Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.08	
	CORE14						83	63	44	Weak to medium strong, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with silt.		
12		12.5 - 13.5										
13	CORE15						98	94	78			
		13.5 - 15									6.60	
14	CORE16						63	57	53	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE interbedded with conglomeratic siltstone, partially weathered, fractures are very close to closely spaced and interbedded with cemented sand.		
15		15 - 16.5										
	CORE17						56	56	40			
16		16.5 - 18										
17	CORE18						61	35	9			
		18 - 19.5										
18	CORE19						50	22	14			
19		19.5 - 21										
20												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C01**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.10DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76.0**

N **2,762,083.80** E **480,766.19**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE20						39	8	0	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE interbedded with conglomeratic siltstone, partially weathered, fractures are very close to closely spaced and interbedded with cemented sand.	0.10	
21	SPT21	21 - 21.26	25/6	77	23/5	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.90	
		21.26 - 22.76									-1.16	
22	CORE22						66	25	0	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE interbedded with conglomeratic siltstone, partially weathered, fractures are very close to closely spaced and interbedded with cemented sand.		
		22.76 - 24										
23	CORE23						33	0	0			
24	SPT24	24 - 24.18	25/5	100/13	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	-3.90	
		24.18 - 25.5									-4.08	
25	CORE25						58	0	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		25.5 - 27										
26	CORE26						39	9	9			
27	SPT27	27 - 27.16	25/5	100/11	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	-6.90	
		27.16 - 27.6									-7.06	
	CORE28						100	46	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		27.6 - 29.1										
28	CORE29						85	47	10			
29		29.1 - 30.6										
30	CORE30						65	47	33			

REMARKS:

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SAMPLE KEY

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- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C01**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		Sheet: **4/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+20.10DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76.0**	N **2,762,083.80** E **480,766.19**
Date Started:	**11/06/2015**	Date Finished: **20/06/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Very weak, brown/ offwhite, conglomeratic SILTSTONE distinctly weathered to destructured, fractures are extremely close to closely spaced.	-9.90	
		30.6 - 32.1										
31	CORE31						52	11	0			
32		32.1 - 33.6										
33	CORE32						29	5	0			
	SPT33	33.6 - 33.77	25/5	100/12	-	>100				Very dense, offwhite slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.50	
		33.77 - 35.27								Weak to medium strong, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-13.67	
34	CORE34						52	29	21			
35		35.27 - 36.27										
	CORE35						36	0	0			
36	SPT36	36.27 - 36.45	25/6	100/12	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.17	
		36.45 - 37.45								Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.	-16.35	
37	CORE37						78	45	14			
		37.45 - 38.95										
38	CORE38						54	33	25			
39		38.95 - 40.45										
	CORE39						65	25	11			
40												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C01**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.10DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76.0**

N **2,762,083.80** E **480,766.19**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.	-19.90	
		40.45 - 41.95										
41	CORE40						78	32	18			
42		41.95 - 43								Very weak to weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	-21.85	
	CORE41						65	25	0			
43		43 - 44.5										
	CORE42						51	34	10			
44												
		44.5 - 46										
45	CORE43						55	45	11			
46		46 - 47.5										
	CORE44						68	33	22			
47												
		47.5 - 48.5										
48	CORE45						78	25	16			
		48.5 - 50										
49	CORE46						81	11	0			
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +10.90m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C01**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.10DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76.0**

N **2,762,083.80** E **480,766.19**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Very weak to weak, light brown/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	-29.90	
	CORE47						58	25	15			
51		51.5 - 52.5										
	CORE48						78	30	11			
52		52.5 - 54										
	CORE49						81	22	5			
53												
		54 - 55										
54	CORE50						74	11	0			
		55 - 56.5										
55	CORE51						81	19	11			
56		56.5 - 58										
	CORE52						77	22	16			
57												
		58 - 59										
58	CORE53						88	19	10			
		59 - 60										
59	CORE54						79	11	0			
										END OF BORING	-39.70	
60												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +10.90m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C03**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+18.04DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,139.95** E **480,655.34**

Date Started: **17/06/2015** Date Finished: **25/06/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	17	25	42				Dense, light brown, slightly silty, medium to fine SAND.	17.04	
2	SPT3	2 - 2.45	14	18	24	42				Dense, brown, very gravelly, silty, gypsiferous SAND. Gravels are subangular medium to fine rock fragments.	16.04	
3	SPT4	3 - 3.29	24	50/14	-	>50				Very dense, brown, very gravelly, silty, coarse SAND. Gravels are subangular medium to fine rock fragments.	15.04	
4	SPT5	4 - 4.19	25/7	50/12	-	>50						
	CORE6	4.2 - 5.2					33	11	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	13.84	
5	SPT7	5.2 - 5.48	25/7	70	30/5	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	12.84	
	CORE8	5.48 - 6.8					47	8	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	12.56	
6	SPT9	6.8 - 7.19	25/5	83	17/1	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	11.24	
7	CORE10	7.19 - 8.19					25	12	10	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are closely spaced. ▼	10.85	
8	SPT11	8.19 - 8.41	25/6	80	20/7	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.85	
	CORE12	8.41 - 9.5					41	5	0	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are closely spaced.	9.63	
9	SPT13	9.5 - 9.7	25/4	88	12/1	>100					8.54	
		9.7 - 10.7								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.34	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.50m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C03**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+18.04DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,139.95** E **480,655.34**

Date Started: **17/06/2015** Date Finished: **25/06/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE14						20	0	0	Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced .		
	SPT15	10.7 - 10.95	25/4	100/14	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.34	
11		10.95 - 12.45								Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to medium spaced.	7.09	
	CORE16						90	77	63			
12		12.45 - 13.95										
13	CORE17						91	84	78			
14		13.95 - 15.45										
	CORE18						37	0	0			
15	SPT19	15.45 - 15.65	25/5	100	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.59	
		15.65 - 17-								Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to medium spaced.	2.39	
16	CORE20						46	11	0			
17	SPT21	17 - 17.17	25/4	100/13	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.04	
		17.17 - 17.6									0.87	
	CORE22						100	57	28	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
		17.6 - 18.6										
18	CORE23						70	43	0			
		18.6 - 20 -										
19	CORE24						17	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.50m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C03**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+18.04DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,139.95** E **480,655.34**

Date Started: **17/06/2015** Date Finished: **25/06/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT25	20 - 20.16	25/4	100/12	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.96	
		20.16 - 21.6									-2.12	
21	CORE26						31	21	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
	SPT27	21.6 - 21.81	25/5	100/16	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.56	
		21.81 - 23.1									-3.77	
22	CORE28						41	11	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
23	SPT29	23.1 - 23.24	25/3	100/11	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.06	
		23.24 - 24.5									-5.20	
24	CORE30						72	0	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
		24.5 - 26									-6.46	
25	CORE31						60	20	13	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with cemented sand.		
26		26 - 27.5										
27	CORE32						61	17	0			
		27.5 - 28.5										
28	CORE33						80	30	0			
		28.5 - 29.5										
29	CORE34						30	0	0			
	SPT35	29.5 - 29.69	25/4	100	-	>100				Very dense, offwhite, silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.46	
		29.69 - 31									-11.65	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.50m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C03**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+18.04DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,139.95** E **480,655.34**

Date Started: **17/06/2015** Date Finished: **25/06/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE36						84	15	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
31		31 - 32.5										
32	CORE37						20	19	17			
	SPT38	32.5 - 32.78	25/9	75	25/4	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces and rock fragments.	-14.46	
		32.78 - 33.78									-14.74	
33	CORE39						40	8	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
	SPT40	33.78 - 34.06	25/8	71	29/5	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces and rock fragments.	-15.74	
34		34.06 - 35.06									-16.02	
	CORE41						35	11	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
35	SPT42	35.06 - 35.35	25/8	70	30/5	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces and rock fragments.	-17.02	
		35.35 - 36.85									-17.31	
36	CORE43						59	31	14	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
		36.85 - 38.35										
37	CORE44						60	35	27			
38		38.35 - 39.85										
39	CORE45						23	0	0			
		39.85 - 40.18	25/10	59	41/8	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are	-21.81	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.50m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C03**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+18.04DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76.0**	N **2,762,139.95** E **480,655.34**
Date Started: **17/06/2015** Date Finished: **25/06/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	SPT46	40.18 - 41.18								subangular medium to fine siltstone pieces and rock fragments.	-22.14	
41	CORE47						78	40	32	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
		41.18 - 42.18										
42	CORE48						84	49	21			
		42.18 - 43.68									-24.14	
43	CORE49						65	62	53	Very weak to weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
		43.68 - 45.18										
44	CORE50						65	40	0			
45		45.18 - 46.68										
46	CORE51						65	49	32			
		46.68 - 48.18										
47	CORE52						62	48	26			
48		48.18 - 49.68										
49	CORE53						65	47	30			
		49.68 - 50.68									-31.64	
50										Very weak to weak, light brown/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.50m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C03**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **6/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+18.04DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76.0**	N **2,762,139.95** E **480,655.34**
Date Started: **17/06/2015** Date Finished: **25/06/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE54						60	55	35	are very closely to medium spaced.	-31.96	
		50.68 - 52.18								Very weak to weak, light brown/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.		
51	CORE55						55	42	46			
52		52.18 - 53.68										
53	CORE56						66	50	37			
		53.68 - 55.18										
54	CORE57						70	67	57			
55		55.18 - 56.68										
56	CORE58						57	53	50			
		56.68 - 57.18										
57	CORE59						66	25	23			
		57.18 - 58.68										
58	CORE60						93	78	75			
		58.68 - 60-										
59	CORE61						66	59	49			
60										END OF BORING	-41.76	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.50m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C05**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.74DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76.0**	N **2,762,047.70** E **480,824.07**
Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	15	15	19	34				Dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.74	
2	SPT3	2 - 2.29	25/11	38	12/3	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.74	
3	SPT4	3 - 3.23	25/10	50/13	-	>50				Very dense, light brown, silty, fine SAND.	17.74	
4	SPT5	4 - 4.32	23	44	6/2	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.74	
5	SPT6	5 - 5.22	24/9	50/13	-	>50						
6												
	SPT7	6.5 - 6.71	25/8	50/13	-	>50						
		6.71 - 8									14.03	
7	CORE8						55	34	0	Weak to medium strong, brown/ offwhite, calcareous CONGLOMERATE interbedded with sandstone, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to medium spaced and interbedded with silty gravel.		
8		8 - 9										
	CORE9						90	66	33			
9		9 - 10.5										
	CORE10						72	58	47			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.00m below the existing ground level i.e. at R.L. +10.74m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C05**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.74DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76.0**	N **2,762,047.70** E **480,824.07**
Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Weak to medium strong, brown/ offwhite, calcareous CONGLOMERATE interbedded with sandstone, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to medium spaced and interbedded with silty gravel.	10.74	
		10.5 - 12										
11	CORE11						62	47	38			
										Weak to medium strong, light brown, calcareous SILTSTONE, partially weathered, fractures are closely to widely spaced.	9.04	
12		12 - 13.5										
	CORE12						94	80	66			
13												
		13.5 - 15										
14	CORE13						88	84	84			
15		15 - 16.5								Very weak, offwhite/ light brown, calcareous SILTSTONE interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	5.74	
	CORE14						100	75	56			
16												
		16.5 - 18										
17	CORE15						66	36	36			
18		18 - 19.5										
	CORE16						88	55	29			
19												
		19.5 - 20.5										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.00m below the existing ground level i.e. at R.L. +10.74m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C05**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.74DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,047.70** E **480,824.07**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE17						58	12	0	Very weak, offwhite/ light brown, calcareous SILTSTONE interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	0.74	
		20.5 - 21									0.24	
	CORE18						100	30	11	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
21		21 - 22.5										
	CORE19						55	33	7			
22												
		22.5 - 23										
	CORE20						92	28	28			
23		23 - 24.5										
	CORE21						65	8	0			
24												
		24.5 - 25										
	CORE22						64	46	29			
25		25 - 26.5										
	CORE23						99	71	31			
26												
		26.5 - 28										
27	CORE24						22	13	0			
28		28 - 29										
	CORE25						77	55	32			
29		29 - 30										
	CORE26						39	8	0			
30												

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
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- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C05**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.74DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,047.70** E **480,824.07**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT27	30 - 30.16	25/4	100/12	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-9.26	
		30.16 - 31.16									-9.42	
	CORE28						58	11	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are very close to closely spaced.		
31		31.16 - 32.16										
	CORE29						36	0	0			
32	SPT30	32.16 - 32.41	25/9	89	11/1	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-11.42	
		32.41 - 33.41									-11.66	
33	CORE31						51	14	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are very close to closely spaced.		
		33.41 - 34.41										
34	CORE32						22	5	0			
	SPT33	34.41 - 34.56	25/3	100/12	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-13.67	
		34.56 - 35.56									-13.82	
35	CORE34						36	11	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are very closely to very closely spaced.		
	SPT35	35.56 - 35.68	25/2	100/10	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-14.82	
		35.68 - 36.68									-14.94	
36	CORE36						45	5	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are very closely to very closely spaced.		
	SPT37	36.68 - 36.81	25/2	100/11	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-15.94	
		36.81 - 37.81									-16.07	
37	CORE38						67	10	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are very closely to very closely spaced.		
		37.81 - 39										
38	CORE39						50	22	22			
39		39 - 40										
	CORE40						41	11	0			
40												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C05**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.74DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,047.70** E **480,824.07**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	SPT41	40 - 40.25	25/5	69	31/5	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-19.26	
		40.25 - 41.25									-19.51	
	CORE42						38	10	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are very closely to very closely spaced.		
41	SPT43	41.25 - 41.47	25/4	75	25/3	>50				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-20.51	
		41.47 - 42.5									-20.73	
42	CORE44						67	48	14	Very weak to weak, brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
		42.5 - 43.5										
43	CORE45						65	38	34			
		43.5 - 45									-22.76	
44	CORE46						87	29	0	Very weak to weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
45		45 - 46										
	CORE47						74	25	11			
46		46 - 47										
	CORE48						65	33	25			
47		47 - 48.5										
	CORE49						78	34	11			
48		48.5 - 50										
49	CORE50						74	41	0			
50												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C05**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.74DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,047.70** E **480,824.07**

Date Started: **11/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Very weak to weak, light brown/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	-29.26	
51	CORE51						58	22	22			
		51.5 - 52.5										
52	CORE52						65	35	29			
		52.5 - 54										
53	CORE53						78	10	0			
54		54 - 55.5										
	CORE54						84	25	0			
55												
		55.5 - 57										
56	CORE55						77	29	15			
57		57 - 58.5										
	CORE56						65	25	11			
58												
		58.5 - 60										
59	CORE57						59	11	0			
										END OF BORING	-39.06	
60												

REMARKS:

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* Ground water table was encountered at a depth of 10.00m below the existing ground level i.e. at R.L. +10.74m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C07**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.75DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,761,992.07** E **480,855.68**
Date Started: **15/06/2015** Date Finished: **23/06/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	11	23	25	48				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.75	
2	SPT3	2 - 2.45	7	12	21	33						
3	SPT4	3 - 3.45	8	10	14	24						
4	SPT5	4 - 4.45	8	13	28	41						
5	SPT6	5 - 5.15	25/7	50/8	-	>50				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments and occasional gypsum crystals.	16.75	
6												
	SPT7	6.5 - 6.65	25/9	50/6		>50						
		6.65 - 7.65								Very weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced.	15.10	
7	CORE8						45	31	14			
	SPT9	7.65 - 7.75	25/5	100/6	-	>100					14.10	
		7.75 - 9.25								Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	14.00	
8	CORE10						66	43	19	Very weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced.		
9		9.25 - 10.75								Weak to medium strong, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially to distinctly weathered, fractures are very close to closely spaced.	12.50	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.30m below the existing ground level i.e. at R.L. +10.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
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		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C07**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.75DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,761,992.07** E **480,855.68**

Date Started: **15/06/2015** Date Finished: **23/06/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11	10.75 - 12.25					66	43	18	Weak to medium strong, offwhite, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially to distinctly weathered, fractures are very close to closely spaced.	11.75	
11	CORE12	12.25 - 13.6					66	60	30			
12	CORE13	13.6 - 15.1					71	62	18			
13	CORE14	15.1 - 16.6					60	51	40			
14	CORE15	16.6 - 18.1					63	57	40			
15	CORE16	18.1 - 19.6					63	41	30			
16	CORE17	19.6 - 19.83					40	12	0			
17	SPT18	19.83 - 21	25/8	100	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.15 1.92	
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.30m below the existing ground level i.e. at R.L. +10.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C07**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.75DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,761,992.07** E **480,855.68**

Date Started: **15/06/2015** Date Finished: **23/06/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19						48	26	18	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
21	SPT20	21 - 21.18	25/5	100/13	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.75	
		21.18 - 22.2									0.57	
	CORE21						39	5	0	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
22	SPT22	22.2 - 22.41	25/6	100	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.45	
		22.41 - 23.5									-0.66	
23	CORE23						57	28	0	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
		23.5 - 25										
24	CORE24						63	41	31			
25		25 - 26.5									-3.25	
	CORE25						53	35	24	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very closely to closely spaced.		
26		26.5 - 28									-4.75	
27	CORE26						69	35	20	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
28		28 - 29.5										
	CORE27						20	16	0			
29	SPT28	29.5 - 29.7	25/5	100	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.75	
		29.7 - 31									-7.95	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.30m below the existing ground level i.e. at R.L. +10.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C07**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **4/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.75DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,761,992.07** E **480,855.68**
Date Started: **15/06/2015** Date Finished: **23/06/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE29						33	5	0	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
31	SPT30	31 - 31.21	25/6	100	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.25	
		31.21 - 32.5									-9.46	
32	CORE31						52	15	0	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
		32.5 - 34										
33	CORE32						20	13	9			
34	SPT33	34 - 34.2	25/7	100/13	-	>100				Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.25	
		34.2 - 35.5									-12.45	
35	CORE34						74	71	69	Very weak to weak, brown/ offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to closely spaced.		
		35.5 - 37										
36	CORE35						65	57	53			
37		37 - 38.5										
	CORE36						64	49	45			
38												
		38.5 - 40										
39	CORE37						65	61	59			
40												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C07**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.75DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,761,992.07** E **480,855.68**
Date Started: **15/06/2015** Date Finished: **23/06/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40		40 - 41.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to closely spaced.	-18.25	
	CORE38						57	27	13			
41		41.5 - 43								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.	-19.75	
42	CORE39						64	53	23			
43		43 - 44.5										
	CORE40						65	51	19			
44		44.5 - 46										
45	CORE41						60	37	16			
46		46 - 47.5										
	CORE42						64	48	28			
47		47.5 - 49										
48	CORE43						65	43	41			
49		49 - 50.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to medium spaced.	-27.25	
	CORE44						61	54	27			
50												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C07**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.75DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,761,992.07** E **480,855.68**

Date Started: **15/06/2015** Date Finished: **23/06/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50										Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to medium spaced.	-28.25	
		50.5 - 52										
51	CORE45						61	57	53			
52		52 - 53.5										
	CORE46						61	59	39			
53												
		53.5 - 55										
54	CORE47						60	53	41			
55		55 - 56.5										
	CORE48						92	39	35			
56												
		56.5 - 58									-34.75	
57	CORE49						62	56	45	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.		
58		58 - 59										
	CORE50						92	30	14			
59		59 - 60										
	CORE51						95	38	38			
60										END OF BORING	-38.05	

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C09**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+22.38DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,761,961.18** E **480,881.42**
Date Started: **15/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	14	24	22	46				Dense to medium dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.38	
2	SPT3	2 - 2.45	7	9	12	21						
3	SPT4	3 - 3.45	6	13	27	40				Dense, light brown, very gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.38	
4	SPT5	4 - 4.09	25/4	50/5	-	>50				Very dense locally medium dense, light brown, gravelly, very silty, fine SAND. Gravels are subangular medium to fine rock fragments.	18.38	
5	SPT6	5 - 5.45	8	10	12	22						
6												
7	SPT7	6.5 - 6.63	28/9	50/4	-	>50				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	15.88	
		6.63 - 8									15.75	
	CORE8						81	64	46	Weak to medium strong, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are very close to widely spaced.		
8		8 - 9.5										
	CORE9						71	40	23			
9		9.5 - 11										
10												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C09**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		Sheet: **2/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+22.38DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76.0**	N **2,761,961.18** E **480,881.42**
Date Started:	**15/06/2015**	Date Finished: **20/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						89	67	27	Weak to medium strong, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, partially to distinctly weathered, fractures are very close to widely spaced.	12.38	
											11.68	
11		11 - 12.5								Very weak to weak, light brown, calcareous SILTSTONE locally interbedded with conglomeratic siltstone, partially to distinctly weathered, fractures are very closely to medium spaced.		
	CORE11						89	66	42			
12												
		12.5 - 14									9.88	
13	CORE12						100	91	85	Weak to medium strong, offwhite calcareous SILTSTONE, partially weathered, fractures are very closely to widely spaced.		
		14 - 15.5										
14	CORE13						65	60	53			
15												
		15.5 - 16.5										
16	CORE14						42	8	0			
	SPT15	16.5 - 16.76	25/8	74	26/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.88	
		16.76 - 17.76									5.62	
17	CORE16						33	11	0	Weak to medium strong, offwhite calcareous SILTSTONE, partially weathered, fractures are very closely to widely spaced.		
	SPT17	17.76 - 18.02	25/9	81	19/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.62	
18		18.02 - 19.52									4.36	
	CORE18						52	12	0	Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
19												
		19.52 - 21.02										
20												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C09**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.38DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,761,961.18** E **480,881.42**

Date Started: **15/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19						61	8	0	Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	2.38	
21		21.02 - 22.02									1.36	
	CORE20						60	32	21	Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
22		22.02 - 23.02										
	CORE21						70	30	18			
23		23.02 - 24.02										
	CORE22						35	0	0			
24	SPT23	24.02 - 24.2	25/9	100/9	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.64	
		24.2 - 25.2									-1.82	
	CORE24						74	45	15	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very closely to closely spaced.		
25		25.2 - 26.7										
26	CORE25						44	11	0			
	SPT26	26.7 - 26.84	25/6	100/8	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.32	
		26.84 - 27.84									-4.46	
27	CORE27						74	25	25	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
		27.84 - 29.34										
28	CORE28						68	35	11			
29		29.34 - 30.84										
30												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C09**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.38DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,761,961.18** E **480,881.42**

Date Started: **15/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE29						54	28	0	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.	-7.62	
		30.84 - 32.34										
31												
	CORE30						33	10	0			
32												
	SPT31	32.34 - 32.5	25/8	100/8	-	>100					-9.96	
		32.5 - 33.5								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.12	
33	CORE32						67	18	10	Very weak to weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silty gravel.		
		33.5 - 35										
34												
	CORE33						39	0	0			
35	SPT34	35 - 35.1	25/4	100/6	-	>100					-12.62	
		35.1 - 36.1								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.72	
	CORE35						57	34	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to closely spaced.		
36		36.1 - 37.6										
	CORE36						74	33	18			
37												
		37.6 - 39.1										
38												
	CORE37						65	45	25			
39												
		39.1 - 40.5										
	CORE38						81	25	11			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C09**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+22.38DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,761,961.18** E **480,881.42**
Date Started: **15/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Very weak to weak, brown/ offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to closely spaced.	-17.62	
		40.5 - 42										
41	CORE39						75	35	10			
42		42 - 43.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to medium spaced.	-19.62	
	CORE40						65	25	0			
43		43.5 - 44.5										
44	CORE41						77	24	18			
		44.5 - 46										
45	CORE42						68	35	0			
46		46 - 47.5										
	CORE43						74	11	0			
47												
		47.5 - 49										
48	CORE44						68	35	22			
49		49 - 50										
	CORE45						84	28	18			
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C09**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **6/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+22.38DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,761,961.18** E **480,881.42**
Date Started: **15/06/2015** Date Finished: **20/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.	-27.62	
	CORE46						87	35	29			
51		51.5 - 53										
	CORE47						65	44	33			
52												
53		53 - 54										
	CORE48						57	41	20			
54		54 - 55										
	CORE49						58	35	18			
55		55 - 56.5										
	CORE50						68	25	0			
56												
		56.5 - 58										
57	CORE51						78	28	16			
58		58 - 59										
	CORE52						81	33	5			
59		59 - 60										
	CORE53						77	48	11			
60										END OF BORING	-37.42	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C11**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.36DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76.0**	N **2,761,883.69** E **480,922.84**
Date Started: **20/06/2015** Date Finished: **25/06/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	10	15	21	36				Dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.36	
2	SPT3	2 - 2.27	25/11	47	3/1	>50				Very dense, light brown, very gravelly, slightly silty to silty, SAND. Gravels are subangular medium to fine sandstone pieces.	22.36	
3	SPT4	3 - 3.22	25/9	50/13	-	>50						
4	CORE5	3.3 - 4.8					62	51	21	Very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	21.06	
5	CORE6	4.8 - 6.3					63	57	14			
6												
7	CORE7	6.3 - 7.8					60	52	34			
8	CORE8	7.8 - 9.3					39	11	0			
9	SPT9	9.3 - 9.55	25/7	80	20/3	>100				Very dense, brown, slightly silty, coarse to medium SAND.	15.06	
		9.55 - 11								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30,	14.81	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.78m below the existing ground level i.e. at R.L. +11.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C11**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		Sheet: **2/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+24.36DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment:	**Mobile B-31**	Core Diameter (mm): **76.0**	N **2,761,883.69** E **480,922.84**
Date Started:	**20/06/2015**	Date Finished: **25/06/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					51	29	9	gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.		
11	CORE11	12.5 - 14					63	57	17			
12	CORE12	14 - 15.5					65	43	17	Extremely weak to very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	11.86 ▼	
13	CORE13	15.5 - 17					65	57	46			
14	CORE14	17 - 18.5					62	41	0			
15	CORE15	18.5 - 20					65	55	31			
16	CORE16						60	51	15			
17												
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.78m below the existing ground level i.e. at R.L. +11.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C11**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.36DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76.0**	N **2,761,883.69** E **480,922.84**
Date Started: **20/06/2015** Date Finished: **25/06/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with silt.	4.36	
	CORE17						47	23	0			
21	SPT18	21.5 - 21.7	25/8	100/12	-	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.86	
		21.7 - 23								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with silt.	2.66	
22	CORE19						58	33	19			
23		23 - 24.5										
	CORE20						53	35	33			
24												
		24.5 - 26										
25	CORE21						39	5	0			
26	SPT22	26 - 26.24	25/6	89	11/3	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.64	
		26.24 - 27.24								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with silt.	-1.88	
	CORE23						53	16	0			
27		27.24 - 28.74										
28	CORE24						65	45	15			
		28.74 - 30										
29	CORE25						78	32	10			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.78m below the existing ground level i.e. at R.L. +11.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C11**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**	Sheet: **4/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.36DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76.0**	N **2,761,883.69** E **480,922.84**
Date Started: **20/06/2015** Date Finished: **25/06/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to closely spaced.	-5.64	
	CORE26						88	25	0			
31		31.5 - 32.5										
	CORE27						74	32	0			
32		32.5 - 34										
	CORE28						65	25	15			
33												
34		34 - 34.5										
	CORE29						58	11	0			
		34.5 - 35.5										
35	CORE30						78	25	22			
		35.5 - 37										
36	CORE31						68	35	11			
37		37 - 38.5										
	CORE32						87	45	35			
38												
		38.5 - 39.5										
39	CORE33						78	32	25			
		39.5 - 41										
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.78m below the existing ground level i.e. at R.L. +11.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C11**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.36DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,761,883.69** E **480,922.84**

Date Started: **20/06/2015** Date Finished: **25/06/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE34						65	12	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very close to closely spaced.	-15.64	
41		41 - 42.5										
	CORE35						57	25	11			
42		42.5 - 44										
43	CORE36						58	32	19			
44		44 - 45.5									-19.64	
	CORE37						74	55	26	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.		
45		45.5 - 46.5										
46	CORE38						65	45	32			
		46.5 - 47.5										
47	CORE39						85	23	11			
		47.5 - 49										
48	CORE40						74	12	0			
49		49 - 50										
	CORE41						88	22	18			
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.78m below the existing ground level i.e. at R.L. +11.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C11**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.36DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,761,883.69** E **480,922.84**

Date Started: **20/06/2015** Date Finished: **25/06/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-1**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.	-25.64	
	CORE42						65	10	0			
51		51.5 - 52.5										
	CORE43						57	18	0			
52		52.5 - 54										
	CORE44						78	25	18			
53												
54		54 - 55										
	CORE45						66	35	14			
55		55 - 56.5										
	CORE46						85	11	0			
56												
		56.5 - 58										
57	CORE47						68	0	0			
58		58 - 59										
	CORE48						74	25	4			
59		59 - 60										
	CORE49						65	18	10			
60										END OF BORING	-35.44	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.78m below the existing ground level i.e. at R.L. +11.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

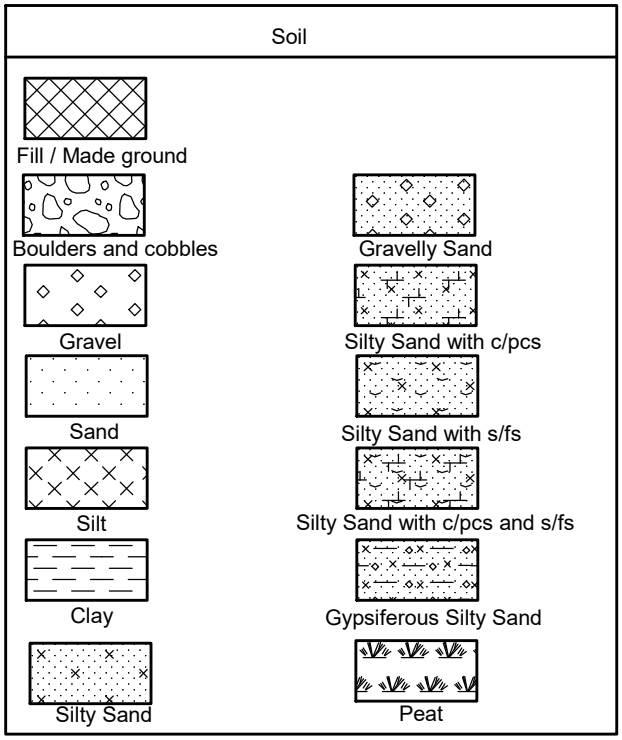
Checked By : ENGR. RABIH DAKWAR

APPENDIX B2

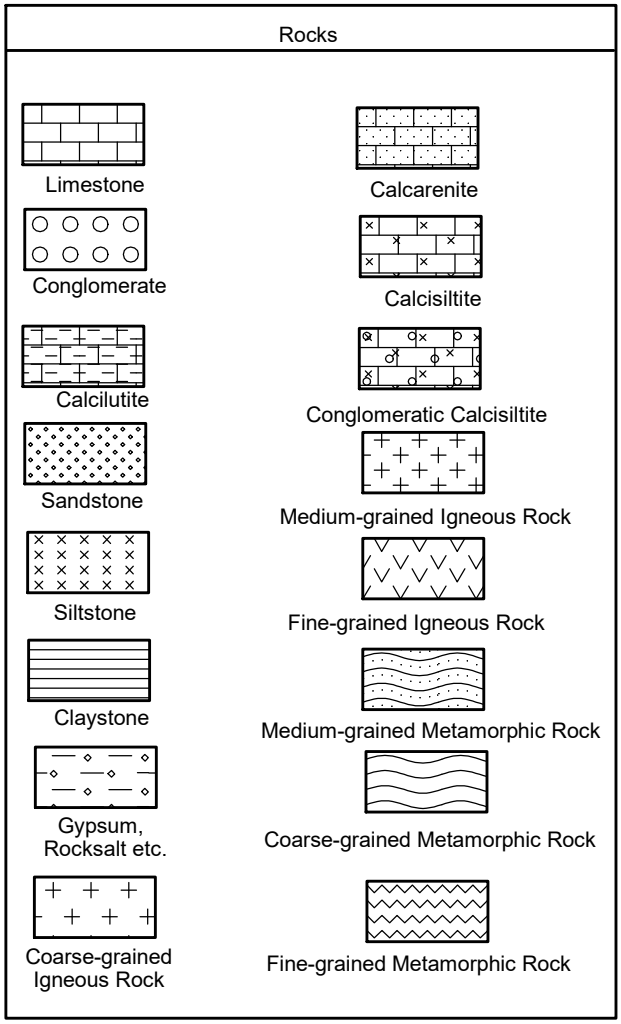
BOREHOLE LOGS (ZONE-2)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A55**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.945DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,761,293.82** E **480,894.13**
Date Started: **25/06/2015** Date Finished: **27/06/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	10	12	13	25				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	28.95	
2	SPT3	2 - 2.45	18	22	25	47						
3	SPT4	3 - 3.37	25	32	18/7	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.95	
4	SPT5	4 - 4.27	25/10	33	7/2	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.95	
		4.3 - 5.8									25.65	
5	CORE6						64	46	35	Very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented sand.		
		5.8 - 7										
6	CORE7						82	55	21			
		7 - 8.5										
7	CORE8						65	50	37			
		8.5 - 10										
8	CORE9						64	51	25			
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.60m below the existing ground level i.e. at R.L. +12.35m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A55**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **2/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+29.945DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Mobile 40-1**	Core Diameter (mm): **76.0**	N **2,761,293.82** E **480,894.13**
Date Started:	**25/06/2015**	Date Finished: **27/06/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented sand.	19.95	
11	CORE10						63	53	44			
		11.5 - 12.5								Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, partially to distinctly weathered, fractures are very closely to medium spaced.	18.45	
12	CORE11						85	54	27			
		12.5 - 13.5										
13	CORE12						93	85	60			
		13.5 - 15										
14	CORE13						24	0	0			
15	SPT14	15 - 15.13	25/4	100/9	-	>100						
		15.13 - 16.5								Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	14.95 14.82	
16	CORE15						42	11	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.		
	SPT16	16.5 - 16.62	25/3	100/9	-	>100					13.45	
		16.62 - 18								Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.33	
17	CORE17						39	10	0	Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt. ▼		
18	SPT18	18 - 18.19	25/8	100/11	-	>100					11.95	
		18.19 - 19.5								Very dense, offwhite, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
19	CORE19						18	0	0			
	SPT20	19.5 - 19.62	25/3	100/9		>100						
20										END OF BORING	10.15	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.60m below the existing ground level i.e. at R.L. +12.35m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A56**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.752DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**	N **2,761,363.04** E **480,778.12**
Date Started: **25/06/2015** Date Finished: **27/06/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	12	18	30				Dense to very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.75	
2	SPT3	2 - 2.37	14	30	20/7	>50						
3	SPT4	3 - 3.33	21	38	12/3	>50					25.75	
		3.33 - 4.33								Very dense, light brown, very gravelly, silty, medium SAND. Gravels are subangular medium to fine sandstone pieces.	25.42	
4	CORE5						80	25	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
		4.33 - 5.5										
5	CORE6						73	47	34			
		5.5 - 7										
6	CORE7						100	66	21			
7		7 - 8.5									21.75	
	CORE8						66	49	8	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
8		8.5 - 10										
9	CORE9						65	43	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.50m below the existing ground level i.e. at R.L. +13.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A56**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **2/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+28.752DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment:	**Mobile 40-3**	Core Diameter (mm): **76.0**	N **2,761,363.04** E **480,778.12**
Date Started:	**25/06/2015**	Date Finished: **27/06/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	10 - 11.5					69	40	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.75	
11	CORE11	11.5 - 13					51	22	0	Extremely weak to very weak, offwhite calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.	17.25	
12												
13	CORE12	13 - 14.5					77	73	63	Weak to medium strong, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are closely to widely spaced.	15.75	
14												
15	CORE13	14.5 - 16					38	11	0			
16	SPT14	16 - 16.16	25/7	100/9	-	>100				Very dense, offwhite, silty, GRAVEL, Gravels are subangular medium to fine siltstone pieces.	12.75	
		16.16 - 17.5								Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	12.59	
17	CORE15						58	45	38			
18	CORE16	17.5 - 19					88	30	8			
19	CORE17	19 - 20					53	0	0			
20										END OF BORING	8.95	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.50m below the existing ground level i.e. at R.L. +13.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A57**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.536DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,761,617.82** E **480,811.76**
Date Started: **24/06/2015** Date Finished: **27/06/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.3	15	50	-	>50					26.54	
										Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		
2	SPT3	2 - 2.15	25/7	50/8	-	>50						
3	SPT4	3 - 3.32	21	40	10/2	>50					24.54	
		3.32 - 4.85								Very dense, light brown, very gravelly, very silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.22	
4	CORE5						59	42	14	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are very closely to widely spaced.		
		4.85 - 6.35										
5	CORE6						64	57	56			
6		6.35 - 7.85										
7	CORE7						65	40	30			
8		7.85 - 9.35										
	CORE8						65	43	23			
9		9.35 - 10.85										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.30m below the existing ground level i.e. at R.L. +12.24m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A57**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.536DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,761,617.82** E **480,811.76**
Date Started: **24/06/2015** Date Finished: **27/06/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE9						64	36	11	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are very closely to widely spaced.	17.54	
		10.85 - 12.35									16.69	
11	CORE10						60	21	13	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are very close to very closely spaced and interbedded with cemented sand.		
12											15.54	
		12.35 - 13.85								Weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
13	CORE11						59	31	8			
		13.85 - 15.35										
14	CORE12						38	5	0			
15	SPT13	15.35 - 15.55	25/8	100/12	-	>100					12.19	
		15.55 - 17								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.99	
16	CORE14						29	11	0	Weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
17	SPT15	17 - 17.2	25/6	100/14	-	>100					10.54	
		17.2 - 18.5								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.34	
	CORE16						36	5	0	Weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
18	SPT17	18.5 - 18.7	25/7	100/13	-	>100					9.04	
		18.7 - 20								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.84	
19	CORE18						51	8	0	Weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
										END OF BORING	7.74	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.30m below the existing ground level i.e. at R.L. +12.24m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B15**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.604DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,786.18** E **481,198.31**

Date Started: **24/06/2015** Date Finished: **28/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	14	21	35				Dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.60	
2	SPT3	2 - 2.45	19	21	25	46						
3	SPT4	3 - 3.45	16	19	23	42						
4	SPT5	4 - 4.45	20	23	26	49					24.60	
5	SPT6	5 - 5.33	22	36	14/3	>50				Dense to very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		
6	SPT7	6 - 6.18	25/7	50/11	-	>50						
		6.2 - 7.5									22.40	
7	CORE8						71	19	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
		7.5 - 9										
8	CORE9						55	40	20			
9		9 - 10.5										
	CORE10						56	48	16			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.15m below the existing ground level i.e. at R.L. +12.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B15**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+28.604DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Mobile 53-1**	Core Diameter (mm): **76.0**	N **2,761,786.18** E **481,198.31**
Date Started:	**24/06/2015**	Date Finished: **28/06/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	18.60	
		10.5 - 12 -										
11	CORE11						43	23	10			
12	SPT12	12 - 12.22 -	25/7	100	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	16.60	
		12.22 - 13.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	16.38	
13	CORE13						39	11	0			
	SPT14	13.5 - 13.68	25/6	100/12	-	>100				Very dense, brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	15.10	
		13.68 - 14.68								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	14.92	
14	CORE15						25	8	0			
	SPT16	14.68 - 14.85	25/5	100/12	-	>100				Very dense, brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.92	
		14.85 - 16 -								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	13.75	
15	CORE17						41	10	0			
16	SPT18	16 - 16.21 -	25/8	50/13	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces. ▼	12.60	
		16.21 - 17.5								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	12.39	
17	CORE19						29	11	0			
	SPT20	17.5 - 17.74	25/7	80	20/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.10	
		17.74 - 19 -								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	10.86	
18	CORE21						39	5	0			
19	SPT22	19 - 19.22 -	25/5	87	13/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.60	
		19.22 - 20.22								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with	9.38	
	CORE23						42	11	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.15m below the existing ground level i.e. at R.L. +12.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B15**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.604DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,786.18** E **481,198.31**

Date Started: **24/06/2015** Date Finished: **28/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										silt.	8.38	
	SPT24	20.22 - 20.47	25/7	80	20/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.13	
		20.47 - 21.8								Very weak to weak, brown, conglomeratic SANDSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.		
21	CORE25						68	24	15			
		21.8 - 23										
22	CORE26						74	39	10			
											5.80	
23		23 - 24.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
	CORE27						62	33	0			
24												
		24.5 - 26										
25	CORE28						38	9	0			
26	SPT29	26 - 26.26	25/7	70	30/4	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.60	
		26.26 - 27.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	2.34	
27	CORE30						41	11	0			
	SPT31	27.5 - 27.73	25/6	80	20/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.10	
		27.73 - 29								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	0.87	
28	CORE32						29	5	0			
29	SPT33	29 - 29.2	25/5	100	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.40	
		29.2 - 30.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and	-0.60	
	CORE34						38	4	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.15m below the existing ground level i.e. at R.L. +12.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B15**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.604DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,786.18** E **481,198.31**

Date Started: **24/06/2015** Date Finished: **28/06/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										interbedded with silt.		
	SPT35	30.5 - 30.74	25/7	80	20/2	>100					-1.90	
		30.74 - 32								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.14	
31	CORE36						76	13	9	Extremely weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with cemented silt.		
32		32 - 33.5										
	CORE37						60	15	13			
33												
		33.5 - 35										
34	CORE38						45	9	0			
35	SPT39	35 - 35.26	25/7	70	30/4	>100					-6.40	
		35.26 - 36.5								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.66	
36	CORE40						39	8	0	Extremely weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with cemented silt.		
	SPT41	36.5 - 36.74	25/6	79	21/3	>100					-7.90	
		36.74 - 38								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.14	
37	CORE42						29	11	0	Extremely weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with cemented silt.		
38	SPT43	38 - 38.24	25/9	100	-	>100					-9.40	
		38.24 - 39.5								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
39	CORE44						14	0	0			
	SPT45	39.5 - 39.7	25/5	100	-	>100						
40										END OF BORING	-11.20	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.15m below the existing ground level i.e. at R.L. +12.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B16**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **1/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		Ground Level (m): **+31.245DMD**
Boring Method:	**Rotary Drilling**		Coordinates:
Boring Diameter:	**125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**		N **2,761,615.33** E **481,036.04**
Equipment:	**Mobile B-31** Core Diameter (mm): **76.0**		
Date Started:	**26/06/2015** Date Finished: **30/06/2015** Operator : **Ijaz Khan**		Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	14	20	34				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	30.25	
2	SPT3	2 - 2.45	8	18	25	43						
3	SPT4	3 - 3.45	10	20	26	46						
4	SPT5	4 - 4.4	20	28	22/10	>50						
5	SPT6	5 - 5.27	25/9	45	5/2	>50						
	CORE7	5.3 - 6.8					64	41	8	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	25.95	
6												
7	CORE8	6.8 - 8.3					33	5	0			
8	SPT9	8.3 - 8.55	25/7	80	20/3	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.95	
		8.55 - 9.5									22.70	
9	CORE10	9.5 - 11					63	45	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +14.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B16**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.245DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,761,615.33** E **481,036.04**

Date Started: **26/06/2015** Date Finished: **30/06/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						63	69	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	21.25	
11		11 - 12.5										
	CORE12						64	47	13			
12		12.5 - 14										
13	CORE13						64	36	7			
14		14 - 15.5										
	CORE14						29	8	0			
15	SPT15	15.5 - 15.72	25/7	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	15.75	
		15.72 - 17									15.53	
16	CORE16						51	31	9	Very weak, to weak. light brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced.		
17		17 - 18.5										
	CORE17						59	50	47			
18		18.5 - 20										
19	CORE18						55	43	36			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +14.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B16**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.245DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,761,615.33** E **481,036.04**

Date Started: **26/06/2015** Date Finished: **30/06/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Very weak, to weak. light brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced.	11.25	
	CORE19						36	11	0			
21												
	SPT20	21.5 - 21.69	25/6	100/13	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	9.75	
		21.69 - 23.2								Very weak, to weak. light brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced.	9.56	
22	CORE21						52	26	10			
23		23.2 - 24.7										
24	CORE22						22	8	0			
	SPT23	24.7 - 24.91	25/6	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	6.55	
		24.91 - 26.4								Very weak, to weak. light brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced.	6.34	
25	CORE24						54	35	33			
26		26.4 - 27.9										
27	CORE25						29	4	0			
	SPT26	27.9 - 28.05	25/5	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	3.35	
28		28.05 - 29.5								Very weak, to weak. light brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced.	3.20	
	CORE27						69	52	50			
29		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +14.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B16**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.245DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76.0**	N **2,761,615.33** E **481,036.04**
Date Started: **26/06/2015** Date Finished: **30/06/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE28						29	18	0	Very weak, to weak. light brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced.	1.25	
31	SPT29	31 - 31.2	25/8	100/12	-	>100				Very dense, offwhite, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	0.25	
		31.2 - 32.7								Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with cemented silt.	0.05	
32	CORE30						39	5	0			
	SPT31	32.7 - 32.88	25/9	100/9	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.46	
33		32.88 - 34.38								Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with cemented silt.	-1.64	
	CORE32						41	11	0			
34												
	SPT33	34.38 - 34.5	25/6	100/6	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.14	
35		34.5 - 36								Extremely weak, offwhite, calcareous SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with cemented silt.	-3.26	
	CORE34						58	12	0			
36		36 - 37										
	CORE35						61	25	10			
37		37 - 38.5										
	CORE36						74	18	0			
38												
		38.5 - 40										
39	CORE37						58	11	0			
										END OF BORING	-8.56	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +14.45m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
■ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B17**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.382DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76.0**	N **2,761,501.90** E **480,933.71**
Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.37	21	31	19/7	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	29.38	
2	SPT3	2 - 2.35	25	35	15/5	>50						
3	SPT4	3 - 3.33	24	42	8/3	>50				Very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.38	
4	SPT5	4 - 4.25	25/12	50/13	-	>50						
5	SPT6	5 - 5.2	25/9	50/11	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.38	
6												
	SPT7	6.5 - 6.69	25/8	50/11	-	>50						
		6.69 - 8								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	23.69	
7	CORE8						69	40	11			
8		8 - 9.5										
9	CORE9						64	13	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.50m below the existing ground level i.e. at R.L. +12.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B17**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.382DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,761,501.90** E **480,933.71**

Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						65	43	15	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	20.38	
11		11 - 12.5										
	CORE11						65	25	0			
12		12.5 - 13.5										
13	CORE12						70	45	11			
		13.5 - 15									16.88	
14	CORE13						62	7	0	Extremely weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
15		15 - 16.5										
	CORE14						30	10	0			
16		16.5 - 17.5										
17	CORE15						26	5	0			
	SPT16	17.5 - 17.8	25/10	60	40/5	>100					12.88	
		17.8 - 18.8								Very dense, offwhite/ brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.58	
18	CORE17						56	29	18	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		18.8 - 19.8										
19	CORE18						36	10	0			
		19.8 - 20.14	25/8	52	48/10	>100					10.58	
20										Very dense, offwhite/ brown, silty, sandy GRAVEL.		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.50m below the existing ground level i.e. at R.L. +12.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B17**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.382DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,761,501.90** E **480,933.71**

Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT19	20.14 - 21.14								Gravels are subangular medium to fine siltstone pieces.	10.24	
	CORE20						42	11	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
21	SPT21	21.14 - 21.38	25/5	70	30/4	>100				Very dense, offwhite/ brown, silty, sandy GRAVEL.	9.24	
		21.38 - 22.38								Gravels are subangular medium to fine siltstone pieces.	9.00	
	CORE22						39	5	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
22	SPT23	22.38 - 22.7	25/8	57	43/9	>100				Very dense, offwhite/ brown, silty, sandy GRAVEL.	8.00	
		22.7 - 23.7								Gravels are subangular medium to fine siltstone pieces.	7.68	
23	CORE24						29	6	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT25	23.7 - 24	25/7	63	37/8	>100				Very dense, offwhite/ brown, silty, sandy GRAVEL.	6.68	
24		24 - 25								Gravels are subangular medium to fine siltstone pieces.	6.38	
	CORE26						39	18	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
25	SPT27	25 - 25.31	25/8	50	50/8	>100				Very dense, offwhite/ brown, silty, sandy GRAVEL.	5.38	
		25.31 - 26.31								Gravels are subangular medium to fine siltstone pieces.	5.07	
	CORE28						64	11	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
26		26.31 - 27.5										
	CORE29						76	7	0			
27		27.5 - 28.5										
	CORE30						43	33	17			
28		28.5 - 29										
	CORE31						46	16	0			
29		29 - 30										
	CORE32						28	5	0			
30												

REMARKS:

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B17**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.382DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,761,501.90** E **480,933.71**

Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT33	30 - 30.3	25/7	63	37/8	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.38	
		30.3 - 31.3									0.08	
	CORE34						36	5	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
31	SPT35	31.3 - 31.56	25/6	65	35/5	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.92	
		31.56 - 32.56									-1.18	
32	CORE36						42	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT37	32.56 - 32.81	25/5	65	35/5	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.18	
		32.81 - 33.81									-2.43	
33	CORE38						36	6	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT39	33.81 - 34.08	25/5	63	37/7	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.43	
34		34.08 - 35.08									-3.70	
	CORE40						29	11	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
35	SPT41	35.08 - 35.4	25/7	56	44/10	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.70	
		35.4 - 36.4									-5.02	
36	CORE42						22	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT43	36.4 - 36.73	25/8	50	50/10	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.02	
		36.73 - 37.73									-6.35	
37	CORE44						29	10	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT45	37.73 - 38.08	25/8	49	51/12	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.35	
38		38.08 - 39									-7.70	
	CORE46						74	19	14	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
39		39 - 40										
	CORE47						91	0	0			
40										END OF BORING	-9.42	

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B60**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.725DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,761,437.21** E **480,628.23**

Date Started: **26/06/2015** Date Finished: **30/06/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	11	18	24	42				Dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.73	
2	SPT3	2 - 2.43	25/13	22	23	45						
3	SPT4	3 - 3.42	19	25	25/12	>50				Very dense, light brown, gravelly, very silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.73	
4	SPT5	4 - 4.25	25/9	45	5/1	>50						
5	SPT6	5 - 5.2	25/8	50/12	-	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	21.73	
		5.2 - 6.2									21.53	
	CORE7						51	43	0	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are very closely spaced.		
6		6.2 - 7.7										
7	CORE8						83	61	8			
		7.7 - 9.2										
8	CORE9						29	8	0			
9	SPT10	9.2 - 9.45	25/8	85	15/2	>100					17.53	
		9.45 - 10.95								Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and rock fragments.	17.28	
10										Very weak to weak, brown, conglomeratic SILTSTONE,		

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B60**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.725DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76.0**	N **2,761,437.21** E **480,628.23**
Date Started:	**26/06/2015**	Date Finished: **30/06/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						52	31	19	distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with silt.		
11		10.95 - 12.25										
	CORE12						33	6	0			
12	SPT13	12.25 - 12.5	25/9	86	14/1	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and rock fragments.	14.48	
		12.5 - 14 -									14.23	
13	CORE14						59	14	8	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with silt.		
14		14 - 15.5 -										
	CORE15						37	5	0			
15	SPT16	15.5 - 15.71	25/6	100	-	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and rock fragments.	11.23	
		15.71 - 16.71									11.02	
16	CORE17						55	20	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		16.71 - 18 -										
17	CORE18						52	31	23			
18		18 - 19.5 -										
	CORE19						29	0	0			
19	SPT20	19.5 - 19.7	25/5	100	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.23	
		19.7 - 20.8									7.03	
20												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B60**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **3/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.725DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76.0**	N **2,761,437.21** E **480,628.23**
Date Started:	**26/06/2015**	Date Finished: **30/06/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE21						41	16	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT22	20.8 - 21	25/4	85	15/1	>100					5.93	
21		21 - 22.5								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.73	
	CORE23						33	7	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
22												
	SPT24	22.5 - 22.72	25/6	90	10/1	>100					4.23	
		22.72 - 24.2								Very dense, offwhite/ brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.01	
23	CORE25						74	67	65	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
24												
		24.2 - 25.5									2.53	
	CORE26						66	15	11	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.		
25		25.5 - 26										
	CORE27						90	38	0			
26		26 - 27.5										
	CORE28						59	22	0			
27												
		27.5 - 29										
28	CORE29						22	8	0			
29	SPT30	29 - 29.18	25/4	100	-	>100					-2.28	
		29.18 - 30.68								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.46	
	CORE31						37	13	10	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and		
30												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B60**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.725DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,761,437.21** E **480,628.23**
Date Started: **26/06/2015** Date Finished: **30/06/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										interbedded with silt.	-3.28	
		30.68 - 32								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.		
31	CORE32						65	45	26			
32		32 - 33.5										
	CORE33						58	25	10			
33												
		33.5 - 34.5										
34	CORE34						74	11	0			
		34.5 - 36										
35	CORE35						65	18	5			
36		36 - 37										
	CORE36						58	25	0			
37		37 - 38										
	CORE37						68	10	0			
38		38 - 39										
	CORE38						71	18	11			
39		39 - 40										
	CORE39						54	11	0			
40										END OF BORING	-13.08	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.20m below the existing ground level i.e. at R.L. +12.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C12**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.550DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76.0**

N **2,761,879.36** E **481,083.11**

Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Syed Zahid Shah**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	6	12	16	28				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.55	
2	SPT3	2 - 2.45	13	18	24	42						
3	SPT4	3 - 3.45	18	22	28	50						
4	SPT5	4 - 4.45	20	20	27	47				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.55	
5	SPT6	5 - 5.17	25/7	50/10	-	>50						
6	SPT7	6 - 6.18	25/7	50/11	-	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	19.55	
		6.2 - 7.7									19.35	
7	CORE8						91	30	0	Extremely weak to very weak, brown/ reddish brown, fine grained calcareous SANDSTONE, partially to distinctly weathered to destructured, fractures are very closely spaced.		
		7.7 - 9										
8	CORE9						100	15	0	Extremely weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced.	17.35	
9		9 - 10.5										
10	CORE10						22	0	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.60m below the existing ground level i.e. at R.L. +11.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C12**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.550DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,761,879.36** E **481,083.11**
Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Syed Zahid Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced.	15.55	
	SPT11	10.5 - 10.76	25/6	63	37/5	>100					15.05	
		10.76 - 12								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	14.79	
11	CORE12						36	8	0	Extremely weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced.		
12	SPT13	12 - 12.25	25/6	64	36/4	>100					13.55	
		12.25 - 13.75								Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.30	
13	CORE14						23	11	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT15	13.75 - 13.92	25/5	100/12	-	>100					11.80	
14		13.92 - 15.42								Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.63	
	CORE16						61	21	19	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
15		15.42 - 16.5										
16	CORE17						83	50	26			
		16.5 - 18										
17	CORE18						61	29	17			
18		18 - 19.5										
	CORE19						61	27	9			
19		19.5 - 21									6.05	
										Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.60m below the existing ground level i.e. at R.L. +11.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C12**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.550DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76.0**

N **2,761,879.36** E **481,083.11**

Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Syed Zahid Shah**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE20						67	20	7	closely spaced.		
21		21 - 22.5										
	CORE21						61	0	0			
22												
		22.5 - 23.5										
23	CORE22						29	0	0			
	SPT23	23.5 - 23.68	25/6	100/12	-	>100					2.05	
		23.68 - 24.68								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.87	
24	CORE24						44	8	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT25	24.68 - 24.85	25/6	100/11	-	>100					0.87	
		24.85 - 26.35								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.70	
25										Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	CORE26						58	16	0			
26												
		26.35 - 27.85										
27	CORE27						29	0	0			
	SPT28	27.85 - 28	25/6	100/12	-	>100					-2.30	
28		28 - 29								Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.45	
	CORE29						97	47	25	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced and interbedded with silt.		
29		29 - 30										
	CORE30						96	58	30			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.60m below the existing ground level i.e. at R.L. +11.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C12**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **4/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+25.550DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76.0**	N **2,761,879.36** E **481,083.11**
Date Started:	**21/06/2015**	Date Finished: **27/06/2015** Operator : **Syed Zahid Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31								Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced and interbedded with silt.	-4.45	
	CORE31						97	42	0			
31		31 - 32										
	CORE32						90	60	34			
32		32 - 33.5									-6.45	
	CORE33						66	26	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
33		33.5 - 35										
34	CORE34						55	0	0			
35		35 - 36.5										
	CORE35						54	0	0			
36		36.5 - 38										
37	CORE36						22	0	0			
38	SPT37	38 - 38.19	25/6	100/13	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.45	
		38.19 - 39.69								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-12.64	
39	CORE38						50	8	0			
		39.69 - 41.19										
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.60m below the existing ground level i.e. at R.L. +11.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C12**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		Sheet: **5/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+25.550DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76.0**	N **2,761,879.36** E **481,083.11**
Date Started:	**21/06/2015**	Date Finished: **27/06/2015** Operator : **Syed Zahid Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE39						53	25	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-14.45	
41		41.19 - 42.69										
42	CORE40						53	29	19			
43	CORE41	42.69 - 44.19					29	0	0			
44	SPT42	44.19 - 44.36	25/6	100/11	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-18.64	
		44.36 - 45.86									-18.81	
45	CORE43						55	20	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
46	CORE44	45.86 - 47.36					50	27	20			
47		47.36 - 48.86									-21.81	
48	CORE45						55	3	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
49		48.86 - 50.36										
50	CORE46						64	9	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.60m below the existing ground level i.e. at R.L. +11.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C12**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **6/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.550DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,761,879.36** E **481,083.11**
Date Started: **21/06/2015** Date Finished: **27/06/2015** Operator : **Syed Zahid Shah**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50										Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-24.45	
		50.36 - 51.86										
51	CORE47						57	0	0			
		51.86 - 52.86										
52	CORE48						74	12	0			
		52.86 - 53.86										
53	CORE49						58	38	32			
		53.86 - 54.86										
54	CORE50						50	40	30			
		54.86 - 56.36										
55	CORE51						29	0	0			
56	SPT52	56.36 - 56.53	25/6	100/11	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-30.81	
		56.53 - 58.03								Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-30.98	
57	CORE53						57	7	0			
58		58.03 - 59.53										
	CORE54						60	16	0			
59		59.53 - 60-										
	CORE55						100	42	0			
60										END OF BORING	-34.25	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.60m below the existing ground level i.e. at R.L. +11.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C13**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.280DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,761,917.52** E **481,155.51**

Date Started: **25/06/2015** Date Finished: **30/06/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	17	19	23	42				Dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.28	
2	SPT3	2 - 2.41	23	27	23/11	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.28	
3	SPT4	3 - 3.3	25/11	36	14/4	>50						
		3.3 - 4.5									21.98	
4	CORE5						79	58	50	Extremely weak to very weak, brown/ reddish brown, fine grained calcareous SANDSTONE, intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		4.5 - 6										
5	CORE6						81	68	47			
6		6 - 7.5										
7	CORE7						92	73	64			
		7.5 - 9										
8	CORE8						93	83	73			
9		9 - 10.5										
10	CORE9						62	59	47			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C13**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.280DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-34** Core Diameter (mm): **76.0**	N **2,761,917.52** E **481,155.51**
Date Started: **25/06/2015** Date Finished: **30/06/2015** Operator : **Waqif Khan**	Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, brown/ reddish brown, fine grained calcareous SANDSTONE, intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	15.28	
		10.5 - 12									14.48	
11	CORE10						70	27	13	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced and interbedded with silt.		
12		12 - 13.5										
	CORE11						31	0	0			
13												
	SPT12	13.5 - 13.81	25/8	62	38/8	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.78	
		13.81 - 15									11.47	
14	CORE13						40	18	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced and interbedded with silt.		
15	SPT14	15 - 15.28	25/7	70	30/5	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.28	
		15.28 - 16.5									10.00	
16	CORE15						35	0	0	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to medium spaced .		
	SPT16	16.5 - 16.72	25/5	85	15/2	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.78	
		16.72 - 18									8.56	
17	CORE17						50	41	34	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to medium spaced .		
18		18 - 19.5										
	CORE18						60	32	21			
19												
		19.5 - 21										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C13**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.280DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,761,917.52** E **481,155.51**

Date Started: **25/06/2015** Date Finished: **30/06/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19						60	43	40	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to medium spaced .	5.28	
21		21 - 22.5										
	CORE20						64	53	52			
22		22.5 - 24										
23	CORE21						64	60	59			
24		24 - 25.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	1.28	
	CORE22						57	51	46			
25		25.5 - 27										
26	CORE23						55	47	39			
27		27 - 28.5										
	CORE24						57	48	31			
28		28.5 - 30										
29	CORE25						56	39	25	Very weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are very close to closely spaced.	-3.22	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C13**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.280DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,761,917.52** E **481,155.51**

Date Started: **25/06/2015** Date Finished: **30/06/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are very close to closely spaced.	-4.72	
	CORE26						29	0	0			
31	SPT27	31.5 - 31.65	25/2	100/13	-	>100					-6.22	
		31.65 - 33.15								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.37	
32	CORE28						55	15	0	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with cemented silt.		
33		33.15 - 34.65										
34	CORE29						35	8	0			
	SPT30	34.65 - 34.8	25/5	100/10	-	>100					-9.37	
		34.8 - 36.3								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.52	
35	CORE31						54	25	0	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with cemented silt.		
36		36.3 - 37.8										
37	CORE32						74	18	0			
		37.8 - 39										
38	CORE33						65	25	18			
39		39 - 40										
	CORE34						54	36	25			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C13**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.280DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,761,917.52** E **481,155.51**

Date Started: **25/06/2015** Date Finished: **30/06/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40		40 - 41.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with cemented silt.	-14.72	
	CORE35						66	20	11			
41		41.5 - 43										
	CORE36						74	18	10			
42												
43		43 - 44										
	CORE37						58	22	18			
44		44 - 45										
	CORE38						61	0	0			
45		45 - 46.5										
	CORE39						94	54	29			
46		46.5 - 48										
47	CORE40						52	18	11			
48		48 - 49.5										
	CORE41						78	25	18			
49		49.5 - 51										
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C13**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.280DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,761,917.52** E **481,155.51**

Date Started: **25/06/2015** Date Finished: **30/06/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-2**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE42						86	35	16	Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with cemented silt.	-24.72	
51		51 - 52										
	CORE43						67	20	0			
52		52 - 53										
	CORE44						78	11	0			
53		53 - 54.5										
	CORE45						65	0	0			
54												
		54.5 - 55										
	CORE46						96	18	11			
55		55 - 56										
	CORE47						74	24	19			
56		56 - 57.5										
	CORE48						65	35	20			
57												
		57.5 - 59										
58	CORE49						55	11	0			
59		59 - 60										
	CORE50						60	18	8			
60										END OF BORING	-34.52	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +11.88m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

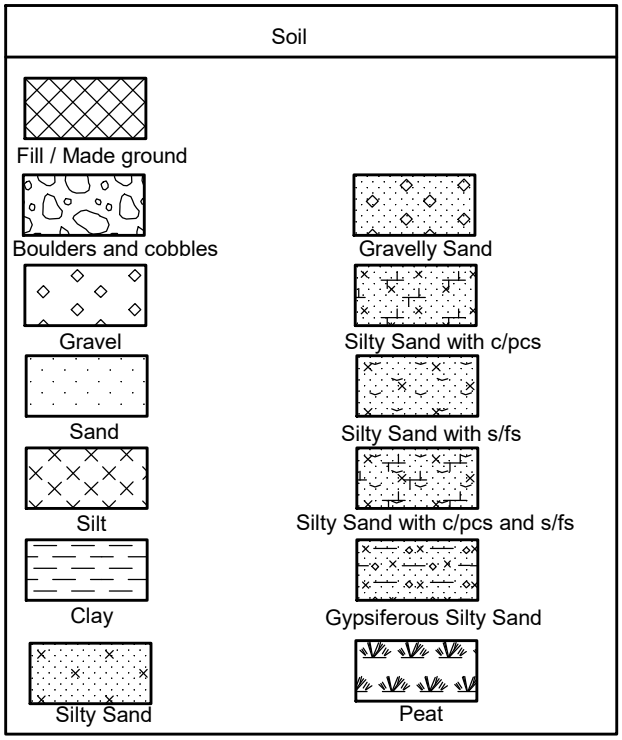
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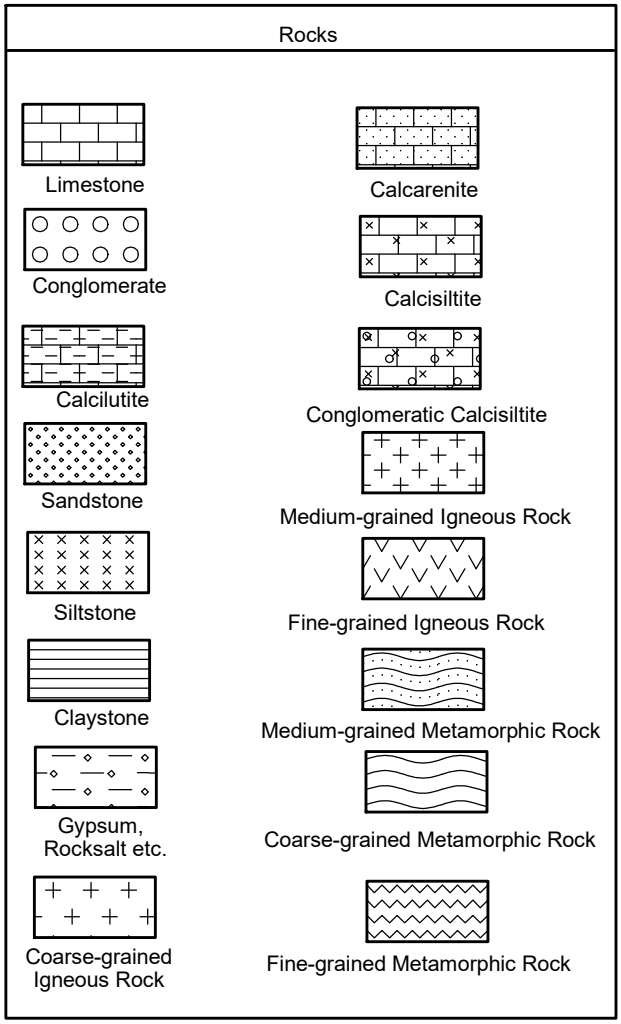
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APPENDIX B3

BOREHOLE LOGS (ZONE-3)

LEGEND OF THE BOREHOLE LOGS





RELATIVE DENSITY OF GRANULAR SOIL
(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL
(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION
BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A01**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+10.613DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,762,736.78** E **480,929.44**
Date Started: **28/06/2015** Date Finished: **29/06/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	10	11	21				Medium dense to dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces with gypsum crystals.	9.61	
2	SPT3	2 - 2.45	20	23	27	50						
3	SPT4	3 - 3.24	25/9	45	5/1	>50				Very dense, light brown, very gravelly, silty, coarse SAND. Gravels are subangular medium to fine sandstone pieces with gypsum crystals.	7.61	
4	SPT5	4 - 4.18	25/8	50/10	-	>50						
5	CORE6	4.2 - 5.5					0	0	0			
	SPT7	5.5 - 5.65	25/5	100/10	-	>100				Very dense, light grey, very gravelly, silty, coarse SAND. Gravels are subangular medium to fine rock fragments.	5.11	
6	CORE8	5.65 - 7					39	11	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely to very closely spaced and interbedded with cemented sand.	4.96	
7	SPT9	7 - 7.15	25/5	100/10	-	>100				Very dense, light grey, very gravelly, silty, coarse SAND. Gravels are subangular medium to fine rock fragments.	3.61	
8	CORE10	7.15 - 8.65					33	19	13	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely to very closely spaced and interbedded with cemented sand.	3.46	
9	SPT11	8.65 - 8.78	25/3	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	1.96	
	CORE12	8.78 - 10					74	21	20	Very weak to weak, offwhite/ brown, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced.	1.83	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.00m below the existing ground level i.e. at R.L. +8.61m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A01**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+10.613DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,762,736.78** E **480,929.44**

Date Started: **28/06/2015** Date Finished: **29/06/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak to weak, offwhite/ brown, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced.	0.61	
11	CORE13						64	40	35			
		11.5 - 13										
12	CORE14						60	25	13			
13		13 - 14.5										
	CORE15						63	24	15			
14												
		14.5 - 16									-3.89	
15	CORE16						61	17	0	Extremely weak to very weak, brown/ light brown, calcareous SILTSTONE partially to distinctly weathered, fractures are extremely close to very closely spaced.		
16		16 - 17.5										
	CORE17						29	0	0			
17	SPT18	17.5 - 17.64	25/4	100/10	-	>100					-6.89	
		17.64 - 18.64								Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.03	
18	CORE19						66	18	0	Extremely weak to very weak, brown/ light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced.		
		18.64 - 20										
19	CORE20						65	27	16			
										END OF BORING	-9.19	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.00m below the existing ground level i.e. at R.L. +8.61m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A02**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+9.861DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,762,852.08** E **481,069.53**
Date Started: **01/07/2015** Date Finished: **02/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	6	9	16	25				Medium dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	8.86	
2	SPT3	2 - 2.45	8	18	27	45				Dense, light brown, gravelly, very silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	7.86	
3	SPT4	3 - 3.45	14	18	17	35						
4	SPT5	4 - 4.33	19	35	15/3	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine rock fragments.	5.86	
5	SPT6	5 - 5.2	25/8	50/12	-	>50						
	CORE7	5.2 - 6.5					0	0	0			
6	SPT8	6.5 - 6.78	25/8	73	27/5	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine rock fragments.	3.36	
	CORE9	6.78 - 8					59	24	18	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	3.08	
7												
8	CORE10	8 - 9					35	6	0			
9	SPT11	9 - 9.26	25/8	82	18/3	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine rock fragments.	0.86	
	CORE12	9.26 - 10.5					62	34	25	Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	0.60	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 1.80m below the existing ground level i.e. at R.L. +8.06m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A02**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+9.861DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,762,852.08** E **481,069.53**

Date Started: **01/07/2015** Date Finished: **02/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-0.14	
		10.5 - 12										
11	CORE13						29	11	0			
12	SPT14	12 - 12.24	25/6	80	20/3	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.14	
		12.24 - 13.5									-2.38	
	CORE15						37	18	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
13	SPT16	13.5 - 13.74	25/5	74	26/4	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.64	
		13.74 - 15									-3.88	
14	CORE17						12	4	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
15	SPT18	15 - 15.22	25/4	85	15/2	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.14	
		15.22 - 16.72									-5.36	
16	CORE19						53	19	15	Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		16.72 - 18.22										
17	CORE20						60	25	0			
18		18.22 - 19.72									-8.36	
19	CORE21						25	0	0	Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
	SPT22	19.72 - 19.99	25/8	74	26/4	>100						
20										END OF BORING	-9.94	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 1.80m below the existing ground level i.e. at R.L. +8.06m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B08**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+13.226DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,444.75** E **480,946.21**

Date Started: **26/06/2015** Date Finished: **29/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine rock fragments.		
1	SPT2	1 - 1.45	17	19	23	42				Dense to very dense, dark grey, very gravelly, silty, coarse SAND. Gravels are subangular medium to fine rock fragments.	12.23	
2	SPT3	2 - 2.45	21	25	25	50						
3	SPT4	3 - 3.35	25	37	13/5	>50						
4	SPT5	4 - 4.38	25	32	18	>50					9.23	
	CORE6	4.38 - 5.38					0	0	0	Very dense, brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine rock fragments with traces of gypsum.		
5	SPT7	5.38 - 5.6	25/8	100/14	-	>100						
		5.6 - 7.1									7.63	
6	CORE8						39	5	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
7	SPT9	7.1 - 7.3	25/7	100/13	-	>100					6.13	
		7.3 - 8.3								Very dense, light brown, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.93	
8	CORE10						54	45	28	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closed to closely spaced.		
		8.3 - 9										
9	CORE11						71	22	18			
		9 - 10.5										
10	CORE12						60	32	29			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.50m below the existing ground level i.e. at R.L. +10.73m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B08**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+13.226DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,444.75** E **480,946.21**

Date Started: **26/06/2015** Date Finished: **29/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closed to closely spaced.	3.23	
		10.5 - 12										
11	CORE13						25	11	0			
12	SPT14	12 - 12.2	25/6	100/14	-	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.23	
		12.2 - 13.5								Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	1.03	
13	CORE15						56	45	20			
		13.5 - 15										
14	CORE16						64	25	18			
15		15 - 16.5										
	CORE17						58	11	0			
16												
		16.5 - 18										
17	CORE18						35	8	0			
18	SPT19	18 - 18.15	25/2	100/13	-	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.77	
		18.15 - 19.5								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-4.92	
19	CORE20						37	7	0			
	SPT21	19.5 - 19.65	25/3	100/12	-	>100				Very dense, light brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.27	
		19.65 - 21									-6.42	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.50m below the existing ground level i.e. at R.L. +10.73m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B08**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+13.226DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,444.75** E **480,946.21**

Date Started: **26/06/2015** Date Finished: **29/06/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE22						41	11	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
21	SPT23	21 - 21.14 / 21.14 - 22.5	25/2	100/12	-	>100				Very dense, light brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.77 / -7.91	
22	CORE24	22.5 - 24					54	12	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
23	CORE25						57	13	0			
24		24 - 25.5										
25	CORE26						26	0	0			
	SPT27	25.5 - 25.68 / 25.68 - 27	25/3	100	-	>100				Very dense, light brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.27 / -12.45	
26	CORE28						53	15	11	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
27		27 - 28.5										
28	CORE29						34	11	0			
	SPT30	28.5 - 28.66 / 28.66 - 30	25/2	100/14	-	>100				Very dense, light brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-15.27 / -15.43	
29	CORE31						29	8	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.50m below the existing ground level i.e. at R.L. +10.73m DMD.
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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B08**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+13.226DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76.0**	N **2,762,444.75** E **480,946.21**
Date Started: **26/06/2015** Date Finished: **29/06/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT32	30 - 30.17	25/3	100/14	-	>100				Very dense, light brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.77	
		30.17 - 31.5									-16.94	
31	CORE33						37	11	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT34	31.5 - 31.63	25/3	100/10	-	>100					-18.27	
		31.63 - 33								Very dense, light brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-18.40	
32	CORE35						56	25	12	Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
33		33 - 34										
	CORE36						60	11	10			
34		34 - 35.5										
	CORE37						74	26	5			
35												
		35.5 - 36.5										
36	CORE38						65	32	0			
		36.5 - 38										
37	CORE39						52	15	0			
38		38 - 39										
	CORE40						59	18	5			
39		39 - 40										
	CORE41						48	0	0			
										END OF BORING	-26.57	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.50m below the existing ground level i.e. at R.L. +10.73m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B09**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.589DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,585.77** E **480,841.31**

Date Started: **28/06/2015** Date Finished: **01/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	12	19	27	46				Dense to very dense, light brown, gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	10.59	
2	SPT3	2 - 2.45	10	16	31	47						
3	SPT4	3 - 3.32	25/12	35	15/5	>50						
4	SPT5	4 - 4.22	25/9	50/13	-	>50						
5	SPT6	5 - 5.19	25/9	50/12	-	>50					6.59	
	CORE7	5.19 - 6.19					0	0	0	Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		
6	SPT8	6.19 - 6.53	25/8	52	48/11	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.40	
	CORE9	6.53 - 7.53					39	0	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	5.06	
7	SPT10	7.53 - 7.84	25	56	44/8	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	4.06	
	CORE11	7.84 - 8.84					70	36	15	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	3.75	
8												
9	CORE12	8.84 - 10					64	56	51			
10										Extremely weak to very weak, offwhite/ brown,	1.89	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.05m below the existing ground level i.e. at R.L. +9.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
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- ▼ : Ground Water Table
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B09**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.589DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,585.77** E **480,841.31**

Date Started: **28/06/2015** Date Finished: **01/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE13	10 - 11					90	40	30	calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with silt.		
11	CORE14	11 - 12.5					82	47	20			
12												
13	CORE15	12.5 - 14					63	29	25			
14	CORE16	14 - 15.5					63	23	0			
15												
16	CORE17	15.5 - 17					63	22	18			
17	CORE18	17 - 18.5					65	40	33			
18												
19	CORE19	18.5 - 20					55	33	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-6.91	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.05m below the existing ground level i.e. at R.L. +9.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B09**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.589DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,585.77** E **480,841.31**

Date Started: **28/06/2015** Date Finished: **01/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-8.41	
	CORE20						29	8	0			
21	SPT21	21 - 21.34	25/9	48	52/10	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.41	
		21.34 - 22.34									-9.75	
	CORE22						62	10	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
22		22.34 - 23.5										
	CORE23						69	30	0			
23		23.5 - 25										
	CORE24						61	21	8			
24												
25		25 - 26.5										
	CORE25						63	17	13			
26												
		26.5 - 28								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-14.91	
27	CORE26						63	26	7			
28		28 - 29										
	CORE27						41	18	0			
29	SPT28	29 - 29.34	25/8	50	50/11	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-17.41	
		29.34 - 30.34									-17.75	
	CORE29						36	8	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely		
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.05m below the existing ground level i.e. at R.L. +9.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B09**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.589DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,585.77** E **480,841.31**

Date Started: **28/06/2015** Date Finished: **01/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										close to closely spaced and interbedded with silt.		
	SPT30	30.34 - 30.63	25/6	58	42/8	>100					-18.75	
		30.63 - 31.63								Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-19.04	
31	CORE31						47	18	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
	SPT32	31.63 - 31.85	25/6	64	36/7	>100					-20.04	
		31.85 - 32.85								Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-20.26	
32	CORE33						39	5	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
	SPT34	32.85 - 33.16	25/7	57	43/8	>100					-21.26	
33		33.16 - 34.16								Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-21.57	
	CORE35						80	30	12	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
34		34.16 - 35.5										
	CORE36						67	30	0			
35		35.5 - 37										
	CORE37						63	13	0			
36												
		37 - 38.5										
37	CORE38						61	9	0			
		38.5 - 40										
38	CORE39						63	20	11			
39										END OF BORING	-28.21	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 2.05m below the existing ground level i.e. at R.L. +9.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B10**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.484DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,762,622.15** E **481,076.34**

Date Started: **29/06/2015** Date Finished: **02/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	12	21	33				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	10.48	
2	SPT3	2 - 2.45	12	19	23	42						
3	SPT4	3 - 3.24	25/9	50	-	>50				Very dense, light brown, very gravelly, silty, coarse SAND. Gravels are subangular medium to fine rock fragments.	8.48	
4	SPT5	4 - 4.19	25/7	50/12	-	>50						
	CORE6	4.19 - 5.5					39	11	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	7.29	
5	SPT7	5.5 - 5.75	25/7	75	25/3	>100				Very dense, brown, gravelly, slightly silty, coarse to medium SAND. Gravels are subangular medium to fine sandstone pieces.	5.98	
	CORE8	5.75 - 7					42	25	6	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	5.73	
6												
7	SPT9	7 - 7.22	25/5	80	20/2	>100				Very dense, brown, gravelly, slightly silty, coarse to medium SAND. Gravels are subangular medium to fine sandstone pieces.	4.48	
	CORE10	7.22 - 8.5					36	18	0	Extremely weak to very weak, brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	4.26	
8												
	SPT11	8.5 - 8.72	25/5	80	20/2	>100				Very dense, brown, gravelly, slightly silty, coarse to medium SAND. Gravels are subangular medium to fine rock fragments.	2.98	
	CORE12	8.72 - 10					52	35	16	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to very closely spaced.	2.76	
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 1.56m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B10**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.484DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,762,622.15** E **481,076.34**

Date Started: **29/06/2015** Date Finished: **02/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to very closely spaced.	1.48	
	CORE13						61	37	17			
11		11.5 - 13										
	CORE14						63	47	13			
12												
		13 - 14.5										
13	CORE15						34	15	0			
14	SPT16	14.5 - 14.74	25/7	80	20/2	>100				Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine rock fragments.	-3.02	
		14.75 - 15.5									-3.26	
15	CORE17						88	57	16	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to very closely spaced.		
		15.5 - 17									-4.24	
16	CORE18						78	48	37	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
		17 - 18.5										
17	CORE19						57	16	0			
18		18.5 - 20										
	CORE20						33	8	0			
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 1.56m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B10**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+11.484DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,762,622.15** E **481,076.34**

Date Started: **29/06/2015** Date Finished: **02/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT21	20 - 20.32	25/9	60	40/8	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.52	
		20.32 - 21.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-8.84	
21	CORE22						47	11	0			
	SPT23	21.5 - 21.75	25	72	28/3	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.02	
		21.75 - 23								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-10.27	
22	CORE24						36	5	0			
23	SPT25	23 - 23.21	25/6	100	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.52	
		23.21 - 24.76								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-11.73	
24	CORE26						57	28	11			
		24.76 - 26.18										
25	CORE27						60	19	0			
26		26.18 - 27.5										
	CORE28						33	0	0			
27	SPT29	27.5 - 27.72	25/5	80	20/2	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.02	
		27.72 - 29								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-16.24	
28	CORE30						72	31	14			
29		29 - 30										
	CORE31						65	13	7			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 1.56m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B10**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+11.484DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**	N **2,762,622.15** E **481,076.34**
Date Started: **29/06/2015** Date Finished: **02/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-18.52	
31	CORE32						58	22	11			
		31.5 - 33										
32	CORE33						66	0	0			
33		33 - 34.5										
34	CORE34						78	18	10			
		34.5 - 36									-23.02	
35	CORE35						60	37	30	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
36		36 - 37.5										
37	CORE36						63	20	15			
		37.5 - 39										
38	CORE37						62	17	7			
39		39 - 40										
	CORE38						90	37	10			
40										END OF BORING	-28.32	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 1.56m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C02**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+16.720DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,762,194.47** E **480,691.21**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.32	25	38	12/2	>50				Very dense, light brown, very gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	15.72	
2	SPT3	2 - 2.28	25	50/13	-	>50						
3	SPT4	3 - 3.15	25/7	50/8	-	>50				Very dense, light grey, very gravelly, very silty, SAND. Gravels are subangular medium to fine siltstone pieces.	13.72	
		3.15 - 4.5										
4	CORE5						0	0	0			
	SPT6	4.5 - 4.7	25/7	100/13	-	>100						
		4.7 - 6.2								Very weak to weak, offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, extremely close to medium spaced.	12.02	
5	CORE7						63	27	0			
6		6.2 - 7.7										
7	CORE8						63	49	33			
		7.7 - 9										
8	CORE9						65	53	35			
9		9 - 10.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	7.72	
10	CORE10						64	48	40			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.78m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C02**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+16.720DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,762,194.47** E **480,691.21**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	6.72	
		10.5 - 12										
11	CORE11						62	48	47			
12		12 - 13.5								Very weak to weak, brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.	4.72	
	CORE12						55	53	51			
13		13.5 - 15										
14	CORE13						52	45	32			
15		15 - 16.5										
	CORE14						52	36	31			
16		16.5 - 18										
17	CORE15						56	31	25			
18		18 - 19.5										
	CORE16						40	8	0			
19	SPT17	19.5 - 19.66	25/6	100/10	-	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.78	
		19.66 - 21									-2.94	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.78m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C02**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+16.720DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76.0**	N **2,762,194.47** E **480,691.21**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE18						38	11	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.		
21	SPT19	21 - 21.23	25/8	100	-	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.28	
		21.23 - 22.5									-4.51	
22	CORE20						41	16	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.		
	SPT21	22.5 - 22.73	25/8	100	-	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.78	
		22.73 - 24									-6.01	
23	CORE22						53	30	25	Very weak to weak, brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.		
24		24 - 25.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-7.28	
	CORE23						60	7	0			
25		25.5 - 27										
26	CORE24						64	11	0			
27		27 - 28.5										
	CORE25						59	0	0			
28		28.5 - 30										
29	CORE26						51	10	9			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.78m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C02**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+16.720DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,762,194.47** E **480,691.21**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-13.28	
	CORE27						60	10	0			
31		31.5 - 33										
	CORE28						66	7	0			
32												
		33 - 34.5										
33	CORE29						56	15	0			
34		34.5 - 36										
	CORE30						61	0	0			
35												
		36 - 37.5										
36	CORE31						65	33	27			
37		37.5 - 39										
	CORE32						59	13	0			
38												
		39 - 40.5										
39	CORE33						41	11	0			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.78m below the existing ground level i.e. at R.L. +10.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C02**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+16.720DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,762,194.47** E **480,691.21**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-23.28	
	SPT34	40.5 - 40.69	25/6	100/13	-	>100					-23.78	
		40.69 - 42								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-23.97	
41	CORE35						53	15	9	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
42		42 - 43.5									-25.28	
	CORE36						65	20	0	Extremely weak to very weak, Light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
43		43.5 - 45										
44	CORE37						57	25	18			
45		45 - 46										
	CORE38						74	35	11			
46		46 - 47										
	CORE39						67	15	0			
47		47 - 48.5										
	CORE40						84	25	21			
48		48.5 - 49.5										
49	CORE41						74	35	19			
		49.5 - 51										
50												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C02**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+16.720DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76.0**

N **2,762,194.47** E **480,691.21**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE42						65	11	0	Extremely weak to very weak, Light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-33.28	
51		51 - 52										
	CORE43						58	0	0			
52		52 - 53.5										
	CORE44						91	25	16			
53												
		53.5 - 55										
54	CORE45						74	20	10			
55		55 - 56										
	CORE46						87	11	0			
56		56 - 57.5										
	CORE47						65	0	0			
57												
		57.5 - 59										
58	CORE48						54	16	11			
59		59 - 60										
	CORE49						77	25	9			
60										END OF BORING	-43.08	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C04**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+17.320DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,762,142.92** E **480,778.26**
Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	8	10	18				Medium dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	16.32	
2	SPT3	2 - 2.45	7	16	34	50				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	15.32	
3	SPT4	3 - 3.33	25	36	14/3	>50						
4	SPT5	4 - 4.25	25/10	50	-	>50				Very dense, light brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine rock fragments.	13.32	
5	SPT6	5 - 5.18	25/8	50/10	-	>50						
6	CORE7	5.2 - 6.7					53	0	0	Extremely weak to very weak, offwhite conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.	12.12	
7	CORE8	6.7 - 7.7					74	45	42			
8	CORE9	7.7 - 9					58	34	17			
9	CORE10	9 - 10.5					37	5	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +8.32m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C04**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+17.320DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,762,142.92** E **480,778.26**
Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT11	10.5 - 10.63 10.63 - 11.63	25/4	100/9	-	>100				Extremely weak to very weak, offwhite conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.	7.32 6.82	
11	CORE12						55	7	0	Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine rock fragments.	6.69	
		11.63 - 13								Extremely weak to very weak, offwhite conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.	5.69	
12	CORE13						69	50	41	Very weak to weak, offwhite, calcareous SILTSTONE, partially weathered, fractures are very closely to medium spaced and interbedded with silt.		
13		13 - 14.5										
	CORE14						63	47	42			
14												
		14.5 - 16										
15	CORE15						59	47	40			
16		16 - 17.5										
	CORE16						60	38	31			
17												
		17.5 - 19										
18	CORE17						60	37	17			
19		19 - 20.5										
	CORE18						56	10	0			
20												

REMARKS:

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* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +8.32m DMD.
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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C04**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

Ground Level (m): **+17.320DMD**

Coordinates: N **2,762,142.92** E **480,778.26**

Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak to weak, offwhite, calcareous SILTSTONE, partially weathered, fractures are very closely to medium spaced and interbedded with silt.	-2.68	
		20.5 - 22										
21	CORE19						41	18	0			
22	SPT20	22 - 22.12	25/3	100/9	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.68	
		22.12 - 23.5								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	-4.80	
23	CORE21						56	23	0			
		23.5 - 25										
24	CORE22						29	0	0			
25	SPT23	25 - 25.19	25/7	100/12	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.68	
		25.19 - 26.5								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	-7.87	
26	CORE24						38	0	0			
	SPT25	26.5 - 26.63	25/4	100/9	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.18	
		26.63 - 28								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	-9.31	
27	CORE26						32	32	0			
28	SPT27	28 - 28.13	25/3	100/10	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.68	
		28.13 - 29.5								Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	-10.80	
	CORE28						56	29	26			
29		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +8.32m DMD.
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SAMPLE KEY

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- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C04**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **4/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+17.320DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**	N **2,762,142.92** E **480,778.26**
Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE29						66	17	7	Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	-12.68	
31		31 - 32.5									-13.68	
	CORE30						57	33	10	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
32		32.5 - 34										
33	CORE31						60	30	13			
34		34 - 35.5										
	CORE32						41	11	0			
35	SPT33	35.5 - 35.63	25/3	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-18.18	
		35.63 - 37								Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-18.31	
36	CORE34						54	22	11			
37		37 - 38.5										
	CORE35						63	30	23			
38		38.5 - 40										
39	CORE36						29	5	0			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +8.32m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C04**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+17.320DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,762,142.92** E **480,778.26**

Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	SPT37	40 - 40.13	25/4	100/9	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-22.68	
		40.13 - 41.5									-22.81	
41	CORE38						47	7	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT39	41.5 - 41.62	25/3	100/9	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-24.18	
		41.62 - 43									-24.30	
42	CORE40						64	18	7	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
43		43 - 44.5										
	CORE41						61	20	16			
44												
		44.5 - 46										
45	CORE42						53	11	7			
46		46 - 47.5										
	CORE43						60	27	20			
47												
		47.5 - 49										
48	CORE44						40	18	0			
49	SPT45	49 - 49.18	25/8	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-31.68	
		49.18 - 50									-31.86	
	CORE46						85	13	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very		
50												

REMARKS:

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C04**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+17.320DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76.0**

N **2,762,142.92** E **480,778.26**

Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51								closely spaced and interbedded with cemented silt.	-32.68	
	CORE47						74	25	11	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
51		51 - 52.5										
	CORE48						65	33	0			
52												
		52.5 - 53.5										
53	CORE49						57	18	0			
		53.5 - 54										
	CORE50						74	25	18			
54		54 - 55										
	CORE51						65	35	0			
55		55 - 56.5										
	CORE52						51	11	0			
56												
		56.5 - 58										
57	CORE53						69	16	10			
58		58 - 59										
	CORE54						71	28	20			
59		59 - 60										
	CORE55						69	30	19			
60										END OF BORING	-42.48	

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C06**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.540DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,762,081.79** E **480,885.49**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	15	20	35				Dense, light brown, silty, medium to fine SAND.	19.54	
2	SPT3	2 - 2.45	14	16	22	38						
3	SPT4	3 - 3.45	12	18	25	43						
4	SPT5	4 - 4.45	14	19	25	44						
5	SPT6	5 - 5.37	25	31	18/7	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	15.54	
6	SPT7	6.5 - 6.75	25/9	46	4/1	>50						
7	CORE8	6.75 - 8.25					35	11	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	13.79	
8	SPT9	8.25 - 8.5	25/7	78	22/3	>100				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.29	
		8.5 - 10									12.04	
9	CORE10						58	33	17	Very weak to weak, offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +10.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C06**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.540DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,762,081.79** E **480,885.49**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak to weak, offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.	10.54	
	CORE11						39	11	0			
11	SPT12	11.5 - 11.67	25/5	100/12	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.04	
		11.67 - 13.2									8.87	
12	CORE13						51	33	26	Very weak to weak, off white, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.		
13		13.2 - 14.7										
14	CORE14						65	37	16			
		14.7 - 16.2										
15	CORE15						60	39	37			
16		16.2 - 17.7										
17	CORE16						60	40	27			
		17.7 - 19.2									2.84	
18	CORE17						61	27	25	Extremely weak to very weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.		
19		19.2 - 20.7										
20	CORE18											

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C06**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.540DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76.0**	N **2,762,081.79** E **480,885.49**
Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20							62	13	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	0.54	
		20.7 - 22.2										
21	CORE19						65	56	47			
22		22.2 - 23.7										
23	CORE20						57	51	47			
24		23.7 - 25.2										
	CORE21						63	11	0			
25		25.2 - 26.7									-4.66	
26	CORE22						57	9	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		26.7 - 28.2										
27	CORE23						39	8	0			
28	SPT24	28.2 - 28.35	25/4	100/11	-	>100					-7.66	
		28.35 - 29.85								Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.81	
29	CORE25						61	27	20	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		29.85 - 31.35										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +10.04m DMD.
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SAMPLE KEY

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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C06**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.540DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,762,081.79** E **480,885.49**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE26						41	16	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-9.46	
31	SPT27	31.35 - 31.51	25/4	100/12	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.81	
		31.51 - 33									-10.97	
32	CORE28						67	23	17	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
33		33 - 34.5										
34	CORE29						57	41	20			
		34.5 - 36										
35	CORE30						67	37	27			
36		36 - 37.5										
37	CORE31						41	11	0			
	SPT32	37.5 - 37.65	25/5	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.96	
		37.65 - 39.15									-17.11	
38	CORE33						60	33	20	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
39		39.15 - 40.65										
40	CORE34						39	6	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +10.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C06**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.540DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76.0**

N **2,762,081.79** E **480,885.49**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-19.46	
	SPT35	40.65 - 40.8	25/5	100/10	-	>100					-20.11	
		40.8 - 42.3								Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-20.26	
41	CORE36						53	23	13	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
42		42.3 - 43.5									-21.76	
	CORE37						65	15	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
43		43.5 - 44.5										
44	CORE38						78	25	11			
		44.5 - 46										
45	CORE39						84	35	18			
46		46 - 47										
	CORE40						74	19	0			
47		47 - 48.5										
	CORE41						65	16	0			
48		48.5 - 49.5										
49	CORE42						58	25	19			
		49.5 - 51										
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +10.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C06**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **6/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.540DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76.0**	N **2,762,081.79** E **480,885.49**
Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE43						65	35	21	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-29.46	
51		51 - 52.5										
	CORE44						78	28	11			
52		52.5 - 53										
	CORE45						84	29	10			
53		53 - 54										
	CORE46						65	0	0			
54		54 - 55.5										
	CORE47						75	19	0			
55		55.5 - 57										
56	CORE48						52	25	19			
57		57 - 58.5										
	CORE49						56	16	10			
58		58.5 - 60										
59	CORE50						61	0	0			
										END OF BORING	-39.26	
60												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +10.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C08**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.588DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**	N **2,762,035.14** E **480,950.49**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brow, silty, fine SAND.		
1	SPT2	1 - 1.45	7	12	12	24				Medium dense to dense, light brown, slightly silty, fine SAND.	20.59	
2	SPT3	2 - 2.45	7	11	19	30						
3	SPT4	3 - 3.31	21	45	5/1	>50				Very dense, light brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine sandstone pieces.	18.59	
4	SPT5	4 - 4.2	25/8	50/12	-	>50				Very dense, light brown, very gravelly, very silty, SAND. Gravels are subangular medium to fine sandstone pieces.	17.59	
		4.2 - 5.5									17.39	
5	CORE6						53	42	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		5.5 - 7										
6	CORE7						59	0	0			
7		7 - 8.5										
	CORE8						53	0	0			
8		8.5 - 10										
9	CORE9						29	0	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +11.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C08**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.588DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**	N **2,762,035.14** E **480,950.49**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT10	10 - 10.16	25/7	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine rock fragments.	11.59	
		10.16 - 11.16									11.43	
	CORE11						51	7	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
11		11.16 - 12.61										
	CORE12						37	0	0			
12	SPT13	12.61 - 12.77	25/7	100/9	-	>100					8.98	
		12.77 - 14								Very dense, brown, slightly sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.82	
	CORE14						55	12	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
13												
14		14 - 15.5										
	CORE15						53	7	0			
15												
		15.5 - 17										
16	CORE16						36	0	0			
17	SPT17	17 - 17.18	25/8	100/10	-	>100				Very dense, brown, slightly sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.59	
		17.18 - 18.18									4.41	
	CORE18						54	11	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
18		18.18 - 19.18										
	CORE19						65	0	0			
19		19.18 - 20										
	CORE20						26	5	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +11.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C08**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.588DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,762,035.14** E **480,950.49**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT21	20 - 20.16	25/4	100/12	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.59	
		20.16 - 21.6									1.43	
21	CORE22						33	6	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
	SPT23	21.6 - 21.81	25/5	100/16	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEl. Gravels are subangular medium to fine siltstone pieces.	-0.01	
22		21.81 - 23.1									-0.22	
	CORE24						39	11	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
23	SPT25	23.1 - 23.24	25/3	100/11	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.51	
		23.24 - 24.5									-1.65	
24	CORE26						54	25	19	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced.		
		24.5 - 26									-2.91	
25	CORE27						56	11	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with cemented sand.		
26		26 - 27.5										
	CORE28						67	18	10			
27		27.5 - 28.5										
28	CORE29						74	25	21			
		28.5 - 29.5										
29	CORE30						29	0	0			
	SPT31	29.5 - 29.69	25/4	100	-	>100				Very dense, offwhite, silty to very silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.91	
		29.69 - 31									-8.10	
30												

REMARKS:

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SAMPLE KEY

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- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C08**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.588DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,762,035.14** E **480,950.49**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE32						65	18	0	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
31		31 - 32.5										
	CORE33						45	11	0			
32	SPT34	32.5 - 32.78	25/9	75	25/4	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces and rock fragments.	-10.91	
		32.78 - 34.28									-11.19	
33	CORE35						54	35	18	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
34		34.28 - 35.06										
	CORE36						25	0	0			
35	SPT37	35.06 - 35.35	25/8	72	28/5	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces and rock fragments.	-13.47	
		35.35 - 36.85									-13.76	
36	CORE38						65	45	11	Extremely weak to very weak, off white, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
37		36.85 - 38.35										
	CORE39						74	25	0			
38		38.35 - 39.85										
39	CORE40						33	0	0			
40		39.85 - 40.18	25/10	65	35/8	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are	-18.26	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +11.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C08**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.588DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,762,035.14** E **480,950.49**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	SPT41	40.18 - 41.18								subangular medium to fine siltstone pieces and rock fragments.	-18.59	
	CORE42						54	25	12	Extremely weak to very weak, offwhite, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are very close to medium spaced and interbedded with silt.		
41		41.18 - 42.5										
	CORE43						65	25	0			
42		42.5 - 44									-20.59	
	CORE44						74	11	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
43												
		44 - 45										
44	CORE45						63	10	8			
		45 - 46.5										
45	CORE46						74	0	0			
46		46.5 - 47										
	CORE47						84	18	16			
		47 - 48										
47	CORE48						65	29	20			
48		48 - 49.5										
	CORE49						75	35	11			
49		49.5 - 51									-28.09	
50										Very weak to weak, light brown/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +11.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C08**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.588DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76.0**

N **2,762,035.14** E **480,950.49**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE50						74	11	0	are very closely to medium spaced. Very weak to weak, light brown/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to medium spaced.	-28.41	
51		51 - 52.5										
	CORE51						84	0	0			
52		52.5 - 53										
	CORE52						65	16	10			
53		53 - 54										
	CORE53						58	25	16			
54		54 - 55.5										
	CORE54						56	19	0			
55		55.5 - 56										
	CORE55						57	25	11			
56		56 - 57										
	CORE56						65	35	13			
57		57 - 58										
	CORE57						58	0	0			
58		58 - 59										
	CORE58						74	18	0			
59		59 - 60										
	CORE59						64	11	0			
60										END OF BORING	-38.21	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +11.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C10**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.653DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,974.64** E **480,987.55**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	9	17	25	42				Dense to very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.65	
2	SPT3	2 - 2.45	12	18	24	42						
3	SPT4	3 - 3.42	14	18	34/12	>50						
4	SPT5	4 - 4.18	25/7	50/11	-	>50				Very dense, light brown, gravelly, very silty, SAND. Gravels are subangular medium to fine sandstone pieces.	18.65	
		4.2 - 5.5									18.45	
	CORE6						71	19	8	Recovered as CONCRETE.	18.30	
5										Extremely weak to very weak, brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.05	
		5.5 - 7								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
6	CORE7						63	11	0			
7		7 - 8.5										
	CORE8						29	0	0			
8												
	SPT9	8.5 - 8.76	25/7	67	33/4	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	14.15	
		8.76 - 10									13.89	
9	CORE10						36	11	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +10.65m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C10**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.653DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,974.64** E **480,987.55**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT11	10 - 10.25	25/6	70	30/4	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	12.65	
		10.25 - 11.5									12.40	
11	CORE12						41	7	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT13	11.5 - 11.72	25/7	100	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	11.15	
12		11.72 - 13									10.93	
	CORE14						66	49	45	Very weak to weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced and interbedded with silt.		
13		13 - 14.5										
	CORE15						63	43	27			
14		14.5 - 16										
15	CORE16						60	33	17			
16		16 - 17.5										
	CORE17						60	47	38			
17		17.5 - 19										
18	CORE18						60	30	27			
19		19 - 20.5										
	CORE19						61	45	46			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +10.65m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C10**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+22.653DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**	N **2,761,974.64** E **480,987.55**
Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	2.65	
		20.5 - 22										
21	CORE20						59	33	27			
22		22 - 23.5										
	CORE21						65	52	47			
23												
		23.5 - 25										
24	CORE22						61	17	11			
25		25 - 26.5										
	CORE23						49	5	0			
26												
	SPT24	26.5 - 26.76	25/8	70	30/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.85	
		26.76 - 28									-4.11	
27	CORE25						41	11	0	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
28	SPT26	28 - 28.24	25/7	80	20/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.35	
		28.24 - 29.5									-5.59	
29	CORE27						39	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
	SPT28	29.5 - 29.68	25/7	100/11	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.85	
		29.68 - 31									-7.03	
30												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C10**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **4/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+22.653DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**	N **2,761,974.64** E **480,987.55**
Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE29						35	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-7.35	
										Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
31	SPT30	31 - 31.26	25/7	69	31/4	>100					-8.35	
		31.26 - 32.5								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.61	
	CORE31						43	7	0	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
32	SPT32	32.5 - 32.74	25/6	80	20/3	>100					-9.85	
		32.74 - 34								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.09	
33	CORE33						37	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
34	SPT34	34 - 34.18	25/5	100/13	-	>100					-11.35	
		34.18 - 35.5								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.53	
35	CORE35						41	16	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT36	35.5 - 35.71	25/7	100/14	-	>100					-12.85	
		35.71 - 37								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.06	
36	CORE37						71	23	8	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
37		37 - 38.5										
	CORE38						64	39	8			
38		38.5 - 40										
39	CORE39						62	25	22			
40												

REMARKS:

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SAMPLE KEY

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⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C10**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.653DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,974.64** E **480,987.55**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40		40 - 41.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	-17.35	
	CORE40						63	8	0			
41		41.5 - 43										
	CORE41						55	10	0			
42												
43		43 - 44										
	CORE42						54	15	0			
44		44 - 45										
	CORE43						65	25	18			
45		45 - 46										
	CORE44						74	25	21			
46		46 - 47.5										
	CORE45						65	35	16			
47												
		47.5 - 49										
48	CORE46						74	11	10			
49		49 - 50										
	CORE47						65	16	0			
50												

REMARKS:

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SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C10**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.653DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76.0**

N **2,761,974.64** E **480,987.55**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	-27.35	
	CORE48						67	18	10			
51		51.5 - 52.5										
	CORE49						57	0	0			
52		52.5 - 54										
	CORE50						58	18	11			
53												
		54 - 55.5										
54	CORE51						84	11	5			
		55.5 - 56.5										
55	CORE52						74	0	0			
		56.5 - 58										
56	CORE53						64	19	0			
		58 - 59										
57	CORE54						57	21	18			
		59 - 60										
58	CORE55						66	25	19			
59										END OF BORING	-37.15	
60												

REMARKS:

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SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C14**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.470DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,762,178.99** E **481,090.42**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	13	17	30				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.47	
2	SPT3	2 - 2.45	7	15	20	35						
3	SPT4	3 - 3.45	5	11	17	28				Medium dense to dense, light brown, silty, fine to medium SAND.	17.47	
4	SPT5	4 - 4.45	16	19	28	47						
5	SPT6	5 - 5.33	25	42	8/3	>50				Very dense, light brown, very gravelly, very silty, medium SAND. Gravels are subangular medium to fine sandstone pieces and traces of gypsum.	15.47	
6												
	SPT7	6.5 - 6.68	25/7	50/11	-	>50						
		6.68 - 8								Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	13.79	
7	CORE8						57	26	7			
8		8 - 9										
	CORE9						60	23	17			
9		9 - 10										
	CORE10						50	35	15			
10												

REMARKS:

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SAMPLE KEY

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- □ IP: Initial Penetration
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C14**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.470DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76.0**	N **2,762,178.99** E **481,090.42**
Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11										
	CORE11						55	15	10	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	10.47	
11		11 - 12.5										
	CORE12						13	0	0			
12												
	SPT13	12.5 - 12.78	25/8	75	25/5	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.97	
		12.78 - 14									7.69	
13	CORE14						12	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
14	SPT15	14 - 14.27	25/8	73	27/4	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.47	
		14.27 - 15.5									6.20	
15	CORE16						38	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT17	15.5 - 15.7	25/7	75	25/3	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.97	
		15.7 - 17.2									4.77	
16	CORE18						63	37	20	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
17		17.2 - 18.5									3.27	
	CORE19						72	34	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy gravel.		
18		18.5 - 20										
19	CORE20						61	38	11			
20												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C14**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.470DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,762,178.99** E **481,090.42**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with san	0.47	
21	CORE21						54	8	7			
		21.5 - 23										
22	CORE22						33	5	0			
23	SPT23	23 - 23.25	25/8	95	5/2	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-2.53	
		23.25 - 24.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with san	-2.78	
24	CORE24						43	11	0			
	SPT25	24.5 - 24.72	25/6	95	5/1	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-4.03	
		24.72 - 26								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with san	-4.25	
25	CORE26						36	4	0			
26	SPT27	26 - 26.26	25/7	80	20/3	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-5.53	
		26.26 - 27.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with san	-5.79	
27	CORE28						41	0	0			
	SPT29	27.5 - 27.75	25/8	82	18/2	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-7.03	
		27.75 - 29.25								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with san	-7.28	
28	CORE30						42	11	0			
29	SPT31	29.25 - 29.45	25/5	100	-	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-8.78	
		29.45 - 30.95								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40,	-8.98	
30												

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C14**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.470DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,762,178.99** E **481,090.42**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE32						40	0	0	gravels are subangular medium to fine matrix is silt, distinctly weathered, fractures are extremely close to closely spaced and interbedded with san		
31	SPT33	30.95 - 31.16	25/5	90	10/2	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.48	
		31.16 - 32									-10.69	
	CORE34						54	0	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
32		32 - 33.5										
	CORE35						45	0	0			
33												
	SPT36	33.5 - 33.71	25/5	92	8/1	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.03	
		33.71 - 35.2									-13.24	
34	CORE37						33	5	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
35	SPT38	35.2 - 35.39	25/4	100	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.73	
		35.39 - 36.89									-14.92	
36	CORE39						35	5	0	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
37	SPT40	36.89 - 37.04	25/3	100/12	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.42	
		37.04 - 38.04									-16.57	
	CORE41						54	15	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
38		38.04 - 39.5										
	CORE42						74	25	18			
39												
		39.5 - 41										
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.00m below the existing ground level i.e. at R.L. +10.47m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C14**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.470DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,762,178.99** E **481,090.42**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE43						65	11	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	-19.53	
41		41 - 42										
	CORE44						57	15	10			
42		42 - 43.5										
	CORE45						65	25	19			
43												
		43.5 - 45										
44	CORE46						74	28	15			
45		45 - 46.5										
	CORE47						84	35	11			
46												
		46.5 - 47.5										
47	CORE48						74	15	10			
		47.5 - 48										
	CORE49						65	11	0			
48		48 - 49										
	CORE50						57	0	0			
49		49 - 50.5										
	CORE51						74	18	11			
50												

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MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C14**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.470DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76.0**

N **2,762,178.99** E **481,090.42**

Date Started: **03/07/2015** Date Finished: **09/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50										Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	-29.53	
		50.5 - 51.5										
51	CORE52						65	25	21			
		51.5 - 53										
52	CORE53						74	34	25			
53		53 - 54.5										
	CORE54						77	11	0			
54												
		54.5 - 56										
55	CORE55						65	0	0			
56		56 - 57.5										
	CORE56						58	0	0			
57												
		57.5 - 58										
	CORE57						91	16	16			
58		58 - 59										
	CORE58						74	28	18			
59		59 - 60										
	CORE59						65	11	0			
60										END OF BORING	-39.33	

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C15**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.050DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,762,255.01** E **481,122.94**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, very gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone and rock fragments.		
1	SPT2	1 - 1.43	20	26	24/13	>50				Very dense locally dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	20.05	
2	SPT3	2 - 2.45	14	20	30	50						
3	SPT4	3 - 3.37	23	31	19/7	>50						
4	SPT5	4 - 4.3	25/12	38	12/3	>50						
5	SPT6	5 - 5.37	22	32	18/7	>50						
6	SPT7	6.5 - 6.78	25/12	45	5/1	>50				Very dense, light brown, silty, medium to fine SAND.	14.55	
7												
8	SPT8	8 - 8.28	25/10	38	12/3	>50						
9	SPT9	9.5 - 9.7	25/8	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.55	
10												

REMARKS:

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SAMPLE KEY

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C15**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.050DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-34** Core Diameter (mm): **76.0**	N **2,762,255.01** E **481,122.94**
Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.05	
11	SPT10	11 - 11.15 11.15 - 12.15	25/5	50/10	-	>50					9.90	
	CORE11						86	20	11	Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
12		12.15 - 13.5										
	CORE12						69	50	41			
13		13.5 - 14.5										
14	CORE13						38	0	0			
	SPT14	14.5 - 14.85	25/8	47	53/12	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.55	
		14.85 - 15.85								Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	6.20	
15	CORE15						48	8	0			
	SPT16	15.85 - 16.19	25/8	51	49/11	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.20	
16		16.19 - 17.19								Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	4.86	
	CORE17						53	10	0			
17		17.19 - 18.5										
	CORE18						61	23	0			
18		18.5 - 20										
19	CORE19						65	26	0			
20												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C15**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.050DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,762,255.01** E **481,122.94**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	1.05	
	CORE20						60	23	13			
21		21.5 - 23										
	CORE21						57	43	32			
22												
23		23 - 24										
	CORE22						46	20	0			
24	SPT23	24 - 24.28	25/6	63	38/7	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.95	
		24.28 - 25.28								Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-3.23	
	CORE24						34	0	0			
25	SPT25	25.28 - 25.61	25/8	54	46/10	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.23	
		25.61 - 26.61								Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-4.56	
26	CORE26						64	32	20			
		26.61 - 27.61										
27	CORE27						75	20	10			
		27.61 - 29										
28	CORE28						63	52	43			
29		29 - 30										
	CORE29						40	15	0			
30												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C15**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.050DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,762,255.01** E **481,122.94**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT30	30 - 30.34	25/8	51	49/11	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.95	
		30.34 - 31.34									-9.29	
31	CORE31						38	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
	SPT32	31.34 - 31.61	25/6	65	35/6	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.29	
		31.61 - 32.96									-10.56	
32	CORE33						41	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
33		32.96 - 33.96										
	CORE34						46	0	0			
34	SPT35	33.96 - 34.26	25/7	61	39/8	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.91	
		34.26 - 35.26									-13.21	
35	CORE36						65	0	0	Extremely weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		35.26 - 36.6										
36	CORE37						59	12	0			
		36.6 - 38										
37	CORE38						64	37	10			
38		38 - 39.5										
	CORE39						75	41	18			
39		39.5 - 41										
40												

REMARKS:

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MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C15**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.050DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,762,255.01** E **481,122.94**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE40						71	33	5	Extremely weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-18.95	
41		41 - 42.5										
	CORE41						55	30	0			
42		42.5 - 44										
43	CORE42						67	22	10			
44		44 - 45.5										
	CORE43						72	21	18			
45		45.5 - 47										
46	CORE44						65	23	10			
47		47 - 48.5										
	CORE45						70	11	0			
48		48.5 - 50										
49	CORE46						69	28	12			
50												

REMARKS:

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Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C15**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.050DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76.0**

N **2,762,255.01** E **481,122.94**

Date Started: **01/07/2015** Date Finished: **06/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Extremely weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-28.95	
51	CORE47						78	25	19			
		51.5 - 53										
52	CORE48						81	33	23			
53		53 - 54.5										
	CORE49						68	14	0			
54												
		54.5 - 56										
55	CORE50						57	30	0			
56		56 - 57.5										
	CORE51						64	20	10			
57												
		57.5 - 59										
58	CORE52						71	24	0			
59		59 - 60										
	CORE53						79	19	0			
60										END OF BORING	-38.75	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.50m below the existing ground level i.e. at R.L. +10.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C16**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+19.873DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76.0**	N **2,762,242.87** E **481,025.93**
Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	14	16	19	35				Dense to very dense, light brown, slightly gravelly, slightly silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	18.87	
2	SPT3	2 - 2.45	14	19	22	41						
3	SPT4	3 - 3.45	20	24	26	50						
4	SPT5	4 - 4.39	22	30	20/9	>50						
5	SPT6	5 - 5.32	24	40	10/2	>50						
6												
	SPT7	6.5 - 6.77	25/10	46	4/1	>50						
7	CORE8	6.77 - 7.77					0	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SANDSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	13.10	
8	SPT9	7.77 - 8.15	25/9	76	24/4	>100				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	12.10	
		8.15 - 9.15									11.72	
9	CORE10						37	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SANDSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT11	9.15 - 9.4	25/9	87	13/1	>100					10.72	
		9.4 - 10.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.47	
10	CORE12									Extremely weak to very weak, offwhite/ brown,		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +11.17m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C16**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.873DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,242.87** E **481,025.93**

Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10							0	0	0	calcareous SANDSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT13	10.5 - 10.75	25/6	77	23/4	>100					9.37	
		10.75 - 12.25								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	9.12	
11	CORE14						46	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SANDSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
12	SPT15	12.25 - 12.6	25/10	52	48/10	>100					7.62	
		12.6 - 14								Very dense, light brown, very gravelly, very silty, SAND. Gravels are subangular medium to fine sandstone pieces.	7.27	
13	CORE16						59	20	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty, distinctly weathered, fractures are very close to closely spaced.		
14		14 - 15.5										
	CORE17						53	27	14			
15		15.5 - 17										
16	CORE18						55	44	43			
17		17 - 18.5										
	CORE19						53	49	47			
18		18.5 - 20										
19	CORE20						61	35	35			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +11.17m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C16**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+19.873DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76.0**	N **2,762,242.87** E **481,025.93**
Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty, distinctly weathered, fractures are very close to closely spaced.	-0.13	
	CORE21						57	21	0			
21		21.5 - 23										
	CORE22						46	10	0			
22												
23	SPT23	23 - 23.3	25/10	67	33/5	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.13	
		23.3 - 24.5									-3.43	
	CORE24						54	17	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty, distinctly weathered, fractures are very close to closely spaced.		
24		24.5 - 25.5									-4.63	
25	CORE25						59	30	20	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
		25.5 - 26.5										
26	CORE26						62	17	0			
		26.5 - 28										
27	CORE27						42	0	0			
28	SPT28	28 - 28.25	25/7	88	12/3	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.13	
		28.25 - 29.75								Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-8.38	
29	CORE29						50	30	17			
		29.75 - 30.75										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +11.17m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C16**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **4/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+19.873DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76.0**	N **2,762,242.87** E **481,025.93**
Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE30						31	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-10.13	
	SPT31	30.75 - 31	25/7	80	20/3	>100					-10.88	
31		31 - 32.5								Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.13	
	CORE32						53	13	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
32		32.5 - 34										
33	CORE33						58	15	7			
34		34 - 35.5										
	CORE34						51	11	0			
35		35.5 - 37										
36	CORE35						63	35	30			
37		37 - 38										
	CORE36						55	20	0			
38		38 - 39.5									-18.13	
	CORE37						54	27	7	Extremely weak to very weak, brown, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
39		39.5 - 41										
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +11.17m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C16**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.873DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,242.87** E **481,025.93**

Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE38						59	19	0	Extremely weak to very weak, brown, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	-20.13	
41		41 - 42.5										
	CORE39						42	0	0			
42	SPT40	42.5 - 42.8	25/9	65	35/6	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-22.63	
		42.8 - 44									-22.93	
43	CORE41						50	14	0	Extremely weak to very weak, brown, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
44		44 - 45.5										
	CORE42						53	23	13			
45		45.5 - 47										
46	CORE43						58	23	19			
47		47 - 48.5										
	CORE44						41	0	0			
48	SPT45	48.5 - 48.79	25/10	70	30/4	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-28.63	
		48.79 - 49.79									-28.92	
49	CORE46						32	9	0	Extremely weak to very weak, brown, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
50	SPT47	49.79 - 50.09	25/10	66	34/5	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are	-29.92	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +11.17m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C16**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.873DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76.0**

N **2,762,242.87** E **481,025.93**

Date Started: **30/06/2015** Date Finished: **05/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50.09 - 51.59								subangular medium to fine siltstone pieces.	-30.22	
51	CORE48						64	33	13	Extremely weak to very weak, brown, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
		51.59 - 53.09									-31.72	
52	CORE49						65	57	39	Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to medium spaced and interbedded with silty.		
53		53.09 - 54.59										
54	CORE50						56	44	27			
		54.59 - 56.09										
55	CORE51						62	51	33			
56		56.09 - 57.59										
57	CORE52						55	40	24			
		57.59 - 58.59										
58	CORE53						82	72	68			
		58.59 - 60-									-38.72	
59	CORE54						59	44	21	Extremely weak to very weak, brown, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.		
60										END OF BORING	-39.93	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +11.17m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C17**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.436DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76.0**

N **2,762,309.27** E **480,830.65**

Date Started: **29/06/2015** Date Finished: **04/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	15	18	21	39				Dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.44	
2	SPT3	2 - 2.45	19	21	23	44				Dense to very dense, reddish brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	12.44	
3	SPT4	3 - 3.45	20	24	23	47						
4	SPT5	4 - 4.45	18	21	23	44						
5	SPT6	5 - 5.44	22	24	26/14	>50						
6	SPT7	6 - 6.4	25	29	21/10	>50						
7	SPT8	7 - 7.35	25/13	34	16/7	>50						
8												
9	SPT9	8.5 - 8.79	25/11	39	11/3	>50						
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.50m below the existing ground level i.e. at R.L. +9.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C17**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.436DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76.0**

N **2,762,309.27** E **480,830.65**

Date Started: **29/06/2015** Date Finished: **04/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT10	10 - 10.26	25/10	46	4/1	>50				Very dense, reddish brown, gravelly, slightly silty, coarse to medium SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	4.44	
11	SPT11	11.5 - 11.75	25/10	50	-	>50						
		11.75 - 13									2.69	
12	CORE12						28	0	0	Extremely weak to very weak, brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
13	SPT13	13 - 13.32	25/9	46	44/8	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	1.44	
		13.32 - 15									1.12	
14	CORE14						34	0	0	Extremely weak to very weak, brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
15	SPT15	15 - 15.28	25/9	69	31/4	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-0.56	
		15.28 - 16.5									-0.84	
16	CORE16						30	0	0	Extremely weak to very weak, brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT17	16.5 - 16.76	25/8	75	25/3	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-2.06	
		16.76 - 18									-2.32	
17	CORE18						27	0	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
18	SPT19	18 - 18.21	25/5	90	10/1	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-3.56	
		18.21 - 19.5									-3.77	
19	CORE20						29	0	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
	SPT21	19.5 - 19.7	25/5	100	-	>100				Very dense, brown, very gravelly, very silty, SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-5.06	
		19.7 - 21									-5.26	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.50m below the existing ground level i.e. at R.L. +9.94m DMD.
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SAMPLE KEY

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C17**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.436DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76.0**

N **2,762,309.27** E **480,830.65**

Date Started: **29/06/2015** Date Finished: **04/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE22						25	0	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
21	SPT23	21 - 21.18	25/4	100/14	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-6.56	
		21.18 - 22.68									-6.74	
22	CORE24						51	0	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
		22.68 - 24.18										
23	CORE25						55	12	0			
24		24.18 - 25.68										
25	CORE26						46	0	0			
	SPT27	25.68 - 25.85	25/8	100/9	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-11.24	
		25.85 - 27.2									-11.41	
26	CORE28						30	0	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
27	SPT29	27.2 - 27.35	25/7	100/8	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-12.76	
		27.35 - 28.6									-12.91	
28	CORE30						52	25	11	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
		28.6 - 30										
29	CORE31						57	8	0			
30												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C17**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.436DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76.0**

N **2,762,309.27** E **480,830.65**

Date Started: **29/06/2015** Date Finished: **04/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-15.56	
	CORE32						53	10	6			
31		31.5 - 33										
	CORE33						58	0	0			
32												
	CORE34	33 - 34.5					46	0	0			
33												
	SPT35	34.5 - 34.65	25/7	100/8	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-20.06	
		34.65 - 36									-20.21	
34	CORE36						55	11	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
		36 - 37.5										
35	CORE37						62	14	0			
	SPT38	37.5 - 37.65	25/5	100/10	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-23.06	
		37.65 - 39									-23.21	
36	CORE39						54	12	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
		39 - 40										
37	CORE40						67	22	10			
38												
39												
40												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C17**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.436DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76.0**

N **2,762,309.27** E **480,830.65**

Date Started: **29/06/2015** Date Finished: **04/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40		40 - 41.5								Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-25.56	
41	CORE41						58	18	0			
		41.5 - 43										
42	CORE42						56	15	0			
43		43 - 44.5										
44	CORE43						62	20	18			
		44.5 - 46										
45	CORE44						73	27	11			
46		46 - 47.5										
47	CORE45						68	30	10			
		47.5 - 49										
48	CORE46						59	15	0			
49		49 - 50.5										
	CORE47						64	29	12			
50												

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C17**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.436DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76.0**

N **2,762,309.27** E **480,830.65**

Date Started: **29/06/2015** Date Finished: **04/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50										Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-35.56	
		50.5 - 52										
51	CORE48						53	35	20			
52		52 - 53.5										
	CORE49						57	15	0			
53												
		53.5 - 55										
54	CORE50						59	18	11			
55		55 - 56.5										
	CORE51						61	21	0			
56												
		56.5 - 58										
57	CORE52						60	18	0			
58		58 - 59										
	CORE53						71	24	18			
59		59 - 60										
	CORE54						73	29	10			
60										END OF BORING	-45.36	

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C18**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+14.557DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,322.54** E **480,723.12**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	14	20	28	48				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.56	
2	SPT3	2 - 2.33	25	36	14/3	>50						
3	SPT4	3 - 3.25	25/9	45	5/1	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.56	
4	SPT5	4 - 4.2	25/8	50/12	-	>50				Very dense, brown, very gravelly, very silty, SAND. Gravels are subangular medium to fine siltstone pieces and rock fragments.	10.56	
		4.2 - 5.5									10.36	
5	CORE6						61	19	0	Extremely weak to very weak, off white/ light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		5.5 - 7										
6	CORE7						63	18	11			
7		7 - 8.5										
8	CORE8						61	15	8			
		8.5 - 10										
9	CORE9						60	35	7			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.70m below the existing ground level i.e. at R.L. +9.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C18**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+14.557DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,322.54** E **480,723.12**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, off white/ light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	4.56	
11	CORE10						36	35	0			
	SPT11	11.5 - 11.7	25/7	100/13	-	>100				Very dense, off white, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.06	
		11.7 - 13.2								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	2.86	
12	CORE12						59	30	7			
13		13.2 - 14.7										
14	CORE13						53	43	7			
		14.7 - 16.2										
15	CORE14						57	33	7			
16		16.2 - 17.7										
17	CORE15						60	30	17			
		17.7 - 19.2										
18	CORE16						57	30	17			
19		19.2 - 20.7								Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-4.64	
20	CORE17											

REMARKS:

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C18**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+14.557DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,322.54** E **480,723.12**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20							60	20	13	Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-5.44	
		20.7 - 22.2										
21	CORE18						40	3	0			
22	SPT19	22.2 - 22.38	25/7	100/11	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.64	
		22.38 - 23.88								Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-7.82	
23	CORE20						47	7	0			
24	SPT21	23.88 - 24.03	25/5	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.32	
		24.03 - 25.5								Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-9.47	
25	CORE22						65	34	17			
		25.5 - 27										
26	CORE23						63	27	23			
27		27 - 28.5										
28	CORE24						64	28	19			
		28.5 - 30										
29	CORE25						67	31	20			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.70m below the existing ground level i.e. at R.L. +9.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C18**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+14.557DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76.0**

N **2,762,322.54** E **480,723.12**

Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-15.44	
	CORE26						54	20	0			
31		31.5 - 33										
	CORE27						62	24	0			
32												
	CORE28	33 - 34.5					59	22	0			
33												
	CORE29	34.5 - 36					57	18	0			
34												
	CORE30	36 - 37.5					58	18	0			
35												
	CORE31	37.5 - 39					61	19	10			
36												
	CORE32	39 - 40.5					59	12	0			
37												
38												
39												
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.70m below the existing ground level i.e. at R.L. +9.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C18**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+14.557DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,322.54** E **480,723.12**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-25.44	
		40.5 - 42										
41	CORE33						60	22	8			
		42 - 43.5										
42	CORE34						53	19	0			
43		43.5 - 45										
44	CORE35						55	10	0			
45		45 - 46.5										
	CORE36						67	20	10			
46		46.5 - 48										
47	CORE37						58	8	0			
48		48 - 49.5										
	CORE38						56	10	0			
49		49.5 - 51										
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.70m below the existing ground level i.e. at R.L. +9.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C18**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**	Sheet: **6/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+14.557DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76.0**	N **2,762,322.54** E **480,723.12**
Date Started: **28/06/2015** Date Finished: **03/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE39	51 - 52.5					51	10	0	Extremely weak to very weak, off white, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	-35.44	
51	CORE40	52.5 - 54					57	9	0			
52	CORE41	54 - 55.5					61	12	0			
53	CORE42	55.5 - 57					64	18	0			
54	CORE43	57 - 58.5					73	25	12			
55	CORE44	58.5 - 60					68	21	10			
56	CORE45						59	20	0			
57												
58												
59												
60										END OF BORING	-45.24	

REMARKS:

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* Ground water table was encountered at a depth of 4.70m below the existing ground level i.e. at R.L. +9.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C19**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		Sheet: **1/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+13.838DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment:	**ACKER**	Core Diameter (mm): **76.0**	N **2,762,369.55** E **480,733.10**
Date Started:	**02/07/2015**	Date Finished: **07/07/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	9	11	14	25				Medium dense, brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine rock fragments.	12.84	
2	SPT3	2 - 2.42	14	18	32/12	>50				Very dense, brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine rock fragments.	11.84	
3	SPT4	3 - 3.25	25/9	42	8/1	>50						
		3.25 - 4.75									10.59	
4	CORE5						66	49	31	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio 60:40, gravels are subangular medium to fine matrix is silt, distinctly weathered fractures are extremely close to closely spaced and interbedded with cemented sand.		
		4.75 - 6.25										
5	CORE6						38	27	23			
6	SPT7	6.25 - 6.5	25/10	100	-	>100					7.59	
		6.5 - 7.75								Very dense, brown, very gravelly, slightly silty, medium to coarse SAND. Gravels are subangular medium to fine rock fragments.	7.34	
7	CORE8						40	0	0	Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT9	7.75 - 7.95	25/5	100	-	>100					6.09	
8		7.95 - 9.25								Very dense, brown, very gravelly, slightly silty, medium to coarse SAND. Gravels are subangular medium to fine rock fragments.	5.89	
	CORE10						51	13	7	Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
9		9.25 - 10.75										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 3.30m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
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- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C19**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Equipment: **ACKER** Core Diameter (mm): **76.0**

Ground Level (m): **+13.838DMD**

Coordinates: N **2,762,369.55** E **480,733.10**

Date Started: **02/07/2015** Date Finished: **07/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11	10.75 - 12.25					46	11	0	Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	3.84	
11	CORE12						26	0	0			
12	SPT13	12.25 - 12.5	25/10	100	-	>100				Very dense, brown, very gravelly, slightly silty, medium to coarse SAND. Gravels are subangular medium to fine rock fragments.	1.59	
		12.5 - 13.75								Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	1.34	
13	CORE14						53	10	0			
14	CORE15	13.75 - 15.25					59	18	0			
15	CORE16	15.25 - 16.75					60	0	0			
16	CORE17	16.75 - 18.25					54	0	0			
17	CORE18	18.25 - 19.75					53	0	0			
18		19.75 - 21.25										
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 3.30m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C19**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Equipment: **ACKER** Core Diameter (mm): **76.0**

Ground Level (m): **+13.838DMD**

Coordinates: N **2,762,369.55** E **480,733.10**

Date Started: **02/07/2015** Date Finished: **07/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19						43	17	0	Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-6.16	
21		21.25 - 22.75										
22	CORE20						34	0	0			
	SPT21	22.75 - 23.01	25/6	66	34/5	>100					-8.91	
23		23.01 - 24.51								Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.17	
	CORE22						53	0	0	Extremely weak to very weak, brown/ off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
24		24.51 - 26										
25	CORE23						50	20	0			
26		26 - 27.5										
	CORE24						50	33	0			
27		27.5 - 29										
28	CORE25						63	43	13			
29		29 - 30										
	CORE26						69	35	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 3.30m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C19**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+13.838DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,369.55** E **480,733.10**

Date Started: **02/07/2015** Date Finished: **07/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-16.16	
	CORE27						63	21	10			
31		31.5 - 33										
	CORE28						58	0	0			
32												
		33 - 34.5										
33	CORE29						52	0	0			
34		34.5 - 36										
	CORE30						51	10	0			
35												
		36 - 37.5										
36	CORE31						50	10	0			
37		37.5 - 39										
	CORE32						51	3	0			
38												
		39 - 40.5										
39	CORE33						56	27	0			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 3.30m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C19**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+13.838DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,369.55** E **480,733.10**

Date Started: **02/07/2015** Date Finished: **07/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Extremely weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-26.16	
		40.5 - 42										
41	CORE34						63	0	0			
42		42 - 43.5								Extremely weak to very weak, off white calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.	-28.16	
	CORE35						60	18	0			
43												
		43.5 - 45										
44	CORE36						64	23	0			
45		45 - 46.5										
	CORE37						63	27	13			
46												
		46.5 - 48										
47	CORE38						54	27	7			
48		48 - 49.5										
	CORE39						56	22	0			
49												
		49.5 - 51										
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 3.30m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C19**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+13.838DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76.0**

N **2,762,369.55** E **480,733.10**

Date Started: **02/07/2015** Date Finished: **07/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-3**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE40						48	0	0	Extremely weak to very weak, off white calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.	-36.16	
51	SPT41	51 - 51.28	25/6	60	40/7	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-37.16	
		51.28 - 52.78									-37.44	
52	CORE42						54	8	0	Extremely weak to very weak, off white calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.		
		52.78 - 54.28										
53	CORE43						59	11	0			
54		54.28 - 55.78										
55	CORE44						43	0	0			
	SPT45	55.78 - 56	25/6	80	20/1	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-41.94	
56		56 - 57.5									-42.16	
	CORE46						58	10	0	Extremely weak to very weak, off white calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.		
57		57.5 - 59										
58	CORE47						64	15	0			
59		59 - 60										
	CORE48						73	28	10			
60										END OF BORING	-45.96	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 3.30m below the existing ground level i.e. at R.L. +10.54m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

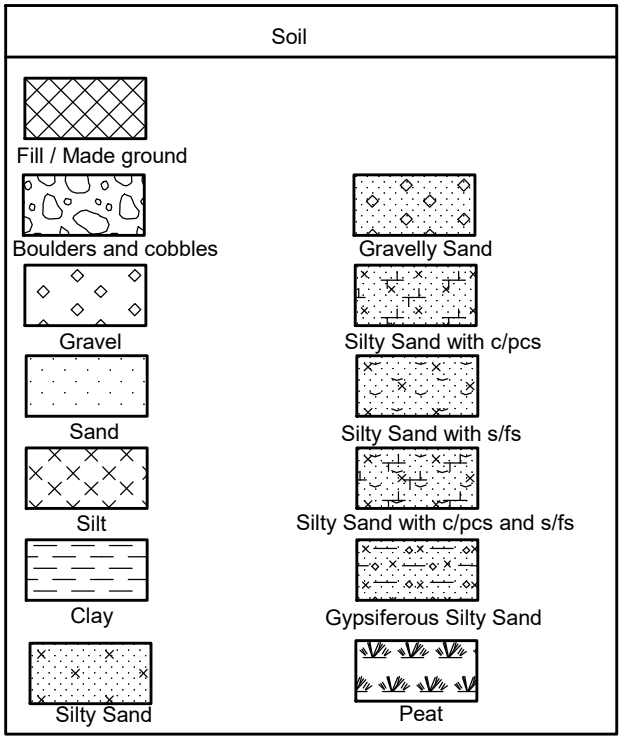
Checked By : ENGR. RABIH DAKWAR

APPENDIX B4

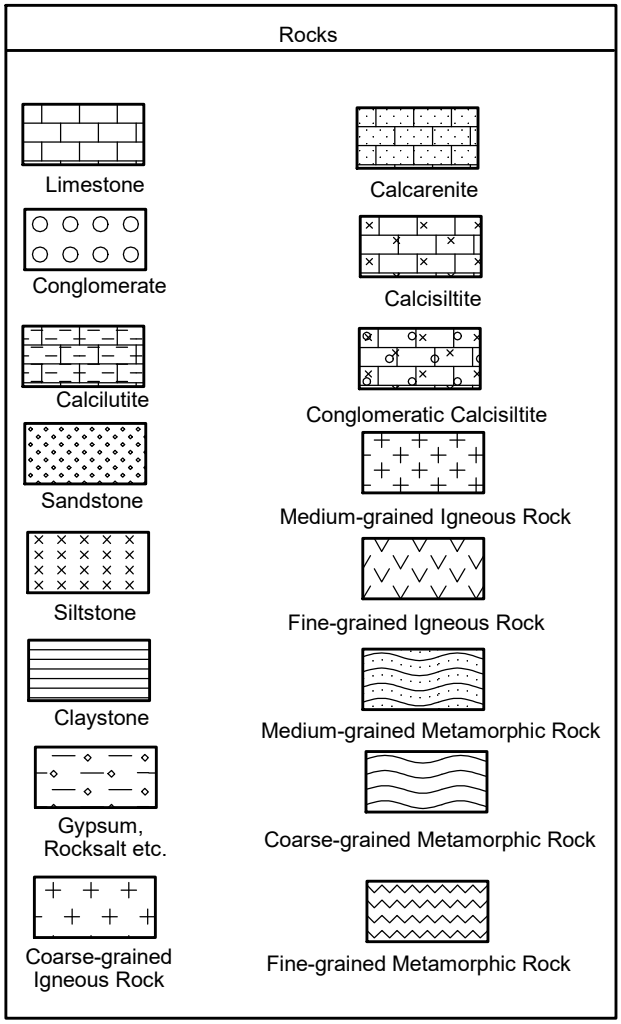
BOREHOLE LOGS (ZONE-4)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A03**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+15.049DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,761.65** E **481,294.96**

Date Started: **06/07/2015** Date Finished: **07/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	10	13	23				Medium dense to dense, light brown, silty, medium to fine SAND.	14.05	
2	SPT3	2 - 2.45	12	15	20	35						
3	SPT4	3 - 3.45	12	15	21	36						
4	SPT5	4 - 4.35	24	35	15/5	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.05	
5	SPT6	5 - 5.28	25/11	42	8/2	>50						
		5.3 - 6.8								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	9.75	
6	CORE7						31	5	5			
	SPT8	6.8 - 7.05	25/7	80	20/3	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	8.25	
7		7.05 - 8.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	8.00	
8	CORE9						32	17	7			
	SPT10	8.5 - 8.67	25/7	100/10	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	6.55	
		8.67 - 10								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	6.38	
9	CORE11						63	40	33			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.50m below the existing ground level i.e. at R.L. +9.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A03**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

Ground Level (m): **+15.049DMD**

Coordinates: N **2,762,761.65** E **481,294.96**

Date Started: **06/07/2015** Date Finished: **07/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	5.05	
	CORE12						41	8	0			
11	SPT13	11.5 - 11.7	25/5	100	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	3.55	
		11.7 - 13.3								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	3.35	
12	CORE14						50	31	15			
13		13.3 - 14.7										
14	CORE15						65	20	10			
		14.7 - 16.3										
15	CORE16						36	0	0			
16	SPT17	16.3 - 16.45	25/5	100/10	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine rock fragments.	-1.25	
		16.45 - 17.5								Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	-1.40	
17	CORE18						70	44	28			
		17.5 - 19										
18	CORE19						60	27	13			
19		19 - 20										
	CORE20						56	5	0			
20										END OF BORING	-4.75	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.50m below the existing ground level i.e. at R.L. +9.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A04**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+15.917DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,727.40** E **481,441.47**
Date Started: **08/07/2015** Date Finished: **09/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	5	9	10	19				Medium dense, light brown, silty, medium to fine SAND.	14.92	
2	SPT3	2 - 2.45	8	12	15	27				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.92	
3	SPT4	3 - 3.45	10	15	16	31						
4	SPT5	4 - 4.45	13	18	24	42						
5	SPT6	5 - 5.37	20	32	18/7	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.92	
6												
	SPT7	6.5 - 6.77	25/10	45	5/2	>50						
7	CORE8	6.8 - 8.3					36	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	9.12	
8	SPT9	8.3 - 8.53	25/6	87	13/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.62	
		8.53 - 10								Very weak to weak, light grey, calcareous conglomeratic SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	7.39	
9	CORE10						53	10	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 6.00m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A04**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

Ground Level (m): **+15.917DMD**

Coordinates: N **2,762,727.40** E **481,441.47**

Date Started: **08/07/2015** Date Finished: **09/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Very weak to weak, light grey, calcareous conglomeratic SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	5.92	
11	CORE11						39	0	0			
	SPT12	11.5 - 11.7	25/5	100/11	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.42	
		11.7 - 13.2								Very weak to weak, light grey, calcareous conglomeratic SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	4.22	
12	CORE13						50	0	0			
13		13.2 - 14.7										
14	CORE14						63	13	12			
		14.7 - 16.2										
15	CORE15						39	5	0			
16	SPT16	16.2 - 16.35	25/3	100/12	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.28	
		16.35 - 17.85								Very weak to weak, light grey, calcareous conglomeratic SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-0.43	
17	CORE17						50	13	9			
		17.85 - 19										
18	CORE18						43	0	0			
19	SPT19	19 - 19.15	25/4	100/11	-	>100				(19.00-19.15) Very dense light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
		19.15 - 20										
	CORE20						85	31	29			
20										END OF BORING	-3.88	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 6.00m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A05**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+16.576DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,762,684.82** E **481,567.85**
Date Started: **11/07/2015** Date Finished: **12/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	14	14	28				Medium dense to dense, light brown, silty, medium to fine SAND.	15.58	
2	SPT3	2 - 2.45	13	20	23	43						
3	SPT4	3 - 3.45	12	18	24	42						
4	SPT5	4 - 4.45	15	21	25	46				Dense to very dense, light brown, slightly gravelly, silty, SAND. Gravels are subangular medium to fine siltstone pieces.	12.58	
5	SPT6	5 - 5.33	22	38	14/3	>50						
6	SPT7	6.5 - 6.75	25/10	50	-	>50				▼		
7	CORE8	6.75 - 8					30	16	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	9.84	
8	SPT9	8 - 8.19	25/8	100/11	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.58	
		8.19 - 9.5								Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	8.39	
9	CORE10						57	11	0			
10		9.5 - 11										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 6.50m below the existing ground level i.e. at R.L. +10.08m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▯ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A05**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+16.576DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,684.82** E **481,567.85**

Date Started: **11/07/2015** Date Finished: **12/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						36	4	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	6.58	
11	SPT12	11 - 11.23	25/8	100	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.58	
		11.23 - 12.7									5.35	
12	CORE13						42	10	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
	SPT14	12.7 - 12.88	25/8	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.88	
13		12.88 - 14									3.70	
	CORE15						36	5	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
14	SPT16	14 - 14.15	25/5	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.58	
		14.15 - 15.5									2.43	
15	CORE17						25	9	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
	SPT18	15.5 - 15.7	25/9	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.08	
		15.7 - 17									0.88	
16	CORE19						36	8	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
17	SPT20	17 - 17.13	25/6	100/7	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.42	
		17.13 - 18.5									-0.55	
18	CORE21						17	19	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
		18.5 - 20										
19	CORE22						19	17	17			
										END OF BORING	-3.22	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 6.50m below the existing ground level i.e. at R.L. +10.08m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A06**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.345DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,762,600.19** E **481,315.09**

Date Started: **08/07/2015** Date Finished: **09/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	13	15	28				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.35	
2	SPT3	2 - 2.45	8	13	16	29						
3	SPT4	3 - 3.45	12	18	21	39						
4	SPT5	4 - 4.45	12	22	26	48						
5	SPT6	5 - 5.45	18	21	26	47						
6												
7	SPT7	6.5 - 6.88	21	37	13/8	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	12.85	
8	SPT8	8 - 8.35	25	35	15/5	>50						
9	CORE9	8.35 - 9.85					49	18	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	11.00	
10	SPT10	9.85 - 10	25/4	100/11	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are	9.50	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.50m below the existing ground level i.e. at R.L. +9.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A06**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Equipment: **Mobile B-31** Core Diameter (mm): **76**

Ground Level (m): **+19.345DMD**

Coordinates: N **2,762,600.19** E **481,315.09**

Date Started: **08/07/2015** Date Finished: **09/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								subangular medium to fine siltstone pieces.	9.35	
11	CORE11						53	33	20	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
		11.5 - 13										
12	CORE12						63	19	0			
13		13 - 14.5										
	CORE13						43	6	0			
14	SPT14	14.5 - 14.66	25/5	100/11	-	>100					4.85	
		14.66 - 16.2								Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.69	
15	CORE15						50	0	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
16		16.2 - 17.7										
17	CORE16						63	35	23			
		17.7 - 19										
18	CORE17						33	6	0			
19	SPT18	19 - 19.15	25/4	100/11	-	>100						
		19.15 - 20								(19.00-19.15) Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
	CORE19						88	0	0			
20										END OF BORING	-0.46	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.50m below the existing ground level i.e. at R.L. +9.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A07**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.587DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,514.65** E **481,387.67**
Date Started: **11/07/2015** Date Finished: **12/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	14	19	23	42				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.59	
2	SPT3	2 - 2.45	17	21	25	46						
3	SPT4	3 - 3.45	14	18	26	44						
4	SPT5	4 - 4.45	16	20	27	47						
5	SPT6	5 - 5.45	14	17	25	42						
6	SPT7	6 - 6.45	17	21	26	47				Dense, light brown, silty, medium to fine SAND.	14.59	
7	SPT8	7 - 7.35	22	32	18/5	>50				Very dense, light brown, slightly silty, medium to fine SAND.	13.59	
8	SPT9	8 - 8.24	25/9	50	-	>50						
9	SPT10	9 - 9.19	25/7	50/12	-	>50						
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.00m below the existing ground level i.e. at R.L. +10.59m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A07**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Equipment: **Mobile B-31** Core Diameter (mm): **76**

Ground Level (m): **+20.587DMD**

Coordinates: N **2,762,514.65** E **481,387.67**

Date Started: **11/07/2015** Date Finished: **12/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT11	10 - 10.27	25/10	44	8/2	>50				Very dense, light brown, slightly silty, medium to fine SAND.	10.59	
11	SPT12	11 - 11.26	25/9	43	7/2	>50				Very dense, brown, very gravelly, silty, gypsiferous SAND. Gravels are subangular medium to fine gypsum crystals.	9.59	
12	SPT13	12 - 12.18	25/8	50/10	-	>50						
13	CORE14	12.2 - 13.5					75	4	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	8.39	
14	CORE15	13.5 - 15					63	3	0			
15	CORE16	15 - 16.5					63	3	0			
16	CORE17	16.5 - 18					39	8	0			
17	SPT18	18 - 18.32	25/9	60	40/8	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.59	
18	CORE19	18.32 - 19.5					26	0	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	2.27	
19	SPT20	19.5 - 19.7	25/7	100/13	-	>100				(19.50-19.80) Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
20										END OF BORING	0.79	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.00m below the existing ground level i.e. at R.L. +10.59m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A08**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.536DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **10.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,762,430.68** E **481,245.58**

Date Started: **08/07/2015** Date Finished: **09/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	12	18	17	35				Dense, light brown, slightly gravelly to gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.54	
2	SPT3	2 - 2.45	8	14	17	31						
3	SPT4	3 - 3.45	10	15	19	34						
4	SPT5	4 - 4.45	8	10	15	25				Medium dense to dense, light brown, slightly gravelly, slightly silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	16.54	
5	SPT6	5 - 5.45	10	15	16	31						
6												
7	SPT7	6.5 - 6.95	12	16	19	35						
8	SPT8	8 - 8.45	12	19	20	39						
9												
10	SPT9	9.5 - 9.95	15	21	23	44						

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.30m below the existing ground level i.e. at R.L. +10.24m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A08**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.536DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **10.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,762,430.68** E **481,245.58**
Date Started: **08/07/2015** Date Finished: **09/07/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces with gypsum traces.	10.54	
11	SPT10	11 - 11.4	21	28	22/10	>50						
12	SPT11	12.5 - 12.76	25/10	45	5/1	>50						
		12.76 - 14.25									7.78	
13	CORE12						29	10	5	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.		
14	SPT13	14.25 - 14.45	25/5	100	-	>100					6.29	
		14.45 - 15.95								Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.09	
15	CORE14						50	21	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
16		15.95 - 17										
	CORE15						56	21	0			
17		17 - 18										
	CORE16						39	0	0			
18	SPT17	18 - 18.2	25/11	100/9	-	>100					2.54	
		18.2 - 19.5								Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.34	
19	CORE18						51	4	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
		19.5 - 20										
	CORE19						18	0	0			
20										END OF BORING	0.74	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.30m below the existing ground level i.e. at R.L. +10.24m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A09**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.570DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,762,168.73** E **481,210.54**

Date Started: **11/07/2015** Date Finished: **12/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	8	14	22				Medium dense to dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.57	
2	SPT3	2 - 2.45	6	16	19	35						
3	SPT4	3 - 3.26	25/7	45	5/1	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	17.57	
4	SPT5	4 - 4.22	25/10	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.57	
5	SPT6	5 - 5.18	25/7	50/11	-	>50						
		5.18 - 6.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	15.39	
6	CORE7						81	62	34			
		6.5 - 8										
7	CORE8						67	53	37			
8		8 - 9.5										
9	CORE9						55	8	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +10.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A09**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.570DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,762,168.73** E **481,210.54**
Date Started: **11/07/2015** Date Finished: **12/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						55	8	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	10.57	
11	SPT11	11 - 11.17	25/8	100/9	-	>100						
		11.17 - 12.5								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	9.57	
	CORE12						54	16	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	9.40	
12		12.5 - 13.5										
13	CORE13						26	11	0			
	SPT14	13.5 - 13.65	25/6	100/9	-	>100						
		13.65 - 15								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.07	
14	CORE15						58	11	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	6.92	
15		15 - 16.5										
16	CORE16						42	6	0			
	SPT17	16.5 - 16.67	25/5	100/12	-	>100						
		16.67 - 18								Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	4.07	
17	CORE18						59	18	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	3.90	
18		18 - 19										
	CORE19						62	24	11			
19		19 - 20										
	CORE20						72	8	0			
20										END OF BORING	0.77	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.20m below the existing ground level i.e. at R.L. +10.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B11**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.076DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,762,270.88** E **481,368.48**

Date Started: **06/07/2015** Date Finished: **09/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	7	12	19				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.08	
2	SPT3	2 - 2.45	7	10	18	28						
3	SPT4	3 - 3.45	8	13	20	33						
4	SPT5	4 - 4.45	10	13	18	31				Dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	17.08	
5	SPT6	5 - 5.45	15	22	28	50				Dense to very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.08	
6												
7	SPT7	6.5 - 6.7	25/8	50/12	-	>50						
8	SPT8	8 - 8.19	25/9	50/10	-	>50						
9	CORE9	8.19 - 9.5					73	42	7	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	12.89	
10		9.5 - 11										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.90m below the existing ground level i.e. at R.L. +11.18m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B11**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.076DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,762,270.88** E **481,368.48**
Date Started: **06/07/2015** Date Finished: **09/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						38	11	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	11.08	
11	SPT11	11 - 11.27	25/8	74	26/4	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.08	
		11.27 - 12.5									9.81	
12	CORE12						50	20	8	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		12.5 - 14										
13	CORE13						36	8	0			
14	SPT14	14 - 14.28	25/13	100	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.08	
		14.28 - 15.28									6.80	
	CORE15						35	0	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
15	SPT16	15.28 - 15.4	25/6	100/6	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.80	
		15.4 - 16.5									5.68	
16	CORE17						45	7	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT18	16.5 - 16.66	25/8	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.58	
		16.66 - 18									4.42	
17	CORE19						50	23	7	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
18		18 - 19.5										
	CORE20						41	13	7			
19	SPT21	19.5 - 19.65	25/8	100/7	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.58	
		19.65 - 21									1.43	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.90m below the existing ground level i.e. at R.L. +11.18m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B11**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.076DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,762,270.88** E **481,368.48**

Date Started: **06/07/2015** Date Finished: **09/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE22						30	0	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
21	SPT23	21 - 21.2 - 21.2 - 22.5	25/12	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.08 -0.12	
22	CORE24						33	5	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT25	22.5 - 22.65 - 22.65 - 24	25/8	100/7						Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.42 -1.57	
23	CORE26						37	0	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
24	SPT27	24 - 24.17 - 24.17 - 25.5	25/8	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.92 -3.09	
25	CORE28						36	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT29	25.5 - 25.79 - 25.796 - 27.006	25/9	70	30/5	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.42 -4.71	
26	CORE30						42	16	8	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
27	SPT31	27 - 27.19 - 27.19 - 28.5	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.92 -6.11	
28	CORE32						36	8	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT33	28.5 - 28.77 - 28.77 - 30	25/7	80	20/4	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.42 -7.69	
29	CORE34						46	6	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.90m below the existing ground level i.e. at R.L. +11.18m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B11**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.076DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,762,270.88** E **481,368.48**

Date Started: **06/07/2015** Date Finished: **09/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT35	30 - 30.2	25/10	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.92	
		30.2 - 31.5								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-9.12	
31	CORE36						21	0	0			
	SPT37	31.5 - 31.68	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.42	
		31.68 - 33								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-10.60	
32	CORE38						40	7	0			
33	SPT39	33 - 33.19	25/10	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.92	
		33.19 - 34.5								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-12.11	
34	CORE40						38	11	0			
	SPT41	34.5 - 34.74	25/8	82	18/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.42	
		34.74 - 36.2								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-13.66	
35	CORE42						38	0	0			
36	SPT43	36.2 - 36.37	25/9	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-15.12	
		36.37 - 37.5								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-15.29	
37	CORE44						42	11	0			
	SPT45	37.5 - 37.7	25/5	100	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.42	
		37.7 - 39								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-16.62	
38	CORE46						85	36	15			
39		39 - 40										
	CORE47						40	9	0			
40										END OF BORING	-18.72	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.90m below the existing ground level i.e. at R.L. +11.18m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B12**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.402DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76**

N **2,762,010.17** E **481,363.39**

Date Started: **07/07/2015** Date Finished: **12/07/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	11	15	20	35				Dense, light brown, slightly, silty, medium to fine SAND.	22.40	
2	SPT3	2 - 2.33	25	36	14/3	>50				Very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.40	
3	SPT4	3 - 3.2	25/8	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.40	
	CORE5	3.2 - 4.2					90	40	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	20.20	
4	CORE6	4.2 - 5.4					95	48	20			
5		5.4 - 6.8										
6	CORE7						68	33	14			
7	CORE8	6.8 - 8					78	38	8			
8	CORE9	8 - 9					95	50	20			
9	CORE10	9 - 10.5					63	40	13			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.88m below the existing ground level i.e. at R.L. +11.52m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B12**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.402DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-34** Core Diameter (mm): **76**	N **2,762,010.17** E **481,363.39**
Date Started: **07/07/2015** Date Finished: **12/07/2015** Operator : **Waqif Khan**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	13.40	
		10.5 - 12									12.90	
11	CORE11						60	17	10	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, locally interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
12		12 - 13.5										
	CORE12						63	30	20			
13												
		13.5 - 15										
14	CORE13						60	42	40			
		15 - 16.5										
15												
	CORE14						60	27	17			
16		16.5 - 18										
17	CORE15						59	11	10			
		18 - 19.5										
18	CORE16						64	10	0			
19		19.5 - 20.5										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.88m below the existing ground level i.e. at R.L. +11.52m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B12**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.402DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-34** Core Diameter (mm): **76**	N **2,762,010.17** E **481,363.39**
Date Started: **07/07/2015** Date Finished: **12/07/2015** Operator : **Waqif Khan**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE17						41	5	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, locally interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.	3.40	
	SPT18	20.5 - 20.69	25/9	100/10	-	>100					2.90	
		20.69 - 22								Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.71	
21	CORE19						38	11	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, locally interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
22	SPT20	22 - 22.19	25/7	100/12	-	>100					1.40	
		22.19 - 23.5								Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.21	
23	CORE21						41	6	0	Very weak to weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
	SPT22	23.5 - 23.68	25/9	100/9	-	>100					-0.10	
		23.68 - 25								Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.28	
24	CORE23						59	21	11	Very weak to weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
25		25 - 26.5										
	CORE24						52	11	0			
26		26.5 - 28										
27	CORE25						43	0	0			
28	SPT26	28 - 28.19	25/6	100/13	-	>100					-4.60	
		28.19 - 29.5								Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.79	
29	CORE27						51	16	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.88m below the existing ground level i.e. at R.L. +11.52m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B12**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.402DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-34** Core Diameter (mm): **76**

N **2,762,010.17** E **481,363.39**

Date Started: **07/07/2015** Date Finished: **12/07/2015** Operator : **Waqif Khan**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE28						22	11	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.	-6.60	
31	SPT29	31 - 31.19 31.19 - 32.5	25/4	100	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.60 -7.79	
32	CORE30						51	11	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
33	CORE31	32.5 - 34					68	21	11			
34	CORE32	34 - 35.5					41	0	0			
35	SPT33	35.5 - 35.69 35.69 - 37	25/4	80/8	20/7	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.10 -12.29	
36	CORE34						54	16	11	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.		
37	CORE35	37 - 38.5					68	14	0			
38	CORE36	38.5 - 40					75	20	11			
39										END OF BORING	-16.40	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.88m below the existing ground level i.e. at R.L. +11.52m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B13**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.950DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76**

N **2,762,003.37** E **481,131.57**

Date Started: **05/07/2015** Date Finished: **09/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	13	17	17	34				Dense, light brown, silty, fine SAND.	21.95	
2	SPT3	2 - 2.45	17	21	27	48						
3	SPT4	3 - 3.27	25/11	45	5/1	>50					19.95	
		3.27 - 4.77								Dense to very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.68	
4	CORE5						55	35	15	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		4.77 - 6.27										
5	CORE6						55	37	0			
6												
		6.27 - 7.77										
7	CORE7						57	24	8			
		7.77 - 9.27										
8	CORE8						31	0	0			
9	SPT9	9.27 - 9.44	25/8	100/9	-	>100					13.68	
		9.44 - 10.44								Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	13.51	
10	CORE10						37	12	7	Extremely weak to very weak, brown, calcareous		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.62m below the existing ground level i.e. at R.L. +11.33m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B13**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.950DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76**

N **2,762,003.37** E **481,131.57**

Date Started: **05/07/2015** Date Finished: **09/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand/ silty sand, distinctly weathered to destructured, fractures are extremely close to very close and interbedded with sandy gravel.	12.51	
	SPT11	10.44 - 10.62	25/9	100/9	-	>100						
		10.62 - 11.82									12.33	
11	CORE12						48	0	0	Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.		
	SPT13	11.82 - 12-	25/9	100/9	-	>100				Extremely weak to very weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand/ silty sand, distinctly weathered to destructured, fractures are extremely close to very close and interbedded with sandy gravel.	11.13	
12		12 - 13.5									10.95	
	CORE14						74	25	5	Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.		
13										Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced and interbedded with cemented silt.		
		13.5 - 15										
14	CORE15						84	35	8			
15		15 - 16.5										
	CORE16						65	22	0			
16	SPT17	16.5 - 16.68	25/9	100/9	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	6.45	
		16.68 - 18-									6.27	
17	CORE18						58	45	0	Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced and interbedded with cemented silt.		
18		18 - 19.5										
	CORE19						78	22	16			
19												
		19.5 - 21										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.62m below the existing ground level i.e. at R.L. +11.33m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B13**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.950DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76**

N **2,762,003.37** E **481,131.57**

Date Started: **05/07/2015** Date Finished: **09/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE20						81	10	5	Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced and interbedded with cemented silt.	2.95	
21		21 - 22.5										
	CORE21						61	45	43			
22		22.5 - 24										
23	CORE22						58	0	0			
24	SPT23	24 - 24.18	25/9	100/9	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	-1.05	
		24.18 - 25.5									-1.23	
	CORE24						55	30	20	Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced and interbedded with cemented silt.		
25		25.5 - 27										
26	CORE25						40	20	17			
27	SPT26	27 - 27.18	25/7	100/11	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	-4.05	
		27.18 - 28.5									-4.23	
	CORE27						59	5	0	Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
28		28.5 - 30										
29	CORE28						41	0	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.62m below the existing ground level i.e. at R.L. +11.33m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B13**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.950DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-2** Core Diameter (mm): **76**

N **2,762,003.37** E **481,131.57**

Date Started: **05/07/2015** Date Finished: **09/07/2015** Operator : **Kashif Khan Shad Ali** Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT29	30 - 30.17	25/8	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.05	
		30.17 - 31.5					65	22	11	Very weak to weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.	-7.22	
31	CORE30											
		31.5 - 33					46	10	0			
32	CORE31											
33	SPT32	33 - 33.19	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.05	
		33.19 - 34.5					39	5	0	Very weak to weak, offwhite, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.	-10.24	
34	CORE33											
	SPT34	34.5 - 34.65	25/7	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.55	
		34.65 - 36					65	25	11	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.	-11.70	
35	CORE35											
36		36 - 37.5					41	0	0			
37	CORE36											
	SPT37	37.5 - 37.68	25/8	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.55	
		37.68 - 39.18					59	18	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy silty gravel.	-14.73	
38	CORE38											
39		39.18 - 40					84	25	10			
	CORE39											
40										END OF BORING	-16.85	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.62m below the existing ground level i.e. at R.L. +11.33m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B14**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.760DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,892.61** E **481,309.79**

Date Started: **04/07/2015** Date Finished: **08/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	10	17	27				Medium dense to dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.76	
2	SPT3	2 - 2.45	16	19	22	41						
3	SPT4	3 - 3.45	14	20	26	46						
4	SPT5	4 - 4.45	17	20	27	47						
5	SPT6	5 - 5.33	22	36	14/3	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.76	
6	SPT7	6 - 6.18	25/8	50/10	-	>50						
7	CORE8	6.2 - 7.5					69	38	77	Extremely weak to very weak, brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	21.56	
8	CORE9	7.5 - 9					60	39	17			
9	CORE10	9 - 10.5					60	40	11			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.90m below the existing ground level i.e. at R.L. +10.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B14**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+27.760DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76**	N **2,761,892.61** E **481,309.79**
Date Started:	**04/07/2015**	Date Finished: **08/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	17.76	
		10.5 - 12										
11	CORE11						60	45	15			
12		12 - 13.5										
	CORE12						65	0	0			
13	SPT13	13.5 - 13.69	25/9	100/10	-	>100					14.26	
		13.69 - 15								Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	14.07	
14	CORE14						62	0	0	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
15		15 - 16										
	CORE15						90	0	0			
16	SPT16	16 - 16.18	25/9	100/9	-	>100					11.76	
		16.18 - 17.5								Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	11.58	
	CORE17						53	0	0	Very weak to weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
17		17.5 - 19										
18	CORE18						66	0	0			
19	SPT19	19 - 19.17	25/7	100/10	-	>100					8.76	
		19.17 - 20.5								Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	8.59	
	CORE20						64	0	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 80:20,		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.90m below the existing ground level i.e. at R.L. +10.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
■ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B14**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.760DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,892.61** E **481,309.79**

Date Started: **04/07/2015** Date Finished: **08/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are extremely close to closely spaced and interbedded with sandy gravel.		
		20.5 - 22									7.26	
21	CORE21						61	0	0	Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
22	SPT22	22 - 22.18	25/9	100/9	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	5.76	
		22.18 - 23.5									5.58	
23	CORE23						61	0	0	Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
		23.5 - 25									4.26	
24	CORE24						61	8	0	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered, fractures are extremely close to medium spaced and interbedded with cemented silt.		
25	SPT25	25 - 25.19	25/9	100/10	-	>100				Very dense, brown, slightly silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces pieces.	2.76	
		25.19 - 26.5									2.57	
26	CORE26						61	44	31	Very weak to weak, offwhite/ brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly weathered, fractures are extremely close to medium spaced and interbedded with cemented silt.		
		26.5 - 28										
27	CORE27						62	21	11			
28		28 - 29.5										
	CORE28						55	15	11			
29												
		29.5 - 31									-1.74	
30										Extremely weak to very weak to weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium		

REMARKS:

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SAMPLE KEY

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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B14**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.760DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,892.61** E **481,309.79**

Date Started: **04/07/2015** Date Finished: **08/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										spaced and interbedded with cemented silt.	-2.24	
	CORE29						57	17	15	Extremely weak to very weak to weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced and interbedded with cemented silt.		
31		31 - 32.5										
	CORE30						59	41	30			
32		32.5 - 34										
	CORE31						59	27	9			
33												
34		34 - 35.5										
	CORE32						61	27	16			
35												
		35.5 - 37										
36	CORE33						62	0	0			
37	SPT34	37 - 37.18	25/10	100/8	-	>100				Very dense, brown, slightly silty, sandy GRAVEL.	-9.24	
		37.18 - 38.5								Gravels are subangular medium to fine siltstone pieces	-9.42	
										pieces.		
	CORE35						60	15	0	Extremely weak to very weak to weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced and interbedded with cemented silt.		
38												
		38.5 - 40										
39	CORE36						59	18	16			
										END OF BORING	-12.04	
40												

REMARKS:

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SAMPLE KEY

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- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.671DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,762,314.46** E **481,474.13**
Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular coarse to medium sandstone pieces.		
1	SPT2	1 - 1.45	12	15	17	32				Dense to very dense, light brown, silty, medium to fine SAND.	19.67	
2	SPT3	2 - 2.45	12	20	23	43						
3	SPT4	3 - 3.45	19	22	25	47						
4	SPT5	4 - 4.45	16	19	23	42						
5	SPT6	5 - 5.36	24	32	18/6	>50						
6												
	SPT7	6.5 - 6.72	25/14	40	10/3	>50					14.17	
		6.72 - 8.22								Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.95	
7	CORE8						54	12	0	Extremely weak to very weak, brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
8		8.22 - 9.72										
9	CORE9						74	25	18			
		9.72 - 10.72								Very weak, offwhite/ light brown, calcareous	10.95	
10												

REMARKS:

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* Ground water table was encountered at a depth of 10.75m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C20**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,314.46** E **481,474.13**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						41	0	0	SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
		10.72 - 11.17	18	26	30	56				▼	9.95	
11	SPT11									Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.		
		11.17 - 12.67									9.50	
12	CORE12						65	45	31	Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
		12.67 - 14.17										
13	CORE13						74	18	5			
14		14.17 - 15.67										
15	CORE14						58	21	18			
		15.67 - 17.17										
16	CORE15						33	8	0			
17		17.17 - 17.54	25/10	49	51/12	>100					3.50	
	SPT16									Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.		
		17.54 - 19.04									3.13	
18	CORE17						54	15	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
19		19.04 - 20.54										
20	CORE18						33	0	0			

REMARKS:

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SAMPLE KEY

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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.671DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,762,314.46** E **481,474.13**
Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	0.67	
	SPT19	20.54 - 20.85	25/9	65	35/6	>100					0.13	
		20.85 - 22.35								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-0.18	
21	CORE20						41	8	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
22	SPT21	22.35 - 22.67	25/10	57	43/6	>100					-1.68	
		22.67 - 24.17								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-2.00	
23	CORE22						37	0	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
24	SPT23	24.17 - 24.44	25/9	78	22/3	>100					-3.50	
		24.44 - 25.94								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-3.77	
25	CORE24						77	0	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
26		25.94 - 27.44										
	CORE25						53	23	17			
27	SPT26	27.44 - 27.59	25/8	100/7	-	>100					-6.77	
		27.59 - 28.94								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-6.92	
28	CORE27						30	0	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
29	SPT28	28.94 - 29.19	25/10	100	-	>100					-8.27	
		29.19 - 30.69								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-8.52	
30	CORE29						33	0	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy		

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C20**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,314.46** E **481,474.13**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										gravel.		
	SPT30	30.69 - 30.93	25/9	100	-	>100					-10.02	
31		30.93 - 32.43								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-10.26	
	CORE31						31	0	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
32												
	SPT32	32.43 - 32.72	25/14	100	-	>100					-11.76	
		32.72 - 34.22								Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	-12.05	
33	CORE33						65	13	0	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
34		34.22 - 35.72										
35	CORE34						51	11	0			
		35.72 - 37.22										
36	CORE35						65	21	19			
37		37.22 - 38.72										
38	CORE36						39	5	0			
	SPT37	38.72 - 39.07	25/10	47	43/10	>100					-18.05	
39		39.07 - 40.57								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-18.40	
	CORE38						74	25	11	Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
40												

REMARKS:

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C20**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,314.46** E **481,474.13**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	-19.33	
		40.57 - 42.07										
41	CORE39						31	8	0			
42	SPT40	42.07 - 42.33	25/8	81	19/3	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-21.40	
		42.33 - 43.83								Very weak to weak, off white, conglomeratic SILTSTONE, distinctly weathered, fractures are very close to closely spaced and interbedded with silt.	-21.66	
43	CORE41						54	25	10			
		43.83 - 45.33										
44	CORE42						65	18	0			
45												
		45.33 - 46.83										
46	CORE43						60	23	7			
		46.83 - 48.33										
47	CORE44						60	28	27			
48	SPT45	48.33 - 48.5	25/6	100/11	-	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-27.66	
		48.5 - 50								Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	-27.83	
49	CORE46						65	35	21			
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.75m below the existing ground level i.e. at R.L. +9.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C20**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,314.46** E **481,474.13**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50 - 51.5								Very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with sandy gravel.	-29.33	
	CORE47						74	25	11			
51		51.5 - 52.5										
	CORE48						65	18	0			
52		52.5 - 54										
	CORE49						58	25	13			
53												
54		54 - 55.5										
	CORE50						65	16	0			
55												
		55.5 - 57										
56	CORE51						74	22	16			
57		57 - 58										
	CORE52						65	11	5			
58		58 - 59										
	CORE53						58	19	10			
59		59 - 60										
	CORE54						65	0	0			
60										END OF BORING	-39.13	

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C21**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.263DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76**	N **2,762,407.89** E **481,509.26**
Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	9	13	22				Light brown, silty, fine SAND.	19.26	
2	SPT3	2 - 2.45	8	10	14	24						
3	SPT4	3 - 3.45	10	13	19	32						
4	SPT5	4 - 4.45	14	20	23	43						
5	SPT6	5 - 5.42	22	24	26/12	>50						
6												
7	SPT7	6.5 - 6.82	25/12	45	15/5	>50				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.76	
8	SPT8	8 - 8.26	25/10	44	6/1	>50				Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.26	
9	SPT9	9.5 - 9.7	25/8	50/12	-	>50						
10		9.7 - 10.7								Extremely weak to very weak, brown, medium to fine	10.56	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.86m below the existing ground level i.e. at R.L. +11.40m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C21**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Equipment: **WIRTH** Core Diameter (mm): **76**

Ground Level (m): **+20.263DMD**

Coordinates: N **2,762,407.89** E **481,509.26**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	10.7 - 11.7					57	18	10	grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11	CORE11						36	11	0			
12	SPT12	11.7 - 12.06	25/9	47	53/12	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.56	
		12.06 - 13.06								Very weak, offwhite/ light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	8.20	
	CORE13						29	5	0			
13	SPT14	13.06 - 13.42	25/10	47	53/11	>100				Very dense, light brown/ offwhite, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	7.20	
		13.42 - 14.42								Very weak, offwhite/ light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	6.84	
14	CORE15						39	8	0			
	SPT16	14.42 - 14.67	25/6	30/7	70/12	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.84	
		14.67 - 15.67								Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	5.59	
15	CORE17						56	18	11			
		15.67 - 17										
16	CORE18						68	25	10			
17		17 - 18										
	CORE19						41	9	0			
18	SPT20	18 - 18.28	25/7	65	35/6	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.26	
		18.28 - 19.28								Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	1.98	
	CORE21						46	11	0			
19	SPT22	19.28 - 19.6	25/9	58	42/8	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.98	
		19.6 - 20.6								Very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with conglomeratic siltstone,	0.66	
20												

REMARKS:

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C21**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Equipment: **WIRTH** Core Diameter (mm): **76**

Ground Level (m): **+20.263DMD**

Coordinates: N **2,762,407.89** E **481,509.26**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE23						37	0	0	distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT24	20.6 - 20.87	25/7	67	33/5	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.34	
		20.87 - 21.87									-0.61	
21	CORE25						50	15	0	Extremely weak to very weak, brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
		21.87 - 23										
22	CORE26						64	28	10			
		23 - 24.5										
23	CORE27						61	38	20			
24		24.5 - 25.5										
25	CORE28						0	0	0			
	SPT29	25.5 - 25.83	25/8	53	47/10	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.24	
		25.83 - 26.83									-5.57	
26	CORE30						37	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
	SPT31	26.83 - 27.14	25/8	49	41/8	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.57	
27		27.14 - 28.14									-6.88	
	CORE32						44	11	0	Extremely weak to very weak, brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
28	SPT33	28.14 - 28.3	25/6	68	32/5	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.88	
		28.3 - 29.3									-8.04	
	CORE34						39	8	0	Extremely weak to very weak, brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
29	SPT35	29.3 - 29.54	25/5	71	29/4	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.04	
		29.54 - 30.54									-9.28	
30										Extremely weak to very weak, brown, calcareous SILTSTONE, locally interbedded with conglomerate,		

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C21**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.263DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76**

N **2,762,407.89** E **481,509.26**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE36						72	22	15	distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
		30.54 - 31.54										
31	CORE37						56	15	0			
		31.54 - 33.04										
32	CORE38						64	18	0			
33		33.04 - 34.54										
	CORE39						26	0	0			
34												
	SPT40	34.54 - 34.81	25/9	80	20/3	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.28	
		34.81 - 35.81									-14.55	
35	CORE41						33	5	0	Extremely weak to very weak, brown, calcareous SILTSTONE, locally interbedded with conglomerate, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
	SPT42	35.81 - 36.03	25/6	87	13/1	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-15.55	
36		36.03 - 37.03									-15.77	
	CORE43						41	11	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
37	SPT44	37.03 - 37.32	25/8	63	37/6	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.77	
		37.32 - 38.32									-17.06	
	CORE45						64	11	5	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
38		38.32 - 39.82										
39	CORE46						36	0	0			
	SPT47	39.82 - 40-	25/9	100/9	-	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are	-19.56	
40												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C21**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.263DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **WIRTH** Core Diameter (mm): **76**	N **2,762,407.89** E **481,509.26**
Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Syed Hikmat Shah**	Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40		40 - 41.5								subangular medium to fine siltstone pieces.	-19.74	
41	CORE48						55	15	8	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
		41.5 - 43										
42	CORE49						41	5	0			
43	SPT50	43 - 43.18	25/9	100/9	-	>100					-22.74	
		43.18 - 44.68								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-22.92	
44	CORE51						65	15	15	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
		44.68 - 46.18										
45	CORE52						40	11	0			
46	SPT53	46.18 - 46.35	25/8	100/9	-	>100					-25.92	
		46.35 - 47.85								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-26.09	
47	CORE54						39	8	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
48	SPT55	47.85 - 48	25/7	100/8	-	>100					-27.59	
		48 - 49.5								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-27.74	
49	CORE56						54	25	18	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
		49.5 - 51										
50												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C21**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Equipment: **WIRTH** Core Diameter (mm): **76**

Ground Level (m): **+20.263DMD**

Coordinates: N **2,762,407.89** E **481,509.26**

Date Started: **04/07/2015** Date Finished: **11/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-4**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE57						65	11	5	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.	-29.74	
51		51 - 52										
	CORE58						74	18	0			
52		52 - 53.5										
	CORE59						65	25	19			
53												
		53.5 - 55										
54	CORE60						74	16	18			
55		55 - 56.5										
	CORE61						84	35	20			
56												
		56.5 - 58										
57	CORE62						65	22	11			
58		58 - 59										
	CORE63						74	11	0			
59		59 - 60										
	CORE64						55	18	5			
60										END OF BORING	-39.54	

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

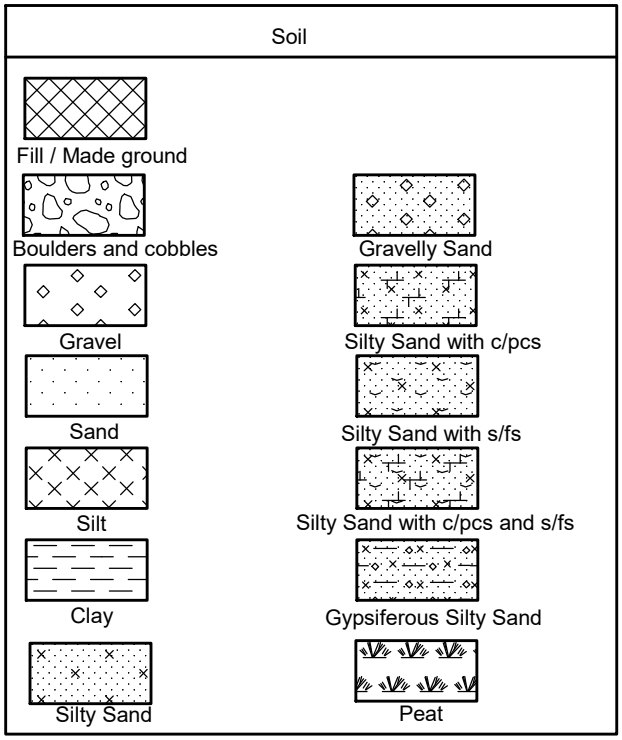
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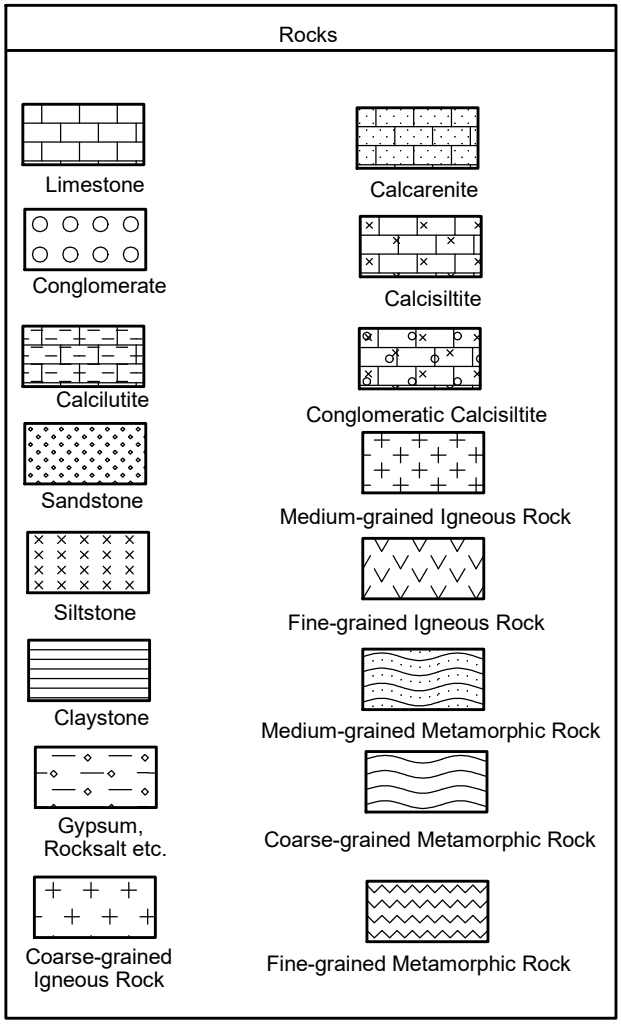
Checked By : ENGR. RABIH DAKWAR

APPENDIX B5

BOREHOLE LOGS (ZONE-5)

LEGEND OF THE BOREHOLE LOGS





RELATIVE DENSITY OF GRANULAR SOIL
(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL
(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION
BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A10**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.840DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,762,458.92** E **482,046.27**

Date Started: **13/07/2015** Date Finished: **20/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	9	11	20				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	18.84	
2	SPT3	2 - 2.45	10	12	15	27						
3	SPT4	3 - 3.45	17	21	26	47						
4	SPT5	4 - 4.45	13	18	25	43					15.84	
5	SPT6	5 - 5.45	14	21	25	46				Dense, light brown, silty, fine SAND.		
6												
7	SPT7	6.5 - 6.85	24	37	13/5	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	13.34	
8	SPT8	8 - 8.28	25/11	45	5/2	>50						
9	CORE9	8.3 - 9.8					58	0	0	Extremely weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	11.54	
10	SPT10	9.8 - 10.02	25/5	85	15/2	>100				Very dense, light brown, gravelly, silty, fine SAND.	10.04	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.10m below the existing ground level i.e. at R.L. +11.74m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A10**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+19.840DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,762,458.92** E **482,046.27**

Date Started: **13/07/2015** Date Finished: **20/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10.02 - 11.5								Gravels are subangular medium to fine sandstone pieces.	9.82	
11	CORE11						66	16	0	Extremely weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		11.5 - 13										
12	CORE12						61	12	0			
13		13 - 14.5										
	CORE13						36	5	0			
14		14.5 - 14.75									5.34	
	SPT14		25/7	85	15/3	>100				Very dense, light brown, gravelly, silty, fine SAND.		
		14.75 - 16.25								Gravels are subangular medium to fine sandstone pieces.	5.09	
15	CORE15						50	39	20	Extremely weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
16											3.99	
		16.25 - 17.75								Very weak, brown, calcareous SANDSTONE, intermixed with siltstone and locally embedded with gypsum crystals, distinctly weathered, fractures are extremely close to medium spaced and interbedded with cemented sand.		
17	CORE16						61	41	20			
		17.75 - 19										
18	CORE17						72	64	51			
19		19 - 20										
	CORE18						96	70	65			
20										END OF BORING	0.04	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.10m below the existing ground level i.e. at R.L. +11.74m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A11**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		Sheet: **1/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+25.930DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76**	N **2,762,263.75** E **482,138.55**
Date Started:	**13/07/2015**	Date Finished: **16/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	12	17	22	39				Dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine cemented pieces.	24.93	
2	SPT3	2 - 2.45	18	22	25	47						
3	SPT4	3 - 3.38	23	27	23/8	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.93	
4	SPT5	4 - 4.25	25/9	38	12/2	>50						
5	CORE6	4.25 - 5.25					90	44	23	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	21.68	
6	CORE7	5.25 - 6.25					85	63	35			
7	CORE8	6.25 - 7.25					86	60	20			
8	CORE9	7.25 - 8.25					99	70	28			
9	CORE10	8.25 - 9.25					92	52	0			
10	CORE11	9.25 - 10.5					84	61	29			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.40m below the existing ground level i.e. at R.L. +11.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A11**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.930DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,762,263.75** E **482,138.55**

Date Started: **13/07/2015** Date Finished: **16/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	15.93	
		10.5 - 12										
11	CORE12						75	41	32			
12		12 - 13.5										
	CORE13						41	18	0			
13												
	SPT14	13.5 - 13.9	25	55	45/10	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.43	
		13.9 - 15.4									12.03	
14	CORE15						39	5	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
15												
	SPT16	15.4 - 15.62	25/7	100	-	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.53	
		15.62 - 17.15									10.31	
16	CORE17						45	8	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
17												
	SPT18	17.15 - 17.36	25/5	85	15/1	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.78	
		17.36 - 18.9									8.57	
18	CORE19						36	10	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT20	18.9 - 19.12	25/6	92	8/1	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.03	
19		19.12 - 20										
	CORE21						49	0	0			
20										END OF BORING	6.13	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.40m below the existing ground level i.e. at R.L. +11.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A12**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+22.060DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,405.13** E **482,206.23**
Date Started: **13/07/2015** Date Finished: **16/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	17	22	28	50				Dense, light brown, gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	21.06	
2	SPT3	2 - 2.42	18	28	22/12	>50				Very dense, light brown, very gravelly, silty, fine SAND. gravels are subangular medium to fine sandstone pieces.	20.06	
3	SPT4	3 - 3.28	25/11	36	14/2	>50						
		3.28 - 4.5									18.78	
4	CORE5						80	61	54	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		4.5 - 6										
5	CORE6						67	56	49			
6		6 - 7.5										
7	CORE7						61	41	17			
		7.5 - 9										
8	CORE8						65	41	15			
9		9 - 10										
	CORE9						85	66	44			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.80m below the existing ground level i.e. at R.L. +12.26m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▯ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A12**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+22.060DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,762,405.13** E **482,206.23**

Date Started: **13/07/2015** Date Finished: **16/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	12.06	
11	CORE10						65	41	21			
		11.5 - 13										
12	CORE11						63	21	0			
13		13 - 14.5										
	CORE12						60	0	0			
14												
		14.5 - 16										
15	CORE13						39	0	0			
16	SPT14	16 - 16.25	25/9	89	11/1	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	6.06	
		16.25 - 17.75									5.81	
17	CORE15						43	5	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT16	17.75 - 18.05	25/9	75	25/6	>100					4.31	
18		18.05 - 19.55								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	4.01	
	CORE17						39	11	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
19										(19.55-19.87m) Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.		
	SPT18	19.55 - 19.87	25/8	51	49/9	>100					2.26	
20										END OF BORING		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.80m below the existing ground level i.e. at R.L. +12.26m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A13**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.130DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,211.36** E **482,289.85**

Date Started: **13/07/2015** Date Finished: **16/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	19	20	26	46				Dense to very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.13	
2	SPT3	2 - 2.32	25	41	9/2	>50						
3	SPT4	3 - 3.26	25/10	45	5/1	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.13	
		3.26 - 4.5									19.87	
4	CORE5						79	29	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		4.5 - 6										
5	CORE6						65	31	0			
6		6 - 7.5										
7	CORE7						65	13	0			
	SPT8	7.5 - 7.71	25/11	100/10	-	>100					15.63	
		7.71 - 9								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	15.42	
8	CORE9						65	37	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
9		9 - 10										
10	CORE10						96	60	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.10m below the existing ground level i.e. at R.L. +12.03m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A13**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.130DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,762,211.36** E **482,289.85**
Date Started: **13/07/2015** Date Finished: **16/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	13.13	
11	CORE11						51	0	0			
	SPT12	11.5 - 11.68	25/8	100/10	-	>100					11.63	
		11.68 - 13								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.45	
12	CORE13						69	18	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
13		13 - 14.5										
14	CORE14						43	0	0			
	SPT15	14.5 - 14.69	25/9	100/10	-	>100					8.63	
		14.69 - 16.19								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	8.44	
15	CORE16						92	11	8	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
16		16.19 - 17.69										
17	CORE17						69	12	5			
		17.69 - 19										
18	CORE18						81	22	0			
19		19 - 20										
	CORE19						79	11	0			
20										END OF BORING	3.33	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.10m below the existing ground level i.e. at R.L. +12.03m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A14**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+23.657DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,762,362.89** E **482,344.74**

Date Started: **12/07/2015** Date Finished: **13/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	15	24	39				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.66	
2	SPT3	2 - 2.35	16	34	16/5	>50						
3	SPT4	3 - 3.3	25/10	40	10/5	>50						
4	CORE5	3.3 - 4.8					68	11	5	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	20.36	
5	CORE6	4.8 - 6.5					79	22	19			
6												
7	CORE7	6.5 - 8					84	10	0			
8	CORE8	8 - 9.5					46	0	0			
9	SPT9	9.5 - 9.69	25/9	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	14.16	
10		9.69 - 11.19									13.97	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.40m below the existing ground level i.e. at R.L. +12.26m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A14**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.657DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,762,362.89** E **482,344.74**
Date Started: **12/07/2015** Date Finished: **13/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						69	11	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
11		11.19 - 12.69										
12	CORE11						49	8	0			
13	SPT12	12.69 - 12.87 12.87 - 14.37	25/9	100/9	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.97 10.79	
14	CORE13						69	45	22	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
15	CORE14	14.37 - 15.87					46	11	0			
16	SPT15	15.87 - 16.02 16.02 - 17	25/8	100/7	-	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	7.79 7.64	
17	CORE16	17 - 18.5					59	11	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
18	CORE17						75	22	19			
19	CORE18	18.5 - 20					82	41	30			
20										END OF BORING	3.86	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.40m below the existing ground level i.e. at R.L. +12.26m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A15**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.060DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,762,156.93** E **482,444.43**
Date Started: **12/07/2015** Date Finished: **13/07/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly silty, medium to fine SAND.		
1	SPT2	1 - 1.45	7	13	13	26				Medium dense to dense, light brown, slightly gravelly, slightly silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	24.06	
2	SPT3	2 - 2.45	17	19	23	42						
3	SPT4	3 - 3.3	25/12	34	16/3	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.06	
4	SPT5	4 - 4.26	25/9	38	12/2	>50						
5	CORE6	4.26 - 5.3					79	25	11	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	20.80	
6	CORE7	5.3 - 6.5					84	61	38			
7	CORE8	6.5 - 7.8					92	51	22			
8	CORE9	7.8 - 9					84	22	11			
9	CORE10	9 - 10.2					92	36	25			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.75m below the existing ground level i.e. at R.L. +12.31m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A15**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.060DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,156.93** E **482,444.43**

Date Started: **12/07/2015** Date Finished: **13/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10.2 - 11.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	15.06	
11	CORE11						84	11	0			
		11.5 - 13										
12	CORE12						79	18	5			
13		13 - 14.5										
	CORE13						84	22	11			
14												
		14.5 - 16									10.56	
15	CORE14						79	18	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
16		16 - 17.5										
	CORE15						51	0	0			
17	SPT16	17.5 - 17.75	25/7	75	25/2	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.56	
		17.75 - 19.25									7.31	
18	CORE17						46	18	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
19	SPT18	19.25 - 19.46	25/5	90	10/1	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.81	
		19.46 - 20										
	CORE19						18	0	0			
20										END OF BORING	5.26	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.75m below the existing ground level i.e. at R.L. +12.31m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A16**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.060DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76**

N **2,762,311.40** E **482,495.96**

Date Started: **12/07/2015** Date Finished: **13/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly silty, medium to fine SAND.		
1	SPT2	1 - 1.45	7	11	12	23				Medium dense to dense, light brown, slightly silty, fine SAND.	24.06	
2	SPT3	2 - 2.45	14	20	27	47						
3	SPT4	3 - 3.32	24	39	11/2	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.06	
4	SPT5	4 - 4.27	25/10	46	4/1	>50						
		4.27 - 5.3								Very weak to weak, light brown, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced and interbedded with cemented sand.	20.79	
5	CORE6						83	45	11			
		5.3 - 6.5										
6	CORE7						78	35	25			
		6.5 - 7.8										
7	CORE8						65	25	16			
		7.8 - 9										
8	CORE9						75	11	11			
9		9 - 10										
	CORE10						81	18	15			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +13.56m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A16**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.060DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **WIRTH** Core Diameter (mm): **76**

N **2,762,311.40** E **482,495.96**

Date Started: **12/07/2015** Date Finished: **13/07/2015** Operator : **Syed Hikmat Shah**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11	10 - 11					93	68	32	Very weak to weak, light brown, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced and interbedded with cemented sand.	15.06	
11	CORE12	11 - 12					98	68	28			
12	CORE13	12 - 13					99	84	66			
13	CORE14	13 - 14					98	86	84			
14	CORE15	14 - 15.5					67	57	50			
15		15.5 - 17									9.56	
16	CORE16						65	57	40	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
17	CORE17	17 - 18.5					64	13	7			
18		18.5 - 20										
19	CORE18						48	0	0			
20										END OF BORING	5.26	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +13.56m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A42**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.390DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,909.03** E **482,159.26**
Date Started: **14/07/2015** Date Finished: **20/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	18	21	26	47				Dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.39	
2	SPT3	2 - 2.37	25	30	20/7	>50				Very dense, light brown, very gravelly, silty to slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.39	
3	SPT4	3 - 3.24	25/9	50	-	>50						
		3.24 - 4.5									20.15	
4	CORE5						71	44	79	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		4.5 - 6										
5	CORE6						60	31	7			
6		6 - 7.5										
7	CORE7						79	33	0			
		7.5 - 8.5										
8	CORE8						55	46	25			
		8.5 - 9.7										
9	CORE9						79	42	25			
		9.7 - 11								Extremely weak to very weak, light brown, medium to	13.69	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.20m below the existing ground level i.e. at R.L. +12.19m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A42**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+23.390DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,909.03** E **482,159.26**
Date Started: **14/07/2015** Date Finished: **20/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						71	31	8	fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
11		11 - 12.5										
	CORE11						65	37	7			
12		12.5 - 14										
13	CORE12						61	43	17			
14		14 - 15										
	CORE13						90	30	10			
15		15 - 16.5									8.39	
	CORE14						64	3	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very close and interbedded with cemented silt.		
16		16.5 - 17.8										
17	CORE15						63	0	0			
	SPT16	17.8 - 18	25/8	100/12	-	>100				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	5.59	
18		18 - 19									5.39	
	CORE17						95	10	17	Very weak, light brown, calcareous SILTSTONE, distinctly weathered to fractures are extremely close to closely spaced and interbedded with cemented silt.		
19		19 - 20										
	CORE18						91	70	47			
20										END OF BORING	3.59	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.20m below the existing ground level i.e. at R.L. +12.19m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A44**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.355DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,761,649.48** E **482,416.42**
Date Started: **14/07/2015** Date Finished: **19/07/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-					Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	10	14	24				Medium dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.36	
2	SPT3	2 - 2.45	11	14	18	32				Dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.36	
3	SPT4	3 - 3.45	14	17	20	37						
4	SPT5	4 - 4.45	13	20	26	46				Dense to very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.36	
5	SPT6	5 - 5.37	18	30	20/7	>50						
6												
	SPT7	6.5 - 6.8	25	50	-	>50						
7	CORE8	6.8 - 8					27	17	54	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.56	
8		8 - 9.5										
9	CORE9						40	23	7			
	SPT10	9.5 - 9.69	25/9	100/10	-	>100					15.86	
10		9.69 - 11								Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	15.67	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.60m below the existing ground level i.e. at R.L. +13.76m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A44**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.355DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,761,649.48** E **482,416.42**

Date Started: **14/07/2015** Date Finished: **19/07/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						30	13	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11	SPT12	11 - 11.18 11.18 - 12.5	25/9	100/9	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	14.36 14.18	
12	CORE13						33	23	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
13	SPT14	12.5 - 12.69 12.69 - 14	25/9	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	12.86 12.67	
	CORE15						33	21	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
14	SPT16	14 - 14.18 14.18 - 15.5	25/9	50/9	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	11.36 11.18	
15	CORE17						30	19	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT18	15.5 - 15.7 15.7 - 17	25/10	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	9.86 9.66	
16	CORE19						30	17	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
17	SPT20	17 - 17.17 17.17 - 18.5	25/8	100/9	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.36 8.19	
18	CORE21						33	7	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT22	18.5 - 18.68 18.68 - 20	25/9	100/9	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	6.86 6.68	
19	CORE23						23	0	0	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
20										END OF BORING	5.56	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.60m below the existing ground level i.e. at R.L. +13.76m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- SPT : Standard Penetration Test
- SPT(C): SPT with cone
- B : Bulk Sample
- CORE : Core Sample
- IP: Initial Penetration
- : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B56**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.297DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,701.53** E **482,480.86**

Date Started: **11/07/2015** Date Finished: **16/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	9	14	23				Medium dense to dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.30	
2	SPT3	2 - 2.45	16	16	26	42						
3	SPT4	3 - 3.39	22	25	25/9	>50				Very dense , light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.30	
4	SPT5	4 - 4.27	25/11	44	6/1	>50				Very dense , light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	21.30	
	CORE6	4.27 - 5.27					94	70	38	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	21.03	
5												
	CORE7	5.27 - 6.4					84	67	26			
6												
	CORE8	6.4 - 7.5					86	54	0			
7												
	CORE9	7.5 - 8.7					81	62	45			
8												
	CORE10	8.7 - 10					69	43	35			
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +13.30m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B56**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.297DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,701.53** E **482,480.86**
Date Started: **11/07/2015** Date Finished: **16/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	15.30	
11	CORE11						62	33	15			
		11.5 - 13										
12	CORE12						64	43	16			
13		13 - 14.5										
	CORE13						60	10	0			
14												
		14.5 - 16										
15	CORE14						43	0	0			
16		16 - 16.35	25/9	50	50/11	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	9.30	
	SPT15	16.35 - 17.85									8.95	
17	CORE16						36	11	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
18	SPT17	17.85 - 18.1	25/7	72	28/3	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.45	
		18.1 - 19.6									7.20	
19	CORE18						69	25	18	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		19.6 - 21										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +13.30m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B56**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		Sheet: **3/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+25.297DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76**	N **2,761,701.53** E **482,480.86**
Date Started:	**11/07/2015**	Date Finished: **16/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19	21 - 22.5					53	11	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	5.30	
21	CORE20						38	0	0			
22	SPT21	22.5 - 22.68	25/5	100/13	-	>100				Very dense, light grey, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	2.80	
		22.68 - 24.2									2.62	
23	CORE22						53	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
24		24.2 - 25.7										
25	CORE23						60	0	0			
		25.7 - 27									-0.40	
26	CORE24						72	28	8	Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to medium spaced.		
27		27 - 28.3										
	CORE25						72	11	0			
28		28.3 - 29.5										
29	CORE26						79	29	25			
		29.5 - 31									-4.20	
30										Very weak, brown, calcareous SILTSTONE/ siliceous CALCISILTITE interbedded with sandstone, partially to distinctly weathred, fractures are very closely to closely		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +13.30m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B56**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.297DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,701.53** E **482,480.86**

Date Started: **11/07/2015** Date Finished: **16/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE27						66	13	7	spaced and interbedded with cemented silt. Very weak, brown, calcareous SILTSTONE/ siliceous CALCISILTITE interbedded with sandstone, partially to distinctly weathred, fractures are very closely to closely spaced and interbedded with cemented silt.	-4.70	
31		31 - 32.5										
	CORE28						53	0	0			
32		32.5 - 34										
33	CORE29						63	15	7			
34		34 - 35.5										
	CORE30						60	17	0			
35		35.5 - 37										
36	CORE31						57	21	8			
37		37 - 38.5								Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very close to medium spaced.	-11.70	
	CORE32						60	20	12			
38		38.5 - 40										
39	CORE33						60	29	13			
40										END OF BORING	-14.50	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +13.30m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B57**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.340DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,929.55** E **482,350.16**
Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	18	30	48				Dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.34	
2	SPT3	2 - 2.3	23	50	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.34	
3	SPT4	3 - 3.21	25/10	50/11	-	>50						
		3.21 - 4.5								Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	21.13	
4	CORE5						71	54	0			
		4.5 - 6										
5	CORE6						65	48	10			
6		6 - 7.5										
7	CORE7						65	37	0			
		7.5 - 9										
8	CORE8						64	30	0			
9		9 - 10.5										
10	CORE9						63	37	7			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.70m below the existing ground level i.e. at R.L. +13.64m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B57**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.340DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,929.55** E **482,350.16**

Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	14.34	
		10.5 - 12									13.84	
11	CORE10						65	33	9	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very close and interbedded with cemented sand.		
12		12 - 13.5										
	CORE11						59	0	0			
13												
	SPT12	13.5 - 13.69	25/9	100/10	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	10.84	
		13.69 - 15									10.65	
14	CORE13						41	0	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very close and interbedded with cemented sand.		
15	SPT14	15 - 15.18	25/9	100/9	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	9.34	
		15.18 - 16.18									9.16	
	CORE15						30	10	0	Weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced and interbedded with sandy gravel.		
16	SPT16	16.18 - 16.35	25/8	100/9	-	>100					8.16	
		16.35 - 17.85								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	7.99	
17	CORE17						84	22	11	Weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 70:30, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced and interbedded with sandy gravel.		
		17.85 - 19.35									6.49	
18	CORE18						86	11	8	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered, fractures are extremely close to very closely spaced.		
19												
		19.35 - 20.85										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.70m below the existing ground level i.e. at R.L. +13.64m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B57**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.340DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,929.55** E **482,350.16**
Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19						75	11	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered, fractures are extremely close to very closely spaced.	4.34	
		20.85 - 22										
21	CORE20						84	16	10			
22		22 - 23.5										
	CORE21						39	5	0			
23	SPT22	23.5 - 23.69	25/9	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.84	
		23.69 - 25.19								Very weak, brown, calcareous SILTSTONE interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	0.65	
24	CORE23						79	28	15			
25		25.19 - 26.69										
26	CORE24						51	0	0			
	SPT25	26.69 - 26.87	28/9	100/9	-	>100				Very dense, light grey/ brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.35	
		26.87 - 28.37								Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-2.53	
27	CORE26						84	22	19			
28		28.37 - 29.5										
29	CORE27						69	14	0			
		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.70m below the existing ground level i.e. at R.L. +13.64m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B57**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.340DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,929.55** E **482,350.16**

Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE28						84	59	12	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-5.66	
31		31 - 32.5										
	CORE29						92	63	35			
32		32.5 - 34										
33	CORE30						81	50	16			
34		34 - 35										
	CORE31						79	12	0			
35		35 - 36										
	CORE32						84	19	0			
36		36 - 37.5										
	CORE33						92	24	19			
37		37.5 - 39										
38	CORE34						86	27	11			
39		39 - 40										
	CORE35						84	12	0			
40										END OF BORING	-15.46	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.70m below the existing ground level i.e. at R.L. +13.64m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B58**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+17.308DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **9.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,613.40** E **481,782.52**

Date Started: **11/07/2015** Date Finished: **15/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	9	12	12	24				Medium dense to dense, light brown, slightly silty, fine SAND.	16.31	
2	SPT3	2 - 2.45	8	14	13	27						
3	SPT4	3 - 3.45	14	15	18	33						
4	SPT5	4 - 4.45	12	19	21	40						
5	SPT6	5 - 5.45	17	22	24	46						
6												
7	SPT7	6.5 - 6.95	15	15	22	37						
8	SPT8	8 - 8.45	20	23	27	50						
9												
10	SPT9	9.5 - 9.85	25	34	16/5	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	7.81	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.00m below the existing ground level i.e. at R.L. +12.31m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B58**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+17.308DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **9.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,613.40** E **481,782.52**
Date Started: **11/07/2015** Date Finished: **15/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine sandstone pieces.	7.31	
11	SPT10	11 - 11.24 / 11.24 - 12.5	25/8	45	5/1	>50						
12	CORE11	12.5 - 14					84	61	45	Very weak, brown, fine grained calcareous SANDSTONE, intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	6.07	
13	CORE12						90	81	52			
14	CORE13	14 - 15.5					75	45	11			
15												
16	CORE14	15.5 - 17					69	22	18			
17	CORE15	17 - 18.5					84	16	10			
18												
19	CORE16	18.5 - 20					75	18	11			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.00m below the existing ground level i.e. at R.L. +12.31m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B58**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+17.308DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **9.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,613.40** E **481,782.52**

Date Started: **11/07/2015** Date Finished: **15/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Very weak, brown, fine grained calcareous SANDSTONE, intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	-2.69	
21	CORE17						59	22	0			
		21.5 - 23										
22	CORE18						43	0	0			
23	SPT19	23 - 23.2	25/4	100/16	-	>100					-5.69	
		23.2 - 24.7								Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.89	
24	CORE20						84	11	0	Very weak, brown, calcareous SILTSTONE, interbedded with sandstone, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
		24.7 - 26.2										
25	CORE21						75	22	9			
26		26.2 - 27.7										
27	CORE22						89	22	11			
		27.7 - 29.2										
28	CORE23						95	36	22			
29		29.2 - 30.7										
30	CORE24											

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.00m below the existing ground level i.e. at R.L. +12.31m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B58**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+17.308DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **9.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,613.40** E **481,782.52**

Date Started: **11/07/2015** Date Finished: **15/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30							51	0	0	Very weak, brown, calcareous SILTSTONE interbedded with sandstone, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-12.69	
	SPT25	30.7 - 30.97	25/8	71	29/4	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.39	
31		30.97 - 32.5								Very weak, light brown, calcareous SILTSTONE, interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-13.66	
	CORE26						61	0	0			
32												
	SPT27	32.5 - 32.72	25/5	85	15/2	>100				Very dense, light grey, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-15.19	
		32.72 - 34.25								Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-15.41	
33	CORE28						48	11	0			
34												
	SPT29	34.25 - 34.45	25/4	88	12/1	>100				Very dense, light grey, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.94	
		34.45 - 36								Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-17.14	
35	CORE30						59	12	5			
36		36 - 37.5										
	CORE31						75	31	18			
37												
		37.5 - 39										
38	CORE32						84	16	0			
39		39 - 40										
	CORE33						95	20	11			
40										END OF BORING	-22.49	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 5.00m below the existing ground level i.e. at R.L. +12.31m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B59**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.640DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,762,046.71** E **482,163.23**

Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	10	15	25				Medium dense to dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.64	
2	SPT3	2 - 2.45	8	10	17	27						
3	SPT4	3 - 3.45	7	12	18	30						
4	SPT5	4 - 4.45	11	15	20	35						
5	SPT6	5 - 5.26	25/10	46	4/1	>50				Very dense, light brown, slightly gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	16.64	
6												
7	SPT7	6.5 - 6.69	25/8	50/11	-	>50						
8	SPT8	8 - 8.23	25/10	50/13	-	>50						
9	CORE9	8.23 - 9.23					40	36	25	Very weak, light brown, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	13.41	
10	SPT10	9.23 - 9.55	25/11	84	16/6	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.41	
		9.55 - 10.73								Very weak, light brown, calcareous SANDSTONE,	12.09	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.70m below the existing ground level i.e. at R.L. +12.94m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B59**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.640DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,762,046.71** E **482,163.23**

Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						73	61	21	partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		10.73 - 12.23										
11	CORE12						52	43	31			
12		12.23 - 13.73										
13	CORE13						31	21	0			
	SPT14	13.73 - 13.92	25/9	100/10	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.91	
14		13.92 - 15.23									7.72	
	CORE15						28	0	0	Very weak, light brown, calcareous SANDSTONE interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
15	SPT16	15.23 - 15.42	25/9	100/10	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	6.41	
		15.42 - 16.5									6.22	
16	CORE17						45	0	0	Very weak, light brown, calcareous SANDSTONE interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT18	16.5 - 16.68	25/9	100/9	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.14	
		16.68 - 18									4.96	
17	CORE19						75	41	11	Very weak, light brown, calcareous SANDSTONE interbedded with conglomerate, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
18		18 - 19.5										
	CORE20						76	25	18			
19		19.5 - 20.5									2.14	
										Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
20												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B59**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.640DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,762,046.71** E **482,163.23**

Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE21	20.5 - 22					84	24	5	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	1.64	
21	CORE22						85	11	0			
22		22 - 23.5										
23	CORE23						69	25	11			
24	CORE24	23.5 - 25					74	18	0			
25	CORE25	25 - 26					49	0	0			
26	SPT26	26 - 26.18	25/9	100/9	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.36	
		26.18 - 27.5								Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-4.54	
27	CORE27						75	18	0			
28	CORE28	27.5 - 29					64	0	0			
29	SPT29	29 - 29.19	25/9	100/10	-	>100				Very dense, light grey, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.36	
		29.19 - 30.5								Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-7.55	
30	CORE30						84	16	8			

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B59**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.640DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,762,046.71** E **482,163.23**
Date Started: **11/07/2015** Date Finished: **19/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-5**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-8.36	
		30.5 - 32										
31	CORE31						79	25	18			
32		32 - 33										
	CORE32						69	11	0			
33		33 - 34.5										
	CORE33						84	15	11			
34												
		34.5 - 35.5										
35	CORE34						43	0	0			
	SPT35	35.5 - 35.68	25/9	100/9	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.86	
		35.68 - 37.18								Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-14.04	
36	CORE36						84	19	11			
37		37.18 - 38.18										
	CORE37						90	62	34			
38		38.18 - 39										
	CORE38						85	11	0			
39		39 - 40										
	CORE39						79	25	11			
40										END OF BORING	-18.16	

REMARKS:

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SAMPLE KEY

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		RQD:	Rock Quality Designation

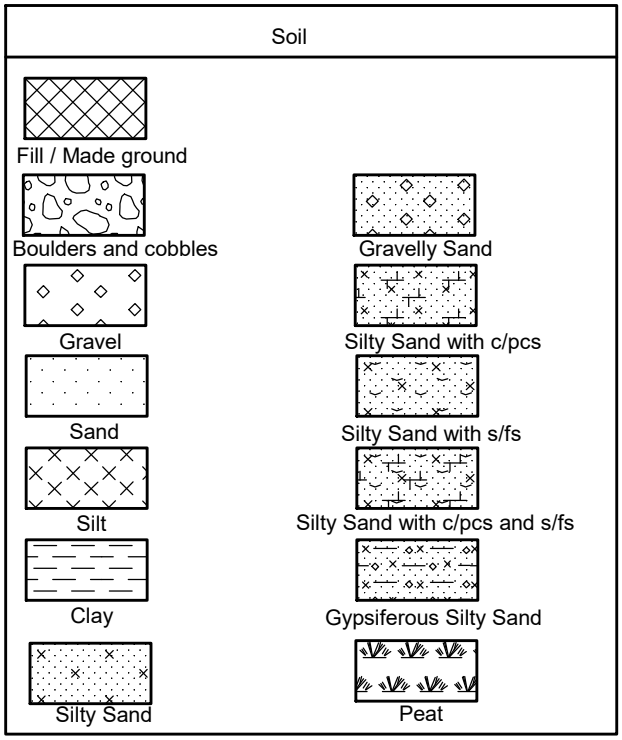
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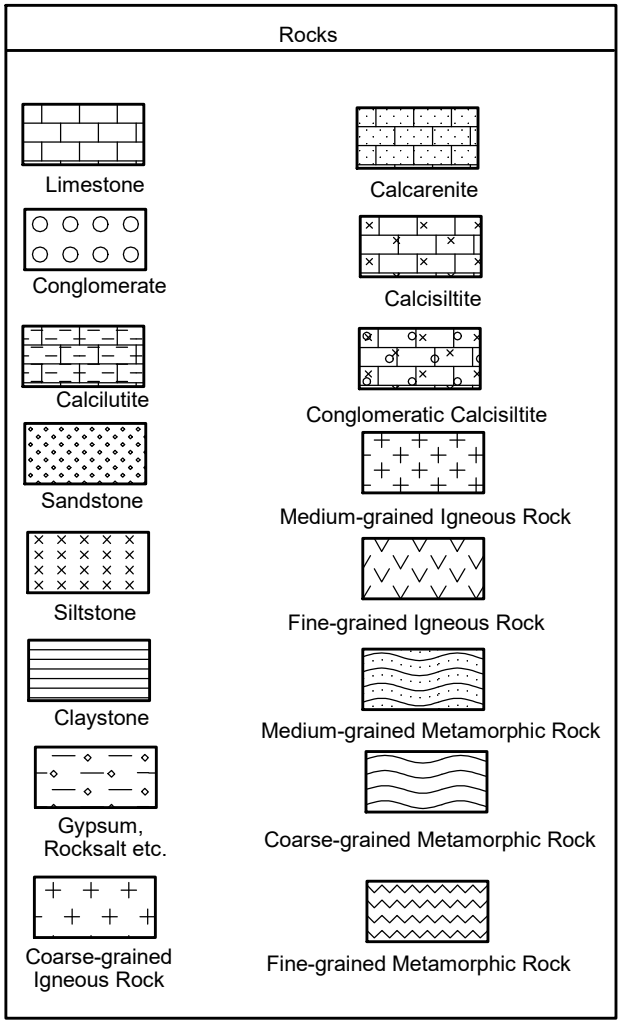
Checked By : ENGR. RABIH DAKWAR

APPENDIX B6

BOREHOLE LOGS (ZONE-6)

LEGEND OF THE BOREHOLE LOGS





RELATIVE DENSITY OF GRANULAR SOIL
(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL
(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION
BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B31**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.890DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,679.48** E **482,164.02**
Date Started: **23/07/2015** Date Finished: **26/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	12	12	24				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.89	
2	SPT3	2 - 2.45	9	15	19	34						
3	SPT4	3 - 3.45	10	18	25	43						
4	SPT5	4 - 4.3	25/13	43	7/2	>50						
5	SPT6	5 - 5.2	25/8	50/12	-	>50				Very dense, light brown, silty, coarse to medium SAND.	20.89	
6												
	SPT7	6.5 - 6.73	25/9	50/14	-	>50						
7	CORE8	6.73 - 7.73					41	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered fractures are extremely close to very closely spaced and interbedded with cemented sand.	19.16	
	SPT9	7.73 - 8.06	25/9	60	40/9	>100				Very dense, light brown, silty, medium to fine SAND.	18.16	
8	CORE10	8.06 - 9.06					29	5	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered fractures are extremely close to very closely spaced and interbedded with cemented sand.	17.83	
9	SPT11	9.06 - 9.33	25/9	80	20/3	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.83	
		9.33 - 10.83								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to	16.56	
10												

REMARKS:

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▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B31**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.890DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,679.48** E **482,164.02**
Date Started: **23/07/2015** Date Finished: **26/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE12						65	41	9	distinctly weathered fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		10.83 - 12.33										
11												
	CORE13						40	21	7			
12												
	SPT14	12.33 - 12.62	25/9	87	13/5	>100				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.56	
		12.62 - 13.83									13.27	
13	CORE15						38	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered fractures are extremely close to very closely spaced and interbedded with cemented sand.		
	SPT16	13.83 - 14.16	25/9	59	41/9	>100				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.06	
14		14.16 - 15.66									11.73	
	CORE17						20	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered fractures are extremely close to very closely spaced and interbedded with cemented sand.		
15												
	SPT18	15.66 - 15.9	25/6	70	30/3	>100				Very dense, light brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.23	
		15.9 - 17.4									9.99	
16	CORE19						27	13	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.		
17	SPT20	17.4 - 17.68	25/7	75	25/6	>100				Very dense, light brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.49	
		17.68 - 18.9									8.21	
18	CORE21						33	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.		
19	SPT22	18.9 - 19.15	25/7	84	16/3	>100				Very dense, light brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.99	
		19.15 - 20.4									6.74	
	CORE23						35	5	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.		
20												

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		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B31**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.890DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,679.48** E **482,164.02**

Date Started: **23/07/2015** Date Finished: **26/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.	5.89	
	SPT24	20.4 - 20.67	25/9	80	20/3	>100					5.49	
		20.67 - 22.17								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.22	
21	CORE25						33	10	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.		
22	SPT26	22.17 - 22.43	25/8	85	15/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.72	
		22.43 - 23.67								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.	3.46	
23	CORE27						30	0	0			
	SPT28	23.67 - 23.93	25/8	78	22/3	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.22	
24		23.93 - 25.43								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced.	1.96	
	CORE29						23	0	0			
25	SPT30	25.43 - 25.7	25/8	70	30/4	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.46	
		25.7 - 27.2								Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	0.19	
26	CORE31						33	13	7			
27	SPT32	27.2 - 27.44	25/7	90	10/2	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.31	
		27.44 - 28.7								Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.	-1.55	
28	CORE33						55	30	28			
		28.7 - 30.2										
29	CORE34						37	25	19			
30												

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B31**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.890DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,679.48** E **482,164.02**

Date Started: **23/07/2015** Date Finished: **26/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT35	30.2 - 30.45	25/7	85	15/3	>100						
		30.45 - 31.7								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.31	
											-4.56	
31	CORE36						20	0	0	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
	SPT37	31.7 - 31.94	25/7	90	10/2	>100					-5.81	
		31.94 - 33.2								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.05	
32	CORE38						37	0	0	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
33	SPT39	33.2 - 33.42	25/6	89	11/1	>100					-7.31	
		33.42 - 34.92								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.53	
34	CORE40						50	35	32	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
35		34.92 - 36.42										
	CORE41						30	0	0			
36	SPT42	36.42 - 36.64	25/6	90	10/1	>100					-10.53	
		36.64 - 37.92								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.75	
37	CORE43						32	0	0	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel.		
38	SPT44	37.92 - 38.15	25/5	80	20/3	>100					-12.03	
		38.15 - 39.65								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.26	
39	CORE45						47	0	0	Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silty gravel. (39.65-39.92m) Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
	SPT46	39.65 - 39.92	25/5	65	35/7	>100						
40										END OF BORING	-13.91	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.80m below the existing ground level i.e. at R.L. +14.09m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B32**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.337DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,761,610.63** E **482,067.47**
Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	11	20				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	25.34	
2	SPT3	2 - 2.45	10	15	19	34						
3	SPT4	3 - 3.45	11	14	21	35						
4	SPT5	4 - 4.45	8	14	24	38						
5	SPT6	5 - 5.29	25/10	34	16/4	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.34	
6	SPT7	6 - 6.24	25/9	50	-	>50						
7	CORE8	6.24 - 7.5					71	15	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	20.10	
8	CORE9	7.5 - 8.5					95	15	10			
9	CORE10	8.5 - 10					63	23	7			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.11m below the existing ground level i.e. at R.L. +14.23m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B32**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.337DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,610.63** E **482,067.47**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	16.34	
11	CORE11						63	27	13			
		11.5 - 12.5										
12	CORE12						96	55	20			
		12.5 - 14									13.84	
13	CORE13						60	45	43	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced.		
14		14 - 15.5										
	CORE14						63	25	19			
15												
		15.5 - 17										
16	CORE15						64	0	0		10.34	
										Extremely weak to very weak, off white/ brown, calcareous SILTSTONE, interbedded with conglomerate and sandy gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
17		17 - 18.5										
	CORE16						61	21	0			
18												
		18.5 - 20										
19	CORE17						62	21	10			
20												

REMARKS:

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* Ground water table was encountered at a depth of 12.11m below the existing ground level i.e. at R.L. +14.23m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B32**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.337DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,610.63** E **482,067.47**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	6.34	
	CORE18						61	22	19			
21		21.5 - 23										
	CORE19						65	24	22			
22												
		23 - 24.5										
23	CORE20						65	8	6			
		24.5 - 26										
24	CORE21						60	0	0			
25												
	SPT22	26 - 26.19	25/9	100/10	-	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL.	0.34	
26		26.19 - 27.5								Gravels are subangular medium to fine siltstone pieces.	0.15	
	CORE23						65	0	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
27		27.5 - 29										
	CORE24						72	18	0			
28												
		29 - 30.5										
29	CORE25						63	0	0			
30												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮ CORE : Core Sample
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B32**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.337DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,610.63** E **482,067.47**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	-3.66	
	SPT26	30.5 - 30.68	25/9	100/9	-	>100					-4.16	
		30.68 - 32								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.34	
31	CORE27						65	0	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
32		32 - 33.5										
	CORE28						64	0	0			
33												
	SPT29	33.5 - 33.69	25/9	100/10	-	>100					-7.16	
		33.69 - 35								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.35	
34	CORE30						63	0	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
35		35 - 36.5										
	CORE31						61	0	0			
36												
	SPT32	36.5 - 36.67	25/8	100/9	-	>100					-10.16	
		36.67 - 38								Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.33	
37	CORE33						98	0	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
38		38 - 39										
	CORE34						66	0	0			
39	SPT35	39 - 39.19	25/9	100/10	-	>100				(39.00-39.19m) Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
		39.19 - 40										
	CORE36						96	0	0			
40										END OF BORING	-13.46	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.11m below the existing ground level i.e. at R.L. +14.23m DMD.
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SAMPLE KEY

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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B33**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.630DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,673.52** E **481,939.79**

Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	11	20	27	47				Dense to very dense, light brown, gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.63	
2	SPT3	2 - 2.45	11	22	27	49						
3	SPT4	3 - 3.38	17	30	20/8	>50						
4	SPT5	4 - 4.28	25/12	45	5/1	>50				Very dense, light brown, slightly gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.63	
5	SPT6	5 - 5.19	25/7	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	19.63	
		5.19 - 6.5									19.44	
6	CORE7						76	32	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		6.5 - 8										
7	CORE8						65	17	0			
8		8 - 9.5										
9	CORE9						65	33	27			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B33**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.630DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,673.52** E **481,939.79**

Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					93	50	19	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	14.63	
11	CORE11	12.5 - 14					78	45	15			
12	CORE12	14 - 15.5					84	25	0			
13	CORE13	15.5 - 17					65	34	19			
14	CORE14	17 - 18.5					74	11	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE locally interbedded with silty sandy gravel, distinctly weathered to destructured, fractures are very close to closely spaced.	9.13	
15	CORE15	18.5 - 19					84	18	0			
16	CORE16	19 - 20.5					74	25	19			
17	CORE17						65	35	11			
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B33**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.630DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,673.52** E **481,939.79**

Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE locally interbedded with silty sandy gravel, distinctly weathered to destructured, fractures are very close to closely spaced.	4.63	
		20.5 - 22										
21	CORE18						50	0	0			
22	SPT19	22 - 22.24	25/8	90	10/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.63	
		22.24 - 23.5								Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	2.39	
23	CORE20						50	35	33			
		23.5 - 25										
24	CORE21						36	8	0			
25	SPT22	25 - 25.25	25/8	85	15/2	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.37	
		25.25 - 26.5								Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-0.62	
26	CORE23						68	42	34			
		26.5 - 28										
27	CORE24						59	28	13			
28		28 - 29.5										
	CORE25						40	7	0			
29												
	SPT26	29.5 - 29.73	25/6	85	15/2	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.87	
		29.73 - 31.2									-5.10	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B33**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		Sheet: **4/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+24.630DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Acker 3**	Core Diameter (mm): **76**	N **2,761,673.52** E **481,939.79**
Date Started:	**20/07/2015**	Date Finished: **23/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE27						44	9	7	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
31	SPT28	31.2 - 31.36	25/8	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.57	
		31.36 - 32.7									-6.73	
32	CORE29						41	3	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT30	32.7 - 32.89	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.07	
33		32.89 - 34									-8.26	
	CORE31						54	0	0	Extremely weak to very weak, off white calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
34		34 - 35.5										
	CORE32						35	0	0			
35	SPT33	35.5 - 35.69	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.87	
		35.69 - 37									-11.06	
36	CORE34						36	0	0	Extremely weak to very weak, off white calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
37	SPT35	37 - 37.18	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.37	
		37.18 - 38.5									-12.55	
38	CORE36						59	7	0	Extremely weak to very weak, off white calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		38.5 - 40		-								
39	CORE37						45	25	0			
40										END OF BORING	-15.17	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B34**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.890DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,870.64** E **481,945.88**

Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	10	15	19	34				Dense to very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone and cemented pieces.	19.89	
2	SPT3	2 - 2.45	8	16	21	37						
3	SPT4	3 - 3.45	11	18	26	44						
4	SPT5	4 - 4.31	25/11	35	15/5	>50						
5	SPT6	5 - 5.2	25/8	50/12	-	>50						
6												
7	SPT7	6.5 - 6.68	25/8	50/10	-	>50						
8	SPT8	8 - 8.2	25/8	50/12	-	>50						
9	CORE9	8.2 - 9.7					63	17	9	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	12.69	
10		9.7 - 11.2										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.80m below the existing ground level i.e. at R.L. +13.09m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B34**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.890DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,870.64** E **481,945.88**
Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						63	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	10.89	
11	SPT11	11.2 - 11.59	25/12	46	54/12	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	9.69	
		11.59 - 13.09									9.30	
12	CORE12						48	7	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
13	SPT13	13.09 - 13.27	25/9	100/9		>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.80	
		13.27 - 14.59								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	7.62	
14	CORE14						64	11	0			
		14.59 - 16.09										
15	CORE15						53	0	0			
16	SPT16	16.09 - 16.35	25/8	80	20/2	>100				Vry dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.80	
		16.35 - 17.85								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	4.54	
17	CORE17						44	0	0			
18	SPT18	17.85 - 18.11	25/8	82	18/2	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.04	
		18.11 - 19.61								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	2.78	
19	CORE19						31	13	7			
	SPT20	19.61 - 19.86	25/9	90	10/1	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.28	
20		19.86 - 21.11									1.03	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.80m below the existing ground level i.e. at R.L. +13.09m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
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▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B34**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.890DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,870.64** E **481,945.88**

Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE21						17	0	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
21	SPT22	21.11 - 21.34	25/6	84	16/2	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.22	
		21.34 - 22.61									-0.45	
22	CORE23						33	27	23	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT24	22.61 - 22.83	25/6	90	10/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.72	
23		22.83 - 24.11									-1.94	
	CORE25						25	17	7	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
24	SPT26	24.11 - 24.32	25/5	89	11/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.22	
		24.32 - 25.61									-3.43	
25	CORE27						27	0	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT28	25.61 - 25.85	25/6	75	25/3	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.72	
		25.85 - 27.35									-4.96	
26	CORE29						20	5	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
27	SPT30	27.35 - 27.57	25/6	90	10/1	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.46	
		27.57 - 28.85									-6.68	
28	CORE31						39	12	8	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
29	SPT32	28.85 - 29.06	25/5	27	13/1	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.96	
		29.06 - 30.35									-8.17	
30	CORE33						47	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.80m below the existing ground level i.e. at R.L. +13.09m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B34**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.890DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,870.64** E **481,945.88**

Date Started: **20/07/2015** Date Finished: **23/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-9.11	
	SPT34	30.35 - 30.57	25/5	81	19/2	>100					-9.46	
		30.57 - 32.07									-9.68	
31	CORE35						50	0	0	Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces. Very weak to weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.		
32	SPT36	32.07 - 32.31	25/6	73	27/3	>100					-11.18	
		32.31 - 33.81									-11.42	
33	CORE37						84	25	11			
		33.81 - 35.31									-12.92	
34	CORE38						74	18	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
35		35.31 - 36.81										
36	CORE39						62	0	0			
		36.81 - 38										
37	CORE40						79	22	11			
38		38 - 39										
	CORE41						84	12	0			
39		39 - 40										
	CORE42						72	10	0			
40										END OF BORING	-18.91	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.80m below the existing ground level i.e. at R.L. +13.09m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B35**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.745DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,973.58** E **481,987.22**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, sandy silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces and rock fragments.		
1	SPT2	1 - 1.45	9	12	19	31				Dense to very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.75	
2	SPT3	2 - 2.45	10	16	24	40						
3	SPT4	3 - 3.45	16	20	24	44						
4	SPT5	4 - 4.42	20	24	26/12	>50						
5	SPT6	5 - 5.37	24	32	18/7	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	15.75	
6												
7	SPT7	6.5 - 6.81	25/11	35	15/5	>50						
8	SPT8	8 - 8.19	25/8	45	5/1	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.	12.75	
9	SPT9	9.5 - 9.68	25/8	50/10	-	>50						
10		9.68 - 10.68								Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly	11.07	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.93m below the existing ground level i.e. at R.L. +12.82m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B35**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+20.745DMD**

Coordinates: N **2,761,973.58** E **481,987.22**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						54	0	0	weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
	SPT11	10.68 - 10.99	25/9	62	38/7	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.07	
11		10.99 - 12-									9.76	
	CORE12						49	8	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
12	SPT13	12 - 12.24	25/5	73	27/3	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	8.75	
		12.24 - 13.25									8.51	
	CORE14						36	0	0	Extremely weak, light brown, calcareous SANDSTONE, recovered as sandy gravel and cemented sand.		
13	SPT15	13.25 - 13.48	25/6	75	25/3	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.50	
		13.48 - 14.48									7.27	
14	CORE16						54	0	0	Extremely weak, light brown, calcareous SANDSTONE, recovered as sandy gravel and cemented sand.		
	SPT17	14.48 - 14.7	25/5	81	19/2	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	6.27	
		14.7 - 15.7-									6.05	
15	CORE18						22	0	0	Extremely weak, light brown, calcareous SANDSTONE, recovered as sandy gravel and cemented sand.		
	SPT19	15.7 - 15.92	25/5	75	25/2	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.05	
16		15.92 - 16.92									4.83	
	CORE20						48	5	0	Extremely weak, brown, calcareous SANDSTONE, recovered as sandy gravel and cemented sand.		
17	SPT21	16.92 - 17.13	25/5	82	18/1	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	3.83	
		17.13 - 18.13									3.62	
	CORE22						54	0	0	Extremely weak, light brown, calcareous SANDSTONE, recovered as sandy gravel and cemented sand.		
18	SPT23	18.13 - 18.33	25/4	90	10/1	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	2.62	
		18.33 - 19.33									2.42	
19	CORE24						62	11	0	Extremely weak, brown/ offwhite, calcareous SILTSTONE, recovered as sandy gravel and cemented silt.		
	SPT25	19.33 - 19.57	25/7	81	19/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.42	
		19.57 - 20.57									1.18	
20										Extremely weak, brown/ offwhite, calcareous		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 7.93m below the existing ground level i.e. at R.L. +12.82m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B35**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.745DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,973.58** E **481,987.22**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE26						29	5	0	SILTSTONE, recovered as sandy gravel and cemented silt.		
	SPT27	20.57 - 20.84	25/8	65	35/4	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.18	
		20.84 - 21.84								Extremely weak, brown/ offwhite, calcareous SILTSTONE, recovered as sandy gravel and cemented silt.	-0.09	
21	CORE28						36	8	0			
	SPT29	21.84 - 22.05	25/5	89	11/1	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.10	
22		22.05 - 23.05								Extremely weak, brown/ offwhite, calcareous SILTSTONE, recovered as sandy gravel and cemented silt.	-1.31	
	CORE30						49	11	0			
23	SPT31	23.05 - 23.28	25/6	84	16/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.31	
		23.28 - 24.28								Extremely weak, brown/ offwhite, calcareous SILTSTONE, recovered as sandy gravel and cemented silt.	-2.54	
	CORE32						54	0	0			
24	SPT33	24.28 - 24.48	25/4	92	8/1	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.54	
		24.48 - 25.48								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-3.74	
25	CORE34						64	15	15			
		25.48 - 26.98										
26	CORE35						33	8	0			
	SPT36	26.98 - 27.17	25/9	100/10	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.24	
27		27.17 - 28.17								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-6.43	
	CORE37						54	16	0			
28		28.17 - 29.67										
	CORE38						39	0	0			
29	SPT39	29.67 - 29.85	25/9	100/9	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.93	
		29.85 - 30.85									-9.11	
30												

REMARKS:

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* Ground water table was encountered at a depth of 7.93m below the existing ground level i.e. at R.L. +12.82m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B35**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.745DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,973.58** E **481,987.22**

Date Started: **19/07/2015** Date Finished: **21/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE40	30.85 - 32.35					64	28	11	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
31	CORE41	32.35 - 33.85					56	5	0			
32												
33	CORE42	33.85 - 34					44	0	0			
34	SPT43	34 - 35	25/7	100/8	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.11	
	CORE44	35 - 36.5					56	11	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-13.26	
35												
36	CORE45	36.5 - 38					84	25	12			
37	CORE46	38 - 39					65	31	18			
38	CORE47	39 - 40					74	15	0			
39	CORE48						58	11	0			
40										END OF BORING	-19.06	

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B36**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.105DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,036.21** E **481,893.00**
Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.		
1	SPT2	1 - 1.45	11	11	7	18				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.11	
2	SPT3	2 - 2.45	11	14	17	31						
3	SPT4	3 - 3.45	12	18	25	43				Dense to very dense, light brown, gravelly, very silty, fine SAND. Gravels are subangular medium to fine sandstone pieces with gypsum crystals.	18.11	
4	SPT5	4 - 4.23	25/8	50	-	>50						
5	SPT6	5 - 5.2	25/8	50/12	-	>50						
		5.2 - 6.7								Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	15.91	
6	CORE7						64	33	9			
		6.7 - 8.2										
7	CORE8						65	30	7			
		8.2 - 9.7										
8	CORE9						65	32	12			
		9.7 - 11.2										
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +11.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B36**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **Mobile B-31** Core Diameter (mm): **76**

Ground Level (m): **+21.105DMD**

Coordinates: N **2,762,036.21** E **481,893.00**

Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10												
	CORE10						66	25	11	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	11.11	
11		11.2 - 12.7										
12	CORE11						65	38	36			
		12.7 - 14.2									8.41	
13	CORE12						63	30	15	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered fractures are extremely close to closely spaced.		
14		14.2 - 15.7										
15	CORE13						65	31	13			
		15.7 - 17.2										
16	CORE14						39	8	0			
17	SPT15	17.2 - 17.35	25/5	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	3.91	
		17.35 - 18.85									3.76	
18	CORE16						54	15	0	Very weak brown, calcareous CONGLOMERATE gravel to matrix ratio is 60:40, gravels are subangular medium to fine, matrix is silty sand, distinctly weathered fractures are extremely close to very closely spaced and interbedded with silty gravel.		
		18.85 - 20.35										
19	CORE17						54	14	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +11.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B36**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.105DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,036.21** E **481,893.00**
Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak brown, calcareous CONGLOMERATE gravel to matrix ratio is 60:40, gravels are subangular medium to fine, matrix is silty sand, distinctly weathered fractures are extremely close to very closely spaced and interbedded with silty gravel.	1.11	
		20.35 - 21.85										
21	CORE18						41	13	0			
22	SPT19	21.85 - 22- 22 - 23.35-	25/7	100/8	-	>100				Very dense, light brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.75 -0.90	
	CORE20						63	13	0	Very weak, brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, and sandy gravel, distinctly weathered, fractures are extremely close to closely spaced.		
23		23.35 - 24.85										
24	CORE21						65	20	7			
		24.85 - 26.35										
25	CORE22						64	25	17			
26		26.35 - 27.85										
27	CORE23						50	27	20			
28		27.85 - 29.35										
	CORE24						46	0	0			
29	SPT25	29.35 - 29.5 29.5 - 31 -	25/5	100/10	-	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces and rock fragments.	-8.25 -8.40	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +11.91m DMD.
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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B36**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **Mobile B-31** Core Diameter (mm): **76**

Ground Level (m): **+21.105DMD**

Coordinates: N **2,762,036.21** E **481,893.00**

Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE26						63	5	0	Very weak, brown/ offwhite, calcareous SILTSTONE, interbedded with conglomerate, and sandy gravel, distinctly weathered, fractures are extremely close to closely spaced.		
31		31 - 32.5										
	CORE27						48	11	0			
32	SPT28	32.5 - 32.66	25/5	100/11	-	>100					-11.40	
		32.66 - 34.15								Very dense, brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-11.56	
33	CORE29						60	20	0	Very weak to weak, offwhite, calcareous SILTSTONE, interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
34		34.15 - 35.65										
35	CORE30						59	18	7			
		35.65 - 37.15										
36	CORE31						65	0	0			
37		37.15 - 38.65										
38	CORE32						50	42	40			
		38.65 - 40										
39	CORE33						52	30	10			
40										END OF BORING	-18.70	

REMARKS:

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* Ground water table was encountered at a depth of 9.20m below the existing ground level i.e. at R.L. +11.91m DMD.
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SAMPLE KEY

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- □ IP: Initial Penetration
- ▼ : Ground Water Table
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- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B37**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.306DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,068.57** E **481,729.44**

Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	16	20	25	45				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.31	
2	SPT3	2 - 2.37	25	32	18/7	>50						
3	SPT4	3 - 3.2	25/8	50/12	-	>50						
	CORE5	3.2 - 4.2					88	58	10	Extremely weak to very weak, light brown, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	17.11	
4	CORE6	4.2 - 5.5					69	52	9			
5	CORE7	5.5 - 6.7					71	42	11			
6	CORE8	6.7 - 8					71	50	18			
7	CORE9	8 - 9.5					63	35	7			
8		9.5 - 11								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close	10.81	
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.15m below the existing ground level i.e. at R.L. +12.16m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B37**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.306DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,068.57** E **481,729.44**

Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						66	43	0	to closely spaced and interbedded with cemented sand.		
11		11 - 12.5									9.31	
12	CORE11						62	32	9	Extremely weak to very weak, brown, medium to fine grained, conglomeratic SANDSTONE, embedded with gypsum crystals distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
13		12.5 - 14									7.81	
	CORE12						63	19	0	Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.		
14		14 - 15.5										
	CORE13						63	20	7			
15		15.5 - 17										
16	CORE14						53	8	0			
17		17 - 18.5									3.31	
	CORE15						58	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced interbedded with silt.		
18		18.5 - 20										
19	CORE16						64	8	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.15m below the existing ground level i.e. at R.L. +12.16m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B37**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.306DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,068.57** E **481,729.44**

Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered fractures are extremely close to closely spaced and interbedded with silt.	0.31	
	CORE17						61	44	40			
21		21.5 - 23										
	CORE18						65	13	0			
22												
		23 - 24.5										
23	CORE19						65	0	0			
24												
	SPT20	24.5 - 24.69	25/9	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.19	
		24.69 - 26								Very weak, brown, conglomeratic SILTSTONE, interbedded with silty gravels, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt.	-4.38	
25	CORE21						61	15	0			
26		26 - 27.5										
	CORE22						65	0	0			
27												
	SPT23	27.5 - 27.68	25/9	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.19	
		27.68 - 29								Very weak, brown, conglomeratic SILTSTONE, interbedded with silty gravels, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt.	-7.37	
28	CORE24						61	8	0			
29		29 - 30.5										
	CORE25						59	15	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.15m below the existing ground level i.e. at R.L. +12.16m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B37**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.306DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,068.57** E **481,729.44**

Date Started: **21/07/2015** Date Finished: **25/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Very weak, brown, conglomeratic SILTSTONE, interbedded with silty gravels, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt.	-9.69	
		30.5 - 32										
31	CORE26						58	13	11			
32		32 - 33.5									-11.69	
	CORE27						45	31	29	Very weak to weak, light brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.		
33												
		33.5 - 35										
34	CORE28						55	29	15			
35		35 - 36.5										
	CORE29						37	21	7			
36												
		36.5 - 37.8										
37	CORE30						47	15	0			
	SPT31	37.8 - 38	25/10	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-17.49	
38		38 - 39									-17.69	
	CORE32						55	0	0	Very weak to weak, light brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with silty gravel.		
39		39 - 40										
	CORE33						60	30	16			
40										END OF BORING	-19.49	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.15m below the existing ground level i.e. at R.L. +12.16m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B38**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.450DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,762,224.89** E **481,782.92**
Date Started: **30/07/2015** Date Finished: **02/08/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	10	15	25				Medium dense to very dense, light brown, silty, fine SAND.	19.45	
2	SPT3	2 - 2.34	16	33	17/4	>50						
3	SPT4	3 - 3.28	25/10	36	14/3	>50						
		3.3 - 4.5									17.15	
4	CORE5						58	29	15	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered to destructured, fractures are very closely spaced.		
		4.5 - 6										
5	CORE6						51	27	13			
6		6 - 7.5										
7	CORE7						33	12	0			
	SPT8	7.5 - 7.69	25/9	100/10	-	>100					12.95	
		7.69 - 9								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.76	
8	CORE9						30	5	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered to destructured, fractures are very closely spaced.		
9	SPT10	9 - 9.18	25/9	100/9	-	>100					11.45	
		9.18 - 10.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.27	
10	CORE11						63	13	10	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.37m below the existing ground level i.e. at R.L. +12.08m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B38**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.450DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,762,224.89** E **481,782.92**
Date Started: **30/07/2015** Date Finished: **02/08/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										weathered to destructured, fractures are very closely spaced.		
		10.5 - 12										
11	CORE12						55	13	9			
12		12 - 13.5										
	CORE13						39	8	0			
13	SPT14	13.5 - 13.81	25/8	85	15/8	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	6.95	
		13.81 - 15								Extremely weak to very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.	6.64	
14	CORE15						45	0	0			
15	SPT16	15 - 15.23	25/7	85	15/1	>100				Very dense, brown/ offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.45	
		15.23 - 16.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.	5.22	
16	CORE17						56	0	0			
	SPT18	16.5 - 16.72	25/7	100	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.95	
		16.72 - 18								Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	3.73	
17	CORE19						58	5	0			
18	SPT20	18 - 18.13	25/4	100/9	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.45	
		18.13 - 19.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.	2.32	
19	CORE21						41	0	0			
	SPT22	19.5 - 19.66	25/6	100/11	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.95	
		19.66 - 21									0.79	
20												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B38**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.450DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,224.89** E **481,782.92**

Date Started: **30/07/2015** Date Finished: **02/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE23						55	16	5	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
21		21 - 22.5										
	CORE24						29	0	0			
22	SPT25	22.5 - 22.62	25/4	100/9	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.05	
		22.62 - 24									-2.17	
23	CORE26						84	11	5	Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
24		24 - 25.5										
	CORE27						75	22	11			
25												
		25.5 - 27										
26	CORE28						84	61	22			
27	SPT29	27 - 27.18	25/8	100/10	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.55	
		27.18 - 28.5								Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced and interbedded with silt.	-6.73	
28	CORE30						49	5	0			
	SPT31	28.5 - 28.67	25/7	100/10	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.05	
		28.67 - 30								Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely closely spaced and interbedded with silt.	-8.22	
29	CORE32						36	8	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.37m below the existing ground level i.e. at R.L. +12.08m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B38**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.450DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,224.89** E **481,782.92**

Date Started: **30/07/2015** Date Finished: **02/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT33	30 - 30.14	25/4	100/10	-	>100				Very dense, offwhite, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.55	
		30.14 - 31.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.	-9.69	
	CORE34						54	0	0			
31												
	SPT35	31.5 - 31.61	25/3	100/8	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.05	
		31.61 - 33								Extremely weak to very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.	-11.16	
32	CORE36						61	0	0			
33	SPT37	33 - 33.22	25/7	100	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.55	
		33.22 - 34.5								Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-12.77	
34	CORE38						54	5	0			
	SPT39	34.5 - 34.62	25/3	100/9	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.05	
		34.62 - 36								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with silt.	-14.17	
35	CORE40						89	15	8			
36		36 - 37.5										
	CORE41						46	0	0			
37												
	SPT42	37.5 - 37.6	25/2	100/8	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-17.05	
		37.6 - 39								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-17.15	
38	CORE43						54	0	0			
39	SPT44	39 - 39.11	25/3	100/8	-	>100				(39.00-39.11m) Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
		39.11 - 40										
	CORE45						18	0	0			
40										END OF BORING	-19.35	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.37m below the existing ground level i.e. at R.L. +12.08m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B39**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+20.454DMD**

Coordinates: N **2,762,162.32** E **481,937.08**

Date Started: **21/07/2015** Date Finished: **26/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	16	25				Medium dense to dense, light brown, silty, fine SAND.	19.45	
2	SPT3	2 - 2.45	7	15	20	35						
3	SPT4	3 - 3.45	11	20	23	43						
4	SPT5	4 - 4.31	25/12	36	14/4	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.45	
5	SPT6	5 - 5.2	25/8	50/12	-	>50						
		5.2 - 6								Extremely weak to very weak, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	15.25	
	CORE7						100	48	15			
6		6 - 7.5										
	CORE8						63	16	0			
7												
		7.5 - 9										
8	CORE9						65	29	9			
9		9 - 10.5										
	CORE10						65	23	7			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.40m below the existing ground level i.e. at R.L. +12.05m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B39**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.454DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,762,162.32** E **481,937.08**
Date Started: **21/07/2015** Date Finished: **26/07/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	10.45	
		10.5 - 11.8										
11	CORE11						74	56	45			
		11.8 - 13.5										
12	CORE12						65	6	0			
13										Extremely weak to very weak, light brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very close to closely spaced.	7.45	
		13.5 - 14.8										
14	CORE13						65	53	51			
		14.8 - 16.3									5.65	
15										Extremely weak to very weak, off white calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	CORE14						63	24	0			
16		16.3 - 17.8										
17	CORE15						64	24	0			
		17.8 - 19.1									2.65	
18										Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced .		
	CORE16						70	60	50			
19		19.1 - 20.6										
20	CORE17						65	40	30			

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B39**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.454DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,762,162.32** E **481,937.08**

Date Started: **21/07/2015** Date Finished: **26/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced .	0.45	
		20.6 - 22.1										
21	CORE18						63	50	43			
22		22.1 - 23.6										
	CORE19						63	31	17			
23		23.6 - 25.1										
24	CORE20						63	27	7			
25		25.1 - 26.6									-4.65	
	CORE21						63	47	38	Very weak to weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
26		26.6 - 28.1										
27	CORE22						63	29	0			
28		28.1 - 29.6										
	CORE23						45	0	0			
29	SPT24	29.6 - 29.79	25/9	100/9	-	>100				Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-9.15	
		29.79 - 30.6									-9.34	
30												

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B39**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.454DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,762,162.32** E **481,937.08**

Date Started: **21/07/2015** Date Finished: **26/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE25						45	5	0	Very weak to weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
	SPT26	30.6 - 30.87	25/8	73	27/4	>100					-10.15	
		30.87 - 31.87								Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-10.42	
31	CORE27						39	0	0	Very weak to weak, light brown, calcareous SILTSTONE, recovered as silty gravel.		
	SPT28	31.87 - 32.1	25/6	85	15/2	>100					-11.42	
32		32.1 - 33.1								Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-11.65	
	CORE29						51	0	0	Very weak to weak, light brown, calcareous SILTSTONE, recovered as silty gravel.		
33	SPT30	33.1 - 33.36	25/7	70	30/4	>100					-12.65	
		33.36 - 34.36								Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-12.91	
34	CORE31						38	5	0	Very weak to weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced and interbedded with cemented silt.		
	SPT32	34.36 - 34.59	25/7	85	15/1	>100					-13.91	
		34.59 - 35.59								Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-14.14	
35	CORE33						55	30	22	Weak to medium strong, brown, offwhite, calcareous CONGLOMERATE, gravel to matrix ratio is 60:40, gravels are subangular medium to fine, matrix is silty, partially to distinctly weathered, fractures are very closely to medium spaced.		
		35.59 - 37.09										
36	CORE34						62	49	43			
37		37.09 - 38.59										
	CORE35						52	41	31			
38		38.59 - 40										
39	CORE36						45	11	0			
40										END OF BORING	-19.35	

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B40**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+16.101DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,762,360.57** E **481,834.03**
Date Started: **09/08/2015** Date Finished: **10/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	14	24	38				Dense, light brown, silty, fine SAND.	15.10	
2	SPT3	2 - 2.45	9	17	24	41						
3	SPT4	3 - 3.45	15	22	28	50						
4	SPT5	4 - 4.31	25/12	36	14/4	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.10	
5	SPT6	5 - 5.16	25/6	50/10	-	>50						
	CORE7	5.16 - 6.5					48	7	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	10.94	
6	SPT8	6.5 - 6.73	25/6	76	24/2	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	9.60	
		6.73 - 8									9.37	
7	CORE9						50	4	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
8		8 - 9.5										
	CORE10						33	10	8			
9	SPT11	9.5 - 9.71	25/5	85	15/1	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	6.60	
		9.71 - 11									6.39	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.20m below the existing ground level i.e. at R.L. +11.90m DMD.
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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B40**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+16.101DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**ACKER**	Core Diameter (mm): **76**	N **2,762,360.57** E **481,834.03**
Date Started:	**09/08/2015**	Date Finished: **10/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE12						36	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
11	SPT13	11 - 11.2 - 11.2 - 12.5	25/5	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	5.10 4.90	
12	CORE14						27	5	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
	SPT15	12.5 - 12.7 - 12.7 - 14 -	25/5	100	-	>100				Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.	3.60 3.40	
13	CORE16						31	11	10	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
14	SPT17	14 - 14.19 - 14.19 - 15.5	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.10 1.91	
15	CORE18						30	10	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT19	15.5 - 15.69 - 15.69 - 17 -	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.60 0.41	
16	CORE20						31	9	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
17	SPT21	17 - 17.18 - 17.18 - 18.5	25/9	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.90 -1.08	
18	CORE22						30	7	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT23	18.5 - 18.67 - 18.67 - 20 -	25/8	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.40 -2.57	
19	CORE24						40	25	13	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
20												

REMARKS:

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* Ground water table was encountered at a depth of 4.20m below the existing ground level i.e. at R.L. +11.90m DMD.
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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B40**
Sheet: **3/4**

Boring Method: **Rotary Drilling**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**
Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+16.101DMD**
Coordinates: N **2,762,360.57** E **481,834.03**

Date Started: **09/08/2015** Date Finished: **10/08/2015** Operator : **Azoor Rahman**
Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT25	20 - 20.19	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.90	
		20.19 - 21.5									-4.09	
21	CORE26						20	9	7	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT27	21.5 - 21.69	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.40	
		21.69 - 23									-5.59	
22	CORE28						28	5	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
23	SPT29	23 - 23.18	25/9	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.90	
		23.18 - 24.5									-7.08	
24	CORE30						32	6	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT31	24.5 - 24.67	25/8	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.40	
		24.67 - 26									-8.57	
25	CORE32						35	0	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
26	SPT33	26 - 26.2	25/5	100	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.90	
		26.2 - 27.5									-10.10	
27	CORE34						27	9	7	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT35	27.5 - 27.69	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.40	
		27.69 - 29									-11.59	
28	CORE36						27	0	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
29	SPT37	29 - 29.17	25/8	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.90	
		29.17 - 30.5									-13.07	
30	CORE38						35	5	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are		

REMARKS:
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SAMPLE KEY

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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL
Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B40**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+16.101DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,762,360.57** E **481,834.03**

Date Started: **09/08/2015** Date Finished: **10/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										extremely close to closely spaced and interbedded with cemented silt.		
	SPT39	30.5 - 30.69	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.40	
		30.69 - 32									-14.59	
31	CORE40						25	6	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
32	SPT41	32 - 32.18	25/9	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-15.90	
		32.18 - 33.5									-16.08	
33	CORE42						27	0	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT43	33.5 - 33.67	25/8	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-17.40	
		33.67 - 35									-17.57	
34	CORE44						30	6	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
35	SPT45	35 - 35.19	25/9	100/10	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-18.90	
		35.19 - 36.5									-19.09	
36	CORE46						31	11	9	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
	SPT47	36.5 - 36.67	25/8	100/9	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-20.40	
		36.67 - 38									-20.57	
37	CORE48						30	9	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
38	SPT49	38 - 38.16	25/8	100/8	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-21.90	
		38.16 - 39									-22.06	
	CORE50						51	7	0	Extremely weak to very weak, light brown/ brown, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
39		39 - 40										
	CORE51						60	44	24			
										END OF BORING	-23.70	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 4.20m below the existing ground level i.e. at R.L. +11.90m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B41**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.369DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,368.52** E **481,668.19**
Date Started: **25/07/2015** Date Finished: **27/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	5	8	10	18				Medium dense to dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.37	
2	SPT3	2 - 2.45	10	11	14	25						
3	SPT4	3 - 3.45	9	13	18	31						
4	SPT5	4 - 4.45	14	19	23	42						
5	SPT6	5 - 5.33	18	35	15/3	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	15.37	
6	SPT7	6 - 6.2	25/8	50/12	-	>50						
		6.2 - 7.7								Very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	14.17	
7	CORE8						65	20	0			
		7.7 - 9										
8	CORE9						69	19	0			
9		9 - 10.5										
	CORE10						60	23	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.80m below the existing ground level i.e. at R.L. +11.57m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮ CORE : Core Sample
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- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B41**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.369DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,368.52** E **481,668.19**

Date Started: **25/07/2015** Date Finished: **27/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	10.37	
		10.5 - 12									9.87	
11	CORE11						47	15	9	Extremely weak to very weak, brown, conglomeratic SILTSTONE locally interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt.		
12	SPT12	12 - 12.19	25/9	100/10	-	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	8.37	
		12.19 - 13.5									8.18	
13	CORE13						60	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt		
		13.5 - 15										
14	CORE14						63	0	0			
15	SPT15	15 - 15.2	25/10	100/10	-	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	5.37	
		15.2 - 16.5									5.17	
16	CORE16						65	17	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt		
		16.5 - 17.5										
17	CORE17						68	10	0			
	SPT18	17.5 - 17.68	25/9	100/9	-	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	2.87	
		17.68 - 19									2.69	
18	CORE19						63	23	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt		
19		19 - 20.5										
	CORE20						60	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.80m below the existing ground level i.e. at R.L. +11.57m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B41**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.369DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,368.52** E **481,668.19**
Date Started: **25/07/2015** Date Finished: **27/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, offwhite, calcareous SILTSTONE, locally interbedded with sandy gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt	0.37	
	SPT21	20.5 - 20.69	25/10	100/9	-	>100					-0.13	
		20.69 - 22									-0.32	
21										Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.		
	CORE22						60	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly to destructured fractures are extremely close to very closely spaced.		
22		22 - 23.5										
	CORE23						64	13	0			
23												
	SPT24	23.5 - 23.71	25/11	100/10	-	>100				Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-3.13	
		23.71 - 25									-3.34	
24										Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly to destructured fractures are extremely close to very closely spaced.		
	CORE25						63	0	0			
25		25 - 26.5										
	CORE26						63	0	0			
26												
	SPT27	26.5 - 26.68	25/8	100/10	-	>100				Very dense, off white, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	-6.13	
		26.68 - 28									-6.31	
27										Extremely weak to very weak, brown, conglomeratic SILTSTONE locally interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	CORE28						63	0	0			
28		28 - 29.5										
	CORE29						53	11	0			
29												
		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.80m below the existing ground level i.e. at R.L. +11.57m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B41**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.369DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,368.52** E **481,668.19**
Date Started: **25/07/2015** Date Finished: **27/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE30	31 - 32.5					53	19	10	Extremely weak to very weak, brown, conglomeratic SILTSTONE locally interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented silt.	-9.63	
31	CORE31	32.5 - 34					58	8	7			
32	CORE32	34 - 35.5					64	5	0			
33	CORE33	35.5 - 37					60	8	7	Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel, distinctly weathered to destructured fractures are extremely close to very closely spaced.	-13.63	
34	CORE34	37 - 38.5					60	13	0			
35	CORE35	38.5 - 40					60	13	9			
36	CORE36						60	9	0			
37										END OF BORING	-19.43	
38												
39												
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.80m below the existing ground level i.e. at R.L. +11.57m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B42**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.171DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,232.47** E **481,614.73**

Date Started: **22/07/2015** Date Finished: **25/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.		
1	SPT2	1 - 1.45	6	12	18	30				Dense, light brown, gravelly, very silty fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.17	
2	SPT3	2 - 2.35	22	30	20/5	>50				Very dense, light brown, very gravelly, silty fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.17	
3	SPT4	3 - 3.26	25/9	44	6/2	>50						
		3.3 - 4.5									17.87	
4	CORE5						81	46	0	Extremely weak to very weak, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		4.5 - 6										
5	CORE6						65	50	32			
6		6 - 7.5										
7	CORE7						65	52	35			
		7.5 - 9										
8	CORE8						59	50	33			
9		9 - 10.5										
10	CORE9						63	40	27			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.10m below the existing ground level i.e. at R.L. +12.07m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B42**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.171DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,232.47** E **481,614.73**

Date Started: **22/07/2015** Date Finished: **25/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	11.17	
		10.5 - 12									10.67	
11	CORE10						60	27	9	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
12		12 - 13.5										
	CORE11						59	31	13			
13												
		13.5 - 15										
14	CORE12						63	4	0			
15		15 - 16.5									6.17	
	CORE13						59	50	40	Very weak to weak, brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
16												
		16.5 - 18										
17	CORE14						64	53	30			
18		18 - 19.5										
	CORE15						57	12	0			
19											2.17	
		19.5 - 21								Very weak, offwhite, calcareous SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.10m below the existing ground level i.e. at R.L. +12.07m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B42**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.171DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,232.47** E **481,614.73**

Date Started: **22/07/2015** Date Finished: **25/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE16						61	5	0	Very weak, offwhite, calcareous SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	1.17	
21	SPT17	21 - 21.23	25/6	90	10/2	>100				Very dense, offwhite, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.17	
		21.23 - 22.5									-0.06	
22	CORE18						65	0	0	Very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.		
		22.5 - 24										
23	CORE19						63	0	0			
24	SPT20	24 - 24.19	25/9	100/10	-	>100				Very dense, offwhite, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.83	
		24.19 - 25.5									-3.02	
25	CORE21						68	14	0	Very weak, offwhite, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		25.5 - 27										
26	CORE22						79	25	11			
27		27 - 28.5										
28	CORE23						60	45	40			
		28.5 - 30										
29	CORE24						65	3	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.10m below the existing ground level i.e. at R.L. +12.07m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B42**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+21.171DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,762,232.47** E **481,614.73**
Date Started: **22/07/2015** Date Finished: **25/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak, offwhite, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-8.83	
	CORE25						60	0	0			
31	SPT26	31.5 - 31.69	25/9	100/10	-	>100				Very dense, offwhite, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.33	
		31.69 - 33									-10.52	
32	CORE27						61	0	0	Very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.		
33		33 - 34.5										
	CORE28						65	0	0			
34	SPT29	34.5 - 34.68	25/8	100/10	-	>100				Very dense, offwhite, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.33	
		34.68 - 36									-13.51	
35	CORE30						65	0	0	Very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.		
36		36 - 37.5										
	CORE31						64	0	0			
37	SPT32	37.5 - 37.65	25/7	100/8	-	>100				Very dense, offwhite, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.33	
		37.65 - 39									-16.48	
38	CORE33						65	0	0	Very weak, offwhite, calcareous SILTSTONE, recovered as silty gravel.		
39		39 - 40										
	CORE34						65	0	0			
40										END OF BORING	-18.63	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.10m below the existing ground level i.e. at R.L. +12.07m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B43**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.136DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,989.08** E **481,521.75**

Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.33	8	38	12/3	>50				Very dense, light brown, gravelly, very silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.14	
2	SPT3	2 - 2.28	25/11	42	8/2	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.14	
		2.28 - 3.5									18.86	
3	CORE4						74	37	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		3.5 - 5										
4	CORE5						65	37	0			
5		5 - 6										
	CORE6						65	23	0			
6		6 - 7										
	CORE7						65	32	8			
7		7 - 8										
	CORE8						50	26	0			
8		8 - 9.5										
	CORE9						38	0	0			
9												
	SPT10	9.5 - 9.76	25/8	80	20/3	>100				Very dense, brown, slightly sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.64	
		9.76 - 11									11.38	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +12.14m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B43**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.136DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,989.08** E **481,521.75**

Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11	11 - 12.5					58	24	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
11	CORE12	12.5 - 14					65	18	11			
12	CORE13	14 - 15.5					63	36	22			
13	CORE14	15.5 - 17					63	30	19			
14	CORE15	17 - 18.5					64	8	0			
15	CORE16	18.5 - 18.76					36	8	0			
16	SPT17	18.76 - 20	25/7	80	20/3	>100				Very dense, brown, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.64	
17	CORE18						55	0	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.	2.38	
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +12.14m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B43**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.136DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,989.08** E **481,521.75**

Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21.5								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.	1.14	
	CORE19						44	0	0			
21												
	SPT20	21.5 - 21.75	25/8	86	14/2	>100				Very dense, brown, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.36	
		21.75 - 23								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, recovered as silty gravel.	-0.61	
22	CORE21						40	0	0			
23	SPT22	23 - 23.24	25/8	90	10/1	>100				Very dense, brown, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.86	
		23.24 - 24.5								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.	-2.10	
24	CORE23						48	0	0			
	SPT24	24.5 - 24.74	25/7	90	10/1	>100				Very dense, brown, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.36	
		24.74 - 26.24								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, recovered as silty gravel.	-3.60	
25	CORE25						29	0	0			
26	SPT26	26.24 - 26.5	25/7	70	30/3	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.10	
		26.5 - 28								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, recovered as silty gravel.	-5.36	
27	CORE27						37	0	0			
28	SPT28	28 - 28.19	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.86	
		28.19 - 29.5								Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, recovered as silty gravel.	-7.05	
29	CORE29						29	0	0			
	SPT30	29.5 - 29.71	25/5	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.36	
		29.71 - 31.21									-8.57	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +12.14m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B43**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+21.136DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,989.08** E **481,521.75**

Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE31						45	8	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
31	SPT32	31.21 - 31.4	25/5	100	-	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.07	
		31.4 - 32.9									-10.27	
32	CORE33						54	0	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
33		32.9 - 34.4										
	CORE34						49	0	0			
34	SPT35	34.4 - 34.75	25/7	85	15/2	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.26	
		34.75 - 36.25									-13.61	
35	CORE36						38	11	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
36	SPT37	36.25 - 36.46	25/5	85	15/1	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-15.11	
		36.46 - 37.96									-15.32	
37	CORE38						50	0	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
38	SPT39	37.96 - 38.22	25/7	80	20/1	>100				Very dense, offwhite, sandy silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.82	
		38.22 - 39									-17.08	
	CORE40						48	11	0	Extremely weak to very weak, light brown/ offwhite, calcareous SILTSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented silt.		
39		39 - 40										
	CORE41						30	0	0			
40										END OF BORING	-18.66	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.00m below the existing ground level i.e. at R.L. +12.14m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B61**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+20.908DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,905.39** E **481,725.23**
Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.23	25/8	50	-	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.91	
2	SPT3	2 - 2.19	25/8	50/11	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.91	
		2.2 - 3.2									18.71	
3	CORE4						96	65	23	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
		3.2 - 4.2										
4	CORE5						93	50	24			
		4.2 - 5.2										
5	CORE6						90	65	22			
		5.2 - 6.4										
6	CORE7						79	56	0			
		6.4 - 7.8										
7	CORE8						64	39	9			
		7.8 - 9.3										
8	CORE9						56	33	7			
		9.3 - 10.8										
9											11.41	
10										Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE locally interbedded with silty sandy gravel, distinctly weathered to destructured.		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.00m below the existing ground level i.e. at R.L. +12.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B61**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.908DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,905.39** E **481,725.23**

Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						60	0	0	fractures are very close to closely spaced and interbedded with cemented silt.		
		10.8 - 12.3										
11												
	CORE11						60	20	11			
12												
		12.3 - 13.5										
13	CORE12						60	10	0			
		13.5 - 14.5										
14	CORE13						95	30	0			
		14.5 - 16									6.41	
15	CORE14						60	5	0	Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.		
16		16 - 17.5										
	CORE15						60	21	17			
17												
		17.5 - 19										
18	CORE16						60	0	0			
19		19 - 20.5										
	CORE17						63	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 8.00m below the existing ground level i.e. at R.L. +12.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B61**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.908DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,905.39** E **481,725.23**

Date Started: **25/07/2015** Date Finished: **26/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, brown/ offwhite, calcareous SILTSTONE, interbedded with sandy gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with silt.	0.91	
	SPT18	20.5 - 20.69	25/9	100/10	-	>100					0.41	
		20.69 - 22								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.22	
21	CORE19						63	0	0	Very weak to weak, offwhite calcareous SILTSTONE, locally interbedded with conglomeratic siltstone, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with silt.		
22		22 - 23.5										
	CORE20						59	31	28			
23												
		23.5 - 25										
24	CORE21						66	20	8			
25		25 - 26.5										
	CORE22						61	19	11			
26												
		26.5 - 28										
27	CORE23						63	20	0			
28		28 - 29.5										
	CORE24						62	10	0			
29												
	SPT25	29.5 - 29.68	25/9	100/9	-	>100					-8.59	
		29.68 - 31								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.77	
30												

REMARKS:

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B61**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		Sheet: **4/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+20.908DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76**	N **2,761,905.39** E **481,725.23**
Date Started:	**25/07/2015**	Date Finished: **26/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE26						63	5	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured , fractures are extremely close to very closely spaced and interbedded with cemented silt.		
31		31 - 32.5										
	CORE27						61	10	0			
32	SPT28	32.5 - 32.69	25/9	100/10	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.59	
		32.69 - 34									-11.78	
33	CORE29						63	11	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured , fractures are extremely close to very closely spaced and interbedded with cemented silt.		
34		34 - 35.5										
	CORE30						63	11	7			
35		35.5 - 37										
36	CORE31						55	23	10			
37		37 - 38.5										
	CORE32						60	18	7			
38		38.5 - 40										
39	CORE33						60	11	8			
40										END OF BORING	-18.89	

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C29**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.970DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,114.47** E **481,542.86**

Date Started: **19/07/2015** Date Finished: **23/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	14	20	24	44				Dense to very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.97	
2	SPT3	2 - 2.36	18	30	20/6	>50						
3	SPT4	3 - 3.21	25/8	50/13	-	>50						
		3.25 - 4.25									17.72	
4	CORE5						91	77	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		4.25 - 5.25										
5	CORE6						82	51	0			
		5.25 - 6.75										
6	CORE7						61	21	0			
		6.75 - 8.25										
7	CORE8						65	46	17			
8		8.25 - 9.75										
9	CORE9						58	44	37			
		9.75 - 11.25										
10												

REMARKS:

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C29**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.970DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,114.47** E **481,542.86**

Date Started: **19/07/2015** Date Finished: **23/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						63	30	19	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	10.97	
11		11.25 - 12.75									9.72	
12	CORE11						63	9	7	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
13	CORE12	12.75 - 14.25					65	15	8			
14		14.25 - 15.75										
15	CORE13						64	23	13			
16	CORE14	15.75 - 17.25					57	0	0			
17		17.25 - 18.75										
18	CORE15						37	0	0			
19	SPT16	18.75 - 18.94	25/9	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.22	
		18.94 - 20.25								Very weak to weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced.	2.03	
20	CORE17						48	13	9			

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C29**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Equipment: **Wirth 2** Core Diameter (mm): **76**

Ground Level (m): **+20.970DMD**

Coordinates: N **2,762,114.47** E **481,542.86**

Date Started: **19/07/2015** Date Finished: **23/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak to weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced.	0.97	
		20.25 - 21.75										
21	CORE18						57	20	13			
		21.75 - 23.25										
22	CORE19						50	22	17			
23		23.25 - 24.75										
24	CORE20						53	22	17			
		24.75 - 26.25									-3.78	
25	CORE21						37	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
26	SPT22	26.25 - 26.39	25/7	100/7	-	>100					-5.28	
		26.39 - 27.75								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.42	
27	CORE23						47	10	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT24	27.75 - 27.89	25/7	100/7	-	>100					-6.78	
28		27.89 - 29.25								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.92	
	CORE25						45	7	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
29	SPT26	29.25 - 29.39	25/7	100/7	-	>100					-8.28	
		29.39 - 30.75								Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.42	
30										Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly		

REMARKS:

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Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C29**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.970DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,114.47** E **481,542.86**

Date Started: **19/07/2015** Date Finished: **23/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE27						58	0	0	weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
		30.75 - 32.25										
31												
	CORE28						53	6	0			
32												
	SPT29	32.25 - 32.44	25/9	100/10	-	>100				Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.28	
		32.44 - 33.75									-11.47	
33	CORE30						50	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
		33.75 - 35.25										
34												
	CORE31						44	13	0			
35												
	SPT32	35.25 - 35.43	25/9	100/9	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.28	
		35.43 - 36.75									-14.46	
36	CORE33						61	13	9	Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are very closely to closely spaced.		
		36.75 - 38.25										
37												
	CORE34						43	23	8			
38												
	SPT35	38.25 - 38.45	25/9	100/11	-	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-17.28	
		38.45 - 39.75									-17.48	
39	CORE36						50	27	7	Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are very closely to closely spaced.		
		39.75 - 41.25										
40												

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Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C29**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.970DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,114.47** E **481,542.86**

Date Started: **19/07/2015** Date Finished: **23/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are very closely to closely spaced.	-19.03	
	CORE37						53	32	20			
41		41.25 - 42.75										
42	CORE38						47	27	7			
	SPT39	42.75 - 42.94	25/8	100/11	-	>100					-21.78	
43		42.94 - 44.25								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-21.97	
	CORE40						37	13	0	Very weak, offwhite, conglomeratic SILTSTONE, distinctly weathered, fractures are very closely to closely spaced.		
44												
	SPT41	44.25 - 44.4	25/7	100/8	-	>100					-23.28	
		44.4 - 45.75								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-23.43	
45	CORE42						40	12	9	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT43	45.75 - 45.93	25/9	100/9	-	>100					-24.78	
46		45.93 - 47.25								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-24.96	
	CORE44						40	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
47												
	SPT45	47.25 - 47.43	25/9	100/9	-	>100					-26.28	
		47.43 - 48.75								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-26.46	
48	CORE46						53	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
		48.75 - 50.25										
49												
	CORE47						57	0	0			
50												

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C29**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+20.970DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,114.47** E **481,542.86**

Date Started: **19/07/2015** Date Finished: **23/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-6**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50										Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-29.03	
	SPT48	50.25 - 50.45	25/11	100/9	-	>100					-29.28	
		50.45 - 51.75									-29.48	
51	CORE49						57	8	7	Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
		51.75 - 53.25								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
52	CORE50						37	13	7			
53	SPT51	53.25 - 53.44	25/9	100/10	-	>100					-32.28	
		53.44 - 54.75								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-32.47	
54	CORE52						40	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT53	54.75 - 54.94	25/9	100/10	-	>100					-33.78	
55		54.94 - 56.25								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-33.97	
	CORE54						41	26	23	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
56	SPT55	56.25 - 56.44	25/9	100/10	-	>100					-35.28	
		56.44 - 57.75								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-35.47	
57	CORE56						13	9	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT57	57.75 - 57.92	25/8	100/9	-	>100					-36.78	
58		57.92 - 59.25								Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-36.95	
	CORE58						54	23	7	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
59		59.25 - 60-										
	CORE59						50	8	0			
60										END OF BORING	-38.83	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.15m below the existing ground level i.e. at R.L. +11.82m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

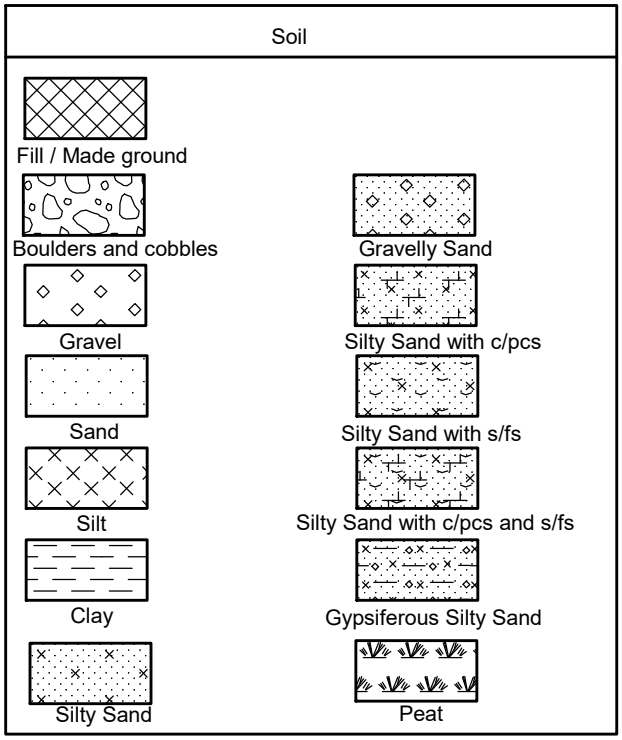
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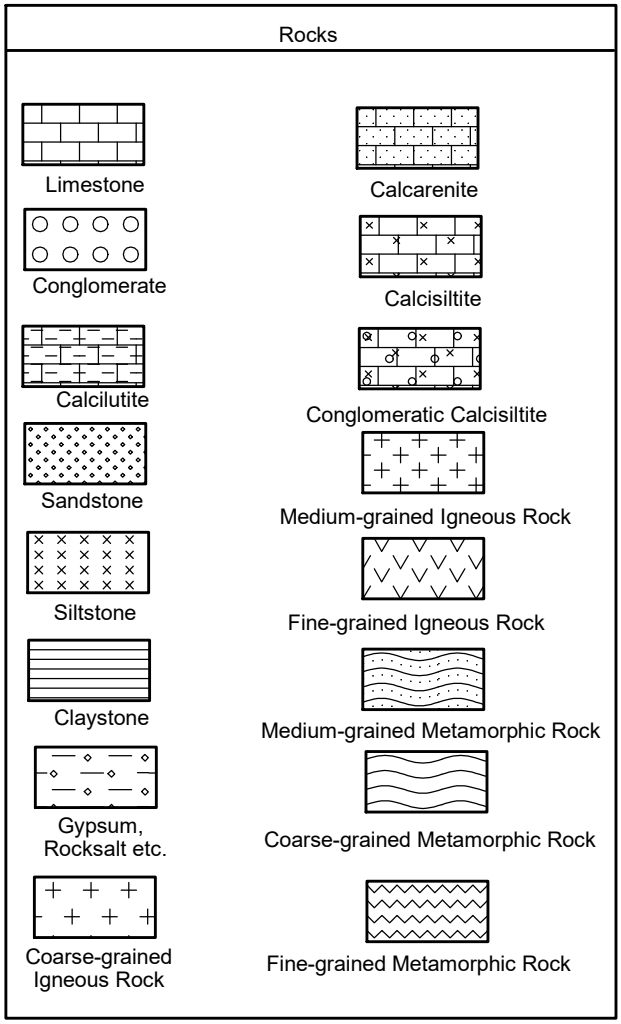
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APPENDIX B7

BOREHOLE LOGS (ZONE-7)

LEGEND OF THE BOREHOLE LOGS





RELATIVE DENSITY OF GRANULAR SOIL
(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL
(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION
BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A59**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.403DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,540.71** E **481,488.26**

Date Started: **29/07/2015** Date Finished: **29/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	10	10	12	22				Medium dense, light brown, silty, fine SAND.	30.40	
2	SPT3	2 - 2.45	12	17	20	37						
3	SPT4	3 - 3.42	20	24	26/12	>50				Very dense, light brown, gravelly, slightly silty, medium to fine SAND. Gravel are subangular medium to fine sandstone pieces.	28.40	
4	SPT5	4 - 4.37	25	32	18/7	>50						
5	SPT6	5 - 5.3	25	50	-	>50						
6	SPT7	6 - 6.24	25/9	50	-	>50						
		6.25 - 7.5									25.15	
7	CORE8						76	20	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		7.5 - 9										
8	CORE9						63	43	7			
9		9 - 10.5										
10	CORE10						60	32	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.00m below the existing ground level i.e. at R.L. +14.40m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A59**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		Sheet: **2/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+31.403DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Mobile 40-1**	Core Diameter (mm): **76**	N **2,761,540.71** E **481,488.26**
Date Started:	**29/07/2015**	Date Finished: **29/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	21.40	
		10.5 - 12										
11	CORE11						61	32	7			
12		12 - 13.5										
	CORE12						60	27	0			
13												
		13.5 - 15									17.90	
14	CORE13						63	20	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
15	SPT14	15 - 15.21	25/5	85	15/1	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	16.40	
		15.21 - 16.5									16.19	
16	CORE15						65	30	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		16.5 - 18										
17	CORE16						65	0	0			
18	SPT17	18 - 18.19	25/9	100/10	-	>100				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	13.40	
		18.19 - 19									13.21	
	CORE18						65	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
19		19 - 20										
	CORE19						65	0	0			
20										END OF BORING	11.60	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.00m below the existing ground level i.e. at R.L. +14.40m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B18**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.092DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,385.18** E **481,069.54**

Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	7	12	19				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	31.09	
2	SPT3	2 - 2.45	7	10	17	27						
3	SPT4	3 - 3.45	11	14	25	39						
4	SPT5	4 - 4.36	17	20	20/6	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	28.09	
5	SPT6	5 - 5.33	24	36	14/3	>50						
		5.35 - 6.5									26.74	
6	CORE7						68	48	22	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		6.5 - 8										
7	CORE8						59	9	8			
8		8 - 9.5										
9	CORE9						63	33	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +13.79m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B18**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.092DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,385.18** E **481,069.54**

Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						55	17	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	22.09	
11		11 - 12.5										
	CORE11						53	24	0			
12		12.5 - 14										
13	CORE12						57	28	8			
14		14 - 15.5										
	CORE13						56	33	15			
15		15.5 - 17										
16	CORE14						51	8	0			
17		17 - 18										
	CORE15						60	0	0			
18		18 - 19.5								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	14.09	
	CORE16						57	17	13			
19		19.5 - 21									12.59	
										Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +13.79m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B18**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

Ground Level (m): **+32.092DMD**

Coordinates: N **2,761,385.18** E **481,069.54**

Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE17						55	11	0	interbedded with cemented silt. Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	12.09	
21		21 - 22.5										
	CORE18						53	0	0			
22		22.5 - 24										
23	CORE19						60	0	0			
24	SPT20	24 - 24.19	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.09	
		24.19 - 25.5								Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	7.90	
25	CORE21						63	0	0			
		25.5 - 27										
26	CORE22						65	0	0			
27	SPT23	27 - 27.18	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.09	
		27.18 - 28.5								Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	4.91	
28	CORE24						55	0	0			
		28.5 - 30										
29	CORE25						64	0	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +13.79m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B18**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.092DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,761,385.18** E **481,069.54**
Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT26	30 - 30.19	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.09	
		30.19 - 31.5					57	0	0	Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	1.90	
31	CORE27											
		31.5 - 33					64	0	0			
32	CORE28											
33	SPT29	33 - 33.18	25/8	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.91	
		33.18 - 34.5					65	0	0	Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-1.09	
34	CORE30											
		34.5 - 36					65	0	0			
35	CORE31											
36	SPT32	36 - 36.18	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.91	
		36.18 - 37.5					64	0	0	Very weak, offwhite, calcareous SILTSTONE, interbedded silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-4.09	
37	CORE33											
		37.5 - 39					64	0	0			
38	CORE34											
39	SPT35	39 - 39.15	25/7	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.91	
		39.15 - 40					63	0	0			
	CORE36											
40										END OF BORING	-7.71	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +13.79m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B19**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+33.579DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,484.63** E **481,137.30**

Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	5	7	9	16				Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	32.58	
2	SPT3	2 - 2.45	7	9	11	20						
3	SPT4	3 - 3.45	10	13	15	28					30.58	
4	SPT5	4 - 4.45	12	15	19	34				Medium dense to dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
5	SPT6	5 - 5.45	13	18	19	37						
6												
7	SPT7	6.5 - 6.91	17	25	25/11	>50				Very dense, light brown, very gravelly, silty, medium SAND. Gravels are subangular medium to fine sandstone pieces.	27.08	
8	SPT8	8 - 8.27	25/10	45	5/2	>50						
9	CORE9	8.3 - 9.8					65	23	0	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.	25.28	
10		9.8 - 11.3										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 20.10m below the existing ground level i.e. at R.L. +13.48m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B19**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+33.579DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,484.63** E **481,137.30**

Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											23.58	
	CORE10						66	10	0	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.		
11		11.3 - 12.8										
	CORE11						63	19	0			
12		12.8 - 14.3										
	CORE12						62	18	0			
13		14.3 - 15.8										
	CORE13						60	20	0			
14		15.8 - 17.3									17.78	
	CORE14						60	20	9	Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.		
15		17.3 - 18.8										
	CORE15						60	27	0			
16		18.8 - 20.3										
	CORE16						60	25	8			
17												
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 20.10m below the existing ground level i.e. at R.L. +13.48m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B19**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+33.579DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,484.63** E **481,137.30**
Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.	13.58	
		20.3 - 21.8										
21	CORE17						60	19	8			
		21.8 - 23.3										
22	CORE18						61	13	0			
23												
		23.3 - 24.8								Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to closely spaced and interbedded with cemented sand.	10.28	
24	CORE19						63	33	15			
		24.8 - 26.3									8.78	
25										Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered fractures are extremely close to medium spaced.		
	CORE20						65	20	11			
26												
		26.3 - 27.8										
27	CORE21						63	23	12			
		27.8 - 29.3										
28												
	CORE22						58	44	33			
29												
		29.3 - 30.8										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 20.10m below the existing ground level i.e. at R.L. +13.48m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▯ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B19**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+33.579DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,484.63** E **481,137.30**
Date Started: **26/07/2015** Date Finished: **27/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE23						64	53	36	Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered fractures are extremely close to medium spaced.	3.58	
		30.8 - 32.3										
31	CORE24						65	48	43			
32		32.3 - 33.8										
33	CORE25						57	43	29			
		33.8 - 35.3										
34	CORE26						38	0	0			
35	SPT27	35.3 - 35.5	25/8	100/12	-	>100				Very dense, offwhite, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.72	
		35.5 - 37								Very weak to weak, offwhite, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered fractures are extremely close to medium spaced.	-1.92	
36	CORE28						50	26	23			
37		37 - 38.5										
	CORE29						56	27	9			
38		38.5 - 40										
39	CORE30						56	29	16			
40										END OF BORING	-6.22	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 20.10m below the existing ground level i.e. at R.L. +13.48m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.214DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,627.56** E **481,297.96**
Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	10	10	20				Medium dense to dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	31.21	
2	SPT3	2 - 2.45	7	13	15	28						
3	SPT4	3 - 3.45	9	13	15	28						
4	SPT5	4 - 4.45	12	15	22	37						
5	SPT6	5 - 5.35	25	35	15/5	>50				Very dense, light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.21	
6	SPT7	6.5 - 6.78	25/10	41	9/3	>50						
7	CORE8	6.8 - 8.3					60	13	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, locally embedded with gypsum, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	25.41	
8		8.3 - 9.8										
9	CORE9						57	25	7			
10		9.8 - 11.3										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.80m below the existing ground level i.e. at R.L. +13.41m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B20**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.214DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,627.56** E **481,297.96**

Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											22.21	
	CORE10						63	24	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, locally embedded with gypsum, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
11		11.3 - 12.8										
12	CORE11						62	17	0			
		12.8 - 14.3										
13	CORE12						60	19	7			
14		14.3 - 15.8									17.91	
15	CORE13						60	27	8	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, interbedded with gypsiferous sandstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		15.8 - 17.3										
16	CORE14						59	40	25			
17		17.3 - 18.8										
18	CORE15						63	27	10			
		18.8 - 20.3										
19	CORE16						55	13	7			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.80m below the existing ground level i.e. at R.L. +13.41m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.214DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,627.56** E **481,297.96**
Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, interbedded with gypsiferous sandstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	12.21	
		20.3 - 21.8										
21	CORE17						63	30	18			
		21.8 - 23.3										
22	CORE18						50	0	0			
23												
		23.3 - 24.8										
24	CORE19						60	0	0			
	SPT20	24.8 - 24.98	25/8	100/10	-	>100					7.41	
25		24.98 - 26.3								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.23	
	CORE21						63	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, interbedded with gypsiferous sandstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
26												
		26.3 - 27.8										
27	CORE22						63	0	0			
	SPT23	27.8 - 28	25/9	100/11	-	>100					4.41	
28		28 - 29.3								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	4.21	
	CORE24						60	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, interbedded with gypsiferous sandstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
29												
		29.3 - 30.8										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.80m below the existing ground level i.e. at R.L. +13.41m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.214DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,627.56** E **481,297.96**
Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE25						60	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, interbedded with gypsiferous sandstone, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	2.21	
	SPT26	30.8 - 30.98	25/9	100/9	-	>100					1.41	
31		30.98 - 32.3								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.23	
	CORE27						60	36	15	Very weak to weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
32		32.3 - 33.8										
33	CORE28						57	15	0			
		33.8 - 35.3										
34	CORE29						38	5	0			
35												
	SPT30	35.3 - 35.5	25/8	100/12	-	>100					-3.09	
		35.5 - 37								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.29	
36	CORE31						47	0	0	Very weak to weak, light brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
37		37 - 38.5										
	CORE32						63	0	0			
38												
	SPT33	38.5 - 38.69	25/9	100/10	-	>100					-6.29	
		38.69 - 40								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.48	
39	CORE34						61	14	0	Very weak to weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
										END OF BORING	-7.59	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.80m below the existing ground level i.e. at R.L. +13.41m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B44**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.360DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,717.20** E **481,619.76**

Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	16	23	39				Dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	29.36	
2	SPT3	2 - 2.45	11	18	20	38						
3	SPT4	3 - 3.45	14	20	22	42						
4	SPT5	4 - 4.45	21	22	26	48						
5	SPT6	5 - 5.36	22	30	20/6	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.36	
6	SPT7	6 - 6.33	25	40	10/3	>50						
7	CORE8	6.33 - 7.5					79	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	24.03	
8	CORE9	7.5 - 9					64	17	7			
9	CORE10	9 - 10.5					64	5	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +12.06m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B44**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.360DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,761,717.20** E **481,619.76**
Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	20.36	
		10.5 - 12										
11	CORE11						63	33	26			
12		12 - 13.5										
	CORE12						64	33	13			
13												
		13.5 - 15									16.86	
14	CORE13						65	66	46	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
15		15 - 16.5										
	CORE14						64	41	21			
16												
		16.5 - 17.5										
17	CORE15						92	32	15			
		17.5 - 19									12.86	
18	CORE16						60	7	0	Extremely weak. brown, medium to fine grained calcareous SANDSTONE locally interbedded with gypsum, distinctly weathered to destructured, fractures are extremely close to very closely spaced. ▼		
19		19 - 20.5										
	CORE17						92	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +12.06m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B44**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.360DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,717.20** E **481,619.76**

Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak. brown, medium to fine grained calcareous SANDSTONE locally interbedded with gypsum, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	10.36	
		20.5 - 22									9.86	
21	CORE18						64	0	0	Extremely weak to very weak, offwhite/brown, conglomeratic SILTSTONE, interbedded with silty, gravel, distinctly weathered, fractures are extremely closely to closely spaced.		
22	SPT19	22 - 22.18	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.36	
		22.18 - 23.5								Extremely weak to very weak, offwhite/brown, conglomeratic SILTSTONE, interbedded with silty, gravel, distinctly weathered, fractures are extremely closely to closely spaced.	8.18	
23	CORE20						59	0	0			
		23.5 - 25										
24	CORE21						63	0	0			
25	SPT22	25 - 25.17	25/8	100/9	-	>100				Very dense, offwhite, grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.36	
		25.17 - 26.5								Extremely weak to very weak, offwhite/brown, conglomeratic SILTSTONE, interbedded with silty, gravel, distinctly weathered, fractures are extremely closely to closely spaced.	5.19	
26	CORE23						63	7	0			
		26.5 - 28										
27	CORE24						60	16	0			
28		28 - 29.5								Very weak, brown, calcareous CONGLOMERATE intermixed with siltstone, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	2.36	
29	CORE25						65	40	33			
		29.5 - 31										
30												

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B44**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.360DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,717.20** E **481,619.76**

Date Started: **28/07/2015** Date Finished: **29/07/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE26						63	0	0	Very weak, brown, calcareous CONGLOMERATE intermixed with siltstone, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand, distinctly weathered, fractures are very close to closely spaced.	0.36	
											-0.14	
31		31 - 32.5								Very weak to weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely closely to very closely spaced.		
	CORE27						63	0	0			
32												
	SPT28	32.5 - 32.69	25/9	100/10	-	>100					-2.14	
		32.69 - 34								Very dense light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.33	
33										Very weak to weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely closely to very closely spaced.		
	CORE29						64	0	0			
34		34 - 35.5										
	CORE30						60	0	0			
35												
	SPT31	35.5 - 35.67	25/8	100/9	-	>100					-5.14	
		35.67 - 37								Very dense light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.31	
36										Very weak to weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely closely to very closely spaced.		
	CORE32						60	7	0			
37		37 - 38.5										
	CORE33						57	13	0			
38												
		38.5 - 40										
39	CORE34						51	20	0			
										END OF BORING	-9.44	
40												

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B45**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.880DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,578.38** E **481,827.09**

Date Started: **30/07/2015** Date Finished: **31/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	9	8	17				Medium dense, light brown, slightly silty, fine SAND.	24.88	
2	SPT3	2 - 2.45	9	9	11	20						
3	SPT4	3 - 3.45	10	15	18	33				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.88	
4	SPT5	4 - 4.45	18	21	25	46						
5	SPT6	5 - 5.33	25	38	12/3	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.88	
6	SPT7	6 - 6.25	25/9	45	5/1	>50						
7	CORE8	6.25 - 7.25					92	45	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	19.63	
8	CORE9	7.25 - 8.25					90	44	12			
9	CORE10	8.25 - 9.5					78	45	0			
10		9.5 - 10.5										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.90m below the existing ground level i.e. at R.L. +12.98m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B45**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.880DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,578.38** E **481,827.09**

Date Started: **30/07/2015** Date Finished: **31/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11	10.5 - 12					87	50	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	15.88	
11	CORE12						64	29	7			
12		12 - 13.5					63	27	0	Extremely weak to very weak, Light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	13.88	
13	CORE13											
14	CORE14	13.5 - 15					63	0	0			
15		15 - 16.5					60	0	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.	10.88	
16	CORE15											
	SPT16	16.5 - 16.69	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.38	
		16.69 - 18									9.19	
17	CORE17						61	0	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.		
18		18 - 19.5					60	7	0			
19	CORE18											
20		19.5 - 21										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.90m below the existing ground level i.e. at R.L. +12.98m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B45**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.880DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,578.38** E **481,827.09**

Date Started: **30/07/2015** Date Finished: **31/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE19						61	0	0	Very weak to weak, brown/ offwhite, calcareous SILTSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are very closely to medium spaced.	5.88	
21	SPT20	21 - 21.18	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.88	
		21.18 - 22.5					59	0	0	Very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	4.70	
22	CORE21											
		22.5 - 24					60	0	0			
23	CORE22											
24	SPT23	24 - 24.17	25/8	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.88	
		24.17 - 25.5					60	0	0	Very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	1.71	
25	CORE24											
		25.5 - 27					59	0	0			
26	CORE25											
27	SPT26	27 - 27.16	25/8	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.12	
		27.16 - 28.5					50	7	0	Very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-1.28	
28	CORE27											
		28.5 - 30					53	27	15			
29	CORE28											
30												

REMARKS:

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SAMPLE KEY

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B45**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.880DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,578.38** E **481,827.09**

Date Started: **30/07/2015** Date Finished: **31/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, off white, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-4.12	
	CORE29						50	25	12			
31		31.5 - 33										
	CORE30						60	0	0			
32												
	CORE31	33 - 34.5					62	0	0			
33												
	SPT32	34.5 - 34.67	25/8	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.62	
34		34.67 - 36									-8.79	
	CORE33						63	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
35												
	CORE34	36 - 37.5					60	7	0			
36												
	CORE35	37.5 - 39					50	13	8	Very weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-11.62	
37												
	CORE36	39 - 40					60	25	15			
38										END OF BORING	-13.92	
39												
40												

REMARKS:

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SAMPLE KEY

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- ▮▮ CORE : Core Sample
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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B46**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.176DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,499.17** E **481,939.40**
Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	6	9	15				Medium dense, light brown, slightly silty, medium to fine SAND.	26.18	
2	SPT3	2 - 2.45	8	9	12	21						
3	SPT4	3 - 3.45	10	10	13	23						
4	SPT5	4 - 4.45	12	13	16	29						
5	SPT6	5 - 5.33	23	40	10/3	>50				Very dense, light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	22.18	
6	SPT7	6.5 - 6.77	25/10	44	6/2	>50						
7	CORE8	6.8 - 8.3					64	35	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	20.38	
8		8.3 - 9.8										
9	CORE9						65	37	14			
10		9.8 - 11.3										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +13.68m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B46**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.176DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,499.17** E **481,939.40**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	17.18	
	CORE10						59	23	0			
11		11.3 - 12.8										
12	CORE11						61	25	9			
		12.8 - 14.3										
13	CORE12						53	19	8			
14		14.3 - 15.8										
15	CORE13						38	0	0			
	SPT14	15.8 - 16	25/8	60	40/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine rock fragments.	11.38	
16		16 - 17.5									11.18	
	CORE15						63	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
17		17.5 - 19										
18	CORE16						64	0	0			
19	SPT17	19 - 19.18	25/9	100/9	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine rock fragments.	8.18	
		19.18 - 20.5									8.00	
	CORE18						64	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +13.68m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B46**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.176DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,499.17** E **481,939.40**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										close to very closely spaced and interbedded with cemented sand.	7.18	
		20.5 - 22								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
21	CORE19						60	0	0			
22	SPT20	22 - 22.17- 22.17 - 23.5	25/8	100/9	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine rock fragments.	5.18 5.01	
	CORE21						64	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
23		23.5 - 25										
24	CORE22						60	10	0			
25		25 - 26.5									2.18	
	CORE23						60	10	0	Very weak, brown, conglomeratic SILTSTONE, interbedded with silty, gravel, distinctly weathered, fractures are extremely close to closely spaced.		
26		26.5 - 28										
27	CORE24						60	0	0			
28	SPT25	28 - 28.17- 28.17 - 29.5	25/8	100/9	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.82 -0.99	
	CORE26						64	11	7	Very weak, brown, conglomeratic SILTSTONE, interbedded with silty, gravel, distinctly weathered, fractures are extremely close to closely spaced.		
29		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +13.68m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B46**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.176DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,499.17** E **481,939.40**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE27						60	10	0	Very weak, brown, conglomeratic SILTSTONE, interbedded with silty, gravel, distinctly weathered, fractures are extremely close to closely spaced.	-2.82	
31		31 - 32.5									-3.82	
	CORE28						65	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
32		32.5 - 34										
33	CORE29						65	0	0			
34	SPT30	34 - 34.16 / 34.16 - 35.5	25/8	100/8	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.82 / -6.98	
	CORE31						65	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
35		35.5 - 37										
36	CORE32						43	0	0			
37	SPT33	37 - 37.15 / 37.15 - 38.65	25/5	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.82 / -9.97	
	CORE34						50	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
38		38.65 - 40										
39	CORE35						70	7	0			
40										END OF BORING	-12.62	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +13.68m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B47**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.490DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,631.93** E **481,446.65**
Date Started: **27/07/2015** Date Finished: **29/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	10	11	11	22				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	30.49	
2	SPT3	2 - 2.45	17	18	24	42						
3	SPT4	3 - 3.33	25	35	15/3	>50						
4	SPT5	4 - 4.32	25	39	11/2	>50						
5	SPT6	5 - 5.25	25/9	45	5/1	>50				Very dense, light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.49	
6	SPT7	6 - 6.21	25/9	50/12	-	>50						
7	CORE8	6.21 - 7.5					76	12	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	25.28	
8	CORE9	7.5 - 9					63	13	0			
9	CORE10	9 - 10.5					31	17	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +14.29m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B47**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.490DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,631.93** E **481,446.65**
Date Started: **27/07/2015** Date Finished: **29/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	21.49	
	SPT11	10.5 - 10.71	25/5	86	14/1	>100					20.99	
		10.71 - 12								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	20.78	
11	CORE12						59	20	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
12		12 - 13.5										
13	CORE13						61	10	0			
		13.5 - 14.5									17.99	
14	CORE14						92	27	10	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		14.5 - 15										
	CORE15						90	28	0			
15		15 - 16.5										
	CORE16						90	35	0			
16												
		16.5 - 18									14.99	
17	CORE17						63	0	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
18	SPT18	18 - 18.19	25/9	100/10	-	>100					13.49	
		18.19 - 19.5								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.30	
	CORE19						65	0	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
19		19.5 - 21										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +14.29m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B47**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.490DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,631.93** E **481,446.65**

Date Started: **27/07/2015** Date Finished: **29/07/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE20						60	7	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	11.49	
21		21 - 22.5										
	CORE21						60	9	7			
22		22.5 - 24										
23	CORE22						60	13	9			
24		24 - 25.5										
	CORE23						61	21	19			
25		25.5 - 27									5.99	
26	CORE24						57	19	17	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
27		27 - 28.5									4.49	
	CORE25						60	13	12	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
28		28.5 - 30										
29	CORE26						60	10	0			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +14.29m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B47**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.490DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,631.93** E **481,446.65**
Date Started: **27/07/2015** Date Finished: **29/07/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	1.49	
31	CORE27						63	12	9			
		31.5 - 33										
32	CORE28						58	16	10			
33		33 - 34.5										
	CORE29						57	17	10			
34												
		34.5 - 36									-3.01	
35	CORE30						60	18	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
36		36 - 37.5										
	CORE31						62	10	0			
37												
		37.5 - 39										
38	CORE32						62	13	12			
39		39 - 40										
	CORE33						60	30	20			
40										END OF BORING	-8.31	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +14.29m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C22**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.447DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,858.31** E **481,428.10**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.		
1	SPT2	1 - 1.45	11	22	25	47				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine cemented pieces.	28.45	
2	SPT3	2 - 2.45	6	12	22	34						
3	SPT4	3 - 3.45	6	9	13	22						
4	SPT5	4 - 4.45	12	18	28	46						
5	SPT6	5 - 5.45	15	19	31	50						
6												
7	SPT7	6.5 - 6.89	24	30	20/9	>50						
8	SPT8	8 - 8.39	21	27	25/9	>50						
9												
10	SPT9	9.5 - 9.83	25/13	36	14/5	>50						

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +14.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C22**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.447DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,858.31** E **481,428.10**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine cemented pieces.	19.45	
11	SPT10	11 - 11.33	25	38	12/3	>50						
12	SPT11	12.5 - 12.7	25/9	50/11	-	>50						
		12.69 - 14									16.76	
13	CORE12						72	33	9	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced.		
14		14 - 15.5										
15	CORE13						63	47	33			
		15.5 - 16.5										
16	CORE14						29	0	0			
	SPT15	16.5 - 16.79	25/8	63	37/6	>100				Very dense, brown, sandy, silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	12.95	
		16.79 - 17.79									12.66	
17	CORE16						65	12	0	Very weak to weak, brown, calcareous CONGLOMERATE interbedded with silty gravel, gravel to matrix ratio is 60:40, gravels are subangular medium to fine matrix is silty sand distinctly weathered to destructured fractures, are extremely close to very closely		
		17.79 - 19										
18	CORE17						66	33	0			
19		19 - 20										
	CORE18						38	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +14.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C22**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.447DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,761,858.31** E **481,428.10**
Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT19	20 - 20.21	25/5	89	11/1	>100				Very dense, brown, sandy silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	9.45	
		20.21 - 21.21									9.24	
	CORE20						50	0	0	Very weak to weak, brown, calcareous CONGLOMERATE. gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is sandy silt, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
21		21.21 - 22.5										
	CORE21						62	37	11			
22		22.5 - 23.5										
	CORE22						36	0	0			
23	SPT23	23.5 - 23.71	25/5	89	11/1	>100				Very dense, brown, sandy silty GRAVEL. Gravels are subangular medium to fine conglomerate pieces.	5.95	
		23.71 - 24.71									5.74	
24	CORE24						56	29	0	Very weak to weak, brown, calcareous CONGLOMERATE, gravels to matrix ratio is 60:40, gravels are subangular medium to fine matrix is sandy silt, distinctly weathered, fractures are extremely close to very closely spaced and interbedded with sandy gravel.		
		24.71 - 26										
25	CORE25						71	44	17			
26		26 - 27.5									3.45	
	CORE26						63	51	47	Very weak to weak, brown, calcareous CONGLOMERATE interbedded with siltstone, partially to distinctly weathered, fractures are very closely to widely spaced.		
27		27.5 - 29										
28	CORE27						63	49	45			
29		29 - 30.5										
	CORE28						65	59	53			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +14.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C22**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.447DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,858.31** E **481,428.10**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Very weak to weak, brown, calcareous CONGLOMERATE interbedded with siltstone, partially to distinctly weathered, fractures are very closely to widely spaced.	-0.55	
		30.5 - 31.5										
31	CORE29						28	0	0			
	SPT30	31.5 - 31.76	25/8	69	31/3	>100				Very dense, brown, very gravely, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-2.05	
		31.76 - 32.76									-2.31	
32	CORE31						36	8	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
	SPT32	32.76 - 33.01	25/6	78	22/3	>100				Very dense, brown, very gravely, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-3.31	
33		33.01 - 34.01									-3.56	
	CORE33						43	0	0	Very weak, brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
34	SPT34	34.01 - 34.24	25/5	90	10/3	>100				Very dense, brown, very gravely, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-4.56	
		34.24 - 35.34									-4.79	
	CORE35						54	14	0	Very weak to weak, brown, calcareous CONGLOMERATE, interbedded with siltstone, partially to distinctly weathered, fractures are very closely to widely spaced.		
35		35.34 - 36.34										
	CORE36						26	0	0			
36	SPT37	36.34 - 36.59	25/7	79	21/3	>50				Very dense, brown, very gravely, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-6.89	
		36.59 - 37.59									-7.14	
37	CORE38						76	25	16	Very weak to weak, brown, conglomeratic SILTSTONE interbedded with sandy gravel, distinctly weathered, fractures are extremely close to medium spaced,		
		37.59 - 39.09										
38	CORE39						59	49	43			
39		39.09 - 40.49										
	CORE40						50	10	0			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +14.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C22**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.447DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,858.31** E **481,428.10**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Very weak to weak, brown, conglomeratic SILTSTONE interbedded with sandy gravel, distinctly weathered, fractures are extremely close to medium spaced.	-10.55	
		40.49 - 41.09										
	CORE41						29	8	0			
41	SPT42	41.09 - 41.29	25/5	100	-	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.64	
		41.29 - 42.29								Very weak to weak, brown, conglomeratic SILTSTONE interbedded with sandy gravel, distinctly weathered, fractures are extremely close to medium spaced.	-11.84	
	CORE43						39	4	0			
42	SPT44	42.29 - 42.52	25/7	86	14/1	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.84	
		42.52 - 43.52								Very weak to weak, brown, conglomeratic SILTSTONE interbedded with sandy gravel, distinctly weathered, fractures are extremely close to medium spaced.	-13.07	
43	CORE45						40	0	0			
	SPT46	43.52 - 43.71	25/4	100	-	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.07	
		43.71 - 44.71								Very weak to weak, brown, conglomeratic SILTSTONE interbedded with sandy gravel, distinctly weathered, fractures are extremely close to medium spaced.	-14.26	
44	CORE47						50	30	14			
		44.71 - 46.21										
45	CORE48						62	16	0			
46		46.21 - 47.71								Very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel. distinctly weathered to destructured fractures are extremely close to closely spaced.	-16.76	
47	CORE49						65	53	52			
		47.71 - 49.21										
48	CORE51						64	20	0			
49		49.21 - 50.21								Very weak to weak, brown, conglomeratic SILTSTONE interbedded with sandy gravel, distinctly weathered, fractures are extremely close to medium spaced,	-19.76	
50	CORE52						49	7	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +14.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮ CORE : Core Sample
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- ▼ : Ground Water Table
- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C22**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.447DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,858.31** E **481,428.10**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	SPT53	50.21 - 50.42	25/5	89	11/1	>100					-20.76	
		50.42 - 51.42								Very dense, brown/ offwhite, coarse to medium SAND. Gravels are subangular medium to fine siltstone pieces.	-20.97	
51	CORE54						36	0	0	Very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel. distinctly weathered to destructured fractures are extremely close to closely spaced.		
	SPT55	51.42 - 51.62	25/4	87	13/1	>100					-21.97	
		51.62 - 52.62								Very dense, brown/ offwhite, coarse to medium SAND. Gravels are subangular medium to fine siltstone pieces.	-22.17	
52	CORE56						42	11	0	Very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel. distinctly weathered to destructured fractures are extremely close to closely spaced.		
	SPT57	52.62 - 52.85	25/6	84	16/2	>100					-23.17	
		52.85 - 53.85								Very dense, brown/ offwhite, coarse to medium SAND. Gravels are subangular medium to fine siltstone pieces.	-23.40	
53	CORE58						75	16	0	Very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel. distinctly weathered to destructured fractures are extremely close to closely spaced.		
		53.85 - 55.35										
54	CORE59						62	13	8			
55		55.35 - 56.85										
										Extremely weak to very weak, offwhite calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-25.90	
56	CORE60						63	17	13			
		56.85 - 58.35										
57	CORE61						65	25	17			
58		58.35 - 60-										
59	CORE62						69	21	0			
60										END OF BORING	-30.35	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.20m below the existing ground level i.e. at R.L. +14.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C23**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.500DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,835.95** E **481,528.17**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	5	12	18	30				Dense to very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	28.50	
2	SPT3	2 - 2.45	7	14	21	35						
3	SPT4	3 - 3.45	11	18	26	44						
4	SPT5	4 - 4.35	22	36	14/5	>50						
5	SPT6	5 - 5.25	25/12	50/13	-	>50						
6												
7	SPT7	6.5 - 6.73	25/10	50/13	-	>50						
8	SPT8	8 - 8.24	25/9	50	-	>50						
9												
10	SPT9	9.5 - 9.71	25/9	50/12	-	>50						
		9.71 - 11.21								Extremely weak to very weak, light brown, medium to	19.79	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.50m below the existing ground level i.e. at R.L. +13.00m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C23**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.500DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,835.95** E **481,528.17**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11.21 - 12.71					65	50	28	fine grained calcareous SANDSTONE, partially to distinctly weathered fractures are very closely to medium spaced and interbedded with cemented sand.		
11												
12	CORE11	12.71 - 14.21					66	51	30			
13	CORE12	14.21 - 15.71					63	51	48			
14												
15	CORE13	15.71 - 17.21					64	55	53			
16	CORE14	17.21 - 18.71					66	45	44			
17												
18	CORE15	18.71 - 19.13					27	0	0			
19	SPT16	19.13 - 20.63	25/12	40	60	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and conglomerate pieces.	10.79	
	CORE17						80	0	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	10.37	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.50m below the existing ground level i.e. at R.L. +13.00m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C23**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.500DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,835.95** E **481,528.17**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	9.50	
	SPT18	20.63 - 21	25/10	47	53/12	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and conglomerate pieces.	8.87	
21		21 - 22.5								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	8.50	
	CORE19						50	0	0			
22												
	SPT20	22.5 - 22.79	25/9	67	33/5	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and conglomerate pieces.	7.00	
		22.79 - 24.29								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	6.71	
23	CORE21						42	15	8			
24												
	SPT22	24.29 - 24.54	25/6	70	30/4	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and conglomerate pieces.	5.21	
		24.54 - 25.79								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	4.96	
25	CORE23						53	17	10			
		25.79 - 27.29										
26	CORE24						40	19	0			
27												
	SPT25	27.29 - 27.54	25/6	81	19/4	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and conglomerate pieces.	2.21	
		27.54 - 28.79								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	1.96	
28	CORE26						44	0	0			
	SPT27	28.79 - 29	25/5	84	16/1	>100				Very dense, brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone and conglomerate pieces.	0.71	
29		29 - 30.29								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	0.50	
	CORE28						65	16	15			
30												

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C23**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.500DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,835.95** E **481,528.17**

Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30.29 - 31.79								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-0.50	
31	CORE29						33	0	0			
	SPT30	31.79 - 31.99	25/4	90	10/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.29	
32		31.99 - 33.29								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-2.49	
	CORE31						30	0	0			
33	SPT32	33.29 - 33.52	25/5	80	20/3	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.79	
		33.52 - 34.79								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-4.02	
34	CORE33						47	5	0			
	SPT34	34.79 - 34.98	25/3	81	19/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.29	
35		34.98 - 36.29								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-5.48	
	CORE35						29	5	0			
36	SPT36	36.29 - 36.58	25/10	76	24/4	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.79	
		36.58 - 38.08								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-7.08	
37	CORE37						38	0	0			
38	SPT38	38.08 - 38.3	25/5	82	18/2	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.58	
		38.3 - 39.8								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-8.80	
39	CORE39						32	17	0			
		39.8 - 41.3								Extremely weak to very weak, offwhite, calcareous	-10.30	
40												

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C23**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.500DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,835.95** E **481,528.17**
Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE40						26	0	0	SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
41	SPT41	41.3 - 41.48	25/5	100/13	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.80	
		41.48 - 42.98								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-11.98	
42	CORE42						17	10	7			
43	SPT43	42.98 - 43.2	25/6	75	25/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.48	
		43.2 - 44.48								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-13.70	
44	CORE44						26	8	0			
	SPT45	44.48 - 44.74	25/6	80	20/5	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.98	
		44.74 - 46.24								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-15.24	
45	CORE46						13	0	0			
46	SPT47	46.24 - 46.45	25/5	90	10/1	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.74	
		46.45 - 47.74								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-16.95	
47	CORE48						26	10	0			
	SPT49	47.74 - 48-	25/8	78	22/3	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-18.24	
48		48 - 49.5 -								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-18.50	
49	CORE50						38	6	0			
	SPT51	49.5 - 49.75	25/7	81	19/3	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-20.00	
50		49.75 - 51.25									-20.25	

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C23**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **6/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.500DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,835.95** E **481,528.17**
Date Started: **26/07/2015** Date Finished: **29/07/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE52						37	7	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
51	SPT53	51.25 - 51.48	25/6	84	16/2	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-21.75	
		51.48 - 52.75								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-21.98	
52	CORE54						33	13	0			
	SPT55	52.75 - 53	25/5	90	10/2	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-23.25	
53		53 - 54.25								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-23.50	
	CORE56						25	7	0			
54	SPT57	54.25 - 54.39	25/7	100/7	-	>100				Very dense, offwhite, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-24.75	
		54.39 - 55.75								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-24.89	
55	CORE58						38	0	0			
	SPT59	55.75 - 55.96	25/5	90	10/1	>100				Very dense, light grey, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-26.25	
56		55.96 - 57.46								Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-26.45	
	CORE60						59	13	0			
57		57.46 - 58.46										
58	CORE61						36	0	0			
	SPT62	58.46 - 58.65	25/6	100/13	-	>100				Very dense, light grey, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-28.96	
		58.65 - 60								Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-29.15	
59	CORE63						37	19	9			
60										END OF BORING	-30.30	

REMARKS:

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SAMPLE KEY

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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C24**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.963DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,745.16** E **481,409.66**
Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	10	15	25				Medium dense to dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	29.96	
2	SPT3	2 - 2.45	12	16	22	38						
3	SPT4	3 - 3.45	16	20	26	46						
4	SPT5	4 - 4.45	18	22	28	50						
5	SPT6	5 - 5.45	19	21	29	50						
6												
7	SPT7	6.5 - 6.95	21	20	29	49				Dense to very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.46	
8	SPT8	8 - 8.35	25	38	12/2	>50						
9												
10	SPT9	9.5 - 9.7 9.7 - 11.2	25/8	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.46 21.26	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.88m below the existing ground level i.e. at R.L. +13.08m DMD.
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SAMPLE KEY

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		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C24**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.963DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,745.16** E **481,409.66**
Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11.2 - 12.7					62	48	36	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11												
12	CORE11	12.7 - 14.2					63	33	8			
13	CORE12	14.2 - 15.7					64	31	14			
14												
15	CORE13	15.7 - 17.2					63	43	37			
16	CORE14	17.2 - 18.7					64	13	13			
17												
18	CORE15	18.7 - 19					51	0	0			
19	SPT16	19 - 20.5	25/10	65	35/5	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	12.26	
	CORE17						64	0	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	11.96	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.88m below the existing ground level i.e. at R.L. +13.08m DMD.
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C24**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.963DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,745.16** E **481,409.66**

Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	10.96	
		20.5 - 22									10.46	
21	CORE18						60	17	8	Very weak to weak, offwhite calcareous SILTSTONE, distinctly weathered, fractures are extremely close to very closely spaced.		
22		22 - 23.5										
	CORE19						65	22	17			
23												
		23.5 - 25										
24	CORE20						60	28	19			
25		25 - 26.5									5.96	
	CORE21						60	33	25	Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely to closely spaced.		
26												
		26.5 - 28										
27	CORE22						63	42	40			
28		28 - 29.5										
	CORE23						64	44	43			
29												
		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.88m below the existing ground level i.e. at R.L. +13.08m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C24**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**

Equipment: **Wirth 2** Core Diameter (mm): **76**

Ground Level (m): **+30.963DMD**

Coordinates: N **2,761,745.16** E **481,409.66**

Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE24						67	38	37	Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely to closely spaced.	0.96	
31		31 - 32.5										
	CORE25						60	28	17			
32		32.5 - 34									-1.54	
	CORE26						65	13	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
33												
34		34 - 35.5										
	CORE27						60	12	0			
35												
		35.5 - 37										
36	CORE28						60	0	0			
37	SPT29	37 - 37.18	25/9	100/9	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.04	
		37.18 - 38.5									-6.22	
	CORE30						60	4	0	Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely to closely spaced.		
38		38.5 - 40										
39	CORE30						60	0	0			
40												

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C24**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **5/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.963DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,745.16** E **481,409.66**
Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	SPT31	40 - 40.19 40.19 - 41.5	25/9	100/10	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.04 -9.23	
41	CORE31						64	0	0	Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely to closely spaced.		
		41.5 - 43									-10.54	
42	CORE32						53	18	15	Very weak, brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
43		43 - 44.5										
44	CORE33						60	30	19			
		44.5 - 46										
45	CORE34						63	24	7			
46		46 - 47.5										
47	CORE35						63	28	20			
		47.5 - 49									-16.54	
48	CORE36						58	13	0	Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely to closely spaced.		
49		49 - 50.5										
	CORE37						59	13	7			
50												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
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▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C24**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.963DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,745.16** E **481,409.66**

Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50										Very weak to weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are extremely close to very closely to closely spaced.	-19.04	
		50.5 - 52										
51	CORE38						65	7	0			
		52 - 53.5										
52	CORE39						65	10	0			
53												
		53.5 - 55										
54	CORE40						65	19	13			
55		55 - 56.5										
	CORE41						61	20	7	Extremely weak to very weak, off white, calcareous SILTSTONE, locally interbedded with silty, gravel, distinctly weathered, fractures are extremely close to very closely to closely spaced and interbedded with cemented silt.	-24.04	
56		56.5 - 58										
57	CORE42						61	12	8			
58		58 - 59.5										
	CORE43						59	29	17			
59		59.5 - 60										
	CORE44						88	30	0			
60										END OF BORING	-28.84	

REMARKS:

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SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C25**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.708DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,722.79** E **481,511.05**
Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	20	28	48				Dense to very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	29.71	
2	SPT3	2 - 2.42	10	25	25/12	>50						
3	SPT4	3 - 3.38	19	30	20/8	>50						
4	SPT5	4 - 4.26	25/11	50	-	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine cemented pieces.	26.71	
5	SPT6	5 - 5.2	25/8	50/12	-	>50						
6	SPT7	6 - 6.18	25/7	50/11	-	>50				Very dense, light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.71	
		6.18 - 7.5									24.53	
7	CORE8						74	38	23	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		7.5 - 8.5										
8	CORE9						90	40	12			
		8.5 - 10										
9	CORE10						65	33	9			
10												

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C25**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		Sheet: **2/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+30.708DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment:	**Acker 3**	Core Diameter (mm): **76**	N **2,761,722.79** E **481,511.05**
Date Started:	**27/07/2015**	Date Finished: **30/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11								Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	20.71	
	CORE11						98	40	0			
11		11 - 12										
	CORE12						95	42	0			
12		12 - 13									18.71	
	CORE13						98	78	35	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.		
13		13 - 14										
	CORE14						91	62	13			
14		14 - 15										
	CORE15						99	60	12			
15		15 - 16.5										
	CORE16						65	0	0			
16		16.5 - 18										
17	CORE17						33	0	0			
18	SPT18	18 - 18.19	25/9	100/10	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine sandstone pieces.	12.71	
		18.19 - 19.5									12.52	
19	CORE19						51	13	8	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		19.5 - 21										
20												

REMARKS:

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SAMPLE KEY

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☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C25**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **3/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.708DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,722.79** E **481,511.05**
Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE20						81	41	24	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured fractures are extremely close to very closely spaced and interbedded with cemented sand.	10.71	
21		21 - 22.5									9.71	
	CORE21						61	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
22		22.5 - 24										
23	CORE22						72	11	5			
24		24 - 25.5										
	CORE23						84	21	18			
25		25.5 - 27										
26	CORE24						95	30	0			
27		27 - 28.5										
	CORE25						59	33	23			
28		28.5 - 30										
29	CORE26						65	47	45			
30												

REMARKS:

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SAMPLE KEY

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		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C25**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.708DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,722.79** E **481,511.05**

Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Very weak, light grey/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	0.71	
	CORE27						58	47	45			
31		31.5 - 32.5										
	CORE28						50	0	0			
32		32.5 - 33.5										
	CORE29						66	0	0			
33	SPT30	33.5 - 33.69	25/9	100/10	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.79	
		33.69 - 35									-2.98	
34	CORE31						65	42	31	Very weak, light grey/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
35		35 - 36.5										
	CORE32						47	0	0			
36	SPT33	36.5 - 36.69	25/9	100/10	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.79	
		36.69 - 38									-5.98	
37	CORE34						47	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
38	SPT35	38 - 38.2	25/8	100/12	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.29	
		38.2 - 39.5									-7.49	
39	CORE36						37	10	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
	SPT37	39.5 - 39.69	25/9	100/10	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.79	
		39.69 - 41									-8.98	
40												

REMARKS:

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C25**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.708DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,722.79** E **481,511.05**

Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	CORE38						57	0	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
41		41 - 42.5										
	CORE39						27	0	0			
42	SPT40	42.5 - 42.68	25/8	100/10	-	>100					-11.79	
		42.68 - 44								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.97	
43	CORE41						39	0	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
44	SPT42	44 - 44.19	25/9	100/10	-	>100					-13.29	
		44.19 - 45.5								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.48	
	CORE43						33	7	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
45	SPT44	45.5 - 45.69	25/9	100/10	-	>100					-14.79	
		45.69 - 47								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.98	
46	CORE45						30	8	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
47	SPT46	47 - 47.16	25/8	100/8	-	>100					-16.29	
		47.16 - 48.5								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-16.45	
	CORE47						33	13	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
48	SPT48	48.5 - 48.67	25/8	100/9	-	>100					-17.79	
		48.67 - 50								Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-17.96	
49	CORE49						43	23	0	Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.		
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.50m below the existing ground level i.e. at R.L. +13.21m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C25**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.708DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,722.79** E **481,511.05**

Date Started: **27/07/2015** Date Finished: **30/07/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	SPT50	50 - 50.18	25/9	100/9	-	>100				Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-19.29	
		50.18 - 51.5								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-19.47	
51	CORE51						36	0	0			
	SPT52	51.5 - 51.7	25/5	100	-	>100				Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-20.79	
		51.7 - 53								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-20.99	
52	CORE53						53	0	0			
53		53 - 54.5										
	CORE54						66	30	24			
54												
		54.5 - 56										
55	CORE55						58	25	0			
56		56 - 57.5										
	CORE56						33	0	0			
57	SPT57	57.5 - 57.68	25/9	100/9	-	>100				Very dense, light grey, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-26.79	
		57.68 - 59								Extremely weak to very weak, light grey, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented silt.	-26.97	
58	CORE58						51	11	0			
59		59 - 60										
	CORE59						61	22	8			
60										END OF BORING	-29.09	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.50m below the existing ground level i.e. at R.L. +13.21m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C26**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.061DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,792.78** E **481,469.37**

Date Started: **29/07/2015** Date Finished: **01/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	9	12	20	32				Dense, light brown, silty, medium to fine SAND.	29.06	
2	SPT3	2 - 2.45	11	16	25	41						
3	SPT4	3 - 3.45	14	20	26	46						
4	SPT5	4 - 4.45	21	22	28	50						
5	SPT6	5 - 5.45	15	19	28	47						
6												
7	SPT7	6.5 - 6.81	25/12	37	13/4	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. gravels are subangular medium to fine sandstone pieces.	23.56	
8	SPT8	8 - 8.38	24	30	20/8	>50						
9	SPT9	9.5 - 9.74	25/9	50	-	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.56	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +12.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C26**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+30.061DMD**

Coordinates: N **2,761,792.78** E **481,469.37**

Date Started: **29/07/2015** Date Finished: **01/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.06	
11	SPT10	11 - 11.19	25/8	27/8	23/3	>50						
		11.19 - 12.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.87	
12	CORE11						73	23	0			
		12.5 - 14										
13	CORE12						65	40	10			
14		14 - 15.5										
	CORE13						61	28	10			
15												
		15.5 - 17										
16	CORE14						57	9	0			
17		17 - 18										
	CORE15						38	11	0			
18	SPT16	18 - 18.2	25/5	100	-	>100				Very dense, brown, slightly gravelly, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	12.06	
		18.2 - 19.2									11.86	
	CORE17						26	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.		
19	SPT18	19.2 - 19.36	25/4	100/12	-	>100					10.86	
		19.36 - 20.36								Very dense, brown, slightly gravelly, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	10.70	
	CORE19						42	5	0	Extremely weak to very weak, brown/ offwhite,		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +12.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C26**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.061DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,792.78** E **481,469.37**

Date Started: **29/07/2015** Date Finished: **01/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.		
	SPT20	20.36 - 20.57	25/5	90	10/1	>100					9.70	
		20.57 - 21.57								Very dense, brown, slightly gravelly, medium to fine SAND. Gravels are subangular medium to fine siltstone pieces.	9.49	
21	CORE21						50	10	0	Weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.		
		21.57 - 22.57										
22	CORE22						38	0	0			
	SPT23	22.57 - 22.78	25/5	87	13/1	>100					7.49	
		22.78 - 23.78								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.28	
23	CORE24						66	10	0	Weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.		
		23.78 - 25.28										
24												
	CORE25						63	32	13			
25												
		25.28 - 26.78										
26	CORE26						31	20	7			
	SPT27	26.78 - 26.95	25/8	100/9	-	>100					3.28	
		26.95 - 28.28								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.11	
27	CORE28						33	13	0	Weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.		
28												
	SPT29	28.28 - 28.45	25/8	100/9	-	>100					1.78	
		28.45 - 29.78								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.61	
29	CORE30						50	11	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.		
		29.78 - 31.28										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +12.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C26**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.061DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,792.78** E **481,469.37**

Date Started: **29/07/2015** Date Finished: **01/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to medium spaced.	0.06	
	CORE31						62	13	0			
31		31.28 - 32.78										
32	CORE32						50	32	27			
		32.78 - 34.28										
33	CORE33						58	36	32			
34		34.28 - 35.78										
35	CORE34						53	42	36			
		35.78 - 37.28										
36	CORE35						75	55	48			
37		37.28 - 38.78										
38	CORE36						40	0	0			
	SPT37	38.78 - 38.94	25/8	100/8	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.72	
39		38.94 - 40.28								Very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-8.88	
	CORE38						23	0	0			
40												

REMARKS:

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SAMPLE KEY

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- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C26**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+30.061DMD**

Coordinates: N **2,761,792.78** E **481,469.37**

Date Started: **29/07/2015** Date Finished: **01/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40	SPT39	40.28 - 40.45	25/8	100/9	-	>100						
		40.45 - 41.78								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.22	
											-10.39	
41	CORE40						27	0	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT41	41.78 - 41.95	25/8	100/7	-	>100						
42		41.95 - 43.28								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-11.72	
											-11.89	
	CORE42						27	0	0	Very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
43	SPT43	43.28 - 43.43	25/8	100/9	-	>100						
		43.43 - 44.78								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.22	
											-13.37	
44	CORE44						47	12	9	Very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT45	44.78 - 44.95	25/8	100/9	-	>100						
45		44.95 - 46.28								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-14.72	
											-14.89	
	CORE46						60	0	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
46		46.28 - 47.78										
47	CORE47						50	17	7			
		47.78 - 48.78										
48	CORE48						50	30	22			
		48.78 - 50.28										
49	CORE49						64	9	0			
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +12.86m DMD.
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SAMPLE KEY

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- ▮▮ CORE : Core Sample
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C26**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.061DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,792.78** E **481,469.37**

Date Started: **29/07/2015** Date Finished: **01/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50		50.28 - 51.78								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-19.94	
51	CORE50						60	23	0			
		51.78 - 53.28										
52	CORE51						57	0	0			
53	SPT52	53.28 - 53.45	25/8	100/9	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-23.22	
		53.45 - 54.78								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-23.39	
54	CORE53						33	17	8			
	SPT54	54.78 - 54.95	25/8	100/9	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-24.72	
55		54.95 - 55.78								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-24.89	
	CORE55						40	0	0			
	SPT56	55.78 - 55.94	25/8	100/8	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-25.72	
56		55.94 - 57.28								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-25.88	
	CORE57						33	19	9			
57	SPT58	57.28 - 57.4	25/6	100/6	-	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-27.22	
		57.4 - 58.5								Very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-27.34	
58	CORE59						50	38	34			
		58.5 - 60										
59	CORE60						64	15	0			
60										END OF BORING	-29.74	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.20m below the existing ground level i.e. at R.L. +12.86m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C27**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **1/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.283DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,761,555.92** E **481,220.44**
Date Started: **30/07/2015** Date Finished: **05/08/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	9	19	27	46				Dense, light brown, slightly silty, fine to medium SAND.	31.28	
2	SPT3	2 - 2.33	21	35	15/3	>50				Very dense, light brown, very gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	30.28	
3	SPT4	3 - 3.25	25/10	50	-	>50						
		3.25 - 4.5									29.03	
4	CORE5						72	32	29	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		4.5 - 6										
5	CORE6						65	41	20			
6		6 - 7.5										
7	CORE7						63	33	17			
		7.5 - 9										
8	CORE8						63	32	10			
9		9 - 10.5										
	CORE9						64	37	23			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 19.00m below the existing ground level i.e. at R.L. +13.28m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C27**

Sheet: **2/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.283DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,555.92** E **481,220.44**

Date Started: **30/07/2015** Date Finished: **05/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered fractures are extremely close to medium spaced and interbedded with cemented sand.	21.78	
		10.5 - 12										
11	CORE10						60	20	20	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly to destructured fractures are extremely close to medium spaced and interbedded with cemented sand.		
12		12 - 13.5										
	CORE11						64	33	17			
13												
		13.5 - 15										
14	CORE12						60	19	0			
15		15 - 16.5										
	CORE13						61	0	0			
16												
		16.5 - 18										
17	CORE14						59	0	0			
18	SPT15	18 - 18.19	25/9	100/10	-	>100				Very dense, light brown, gravelly, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	14.28	
		18.19 - 19.5									14.09	
19	CORE16						60	0	0	Very weak to weak, brown, calcareous CONGLOMERATE, locally intermix with siltstone, gravels to matrix ratio is 65:35, gravels are subangular medium to fine matrix is sandy silt, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		19.5 - 21										
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 19.00m below the existing ground level i.e. at R.L. +13.28m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C27**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.283DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,555.92** E **481,220.44**

Date Started: **30/07/2015** Date Finished: **05/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE17						62	40	30	Very weak to weak, brown, calcareous CONGLOMERATE, locally intermix with siltstone, gravels to matrix ratio is 65:35, gravels are subangular medium to fine matrix is sandy silt, distinctly weathered to destructured, fractures are extremely close to very cl	12.28	
21		21 - 22.5										
	CORE18						63	33	17			
22												
		22.5 - 24										
23	CORE19						63	23	17			
24		24 - 25.5										
	CORE20						62	38	37	Very weak to weak, light grey, calcareous SILTSTONE distinctly weathered, fractures are extremely close to closely spaced.	8.28	
25												
		25.5 - 27									6.78	
26	CORE21						62	21	19	Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.		
27		27 - 28.5										
	CORE22						61	20	19			
28												
		28.5 - 30										
29	CORE23						62	23	18			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 19.00m below the existing ground level i.e. at R.L. +13.28m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C27**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.283DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,555.92** E **481,220.44**

Date Started: **30/07/2015** Date Finished: **05/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented silt.	2.28	
31	CORE24						59	13	0			
		31.5 - 33										
32	CORE25						60	20	10			
33		33 - 34.5									-0.72	
	CORE26						60	27	25	Very weak to weak, light grey/ brown, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely closely to medium spaced and interbedded with cemented sand.		
34		34.5 - 36										
35	CORE27						60	20	17			
36		36 - 37.5										
	CORE28						62	29	25			
37		37.5 - 39										
38	CORE29						63	28	27			
39		39 - 40.5									-6.72	
	CORE30						59	15	13	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 19.00m below the existing ground level i.e. at R.L. +13.28m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C27**

Sheet: **5/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.283DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,555.92** E **481,220.44**

Date Started: **30/07/2015** Date Finished: **05/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-7.72	
		40.5 - 42										
41	CORE31						55	5	0			
		42 - 43.5										
42	CORE32						59	0	0			
43	SPT33	43.5 - 43.69	25/9	100/10	-	>100				Very dense, light brown, gravelly, silty GRAVEl. Gravels are subangular medium to fine siltstone pieces.	-11.22	
		43.69 - 45									-11.41	
44	CORE34						61	0	0	Very weak to weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely closely to closely spaced.		
45		45 - 46.5									-12.72	
	CORE35						65	42	27	Very weak to weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely closely to closely spaced.		
46		46.5 - 48										
47	CORE36						61	8	0			
48		48 - 49.5										
	CORE37						60	10	0			
49		49.5 - 51										
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 19.00m below the existing ground level i.e. at R.L. +13.28m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C27**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.283DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,555.92** E **481,220.44**

Date Started: **30/07/2015** Date Finished: **05/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	CORE38						62	18	0	Very weak to weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely closely to closely spaced.	-17.72	
51		51 - 52.5										
	CORE39						61	5	0			
52		52.5 - 54										
53	CORE40						63	25	17			
54		54 - 55.5										
	CORE41						62	0	0			
55		55.5 - 57										
56	CORE42						61	0	0			
57	SPT43	57 - 57.18	25/9	100/9	-	>100				Very dense, light brown, gravelly, silty GRAVEl. Gravels are subangular medium to fine siltstone pieces.	-24.72	
		57.18 - 58.5								Very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-24.90	
58	CORE44						61	21	9			
		58.5 - 60										
59	CORE45						61	19	0			
60										> END OF BORING	-27.52	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 19.00m below the existing ground level i.e. at R.L. +13.28m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C28**

Sheet: **1/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.737DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,635.85** E **481,724.95**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	12	17	29				Medium dense to dense becoming very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.74	
2	SPT3	2 - 2.45	5	14	21	35						
3	SPT4	3 - 3.45	10	16	24	40						
4	SPT5	4 - 4.43	22	25	25/13	>50						
5	SPT6	5 - 5.31	25/13	36	14/3	>50						
6												
7	SPT7	6.5 - 6.7	25/8	50/12	-	>50						
8	SPT8	8 - 8.2	25/8	50/12	-	>50						
9	CORE9	8.2 - 9.2					70	7	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	20.54	
10	CORE10	9.2 - 10.7										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.70m below the existing ground level i.e. at R.L. +14.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-C28**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**	Sheet: **2/6**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.737DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,635.85** E **481,724.95**
Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10							83	60	49	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.74	
		10.7 - 12.2										
11	CORE11						66	53	33			
12		12.2 - 13.7										
13	CORE12						63	53	37			
		13.7 - 15.2										
14	CORE13						50	35	9			
15		15.2 - 16.7										
16	CORE14						36	0	0			
	SPT15	16.7 - 17.02	25/9	60	40/8	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.04	
17		17.02 - 18.52								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	11.72	
	CORE16						43	0	0			
18	SPT17	18.52 - 18.74	25/4	76	24/3	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.22	
		18.74 - 19.99								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	10.00	
19	CORE18						28	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.70m below the existing ground level i.e. at R.L. +14.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C28**

Sheet: **3/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.737DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,635.85** E **481,724.95**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT19	20.02 - 20.24	25/6	80	20/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.72	
		20.24 - 21.52								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	8.50	
21	CORE20						33	0	0			
	SPT21	21.52 - 21.74	25/6	85	15/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.22	
		21.74 - 23.02								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	7.00	
22	CORE22						30	0	0			
23	SPT23	23.02 - 23.23	25/5	90	10/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.72	
		23.23 - 24.52								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	5.51	
24	CORE24						33	0	0			
	SPT25	24.52 - 24.76	25/6	86	24/3	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.22	
		24.76 - 26.26								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	3.98	
25	CORE26						23	9	0			
26	SPT27	26.26 - 26.48	25/5	90	10/2	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.48	
		26.48 - 27.76								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	2.26	
27	CORE28						25	19	13			
	SPT29	27.76 - 27.98	25/6	89	11/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.98	
28		27.98 - 29.26								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	0.76	
	CORE30						42	10	0			
29	SPT31	29.26 - 29.47	25/5	90	10/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.52	
		29.47 - 30.76								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured,	-0.73	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.70m below the existing ground level i.e. at R.L. +14.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C28**

Sheet: **4/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.737DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,635.85** E **481,724.95**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE32						36	8	0	fractures are extremely close to very closely spaced.		
	SPT33	30.76 - 30.98	25/6	40	10/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.02	
31		30.98 - 32.48								Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.	-2.24	
	CORE34						33	0	0			
32												
	SPT35	32.48 - 32.6	25/6	89	11/1	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.74	
		32.6 - 34.1								Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.	-3.86	
33	CORE36						52	0	0			
34		34.1 - 35.6										
	CORE37						40	0	0			
35												
	SPT38	35.6 - 35.83	25/6	82	18/2	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.86	
		35.83 - 37.33								Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.	-7.09	
36	CORE39						29	0	0			
37												
	SPT40	37.33 - 37.59	25/8	76	24/3	>100				Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.59	
		37.59 - 39.09								Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.	-8.85	
38	CORE41						50	8	0			
39		39.09 - 40.59										
	CORE42						26	0	0			
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.70m below the existing ground level i.e. at R.L. +14.04m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- □ IP: Initial Penetration
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- TCR: Total Core Recovery
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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-C28**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		Sheet: **5/6**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+28.737DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76**	N **2,761,635.85** E **481,724.95**
Date Started:	**30/07/2015**	Date Finished: **01/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
40										Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.	-11.26	
	SPT43	40.59 - 40.84	64	77	23/6	>100					-11.85	
		40.84 - 42.34								Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.10	
41	CORE44						40	0	0	Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.		
42	SPT45	42.34 - 42.59	25/6	78	22/4	>100					-13.60	
		42.59 - 44.09								Very dense, light grey, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-13.85	
43	CORE46						55	0	0	Very weak to weak, light grey, conglomeratic SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented silt.		
44		44.09 - 45.59										
45	CORE47						57	20	18			
		45.59 - 47.09										
46	CORE48						63	31	30			
47		47.09 - 48.59										
48	CORE49						57	30	24			
		48.59 - 50.09										
49	CORE50						38	0	0			
50												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-C28**

Sheet: **6/6**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.737DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,635.85** E **481,724.95**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-7**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
50	SPT51	50.09 - 50.36	25/6	64	36/6	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-21.35	
		50.36 - 51.86								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-21.62	
51	CORE52						29	0	0			
52	SPT53	51.86 - 52.11	25/5	71	29/5	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-23.12	
		52.11 - 53.61								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-23.37	
53	CORE54						42	8	0			
	SPT55	53.61 - 53.83	25/4	80	20/3	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-24.87	
54		53.83 - 55.33								Extremely weak to very weak, offwhite, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-25.09	
	CORE56						36	0	0			
55	SPT57	55.33 - 55.57	25/5	78	22/4	>100				Very dense, brown, sandy silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-26.59	
		55.57 - 57.07								Very weak to weak, light grey, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely spaced.	-26.83	
56	CORE58						50	13	7			
57		57.07 - 58.57										
	CORE59						55	28	27			
58		58.57 - 60-										
59	CORE60						28	14	7			
60										END OF BORING	-31.06	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

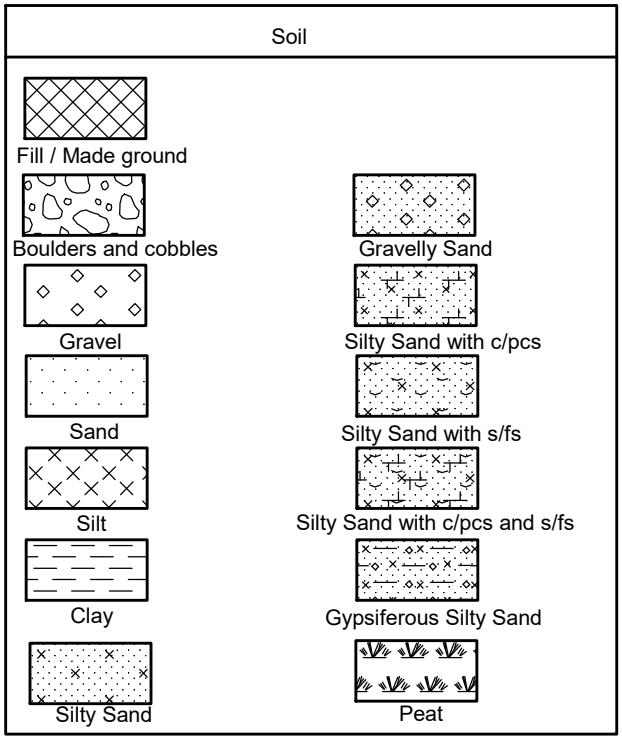
Checked By : ENGR. RABIH DAKWAR

APPENDIX B8

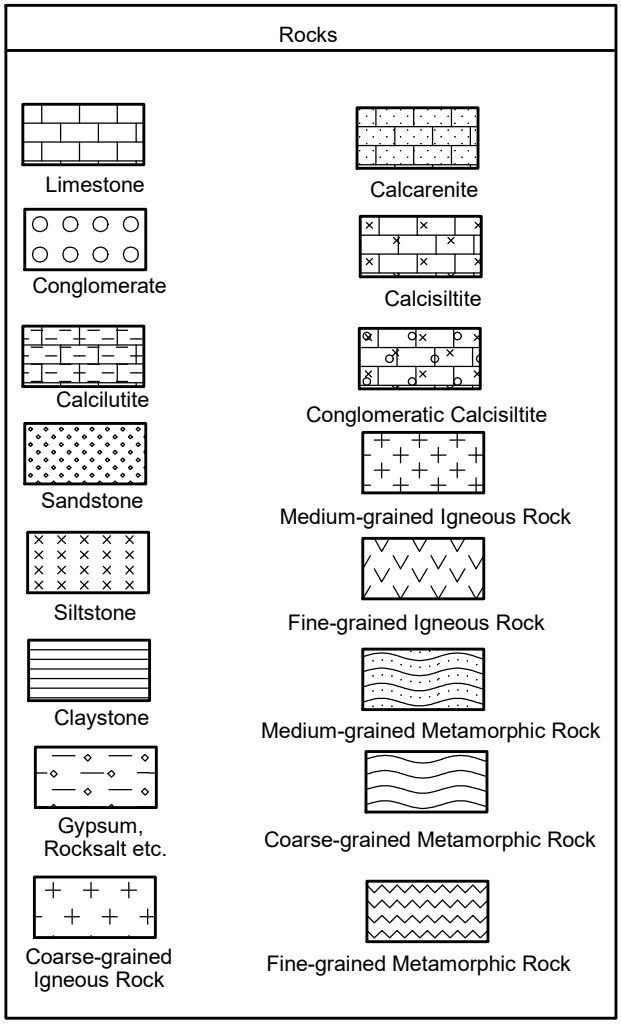
BOREHOLE LOGS (ZONE-8)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A52**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.103DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,311.25** E **481,750.34**
Date Started: **03/08/2015** Date Finished: **04/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	12	21				Medium dense to dense, light brown, silty, medium to fine SAND.	28.10	
2	SPT3	2 - 2.45	10	13	15	28						
3	SPT4	3 - 3.45	13	18	24	42						
4	SPT5	4 - 4.45	18	22	27	49						
5	SPT6	5 - 5.35	20	36	14/5	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.10	
6	SPT7	6.5 - 6.75	25/10	50	-	>50						
7	CORE8	6.75 - 8.25					62	16	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	22.35	
8		8.25 - 9.75										
9	CORE9						63	33	0			
10		9.75 - 11.25										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.15m below the existing ground level i.e. at R.L. +14.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A52**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		Sheet: **2/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+29.103DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Wirth 2**	Core Diameter (mm): **76**	N **2,761,311.25** E **481,750.34**
Date Started:	**03/08/2015**	Date Finished: **04/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											19.10	
	CORE10						61	37	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
11		11.25 - 12.75										
12	CORE11						63	17	0			
		12.75 - 14.25										
13	CORE12						55	5	0			
14											14.85	
		14.25 - 15.75								Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
15	CORE13						62	17	0			
		15.75 - 17.25										
16	CORE14						34	12	0			
17	SPT15	17.25 - 17.42	25/8	100/9	-	>100					11.85	
		17.42 - 18.75								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.68	
18	CORE16						43	9	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT17	18.75 - 18.93	25/9	100/9	-	>100					10.35	
19		18.93 - 20								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.17	
	CORE18						62	12	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
20										END OF BORING	9.30	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.15m below the existing ground level i.e. at R.L. +14.95m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A53**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.265DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,062.97** E **481,181.82**
Date Started: **05/08/2015** Date Finished: **05/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	10	16	29	45				Dense to medium dense, light brown, slightly silty, medium to fine SAND.	28.27	
2	SPT3	2 - 2.45	9	11	17	28						
3	SPT4	3 - 3.45	14	19	24	43				Dense, light brown, slightly silty, fine SAND.	26.27	
4	SPT5	4 - 4.45	13	19	26	45						
5	SPT6	5 - 5.45	15	20	24	44						
6												
7	SPT7	6.5 - 6.95	19	25	19	44						
8	SPT8	8 - 8.29	25/11	35	15/3	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.27	
9	SPT9	9.5 - 9.76	25/10	44	6/1	>50						
10		9.8 - 11.3								Extremely weak to very weak, light brown, fine grained	19.47	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.50m below the existing ground level i.e. at R.L. +14.77m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A53**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		Sheet: **2/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+29.265DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**	Coordinates:
Equipment:	**Mobile 40-2**	Core Diameter (mm): **76**	N **2,761,062.97** E **481,181.82**
Date Started:	**05/08/2015**	Date Finished: **05/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						63	42	0	calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
11		11.3 - 12.8										
12	CORE11						48	0	0			
13	SPT12	12.8 - 13	25/5	100	-	>100					16.47	
		13 - 14.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.27	
	CORE13						50	6	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
14		14.5 - 16										
15	CORE14						55	6	0			
16		16 - 17.5										
	CORE15						50	3	0			
17										Extremely weak to very weak, off white, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	12.27	
		17.5 - 19										
18	CORE16						14	12	0			
19	SPT17	19 - 19.16	25/4	100/12	-	>100					10.27	
		19.16 - 20								Very dense, brown, grey, silty, sandy GRAVEL. Gravel are subangular medium to fine siltstone pieces.		
	CORE18						39	0	0			
20										END OF BORING	9.47	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.50m below the existing ground level i.e. at R.L. +14.77m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A54**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.228DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**

Coordinates:

Equipment: **Mobile 40-2** Core Diameter (mm): **76**

N **2,761,151.39** E **481,032.90**

Date Started: **04/08/2015** Date Finished: **04/08/2015** Operator : **Faiz Ullah Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	14	21	22	43				Dense to medium dense, light brown, slightly silty, medium to fine SAND.	29.23	
2	SPT3	2 - 2.45	8	10	14	24						
3	SPT4	3 - 3.45	9	15	20	35						
4	SPT5	4 - 4.45	15	18	25	43						
5	SPT6	5 - 5.45	15	15	25	40						
6												
7	SPT7	6.5 - 6.95	22	24	25	49						
8	SPT8	8 - 8.33	25	37	13/3	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.23	
9	SPT9	9.5 - 9.75	25/10	50	-	>50						
10		9.75 - 11.25								Extremely weak to very weak, brown/ reddish brown,	20.48	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.00m below the existing ground level i.e. at R.L. +13.23m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A54**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.228DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**

Coordinates:

Equipment: **Mobile 40-2** Core Diameter (mm): **76**

N **2,761,151.39** E **481,032.90**

Date Started: **04/08/2015** Date Finished: **04/08/2015** Operator : **Faiz Ullah Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10												
	CORE10						61	16	0	fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11		11.25 - 12.75										
12	CORE11						61	23	0			
		12.75 - 14.25										
13	CORE12						63	50	28			
14		14.25 - 15.75									15.98	
	CORE13						63	0	0	Extremely weak to very weak, light grey/ offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
15		15.75 - 17.25										
16	CORE14						64	0	0			
17	SPT15	17.25 - 17.49	25/5	85	15/4	>100					12.98	
		17.49 - 18.75								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.74	
18	CORE16						36	0	0	Extremely weak to very weak, light grey/ offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
	SPT17	18.75 - 18.99	25/9	100	-	>100					11.48	
19		18.99 - 20-								Very dense, light grey, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	11.24	
	CORE18						79	0	0	Extremely weak to very weak, light grey/ offwhite, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
20										END OF BORING	10.43	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.00m below the existing ground level i.e. at R.L. +13.23m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A58**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.010DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,354.81** E **481,528.10**
Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	10	14	24				Medium dense to dense becoming very dense, light brown, silty/ slightly silty, medium to fine SAND.	30.01	
2	SPT3	2 - 2.45	11	14	20	34						
3	SPT4	3 - 3.45	13	18	22	40						
4	SPT5	4 - 4.45	16	20	25	45						
5	SPT6	5 - 5.45	18	22	26	48						
6												
7	SPT7	6.5 - 6.84	23	37	13/4	>50						
8	SPT8	8 - 8.24	25/8	42	8/1	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.01	
9	CORE9	8.25 - 9.75					87	25	11	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	22.76	
10		9.75 - 11.25										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.10m below the existing ground level i.e. at R.L. +12.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A58**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.010DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,354.81** E **481,528.10**

Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	21.01	
	CORE10						54	11	0			
11		11.25 - 12.75										
12	CORE11						56	18	10			
		12.75 - 14.25										
13	CORE12						74	10	0			
14		14.25 - 15.75										
15	CORE13						65	15	0			
		15.75 - 17.25										
16	CORE14						47	0	0			
17	SPT15	17.25 - 17.48	25/6	79	21/2	89.5					13.76	
		17.48 - 18.25								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine rock fragments and gypsum crystals.	13.53	
	CORE16						40	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, interbedded with gypsum crystals, recovered as sandy gravel.		
18	SPT17	18.25 - 18.46	25/5	90	10/1	100					12.76	
		18.46 - 19.75								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine rock fragments and gypsum crystals.		
19	CORE18						18	0	0			
	SPT19	19.75 - 20	25/7	65	35/3	>100					11.21	
20										END OF BORING		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.10m below the existing ground level i.e. at R.L. +12.91m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A60**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.052DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,422.04** E **481,624.13**
Date Started: **10/08/2015** Date Finished: **10/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	11	12	23				Medium dense to dense, light brown, silty, medium to fine SAND.	29.05	
2	SPT3	2 - 2.45	9	12	14	26						
3	SPT4	3 - 3.45	12	19	20	39						
4	SPT5	4 - 4.45	24	21	25	46						
5	SPT6	5 - 5.35	25	24	25	49						
6												
7	SPT7	6.5 - 6.75	20	35	15/5	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.55	
8	SPT8	8 - 8.25	25/10	50	-	>50						
9	CORE9	8.25 - 9.75					65	18	5	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	21.80	
10		9.75 - 11.25										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +13.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-A60**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		Sheet: **2/2**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+30.052DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76**	N **2,761,422.04** E **481,624.13**
Date Started:	**10/08/2015**	Date Finished: **10/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	20.05	
	CORE10						57	25	11			
11		11.25 - 12.75										
12	CORE11						54	11	0			
		12.75 - 14.25										
13	CORE12						65	16	11			
14		14.25 - 15.75										
15	CORE13						61	25	14	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	15.05	
		15.75 - 17.25										
16	CORE14						33	0	0			
17	SPT15	17.25 - 17.42	25/9	100/8	-	>100					12.80	
		17.42 - 18.75								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.63	
18	CORE16						45	5	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT17	18.75 - 18.93	25/9	100/9	-	>100					11.30	
19		18.93 - 20								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.12	
	CORE18						61	25	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
20										END OF BORING	10.25	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +13.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	☐ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B21**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.977DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,249.81** E **481,070.06**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	4	10	9	19				Medium dense, light brown, slightly silty, fine SAND.	29.98	
2	SPT3	2 - 2.32	24	40	10/2	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	28.98	
3	SPT4	3 - 3.26	25/10	46	4/1	>50						
		3.26 - 4.26									27.72	
4	CORE5						68	47	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
		4.26 - 5.76										
5	CORE6						61	30	0			
		5.76 - 7.26										
6	CORE7						42	5	0			
7	SPT8	7.26 - 7.61	25/10	52	48/10	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.72	
		7.61 - 9.11									23.37	
8	CORE9						51	15	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
9		9.11 - 10.61										
10	CORE10						31	0	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +14.18m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B21**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.977DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,249.81** E **481,070.06**
Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	20.98	
	SPT11	10.61 - 10.95	25/9	47	53/10	>100					20.37	
11		10.95 - 12.45								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.03	
	CORE12						38	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
12												
	SPT13	12.45 - 12.72	25/8	75	25/4	>100					18.53	
		12.72 - 14.22								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.26	
13	CORE14						26	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
14												
	SPT15	14.22 - 14.55	25/10	59	41/8	>100					16.76	
		14.55 - 16.05								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.43	
15	CORE16						15	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
16												
	SPT17	16.05 - 16.37	25/8	59	41/10	>100					14.93	
		16.37 - 17.87								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	14.61	
17	CORE18						20	0	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.		
	SPT19	17.87 - 18.1	25/4	72	28/4	>100					13.11	
18		18.1 - 19.6								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.88	
	CORE20						21	0	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.		
19												
	SPT21	19.6 - 19.83	25/5	74	26/3	>100					11.38	
		19.83 - 21.3								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	11.15	
20												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B21**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.977DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,249.81** E **481,070.06**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE22						39	0	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.		
21	SPT23	21.3 - 21.53	25/4	77	23/4	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.68	
		21.53 - 23.03								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	9.45	
22	CORE24						30	0	0			
23	SPT25	23.03 - 23.27	25/6	77	23/3	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.95	
		23.27 - 24.77								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	7.71	
24	CORE26						27	0	0			
25	SPT27	24.77 - 24.98	25/4	83	17/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.21	
		24.98 - 26.48								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	6.00	
26	CORE28						44	10	0			
	SPT29	26.48 - 26.72	25/6	79	21/3	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.50	
		26.72 - 28.22								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	4.26	
27	CORE30						20	0	0			
28	SPT31	28.22 - 28.44	25/5	87	13/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.76	
		28.44 - 29.94								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	2.54	
29	CORE32						42	0	0			
30		29.94 - 30.15	25/4	80	20/2	>100					1.04	

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B21**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.977DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,249.81** E **481,070.06**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT33	30.15 - 31.65								Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.83	
										Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.		
31	CORE34						39	0	0			
	SPT35	31.65 - 31.88	25/5	75	25/3	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.67	
		31.88 - 33.38								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	-0.90	
32	CORE36						29	0	0			
33	SPT37	33.38 - 33.59	25/4	83	17/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.40	
		33.59 - 35.09								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	-2.61	
34	CORE38						33	0	0			
35	SPT39	35.09 - 35.34	25/6	71	29/4	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.11	
		35.34 - 36.84								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	-4.36	
36	CORE40						45	0	0			
	SPT41	36.84 - 37.05	25/4	81	19/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.86	
37		37.05 - 38.55								Extremely weak to very weak, light brown, calcareous SILTSTONE, recovered as sandy silt/ silty gravel.	-6.07	
	CORE42						29	0	0			
38	SPT43	38.55 - 38.87	25/4	88	12/2	>100				Very dense, light brown, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.57	
		38.87 - 40-								Very weak, brown, conglomeratic SILTSTONE, distinctly weathered fractures are extremely close to medium spaced. Gravels are subangular medium to fine rock fragments.	-7.89	
39	CORE44						35	29	26			
										END OF BORING	-8.82	
40												

REMARKS:

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SAMPLE KEY

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- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B22**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.148DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,181.35** E **481,251.83**
Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	9	17	26	43				Dense to very dense, light brown, silty, medium to fine SAND.	29.15	
2	SPT3	2 - 2.27	25	50/12	-	>50						
3	SPT4	3 - 3.18	25/8	50/10	-	>50					27.15	
		3.18 - 4.5								Very dense, light brown, very gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.97	
4	CORE5						72	47	19	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		4.5 - 5.5										
5	CORE6						93	65	40			
		5.5 - 6.5										
6	CORE7						95	75	55			
		6.5 - 8										
7	CORE8						80	57	31			
8		8 - 9										
	CORE9						65	33	32			
9		9 - 10.5									21.15	
	CORE10						93	65	40	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.40m below the existing ground level i.e. at R.L. +13.75m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B22**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.148DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,181.35** E **481,251.83**

Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	20.15	
		10.5 - 12										
11	CORE11						95	75	55			
12		12 - 13										
	CORE12						80	57	31			
13		13 - 14.5										
	CORE13						65	33	32			
14												
		14.5 - 16								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	15.65	
15	CORE14						66	7	0			
16		16 - 17.5										
	CORE15						50	17	11			
17												
		17.5 - 19										
18	CORE16						52	20	0			
19		19 - 20										
	CORE17						36	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.40m below the existing ground level i.e. at R.L. +13.75m DMD.
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SAMPLE KEY

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Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B22**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.148DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,181.35** E **481,251.83**
Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT18	20 - 20.18	25/9	100/9	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.15	
		20.18 - 21.5								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	9.97	
21	CORE19						22	8	0			
	SPT20	21.5 - 21.76	25/8	75	25/3	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.65	
		21.76 - 23.26								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	8.39	
22	CORE21						40	0	0			
23	SPT22	23.26 - 23.49	25/5	80	20/3	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.89	
		23.49 - 24.76								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	6.66	
24	CORE23						38	0	0			
	SPT24	24.76 - 25	25/6	78	22/3	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.39	
25		25 - 26.5								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	5.15	
	CORE25						33	0	0			
26	SPT26	26.5 - 26.67	25/7	100/10	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.65	
		26.67 - 28								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	3.48	
27	CORE27						40	0	0			
28	SPT28	28 - 28.19	25/9	100/10	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.15	
		28.19 - 29.5								Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	1.96	
29	CORE29						38	0	0			
	SPT30	29.5 - 29.76	25/11	100	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.65	
		29.76 - 31.23									0.39	
30												

REMARKS:

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* Ground water table was encountered at a depth of 16.40m below the existing ground level i.e. at R.L. +13.75m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B22**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.148DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,181.35** E **481,251.83**
Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE31						40	0	0	Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
31	SPT32	31.23 - 31.45	25/9	100/13	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.08	
		31.45 - 32.73									-1.30	
32	CORE33						45	0	0	Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
	SPT34	32.73 - 32.93	25/8	100/12	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.58	
33		32.93 - 34.23									-2.78	
	CORE35						38	0	0	Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
34	SPT36	34.23 - 34.44	25/8	100/13	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.08	
		34.44 - 35.95									-4.29	
35	CORE37						50	0	0	Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
36		35.95 - 37.44										
	CORE38						38	0	0			
37	SPT39	37.44 - 37.62	25/6	100/12	-	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.29	
		37.62 - 39									-7.47	
38	CORE40						51	0	0	Extremely weak, light grey, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
39		39 - 40										
	CORE41						40	0	0			
40										END OF BORING	-9.65	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.40m below the existing ground level i.e. at R.L. +13.75m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B23**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.052DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,348.82** E **481,289.48**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	17	24	41				Dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	31.05	
2	SPT3	2 - 2.45	9	20	28	48						
3	SPT4	3 - 3.27	25/11	45	5/1	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	29.05	
4	SPT5	4 - 4.18	25/7	50/11	-	>50						
5	CORE6	4.18 - 5.5					66	42	20	Extremely weak to very weak, light brown, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.	27.87	
	CORE7	5.5 - 6					30	15	0			
6	CORE8	6 - 7.5					97	50	0			
7												
8	CORE9	7.5 - 9					91	50	8			
9	CORE10	9 - 10					95	30	10	Extremely weak to very weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	23.05	
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.90m below the existing ground level i.e. at R.L. +14.15m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B23**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.052DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,348.82** E **481,289.48**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11								Extremely weak to very weak, light brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	22.05	
	CORE11						97	45	22			
11		11 - 12										
	CORE12						97	35	10			
12		12 - 13										
	CORE13						95	40	12			
13		13 - 14.5										
	CORE14						65	31	15			
14												
		14.5 - 16								Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	17.55	
15	CORE15						60	0	0			
16		16 - 17.5										
	CORE16						53	13	0			
17												
		17.5 - 19										
18	CORE17						36	0	0			
19	SPT18	19 - 19.23	25/8	85	15/2	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	13.05	
		19.23 - 20.5								Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced	12.82	
20	CORE19						84	0	0			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.90m below the existing ground level i.e. at R.L. +14.15m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B23**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.052DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,348.82** E **481,289.48**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										and interbedded with cemented silt.	12.05	
		20.5 - 22								Extremely weak to very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
21	CORE20						50	32	20			
22		22 - 23.5										
	CORE21						43	24	23			
23	SPT22	23.5 - 23.71	25/5	80	20/1	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	8.55	
		23.71 - 25									8.34	
24	CORE23						50	19	8	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
25		25 - 26.5										
	CORE24						47	20	7			
26	SPT25	26.5 - 26.72	25/5	81	19/2	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	5.55	
		26.72 - 28									5.33	
27	CORE26						33	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
28	SPT27	28 - 28.26	25/7	75	25/3	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	4.05	
		28.26 - 29.76									3.79	
29	CORE28						22	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
	SPT29	29.76 - 29.98	25/5	85	15/2	>100				Very dense, light brown, slightly sandy, silty, GRAVEL.	2.29	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.90m below the existing ground level i.e. at R.L. +14.15m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B23**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.052DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,348.82** E **481,289.48**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		29.98 - 31.48								Gravels are made up of siltstone pieces.	2.07	
	CORE30						33	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
31	SPT31	31.48 - 31.7	25/5	84	16/2	>100						
		31.7 - 32.98								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	0.57	
											0.35	
32	CORE32						22	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
33	SPT33	32.98 - 33.21	25/5	80	20/3	>100						
		33.21 - 34.7								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-0.93	
											-1.16	
34	CORE34						30	0	0	Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
	SPT35	34.7 - 34.91	25/5	90	10/1	>100						
		34.91 - 36.2								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-2.65	
35										Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-2.86	
	CORE36						22	0	0			
36	SPT37	36.2 - 36.43	25/7	100	-	>100						
		36.43 - 37.93								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-4.15	
										Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-4.38	
37	CORE38						38	11	0			
38	SPT39	37.93 - 38.19	25/7	85	15/3	>100						
		38.19 - 39.69								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-5.88	
										Very weak, light grey/ brown, calcareous SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	-6.14	
39	CORE40						40	0	0			
	SPT41	39.69 - 39.96	25/8	80	20/3	>100				(39.69-39.96m) Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-7.75	
40										END OF BORING		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.90m below the existing ground level i.e. at R.L. +14.15m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B24**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.400DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,477.81** E **481,368.50**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	6	10	14	24				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	31.40	
2	SPT3	2 - 2.45	13	15	18	33						
3	SPT4	3 - 3.45	15	20	24	44						
4	SPT5	4 - 4.45	18	22	27	49						
5	SPT6	5 - 5.34	25	38	12/4	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.40	
6	SPT7	6.5 - 6.7	25/8	50/12	-	>50						
7	CORE8	6.7 - 8					69	15	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	25.70	
8	CORE9	8 - 9.5					64	19	10			
9		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +14.10m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B24**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.400DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,477.81** E **481,368.50**
Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					64	31	20	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	22.40	
11	CORE11	12.5 - 14					63	20	18			
12	CORE12	14 - 15.5					63	19	8			
13	CORE13	15.5 - 17					65	27	9			
14	CORE14	17 - 18.5					64	23	7			
15	CORE15	18.5 - 20					65	13	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel and gypsum crystals, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	15.10	
16												
17												
18												
19	CORE16						57	8	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +14.10m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B24**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.400DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,477.81** E **481,368.50**

Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE17	20 - 21.5					65	20	7	Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel and gypsum crystals, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	12.40	
21	CORE18	21.5 - 23					60	18	11	Extremely weak to very weak, brown, conglomeratic SILTSTONE interbedded with silty gravel and gypsum crystals, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	10.90	
22	CORE19	23 - 24.5					62	19	11			
23	CORE20	24.5 - 26					61	13	0			
24	CORE21	26 - 27.5					60	19	13			
25	CORE22	27.5 - 29					60	13	0			
26	CORE23	29 - 30.5					65	10	0	Extremely weak to very weak, light brown/ brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	3.40	
27												
28												
29												
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +14.10m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B24**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.400DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,477.81** E **481,368.50**
Date Started: **30/07/2015** Date Finished: **01/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										Extremely weak to very weak, light brown/ brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	2.40	
		30.5 - 32										
31	CORE24						63	0	0			
32		32 - 33.5										
	CORE25						61	8	0			
33												
		33.5 - 35										
34	CORE26						64	9	7			
35		35 - 36.5										
	CORE27						61	17	11			
36												
		36.5 - 38										
37	CORE28						40	10	7	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-4.10	
38	SPT29	38 - 38.19	25/9	100/10	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL.	-5.60	
		38.19 - 39.5								Gravels are made up of siltstone pieces.	-5.79	
39	CORE30						40	7	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		39.5 - 40										
	CORE31						99	40	34			
40										END OF BORING	-7.40	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 18.30m below the existing ground level i.e. at R.L. +14.10m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B25**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.499DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,314.55** E **481,449.03**

Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.35	20	36	14/5	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	30.50	
2	SPT3	2 - 2.19	25/7	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	29.50	
		2.2 - 3.7									29.31	
3	CORE4						63	47	23	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		3.7 - 5.2										
4	CORE5						62	40	14			
5		5.2 - 6.7										
6	CORE6						59	27	0			
		6.7 - 8.2										
7	CORE7						59	28	0			
8		8.2 - 9.2										
	CORE8						90	53	0			
9		9.2 - 10.2									22.30	
	CORE9						97	35	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.70m below the existing ground level i.e. at R.L. +13.80m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B25**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.499DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,314.55** E **481,449.03**

Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	21.50	
	CORE10	10.2 - 11.2					90	35	0			
11	CORE11	11.2 - 12.2					95	39	0			
12	CORE12	12.2 - 13.2					95	55	13			
13	CORE13	13.2 - 14.5					73	13	0			
14		14.5 - 16					61	11	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	17.00	
15	CORE14											
16	CORE15	16 - 17.5					60	14	8			
17		17.5 - 19					61	16	11			
18	CORE16											
19	CORE17	19 - 20.5					61	29	11	Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced.	12.50	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.70m below the existing ground level i.e. at R.L. +13.80m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B25**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.499DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,314.55** E **481,449.03**
Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced.	11.50	
		20.5 - 22										
21	CORE18						60	13	0			
		22 - 23.5										
22	CORE19						61	22	19			
23												
		23.5 - 25										
24	CORE20						55	20	17			
		25 - 26.5										
25	CORE21						57	31	23			
26												
		26.5 - 28										
27	CORE22						58	25	21			
28												
		28 - 29.5										
	CORE23						61	28	21			
29												
		29.5 - 31										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.70m below the existing ground level i.e. at R.L. +13.80m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B25**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.499DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,314.55** E **481,449.03**

Date Started: **01/08/2015** Date Finished: **03/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE24						59	41	17	Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced.	1.50	
31		31 - 32.5										
	CORE25						42	21	12			
32	SPT26	32.5 - 32.69	25/9	100/10	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-1.00	
		32.69 - 34									-1.19	
33	CORE27						50	14	8	Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced.		
34		34 - 35.5										
	CORE28						52	21	17			
35												
		35.5 - 37										
36	CORE29						28	7	0			
37	SPT30	37 - 37.19	25/9	100/10	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-5.50	
		37.19 - 38.5									-5.69	
	CORE31						29	4	0	Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced.		
38	SPT32	38.5 - 38.68	25/9	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-7.00	
		38.68 - 40									-7.18	
39	CORE33						24	0	0	Very weak to weak, brown, calcareous SILTSTONE locally interbedded with conglomerate, partially to distinctly weathered, fractures are very closely to closely spaced.		
40										END OF BORING	-8.30	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 17.70m below the existing ground level i.e. at R.L. +13.80m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B26**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.431DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,265.35** E **481,592.65**

Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	10	8	18				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	29.43	
2	SPT3	2 - 2.45	8	11	15	26						
3	SPT4	3 - 3.45	12	16	19	35						
4	SPT5	4 - 4.45	13	16	21	37						
5	SPT6	5 - 5.45	14	20	25	45						
6												
7	SPT7	6.5 - 6.87	19	30	20/8	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.93	
8	SPT8	8 - 8.25	25/10	50	-	>50						
9	CORE9	8.25 - 9.75					65	23	7	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	22.18	
10		9.75 - 11.25										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B26**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.431DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,265.35** E **481,592.65**

Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											20.43	
	CORE10						63	23	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
11		11.25 - 12.75										
12	CORE11						65	13	0			
		12.75 - 14.25										
13	CORE12						65	27	0			
14		14.25 - 15.75										
15	CORE13						60	13	0			
		15.75 - 17.25										
16	CORE14						61	47	0			
17		17.25 - 18.75										
18	CORE15						61	7	0			
		18.75 - 20.25									11.68	
19	CORE16						54	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B26**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.431DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,265.35** E **481,592.65**
Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20.25 - 21.75								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	10.43	
21	CORE17						61	0	0			
	SPT18	21.75 - 21.95	25/9	100/11	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.68	
22		21.95 - 23.25									8.48	
	CORE19						60	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are extremely close to closely spaced.		
23		23.25 - 24.75										
24	CORE20						56	0	0			
	SPT21	24.75 - 24.93	25/9	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.68	
25		24.93 - 26.25									5.50	
	CORE22						54	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are extremely close to closely spaced.		
26		26.25 - 27.75										
27	CORE23						56	0	0			
	SPT24	27.75 - 27.92	25/8	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.68	
28		27.92 - 29.25									2.51	
	CORE25						58	48	38	Extremely weak to very weak, light brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
29		29.25 - 30.75										
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B26**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.431DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,265.35** E **481,592.65**
Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE26						60	9	9	Extremely weak to very weak, light brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	0.43	
		30.75 - 32.25										
31	CORE27						60	8	8			
32		32.25 - 33.75										
33	CORE28						45	0	0			
	SPT29	33.75 - 33.9	25/5	100/10	-	>100						
		33.9 - 35.5								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.32	
34	CORE30						35	7	7	Extremely weak to very weak, light brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-3.47	
35	SPT31	35.5 - 35.69	25/9	100/10	-	>100						
		35.69 - 37								Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.07	
36	CORE32						62	13	11	Extremely weak to very weak, light brown, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-5.26	
37		37 - 38.5										
38	CORE33						60	7	0			
		38.5 - 40										
39	CORE34						60	8	0			
										END OF BORING	-9.37	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.80m below the existing ground level i.e. at R.L. +13.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
■ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B27**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.372DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,417.90** E **481,830.30**
Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	11	12	13	25				Medium dense to dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.37	
2	SPT3	2 - 2.45	13	19	23	42						
3	SPT4	3 - 3.45	17	22	27	49						
4	SPT5	4 - 4.33	25	36	14/3	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.37	
5	SPT6	5 - 5.25	25/9	44	6/1	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.37	
		5.25 - 6.25									23.12	
6	CORE7						90	30	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		6.25 - 7.25										
7	CORE8						90	48	0			
		7.25 - 8.25										
8	CORE9						90	40	0			
		8.25 - 9.5										
9	CORE10						78	37	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.00m below the existing ground level i.e. at R.L. +14.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B27**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.372DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,417.90** E **481,830.30**

Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						63	23	10	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.37	
11		11 - 12.5									17.37	
12	CORE12						62	13	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
13	CORE13	12.5 - 14					61	17	0			
14		14 - 15.5										
15	CORE14						60	0	0			
16	CORE15	15.5 - 17					56	0	0			
17	SPT16	17 - 17.21	25/5	84	16/1	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	11.37	
		17.21 - 18.5									11.16	
18	CORE17						54	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	10.37	
		18.5 - 20								Very weak to weak, off white, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
19	CORE18						60	0	0			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.00m below the existing ground level i.e. at R.L. +14.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B27**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**	Sheet: **3/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.372DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,417.90** E **481,830.30**
Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT19	20 - 20.19	25/9	100/10	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	8.37	
		20.19 - 21.5								Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	8.18	
21	CORE20						65	19	17			
		21.5 - 23										
22	CORE21						60	13	12			
23		23 - 24.5										
	CORE22						59	33	27			
24		24.5 - 26										
25	CORE23						60	0	0			
26		26 - 27.5										
	CORE24						47	10	7	Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	2.37	
27	SPT25	27.5 - 27.68	25/9	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	0.87	
		27.68 - 29								Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	0.69	
28	CORE26						40	12	0			
29	SPT27	29 - 29.18	25/9	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-0.63	
		29.18 - 30.5								Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and	-0.81	
30	CORE28						64	23	9			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.00m below the existing ground level i.e. at R.L. +14.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B27**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.372DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,417.90** E **481,830.30**

Date Started: **01/08/2015** Date Finished: **02/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-8**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										interbedded with cemented silt.	-1.63	
		30.5 - 32								Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
31	CORE29						45	0	0			
32	SPT30	32 - 32.17	25/8	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-3.63	
		32.17 - 33.5								Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-3.80	
33	CORE31						47	0	0			
	SPT32	33.5 - 33.69	25/9	100/10						Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-5.13	
		33.69 - 34.5								Very weak, brown, calcareous SILTSTONE interbedded with silty gravel, partially to distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	-5.32	
34	CORE33						33	0	0			
	SPT34	34.5 - 34.68	25/9	100/9	-	>100				Very dense, light brown, slightly sandy, silty, GRAVEL. Gravels are made up of siltstone pieces.	-6.13	
		34.68 - 36								Very weak to weak, off white, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	-6.31	
35	CORE35						51	9	7			
36		36 - 37.5										
	CORE36						55	8	7			
37												
		37.5 - 39										
38	CORE37						56	34	19			
39		39 - 40										
	CORE38						53	7	0			
40										END OF BORING	-11.43	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.00m below the existing ground level i.e. at R.L. +14.37m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : NAVAS / AFSAL

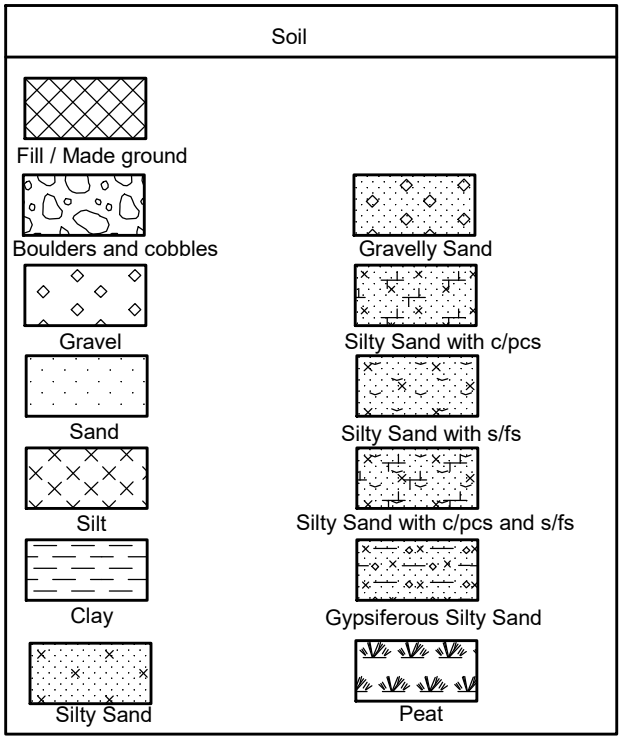
Checked By : ENGR. RABIH DAKWAR

APPENDIX B9

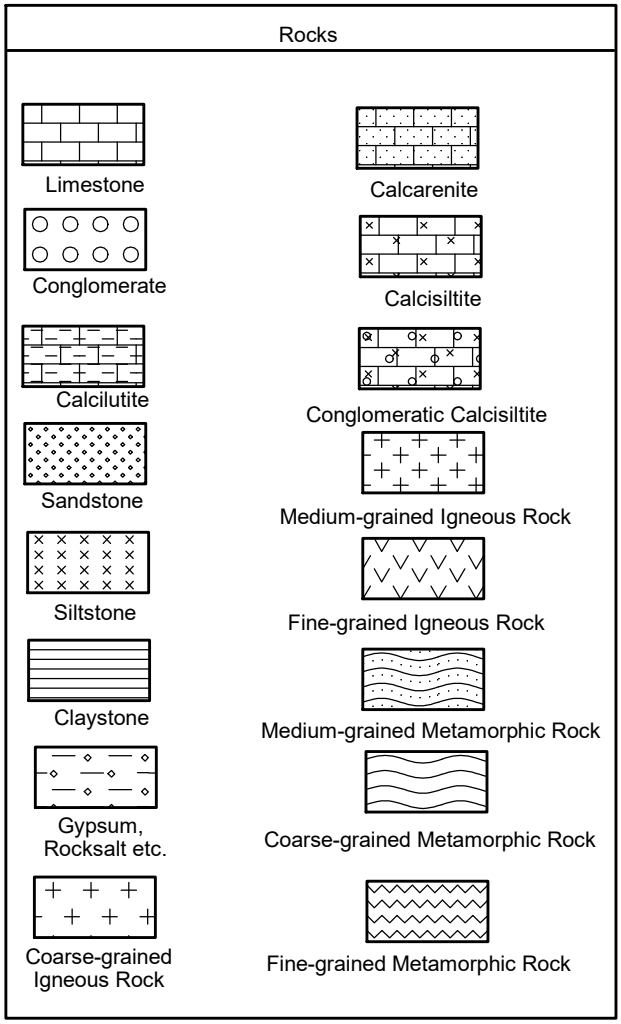
BOREHOLE LOGS (ZONE-9)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A48**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.215DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,063.96** E **482,145.01**
Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	8	13	21				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	26.22	
2	SPT3	2 - 2.45	8	13	13	26						
3	SPT4	3 - 3.45	13	15	20	35						
4	SPT5	4 - 4.45	17	22	27	49						
5	SPT6	5 - 5.45	17	20	27	47						
6												
7	SPT7	6.5 - 6.83	25	37	13/3	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.72	
8	SPT8	8 - 8.25	25/9	41	9/1	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.22	
9	CORE9	8.25 - 9.75					50	24	0	Extremely weak to weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.97	
10		9.75 - 11.25								Extremely weak to weak, light brown, fine grained	17.47	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +15.72m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A48**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.215DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile 40-2** Core Diameter (mm): **76**

N **2,761,063.96** E **482,145.01**

Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Faiz Ullah Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						36	0	0	calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11	SPT11	11.25 - 11.5	25/8	75	25/2	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	15.97	
		11.5 - 13									15.72	
12	CORE12						47	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
13	SPT13	13 - 13.18	25/9	25/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	14.22	
		13.18 - 14.5									14.04	
14	CORE14						61	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		14.5 - 16										
15	CORE15						61	0	0			
16	SPT16	16 - 16.19	25/9	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	11.22	
		16.19 - 17.5									11.03	
17	CORE17						61	0	0	Very weak to weak, brown, conglomeratic SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		17.5 - 18.5										
18	CORE18						55	0	0			
	SPT19	18.5 - 18.68	25/9	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.72	
		18.68 - 20									8.54	
19	CORE20						73	14	0	Very weak to weak, brown, conglomeratic SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
20										END OF BORING	7.42	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +15.72m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A49**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.489DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,760,724.74** E **481,826.30**
Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	15	23	38				Dense to very dense, light brown, silty, medium to fine SAND.	26.49	
2	SPT3	2 - 2.45	13	20	29	49						
3	SPT4	3 - 3.35	21	35	15/5	>50						
4	SPT5	4 - 4.33	25	40	10/3	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.49	
5	SPT6	5 - 5.26	25/11	50	-	>50						
		5.26 - 6.5									22.23	
6	CORE7						73	54	20	Extremely weak to very weak, light brown, medium to fine calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		6.5 - 7.5										
7	CORE8						93	72	0			
		7.5 - 9										
8	CORE9						33	0	0			
9	SPT10	9 - 9.24	25/7	85	15/2	>100					18.49	
		9.24 - 10.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.25	
10	CORE11						27	0	0	Extremely weak to very weak, light brown, medium to fine calcareous SANDSTONE, distinctly weathered to		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +13.99m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A49**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.489DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,760,724.74** E **481,826.30**

Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT12	10.5 - 10.73	25/7	90	10/1	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.99	
		10.73 - 12									16.76	
11	CORE13						35	0	0	Extremely weak to very weak, light brown, medium to fine calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
12	SPT14	12 - 12.18	25/9	100/9	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	15.49	
		12.18 - 13									15.31	
	CORE15						39	7	0	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
13	SPT16	13 - 13.19	25/9	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	14.49	
		13.19 - 14									14.30	
	CORE17						31	6	0	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
14	SPT18	14 - 14.17	25/8	100/9	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	13.49	
		14.17 - 15.5									13.32	
	CORE19						40	28	9	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
15												
	SPT20	15.5 - 15.68	25/9	100/9	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	11.99	
		15.68 - 17									11.81	
16	CORE21						36	6	0	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
17	SPT22	17 - 17.17	25/8	100/9	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	10.49	
		17.17 - 18.5									10.32	
18	CORE23						45	0	0	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
	SPT24	18.5 - 18.73	25/8	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	8.99	
		18.73 - 20									8.76	
19	CORE25						37	6	0	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
20										END OF BORING	7.69	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +13.99m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A50**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.911DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,126.11** E **481,831.64**

Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	10	14	24				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.91	
2	SPT3	2 - 2.45	10	14	18	32						
3	SPT4	3 - 3.45	14	20	24	44						
4	SPT5	4 - 4.45	15	22	27	49						
5	SPT6	5 - 5.42	18	22	28/12	>50						
6												
	SPT7	6.5 - 6.73	25/8	50	-	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	22.41	
7		6.75 - 8.25									22.16	
	CORE8						60	37	14	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
8		8.25 - 9.75										
9	CORE9						60	24	0			
		9.75 - 11.25									19.16	
10										Very weak, brown, conglomeratic SILTSTONE, distinctly		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +16.41m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A50**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.911DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,126.11** E **481,831.64**
Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										weathered to destructured, fractures are extremely close to very closely spaced.	18.91	
	CORE10						51	8	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
11		11.25 - 12.75										
12	CORE11						54	13	0			
		12.75 - 14.25										
13	CORE12						53	11	0			
14		14.25 - 15.75										
15	CORE13						61	6	0			
		15.75 - 17.25										
16	CORE14						59	3	0			
17		17.25 - 18.75										
18	CORE15						51	0	0			
	SPT16	18.75 - 19.02	25/7	70	30/5	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	10.16	
19		19.02 - 20-									9.89	
	CORE17						73	0	0	Very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
										END OF BORING	9.11	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +16.41m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A51**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.903DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,161.85** E **481,497.62**

Date Started: **05/08/2015** Date Finished: **05/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	5	8	10	18				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	28.90	
2	SPT3	2 - 2.45	8	11	15	26						
3	SPT4	3 - 3.45	10	14	15	29						
4	SPT5	4 - 4.45	10	15	19	34						
5	SPT6	5 - 5.45	12	17	20	37						
6												
7	SPT7	6.5 - 6.95	17	21	25	46						
8	SPT8	8 - 8.37	23	32	18/7	>50				Very dense, light brown, very gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	21.90	
9	SPT9	9.5 - 9.8	25/13	45	5/2	>50						
10		9.8 - 11.3								Extremely weak to very weak, light brown, medium to	20.10	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.50m below the existing ground level i.e. at R.L. +14.40m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A51**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **2/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.903DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **7.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,161.85** E **481,497.62**
Date Started: **05/08/2015** Date Finished: **05/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						23	0	0	fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with bands of cemented sand.		
11	SPT11	11.3 - 11.52	25/7	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.60	
		11.52 - 13					50	21	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with bands of cemented sand.	18.38	
12	CORE12											
13		13 - 14.5					62	17	0			
	CORE13											
14												
		14.5 - 16					60	15	0			
15	CORE14											
16		16 - 17.5					60	31	15			
	CORE15											
17												
		17.5 - 19					45	0	0	Very weak to weak, offwhite/ brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.	12.40	
18	CORE16											
19	SPT17	19 - 19.2	25/7	100/13	-	>100				(19.00-19.20m) Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.		
		19.2 - 20					68	0	0			
	CORE18											
20										END OF BORING	10.10	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.50m below the existing ground level i.e. at R.L. +14.40m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B48**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.194DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,761,030.31** E **481,303.01**
Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	10	16	26				Medium dense to dense, light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	28.19	
2	SPT3	2 - 2.45	7	11	15	26						
3	SPT4	3 - 3.45	10	14	22	36						
4	SPT5	4 - 4.45	16	19	30	49				Dense to very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.19	
5	SPT6	5 - 5.3	25/12	37	13/13	>50						
6												
	SPT7	6.5 - 6.69	25/9	50/10	-	>50						
		6.69 - 8									22.50	
7	CORE8						61	21	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
8		8 - 9.5										
9	CORE9						65	19	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 14.00m below the existing ground level i.e. at R.L. +15.19m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B48**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.194DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,761,030.31** E **481,303.01**
Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						64	25	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	19.19	
11		11 - 12.5										
	CORE11						60	24	0			
12		12.5 - 14										
13	CORE12						63	15	0			
14		14 - 15.5									15.19	
	CORE13						60	0	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
15		15.5 - 17										
16	CORE14						50	10	0			
17		17 - 18.5										
	CORE15						59	29	0			
18		18.5 - 20										
19	CORE16						58	49	49			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B48**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.194DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,030.31** E **481,303.01**

Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20		20 - 21								Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.	9.19	
	CORE17						24	24	10			
21	SPT18	21 - 21.2	25/10	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	8.19	
		21.2 - 22.5									7.99	
	CORE19						60	14	7	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
22		22.5 - 24										
23	CORE20						60	14	0			
24		24 - 25.5										
	CORE21						61	14	7			
25		25.5 - 27										
26	CORE22						63	17	13			
27		27 - 28.5										
	CORE23						44	12	6			
28	SPT24	28.5 - 28.7	25/10	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	0.69	
		28.7 - 30									0.49	
29	CORE25						50	43	30	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
30												

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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B48**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+29.194DMD**

Coordinates: N **2,761,030.31** E **481,303.01**

Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.	-0.81	
	CORE26						29	7	0			
31	SPT27	31.5 - 31.69	25/9	100/9	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-2.31	
		31.69 - 33									-2.50	
32	CORE28						40	12	12	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
33	SPT29	33 - 33.25	25/10	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-3.81	
		33.25 - 34.5									-4.06	
34	CORE30						33	0	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
	SPT31	34.5 - 34.67	25/7	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-5.31	
		34.67 - 36									-5.48	
35	CORE32						37	0	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
36	SPT33	36 - 36.21	25/6	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-6.81	
		36.21 - 37.5									-7.02	
37	CORE34						41	20	9	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
	SPT35	37.5 - 37.65	25/5	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	-8.31	
		37.65 - 39									-8.46	
38	CORE36						55	21	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
39		39 - 40										
	CORE37						58	34	10			
40										END OF BORING	-10.61	

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SAMPLE KEY

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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B49**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.498DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,760,971.18** E **481,469.77**

Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	6	12	19	31				Dense, light brown, silty, medium to fine SAND.	27.50	
2	SPT3	2 - 2.45	8	14	22	36						
3	SPT4	3 - 3.45	9	17	27	44						
4	SPT5	4 - 4.24	25/8	46	6/1	>50				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.50	
5	SPT6	5 - 5.22	25/7	50	-	>50						
		5.22 - 6.22									23.28	
6	CORE7						65	48	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		6.22 - 7.72										
7	CORE8						53	44	0			
		7.72 - 9.22										
8	CORE9						50	24	0			
9		9.22 - 10.72										
										Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	19.28	
10												

REMARKS:

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SAMPLE KEY

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Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B49**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		Sheet: **2/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+28.498DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76**	N **2,760,971.18** E **481,469.77**
Date Started:	**02/08/2015**	Date Finished: **03/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						41	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.	18.50	
	SPT11	10.72 - 10.95	25/8	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	17.78	
11		10.95 - 12.2									17.55	
	CORE12						23	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
12	SPT13	12.2 - 12.35	25	85	15/5	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	16.30	
		12.35 - 13.7									16.15	
13	CORE14						45	31	9	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
	SPT15	13.7 - 13.86	25/8	100/8	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	14.80	
14		13.86 - 15.22									14.64	
	CORE16						63	59	59	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
15		15.22 - 16.72										
16	CORE17						61	59	42			
		16.72 - 18.22										
17	CORE18						32	0	0			
18	SPT19	18.22 - 18.5	25/13	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	10.28	
		18.5 - 20									10.00	
19	CORE20						15	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
20												

REMARKS:

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Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B49**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.498DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,760,971.18** E **481,469.77**

Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT21	20 - 20.2	25/10	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	8.50	
		20.2 - 21.5									8.30	
21	CORE22						19	5	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
	SPT23	21.5 - 21.65	25/7	100/8	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	7.00	
		21.65 - 23									6.85	
22	CORE24						22	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
23	SPT25	23 - 23.25	25/6	77	23/4	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	5.50	
		23.25 - 24.75									5.25	
24	CORE26						19	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
	SPT27	24.75 - 24.98	25/5	80	20/3	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.75	
25		24.98 - 26.48									3.52	
	CORE28						24	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
26	SPT29	26.48 - 26.69	25/4	80	20/2	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.03	
		26.69 - 28.19									1.81	
27	CORE30						14	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
28	SPT31	28.19 - 28.49	25	100	-	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.31	
		28.49 - 29.69									0.01	
29	CORE32						17	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
	SPT33	29.69 - 29.94	25/6	80	20/4	>100				Very dense, offwhite, silty, sandy, GRAVEL. Gravels are	-1.19	
30		29.94 - 31.44									-1.44	

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B49**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.498DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,760,971.18** E **481,469.77**

Date Started: **02/08/2015** Date Finished: **03/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										subangular medium to fine siltstone pieces.		
	CORE34						21	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
31	SPT35	31.44 - 31.66	25/5	82	18/2	>100					-2.94	
		31.66 - 33.16								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.16	
32	CORE36						32	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
33	SPT37	33.16 - 33.38	25/4	82	18/3	>100					-4.66	
		33.38 - 34.88								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.88	
34	CORE38						26	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
35	SPT39	34.88 - 35.1	25/5	82	18/2	>100					-6.38	
		35.1 - 36.6								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.60	
36	CORE40						33	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
	SPT41	36.6 - 36.81	25/6	100	-	>100					-8.10	
37		36.81 - 38.1								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.31	
	CORE42						8	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
38	SPT43	38.1 - 38.34	25/6	81	19/3	>100					-9.60	
		38.34 - 40								Very dense, offwhite, silty, sandy, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.84	
39	CORE44						12	0	0	Extremely weak to very weak, offwhite/ brown, calcareous SILTSTONE, distinctly weathered to destructured, fractures are very closely to closely spaced.		
40										END OF BORING	-11.30	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.25m below the existing ground level i.e. at R.L. +16.25m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B50**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.969DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,760,892.09** E **481,551.78**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	7	14	18	32				Dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.97	
2	SPT3	2 - 2.45	14	16	26	42						
3	SPT4	3 - 3.45	8	12	18	30				Dense to very dense, light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.97	
4	SPT5	4 - 4.33	15	38	12/3	>50						
5	SPT6	5 - 5.3	25	50	-	>50						
6												
7	SPT7	6.5 - 6.82	25	40	10/2	>50				Very dense, light brown, slightly silty, medium to fine SAND.	21.47	
8	SPT8	8 - 8.24	25/8	41	9/1	>50						
9	SPT9	9.5 - 9.7	25/8	50/12	-	>50						
10		9.7 - 11								Extremely weak to very weak, light brown, medium to	18.27	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.70m below the existing ground level i.e. at R.L. +14.27m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B50**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.969DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,760,892.09** E **481,551.78**
Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						35	0	0	fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11	SPT11	11 - 11.26	25/8	80	20/3	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.97	
		11.26 - 12.5									16.71	
12	CORE12						21	14	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT13	12.5 - 12.63	25/5	100/8	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	15.47	
		12.63 - 14									15.35	
13	CORE14						18	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
14	SPT15	14 - 14.18	25/7	100/11	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	13.97	
		14.18 - 15.5									13.79	
15	CORE16						19	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT17	15.5 - 15.72	25/7	100	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.47	
		15.72 - 17									12.25	
16	CORE18						11	7	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
17	SPT19	17 - 17.2	25/10	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.97	
		17.2 - 18.5									10.77	
18	CORE20						27	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT21	18.5 - 18.65	25/7	100/8	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.47	
		18.65 - 20									9.32	
19	CORE22						27	21	17	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.70m below the existing ground level i.e. at R.L. +14.27m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B50**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.969DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,760,892.09** E **481,551.78**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT23	20 - 20.17-	25/3	100/14	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.97	
		20.17 - 21.5									7.80	
	CORE24						20	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
21												
	SPT25	21.5 - 21.68	25/3	100	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.47	
		21.68 - 23-									6.29	
22	CORE26						18	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
23	SPT27	23 - 23.16-	25/7	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.97	
		23.16 - 24.5									4.81	
	CORE28						22	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
24												
	SPT29	24.5 - 24.65	25/5	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.47	
		24.65 - 26-									3.32	
25	CORE30						23	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT31	26 - 26.17-	25/7	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.97	
26		26.17 - 27.5									1.80	
	CORE32						15	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
27												
	SPT33	27.5 - 27.62	25/3	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.47	
		27.62 - 29-									0.35	
28	CORE34						20	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT35	29 - 29.19-	25/4	100	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.03	
29		29.19 - 30.5									-1.22	
	CORE36						17	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.70m below the existing ground level i.e. at R.L. +14.27m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B50**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.969DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,760,892.09** E **481,551.78**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30												
	SPT37	30.5 - 30.68 30.68 - 32-	25/8	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.53 -2.71	
31	CORE38						17	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
32	SPT39	32 - 32.1 - 32.1 - 33.1-	25/5	100/5	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.03 -4.13	
	CORE40						20	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
33	SPT41	33.1 - 33.25 33.25 - 34.5	25/5	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.13 -5.28	
34	CORE42						31	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT43	34.5 - 34.62 34.62 - 36-	25/3	100/9	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.53 -6.65	
35	CORE44						26	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
36	SPT45	36 - 36.1 - 36.1 - 37.5-	25/2	100/8	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.03 -8.13	
37	CORE46						33	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT47	37.5 - 37.67 37.67 - 39-	25/7	100/10	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.53 -9.70	
38	CORE48						41	0	0	Very weak to weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
39	SPT49	39 - 39.19- 39.19 - 40-	25/9	100/10	-	>100				(39.00-39.19m) Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
	CORE50						39	0	0			
40										END OF BORING	-11.83	

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B51**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.331DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,019.60** E **481,692.61**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	8	9	17				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	27.33	
2	SPT3	2 - 2.45	8	11	14	25						
3	SPT4	3 - 3.45	10	15	18	33						
4	SPT5	4 - 4.45	12	20	23	43						
5	SPT6	5 - 5.45	17	21	25	46						
6												
7	SPT7	6.5 - 6.89	19	28	22/9	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	21.83	
8	SPT8	8 - 8.3	25/12	40	10/3	>50						
9	CORE9	8.3 - 9.8					31	0	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	20.03	
10	SPT10	9.8 - 10	25/10	100/10	-	>100				Very dense, light brown, very gravelly, silty, fine SAND.	18.53	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮ CORE : Core Sample
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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B51**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Equipment: **Mobile B-31** Core Diameter (mm): **76**

Ground Level (m): **+28.331DMD**

Coordinates: N **2,761,019.60** E **481,692.61**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Gravels are subangular medium to fine sandstone pieces.	18.33	
	CORE11						21	0	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11												
	SPT12	11.5 - 11.8	25	100						Very dense, light brown, very gravelly, silty, fine SAND.	16.83	
		11.8 - 12.6								Gravels are subangular medium to fine sandstone pieces.	16.53	
12	CORE13						40	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT14	12.6 - 12.8	25	100	-	>100					15.73	
		12.8 - 14.15									15.53	
13	CORE15						37	0	0	Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces. Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
14												
	SPT16	14.15 - 14.45	25	100	-	>100					14.18	
		14.45 - 15.8									13.88	
15	CORE17						28	0	0	Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces. Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT18	15.8 - 16	25/10	100/10	-	>100					12.53	
16		16 - 17.3								Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.33	
	CORE19						21	0	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
17												
	SPT20	17.3 - 17.5	25/10	100/10	-	>100					11.03	
		17.5 - 18.8								Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.83	
18	CORE21						33	0	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
	SPT22	18.8 - 19	25/10	100/10	-	>100					9.53	
19		19 - 20.3								Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	9.33	
	CORE23						41	0	0	Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.		
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B51**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.331DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,019.60** E **481,692.61**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20												
	SPT24	20.3 - 20.5	25/5	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	8.03	
		20.5 - 21.8								Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.	7.83	
21	CORE25						34	0	0			
	SPT26	21.8 - 22	25/7	100/13	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	6.53	
22		22 - 23.5								Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.	6.33	
	CORE27						53	0	0			
23												
		23.5 - 25										
24	CORE28						56	0	0			
25	SPT29	25 - 25.19	25/9	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.33	
		25.19 - 26.5								Extremely weak, brown, calcareous SILTSTONE, interbedded with conglomerate and silty gravel, distinctly weathered, fractures are very closely to closely spaced.	3.14	
26	CORE30						41	0	0			
	SPT31	26.5 - 26.8	25	100	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.83	
		26.8 - 28								Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.	1.53	
27	CORE32						50	0	0			
28		28 - 29.5										
	CORE33						32	0	0			
29												
	SPT34	29.5 - 29.7	25/10	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.17	
		29.7 - 31									-1.37	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B51**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.331DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,019.60** E **481,692.61**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE35						26	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
31	SPT36	31 - 31.15 31.15 - 32.65	25/5	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.67 -2.82	
32	CORE37						54	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
33	CORE38	32.65 - 34.15					58	0	0			
34	SPT39	34.15 - 34.33 34.33 - 35.65	25/9	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.82 -6.00	
35	CORE40						60	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
36	CORE41	35.65 - 37.15					53	0	0			
37	SPT42	37.15 - 37.34 37.34 - 38.65	25/9	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.82 -9.01	
38	CORE43						36	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
39	SPT44	38.65 - 38.79 38.79 - 40	25/4	100/10	-	>100				Very dense, brown, slightly sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.32 -10.46	
	CORE45						44	0	0	Extremely weak to very weak, brown, calcareous SILTSTONE, distinctly weathered, fractures are very closely to closely spaced and interbedded with cemented silt.		
40										END OF BORING	-11.47	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B52**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.963DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,760,895.52** E **481,834.96**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	11	23	28	51				Very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.96	
2	SPT3	2 - 2.31	25	45	5/1	>50						
3	SPT4	3 - 3.2	25/8	50/12	-	>50				Very dense, light brown, gravelly to very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.96	
4	SPT5	4 - 4.23	25/10	50/13	-	>50						
5	SPT6	5 - 5.18	25/8	50/10	-	>50						
		5.18 - 6.5									22.78	
6	CORE7						72	57	23	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		6.5 - 7.5										
7	CORE8						95	56	0			
		7.5 - 9										
8	CORE9						63	20	0			
9		9 - 10.5									18.96	
	CORE10						63	29	0	Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +16.46m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B52**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.963DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,760,895.52** E **481,834.96**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	17.96	
		10.5 - 11.5										
11	CORE11						60	41	21			
		11.5 - 13										
12	CORE12						62	48	24			
13		13 - 14.5										
	CORE13						43	33	15			
14												
	SPT14	14.5 - 14.7	25/5	100	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	13.46	
		14.7 - 16								Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, extremely close to medium spaced.	13.26	
15	CORE15						50	45	23			
16		16 - 17.5										
	CORE16						51	40	31			
17												
		17.5 - 19										
18	CORE17						52	30	11			
19		19 - 20.5										
	CORE18						34	26	23			
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +16.46m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B52**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Equipment: **Acker 3** Core Diameter (mm): **76**

Ground Level (m): **+27.963DMD**

Coordinates: N **2,760,895.52** E **481,834.96**

Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, extremely close to medium spaced.	7.96	
	SPT19	20.5 - 20.75	25/10	100	-	>100					7.46	
		20.75 - 22.25								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	7.21	
21										Very weak to weak, offwhite, calcareous SILTSTONE, partially to distinctly weathered, extremely close to medium spaced.		
	CORE20						21	21	21			
22												
	SPT21	22.25 - 22.5	25/10	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.71	
		22.5 - 24								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	5.46	
23	CORE22						34	26	11			
24	SPT23	24 - 24.22	25/7	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.96	
		24.22 - 25.5								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	3.74	
25	CORE24						39	35	23			
	SPT25	25.5 - 25.7	25/5	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.46	
		25.7 - 27.2								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	2.26	
26	CORE26						36	25	23			
27	SPT27	27.2 - 27.4	25/5	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.76	
		27.4 - 28.7								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	0.56	
28	CORE28						44	21	17			
	SPT29	28.7 - 28.9	25/5	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.74	
		28.9 - 30								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-0.94	
29	CORE30						40	13	13			
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +16.46m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B52**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.963DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,760,895.52** E **481,834.96**
Date Started: **03/08/2015** Date Finished: **05/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT31	30 - 30.2	25/5	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.04	
		30.2 - 31.7								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-2.24	
31	CORE32						29	21	14			
	SPT33	31.7 - 31.85	25/6	100/9	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.74	
		31.85 - 33.2								Very weak, offwhite, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-3.89	
32	CORE34						51	16	16			
33		33.2 - 34.7										
34	CORE35						53	41	41			
		34.7 - 36.2										
35	CORE36						52	34	26			
36		36.2 - 37.7										
37	CORE37						51	27	23			
		37.7 - 39										
38	CORE38						55	18	9			
39		39 - 40										
	CORE39						51	36	0			
40										END OF BORING	-11.84	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +16.46m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B53**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.849DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,760,908.45** E **481,969.97**
Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	12	19	24	43				Dense to very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.85	
2	SPT3	2 - 2.45	12	20	28	48						
3	SPT4	3 - 3.43	17	24	26/13	>50						
4	SPT5	4 - 4.29	25/11	40	10/3	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.85	
5	SPT6	5 - 5.2	25/8	50/12	-	>50						
	CORE7	5.2 - 6.2					50	22	14	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	22.65	
6	CORE8	6.2 - 7.2					52	23	0			
7	CORE9	7.2 - 8.7					54	40	17			
8	CORE10	8.7 - 10.2					55	48	33			
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +16.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B53**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.849DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,760,908.45** E **481,969.97**
Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10.2 - 11.7								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	17.85	
											17.35	
11	CORE11						54	8	0	Extremely weak, brown, medium to fine grained gypsiferous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		11.7 - 13.2										
12	CORE12						61	0	0			
13		13.2 - 14.7										
14	CORE13						38	12	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	14.65	
	SPT14	14.7 - 14.9	25/10	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	13.15	
15		14.9 - 16.2									12.95	
	CORE15						38	26	26	Extremely weak, brown, medium to fine grained gypsiferous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
16	SPT16	16.2 - 16.4	25/10	100/10	-	>100				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine siltstone pieces.	11.65	
		16.4 - 17.7									11.45	
17	CORE17						40	34	11	Extremely weak, brown, medium to fine grained gypsiferous SILTSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT18	17.7 - 17.9	25/9	100/11	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	10.15	
18		17.9 - 19.2									9.95	
	CORE19						47	17	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
19		19.2 - 20.7										
20	CORE20											

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +16.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B53**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **ACKER** Core Diameter (mm): **76**

Ground Level (m): **+27.849DMD**

Coordinates: N **2,760,908.45** E **481,969.97**

Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20							52	30	15	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	7.85	
		20.7 - 22.2										
21	CORE21						33	22	20			
22	SPT22	22.2 - 22.35	25/6	100/9	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	5.65	
		22.35 - 23.7								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	5.50	
23	CORE23						28	13	0			
	SPT24	23.7 - 24	25	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.15	
24		24 - 25.2								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	3.85	
	CORE25						33	19	0			
25	SPT26	25.2 - 25.5	25	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.65	
		25.5 - 26.2								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	2.35	
26	CORE27						50	7	0			
		26.2 - 27.7										
27	CORE28						30	0	0			
	SPT29	27.7 - 28	25	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.15	
28		28 - 29.2								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-0.15	
	CORE30						39	11	11			
29	SPT31	29.2 - 29.5	25	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.35	
		29.5 - 30.7								Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly	-1.65	
30												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +16.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B53**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.849DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,760,908.45** E **481,969.97**

Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE32						35	9	9	weathered to destructured, fractures are extremely close to closely spaced.		
	SPT33	30.7 - 31	25	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.85	
31		31 - 31.5									-3.15	
	CORE34						21	21	19	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT35	31.5 - 31.7	25/8	100/12	-	>100					-3.65	
		31.7 - 33									-3.85	
32										Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
	CORE36						16	11	0	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
33	SPT37	33 - 33.2	25/5	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.15	
		33.2 - 34.7									-5.35	
34	CORE38						51	19	15	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		34.7 - 36.2										
35	CORE39						62	8	0			
36		36.2 - 37.7										
37	CORE40						26	16	0			
	SPT41	37.7 - 38	25	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.85	
38		38 - 39									-10.15	
	CORE42						51	30	13	Extremely weak to very weak, offwhite, calcareous SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
39		39 - 40										
	CORE43						53	0	0			
										END OF BORING	-11.95	
40												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.00m below the existing ground level i.e. at R.L. +16.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B54**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.832DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,035.60** E **482,020.22**
Date Started: **03/08/2015** Date Finished: **04/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	9	9	18				Medium dense to very dense, light brown, slightly silty, medium to fine SAND.	26.83	
2	SPT3	2 - 2.45	11	13	14	27						
3	SPT4	3 - 3.38	17	28	22/8	>50						
4	SPT5	4 - 4.26	25/9	39	11/2	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.83	
5	SPT6	5 - 5.23	25/8	50	-	>50						
		5.23 - 6.5									22.60	
6	CORE7						69	49	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		6.5 - 8										
7	CORE8						61	34	0			
8		8 - 9.5										
9	CORE9						61	30	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.03m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B54**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.832DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,035.60** E **482,020.22**

Date Started: **03/08/2015** Date Finished: **04/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						61	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced and interbedded with cemented sand.	17.83	
11		11 - 12.5										
	CORE11						58	11	11			
12		12.5 - 14										
	CORE12						50	8	0	Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely closely to closely spaced.	15.33 ▼	
13												
	CORE13						51	22	11			
14		14 - 15.5										
	CORE14						55	27	27			
15		15.5 - 17										
	CORE15						61	0	0			
16		17 - 18.5										
	CORE16						55	0	0			
17		18.5 - 20										
18												
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.03m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B54**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.832DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,035.60** E **482,020.22**

Date Started: **03/08/2015** Date Finished: **04/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT17	20 - 20.21	25/5	90	10/1	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	7.83	
		20.21 - 21.5								Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely closely to closely spaced.	7.62	
21	CORE18						61	0	0			
		21.5 - 23										
22	CORE19						58	0	0			
23	SPT20	23 - 23.2	25/9	100/11	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.83	
		23.2 - 24.5								Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely closely to closely spaced.	4.63	
24	CORE21						63	0	0			
		24.5 - 26										
25	CORE22						35	19	0			
26	SPT23	26 - 26.35	25	85	15/5	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.83	
		26.35 - 27.5								Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely closely to closely spaced.	1.48	
27	CORE24						33	21	12			
		27.5 - 27.9	25	80	20/10	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.33	
	SPT25											
		27.9 - 29								Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely closely to closely spaced.	-0.07	
28	CORE26						40	17	0			
29	SPT27	29 - 29.2	25/10	100/10	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.17	
		29.2 - 30.5								Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are	-1.37	
30	CORE28						63	10	0			

REMARKS:

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SAMPLE KEY

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- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B54**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.832DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,035.60** E **482,020.22**

Date Started: **03/08/2015** Date Finished: **04/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-9**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30										extremely closely to closely spaced.		
		30.5 - 32										
31	CORE29						61	20	8			
32		32 - 33.5										
	CORE30						61	12	0			
33												
		33.5 - 35										
34	CORE31						35	27	17			
35	SPT32	35 - 35.25	25/10	100	-	>100				Very dense, offwhite, sandy, silty GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.17	
		35.25 - 36.5								Extremely weak to very weak, offwhite/ light brown, calcareous SILTSTONE, interbedded with silty, gravel, distinctly weathered to destructured, fractures are extremely closely to closely spaced.	-7.42	
36	CORE33						51	15	10			
		36.5 - 38										
37	CORE34						62	12	12			
38		38 - 39										
	CORE35						62	29	23			
39		39 - 40										
	CORE36						50	18	10			
40										END OF BORING	-11.97	

REMARKS:

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SAMPLE KEY

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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

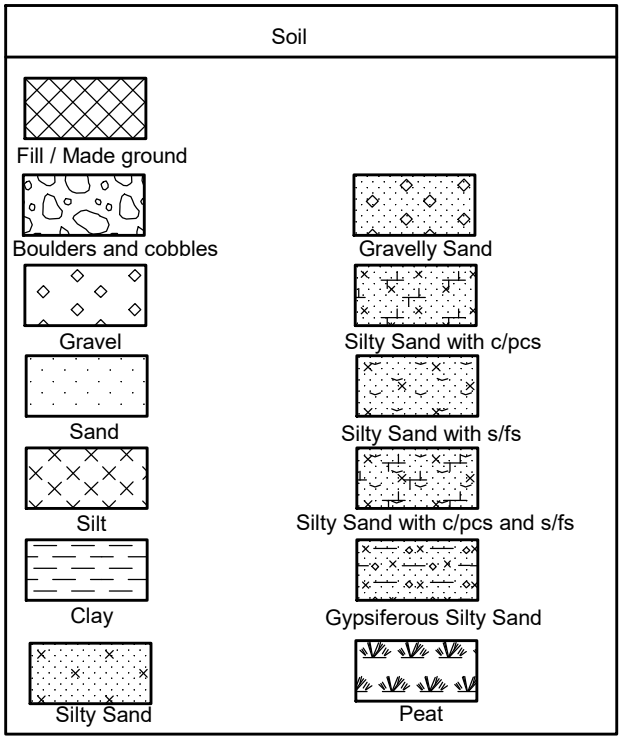
Checked By : ENGR. RABIH DAKWAR

APPENDIX B10

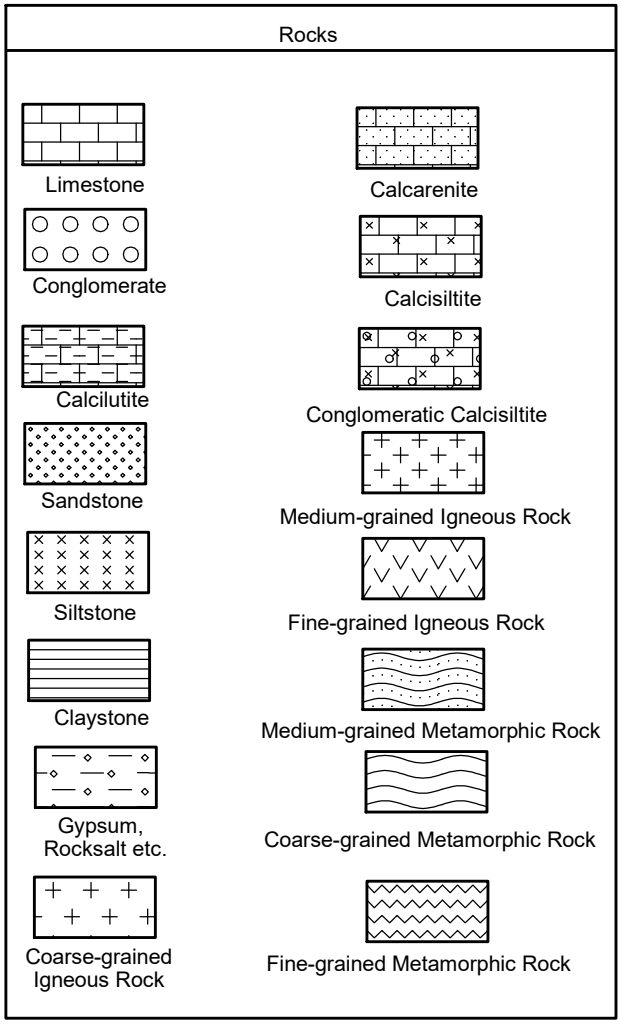
BOREHOLE LOGS (ZONE-10)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A43**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.985DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,761,713.76** E **482,276.60**
Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	20	23	43				Dense, light brown, slightly gravelly, slightly silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces.	24.99	
2	SPT3	2 - 2.45	17	19	24	43						
3	SPT4	3 - 3.45	10	16	26	42						
4	SPT5	4 - 4.45	16	17	23	40						
5	SPT6	5 - 5.45	12	16	28	44						
6	SPT7	6 - 6.34	22	33	17/4	>50				Very dense, light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.99	
7	SPT8	7 - 7.24	25/10	50/14	-	>50					18.74	
8	CORE9	7.25 - 8.5					76	48	22	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
9	CORE10	8.5 - 10					62	28	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.60m below the existing ground level i.e. at R.L. +14.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A43**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.985DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,713.76** E **482,276.60**

Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.	15.99	
	CORE11						60	39	13			
11		11.5 - 13										
	CORE12						51	37	21			
12												
		13 - 14.5										
13	CORE13						62	53	39			
14		14.5 - 16										
	CORE14						61	35	7			
15												
		16 - 17.5										
16	CORE15						64	53	11			
17		17.5 - 19										
	CORE16						63	43	8			
18												
		19 - 20										
19	CORE17						94	0	0			
										END OF BORING	6.19	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.60m below the existing ground level i.e. at R.L. +14.39m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A45**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+25.500DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,761,536.95** E **482,384.71**
Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	9	10	14	24				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.50	
2	SPT3	2 - 2.45	10	15	18	33						
3	SPT4	3 - 3.45	14	16	22	38						
4	SPT5	4 - 4.45	10	23	26	49						
5	SPT6	5 - 5.4	14	22	28/10	>50						
6												
7	SPT7	6.5 - 6.8	25/12	34	16/3	>50						
8	SPT8	8 - 8.25	25/9	41	9/1	>50						
9												
10	SPT9	9.5 - 9.7	25/9	50/11	-	>50						

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +14.00m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A45**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.500DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,761,536.95** E **482,384.71**

Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	15.50	
11	CORE10						27	0	0			
	SPT11	11.5 - 11.68	25/9	100/9	-	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	14.00	
		11.68 - 13									13.82	
12	CORE12						27	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
13	SPT13	13 - 13.2	25/9	100/11	-	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	12.50	
		13.2 - 14.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	12.30	
14	CORE14						48	12	9			
	SPT15	14.5 - 14.69	25/9	100/10	-	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	11.00	
		14.69 - 16								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	10.81	
15	CORE16						55	23	9			
16		16 - 17.5										
	CORE17						39	37	29			
17												
	SPT18	17.5 - 17.69	25/9	100/9	-	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.00	
		17.69 - 19								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	7.81	
18	CORE19						19	0	0			
19	SPT20	19 - 19.18	25/9	100/9	-	>100				(19.00-19.18m) Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.		
		19.18 - 20										
	CORE21						41	0	0			
20										END OF BORING	5.70	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +14.00m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A46**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.825DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,360.99** E **482,313.97**

Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	7	9	16				Medium dense to dense, light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.83	
2	SPT3	2 - 2.45	7	10	13	23						
3	SPT4	3 - 3.45	10	13	15	28						
4	SPT5	4 - 4.45	10	18	19	37						
5	SPT6	5 - 5.45	12	18	23	41						
6												
7	SPT7	6.5 - 6.86	21	35	15/6	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.33	
8	SPT8	8 - 8.27	25/10	40	10/2	>50						
9	CORE9	8.3 - 9.8					61	51	39	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	17.53	
10		9.8 - 11.3										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.40m below the existing ground level i.e. at R.L. +15.43m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A46**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+25.825DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,761,360.99** E **482,313.97**

Date Started: **06/08/2015** Date Finished: **06/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	15.83 ▼	
	CORE10						61	45	18			
11		11.3 - 12.8										
12	CORE11						61	26	13			
		12.8 - 14.3										
13	CORE12						61	14	0			
14		14.3 - 15.8										
15	CORE13						58	0	0			
		15.8 - 17.3										
16	CORE14						43	0	0			
17	SPT15	17.3 - 17.49	25/9	100/10	-	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.53	
		17.49 - 18.8								Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	8.34	
18	CORE16						49	0	0			
19	SPT17	18.8 - 18.99	25/9	100/10	-	>100						
		18.99 - 20										
	CORE18						53	0	0			
20										END OF BORING	6.03	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.40m below the existing ground level i.e. at R.L. +15.43m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A47**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **1/2**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.324DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,761,220.26** E **482,240.96**
Date Started: **06/08/2015** Date Finished: **07/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-					Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	12	14	20	34				Dense to very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.32	
2	SPT3	2 - 2.45	15	22	25	47						
3	SPT4	3 - 3.45	18	21	28	49						
4	SPT5	4 - 4.45	20	23	27	50						
5	SPT6	5 - 5.34	23	37	13/4	>50						
6												
	SPT7	6.5 - 6.75	25/9	42	8/1	>50					19.82	
		6.75 - 8.25								Very dense, light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.57	
7	CORE8						55	4	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
8		8.25 - 9.75										
9	CORE9						61	5	0			
		9.75 - 11.25										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.40m below the existing ground level i.e. at R.L. +14.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A47**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.324DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,761,220.26** E **482,240.96**

Date Started: **06/08/2015** Date Finished: **07/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	16.32	
11	CORE10	11.25 - 12.75					59	26	11			
12	CORE11	12.75 - 14.25					57	27	0			
13	CORE12	14.25 - 15.75					59	22	0			
14	CORE13	15.75 - 17.25					81	20	19			
15	CORE14	17.25 - 18.75					74	16	0			
16	CORE15	18.75 - 20					61	8	5			
17	CORE16						55	0	0			
18										END OF BORING	6.52	
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.40m below the existing ground level i.e. at R.L. +14.92m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B28**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,257.68** E **481,938.51**

Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	10	14	24				Medium dense to dense becoming very dense, light brown, silty, fine SAND.	27.67	
2	SPT3	2 - 2.45	8	13	18	31						
3	SPT4	3 - 3.45	9	14	21	35						
4	SPT5	4 - 4.24	25/9	50	-	>50						
5	SPT6	5 - 5.19	25/9	50/10	-	>50						
6												
	SPT7	6.5 - 6.7	25/9	50/11	-	>50				Very dense, light brown, very gravelly, silty, fine SAND.	22.17	
		6.7 - 7.7								Gravels are subangular medium to fine sandstone pieces.	21.97	
7	CORE8						89	84	48	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced.		
		7.7 - 8.9										
8	CORE9						38	33	13			
9	SPT10	8.9 - 9.2	25/8	65	35/7	>100				Very dense, light grey, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	19.77	
		9.2 - 10.7									19.47	
10	CORE11									Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced.		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +15.27m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B28**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.671DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,257.68** E **481,938.51**
Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10							63	49	25	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE intermixed with siltstone, partially to distinctly weathered, fractures are extremely close to closely spaced.	18.67	
		10.7 - 12.2										
11	CORE12						44	39	27			
12	SPT13	12.2 - 12.31	25/5	100/6	-	>50					16.47	
		12.31 - 13.7								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	16.36	
13	CORE14						17	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
	SPT15	13.7 - 13.89	25/4	100	-	>100					14.97	
14		13.89 - 15.2								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	14.78	
	CORE16						31	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
15	SPT17	15.2 - 15.38	25/3	100	-	>100					13.47	
		15.38 - 16.7								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	13.29	
16	CORE18						29	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
	SPT19	16.7 - 16.94	25/9	100	-	>100					11.97	
17		16.94 - 18.44								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	11.73	
	CORE20						27	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
18	SPT21	18.44 - 18.52	25/4	100/4	-	>100					10.23	
		18.52 - 19.94								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	10.15	
19	CORE22						38	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
20		19.94 - 20.15	25/6	100	-	>100					8.73	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.40m below the existing ground level i.e. at R.L. +15.27m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B28**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,257.68** E **481,938.51**

Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	SPT23	20.15 - 21.69								Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	8.52	
21	CORE24						27	0	0	Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
22	SPT25	21.69 - 21.87	25/9	100/9	-	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	6.98	
		21.87 - 23.19								Extremely weak to very weak, light brown, fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	6.80	
23	CORE26						36	0	0			
24	SPT27	23.19 - 23.42	25/4	72	28/4	>100				Very dense, light brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.48	
		23.42 - 24.92								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	5.25	
25	CORE28						45	8	0			
26	SPT29	24.92 - 25.16	25/6	81	21/3	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	3.75	
		25.16 - 26.66								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	3.51	
27	CORE30						39	0	0			
28	SPT31	26.66 - 26.89	25/5	84	16/3	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.01	
		26.89 - 28.39								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	1.78	
29	CORE32						42	5	0			
30	SPT33	28.39 - 28.62	25/6	90	10/2	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.28	
		28.62 - 30.12								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	0.05	
	CORE34						21	19	19			

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B28**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.671DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 2** Core Diameter (mm): **76**

N **2,761,257.68** E **481,938.51**

Date Started: **04/08/2015** Date Finished: **05/08/2015** Operator : **Manzoor Hussain**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT35	30.12 - 30.3	25/9	100/9	-	>100					-1.45	
		30.3 - 31.62								Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.63	
31	CORE36						20	11	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT37	31.62 - 31.8	25/9	100/9	-	>100					-2.95	
		31.8 - 33.12								Very dense, brown/ offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.13	
32	CORE38						36	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
33	SPT39	33.12 - 33.32	25/4	93	7/1	>100					-4.45	
		33.32 - 34.82								Very dense, brown/ offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.65	
34	CORE40						45	8	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT41	34.82 - 35.05	25/5	79	21/3	>100					-6.15	
35		35.05 - 36.55								Very dense, brown/ offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.38	
36	CORE42						39	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
	SPT43	36.55 - 36.8	25/6	83	17/4	>100					-7.88	
		36.8 - 38.3								Very dense, brown/ offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.13	
37	CORE44						51	18	8	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
38		38.3 - 39.3										
	CORE45						64	22	11			
39		39.3 - 40 -										
	CORE46						49	8	0			
40										END OF BORING	-11.13	

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

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- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B29**

Sheet: **1/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.606DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,263.86** E **482,102.01**

Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	10	11	21				Medium dense to dense becoming very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.61	
2	SPT3	2 - 2.45	14	18	21	39						
3	SPT4	3 - 3.41	21	26	24/11	>50						
4	SPT5	4 - 4.39	16	28	22/9	>50						
5	SPT6	5 - 5.34	25	35	15/4	>50						
6	SPT7	6 - 6.23	25/8	50	-	>50						
	CORE8	6.25 - 7.5					74	31	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely closely to medium spaced.	21.36	
7												
	CORE9	7.5 - 9					63	52	0			
8												
	CORE10	9 - 10.5					62	41	0			
9												
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.10m below the existing ground level i.e. at R.L. +15.51m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B29**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.606DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,263.86** E **482,102.01**
Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely closely to medium spaced.	17.61	
		10.5 - 12										
11	CORE11						64	15	13			
12		12 - 13.5										
	CORE12						57	14	0			
13												
		13.5 - 15										
14	CORE13						63	34	7			
15		15 - 16.5										
	CORE14						61	0	0			
16												
		16.5 - 18										
17	CORE15						60	0	0			
18	SPT16	18 - 18.21	25/5	84	16/1	>100				Very dense, brown, silty, Gravel. Gravels are subangular medium to fine sandstone pieces.	9.61	
		18.21 - 19.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely closely to medium spaced.	9.40	
	CORE17						56	0	0			
19		19.5 - 21										
20												

REMARKS:

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* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B29**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.606DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,263.86** E **482,102.01**

Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE18						52	9	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely closely to medium spaced.	7.61	
21	SPT19	21 - 21.2	25/8	100/12	-	>100					6.61	
		21.2 - 22.5								Very dense, brown, silty, Gravel. Gravels are subangular medium to fine sandstone pieces.	6.41	
22	CORE20						61	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely closely to medium spaced.		
		22.5 - 24										
23	CORE21						59	9	7			
24		24 - 25.5										
	CORE22						59	11	0			
25												
		25.5 - 27									2.11	
26	CORE23						59	23	15	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
27		27 - 28.5										
	CORE24						61	14	14			
28												
		28.5 - 30										
29	CORE25						57	15	13			
30												

REMARKS:

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* Ground water table was encountered at a depth of 12.10m below the existing ground level i.e. at R.L. +15.51m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B29**

Sheet: **4/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.606DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,263.86** E **482,102.01**

Date Started: **05/08/2015** Date Finished: **06/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30		30 - 31.5								Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-2.39	
	CORE26						58	21	0			
31		31.5 - 33										
	CORE27						57	20	0			
32												
33		33 - 34.5										
	CORE28						37	0	0			
34												
	SPT29	34.5 - 34.68	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.89	
		34.68 - 36									-7.07	
35	CORE30						47	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
36	SPT31	36 - 36.2	25/8	100/12	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-8.39	
		36.2 - 37.5									-8.59	
	CORE32						46	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
37												
	SPT33	37.5 - 37.69	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.89	
		37.69 - 39									-10.08	
38	CORE34						54	13	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
39		39 - 40										
	CORE35						39	8	0			
40										END OF BORING	-12.19	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.10m below the existing ground level i.e. at R.L. +15.51m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B30**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **1/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.515DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,761,564.69** E **482,240.41**
Date Started: **06/08/2015** Date Finished: **07/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	12	16	28				Medium dense to dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.52	
2	SPT3	2 - 2.45	9	11	18	29						
3	SPT4	3 - 3.45	17	22	27	49						
4	SPT5	4 - 4.39	21	28	22/9	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.52	
5	SPT6	5 - 5.31	25/11	35	15/5	>50						
6												
	SPT7	6.5 - 6.7	25/8	50/12	-	>50						
		6.7 - 7.7									19.82	
7	CORE8						50	12	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely closely to medium spaced, interbedded with cemented sand.		
		7.7 - 8.7										
8	CORE9						23	3	0			
	SPT10	8.7 - 9	25/8	75	25/7	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	17.82	
9		9 - 10.5									17.52	
	CORE11						55	31	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely closely to medium spaced, interbedded with cemented		
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.80m below the existing ground level i.e. at R.L. +14.72m DMD.
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SAMPLE KEY

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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B30**

Sheet: **2/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.515DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,564.69** E **482,240.41**

Date Started: **06/08/2015** Date Finished: **07/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										sand.	16.52	
		10.5 - 12								Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely closely to medium spaced, interbedded with cemented sand.		
11	CORE12						55	45	13			
12		12 - 13.5										
	CORE13						50	15	0			
13												
		13.5 - 15										
14	CORE14						57	41	28			
15		15 - 16.5										
	CORE15						63	7	0			
16												
		16.5 - 18										
17	CORE16						55	7	0			
18		18 - 19.5										
	CORE17						62	31	0			
19												
		19.5 - 21									7.02	
20										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely		

REMARKS:

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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-B30**

Sheet: **3/4**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.515DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **ACKER** Core Diameter (mm): **76**

N **2,761,564.69** E **482,240.41**

Date Started: **06/08/2015** Date Finished: **07/08/2015** Operator : **Azoor Rahman**

Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20	CORE18						63	13	0	closely to medium spaced, interbedded with cemented sand.		
21		21 - 22.5									5.52	
	CORE19						63	39	7	Very weak to weak, brown/ offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
22		22.5 - 24										
23	CORE20						33	16	9			
24	SPT21	24 - 24.19	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.52	
		24.19 - 25.5								Very weak to weak, brown/ offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	2.33	
25	CORE22						29	26	19			
	SPT23	25.5 - 25.68	25/9	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	1.02	
		25.68 - 27								Very weak to weak, brown/ offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	0.84	
26	CORE24						31	29	16			
27	SPT25	27 - 27.19	25/9	100/10	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.48	
		27.19 - 28.5								Very weak to weak, brown/ offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-0.68	
28	CORE26						29	26	0			
	SPT27	28.5 - 28.67	25/8	100/9	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-1.99	
		28.67 - 30								Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	-2.16	
29	CORE28						28	13	0			
30												

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SAMPLE KEY

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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B30**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		Sheet: **4/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.515DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment:	**ACKER**	Core Diameter (mm): **76**	N **2,761,564.69** E **482,240.41**
Date Started:	**06/08/2015**	Date Finished: **07/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	SPT29	30 - 30.16	25/8	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-3.49	
		30.16 - 31.5									-3.65	
31	CORE30						31	14	0	Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
	SPT31	31.5 - 31.69	25/8	100/11	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.99	
		31.69 - 33									-5.18	
32	CORE32						40	5	0	Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
33	SPT33	33 - 33.16	25/8	100/8	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-6.49	
		33.16 - 34.5									-6.65	
34	CORE34						21	16	13	Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
	SPT35	34.5 - 34.72	25/6	80	20/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.99	
		34.72 - 36									-8.21	
35	CORE36						27	23	23	Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
36	SPT37	36 - 36.24	25/8	90	10/1	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.49	
		36.24 - 37.5									-9.73	
37	CORE38						29	9	0	Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
	SPT39	37.5 - 37.63	25/6	100/7	-	>100				Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.99	
		37.63 - 39									-11.12	
38	CORE40						33	21	15	Very weak to weak, offwhite, calcareous conglomeratic SILTSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.		
39	SPT41	39 - 39.13	25/6	100/7	-	>100				(39.00-39.13m) Very dense, offwhite, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
		39.13 - 40										
	CORE42						58	44	13			
40										END OF BORING	-13.29	

REMARKS:

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SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B55**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		Sheet: **1/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.715DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76**	N **2,761,425.63** E **482,187.34**
Date Started:	**06/08/2015**	Date Finished: **08/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	8	7	15				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.72	
2	SPT3	2 - 2.45	7	8	8	16						
3	SPT4	3 - 3.45	6	11	18	29						
4	SPT5	4 - 4.45	8	16	22	38						
5	SPT6	5 - 5.25	25/10	45	5/1	>50						
6												
	SPT7	6.5 - 6.7	25/8	50/12	-	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.22	
7	CORE8	6.7 - 7.7					99	80	65	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	20.02	
8	CORE9	7.7 - 9.2					64	58	27			
9		9.2 - 10.7										
10	CORE10											

REMARKS:

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SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
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- TCR: Total Core Recovery
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- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B55**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **2/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.715DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,425.63** E **482,187.34**
Date Started: **06/08/2015** Date Finished: **08/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10							75	66	35	Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	16.72	
		10.7 - 12.2										
11	CORE11						55	49	34			
12		12.2 - 13.7										
13	CORE12						52	47	37			
		13.7 - 15.2										
14	CORE13						10	0	0			
15	SPT14	15.2 - 15.53	25/9	49	41/9	>100				Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	11.52	
		15.53 - 17.03								Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	11.19	
16	CORE15						36	0	0			
17	SPT16	17.03 - 17.3	25/7	74	26/5	>100				Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	9.69	
		17.3 - 18.8								Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	9.42	
18	CORE17						32	5	0			
19	SPT18	18.8 - 19.02	25/4	80	20/3	>100				Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	7.92	
		19.02 - 20.52								Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	7.70	
20	CORE19						42	8	0			

REMARKS:

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SAMPLE KEY

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⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner:	DUBAI WORLD TRADE CENTER - L.L.C.		BOREHOLE No.: **BH-B55**
Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		Sheet: **3/4**
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.		
Boring Method:	**Rotary Drilling**		Ground Level (m): **+26.715DMD**
Boring Diameter:	**125/99mm**	Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment:	**Acker 2**	Core Diameter (mm): **76**	N **2,761,425.63** E **482,187.34**
Date Started:	**06/08/2015**	Date Finished: **08/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
20										Extremely weak to very weak, brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced.	6.72	
	SPT20	20.52 - 20.77	25/6	80	20/4	>100					6.20	
		20.77 - 22.27								Very dense, brown, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	5.95	
21	CORE21						36	5	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
22	SPT22	22.27 - 22.56	25/9	66	24/5	>100				Very dense, brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	4.45	
		22.56 - 24.06									4.16	
23	CORE23						42	9	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
24	SPT24	24.06 - 24.34	25/8	71	29/5	>100				Very dense, brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	2.66	
		24.34 - 25.84									2.38	
25	CORE25						41	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
26	SPT26	25.84 - 26.1	25/7	76	24/4	>100				Very dense, brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	0.88	
		26.1 - 27.6									0.61	
27	CORE27						38	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT28	27.6 - 27.84	25/5	76	24/4	>100				Very dense, brown/ offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-0.89	
28		27.84 - 29.34									-1.13	
	CORE29						42	0	0	Extremely weak to very weak, brown/ offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
29	SPT30	29.34 - 29.56	25/4	76	24/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-2.63	
		29.56 - 31.06									-2.85	
30										Extremely weak to very weak, offwhite, conglomeratic		

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.10m below the existing ground level i.e. at R.L. +14.62m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-B55**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)**	Sheet: **4/4**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.715DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Acker 2** Core Diameter (mm): **76**	N **2,761,425.63** E **482,187.34**
Date Started: **06/08/2015** Date Finished: **08/08/2015** Operator : **Manzoor Hussain**	Report No.: **XSD/15-0143-10**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
30	CORE31						39	0	0	SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
31	SPT32	31.06 - 31.28	25/5	90	10/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-4.35	
		31.28 - 32.56								Extremely weak to very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-4.57	
32	CORE33						41	5	0			
	SPT34	32.56 - 32.78	25/6	84	16/1	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-5.85	
		32.78 - 34.06								Extremely weak to very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-6.07	
33	CORE35						38	0	0			
34	SPT36	34.06 - 34.3	25/6	81	19/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-7.35	
		34.3 - 35.8								Extremely weak to very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-7.59	
35	CORE37						24	0	0			
	SPT38	35.8 - 36.02	25/5	81	19/2	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-9.09	
36		36.02 - 37.52								Extremely weak to very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-9.31	
	CORE39						36	0	0			
37	SPT40	37.52 - 37.74	25/4	80	20/3	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-10.81	
		37.74 - 38.74								Extremely weak to very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-11.03	
38	CORE41						22	0	0			
	SPT42	38.74 - 38.94	25/4	90	10/1	>100				Very dense, offwhite, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.	-12.03	
39		38.94 - 40								Extremely weak to very weak, offwhite, conglomeratic SILTSTONE, interbedded with silty gravel, distinctly weathered to destructured, fractures are extremely close to closely spaced.	-12.23	
	CORE43						89	0	0			
40										END OF BORING	-13.09	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.10m below the existing ground level i.e. at R.L. +14.62m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

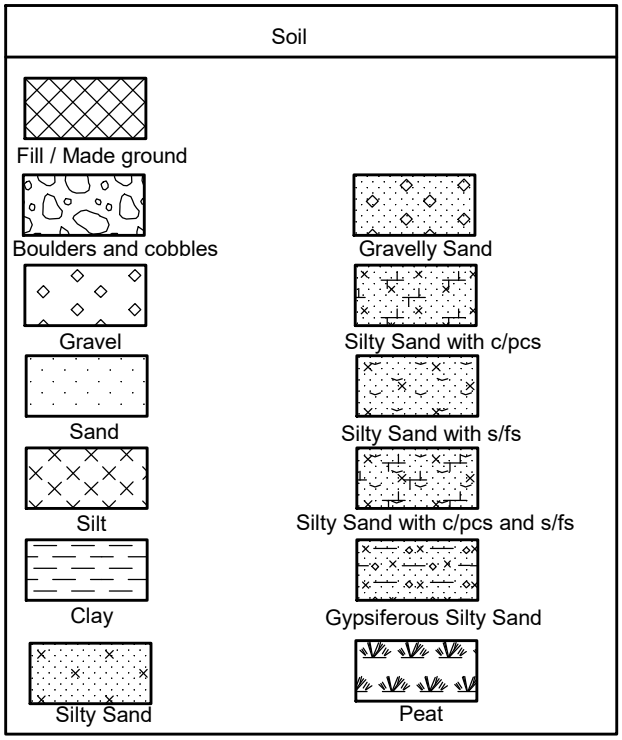
Checked By : ENGR. RABIH DAKWAR

APPENDIX B11

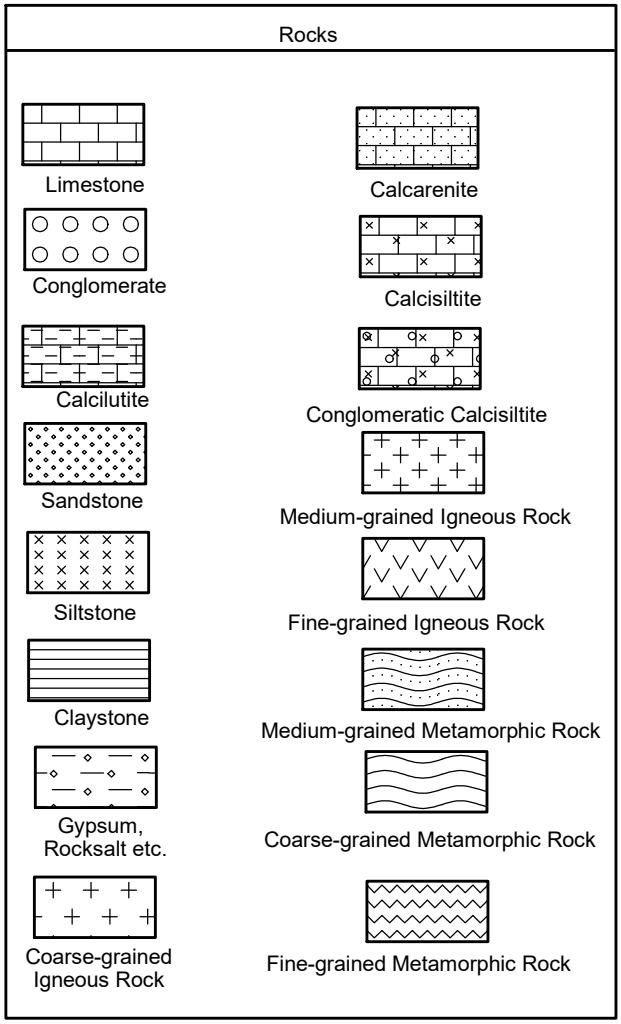
BOREHOLE LOGS (ZONE-11)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A17**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.754DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,060.88** E **482,743.67**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	12	21				Medium dense to dense becoming very dense, light brown, slightly silty, fine to medium SAND.	26.75	
2	SPT3	2 - 2.45	9	14	16	30						
3	SPT4	3 - 3.45	10	13	16	29						
4	SPT5	4 - 4.45	14	19	22	41						
5	SPT6	5 - 5.45	17	22	27	49						
6	SPT7	6 - 6.35	22	32	18/5	>50						
7	SPT8	7 - 7.32	25/13	34	16/4	>50						
8	SPT9	8 - 8.32	25/10	30	20/7	>50						
9	SPT10	9 - 9.25	25/9	44	6/1	>50						
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.20m below the existing ground level i.e. at R.L. +15.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A17**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.754DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,060.88** E **482,743.67**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT11	10 - 10.22	25/9	50/13	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	17.75	
11	SPT12	11 - 11.2	25/8	50/12	-	>50						
		11.2 - 12.5									16.55	
12	CORE13						71	31	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced, interbedded with cemented sand.		
		12.5 - 14										
13	CORE14						61	23	0			
14		14 - 15.5										
	CORE15						61	41	30			
15												
		15.5 - 17										
16	CORE16						60	19	35			
17		17 - 18.5										
	CORE17						61	17	13			
18												
		18.5 - 20									9.25	
19	CORE18						60	20	0	Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, extremely close to closely spaced.		
										END OF BORING	7.95	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.20m below the existing ground level i.e. at R.L. +15.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A18**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.930DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,205.54** E **482,798.12**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	11	12	23				Medium dense to very dense, light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.93	
2	SPT3	2 - 2.33	25	37	13/3	>50						
3	SPT4	3 - 3.25	25/8	42	8/2	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.93	
4	SPT5	4 - 4.21	25/9	50/12	-	>50						
5	SPT6	5 - 5.19	25/8	50/11	-	>50						
		5.2 - 6.5									22.73	
6	CORE7						68	47	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
		6.5 - 8										
7	CORE8						63	45	0			
8		8 - 9.5										
9	CORE9						61	34	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.30m below the existing ground level i.e. at R.L. +15.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A18**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.930DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,762,205.54** E **482,798.12**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						62	35	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.	17.93	
11		11 - 12.5										
	CORE11						60	41	0			
12		12.5 - 14										
13	CORE12						63	22	9			
14		14 - 15.5										
	CORE13						60	35	0			
15		15.5 - 17										
16	CORE14						61	12	9			
17		17 - 18.5										
	CORE15						62	34	0			
18		18.5 - 20										
19	CORE16						62	0	0	Extremely weak to very weak, light brown, calcareous SILTSTONE, distinctly weathered, fractures are extremely close to closely spaced.	9.43	
										END OF BORING	8.13	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.30m below the existing ground level i.e. at R.L. +15.63m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A19**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.450DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,300.13** E **482,848.67**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	10	8	18				Medium dense to dense, light brown, slightly silty, fine SAND.	25.45	
2	SPT3	2 - 2.45	10	14	15	29						
3	SPT4	3 - 3.45	13	16	21	37						
4	SPT5	4 - 4.2	25/10	50/10	-	>50				Very dense, light brown, gravelly, very silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.45	
5	SPT6	5 - 5.3	25	50	-	>50						
		5.3 - 6.5									21.15	
6	CORE7						33	4	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT8	6.5 - 6.85	25	80	20/5	>100				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.95	
		6.85 - 8									19.60	
7	CORE9						28	11	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
8	SPT10	8 - 8.3	25	100	-	>100				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.45	
		8.3 - 9.5									18.15	
9	CORE11						42	25	18	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT12	9.5 - 9.85	25	75	25/5	>100				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.95	
10		9.85 - 11									16.60	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.80m below the existing ground level i.e. at R.L. +14.65m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A19**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+26.450DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,762,300.13** E **482,848.67**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE13						61	7	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
11		11 - 12.5										
	CORE14						60	4	0			
12		12.5 - 14										
13	CORE15						61	35	0			
14		14 - 15.5										
	CORE16						34	27	7			
15	SPT17	15.5 - 15.75	25/10	100	-	>100					10.95	
		15.75 - 17								Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.70	
16	CORE18						52	25	17	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
17		17 - 18.5										
	CORE19						50	25	0			
18		18.5 - 20										
19	CORE20						45	14	0			
20										END OF BORING	6.65	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.80m below the existing ground level i.e. at R.L. +14.65m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.450DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,852.51** E **482,840.62**
Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	7	13	20				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	25.45	
2	SPT3	2 - 2.45	6	15	19	34						
3	SPT4	3 - 3.45	11	15	19	34						
4	SPT5	4 - 4.45	16	19	23	42						
5	SPT6	5 - 5.45	20	20	29	49						
6												
7	SPT7	6.5 - 6.87	25	32	18/7	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	19.95	
8	SPT8	8 - 8.24	25/8	43	7/1	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	18.45	
		8.24 - 9.5									18.21	
9	CORE9						73	33	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.		
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.60m below the existing ground level i.e. at R.L. +14.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C. — BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A20**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+26.450DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,852.51** E **482,840.62**
Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						63	33	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.	16.45	
11		11 - 12.5										
	CORE11						61	49	8			
12		12.5 - 14										
13	CORE12						64	36	0			
14		14 - 15.5										
	CORE13						62	55	36			
15		15.5 - 17										
16	CORE14						61	10	0			
17		17 - 18.5										
	CORE15						37	0	0			
18	SPT16	18.5 - 18.7	25/10	100/10	-	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	7.95	
		18.7 - 20									7.75	
19	CORE17						61	0	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.		
20										END OF BORING	6.65	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.60m below the existing ground level i.e. at R.L. +14.85m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A21**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.548DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,762,018.41** E **482,899.06**
Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	15	23	38				Dense to very dense, light brown, slightly silty, medium to fine SAND.	29.55	
2	SPT3	2 - 2.3	25	50	-	>50						
3	SPT4	3 - 3.24	25/9	50	-	>50						
4	SPT5	4 - 4.26	25/11	50	-	>50						
5	SPT6	5 - 5.21	25/10	50/11	-	>50					25.55	
		5.21 - 6.5								Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.34	
6	CORE7						73	36	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		6.5 - 8										
7	CORE8						60	23	7			
8		8 - 9.5										
9	CORE9						65	41	7			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.50m below the existing ground level i.e. at R.L. +15.05m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A21**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+30.548DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **1.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,762,018.41** E **482,899.06**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					61	53	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	20.55	
11	CORE11	12.5 - 14					63	39	0			
12	CORE12	14 - 15.5					60	50	20			
13	CORE13	15.5 - 17					59	43	17			
14	CORE14	17 - 18.5					63	45	22			
15	CORE15	18.5 - 20					61	35	18			
16	CORE16						75	35	28			
17												
18												
19												
20										END OF BORING	10.75	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 15.50m below the existing ground level i.e. at R.L. +15.05m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A22**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.355DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,762,153.78** E **482,952.20**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	9	12	15	27				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	26.36	
2	SPT3	2 - 2.45	13	16	20	36						
3	SPT4	3 - 3.34	22	37	13/4	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.36	
4	SPT5	4 - 4.24	25/8	40	10/1	>50						
5	SPT6	5 - 5.2	25/7	50/13	-	>50						
		5.2 - 6.7									22.16	
6	CORE7						57	42	7	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced, interbedded with cemented sand.		
		6.7 - 8.2										
7	CORE8						61	45	0			
8		8.2 - 9.7										
9	CORE9						62	45	0			
		9.7 - 11.2										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.65m below the existing ground level i.e. at R.L. +16.71m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A22**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.355DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,153.78** E **482,952.20**

Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced, interbedded with cemented sand.	17.36	
11	CORE10	11.2 - 12.7					60	36	0			
12	CORE11	12.7 - 14.2					61	32	0			
13	CORE12	14.2 - 15.7					64	32	0			
14	CORE13	15.7 - 17.2					63	28	0			
15	CORE14	17.2 - 18.7					57	28	0			
16	CORE15	18.7 - 20					61	42	7			
17	CORE16						70	37	12			
18										END OF BORING	7.56	
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.65m below the existing ground level i.e. at R.L. +16.71m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A23**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+24.690DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Wirth 2** Core Diameter (mm): **76**	N **2,762,292.77** E **483,006.14**
Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	8	12	16	28				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.69	
2	SPT3	2 - 2.45	10	13	20	33						
3	SPT4	3 - 3.45	14	20	24	44						
4	SPT5	4 - 4.23	25/8	50	-	>50						
5	SPT6	5 - 5.19	25/7	50/12	-	>50					19.69	
		5.2 - 6.7								Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	19.49	
6	CORE7						60	25	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.		
		6.7 - 8.2										
7	CORE8						60	24	0			
8		8.2 - 9.7										
9	CORE9						61	13	0			
		9.7 - 11.2										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.50m below the existing ground level i.e. at R.L. +15.19m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A23**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+24.690DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,292.77** E **483,006.14**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											14.69	
	CORE10						61	23	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.		
11		11.2 - 12.7										
	CORE11						59	49	7			
12		12.7 - 14.2										
	CORE12						60	28	0			
13												
		14.2 - 15.7										
14	CORE13						51	45	7			
		15.7 - 17.2										
15	CORE14						62	46	0			
		17.2 - 18.7										
16	CORE15						60	31	0			
		18.7 - 20										
17	CORE16						68	51	28	Extremely weak to very weak, brown, conglomeratic SILTSTONE, partially to distinctly weathered, extremely close to closely spaced.	5.69	
18										END OF BORING	4.89	
19												
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.50m below the existing ground level i.e. at R.L. +15.19m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A24**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.960DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,761,954.71** E **483,050.48**
Date Started: **07/08/2015** Date Finished: **08/08/2015** Operator : **Mohammad Ismail**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	4	5	8	13				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.96	
2	SPT3	2 - 2.45	7	10	10	20						
3	SPT4	3 - 3.45	8	15	16	31						
4	SPT5	4 - 4.45	9	16	20	36						
5	SPT6	5 - 5.37	18	31	19/7	>50						
6												
7	SPT7	6.5 - 6.75	25/10	50	-	>50						
8	SPT8	8 - 8.3	23	50	-	>50						
9												
10	SPT9	9.5 - 9.7	25/8	50/12	-	>50						

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.00m below the existing ground level i.e. at R.L. +14.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A24**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.960DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

N **2,761,954.71** E **483,050.48**

Date Started: **07/08/2015** Date Finished: **08/08/2015** Operator : **Mohammad Ismail**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	17.96	
11	SPT10	11 - 11.24	25/8	46	4/1	>50						
		11.3 - 12.5									16.66	
12	CORE11						41	17	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
	SPT12	12.5 - 12.85	25	80	20/5	>100					15.46	
		12.85 - 13.5								Very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	15.11	
13	CORE13						52	0	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
		13.5 - 14.5										
14	CORE14						50	21	0			
		14.5 - 16										
15	CORE15						56	18	0			
16		16 - 17.5										
	CORE16						57	11	0			
17												
		17.5 - 19										
18	CORE17						50	23	13			
19		19 - 20										
	CORE18						88	71	27			
20										END OF BORING	8.16	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.00m below the existing ground level i.e. at R.L. +14.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A25**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.123DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,107.33** E **483,106.27**
Date Started: **07/08/2015** Date Finished: **08/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	12	13	16	29				Medium dense to dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.12	
2	SPT3	2 - 2.45	17	20	23	43						
3	SPT4	3 - 3.33	25	38	12/3	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.12	
4	SPT5	4 - 4.26	25/10	44	6/1	>50						
5	SPT6	5 - 5.25	25/10	50	-	>50						
		5.25 - 6.5									22.88	
6	CORE7						73	28	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		6.5 - 8										
7	CORE8						59	28	0			
8		8 - 9.5										
9	CORE9						56	37	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.32m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A25**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.123DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,107.33** E **483,106.27**
Date Started: **07/08/2015** Date Finished: **08/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						61	33	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	18.12	
11		11 - 12.5										
	CORE11						61	35	13			
12		12.5 - 14										
13	CORE12						61	48	21			
14		14 - 15.5										
	CORE13						60	23	0			
15		15.5 - 17										
16	CORE14						58	25	0			
17		17 - 18.5										
	CORE15						61	38	7			
18		18.5 - 20										
19	CORE16						61	0	0			
20										END OF BORING	8.32	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.80m below the existing ground level i.e. at R.L. +15.32m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A26**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+31.402DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile B-31** Core Diameter (mm): **76**

N **2,762,257.30** E **483,160.72**

Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Ijaz Khan**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	10	19				Medium dense to dense, light brown, silty, medium to fine SAND.	30.40	
2	SPT3	2 - 2.45	7	10	12	22						
3	SPT4	3 - 3.45	10	13	16	29						
4	SPT5	4 - 4.45	14	15	19	34						
5	SPT6	5 - 5.34	24	38	12/4	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.40	
6	SPT7	6.5 - 6.8	25/13	44	6/2	>50						
7	CORE8	6.8 - 8.3					71	7	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.	24.60	
8		8.3 - 9.8										
9	CORE9						60	11	0			
10		9.8 - 11.3										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.10m below the existing ground level i.e. at R.L. +15.30m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▯ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A26**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.402DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,257.30** E **483,160.72**
Date Started: **07/08/2015** Date Finished: **07/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											21.40	
	CORE10						54	21	11	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced and interbedded with cemented sand.		
11		11.3 - 12.8										
12	CORE11						62	20	0			
		12.8 - 14.3										
13	CORE12						55	34	0			
14		14.3 - 15.8										
15	CORE13						61	15	0			
		15.8 - 17.3										
16	CORE14						61	13	0			
17		17.3 - 18.8										
18	CORE15						62	26	0			
		18.8 - 20										
19	CORE16						63	0	0			
										END OF BORING	11.60	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 16.10m below the existing ground level i.e. at R.L. +15.30m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A27**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+27.741DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,906.93** E **483,200.57**

Date Started: **07/08/2015** Date Finished: **08/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	13	22	35				Dense, light brown, silty, medium to fine SAND.	26.74	
2	SPT3	2 - 2.45	12	18	27	45						
3	SPT4	3 - 3.27	25/12	50	-	>50				Very dense, light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.74	
4	SPT5	4 - 4.2	25/8	50/12	-	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	23.74	
5	SPT6	5 - 5.18	25/7	50/11	-	>50						
		5.18 - 6.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	22.56	
6	CORE7						70	40	0			
		6.5 - 8										
7	CORE8						63	39	0			
8		8 - 9.5										
9	CORE9						63	47	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.10m below the existing ground level i.e. at R.L. +16.64m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A27**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.741DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,906.93** E **483,200.57**
Date Started: **07/08/2015** Date Finished: **08/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						63	15	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	17.74	
11		11 - 12.5										
	CORE11						63	43	24			
12		12.5 - 14										
13	CORE12						60	27	13			
14		14 - 15.5									13.74	
	CORE13						34	27	21	Extremely weak to very weak, brown, conglomeratic SANDSTONE, locally embedded with gypsum crystals, distinctly weathered, fractures are extremely close to closely spaced.		
15	SPT14	15.5 - 15.7	25/5	100	-	>100					12.24	
		15.7 - 17								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	12.04	
16	CORE15						42	36	26	Extremely weak to very weak, brown, conglomeratic SANDSTONE, locally embedded with gypsum crystals, distinctly weathered, fractures are extremely close to closely spaced.		
17	SPT16	17 - 17.2	25/5	100	-	>100					10.74	
		17.2 - 18.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.54	
	CORE17						31	23	8	Extremely weak to very weak, brown, conglomeratic SANDSTONE, locally embedded with gypsum crystals, distinctly weathered, fractures are extremely close to closely spaced.		
18	SPT18	18.5 - 18.75	25/10	100	-	>100						
		18.75 - 20										
19	CORE19						45	10	10			
										END OF BORING	7.94	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.10m below the existing ground level i.e. at R.L. +16.64m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A28**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.127DMD**

Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,054.25** E **483,256.35**

Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	4	7	11	18				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	27.13	
2	SPT3	2 - 2.45	7	9	14	23						
3	SPT4	3 - 3.45	12	16	22	38						
4	SPT5	4 - 4.45	16	19	28	47						
5	SPT6	5 - 5.35	24	34	16/5	>50				Very dense, brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.13	
6	SPT7	6 - 6.37	25	40	10/3	>50						
7	SPT8	7 - 7.27	25/10	42	8/2	>50						
8	SPT9	8 - 8.26	25/9	43	7/2	>50				Very dense, brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.13	
		8.3 - 9.5									19.83	
9	CORE10						79	57	15	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced, interbedded with cemented sand.		
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.30m below the existing ground level i.e. at R.L. +15.83m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ❚❚ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By :

Checked By :

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A28**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.127DMD**

Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,762,054.25** E **483,256.35**

Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE11						61	40	15	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced, interbedded with cemented sand.	18.13	
11		11 - 12.5										
	CORE12						63	37	7			
12		12.5 - 14										
13	CORE13						63	39	21			
14		14 - 15.5										
	CORE14						62	23	21			
15		15.5 - 17									12.63	
	CORE15						57	21	9	Extremely weak to very weak, brown, conglomeratic SANDSTONE, locally embedded with gypsum crystals distinctly weathered to destructured, fractures are extremely close to closely spaced.		
16												
17		17 - 18.5										
	CORE16						62	11	0			
18		18.5 - 20										
19	CORE17						60	9	0			
										END OF BORING	8.33	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.30m below the existing ground level i.e. at R.L. +15.83m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : Checked By :

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A29**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.502DMD**

Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**

Coordinates:

Equipment: **Mobile 40-2** Core Diameter (mm): **76**

N **2,762,202.89** E **483,316.12**

Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Faiz Ullah Khan**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	5	10	16	26				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	27.50	
2	SPT3	2 - 2.45	9	16	19	35						
3	SPT4	3 - 3.45	14	17	21	38						
4	SPT5	4 - 4.45	16	20	26	46						
5	SPT6	5 - 5.34	25	38	12/4	>50				Very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	23.50	
6												
7	SPT7	6.5 - 6.72	25/8	50/14	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	22.00	
8	SPT8	8 - 8.19	25/7	50/12	-	>50						
9	CORE9	8.19 - 9.5					70	38	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced, interbedded with cemented sand.	20.31	
10		9.5 - 11										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.54m below the existing ground level i.e. at R.L. +15.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ⧓ SPT(C): SPT with cone
- ⧓ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By :

Checked By :

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A29**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.502DMD**
Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,762,202.89** E **483,316.12**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					64	37	17	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced, interbedded with cemented sand.	18.50	
11	CORE11	12.5 - 14					70	40	10			
12	CORE12	14 - 15.5					61	30	0			
13	CORE13	15.5 - 17					60	43	17			
14	CORE14	17 - 18.5					61	36	22			
15	CORE15	18.5 - 20					59	15	0			
16	CORE16						61	0	0			
17												
18												
19												
20										END OF BORING	8.70	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.54m below the existing ground level i.e. at R.L. +15.96m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : Checked By :

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A30**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.161DMD**
Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,762,006.47** E **483,409.10**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		
1	SPT2	1 - 1.45	6	9	14	23				Medium dense to dense becoming very dense, light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.16	
2	SPT3	2 - 2.45	7	8	16	24						
3	SPT4	3 - 3.45	9	11	18	29						
4	SPT5	4 - 4.45	16	24	26	50						
5	SPT6	5 - 5.38	24	29	21/8	>50						
6												
7	SPT7	6.5 - 6.78	25/11	42	8/2	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.66	
8	SPT8	8 - 8.19	25/8	50/11	-	>50						
	CORE9	8.19 - 9.19					51	15	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.	18.97	
9		9.19 - 10.5										
10	CORE10						39	24	9			

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +15.16m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : Checked By :

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A30**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+27.161DMD**
Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**	Coordinates:
Equipment: **ACKER** Core Diameter (mm): **76**	N **2,762,006.47** E **483,409.10**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Azoor Rahman**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.	17.16	
	SPT11	10.5 - 10.85	25	80	20/5	>100					16.66	
		10.85 - 12								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	16.31	
11	CORE12						35	15	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
12	SPT13	12 - 12.3	25	100	-	>100					15.16	
		12.3 - 13.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	14.86	
13	CORE14						23	23	23	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
	SPT15	13.5 - 13.8	25	100	-	>100					13.66	
		13.8 - 15								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	13.36	
14	CORE16						29	17	16	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
15	SPT17	15 - 15.25	25/10	100	-	>100					12.16	
		15.25 - 16.5								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	11.91	
16	CORE18						28	27	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
	SPT19	16.5 - 16.8	25	100	-	>100					10.66	
		16.8 - 18								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	10.36	
17	CORE20						36	9	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.		
18	SPT21	18 - 18.25	25/10	100	-	>100					9.16	
		18.25 - 19.25								Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	8.91	
	CORE22						27	26	25	Very weak, brown, conglomeratic SILTSTONE, partially to distinctly weathered, fractures are very closely to closely spaced.		
19	SPT23	19.25 - 19.5	25/10	100	-	>100						
		19.5 - 20								(19.25-19.50m) Very dense, brown, silty, sandy GRAVEL. Gravels are subangular medium to fine siltstone pieces.		
	CORE24						64	30	30			
20										END OF BORING	7.36	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +15.16m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : Checked By :

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A31**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **1/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.062DMD**
Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,157.77** E **483,468.87**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	10	19				Medium dense to dense, light brown, slightly silty, fine SAND.	28.06	
2	SPT3	2 - 2.45	9	12	15	27						
3	SPT4	3 - 3.45	13	16	21	37						
4	SPT5	4 - 4.45	14	22	24	46						
5	SPT6	5 - 5.33	25	37	13/3	>50				Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	24.06	
6	SPT7	6.5 - 6.8	25	50	-	>50						
7	CORE8	6.8 - 8.3					61	15	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.	22.26	
8		8.3 - 9.8										
9	CORE9						63	47	7			
10		9.8 - 11.3										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +15.56m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : Checked By :

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A31**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.062DMD**
Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,762,157.77** E **483,468.87**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered, fractures are extremely close to closely spaced.	19.06	
	CORE10						63	31	20			
11		11.3 - 12.8										
12	CORE11						62	26	9			
		12.8 - 14.3										
13	CORE12						63	17	0			
14		14.3 - 15.8										
15	CORE13						63	17	0			
		15.8 - 17.3										
16	CORE14						61	19	18			
17		17.3 - 18.8										
18	CORE15						0	0	0			
19	SPT16	18.8 - 19	25/10	100	-	>100				Very dense, light brown, silty, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	10.26	
		19 - 20								Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered, fractures are extremely close to closely spaced.	10.06	
	CORE17						75	35	0			
20										END OF BORING	9.26	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.50m below the existing ground level i.e. at R.L. +15.56m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
▮ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : Checked By :

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A32**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **3.0**

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

Ground Level (m): **+28.719DMD**

Coordinates: N **2,762,111.31** E **483,616.30**

Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	10	13	15	28				Medium dense to dense becoming very dense, light brown, slightly silty, medium to fine SAND.	27.72	
2	SPT3	2 - 2.45	18	19	25	44						
3	SPT4	3 - 3.27	25/10	42	8/2	>50						
4	SPT5	4 - 4.2	25/8	50/12	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.72	
5	SPT6	5 - 5.19	25/8	50/11	-	>50						
		5.19 - 6.5								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced.	23.53	
6	CORE7						70	46	0			
		6.5 - 8										
7	CORE8						63	27	0			
8		8 - 9.5										
9	CORE9						63	33	0			
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.00m below the existing ground level i.e. at R.L. +15.72m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : Checked By :

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A32**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**	Sheet: **2/2**
Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.719DMD**
Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,762,111.31** E **483,616.30**
Date Started: **08/08/2015** Date Finished: **08/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10	11 - 12.5					61	23	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered, fractures are extremely close to very closely spaced.	18.72	
11	CORE11	12.5 - 14					61	25	0			
12	CORE12	14 - 15.5					64	27	0			
13	CORE13	15.5 - 17					63	27	9			
14	CORE14	17 - 18.5					62	33	0			
15	CORE15	18.5 - 20					61	40	0			
16	CORE16						62	15	0			
17												
18												
19												
20										END OF BORING	8.92	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.00m below the existing ground level i.e. at R.L. +15.72m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : Checked By :

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A33**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.973DMD**

Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,059.55** E **483,766.38**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	10	13	16	29				Medium dense to dense becoming very dense, light brown, slightly silty, medium to fine SAND.	28.97	
2	SPT3	2 - 2.45	11	16	22	38						
3	SPT4	3 - 3.45	16	20	24	44						
4	SPT5	4 - 4.31	22	42	8/1	>50						
5	SPT6	5 - 5.25	25/10	50	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.97	
		5.25 - 6.75									24.72	
6	CORE7						61	32	8	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
		6.75 - 8.25										
7	CORE8						63	33	7			
8		8.25 - 9.75										
9	CORE9						63	27	0			
		9.75 - 11.25										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.40m below the existing ground level i.e. at R.L. +17.57m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- SPT : Standard Penetration Test
- SPT(C): SPT with cone
- B : Bulk Sample
- CORE : Core Sample
- IP: Initial Penetration
- : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By :

Checked By :

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)**

Location: **PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A33**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.973DMD**

Boring Diameter: **125/99mm** Drill Fluid : Casing Dia (mm) : Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Wirth 2** Core Diameter (mm): **76**

N **2,762,059.55** E **483,766.38**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-11**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10											19.97	
	CORE10						63	31	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to very closely spaced and interbedded with cemented sand.		
11		11.25 - 12.75										
12	CORE11						63	23	0			
		12.75 - 14.25										
13	CORE12						63	17	0			
14		14.25 - 15.75										
15	CORE13						63	25	0			
		15.75 - 17.25										
16	CORE14						63	33	13			
17		17.25 - 18.75										
18	CORE15						63	27	10			
		18.75 - 20										
19	CORE16						72	42	20			
20										END OF BORING	10.17	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.40m below the existing ground level i.e. at R.L. +17.57m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

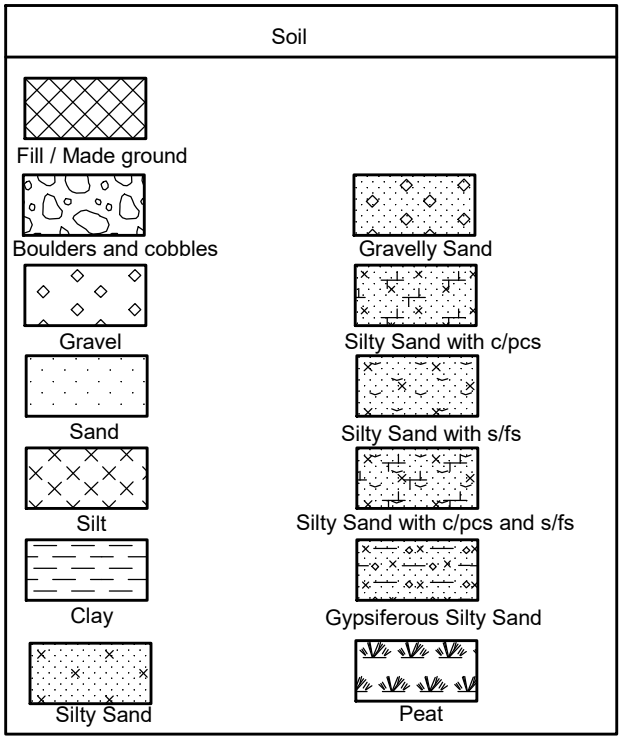
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APPENDIX B12

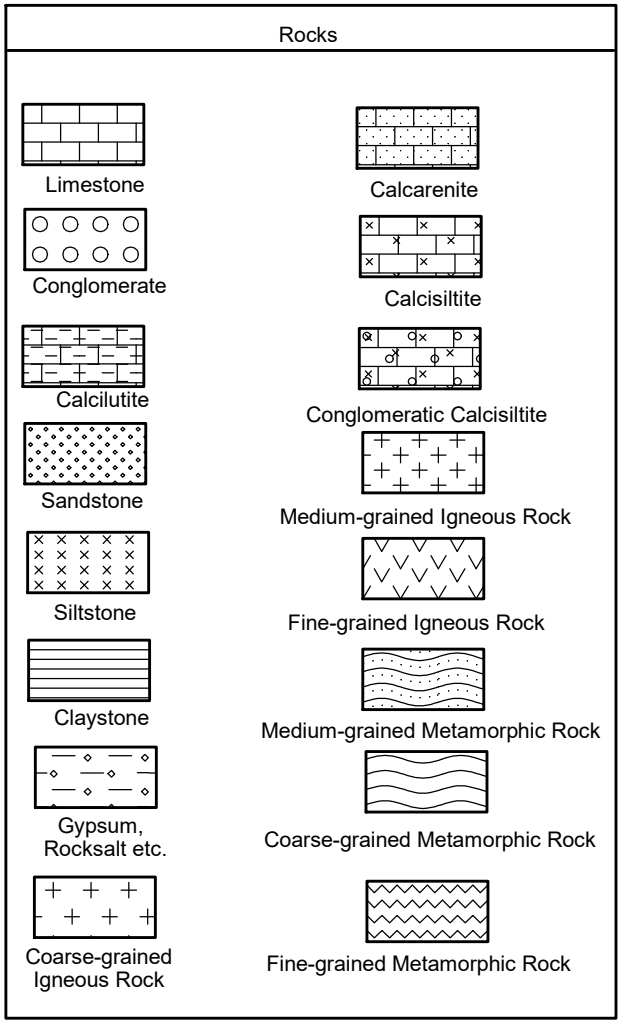
BOREHOLE LOGS (ZONE-12)

LEGEND OF THE BOREHOLE LOGS

Soil



Rocks



RELATIVE DENSITY OF GRANULAR SOIL

(BS 5930 : 2015 (Table 10)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 29º
4 - 10	Loose	29º - 30º
10 - 30	Medium dense	30º - 36º
30 - 50	Dense	36º - 41º
> 50	Very dense	> 41º

* After Peck, Hanson and Thornburn

CONSISTENCY OF COHESIVE SOIL

(BS 5930 : 2015 (Table 9)

Consistency	Undrained Shear Strength (kN/m²)
Extremely Low	< 10
Very Low	10 - 20
Low	20-40
Medium	40 - 75
High	75 - 150
Very High	150 - 300

ROCK STRENGTH CLASSIFICATION

BS EN-ISO 14689-1:2003 (Table 5)

Unconfined Compressive Strength (MN/m²)	Description
0.6-1.0	Extremely Weak
1.0-5.0	Very Weak
5 - 25.0	Weak
25.0 - 50.0	Medium Strong
50 - 100	Strong
100 - 250	Very Strong
> 250	Extremely Strong

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A34**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.218DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Acker 3** Core Diameter (mm): **76**	N **2,761,852.87** E **483,860.52**
Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Asif Khan**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	14	20	34				Dense, light brown, silty, fine SAND.	27.22	
2	SPT3	2 - 2.45	11	19	28	47						
3	SPT4	3 - 3.25	25/10	50	-	>50				Very dense, light brown, very gravelly, silty, medium SAND. Gravels are subangular medium to fine sandstone pieces.	25.22	
4	SPT5	4 - 4.17	25/7	50/10	-	>50						
5	CORE6	4.17 - 5.5					71	41	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	24.05	
6	CORE7	5.5 - 7					64	47	9			
7	CORE8	7 - 8.5					64	30	0			
8		8.5 - 10										
9	CORE9						65	40	0			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.50m below the existing ground level i.e. at R.L. +18.72m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**

Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A34**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+28.218DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Acker 3** Core Diameter (mm): **76**

N **2,761,852.87** E **483,860.52**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Asif Khan**

Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10		10 - 11.5								Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.	18.22	
	CORE10						65	47	0			
11		11.5 - 13										
	CORE11						60	40	27			
12												
		13 - 14.5										
13	CORE12						65	40	19			
14	SPT13	14.5 - 14.75	25/10	100	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are sandstone pieces.	13.72	
		14.75 - 16									13.47	
15	CORE14						38	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
16	SPT15	16 - 16.23	25/8	100	-	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are sandstone pieces.	12.22	
		16.23 - 17.23									11.99	
	CORE16						40	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, partially to distinctly weathered, fractures are extremely close to closely spaced and interbedded with cemented sand.		
17	SPT17	17.23 - 17.5	25/10	80	20/2	>100				Very dense, brown, slightly gravelly, silty, fine SAND. Gravels are sandstone pieces.	10.99	
		17.5 - 18.5									10.72	
18	CORE18						40	0	0	Very weak, brown, offwhite, calcareous SILTSTONE, locally interbedded with conglomeratic, distinctly weathered to destructured, fractures are extremely very closely to closely spaced.		
		18.5 - 19										
	CORE19						73	58	47			
19		19 - 20										
	CORE20						65	45	27			
20										END OF BORING	8.42	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 9.50m below the existing ground level i.e. at R.L. +18.72m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A35**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.162DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,954.88** E **484,073.86**
Date Started: **10/08/2015** Date Finished: **10/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	8	7	13	20				Medium dense to dense becoming very dense, light brown, slightly silty, medium to fine SAND.	30.16	
2	SPT3	2 - 2.45	16	17	20	37						
3	SPT4	3 - 3.45	11	17	21	38						
4	SPT5	4 - 4.45	21	19	28	47						
5	SPT6	5 - 5.38	24	30	20/8	>50						
6												
7	SPT7	6.5 - 6.77	25/11	41	9/1	>50				Very dense, light brown, very gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	24.66	
8	SPT8	8 - 8.25	25/10	50	-	>50						
9	CORE9	8.25 - 9.5					62	33	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	22.91	
10		9.5 - 11										

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +19.66m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A35**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **2/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.162DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **4.5**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,954.88** E **484,073.86**
Date Started: **10/08/2015** Date Finished: **10/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						57	27	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	21.16	
11		11 - 12.5										
	CORE11						62	10	0			
12		12.5 - 14										
13	CORE12						60	0	0			
14		14 - 15.5										
	CORE13						60	0	0			
15	SPT14	15.5 - 15.69	25/9	100/10	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	15.66	
		15.69 - 17								Extremely weak to very weak, light brown/ brown, calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	15.47	
16	CORE15						61	0	0			
17		17 - 18.5										
	CORE16						63	0	0			
18	SPT17	18.5 - 18.68	25/9	100/9	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	12.66	
		18.68 - 20								Extremely weak to very weak, light brown/ brown, calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	12.48	
19	CORE18						63	10	0			
20										END OF BORING	11.36	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 11.50m below the existing ground level i.e. at R.L. +19.66m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A36**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+28.734DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-3** Core Diameter (mm): **76**	N **2,761,810.10** E **483,990.30**
Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Syed Zahid Ali**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	10	14	24				Medium dense to dense becoming very dense, light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	27.73	
2	SPT3	2 - 2.45	10	20	21	41						
3	SPT4	3 - 3.45	14	16	24	40						
4	SPT5	4 - 4.3	25	50	-	>50						
5	SPT6	5 - 5.23	25/8	50	-	>50				Very dense, light brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine sandstone pieces.	23.73	
		5.25 - 6.75									23.48	
6	CORE7						40	31	15	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT8	6.75 - 6.98	25/7	84	16/1	>100					21.98	
7		6.98 - 8.25								Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	21.75	
	CORE9						43	30	13	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
8	SPT10	8.25 - 8.46	25/5	90	10/1	>100					20.48	
		8.46 - 9.75								Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	20.27	
9	CORE11						57	22	9	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		9.75 - 10.75										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.15m below the existing ground level i.e. at R.L. +18.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**

Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A36**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Equipment: **Mobile 40-3** Core Diameter (mm): **76**

Ground Level (m): **+28.734DMD**

Coordinates: N **2,761,810.10** E **483,990.30**

Date Started: **08/08/2015** Date Finished: **09/08/2015** Operator : **Syed Zahid Ali**

Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE12						40	14	0	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	18.73	
	SPT13	10.75 - 10.95	25/4	90	10/1	100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	17.98	
11		10.95 - 12.25									17.78	
	CORE14						31	21	10	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
12	SPT15	12.25 - 12.45	25/8	100/12	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	16.48	
		12.45 - 13.75									16.28	
13	CORE16						43	23	7	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT17	13.75 - 13.94	25/8	100/11	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	14.98	
14		13.94 - 15.25									14.79	
	CORE18						40	20	0	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
15	SPT19	15.25 - 15.42	25/7	100/10	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	13.48	
		15.42 - 16.25									13.31	
	CORE20						31	23	0	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
16	SPT21	16.25 - 16.4	25/6	100/9	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	12.48	
		16.4 - 17.75									12.33	
17	CORE22						57	27	7	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
		17.75 - 18.75										
18	CORE23						40	0	0			
	SPT24	18.75 - 18.87	25/6	100/6	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	9.98	
19		18.87 - 20-									9.86	
	CORE25						54	14	12	Extremely weak to very weak, light brown, fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
20										END OF BORING	8.93	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.15m below the existing ground level i.e. at R.L. +18.58m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A37**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+29.890DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 53-1** Core Diameter (mm): **76**	N **2,761,753.48** E **484,166.79**
Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Syed Nasir Shah**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	4	8	14	22				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	28.89	
2	SPT3	2 - 2.45	8	11	16	27						
3	SPT4	3 - 3.45	8	13	24	37						
4	SPT5	4 - 4.34	22	34	16/4	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.89	
5	SPT6	5 - 5.35	24	40	10/5	>50						
6	CORE7	5.35 - 6.5					84	65	47	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced.	24.54	
7	CORE8	6.5 - 8					64	33	27			
8	CORE9	8 - 9.5					63	21	11			
9		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +17.89m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**

Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A37**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+29.890DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 53-1** Core Diameter (mm): **76**

N **2,761,753.48** E **484,166.79**

Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Syed Nasir Shah**

Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						61	45	37	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to medium spaced.	19.89	
11		11 - 12.5										
	CORE11						61	20	0			
12		12.5 - 14										
13	CORE12						60	20	0			
14		14 - 15.5									15.89	
	CORE13						60	13	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to medium spaced.		
15		15.5 - 17										
16	CORE14						57	0	0			
17	SPT15	17 - 17.2	25/8	100/12	-	>100				Very dense, light brown, very gravelly, silty, fine SAND.	12.89	
		17.2 - 18.5								Gravels are subangular medium to fine sandstone pieces.	12.69	
	CORE16						59	17	0	Extremely weak to very weak, light brown, medium to fine grained, calcareous SANDSTONE, locally interbedded with conglomerate, distinctly weathered to destructured, fractures are extremely close to medium spaced.		
18		18.5 - 20										
19	CORE17						55	25	7			
20										END OF BORING	10.09	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.00m below the existing ground level i.e. at R.L. +17.89m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A38**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.645DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**	Coordinates:
Equipment: **Mobile 40-2** Core Diameter (mm): **76**	N **2,761,902.57** E **484,229.61**
Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Faiz Ullah Khan**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	4	9	10	19				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	31.65	
2	SPT3	2 - 2.45	8	9	15	24						
3	SPT4	3 - 3.45	17	21	27	48						
4	SPT5	4 - 4.45	13	19	24	43						
5	SPT6	5 - 5.45	17	21	29	50						
6												
7	SPT7	6.5 - 6.87	20	28	22/7	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	26.15	
8	SPT8	8 - 8.3	25/12	37	13/3	>50						
9	CORE9	8.3 - 9.5					80	37	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	24.35	
		9.5 - 11										
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.10m below the existing ground level i.e. at R.L. +19.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**

Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A38**

Sheet: **2/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.645DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **6.0**

Coordinates:

Equipment: **Mobile 40-2** Core Diameter (mm): **76**

N **2,761,902.57** E **484,229.61**

Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Faiz Ullah Khan**

Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	CORE10						38	0	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.	22.65	
11	SPT11	11 - 11.42	25/12	49	51	>100				Very dense, light brown, silty, fine SAND.	21.65	
		11.42 - 12.5									21.23	
12	CORE12						42	0	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
	SPT13	12.5 - 12.85	25/10	47	53/10	>100				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	20.15	
		12.85 - 14									19.80	
13	CORE14						61	30	0	Extremely weak to very weak, light brown, calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to closely spaced.		
14		14 - 15.5										
	CORE15						65	17	0			
15												
		15.5 - 17										
16	CORE16						65	37	7			
17		17 - 18.5										
	CORE17						63	0	0			
18												
		18.5 - 20										
19	CORE18						64	0	0			
										END OF BORING	12.85	
20												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.10m below the existing ground level i.e. at R.L. +19.55m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
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- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A39**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.025DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,699.86** E **484,323.84**
Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	7	9	16				Medium dense to dense becoming very dense, light brown, slightly silty, fine to medium SAND.	30.03	
2	SPT3	2 - 2.45	16	16	19	35						
3	SPT4	3 - 3.39	25	30	20/9	>50						
4	SPT5	4 - 4.37	25	32	18/7	>50						
5	SPT6	5 - 5.25	25/8	43	7/2	>50						
6	SPT7	6 - 6.21	25/8	50/13	-	>50				Very dense, light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	25.03	
7	SPT8	7 - 7.21	25/9	50/12	-	>50						
8	CORE9	7.21 - 8.5					52	13	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are very close to very closely spaced.	23.82	
9	CORE10	8.5 - 10					42	25	7			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +18.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A39**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **2/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+31.025DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,699.86** E **484,323.84**
Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10	SPT11	10 - 10.26	25/8	75	25/3	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	21.03	
		10.26 - 11.5					40	13	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are very close to very closely spaced.	20.77	
11	CORE12											
	SPT13	11.5 - 11.73	25/7	90	10/1	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	19.53	
		11.73 - 13					41	15	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are very close to very closely spaced.	19.30	
12	CORE14											
13	SPT15	13 - 13.2	25/9	100/11	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	18.03	
		13.2 - 14.5					46	10	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are very close to very closely spaced.	17.83	
14	CORE16											
	SPT17	14.5 - 14.69	25/9	100/10	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	16.53	
		14.69 - 16					43	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are very close to very closely spaced.	16.34	
15	CORE18											
16	SPT19	16 - 16.17	25/8	100/9	-	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	15.03	
		16.17 - 17.5					50	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are very close to very closely spaced.	14.86	
17	CORE20											
		17.5 - 19										
18	CORE21						33	0	0			
19	SPT22	19 - 19.16	25/8	100/8	-	>100				(19.00-19.20m) Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.		
		19.16 - 20										
	CORE23						55	0	0			
20										END OF BORING	11.23	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 12.50m below the existing ground level i.e. at R.L. +18.53m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**

Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**

BOREHOLE No.: **BH-A40**

Sheet: **1/2**

Boring Method: **Rotary Drilling**

Ground Level (m): **+32.101DMD**

Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**

Coordinates:

Equipment: **Mobile 40-1** Core Diameter (mm): **76**

N **2,761,851.56** E **484,380.12**

Date Started: **10/08/2015** Date Finished: **10/08/2015** Operator : **Syed Wasil Shah**

Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	7	9	9	18				Medium dense to dense, light brown, slightly silty, fine to medium SAND.	31.10	
2	SPT3	2 - 2.45	12	14	16	30						
3	SPT4	3 - 3.45	16	22	26	48						
4	SPT5	4 - 4.37	25	32	18/7	>50				Very dense, light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	28.10	
5	SPT6	5 - 5.29	25/11	40	10/3	>50						
6	SPT7	6 - 6.26	25/9	41	9/2	>50						
7	SPT8	7 - 7.24	25/8	46	4/1	>50						
		7.25 - 8.75									24.85	
8	CORE9						65	33	0	Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		8.75 - 10.25										
9	CORE10						63	20	8			
10												

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.00m below the existing ground level i.e. at R.L. +19.10m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

- ☒ SPT : Standard Penetration Test
- ☒ SPT(C): SPT with cone
- ☒ B : Bulk Sample
- ▮▮ CORE : Core Sample
- □ IP: Initial Penetration
- ▼ : Ground Water Table
- TCR: Total Core Recovery
- SCR: Solid Core Recovery
- RQD: Rock Quality Designation

Logged By : ABDULLA AFSAL

Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

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BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A40**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **2/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+32.101DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **3.0**	Coordinates:
Equipment: **Mobile 40-1** Core Diameter (mm): **76**	N **2,761,851.56** E **484,380.12**
Date Started: **10/08/2015** Date Finished: **10/08/2015** Operator : **Syed Wasil Shah**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Extremely weak to very weak, light brown, medium to fine grained, siliceous CALCARENITE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	22.10	
		10.25 - 11.75										
11	CORE11						63	25	0			
		11.75 - 13.25										
12	CORE12						65	20	7			
13												
		13.25 - 14.75										
14	CORE13						61	11	0			
		14.75 - 16.25										
15	CORE14						40	23	7			
16												
	SPT15	16.25 - 16.5	25/10	100	-	>100				Very dense, brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	15.85	
		16.5 - 17.75									15.60	
17	CORE16						47	12	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
		17.75 - 18.75										
18	CORE17						33	0	0			
	SPT18	18.75 - 19	25/10	100	-	>100				Very dense, brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	13.35	
19		19 - 20									13.10	
	CORE19						33	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.		
20										END OF BORING	12.30	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 13.00m below the existing ground level i.e. at R.L. +19.10m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A41**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **1/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.821DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **10.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,651.47** E **484,476.98**
Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
0	B1	0 - 0.5	-	-	-	-				Light brown, silty, fine SAND.		
1	SPT2	1 - 1.45	6	9	11	20				Medium dense to dense, light brown, slightly silty, medium to fine SAND.	29.82	
2	SPT3	2 - 2.45	6	6	9	15						
3	SPT4	3 - 3.45	7	10	13	23						
4	SPT5	4 - 4.45	10	14	17	31						
5	SPT6	5 - 5.45	13	20	23	43						
6												
7	SPT7	6.5 - 6.95	14	20	22	42						
8	SPT8	8 - 8.45	13	19	25	44						
9												
10	SPT9	9.5 - 9.95	15	19	25	44						

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.80m below the existing ground level i.e. at R.L. +20.02m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
⧓ SPT(C):	SPT with cone	▼ :	Ground Water Table
⧓ B	: Bulk Sample	TCR:	Total Core Recovery
▮▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

BOREHOLE LOG

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	BOREHOLE No.: **BH-A41**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)**	Sheet: **2/2**
Location: **PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.**	
Boring Method: **Rotary Drilling**	Ground Level (m): **+30.821DMD**
Boring Diameter: **125/99mm** Drill Fluid : **Mud** Casing Dia (mm) : **140** Casing Depth (m) : **10.5**	Coordinates:
Equipment: **Mobile B-31** Core Diameter (mm): **76**	N **2,761,651.47** E **484,476.98**
Date Started: **09/08/2015** Date Finished: **09/08/2015** Operator : **Ijaz Khan**	Report No.: **XSD/15-0143-12**

Scale (m)	Samples: Type and Number	Samples: Depth (m)	* SPT Records: Field Records 0-15 cm	15-30 cm	30-45 cm	N Blows	Core Recovery: TCR (%)	SCR (%)	RQD (%)	Description of Strata	Reduced Level (m)	Legend
10										Very dense, light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.	20.82	
11	SPT10	11 - 11.35	23	34	15/5	>50						
12	SPT11	12.5 - 12.74	25/9	50	-	>50						
13	CORE12	12.8 - 14.3					60	0	0	Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	18.02	
14		14.3 - 15.8										
15	CORE13						60	0	0			
16	SPT14	15.8 - 16.04	25/7	85	15/2	>100				Very dense, light brown, sandy, GRAVEL. Gravels are subangular medium to fine sandstone pieces.	15.02	
		16.04 - 17.3								Extremely weak to very weak, light brown, medium to fine grained calcareous SANDSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	14.78	
17	CORE15						63	0	0			
		17.3 - 18.8								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	13.52	
18	CORE16						20	16	7			
19	SPT17	18.8 - 19	25/8	100/12	-	>100				Very dense, brown, sandy, silty, GRAVEL. Gravels are subangular medium to fine siltstone pieces.	12.02	
		19 - 20								Extremely weak to very weak, brown, conglomeratic SILTSTONE, distinctly weathered to destructured, fractures are extremely close to very closely spaced.	11.82	
	CORE18						57	22	20			
20										END OF BORING	11.02	

REMARKS:

* Ground level is related to Dubai Municipality Datum (DMD).
* Ground water table was encountered at a depth of 10.80m below the existing ground level i.e. at R.L. +20.02m DMD.
* In cases of refusal under seating drive, the test drive is commenced immediately after completion of penetration under seating drive.

SAMPLE KEY

☒ SPT	: Standard Penetration Test	□ IP:	Initial Penetration
☒ SPT(C):	SPT with cone	▼ :	Ground Water Table
☒ B	: Bulk Sample	TCR:	Total Core Recovery
▮ CORE	: Core Sample	SCR:	Solid Core Recovery
		RQD:	Rock Quality Designation

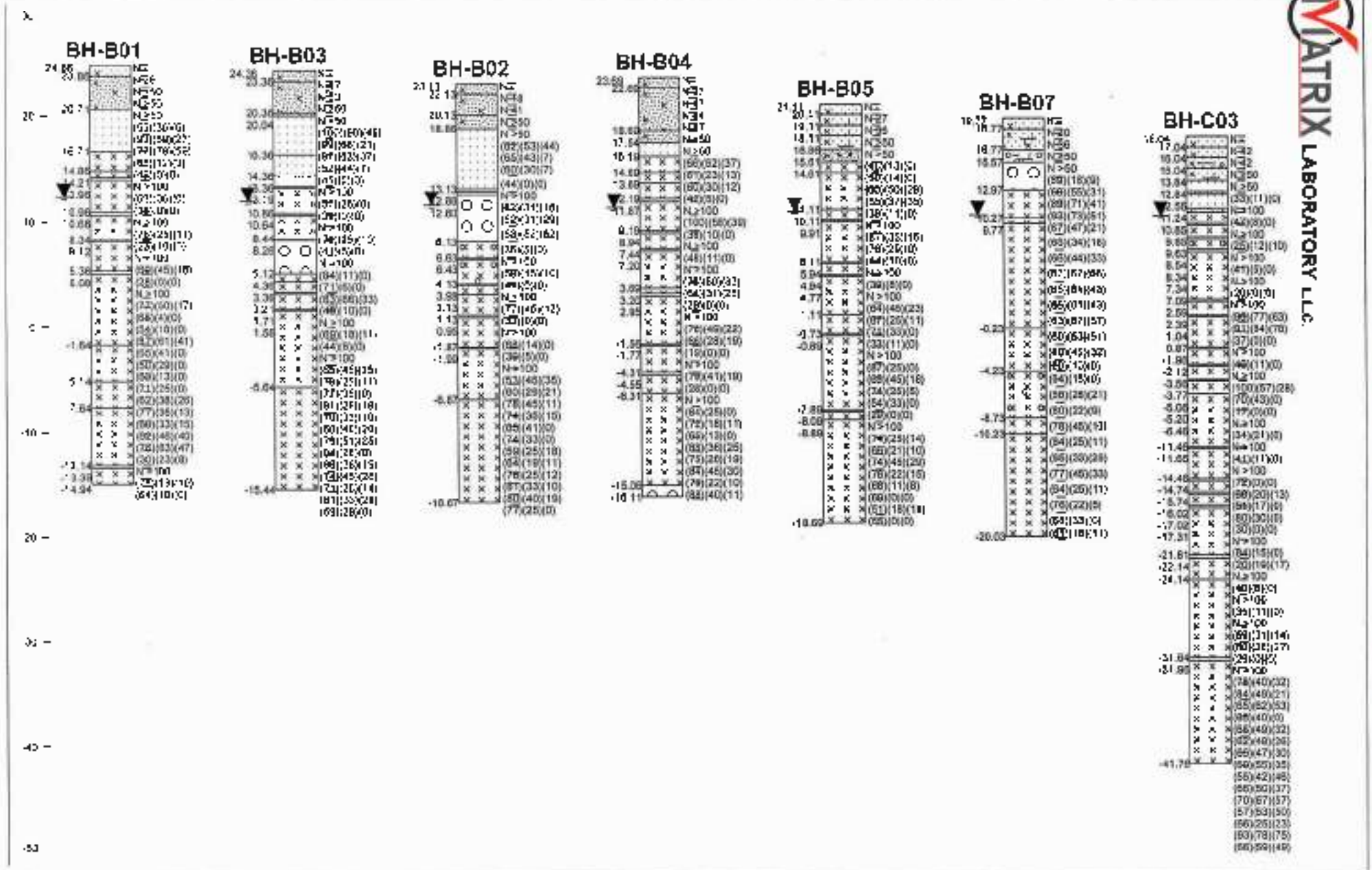
Logged By : ABDULLA AFSAL | Checked By : ENGR. RABIH DAKWAR

APPENDIX B1

GEOLOGICAL CROSS SECTIONS

APPENDIX B1-1

GEOLOGICAL CROSS SECTIONS (ZONE 1)

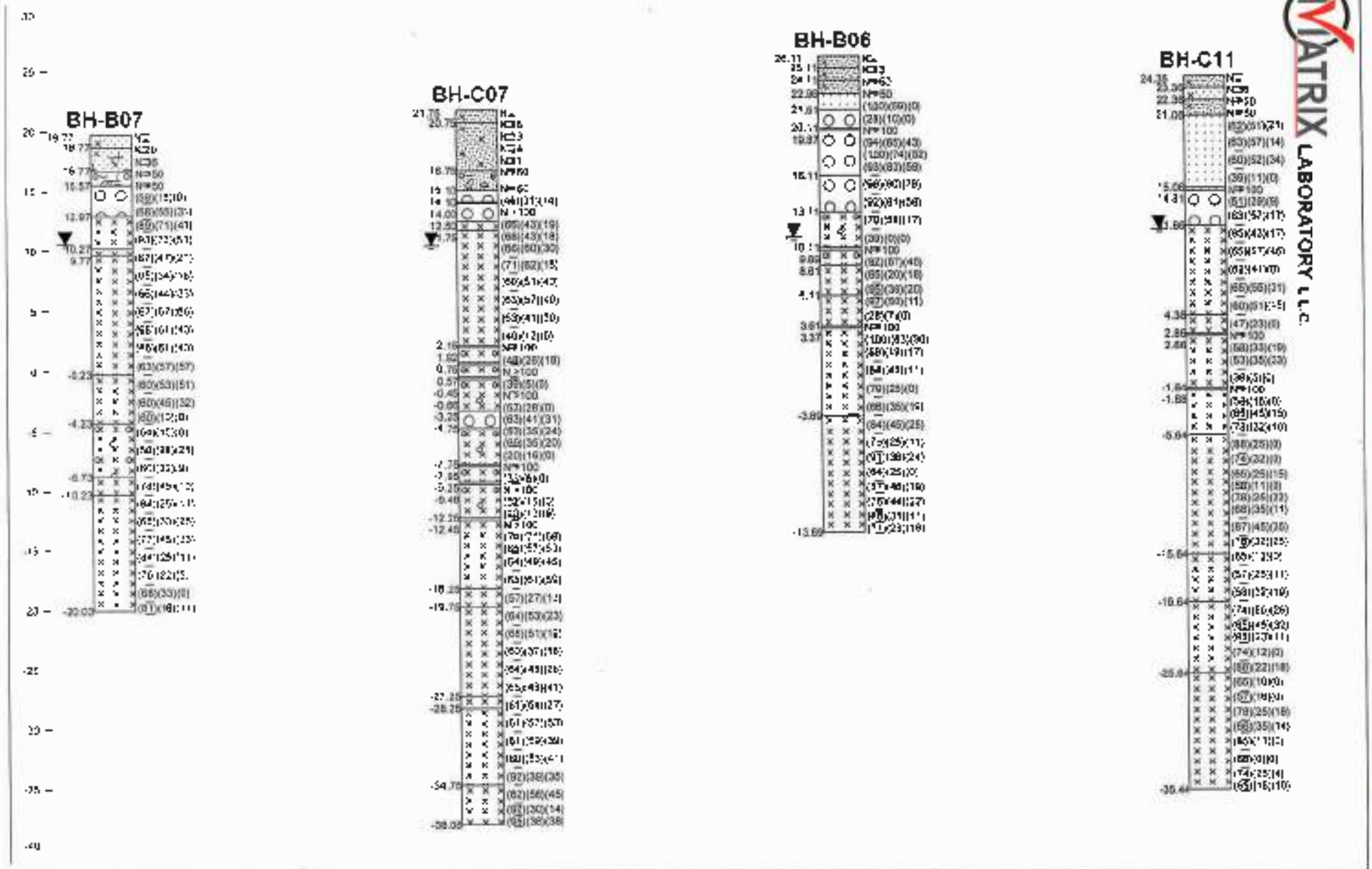


MATRIX LABORATORY LLC.

Legend : (TCR)(SCR)(RQD)

SECTION A-A'

Project:	PROPOSED PV1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)	Vertical Scale:	1:500
Location	PLOT NO. 5219784, WADINAT AL MATAAR, DUBAI U.A.E.	Project Number:	XSDV16-0143-1



MATRIX LABORATORY L.L.C.

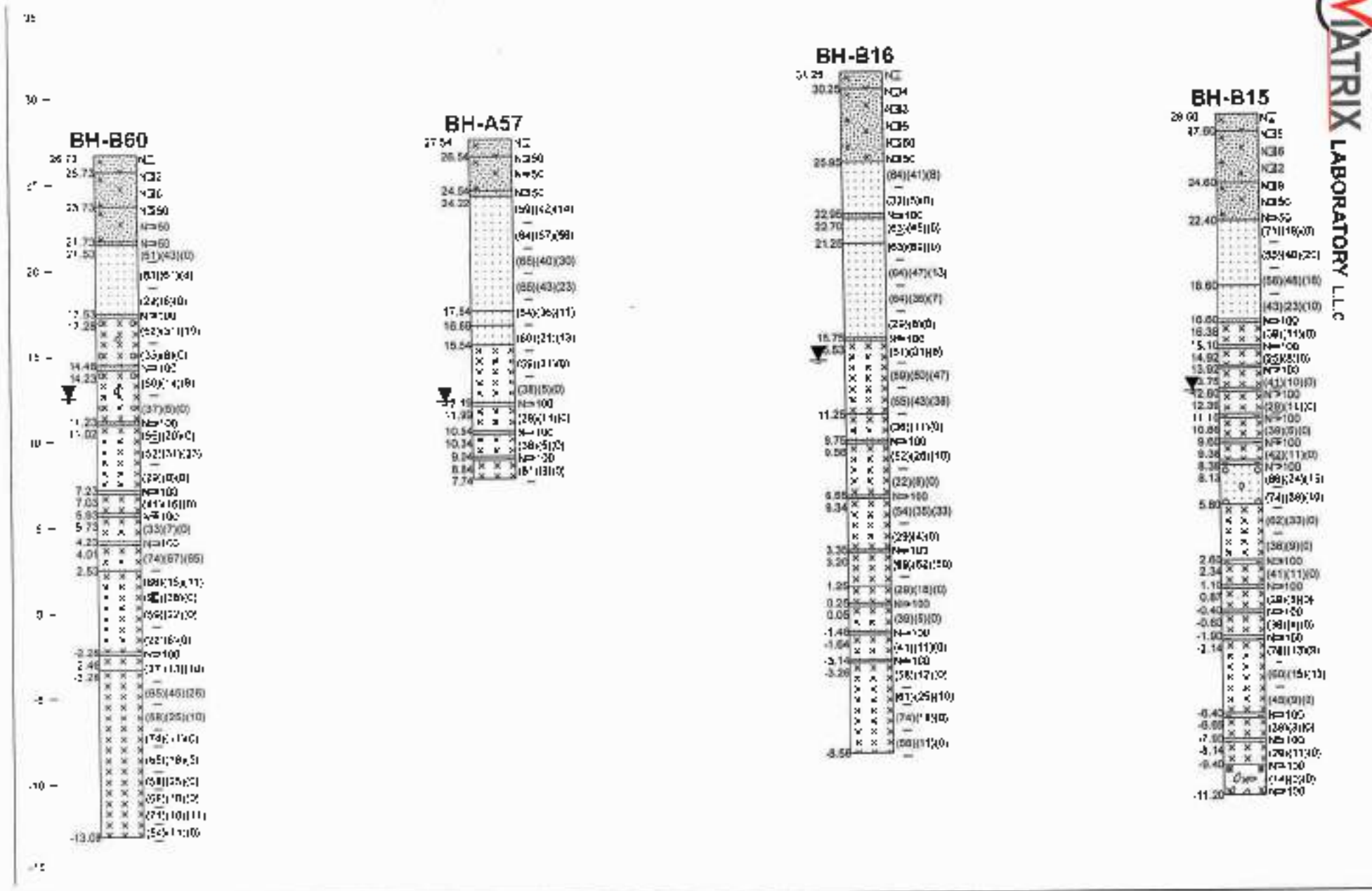
Legend : (TCR)|SCR|(RQD)

SECTION B-B'

Project	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)	Vertical Scale:	1:438
Location	PLOT NO. 521-786, MADINAT AL MATAAR, DUBAI, U.A.E	Project Number	XSD15-0143-1

APPENDIX B1-2

GEOLOGICAL CROSS SECTIONS (ZONE 2)

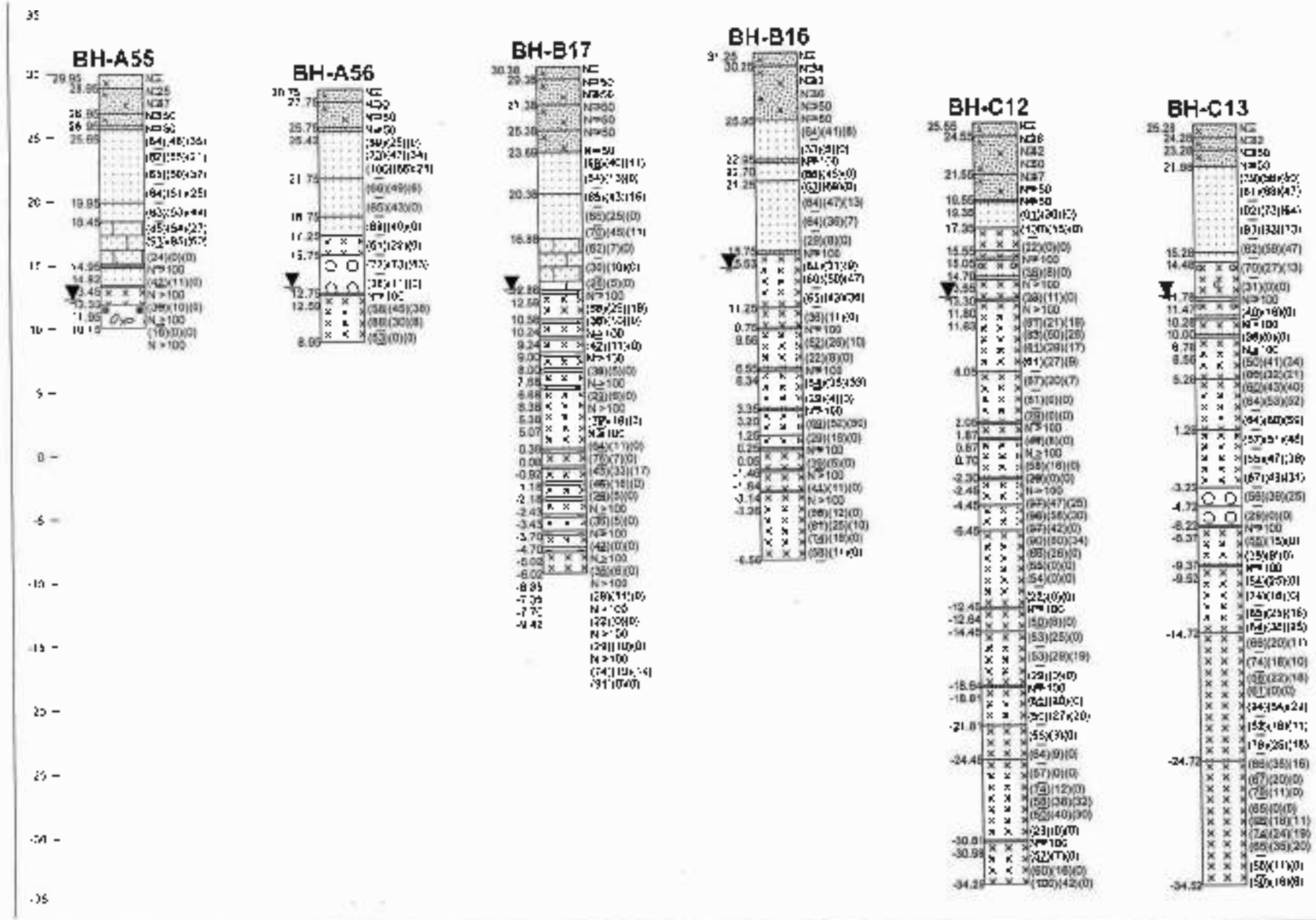


MATRIX LABORATORY L.L.C

Legend : (TCR)|SCR|(RQD)

SECTION A-A'

Project:	PROPOSED FN1403-DTC-LA-EXPO DEVELOPMENT (ZONE 2)	Vertical Scale:	1:313
Location:	PLOT NO: 5210784, MALHNAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSD15-0143-2



Legend : |TCR|SCR|(RQD)

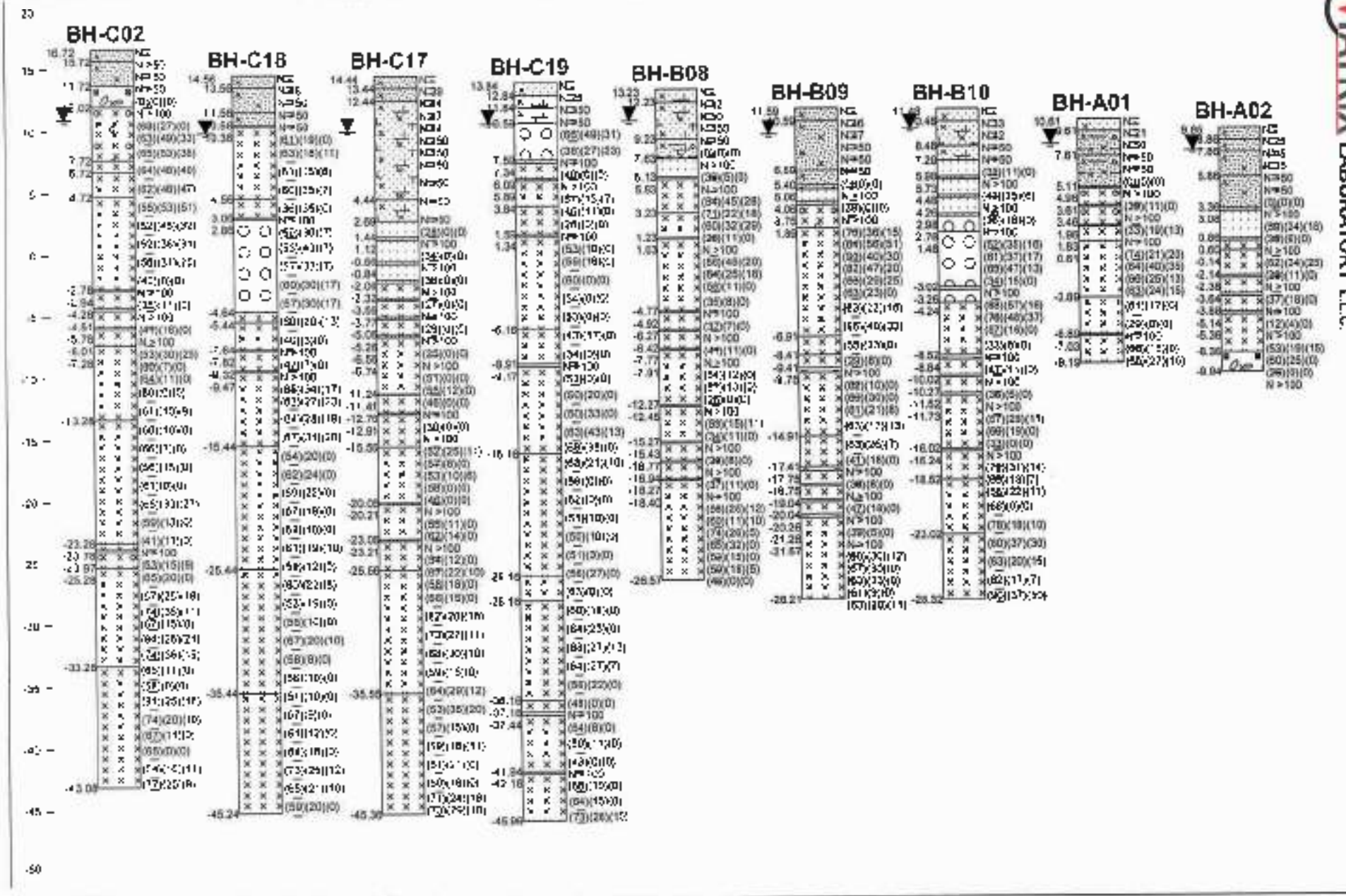
SECTION B-B'

Project:	PROPOSED FN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)	Vertical Scale:	1:438
Location:	P. O. BOX NO. 5219784 MALINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSD15-0143-2

MATRIX LABORATORY L.L.C.

APPENDIX B1-3

GEOLOGICAL CROSS SECTIONS (ZONE 3)

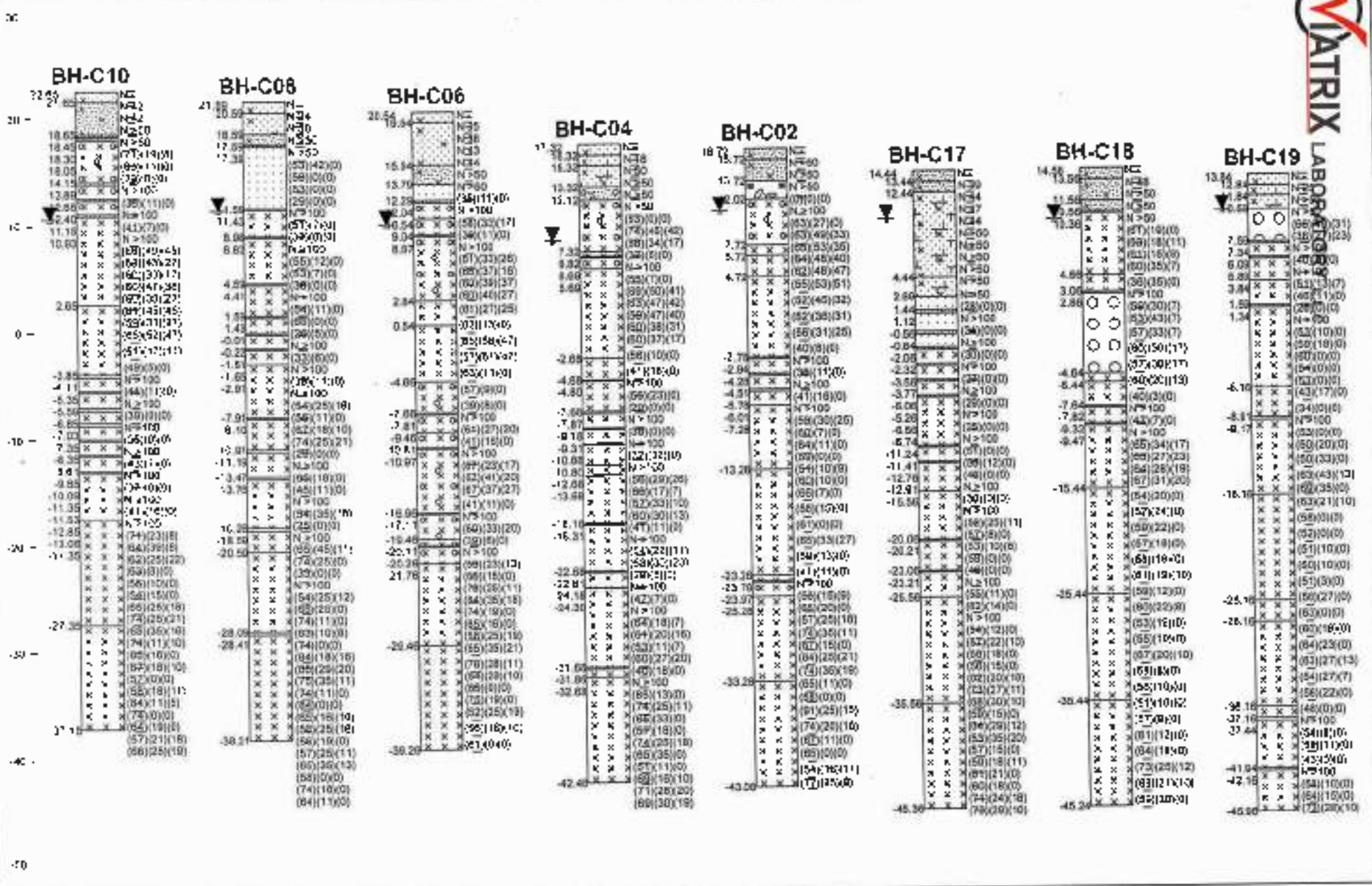


MATRIX LABORATORY L.L.C.

Legend : (TCR|SCR|RQD)

SECTION A-A'

Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)	Vertical Scale:	1:400
Location:	PLOT NO. 5219/84, MADINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSD15-0143-3



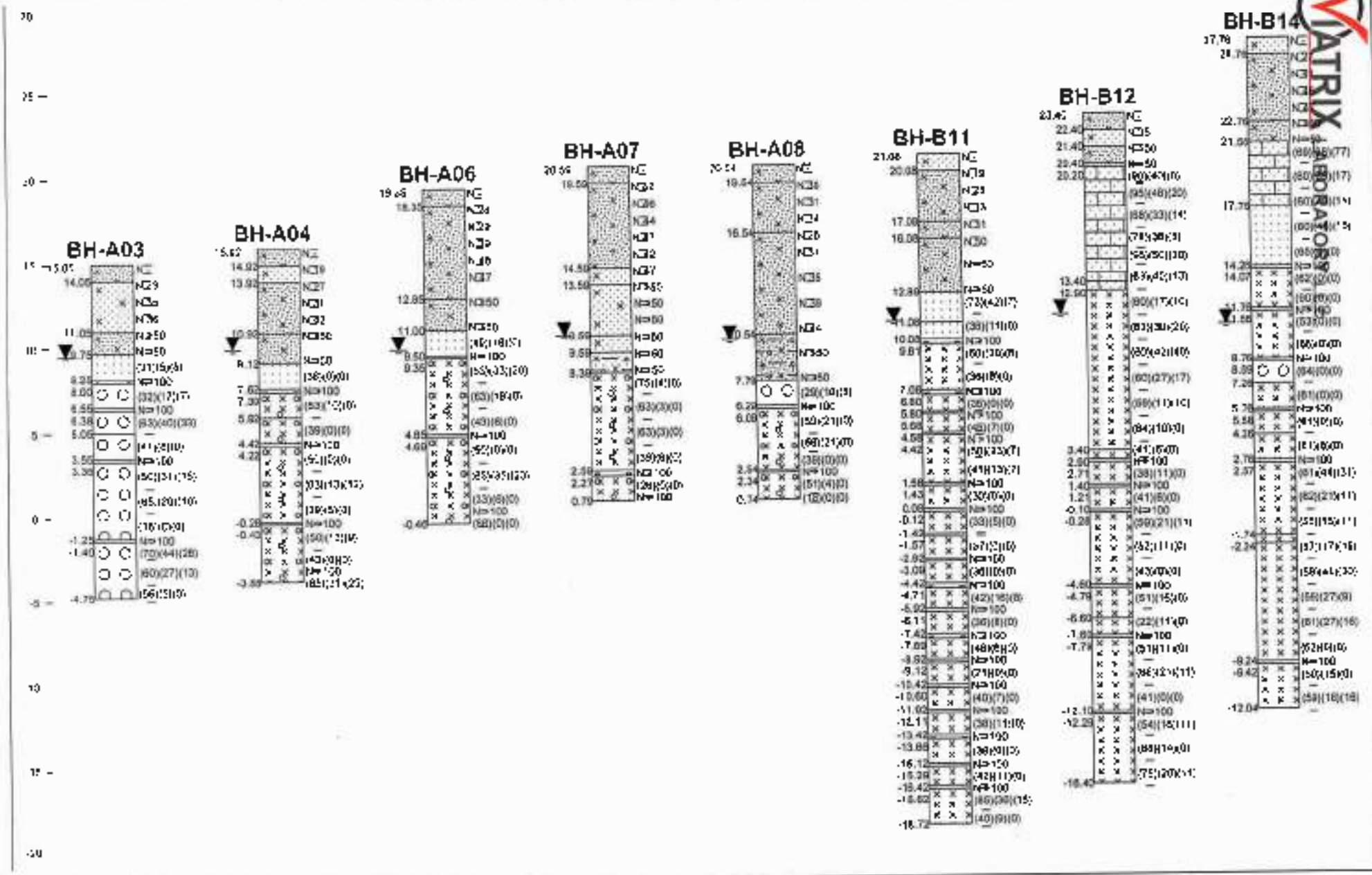
Legend : (TCR)(SCR)(RQD)

SECTION B-B'

Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)	Vertical Scale:	1:500
Location:	P. OT NO. S21 9734, MAJINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSO15-0143-3

APPENDIX B1-4

GEOLOGICAL CROSS SECTIONS (ZONE 4)

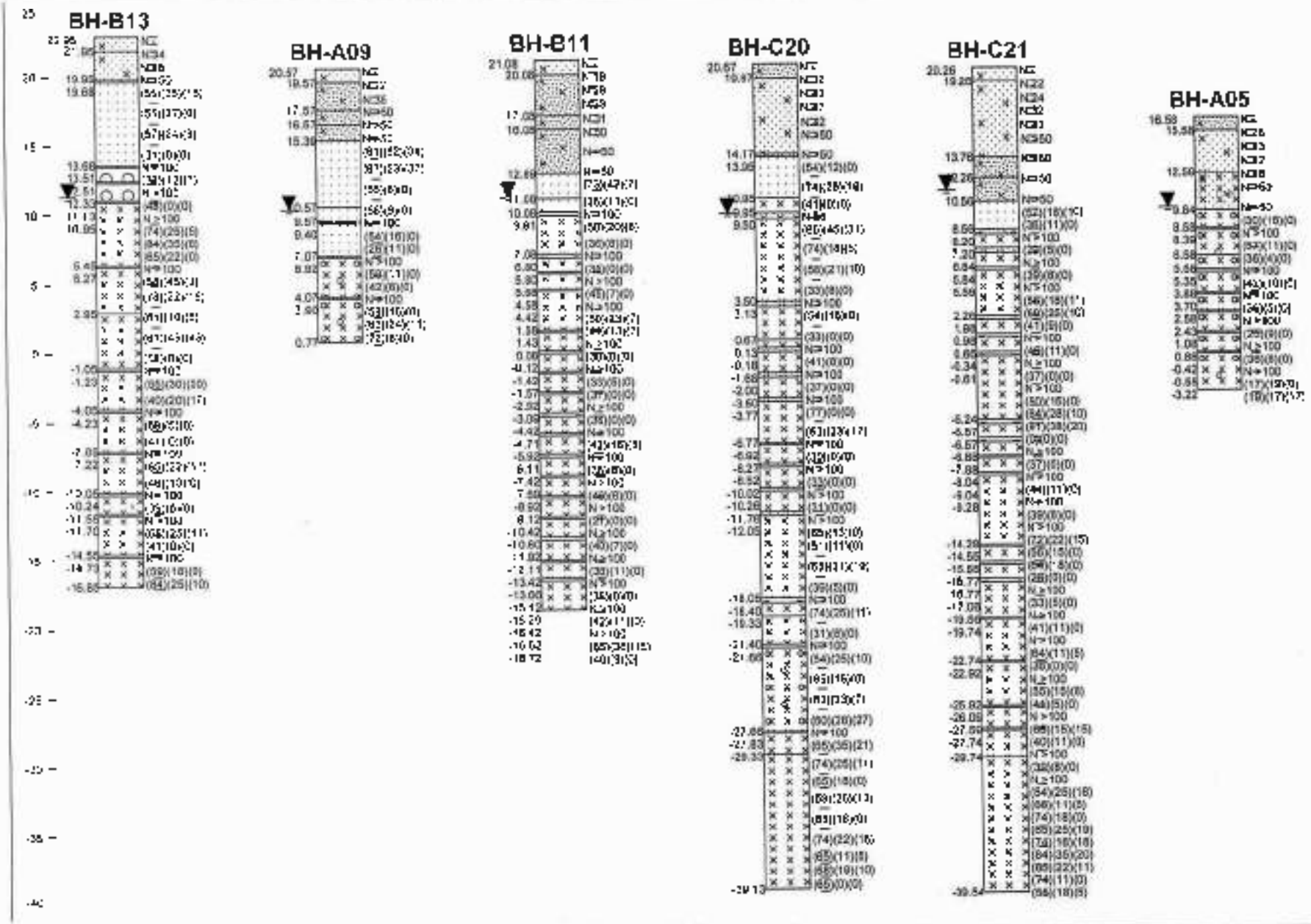


Legend : (TCR)|SCR|(RQD)

SECTION A-A'

Project: PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)	Vertical Scale: 1:313
Location: PLOT NO. 5210764 MADINAT AL NATAAR, OJBAL U.A.E.	Project Number: XSD15-0143-4

MATRIX LABORATORY L.L.C.



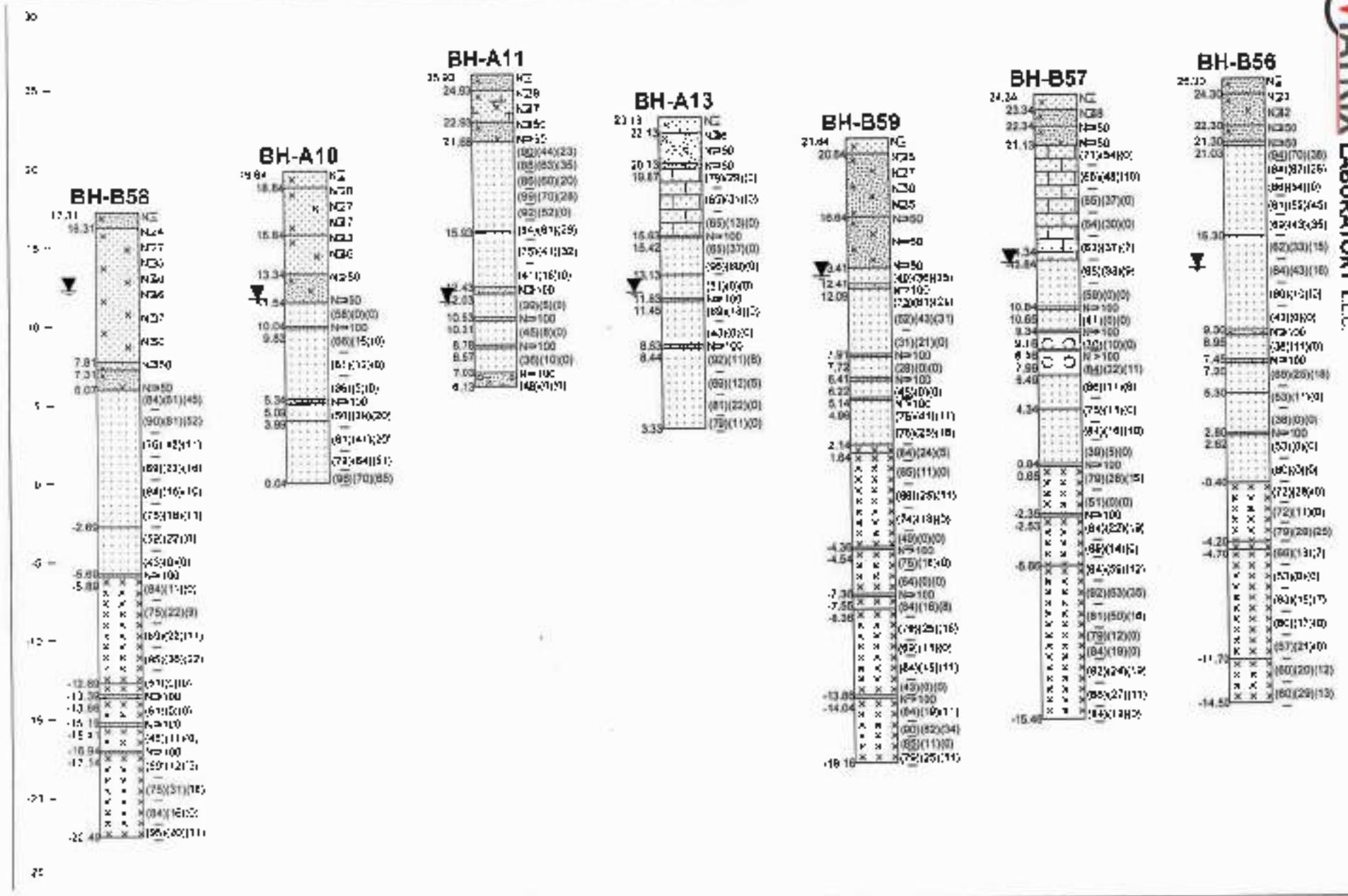
SECTION B-B'

Legend : (TCR)|(SCR)|(RQD)

Project	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)	Vertical Scale:	1:400
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSD/15-0143-4

APPENDIX B1-5

GEOLOGICAL CROSS SECTIONS (ZONE 5)

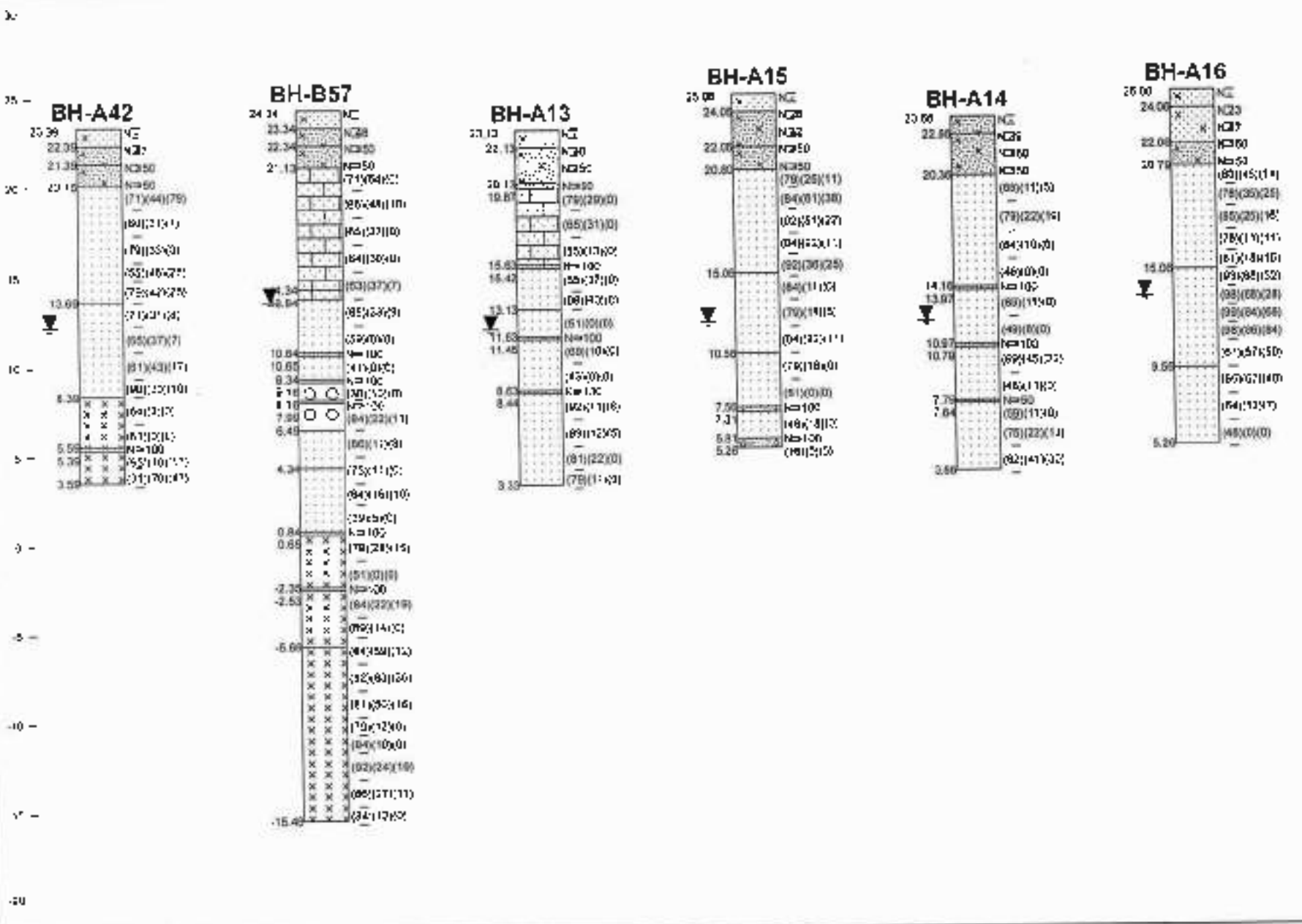


MATRIX LABORATORY L.L.C.

Legend : (TCR||SCR(RQD)

SECTION A-A'

Project:	PROPOSED PV1400-DTCJA-EXPO DEVELOPMENT (ZONE 5)	Vertical Scale:	1:344
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E	Project Number:	X5D/15-0143-5



MATRIX LABORATORY L.L.C.

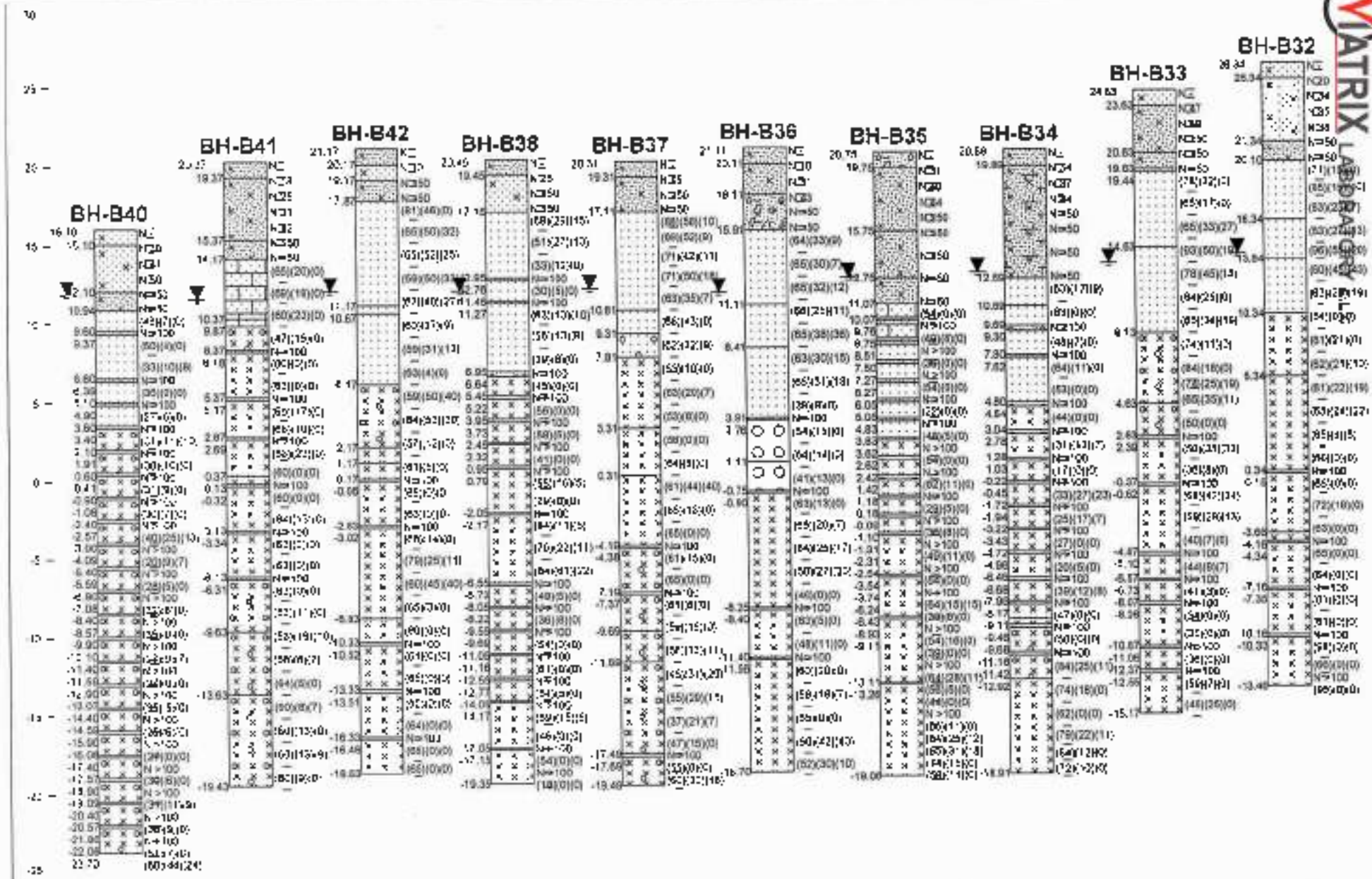
Legend : (TCR)(SCR)(RQD)

SECTION B-B'

Project:	PROPOSED FM1403-DTCJA/EXPO DEVELOPMENT (ZONE 5)	Vertical Scale:	1:313
Location:	PLOT NO. 5719784, MADINAT AL WATAAR, DUBAI, U.A.E	Project Number:	XSD15-0143-S

APPENDIX B1-6

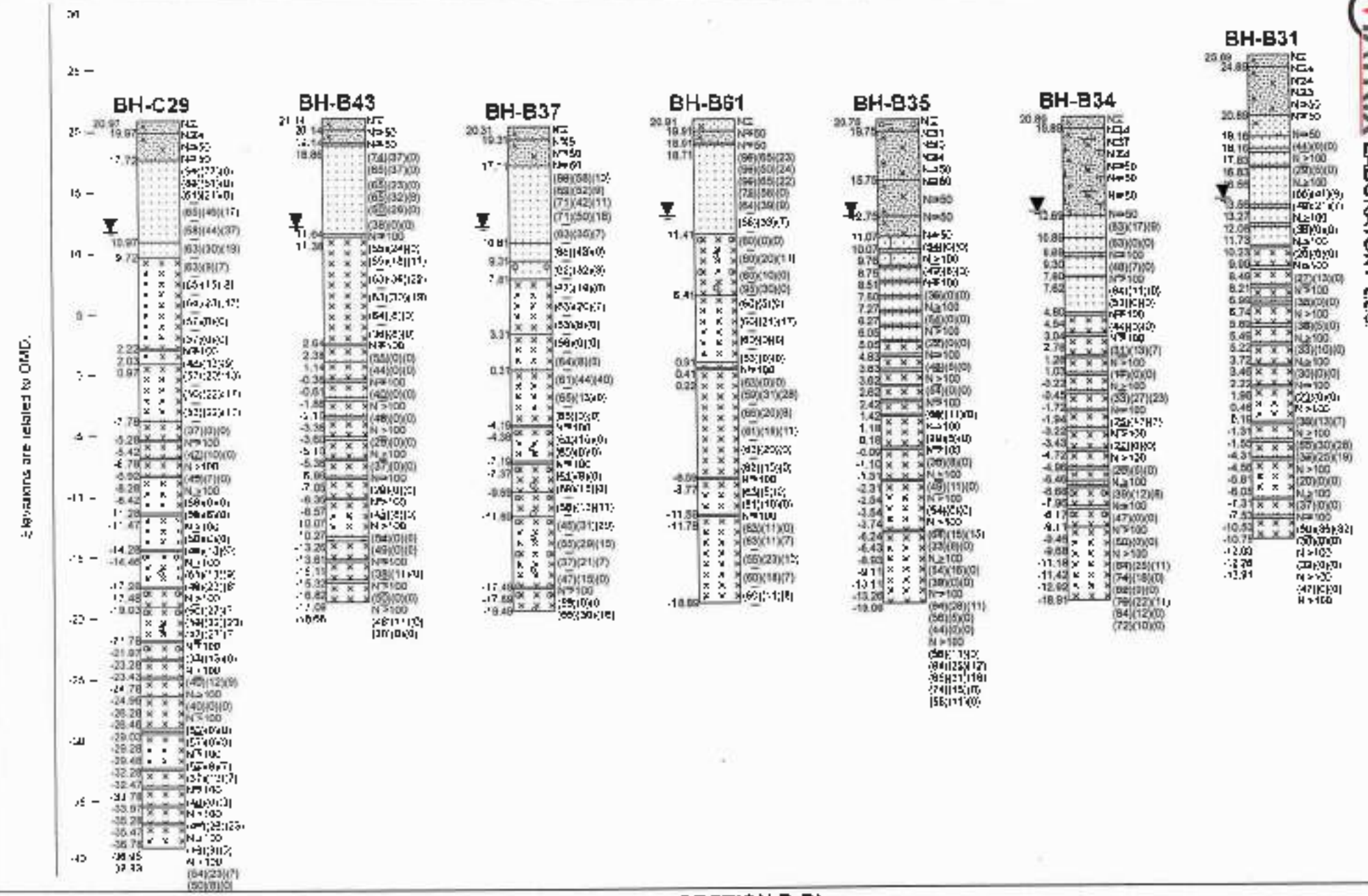
GEOLOGICAL CROSS SECTIONS (ZONE 6)



Legend : |TCR|SCR|RQD|

SECTION A-A'

Project:	PROPOSED PV1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)	Vertical Scale:	1:344
Location:	PLOT NO: 5212784, MADINAT AL MATAAR, DUBAI, U.A.E	Project Number:	XSD16-01434



Legend : (TCR)(SCR)(RQD)

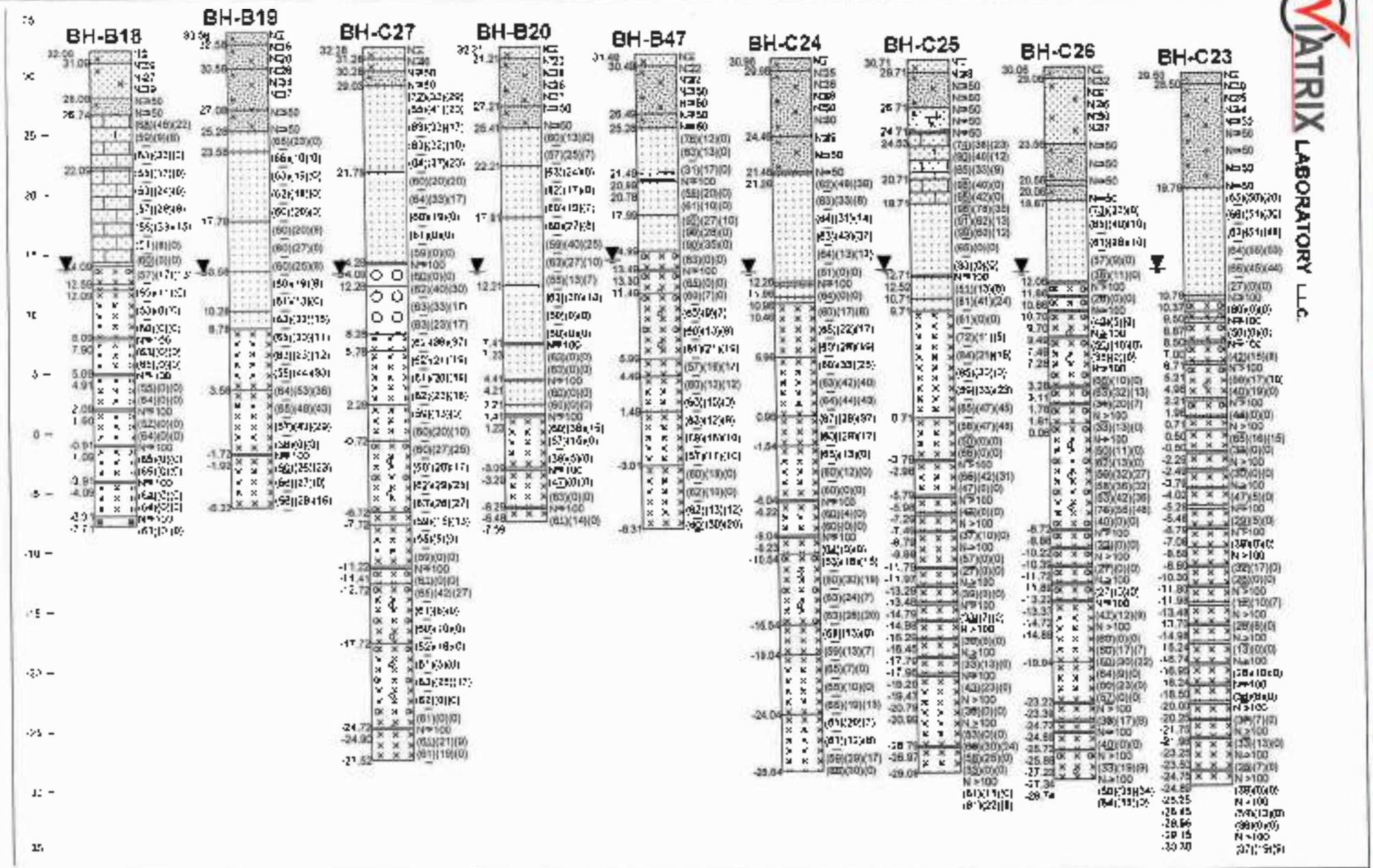
SECTION B-B'

Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)	Vertical Scale:	1:438
Location:	PLOT NO. 5219784, MADINAT AL MATAAK, DUBAI, U.A.E.	Project Number:	XSO15-0143-6

MATRIX LABORATORY L.L.C.

APPENDIX B1-7

GEOLOGICAL CROSS SECTIONS (ZONE 7)

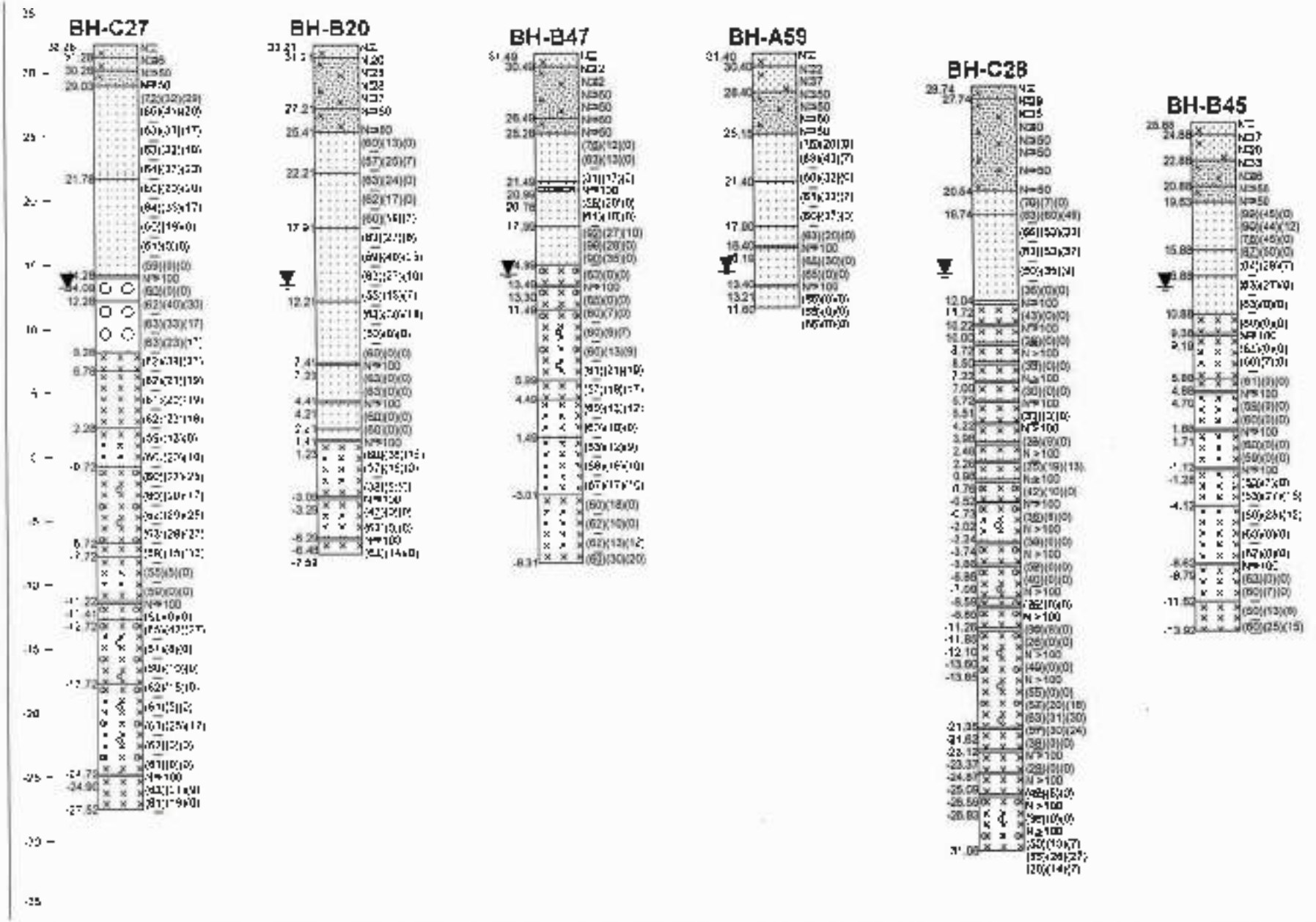


MATRIX LABORATORY L.L.C.

Legend : (TCR)(SCR)(RQD)

SECTION A-A'

Project:	PROPOSED PN1403-DTCJA EXPO DEVELOPMENT (ZONE 7)	Vertical Scale:	1:400
Location:	PLOT NO. 5210784, MADINAT AL MATAAR, DUBAI, U.A.E	Project Number:	XSD15-0143-7



Legend : (TCR)(SCR)(RQD)

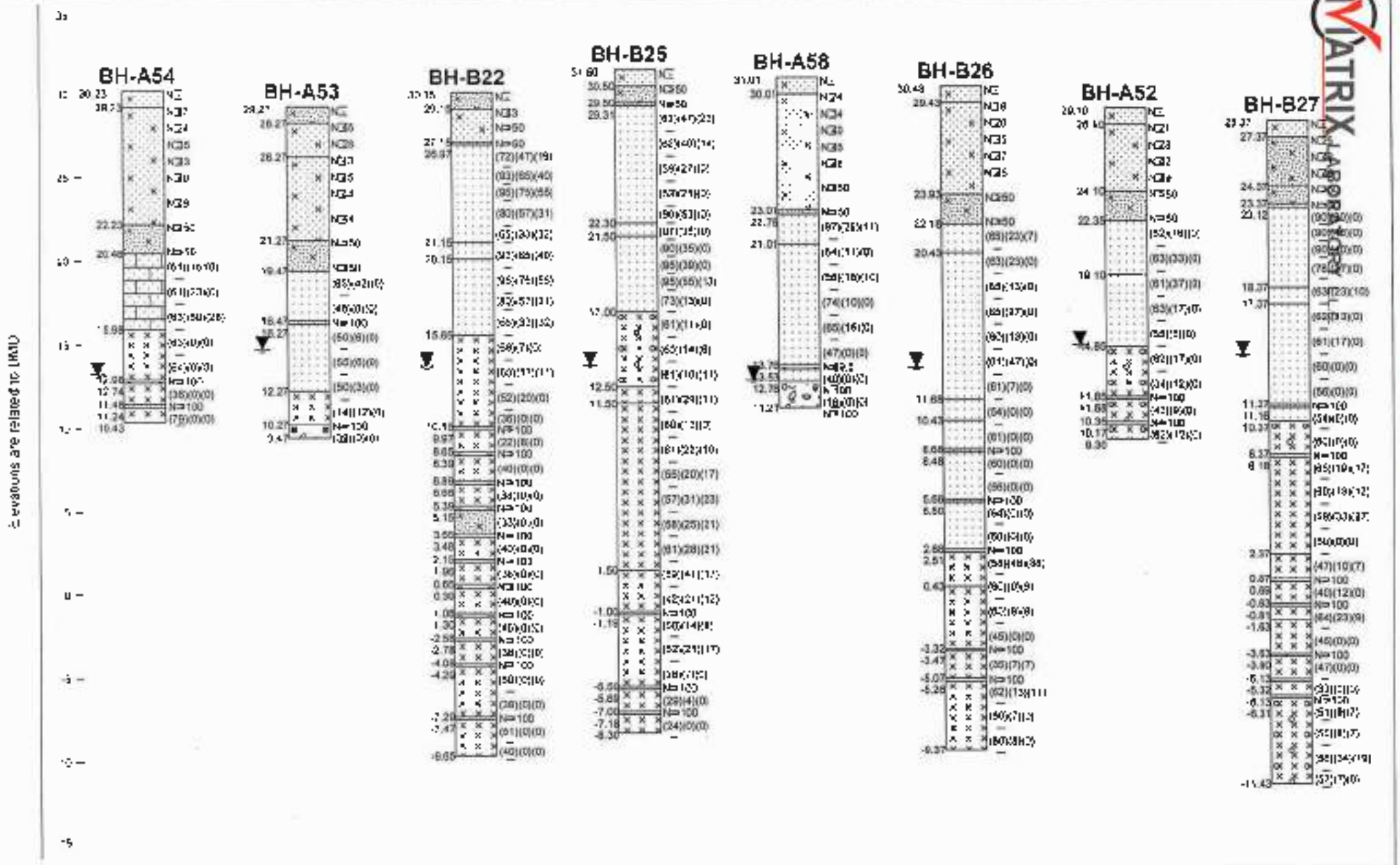
SECTION B-B'

Project:	PROPOSED PLOT NO. 403-D-03 JA-EXPO DEVELOPMENT (ZONE 7)	Vertical Scale:	1:400
Location:	PLOT NO. 403-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	KSD/13-0143-7

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APPENDIX B1-8

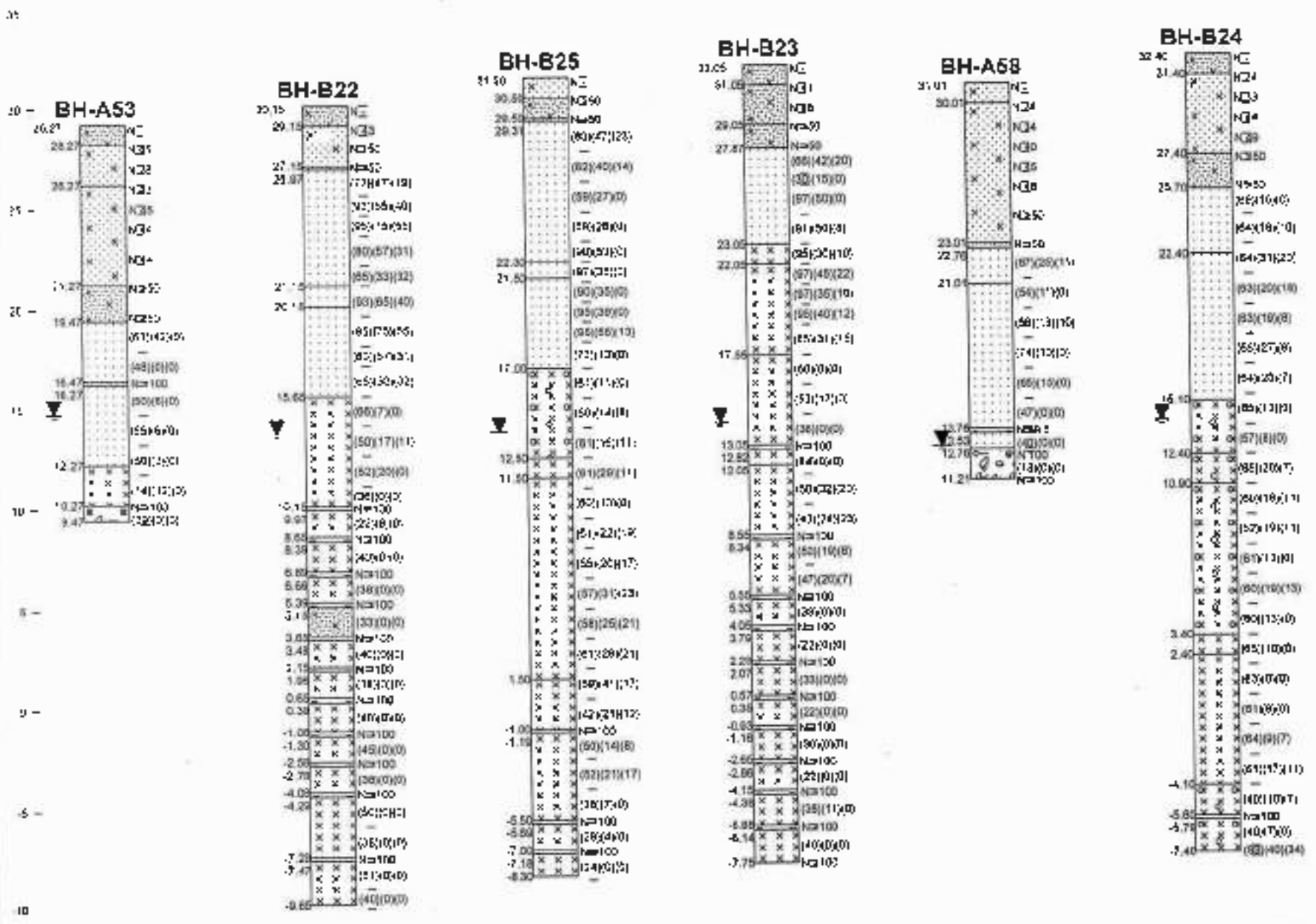
GEOLOGICAL CROSS SECTIONS (ZONE 8)



Legend (TCR)(SCR)(RQD)

SECTION A-A'

Project	PROPOSED PA1400-DTCCA-EXPO DEVELOPMENT (ZONE 9)	Vertical Scale:	1:313
Location	PLOT NO 5219734 MADINAT AL MATAAR, DUBAI, U.A.E	Project Number	XSD15-0143-B



SECTION B-B'

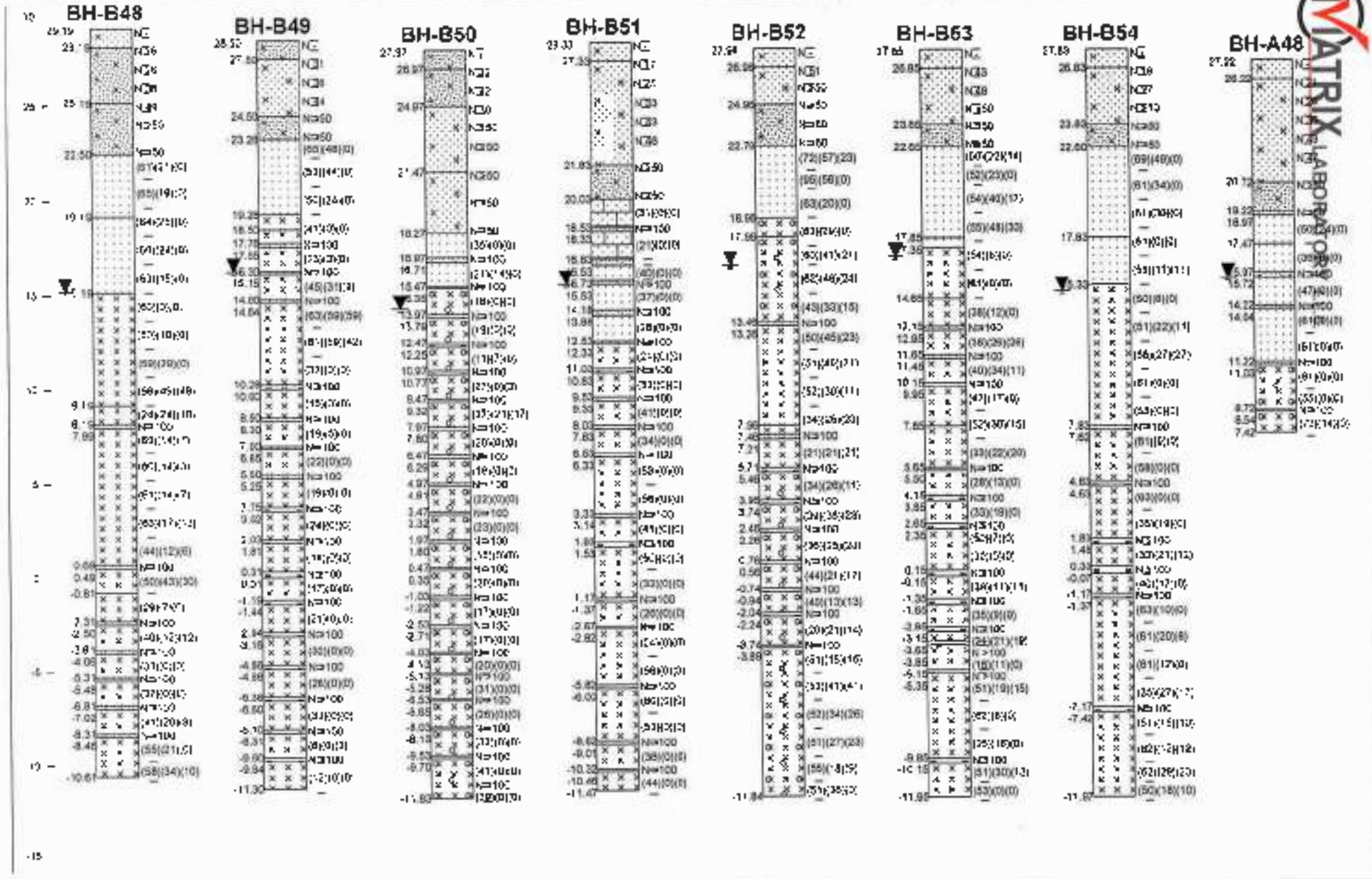
Legend : (TCR)(SCR)(RQD)

Project:	PROPOSED PN 402-DTCJA-EXPO DEVELOPMENT (ZONE B)	Vertical Scale:	1:201
Location	PLOT NO. 22-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XBD15-0149-8

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APPENDIX B1-9

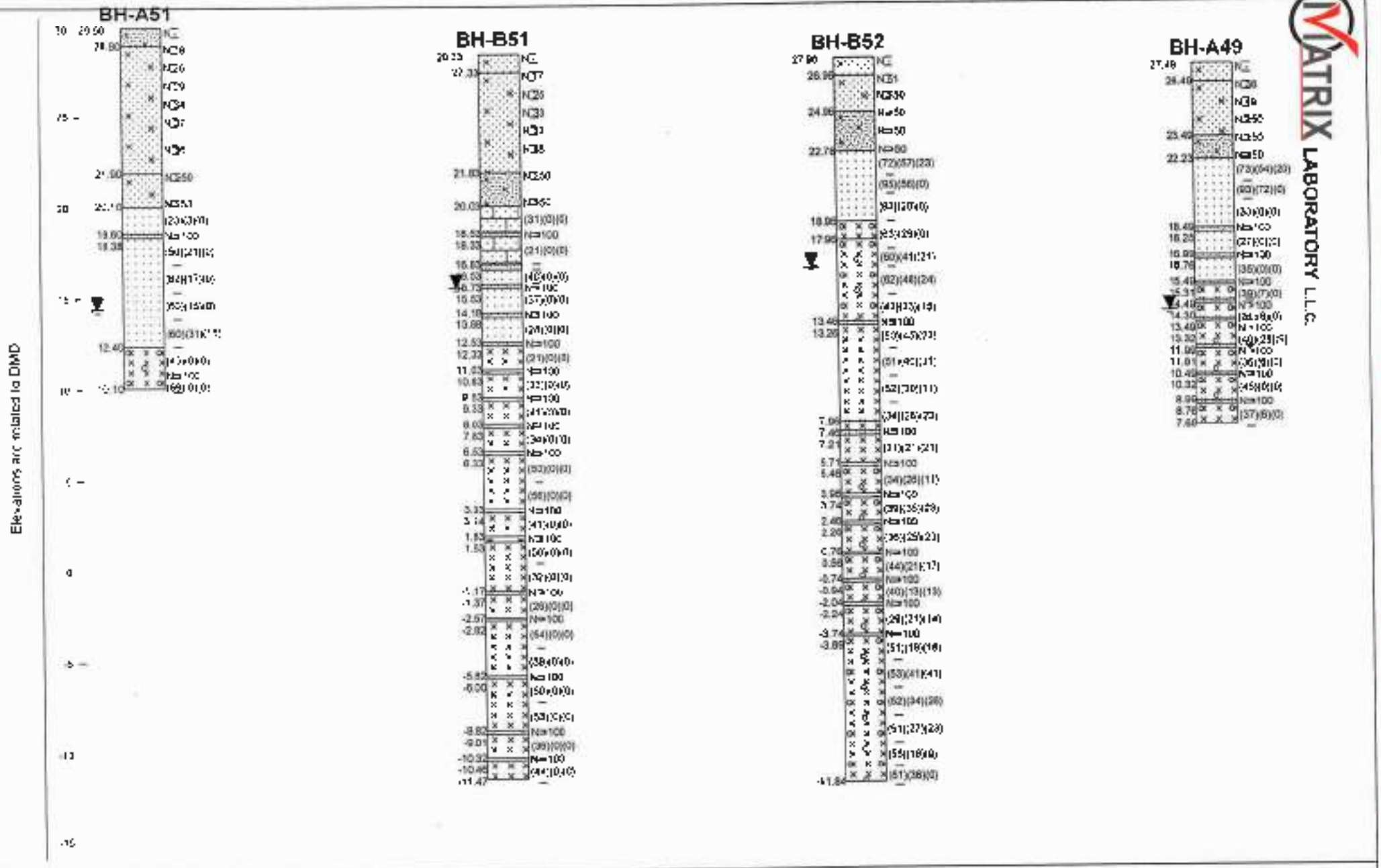
GEOLOGICAL CROSS SECTIONS (ZONE 9)



Legend : (TCR)(SCR)(RQD)

SECTION A-A'

Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)	Vertical Scale:	1:281
Location:	PLOT NO. 5219784, MUSHRAT AL MATAAR, DUBAI U.A.E.	Project Number:	ASDX15-07#3-9



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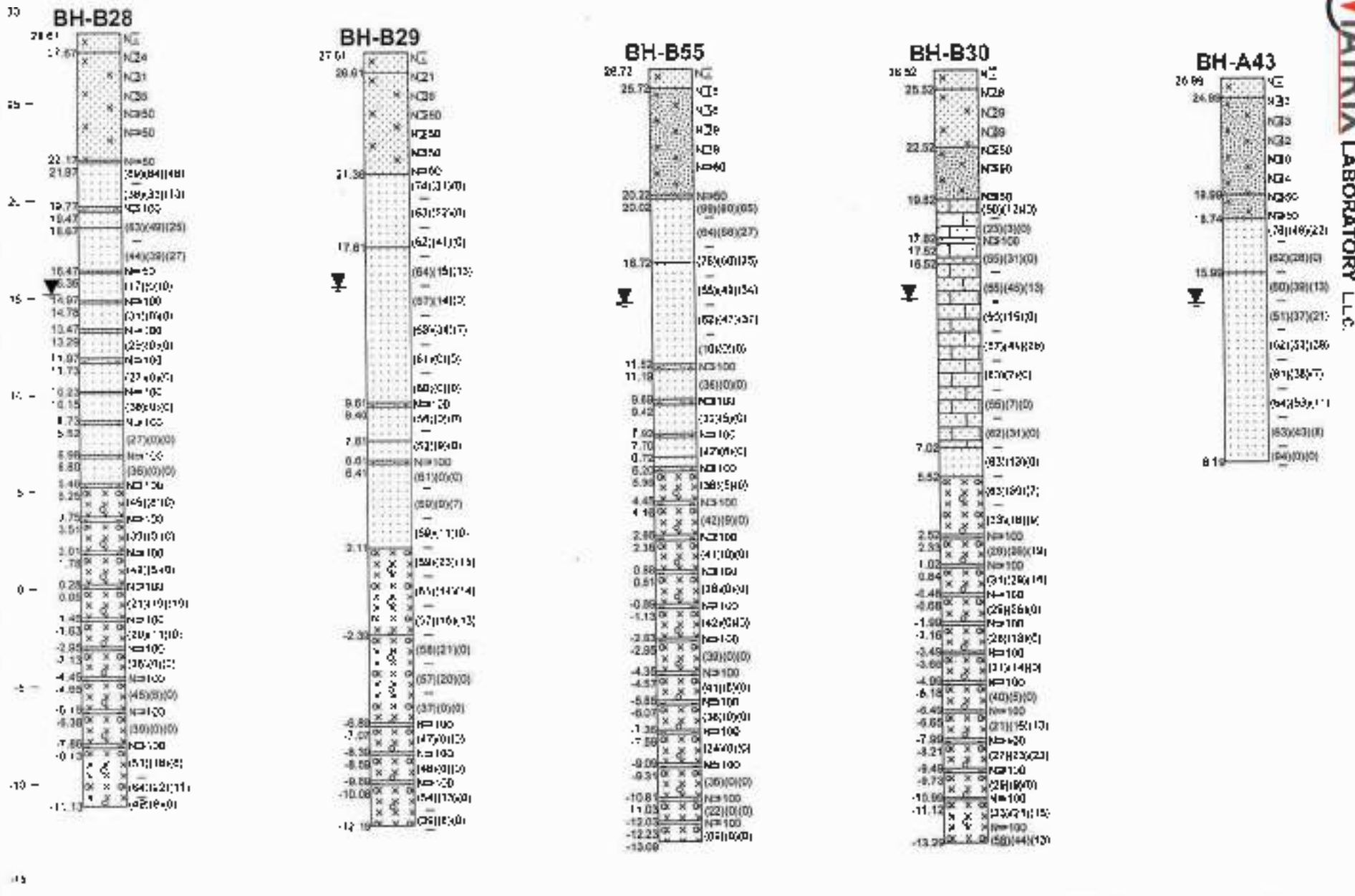
Legend : |TCR|(SCR)|RQD|

SECTION B-B'

Project:	PROPOSED PN 403-DTCJA-EXPO DEVELOPMENT (ZONE 9)	Vertical Scale:	1 2&1
Location:	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E	Project Number:	XSO15-0143-9

APPENDIX B1-10

GEOLOGICAL CROSS SECTIONS (ZONE 10)

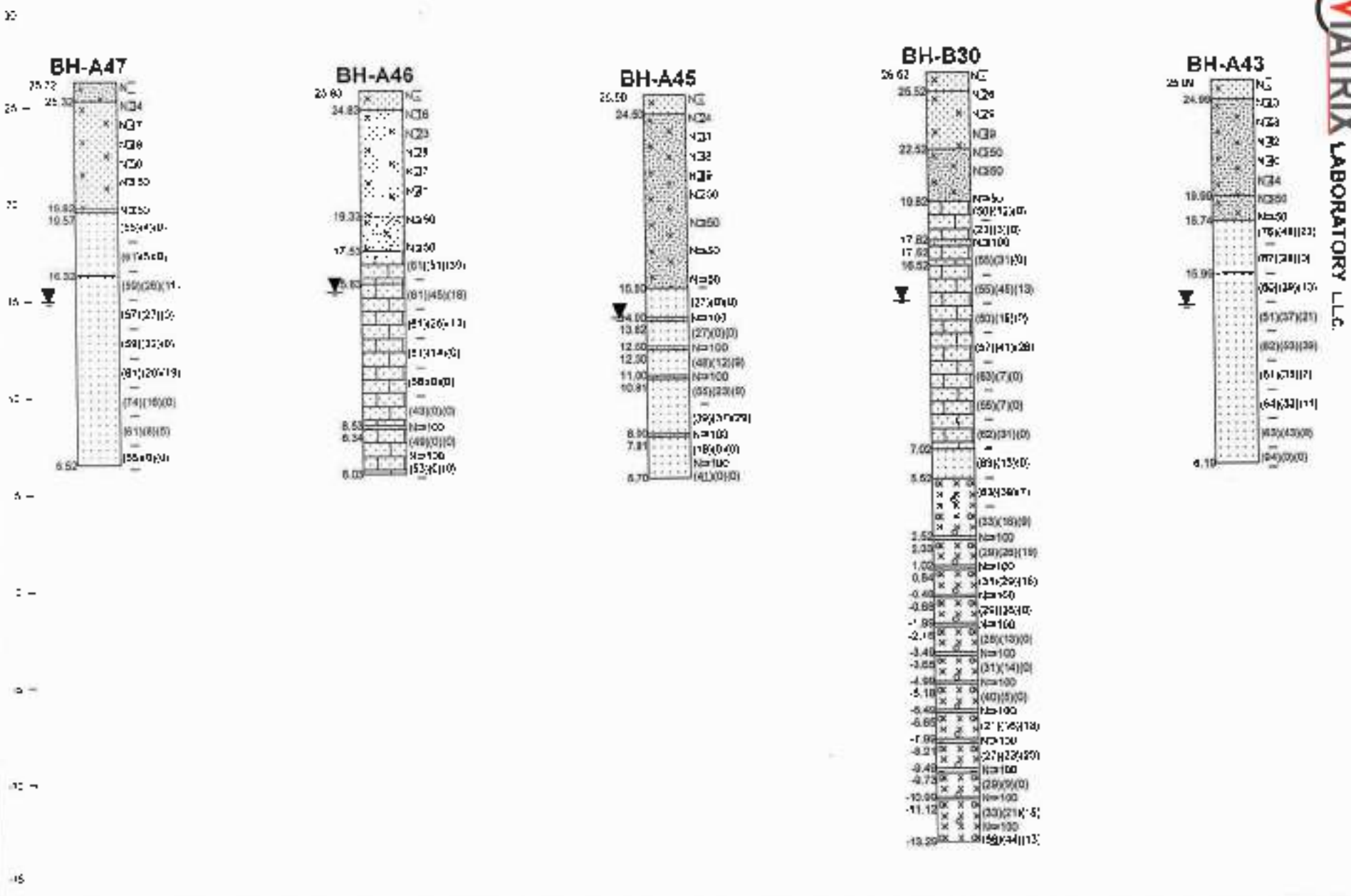


Legend : |TCR|(SCR)|RQD|

SECTION A-A'

Project:	PROPOSED PN 403-DTCJA-EXPO DEVELOPMENT (ZONE 10)	Vertical Scale:	1:291
Location:	PLOT NO. 5215784, MADINAT AL WATAAR, DUBAI, U.A.E.	Project Number:	XSO15-0143-10

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Legend (TCR)|(SCR)|RQD)

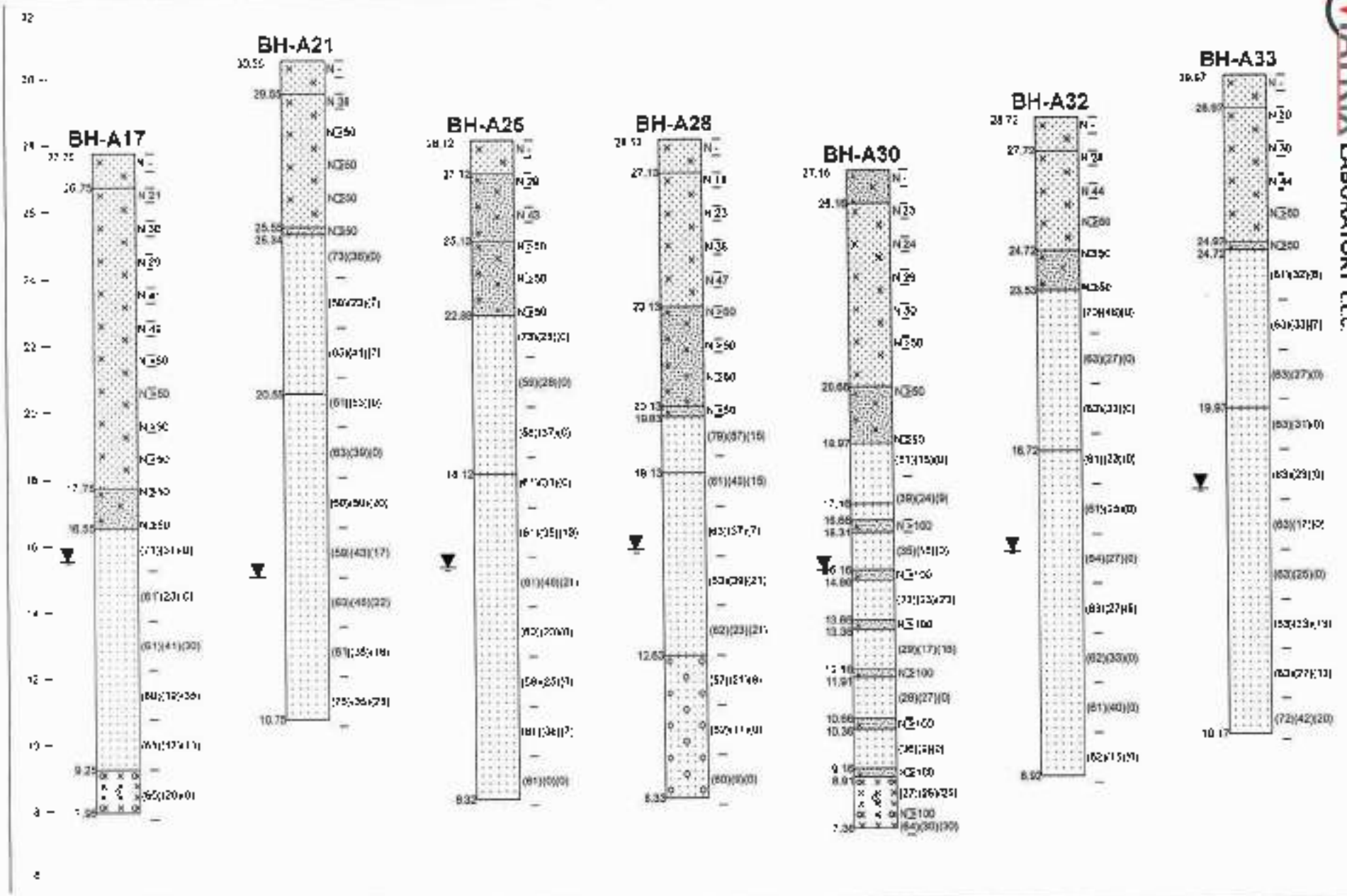
SECTION B-B'

Project:	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)	Vertical Scale:	1:201
Location:	PLOT NO. 5212784, MAQAM AL MATAAR, DUBAI, U.A.E.	Project Number:	XSD15-0143-10

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APPENDIX B1-11

GEOLOGICAL CROSS SECTIONS (ZONE 11)

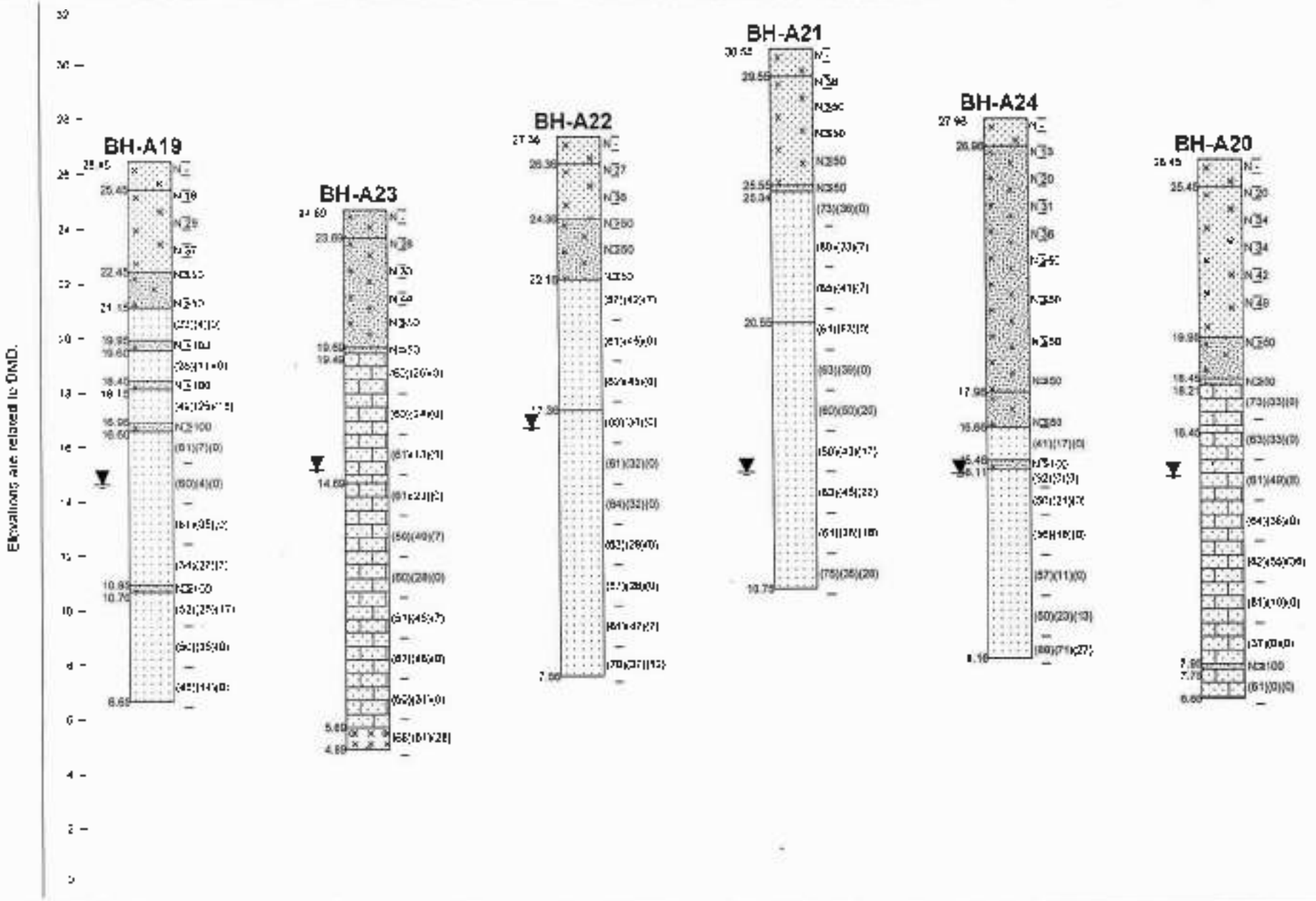


Legend : (TCR)(SCR)(RQD)

SECTION A-A'

Project:	PROPOSED PN 1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)	Vertical Scale:	1:100
Location:	PLOT NO. S210786, MADINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSD15-0143-11

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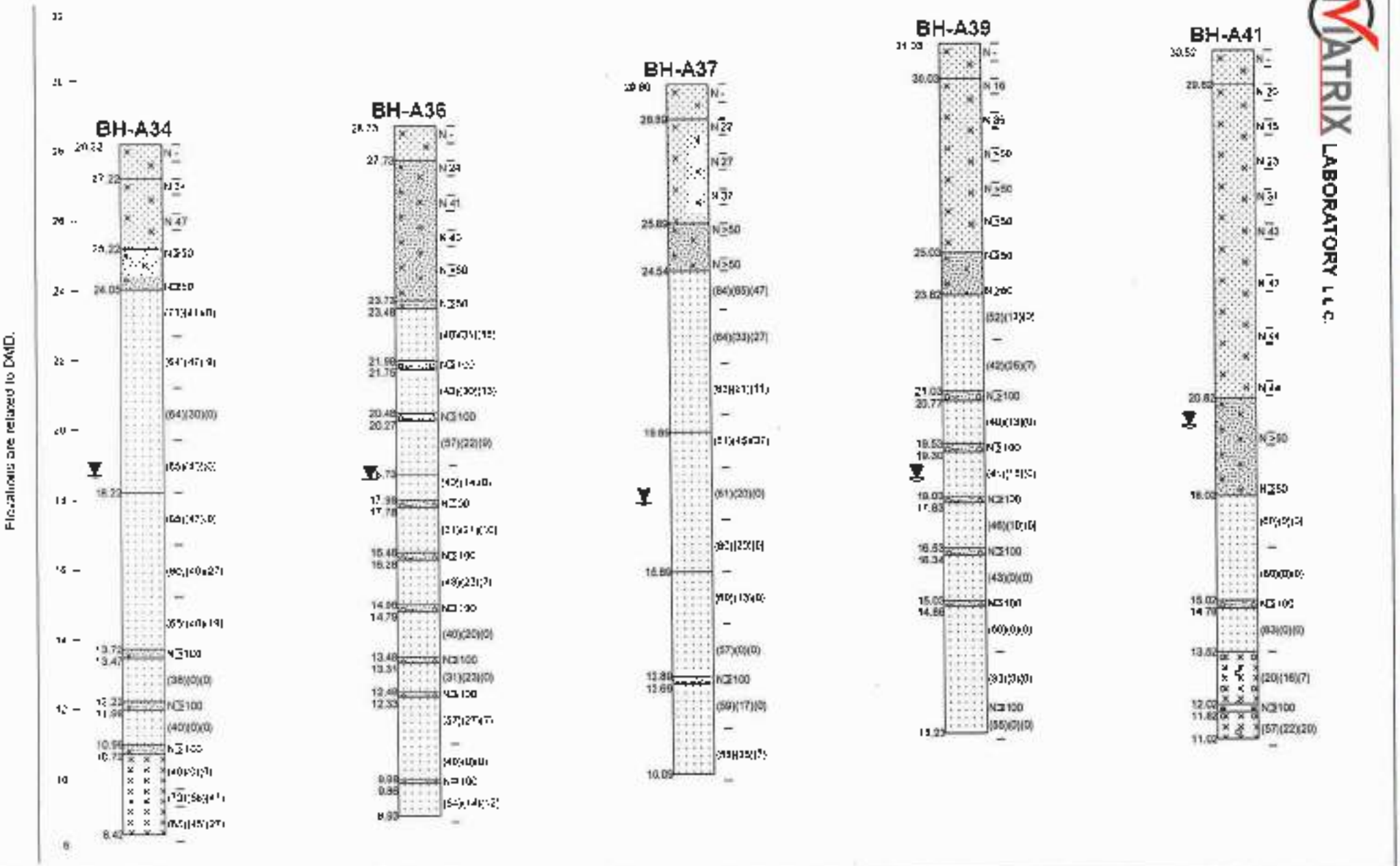
Legend : (TCR)(SCR)(RQD)

SECTION B-B'

Project:	PROPOSED PH 405-DTCJA-EXPO DEVELOPMENT (ZONE 1)	Vertical Scale:	1:200
Location:	PLOT NO. 5218/95 MADINAT AL MATAAR, DUBAI, U.A.E	Project Number:	XSD13-0143-11

APPENDIX B1-12

GEOLOGICAL CROSS SECTIONS (ZONE 12)

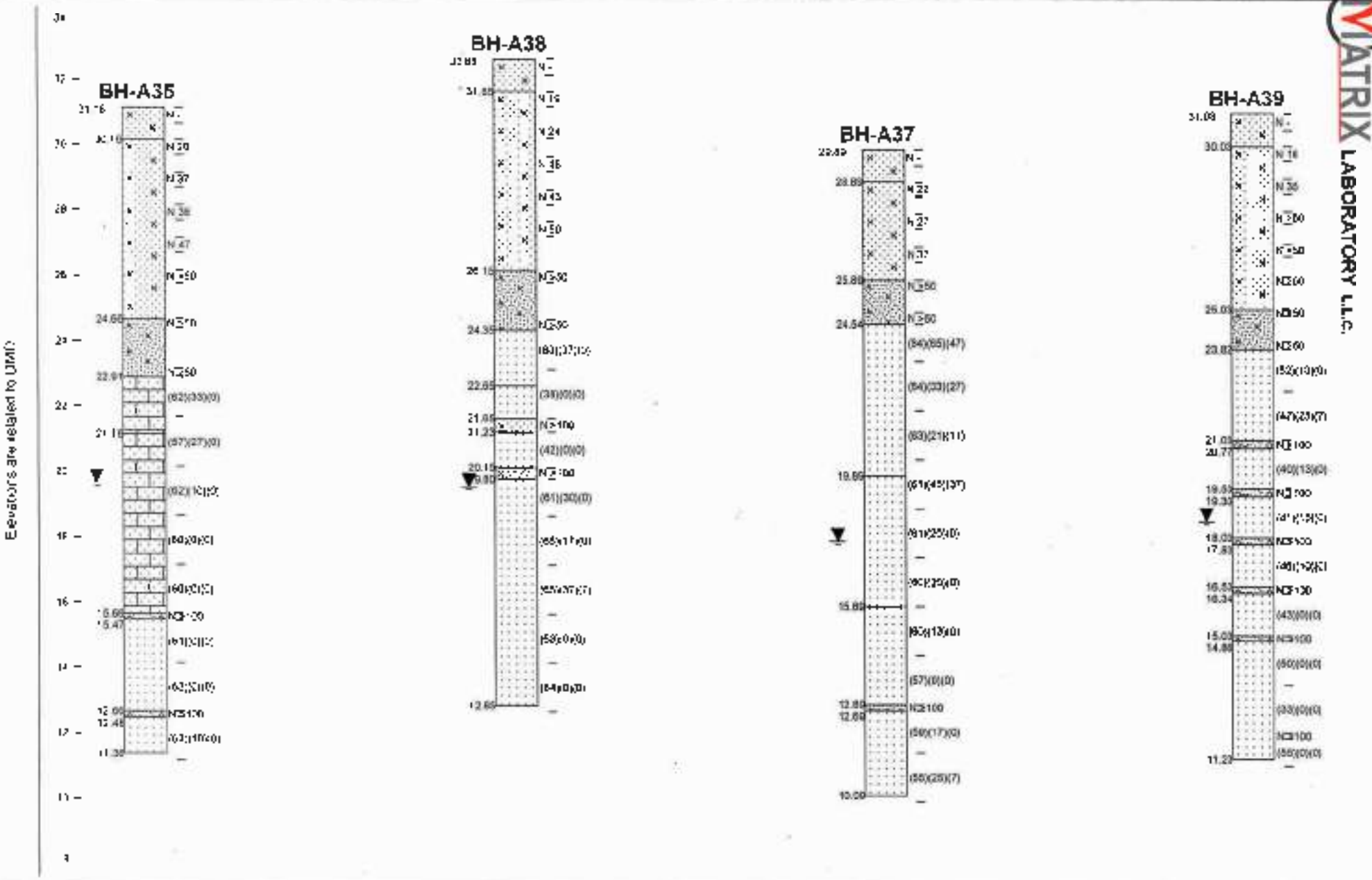


Legend : (TCR||SCR||RQD)

SECTION A-A'

Project:	PROPOSED PN 403-DTCJA-EXPC DEVELOPMENT (ZONE 12)	Vertical Scale:	1:150
Location:	P. OT NO. 5210786, MADINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	XSDX16-0143-12

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Legend : (TCR)|(SCR)|(RQD)

SECTION B-B'

Project	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 12)	Vertical Scale:	1:163
Location	PLOT NO. 5219786, MAUINAT AL MATAAR, DUBAI, U.A.E.	Project Number:	X3DY16-0143-12

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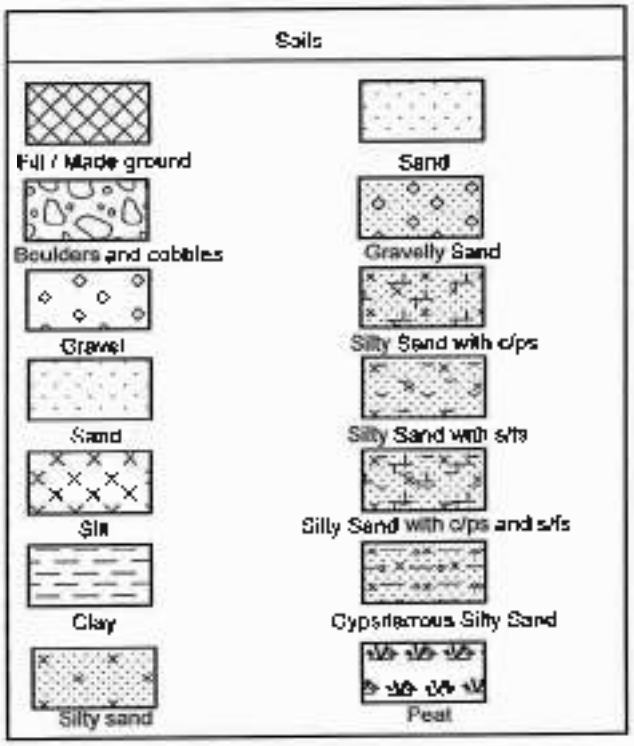
APPENDIX B2

TRIAL PIT LOGS

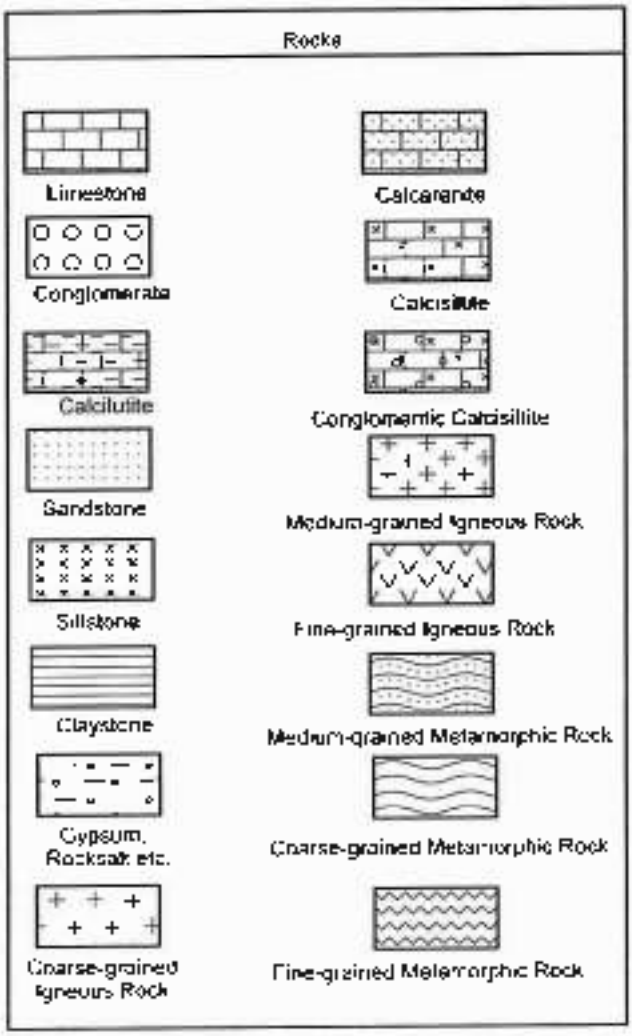
MATRIX LABORATORY LLC

LEGEND OF TEST PITS LOGS

Soils



Rocks



RELATIVE DENSITY OF GRANULAR SOILS

(BS 5930 : 1999)

SPT N Value (Blows/300mm)	Relative Density	Angle of Internal Friction *
0 - 4	Very loose	< 30°
4 - 10	Loose	30° - 35°
10 - 30	Medium dense	35° - 40°
30 - 50	Dense	40° - 45°
> 50	Very dense	> 45°

* [illegible]

CONSISTENCY OF COHESIVE SOILS

(BS 5930 : 1999)

Consistency	Undrained Shear Strength (kN/m²)
Very Soft	< 20
Soft	20 - 40
Firm	40 - 75
Stiff	75 - 150
Very Stiff	150 - 300
Hard	> 300

ROCK STRENGTH CLASSIFICATION

(BS 5930 : 1999)

Unconfined Compressive Strength (MN/m²)	Description
< 1.25	Very weak
1.25 - 5	Weak
5 - 12.5	Moderately Weak
12.5 - 50	Moderately Strong
50 - 100	Strong
100 - 200	Very Strong
> 200	Extremely Strong

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP001**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+25.41DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 0.50m**	N **2,761,462.84**	E **480,488.40**
Date Started:	**26/07/2015** Date Finished: **26/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	■	0.00-0.50	TP1	24.91	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP002**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+27.37DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.50m**	N **2,761,410.50**	E **480,682.71**
Date Started:	**26/07/2015** Date Finished: **26/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are suabgular medium to fine sandstone pieces.		0.00-1.00	TP1	26.37	
1		Light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-1.50	TP2	25.87	
		END OF EXCAVATION					
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 1.50m**

Date Started: **26/07/2015** Date Finished: **26/07/2015**

INSPECTION PIT No.: **TP003**

Sheet: **1/1**

Ground Level (m): **+23.19DMD**

Coordinates:

N **2,761,615.56** E **480,420.43**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1	22.19	
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-1.50	TP2	21.69	
		END OF EXCAVATION					
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP004**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+24.91DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,761,652.34**	E **480,559.78**
Date Started:	**26/07/2015** Date Finished: **26/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, silty, fine SAND.		1.00-2.00	TP2	23.91	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	22.91	
3		END OF EXCAVATION				21.91	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP005**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+26.62DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,599.47** E **480,754.41**
Date Started: **26/07/2015** Date Finished: **26/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				25.62	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP006**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+24.95DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,761,802.01**	E **480,815.83**
Date Started:	**26/07/2015** Date Finished: **26/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	23.95	
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	22.95	
3		END OF EXCAVATION				21.95	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP007**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+22.16DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,840.22** E **480,630.57**
Date Started: **26/07/2015** Date Finished: **26/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				21.16	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 3.00m**

Date Started: **26/07/2015** Date Finished: **26/07/2015**

INSPECTION PIT No.: **TP008**

Sheet: **1/1**

Ground Level (m): **+19.93DMD**

Coordinates:

N **2,762,027.65** E **480,701.37**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	18.93	
2		Light brown, very gravelly, silty, SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	17.93	
3		END OF EXCAVATION				16.93	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 3.00m**

Date Started: **26/07/2015** Date Finished: **26/07/2015**

INSPECTION PIT No.: **TP009**

Sheet: **1/1**

Ground Level (m): **+21.83DMD**

Coordinates:

N **2,761,983.79** E **480,912.14**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, silty, fine SAND.		1.00-2.00	TP2	20.83	
2		Light brown, slightly silty, fine SAND.		2.00-3.00	TP3	19.83	
3		END OF EXCAVATION				18.83	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 1.50m**

Date Started: **26/07/2015** Date Finished: **26/07/2015**

INSPECTION PIT No.: **TP010**

Sheet: **1/1**

Ground Level (m): **+17.64DMD**

Coordinates:

N **2,762,133.94** E **480,597.97**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, gypsiferous coarse to medium SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-1.50	TP2	16.64	
		END OF EXCAVATION				16.14	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP011**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+15.05DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.00m**	N **2,762,216.22**	E **480,771.24**
Date Started:	**27/07/2015** Date Finished: **27/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Brown, very gravelly, gypsiferous SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, gypsiferous, coarse SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	14.05	
2		END OF EXCAVATION				13.05	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP012**

Sheet: **1/1**

Ground Level (m): **+20.07DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Coordinates:

N **2,762,162.93** E **480,964.92**

Date Started: **29/07/2015** Date Finished: **29/07/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	19.07	
2				2.00-3.00	TP3		
3		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		3.00-4.00	TP4	17.07	
4		END OF EXCAVATION				16.07	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP013**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+13.33DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,762,404.10**	E **480,842.90**
Date Started:	**01/08/2015** Date Finished: **01/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	12.33	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	11.33	
3		END OF EXCAVATION				10.33	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **29/07/2015** Date Finished: **29/07/2015**

INSPECTION PIT No.: **TP014**

Sheet: **1/1**

Ground Level (m): **+20.02DMD**

Coordinates:

N **2,762,351.13** E **481,034.92**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	19.02	
2		Light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	18.02	
3		Ligth brown, silty, fine SAND.		3.00-4.00	TP4	17.02	
4		END OF EXCAVATION				16.02	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP015**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+14.19DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,762,517.35** E **480,723.60**	
Date Started:	**01/08/2015** Date Finished: **01/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	13.19	
2		Brown, gravelly, silty gypsiferous SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	12.19	
3		END OF EXCAVATION				11.19	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **30/07/2015** Date Finished: **30/07/2015**

INSPECTION PIT No.: **TP016**

Sheet: **1/1**

Ground Level (m): **+18.68DMD**

Coordinates:

N **2,762,539.48** E **481,106.37**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	17.68	
2		Light brown, silty, fine SAND.		2.00-3.00	TP3	16.68	
3				3.00-4.00	TP4		
4		END OF EXCAVATION				14.68	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP017**

Sheet: **1/1**

Ground Level (m): **+11.22DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 1.50m**

Coordinates:

N **2,762,592.19** E **480,912.97**

Date Started: **27/07/2015** Date Finished: **27/07/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone and rock fragments.		0.00-1.00	TP1	10.22	
1		Light brown, very gravelly, very silty, coarse SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-1.50	TP2	9.72	
2		END OF EXCAVATION					
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP018**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+12.15DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.00m**	N **2,762,747.09**	E **480,810.39**
Date Started:	**27/07/2015** Date Finished: **27/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular corse to fine sandstone pieces.		0.00-1.00	TP1		
1		Brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	11.15	
2		END OF EXCAVATION				10.15	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP019**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+10.00DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.00m**	N **2,762,745.37**	E **481,114.09**
Date Started:	**27/07/2015** Date Finished: **27/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				9.00	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* Groundwater table was encountered at the bottom of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **29/07/2015** Date Finished: **29/07/2015**

INSPECTION PIT No.: **TP020**

Sheet: **1/1**

Ground Level (m): **+13.12DMD**

Coordinates:

N **2,762,879.22** E **480,927.05**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, silty, fine SAND.		1.00-2.00	TP2	12.12	
2		Light brown, slightly gravelly, silty, fine to medium SAND. Gravels are subangular medium to fine sandstone pieces		2.00-3.00	TP3	11.12	
3		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone piecers.		3.00-4.00	TP4	10.12	
4		END OF EXCAVATION				9.12	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **28/07/2015** Date Finished: **28/07/2015**

INSPECTION PIT No.: **TP021**

Sheet: **1/1**

Ground Level (m): **+17.41DMD**

Coordinates:

N **2,762,674.95** E **481,369.90**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular corse to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	16.41	
2		Light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	15.41	
3		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		3.00-4.00	TP4	14.41	
4		END OF EXCAVATION				13.41	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP022**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+17.26DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,762,620.75**	E **481,564.34**
Date Started:	**29/07/2015** Date Finished: **29/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	16.26	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		2.00-3.00	TP3	15.26	
3		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		3.00-4.00	TP4	14.26	
4		END OF EXCAVATION				13.26	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP023**

Sheet: **1/1**

Ground Level (m): **+17.33DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Coordinates:

N **2,762,567.86** E **481,758.07**

Date Started: **28/07/2015** Date Finished: **28/07/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	15.33	
3		Light brown, silty, fine SAND.		3.00-4.00	TP4	14.33	
4		END OF EXCAVATION				13.33	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **28/07/2015** Date Finished: **28/07/2015**

INSPECTION PIT No.: **TP024**

Sheet: **1/1**

Ground Level (m): **+21.05DMD**

Coordinates:

N **2,762,486.11** E **481,300.56**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, silty, fine SAND.		1.00-2.00	TP2	20.05	
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	19.05	
3				3.00-4.00	TP4		
4		END OF EXCAVATION				17.05	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **29/07/2015** Date Finished: **29/07/2015**

INSPECTION PIT No.: **TP025**

Sheet: **1/1**

Ground Level (m): **+20.24DMD**

Coordinates:

N **2,762,432.95** E **481,493.84**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	19.24	
2				2.00-3.00	TP3		
3		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		3.00-4.00	TP4	17.24	
4		END OF EXCAVATION				16.24	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **28/07/2015** Date Finished: **28/07/2015**

INSPECTION PIT No.: **TP026**

Sheet: **1/1**

Ground Level (m): **+19.90DMD**

Coordinates:

N **2,762,387.55** E **481,689.97**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF BORING				15.90	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP027**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+20.46DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.00m**	N **2,762,191.04**	E **481,617.33**
Date Started:	**29/07/2015** Date Finished: **29/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, sandy GRAVEL. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				19.46	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP028**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+18.30DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.00m**	N **2,762,248.83**	E **481,458.41**
Date Started:	**28/07/2015** Date Finished: **28/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	17.30	
2		END OF EXCAVATION				16.30	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **29/07/2015** Date Finished: **29/07/2015**

INSPECTION PIT No.: **TP029**

Sheet: **1/1**

Ground Level (m): **+18.62DMD**

Coordinates:

N **2,762,297.10** E **481,228.58**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		1.00-2.00	TP2	17.62	
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	16.62	
3				3.00-4.00	TP4		
4		END OF BORING				14.62	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP030**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+20.50DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 0.50m**	N **2,762,105.58**	E **481,163.00**
Date Started:	**29/07/2015** Date Finished: **29/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-0.50	TP1	20.00	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP031**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+21.22DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 0.50m**	N **2,762,055.31**	E **481,354.53**
Date Started:	**29/07/2015** Date Finished: **29/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-0.50	TP1	20.72	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP032**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+20.68DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 0.50m**	N **2,762,003.85** E **481,545.80**
Date Started: **28/07/2015** Date Finished: **28/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	■	0.00-0.50	TP1	20.18	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP033**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+25.36DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.00m**	N **2,761,943.97**	E **481,233.34**
Date Started:	**30/07/2015** Date Finished: **30/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone and cemented pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, coarse SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	24.36	
2		END OF EXCAVATION				23.36	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP034**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+27.53DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.00m**	N **2,761,869.97**	E **481,262.88**
Date Started:	**30/07/2015** Date Finished: **30/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, slightly silty, SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				26.53	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP035**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+24.46DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.50m**	N **2,761,921.41** E **481,087.04**
Date Started: **30/07/2015** Date Finished: **30/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular coarse to medium sandstone pieces.		1.00-1.50	TP2	23.46	
		END OF EXCAVATION				22.96	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP036**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+28.16DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.00m**	N **2,761,733.77**	E **481,017.27**
Date Started:	**30/07/2015** Date Finished: **30/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone and cemented pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				27.16	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP037**

Sheet: **1/1**

Ground Level (m): **+30.83DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 2.00m**

Coordinates:

N **2,761,680.67** E **481,211.55**

Date Started: **30/07/2015** Date Finished: **30/07/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	29.83	
2		END OF EXCAVATION				28.83	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP038**

Sheet: **1/1**

Ground Level (m): **+31.73DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 2.00m**

Coordinates:

N **2,761,650.77** E **481,322.57**

Date Started: **30/07/2015** Date Finished: **30/07/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	30.73	
2		END OF EXCAVATION				29.73	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP039**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+32.45DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,439.28** E **481,334.49**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly silty, medium to fine SAND.		1.00-2.00	TP2	31.45	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	30.45	
3		END OF EXCAVATION				29.45	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP040**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+33.33DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,470.44** E **481,223.65**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	31.33	
3		END OF EXCAVATION				30.33	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP041**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+31.32DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,761,304.60** E **481,070.05**	
Date Started:	**31/07/2015** Date Finished: **31/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-2.00	TP1		
1							
2		Light brown, very gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP2	29.32	
3		END OF BORING				28.32	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP042**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+29.72DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,357.54** E **480,876.23**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				28.72	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP043**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+30.40DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.50m**	N **2,761,545.76**	E **480,948.48**
Date Started:	**31/07/2015** Date Finished: **31/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		1.00-1.50	TP2	29.40	
		END OF EXCAVATION				28.90	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP044**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+30.61DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,251.96** E **481,265.32**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	28.61	
3		END OF EXCAVATION				27.61	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **31/07/2015** Date Finished: **31/07/2015**

INSPECTION PIT No.: **TP045**

Sheet: **1/1**

Ground Level (m): **+29.11DMD**

Coordinates:

N **2,761,044.31** E **481,262.74**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	28.11	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	27.11	
3				3.00-4.00	TP4		
4		END OF EXCAVATION				25.11	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 2.00m**

Date Started: **31/07/2015** Date Finished: **31/07/2015**

INSPECTION PIT No.: **TP046**

Sheet: **1/1**

Ground Level (m): **+27.46DMD**

Coordinates:

N **2,760,736.49** E **481,712.51**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and rock fragments.		1.00-2.00	TP2	26.46	
2		END OF EXCAVATION				25.46	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP047**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+29.60DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,760,998.43**	E **481,434.06**
Date Started:	**31/07/2015** Date Finished: **31/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				25.60	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **04/08/2015** Date Finished: **04/08/2015**

INSPECTION PIT No.: **TP048**

Sheet: **1/1**

Ground Level (m): **+28.17DMD**

Coordinates:

N **2,760,957.41** E **481,580.66**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	27.17	
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	26.17	
3		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		3.00-4.00	TP4	25.17	
4		END OF EXCAVATION				24.17	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP049**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+28.08DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,760,904.79**	E **481,773.88**
Date Started:	**30/07/2015** Date Finished: **30/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces and shell fragments.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	27.08	
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular corse to fine sandstone pieces.		2.00-3.00	TP3	26.08	
3		END OF EXCAVATION				25.08	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP050**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+30.08DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.00m**	N **2,761,198.77**	E **481,458.15**
Date Started:	**04/08/2015** Date Finished: **04/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular corse to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				29.08	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **31/07/2015** Date Finished: **31/07/2015**

INSPECTION PIT No.: **TP051**

Sheet: **1/1**

Ground Level (m): **+29.36DMD**

Coordinates:

N **2,761,144.99** E **481,651.66**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	28.36	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	27.36	
3		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular corse to fine sandstone pieces.		3.00-4.00	TP4	26.36	
4		END OF EXCAVATION				25.36	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP052**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+28.56DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,091.57** E **481,846.23**
Date Started: **30/07/2015** Date Finished: **30/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	26.56	
3		END OF EXCAVATION				25.56	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **31/07/2015** Date Finished: **31/07/2015**

INSPECTION PIT No.: **TP053**

Sheet: **1/1**

Ground Level (m): **+28.54DMD**

Coordinates:

N **2,761,298.83** E **481,913.86**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, slightly silty, medium to fine SAND.		1.00-2.00	TP2	27.54	
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				24.54	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **30/07/2015** Date Finished: **30/07/2015**

INSPECTION PIT No.: **TP054**

Sheet: **1/1**

Ground Level (m): **+29.65DMD**

Coordinates:

N **2,761,345.84** E **481,676.81**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.					
				0.00-1.00	TP1		
1							
				1.00-2.00	TP2		
2							
				2.00-3.00	TP3		
3							
				3.00-4.00	TP4		
4		END OF EXCAVATION				25.65	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **30/07/2015** Date Finished: **30/07/2015**

INSPECTION PIT No.: **TP055**

Sheet: **1/1**

Ground Level (m): **+30.76DMD**

Coordinates:

N **2,761,386.20** E **481,528.34**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.					
				0.00-1.00	TP1		
1							
				1.00-2.00	TP2		
2							
				2.00-3.00	TP3		
3							
				3.00-4.00	TP4		
4		END OF EXCAVATION				26.76	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP056**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+30.28DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.00m**	N **2,761,574.65**	E **481,599.58**
Date Started:	**31/07/2015** Date Finished: **31/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular corse to medium sandstone pieces.		1.00-2.00	TP2	29.28	
2		END OF EXCAVATION				28.28	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **31/07/2015** Date Finished: **31/07/2015**

INSPECTION PIT No.: **TP057**

Sheet: **1/1**

Ground Level (m): **+28.90DMD**

Coordinates:

N **2,761,521.04** E **481,792.38**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly silty, medium to fine SAND.		1.00-2.00	TP2	27.90	
2				2.00-3.00	TP3		
3		Brown, gypsiferous SAND.		3.00-4.00	TP4	25.90	
4		END OF EXCAVATION				24.90	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **31/07/2015** Date Finished: **31/07/2015**

INSPECTION PIT No.: **TP058**

Sheet: **1/1**

Ground Level (m): **+26.27DMD**

Coordinates:

N **2,761,656.64** E **482,056.97**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, silty, fine SAND.		1.00-2.00	TP2	25.27	
2				2.00-3.00	TP3		
3		Light brown, gravelly, slightly silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		3.00-4.00	TP4	23.27	
4		END OF EXCAVATION				22.27	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP059**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+19.82DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,710.51** E **481,865.28**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				18.82	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP060**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+29.95DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 1.50m**	N **2,761,761.29**	E **481,670.01**
Date Started:	**04/08/2015** Date Finished: **04/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, medium to fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-1.50	TP2	28.95	
		END OF EXCAVATION				28.45	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C. | **LOG OF INSPECTION PIT**

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP061**
Sheet: **1/1**
Ground Level (m): **+25.05DMD**
Coordinates: N **2,761,843.88** E **482,128.25**
Project No.: **XSD/15-0143**

Method: **Mechanical Excavation**
Size of Test Pit: **1.0m x 1.5m x 2.00m**
Date Started: **04/08/2015** Date Finished: **04/08/2015**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		END OF EXCAVATION				23.05	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP062**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+20.70DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,898.15** E **481,934.13**
Date Started: **01/08/2015** Date Finished: **01/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				19.70	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP063**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+21.11DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,949.29** E **481,741.15**
Date Started: **01/08/2015** Date Finished: **01/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				20.11	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP064**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+21.87DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,762,032.13** E **482,197.90**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				20.87	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP065**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+21.22DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 0.50m**	N **2,762,085.58**	E **482,004.85**
Date Started:	**31/07/2015** Date Finished: **31/07/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-0.50	TP1	20.72	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP066**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+21.01DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,762,138.83** E **481,810.73**
Date Started: **31/07/2015** Date Finished: **31/07/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, slightly silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				20.01	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP067**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+19.90DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 0.50m**	N **2,762,327.42**	E **481,882.80**
Date Started:	**01/08/2015** Date Finished: **01/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	■	0.00-0.50	TP1	19.40	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP068**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+24.89DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,762,274.54**	E **482,074.40**
Date Started:	**01/08/2015** Date Finished: **01/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				20.89	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP069**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+21.33DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 0.50m**	N **2,762,236.27** E **482,207.36**
Date Started: **01/08/2015** Date Finished: **01/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	■	0.00-0.50	TP1	20.83	
		END OF EXCAVATION					
1							
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP070**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+22.74DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 0.50m**	N **2,762,408.54** E **482,339.65**
Date Started: **01/08/2015** Date Finished: **01/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	■	0.00-0.50	TP1	22.24	
1		END OF EXCAVATION					
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP071**	
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**	
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+20.57DMD**	
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 3.00m**	N **2,762,461.66** E **482,145.82**	
Date Started:	**01/08/2015** Date Finished: **01/08/2015**	Project No.: **XSD/15-0143**	

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		1.00-2.00	TP2	19.57	
2		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	18.57	
3		END OF EXCAVATION				17.57	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP072**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+18.64DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 4.00m**	N **2,762,514.41** E **481,951.44**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly silty, fine to medium SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3		Light brown, very gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		3.00-4.00	TP4	15.64	
4		END OF EXCAVATION				14.64	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP073**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+24.26DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 2.00m**	N **2,762,355.11** E **482,533.06**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, very gravelly, silty, fine SAND. Gravels are subangular coarse to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	23.26	
2		END OF EXCAVATION				22.26	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP074**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+26.20DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 2.00m**	N **2,762,149.19** E **482,524.52**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		END OF EXCAVATION				24.20	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 1.50m**

Date Started: **02/08/2015** Date Finished: **02/08/2015**

INSPECTION PIT No.: **TP075**

Sheet: **1/1**

Ground Level (m): **+25.79DMD**

Coordinates:

N **2,761,978.54** E **482,530.22**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1	24.79	
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-1.50	TP2	24.29	
		END OF EXCAVATION					
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP076**

Sheet: **1/1**

Ground Level (m): **+23.93DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 2.00m**

Coordinates:

N **2,761,979.92** E **482,392.06**

Date Started: **02/08/2015** Date Finished: **02/08/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	22.93	
2		END OF EXCAVATION				21.93	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP077**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+25.15DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 4.00m**	N **2,761,791.33** E **482,321.52**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	23.15	
3		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		3.00-4.00	TP4	22.15	
4		END OF EXCAVATION				21.15	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP078**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+25.35DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 4.00m**	N **2,761,767.60** E **482,496.00**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	24.35	
2				2.00-3.00	TP3		
3		Light brown, silty, fine SAND.		3.00-4.00	TP4	22.35	
4		END OF EXCAVATION				21.35	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP079**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+26.18DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 4.00m**	N **2,761,604.15** E **482,251.28**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, silty, fine SAND.				24.18	
				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				22.18	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP080**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+24.85DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,761,551.88** E **482,441.88**
Date Started: **03/08/2015** Date Finished: **03/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				23.85	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 3.00m**

Date Started: **02/08/2015** Date Finished: **02/08/2015**

INSPECTION PIT No.: **TP081**

Sheet: **1/1**

Ground Level (m): **+26.78DMD**

Coordinates:

N **2,761,438.44** E **482,093.55**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	25.78	
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	24.78	
3		END OF EXCAVATION				23.78	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

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LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP082**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+27.25DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 4.00m**	N **2,761,227.89** E **482,110.71**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	26.25	
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				23.25	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP083**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+27.40DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 2.00m**	N **2,760,994.57** E **482,124.97**
Date Started: **02/08/2015** Date Finished: **02/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	26.40	
2		END OF EXCAVATION				25.40	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP084**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+27.68DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.50m**	N **2,760,851.02**	E **481,968.12**
Date Started:	**02/08/2015** Date Finished: **02/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, very gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	26.68	
2				2.00-2.50	TP3		
		END OF EXCAVATION				25.18	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP085**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+27.62DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 1.00m**	N **2,760,662.71** E **481,896.95**
Date Started: **03/08/2015** Date Finished: **03/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty fine SAND. Garvels are subangular medium to fine sandstone pieces.	X	0.00-1.00	TP1		
1		END OF EXCAVATION				26.62	
2							
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP086**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+26.91DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 2.00m**	N **2,762,249.37**	E **482,920.16**
Date Started:	**03/08/2015** Date Finished: **03/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, slightly gravelly, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	25.91	
2		END OF EXCAVATION				24.91	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP087**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+27.61DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 2.00m**	N **2,762,056.05** E **482,850.48**
Date Started: **03/08/2015** Date Finished: **03/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		END OF EXCAVATION				25.61	
3							
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP088**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+27.80DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,762,196.46** E **483,114.29**
Date Started: **03/08/2015** Date Finished: **03/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3		END OF EXCAVATION				24.80	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP089**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+28.11DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,762,143.93** E **483,308.14**
Date Started: **03/08/2015** Date Finished: **03/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3		END OF EXCAVATION				25.11	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP090**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+28.44DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,762,088.42**	E **483,500.51**
Date Started:	**04/08/2015** Date Finished: **04/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				24.44	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP091**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+28.03DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,762,002.70**	E **483,043.96**
Date Started:	**03/08/2015** Date Finished: **03/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				24.03	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP092**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+27.22DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,761,958.22**	E **483,242.89**
Date Started:	**03/08/2015** Date Finished: **03/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, slightly gravelly, silty, fine SAND. Gravels are subangular medium to fine sandstone pieces.				25.22	
				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				23.22	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **03/08/2015** Date Finished: **03/08/2015**

INSPECTION PIT No.: **TP093**

Sheet: **1/1**

Ground Level (m): **+26.31DMD**

Coordinates:

N **2,761,903.74** E **482,831.36**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.					
				0.00-1.00	TP1		
1							
				1.00-2.00	TP2		
2							
				2.00-3.00	TP3		
3							
				3.00-4.00	TP4		
4		END OF EXCAVATION				22.31	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner:	**DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.:	**TP094**
Project:	**PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet:	**1/1**
Location:	**PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m):	**+27.60DMD**
Method:	**Mechanical Excavation**	Coordinates:	
Size of Test Pit:	**1.0m x 1.5m x 4.00m**	N **2,761,872.54**	E **483,015.00**
Date Started:	**04/08/2015** Date Finished: **04/08/2015**	Project No.:	**XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	26.60	
2				2.00-3.00	TP3		
3				3.00-4.00	TP4		
4		END OF EXCAVATION				23.60	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.	LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP095**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+31.22DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,963.13** E **484,201.99**
Date Started: **04/08/2015** Date Finished: **04/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3		END OF EXCAVATION				28.22	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 4.00m**

Date Started: **04/08/2015** Date Finished: **04/08/2015**

INSPECTION PIT No.: **TP096**

Sheet: **1/1**

Ground Level (m): **+30.10DMD**

Coordinates:

N **2,761,896.70** E **483,994.28**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.					
				0.00-1.00	TP1		
1							
				1.00-2.00	TP2		
2							
				2.00-3.00	TP3		
3							
				3.00-4.00	TP4		
4		END OF EXCAVATION				26.10	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

INSPECTION PIT No.: **TP097**

Sheet: **1/1**

Ground Level (m): **+30.27DMD**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 3.00m**

Coordinates:

N **2,761,845.96** E **484,113.11**

Date Started: **04/08/2015** Date Finished: **04/08/2015**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.					
				0.00-1.00	TP1		
1							
				1.00-2.00	TP2		
2							
				2.00-3.00	TP3		
3							
				3.00-4.00	TP4		
4		END OF EXCAVATION				26.27	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**

Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**

Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**

Method: **Mechanical Excavation**

Size of Test Pit: **1.0m x 1.5m x 3.00m**

Date Started: **04/08/2015** Date Finished: **04/08/2015**

INSPECTION PIT No.: **TP098**

Sheet: **1/1**

Ground Level (m): **+29.22DMD**

Coordinates:

N **2,761,690.19** E **484,207.40**

Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1		Light brown, slightly gravelly, silty fine SAND. Gravels are subangular medium to fine sandstone pieces.		1.00-2.00	TP2	28.22	
2		Light brown, silty, fine SAND.		2.00-3.00	TP3	27.22	
3				3.00-4.00	TP4		
4		END OF EXCAVATION				25.22	
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP099**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+31.61DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,715.73** E **484,459.55**
Date Started: **04/08/2015** Date Finished: **04/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2		Light brown, slightly gravelly, silty fine SAND. Gravels are subangular medium to fine sandstone pieces.		2.00-3.00	TP3	29.61	
3		END OF EXCAVATION				28.61	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

MATRIX LABORATORY L.L.C.

MATRIX LABORATORY L.L.C.

LOG OF INSPECTION PIT

Owner: **DUBAI WORLD TRADE CENTER - L.L.C.**	INSPECTION PIT No.: **TP100**
Project: **PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT**	Sheet: **1/1**
Location: **PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.**	Ground Level (m): **+32.10DMD**
Method: **Mechanical Excavation**	Coordinates:
Size of Test Pit: **1.0m x 1.5m x 3.00m**	N **2,761,897.42** E **484,315.64**
Date Started: **04/08/2015** Date Finished: **04/08/2015**	Project No.: **XSD/15-0143**

Depth (m)	Legend	Soil Description	Sample	Sample Depth (m)	Sample Number	Reduced Level (m)	Remarks
0		Light brown, silty, fine SAND.		0.00-1.00	TP1		
1				1.00-2.00	TP2		
2				2.00-3.00	TP3		
3		END OF EXCAVATION				29.10	
4							
5							

REMARKS:
* Ground level is related to Dubai Municipality Datum (DMD).
* No groundwater table was encountered up to the end of excavation.

APPENDIX C

LABORATORY TEST RESULTS

APPENDIX C1

LABORATORY TEST RESULTS (ZONE 1)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	11-21/06/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	16-23/06/2015
Test Method	See below	**Date Tested**	17-27/06/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B01	SPT2	1.00	1.8	0.08	8.4 @ 27°C	DS-3
BH-B02	SPT2	1.00	0.3	0.01	8.1 @ 26°C	DS-1
BH-B07	SPT3	2.00	0.3	0.01	8.4 @ 27°C	DS-1
BH-C01	SPT3	2.00	0.3	0.01	8.2 @ 28°C	DS-1
BH-C07	SPT3	2.00	0.2	0.02	8.1 @ 26°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	17-25/06/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	17-25/06/2015
Test Method	See below	**Date Tested**	17-28/06/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B04	12.15	0.17	0.03	8.4 @ 28°C	DS-1
BH-C01	9.40	1.56	0.09	8.3 @ 28°C	DS-3
BH-C09	10.50	0.45	0.04	8.4 @ 28°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

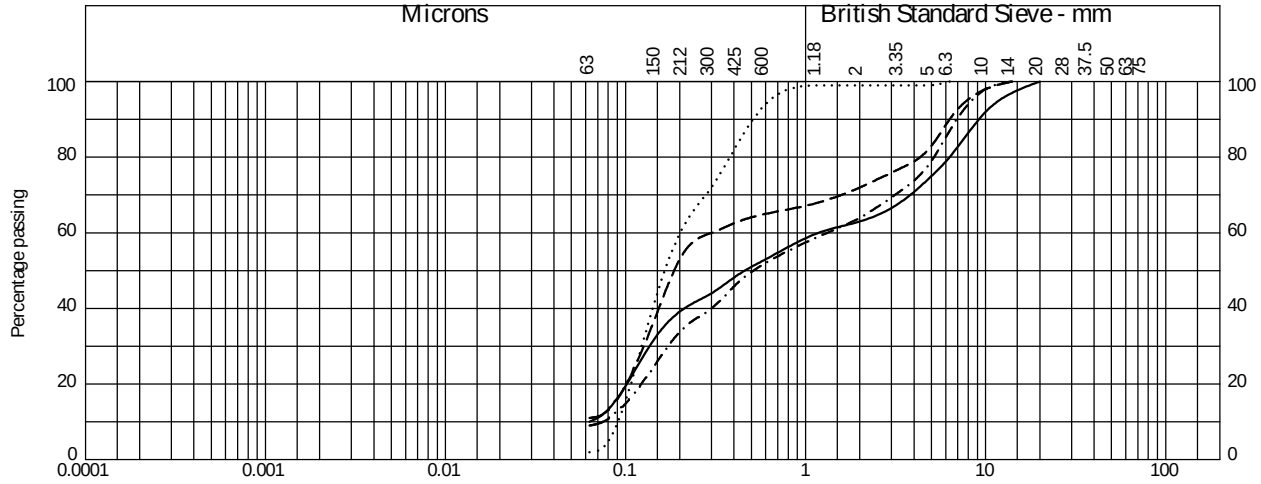
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B01	SPT3	129.3	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-B01	SPT5	131.7	— — —	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B02	SPT3	131.8	.....	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	2.00
BH-B02	SPT4	123.1	— · — · —	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00

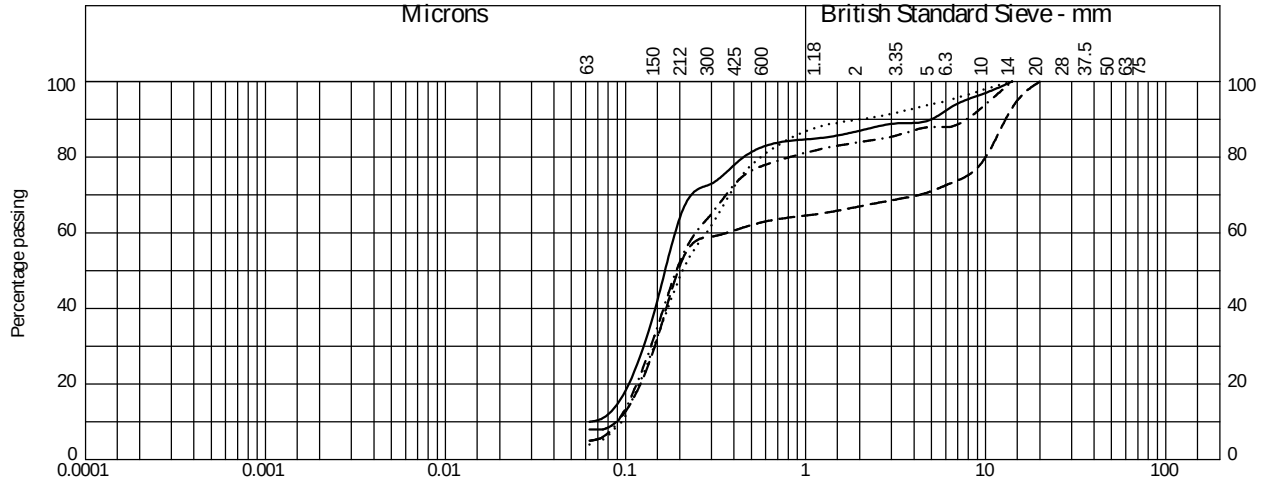
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B03	SPT2	127.4	———	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B03	SPT5	124.4	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B04	SPT2	130.3	.....	GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00
BH-B04	SPT4	137.2	– · – · –	GRAVELLY, SILTY, M-F SAND (S-M)	3.00

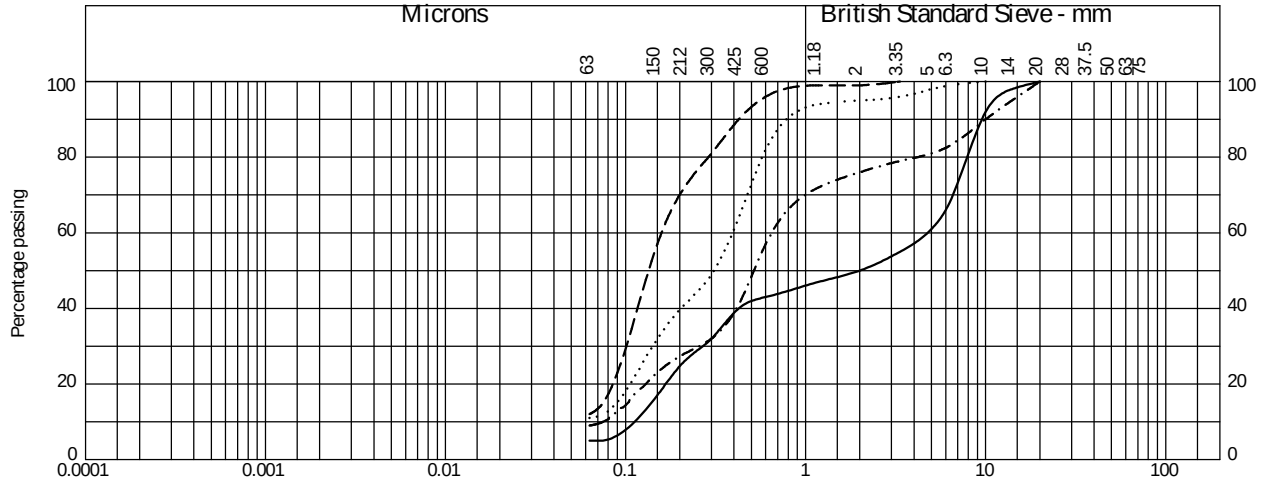
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B04	SPT6	134.1	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B05	SPT2	124.8	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B05	SPT3	130.4	.....	GRAVELLY, SILTY, F-M SAND (S-M)	2.00
BH-B05	SPT4	138.4	–·–·–	V. GRAVELLY, SILTY, MEDIUM SAND (S-M)	3.00

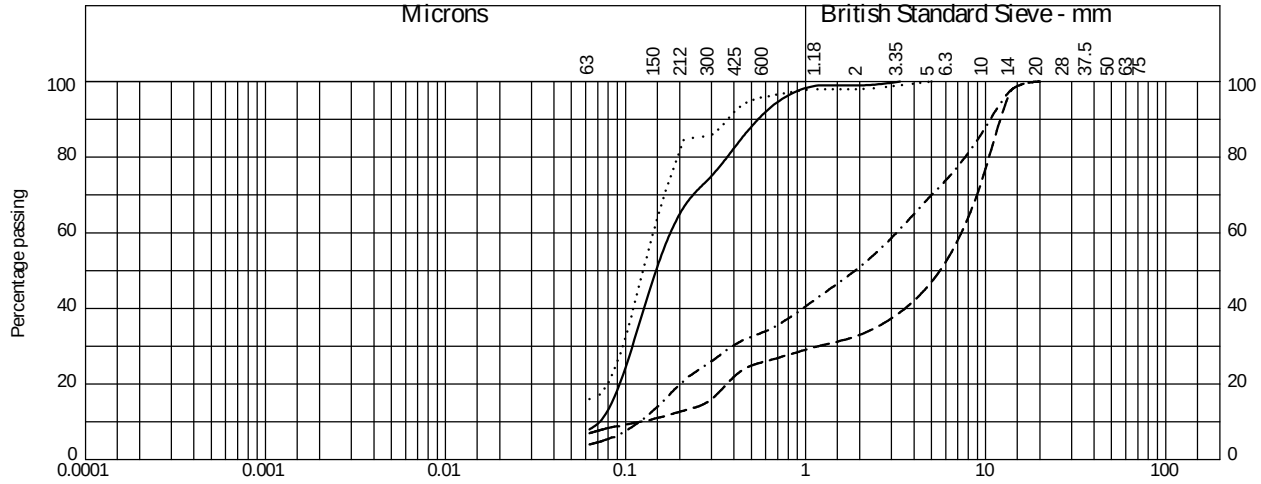
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B06	SPT2	121.4	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B06	SPT4	148.3	– – –	V. GRAVELLY, SILTY, SAND (S-M)	3.00
BH-B07	SPT2	121.4	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B07	SPT4	135.4	–.–.–	SL. SILTY, SANDY GRAVEL (SG)	3.00

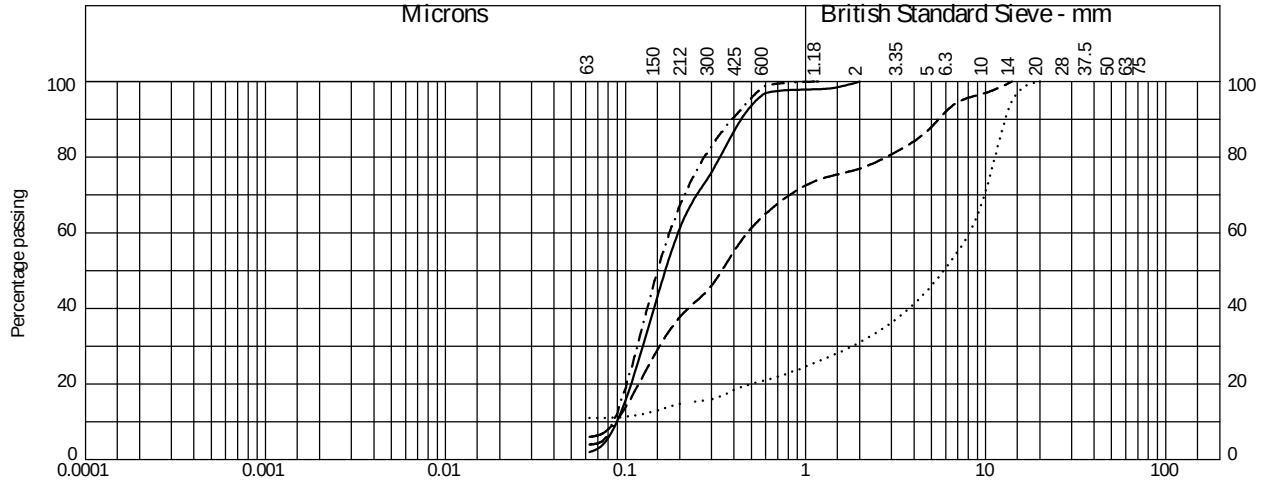
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C01	SPT2	124.3	———	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00
BH-C01	SPT5	140.1	– – –	V. GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-C01	SPT6	132.3	.....	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-C03	SPT2	127.2	– . – . –	SL. SILTY, M-F SAND (SP)	1.00

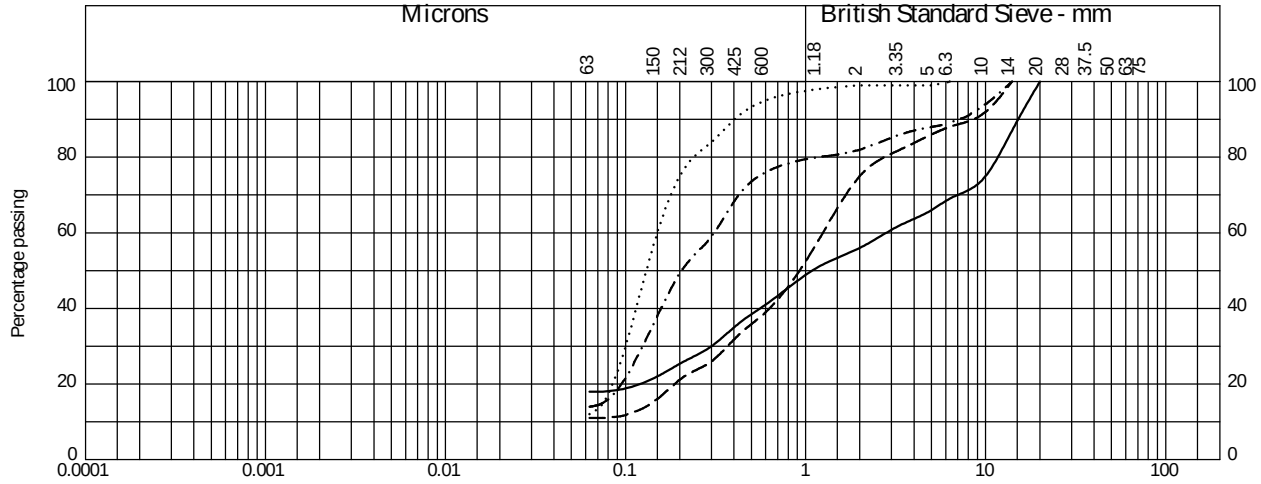
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C03	SPT3	132.9	———	V. GRAVELLY, SILTY, SAND (S-M)	2.00
BH-C03	SPT5	133.6	– – –	V. GRAVELLY, SILTY, COARSE SAND (S-M)	4.00
BH-C05	SPT2	121.0	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-C05	SPT3	129.2	–·–·–	GRAVELLY, SILTY, M-F SAND (S-M)	2.00

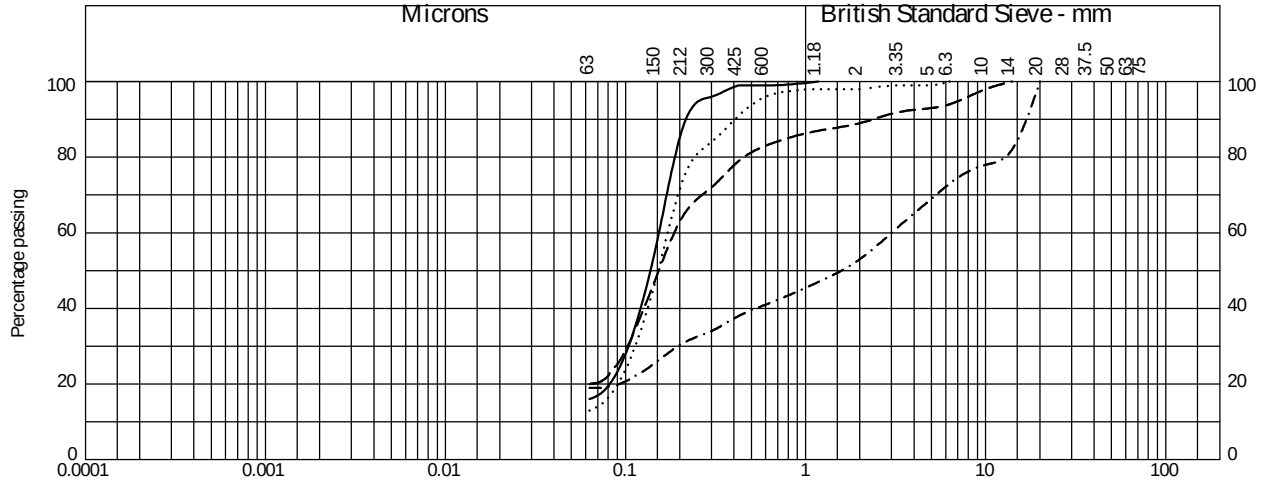
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C05	SPT4	126.2	———	SILTY, FINE SAND (S-M)	3.00
BH-C05	SPT7	132.7	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	6.00
BH-C07	SPT2	132.2	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C07	SPT6	143.0	–·–·–	SILTY, SANDY GRAVEL (SG)	5.00

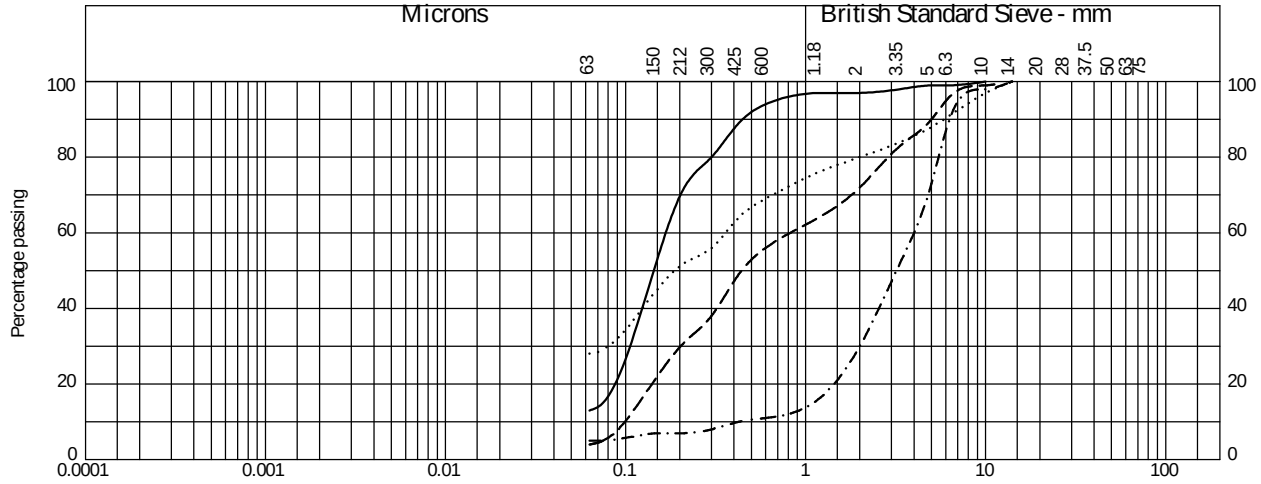
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C09	SPT3	134.2	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-C09	SPT5	134.6	– – –	V. GRAVELLY, SL. SILTY, M-F SAND (SP)	4.00
BH-C09	SPT6	127.1	.....	GRAVELLY, V. SILTY, FINE SAND (SM)	5.00
BH-C09	SPT7	132.3	– · – · –	SILTY, SANDY GRAVEL (SG)	6.50

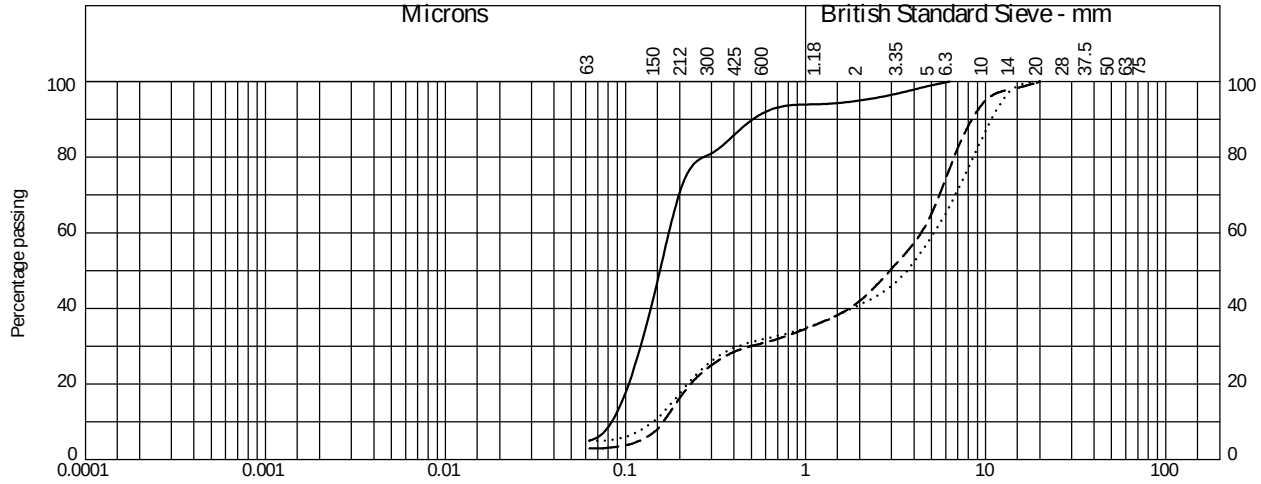
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-1
Contractor	N.P.	Date Reported	12/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-1
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 1)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	16-23/06/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	18-25/06/2015
Test Method Var	NIL	Tested By	BIKI / ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C11	SPT2	138.2	———	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-C11	SPT3	125.4	– – –	V. GRAVELLY, SL. SILTY, SAND (SP)	2.00
BH-C11	SPT4	124.5	.....	V. GRAVELLY, SILTY, SAND (S-M)	3.00
			–·–·–		

The results relate only to the samples tested.

Table C-1 (1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143-1		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B05	**Sampling Date**	16/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.60	96
0.425	90
0.300	81
0.212	72
0.150	57
0.075	15
0.063	12
0.023	10
0.015	8
0.008	6
0.006	5
0.004	4
0.002	3
0.001	0

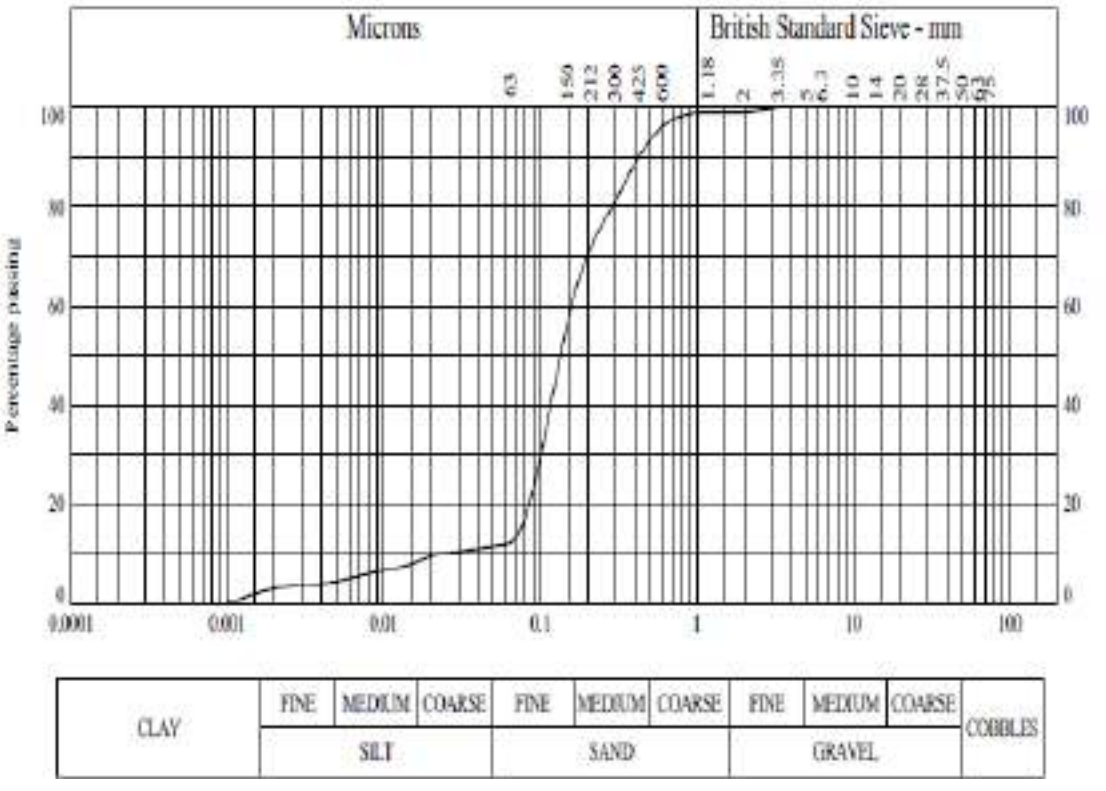


Table C-1 (2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B07	**Sampling Date**	16/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	98
1.18	98
0.60	96
0.425	93
0.300	86
0.212	85
0.150	64
0.075	18
0.063	16
0.023	12
0.015	11
0.008	10
0.006	8
0.004	6
0.002	4
0.001	0

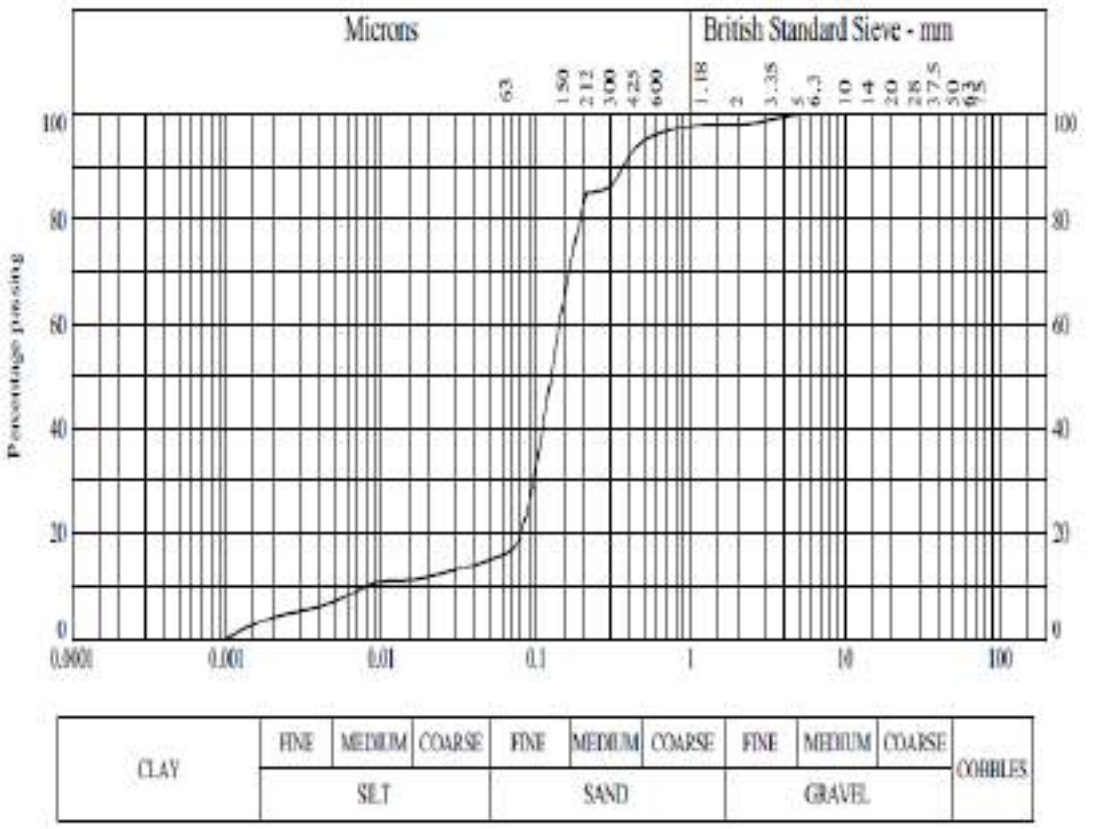


Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C03	**Sampling Date**	17/06/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	24/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	87
10	75
6.3	69
5	66
3.35	62
2	56
1.18	51
0.60	41
0.425	36
0.300	30
0.212	26
0.150	22
0.075	18
0.063	15
0.023	14
0.015	10
0.008	9
0.006	7
0.004	3
0.002	2
0.001	0

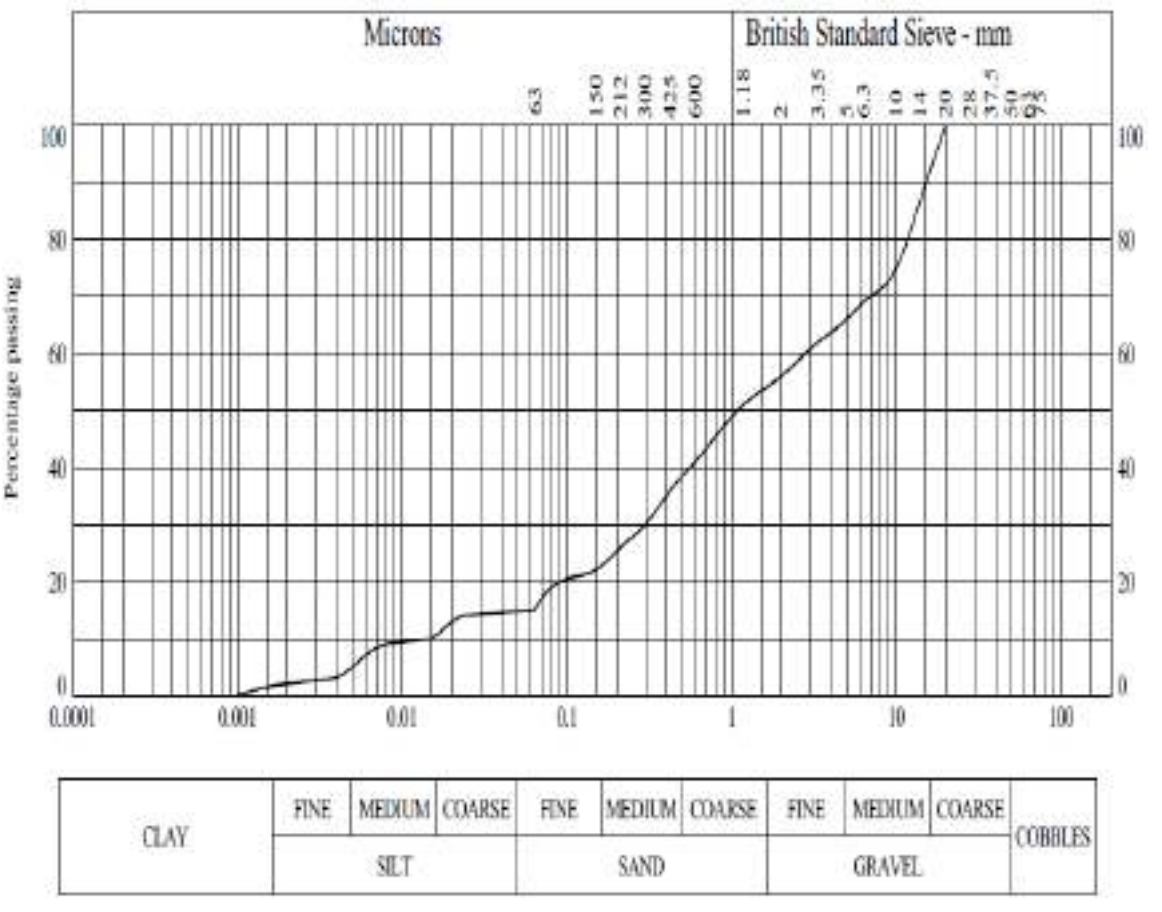


Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C05	**Sampling Date**	11/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	18/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	99
1.18	98
0.60	95
0.425	91
0.300	84
0.212	77
0.150	60
0.075	40
0.063	30
0.023	20
0.015	15
0.008	14
0.006	12
0.004	5
0.002	4
0.001	0

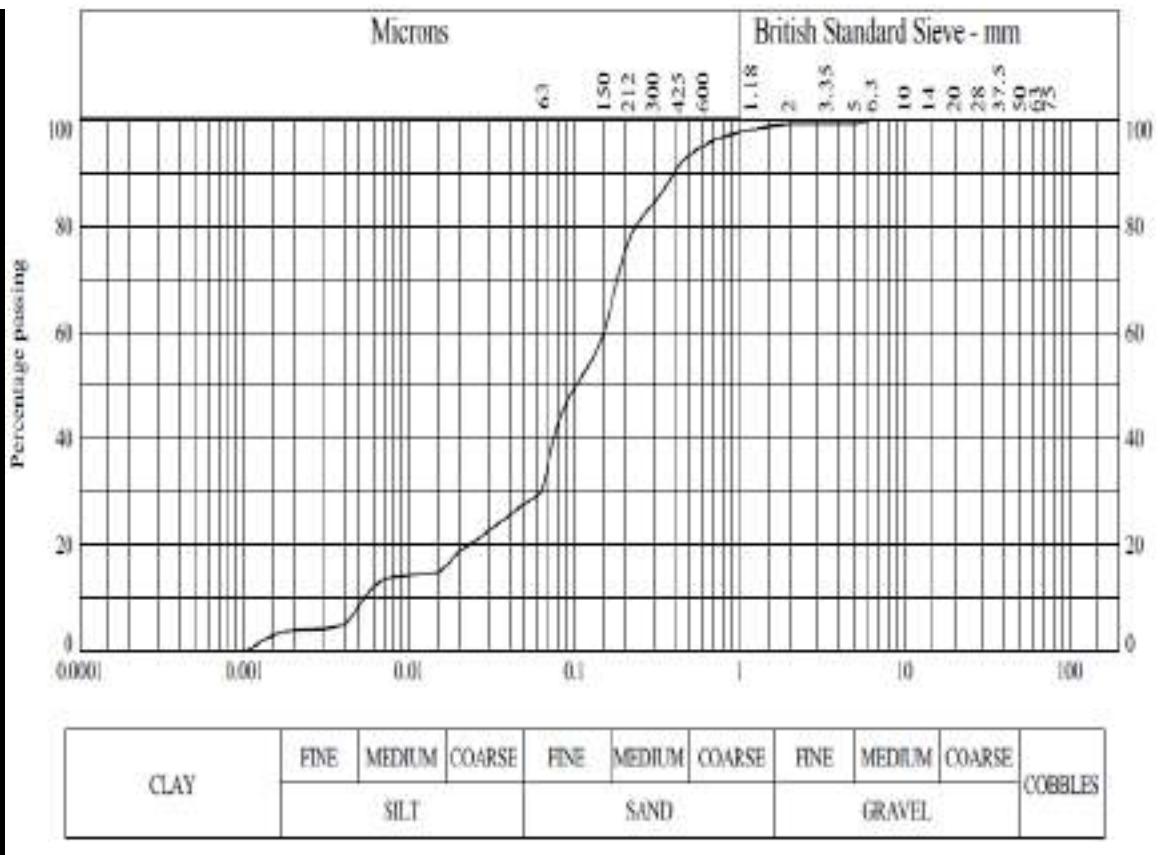


Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-C05	**Sampling Date**	16/06/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10	94
6.3	89
5	88
3.35	86
2	82
1.18	80
0.60	76
0.425	70
0.300	59
0.212	51
0.150	38
0.075	15
0.063	14
0.023	10
0.015	8
0.008	6
0.006	4
0.004	3
0.002	2
0.001	0

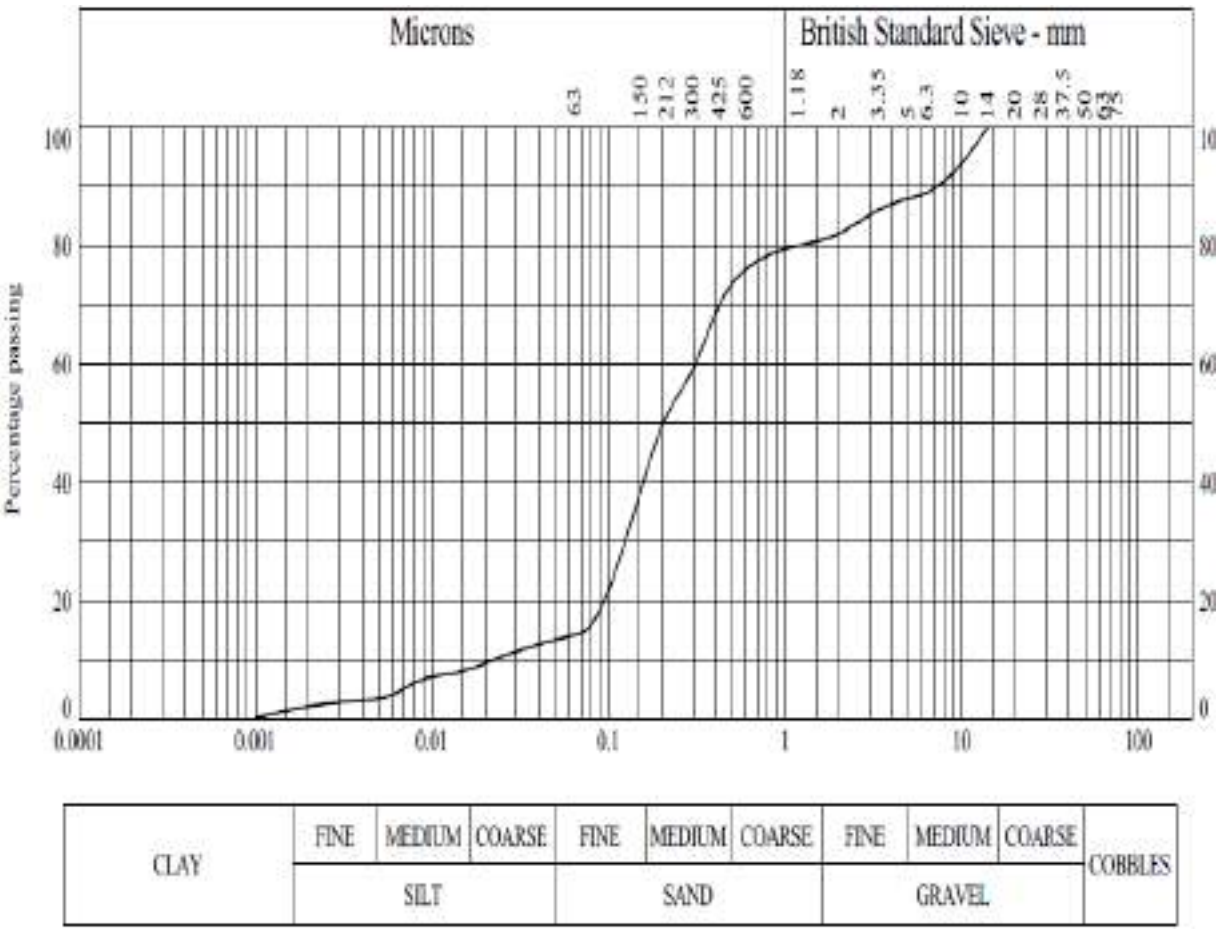


Table C-1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C05	**Sampling Date**	16/06/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	18/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.60	99
0.43	99
0.30	96
0.21	89
0.15	58
0.08	48
0.06	38
0.02	28
0.01	18
0.01	10
0.006	4
0.004	3
0.002	2
0.001	1

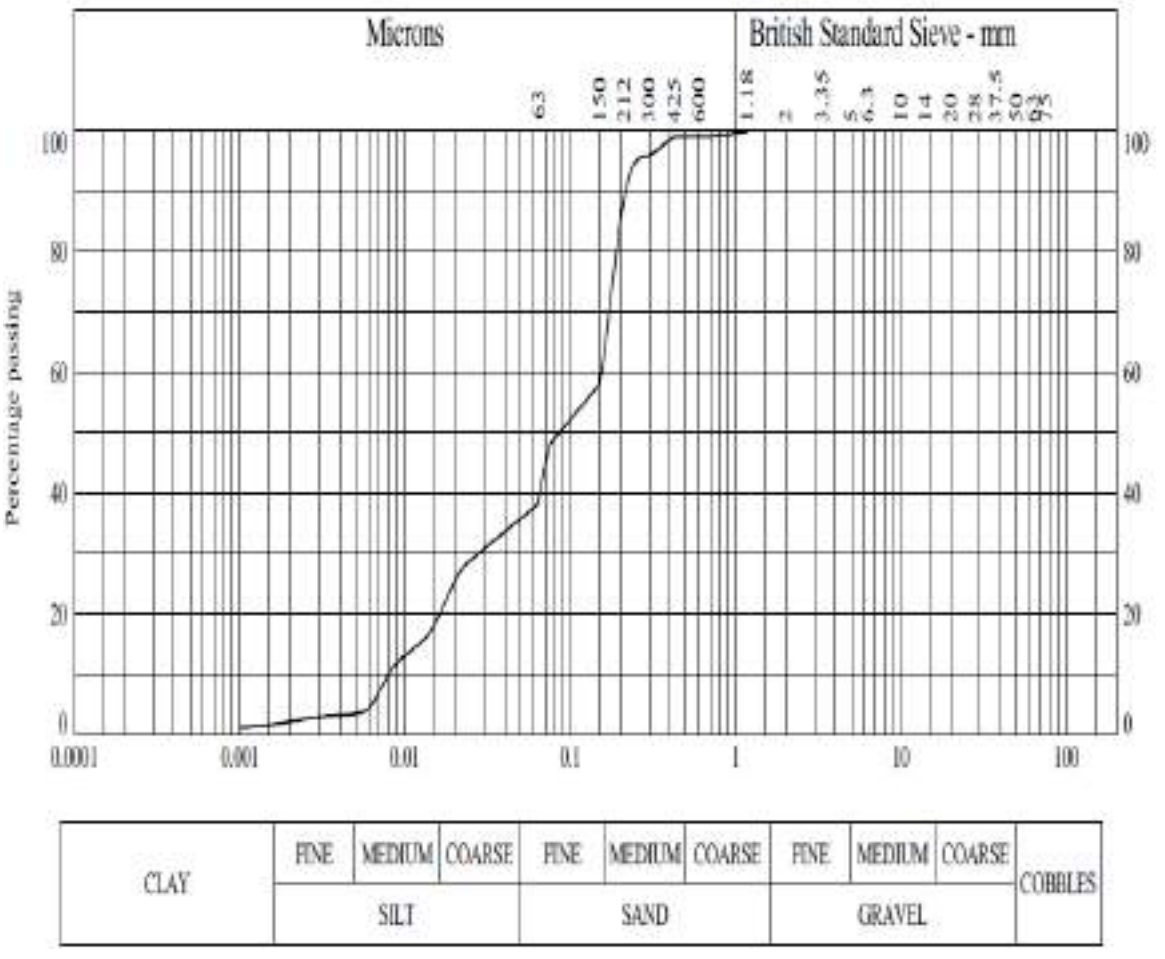


Table C-1 (7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-C05	**Sampling Date**	16/06/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	18/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	100
10.0	98
6.3	94
5.0	93
3.4	92
2.0	89
1.18	87
0.60	83
0.425	79
0.300	72
0.212	65
0.150	49
0.075	21
0.063	20
0.023	15
0.015	14
0.008	6
0.006	5
0.004	4
0.002	3
0.001	1

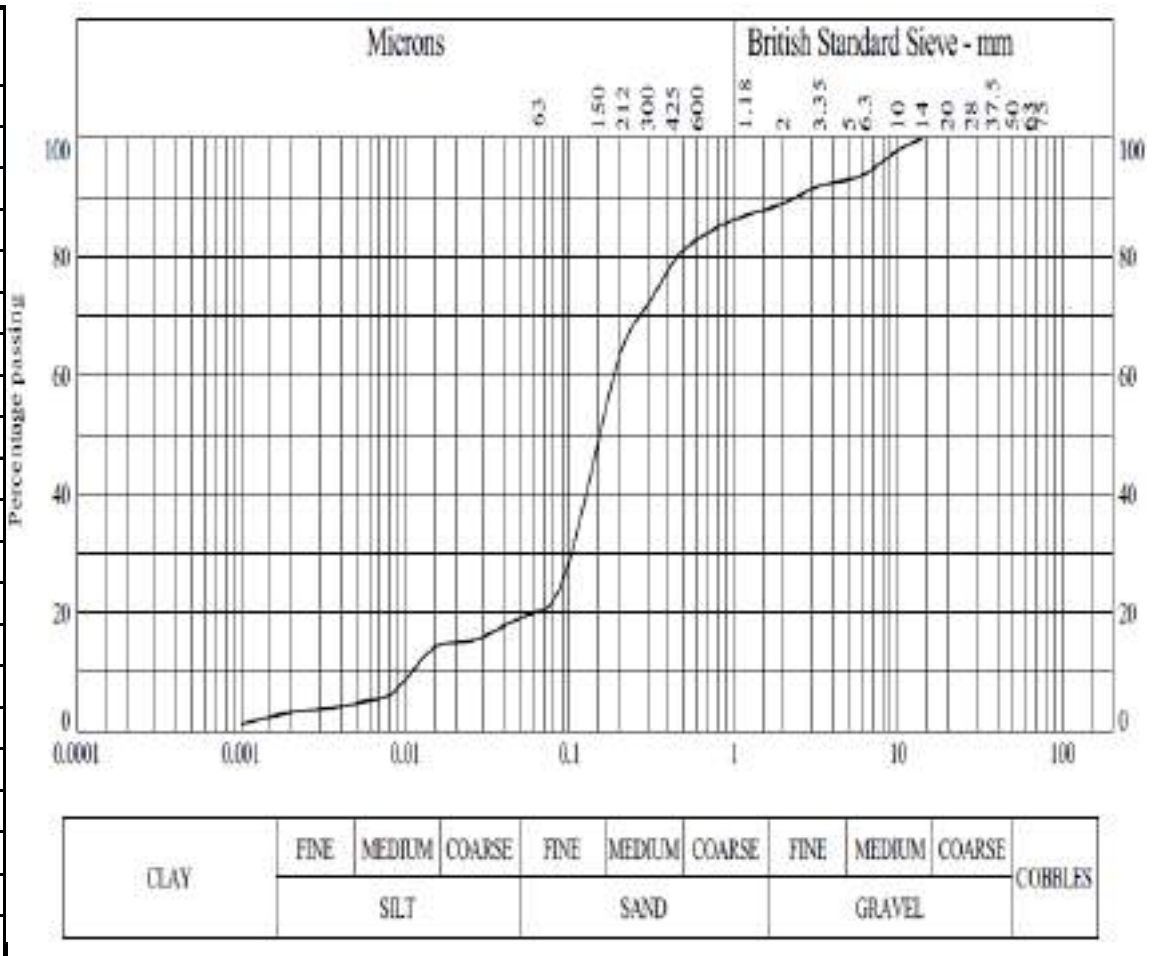


Table C-1 (8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C07	**Sampling Date**	15/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	24/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	98
1.18	98
0.6	96
0.425	91
0.3	84
0.212	75
0.150	49
0.075	15
0.063	13
0.023	8
0.015	7
0.008	6
0.006	5
0.004	4
0.002	2
0.001	0

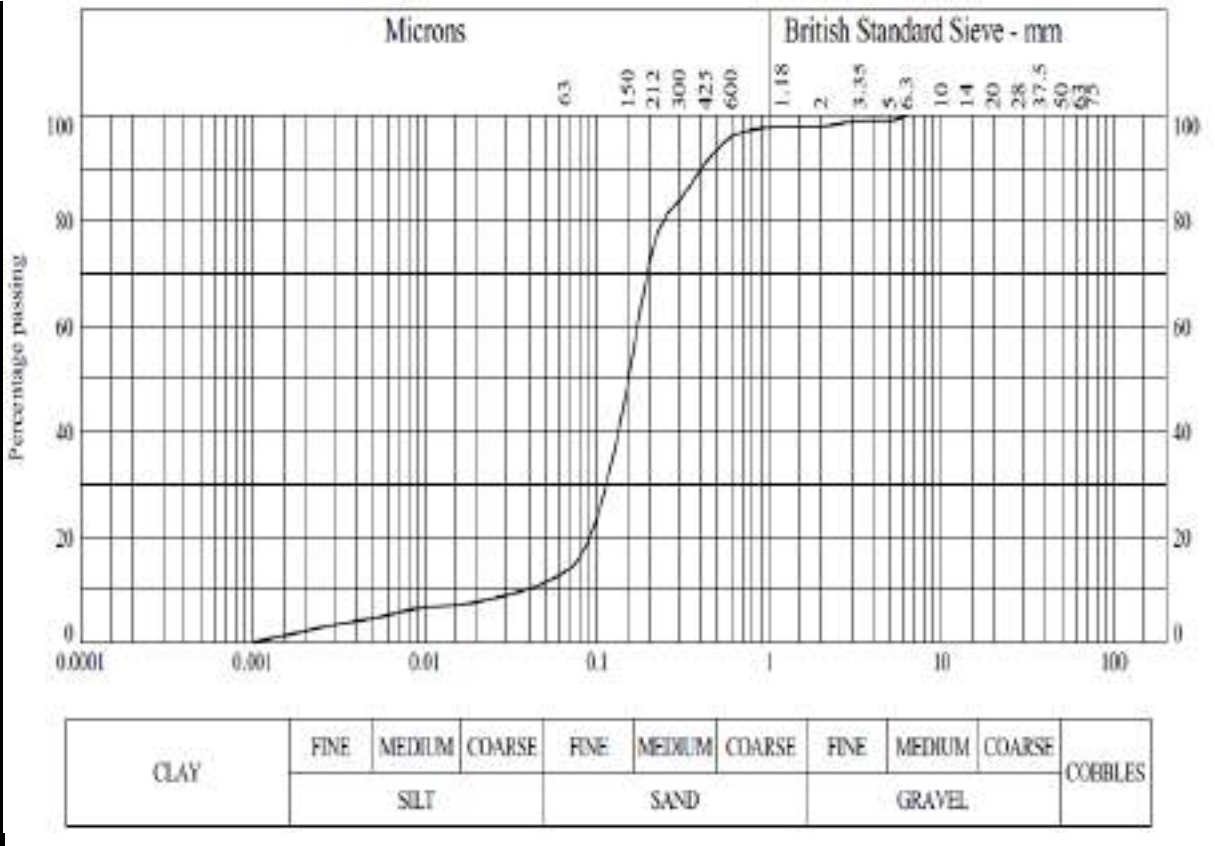


Table C-1 (9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, SANDY GRAVEL (SG)	**Sampled By**	Matrix
Borehole No.	BH-C07	**Sampling Date**	15/06/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	24/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	94
10	94
6.3	93
5	92
3.35	92
2	91
1.18	91
0.60	90
0.425	87
0.300	78
0.212	69
0.150	52
0.075	8
0.063	6
0.023	16
0.015	6
0.008	5
0.006	4
0.004	3
0.002	2
0.001	1

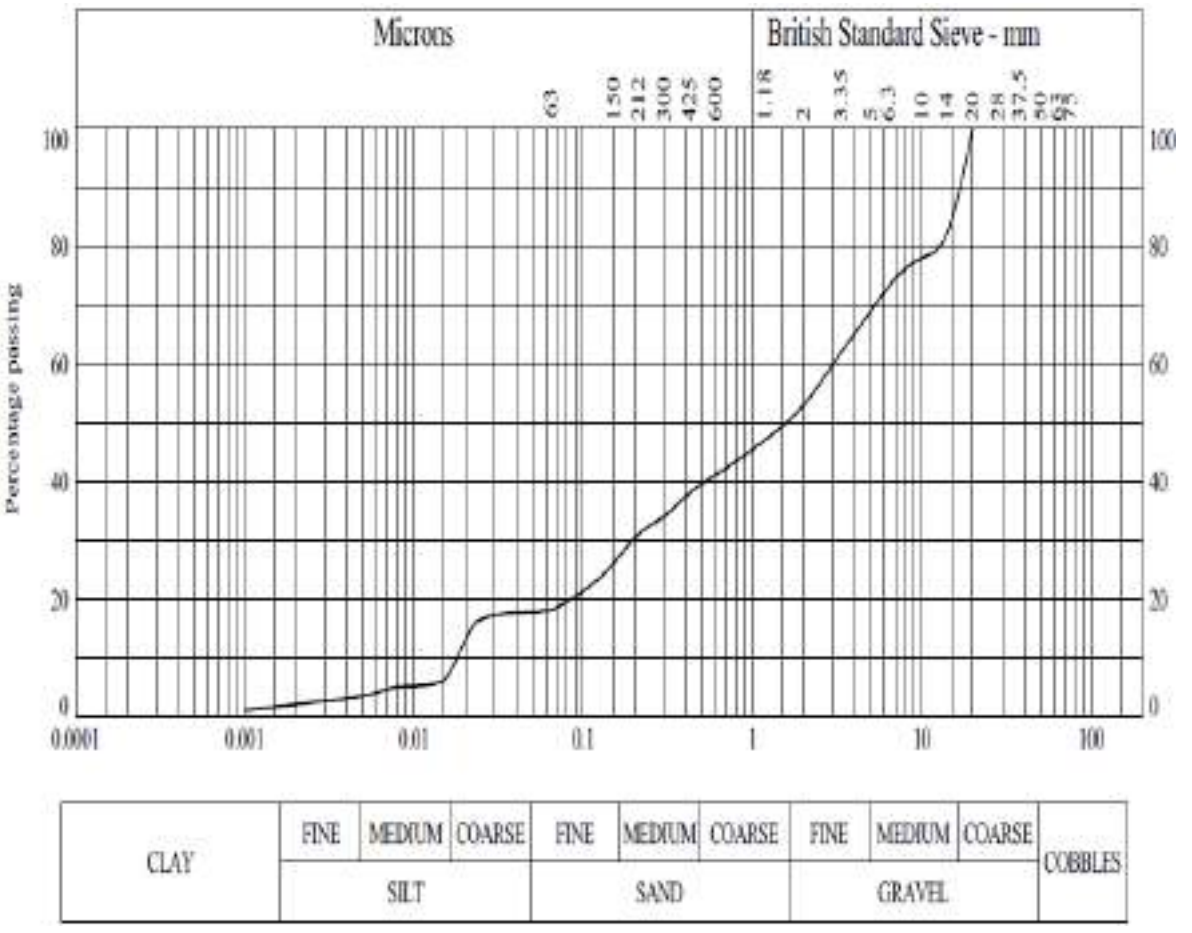


Table C-1 (10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-C09	**Sampling Date**	15/06/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	20/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	22/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	99
3.35	98
2	97
1.18	97
0.60	94
0.425	89
0.300	80
0.212	72
0.150	53
0.075	15
0.063	13
0.023	8
0.015	7
0.008	6
0.006	5
0.004	4
0.002	3
0.001	0

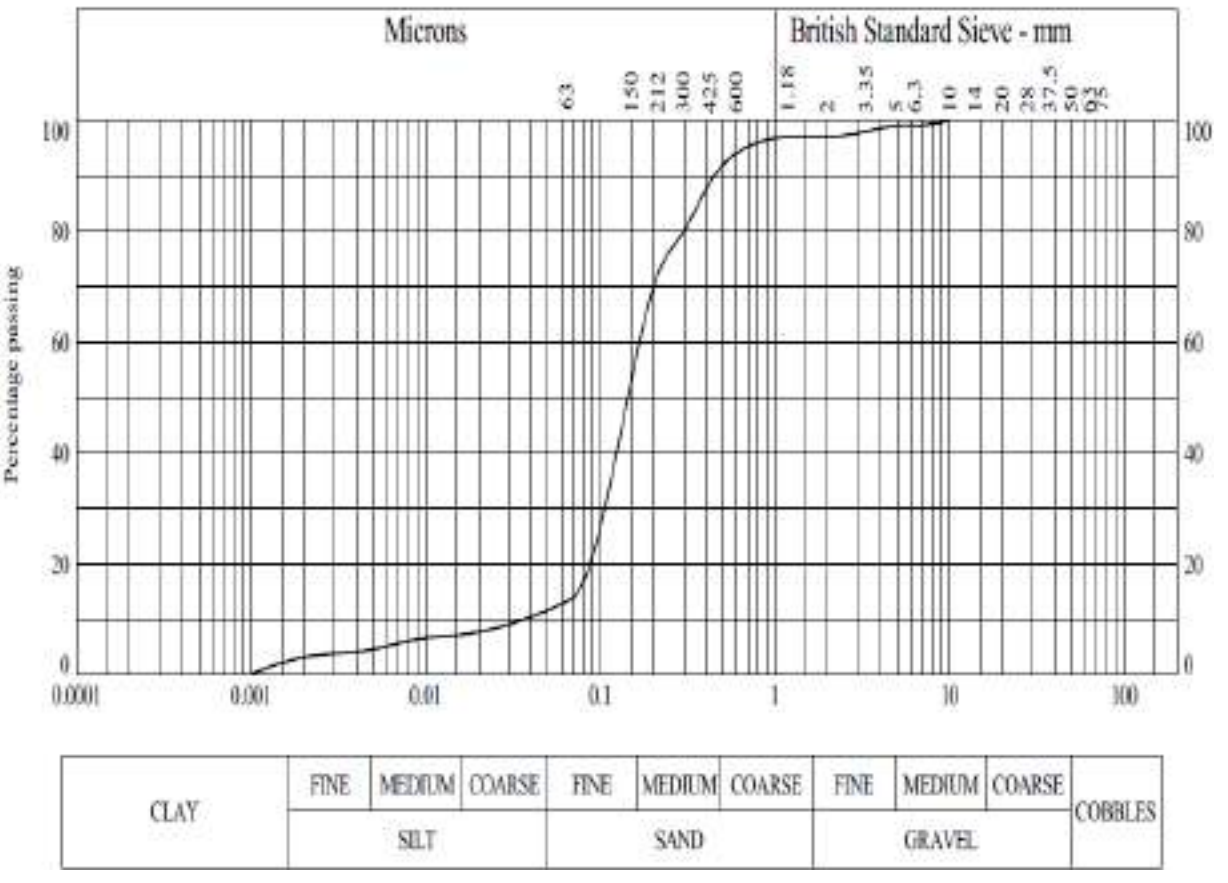


Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P	**Date Reported**	12/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-1
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C09	**Sampling Date**	15/06/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	20/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	22/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10	97
6.3	91
5	88
3.35	84
2	80
1.18	76
0.60	69
0.425	64
0.300	56
0.212	52
0.150	45
0.075	20
0.063	10
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

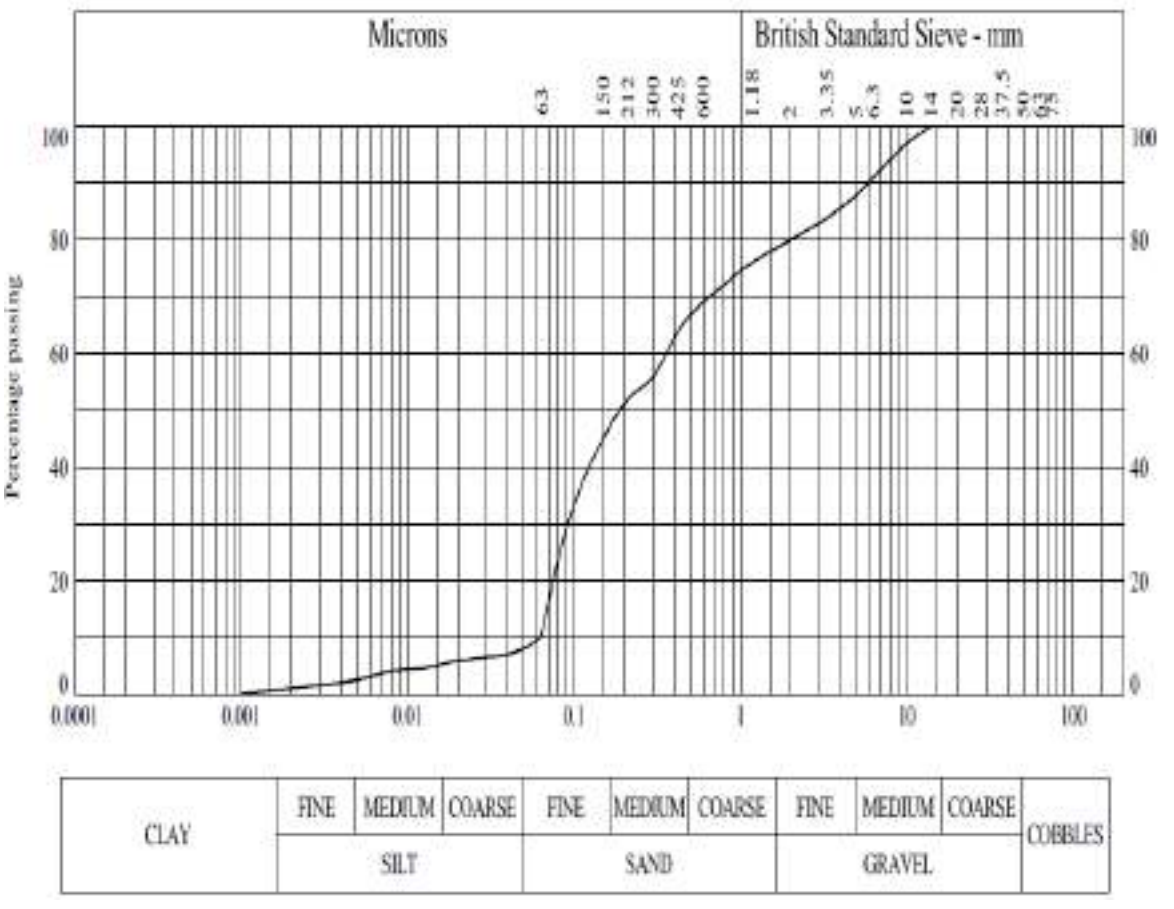


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Date Received**	16-23/06/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	18-25/06/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	11-21/06/2015
Tested By	Erwin		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-B01	2.0	11.0
BH-B01	3.0	14.0
BH-B01	4.0	21.0
BH-B02	2.0	5.8
BH-B02	3.0	12.0
BH-B02	3.0	15.0
BH-B03	1.0	22.0
BH-B03	3.0	16.0
BH-B03	4.0	13.0
BH-B04	1.0	12.0
BH-B04	3.0	12.0
BH-B04	5.0	14.0
BH-B05	1.0	7.6

Borehole No.	Depth	Moisture Content (%)
BH-B05	2.0	12.0
BH-B05	3.0	10.0
BH-B06	1.0	4.8
BH-B06	3.0	5.9
BH-B07	1.0	3.5
BH-B07	3.0	13.0
BH-B07	4.0	17.0
BH-C01	1.0	11.0
BH-C01	4.0	11.0
BH-C01	5.0	20.0
BH-C02	1.0	6.9
BH-C02	2.0	9.7
BH-C02	4.0	22.0
BH-C03	1.0	3.2
BH-C03	2.0	4.2
BH-C03	4.0	14.0
BH-C05	1.0	6.6
BH-C05	2.0	5.0
BH-C05	3.0	6.3
BH-C05	6.0	7.4
BH-C07	1.0	4.8
BH-C07	2.0	10.0
BH-C07	4.0	12.0
BH-C07	5.0	15.0
BH-C09	4.0	15.0

Borehole No.	Depth	Moisture Content (%)
BH-C09	5.0	16.0
BH-C09	6.5	17.0
BH-C11	2.0	17.0
BH-C11	3.0	15.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Date Received**	20/06/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	20/06/2015
Sample Description	Soil	**Sampling Date**	15/06/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-B06	2.0	2.59

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Date Received**	14-23/06/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	15-23/06/2015
Sample Description	SAND	**Sampling Date**	11-21/06/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Arlene
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-B03	1.00	100	0.2
BH-B07	2.00	100	0.2
BH-C05	1.00	100	0.1

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Date Received**	17-24/06/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	11-21/06/2015
Sample Description	ROCK CORE	**Date Tested**	18-25/06/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Arlene

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-B01	26.4	20.61	46.93
BH-B05	6.50	22.16	50.46
BH-B06	6.24	7.3	16.62
BH-C05	10.8	15.61	35.55

Engr. Rabih Dakwar
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Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 6

REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Contractor	N.P.	**Date Reported**	12/07/2015
Consultant	CH2M MACE JV	**Date Received**	16/06-01/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	17/06-02/07/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	11-25/06/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Biki
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-B01	5.15	1	0.28	Vertical
BH-B01	20.18	2	0.37	Vertical
BH-B01	32.60	3	0.10	Vertical
BH-B02	8.60	4	0.47	Vertical
BH-B02	17.00	5	1.05	Vertical
BH-B02	28.10	6	1.20	Vertical
BH-B03	4.82	7	0.65	Vertical
BH-B03	8.00	8	1.22	Vertical
BH-B04	7.70	9	0.17	Vertical
BH-B04	11.92	10	0.07	Vertical
BH-B04	31.10	11	0.71	Vertical
BH-B05	8.10	12	0.12	Vertical
BH-B05	35.10	13	0.30	Vertical
BH-B06	3.90	14	0.63	Vertical
BH-B06	3.15	15	0.63	Vertical
BH-B06	8.00	16	0.41	Vertical
BH-B06	8.60	17	1.27	Vertical
BH-B06	11.70	18	0.87	Vertical
BH-B06	13.00	19	0.05	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-B06	20.20	20	1.23	Vertical
BH-B06	25.35	21	0.27	Vertical
BH-B07	5.90	22	0.19	Vertical
BH-B07	25.70	23	0.12	Vertical
BH-C01	7.12	24	1.10	Vertical
BH-C01	16.80	25	0.21	Vertical
BH-C01	25.50	26	0.44	Vertical
BH-C01	28.70	27	0.12	Vertical
BH-C03	17.60	28	0.19	Vertical
BH-C03	25.00	29	0.81	Vertical
BH-C03	36.65	30	0.44	Vertical
BH-C03	53.70	31	0.17	Vertical
BH-C03	57.38	32	0.14	Vertical
BH-C03	59.00	33	0.18	Vertical
BH-C05	10.40	34	0.33	Vertical
BH-C05	11.60	35	1.28	Vertical
BH-C05	18.30	36	0.49	Vertical
BH-C05	22.40	37	0.07	Vertical
BH-C05	28.20	38	0.55	Vertical
BH-C05	33.31	39	1.44	Vertical
BH-C05	42.30	40	0.39	Vertical
BH-C05	43.40	41	0.10	Vertical
BH-C07	7.75	42	1.12	Vertical
BH-C07	9.75	43	0.44	Vertical
BH-C07	19.50	44	0.22	Vertical
BH-C07	21.50	45	0.12	Vertical
BH-C07	40.30	46	0.26	Vertical
BH-C09	6.73	47	1.27	Vertical
BH-C09	10.85	48	1.23	Vertical
BH-C09	19.52	49	1.42	Vertical
BH-C09	28.50	50	1.05	Vertical
BH-C09	39.50	51	0.77	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-C11	5.00	52	0.61	Vertical
BH-C11	17.00	53	0.92	Vertical
BH-C11	21.00	54	1.22	Vertical
BH-C11	36.50	55	0.95	Vertical
BH-C11	42.00	56	1.22	Vertical

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Dubai, U.A.E

The results relate only to the samples tested.

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TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	12/07/2015
Sample Description	Rock	**Date Received**	16/06-01/07/2015
Sample Source	Site	**Date Tested**	17/06-02/07/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin

Sample Details:			Dimensions:		Results:						
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density	Sketch	Rock Description
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-B01	6.65	1	7.10	14.40	2.2	1.25	177.5	9.70	2.10	Figure C-1	cal. SANDSTONE
BH-B01	8.00	2	7.30	15.10	2.8	0.99	282.7	11.90	1.87	Figure C-2	cal. SANDSTONE
BH-B01	14.50	3	7.40	15.20	3.8	1.25	306.4	11.70	1.72	Figure C-3	cal. SILTSTONE
BH-B01	23.60	4	7.50	15.10	4.1	1.32	311.7	14.50	1.59	Figure C-4	cal. SILTSTONE
BH-B01	31.00	5	7.30	15.00	5.4	1.93	280.9	11.70	1.58	Figure C-5	cal. SILTSTONE
BH-B01	35.50	6	6.90	15.00	3.4	1.60	214.1	10.50	1.57	Figure C-6	cal. SILTSTONE
BH-B02	4.35	7	7.50	15.00	5.6	1.93	287.6	6.40	2.02	Figure C-7	cal. SANDSTONE
BH-B02	11.30	8	7.50	15.10	2.9	1.26	230.1	19.00	2.05	Figure C-8	cal. CONGLOMERATE
BH-B02	14.80	9	7.50	15.10	2.2	1.13	190.6	30.20	1.76	Figure C-9	cal. CONGLOMERATE
BH-B02	26.80	10	7.50	15.10	1.8	1.13	161.3	13.00	2.16	Figure C-10	cal. SILTSTONE
BH-B02	35.50	11	7.50	15.10	3.5	1.19	290.1	11.60	2.06	Figure C-11	cal. SILTSTONE
BH-B03	6.30	12	7.50	15.00	3.4	1.33	253.3	9.50	1.79	Figure C-12	cal. SANDSTONE
BH-B03	7.10	13	7.50	15.10	7.2	2.12	338.7	4.70	2.09	Figure C-13	cal. SANDSTONE
BH-B03	18.34	14	7.50	15.20	2.0	0.99	206.4	20.70	1.69	Figure C-14	cal. CONGLOMERATE
BH-B03	32.10	15	7.40	15.00	4.7	1.87	248.8	14.60	2.07	Figure C-16	cal. SILTSTONE
BH-B04	6.35	16	7.00	14.20	2.6	1.41	182.1	8.30	2.21	Figure C-17	cal. SANDSTONE
BH-B04	9.00	17	7.50	15.00	3.7	1.27	291.4	18.50	2.03	Figure C-18	cal. SILTSTONE
BH-B04	17.39	18	7.50	15.00	8.2	2.53	324.2	20.40	1.99	Figure C-19	cal. SILTSTONE
BH-B04	21.80	19	7.50	15.00	3.0	1.20	248.5	18.70	2.25	Figure C-20	cal. SILTSTONE
BH-B04	33.10	20	7.50	15.30	3.4	1.37	249.9	12.80	1.94	Figure C-21	cal. SILTSTONE
BH-B05	6.80	21	6.70	13.60	2.7	1.40	192.8	23.90	2.25	Figure C-22	cal. SILTSTONE
BH-B05	16.60	22	7.50	15.10	3.8	1.92	197.0	11.70	2.01	Figure C-23	cal. SILTSTONE
BH-B05	32.80	23	7.50	15.00	3.5	1.27	277.0	11.60	2.07	Figure C-25	cal. SILTSTONE

MATRIX LABORATORY L.L.C.

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-B06	7.14	24	7.50	15.00	18.6	4.60	404.7	6.20	2.43	Figure C-26	cal. CONGLOMERATE
BH-B06	9.80	25	7.50	15.10	8.7	2.32	374.9	20.10	2.07	Figure C-27	cal. CONGLOMERATE
BH-B06	17.30	26	7.50	15.10	4.6	1.66	279.5	18.30	2.07	Figure C-28	cong. SILTSTONE
BH-B06	33.20	27	7.50	15.10	3.0	1.19	255.3	14.90	2.01	Figure C-30	cal. SILTSTONE
BH-B07	9.30	28	7.50	15.00	7.3	2.33	314.1	13.00	2.15	Figure C-31	cal. SILTSTONE
BH-B07	14.00	29	7.50	15.00	3.1	1.07	286.5	23.30	1.93	Figure C-32	cal. SILTSTONE
BH-B07	18.50	30	7.60	15.20	13.4	3.36	398.6	9.00	1.94	Figure C-33	cal. SILTSTONE
BH-B07	33.20	31	7.30	15.00	3.4	1.67	200.7	15.40	2.02	Figure C-35	cal. SILTSTONE
BH-C01	13.00	32	7.50	15.10	16.5	3.71	443.4	18.70	1.98	Figure C-36	cal. SILTSTONE
BH-C01	18.00	33	7.50	15.00	7.3	2.33	314.1	25.60	1.90	Figure C-37	cal. SILTSTONE
BH-C01	29.10	34	7.50	15.10	2.6	1.19	218.1	25.60	1.90	Figure C-38	cong. SILTSTONE
BH-C01	46.80	35	7.60	15.20	2.9	1.51	192.3	16.30	2.08	Figure C-40	cal. SILTSTONE
BH-C01	50.40	36	7.40	15.10	3.4	1.85	185.5	14.60	2.04	Figure C-41	cal. SILTSTONE
BH-C03	11.15	37	7.50	15.10	9.5	2.98	317.9	21.70	1.93	Figure C-42	cal. SILTSTONE
BH-C03	13.00	38	7.50	15.00	3.4	1.60	212.3	30.40	1.85	Figure C-43	cal. SILTSTONE
BH-C03	25.50	39	7.50	15.00	3.7	1.67	219.9	20.30	1.74	Figure C-44	cal. SILTSTONE
BH-C03	37.40	40	7.50	15.10	2.7	0.93	288.0	15.00	1.93	Figure C-45	cal. SILTSTONE
BH-C03	42.00	41	6.00	13.40	3.2	1.57	206.1	18.50	1.65	Figure C-46	cal. SILTSTONE
BH-C03	45.18	42	6.40	13.50	3.3	1.56	211.5	15.20	1.64	Figure C-47	cal. SILTSTONE
BH-C03	48.18	43	6.20	13.40	3.8	1.87	203.1	16.40	1.76	Figure C-48	cal. SILTSTONE
BH-C03	49.68	44	6.30	15.10	6.8	1.85	370.2	12.50	1.71	Figure C-49	cal. SILTSTONE
BH-C05	8.40	45	7.40	15.10	3.1	1.06	294.4	24.30	1.76	Figure C-50	cal. CONGLOMERATE
BH-C05	12.20	46	7.50	15.10	8.5	2.58	328.6	21.10	1.86	Figure C-51	cal. SILTSTONE
BH-C05	13.50	47	7.50	15.00	12.0	3.00	399.8	21.00	1.92	Figure C-52	cal. SILTSTONE
BH-C05	16.50	48	7.50	15.10	5.9	2.12	280.1	14.30	1.98	Figure C-53	cal. SILTSTONE
BH-C05	25.00	49	7.50	15.20	4.9	2.17	224.0	18.90	1.96	Figure C-54	cal. SILTSTONE
BH-C05	42.70	50	7.50	15.10	3.8	1.92	195.6	16.50	2.12	Figure C-55	cong. SILTSTONE
BH-C05	52.00	51	7.50	15.10	3.5	1.59	218.8	21.30	1.90	Figure C-57	cal. SILTSTONE
BH-C07	10.75	52	7.50	15.00	6.9	2.33	295.1	19.40	1.95	Figure C-58	cal. SILTSTONE
BH-C07	14.16	53	6.30	15.10	9.3	2.78	335.1	19.50	2.05	Figure C-59	cal. SILTSTONE
BH-C07	23.50	54	6.30	13.00	3.0	1.62	186.0	19.50	2.04	Figure C-60	cong. SILTSTONE
BH-C07	26.60	55	6.30	13.30	2.0	1.13	180.1	16.40	2.06	Figure C-61	cong. SILTSTONE
BH-C07	34.20	56	6.10	15.00	2.4	1.13	210.6	19.40	1.84	Figure C-62	cal. SILTSTONE
BH-C07	37.00	57	6.00	15.00	4.1	1.67	242.9	8.40	1.78	Figure C-63	cal. SILTSTONE
BH-C07	41.30	58	6.00	15.00	6.6	2.07	316.8	11.80	2.15	Figure C-64	cal. SILTSTONE
BH-C07	41.60	59	6.10	15.10	3.1	1.59	196.7	20.40	1.45	Figure C-65	cal. SILTSTONE

MATRIX LABORATORY L.L.C.

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-C07	45.00	60	6.10	15.10	3.8	1.26	298.2	18.90	1.85	Figure C-66	cal. SILTSTONE
BH-C07	48.00	61	6.10	15.00	4.4	2.33	189.9	16.40	1.68	Figure C-67	cal. SILTSTONE
BH-C07	49.10	62	6.10	15.00	3.5	1.73	202.7	18.40	1.69	Figure C-68	cal. SILTSTONE
BH-C07	53.50	63	6.20	15.10	3.0	1.46	207.6	15.20	1.75	Figure C-69	cal. SILTSTONE
BH-C07	56.60	64	6.20	15.20	1.9	1.05	184.7	12.40	1.59	Figure C-70	cal. SILTSTONE
BH-C07	59.00	65	6.20	15.20	5.1	2.11	239.4	19.30	1.67	Figure C-71	cal. SILTSTONE
BH-C09	8.40	66	7.50	15.00	4.7	2.33	202.7	6.50	2.31	Figure C-72	cal. CONGLOMERATE
BHC09	13.80	67	7.50	15.00	6.9	2.40	287.7	22.80	1.91	Figure C-73	cal. SILTSTONE
BHC09	27.15	68	7.40	15.30	2.5	1.24	201.3	16.20	1.73	Figure C-74	cong. SILTSTONE
BHC09	43.80	69	7.40	15.20	2.5	1.12	222.9	21.80	1.84	Figure C-76	cal. SILTSTONE
BHC09	52.25	70	7.40	15.10	3.3	1.59	205.2	15.60	2.07	Figure C-77	cal. SILTSTONE
BH-C11	6.50	71	7.50	15.10	7.1	2.58	276.2	6.90	1.94	Figure C-78	cal. SANDSTONE
BH-C11	13.60	72	7.50	15.10	4.1	1.92	212.9	19.40	2.01	Figure C-79	cal. SILTSTONE
BH-C11	18.30	73	7.50	15.10	11.9	3.38	351.1	13.20	2.17	Figure C-80	cal. SILTSTONE
BH-C11	38.10	74	7.50	15.00	3.2	1.60	200.2	10.60	2.07	Figure C-82	cal. SILTSTONE
BH-C11	53.00	75	7.50	15.00	5.2	1.80	286.9	16.20	2.07	Figure C-84	cal. SILTSTONE

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The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

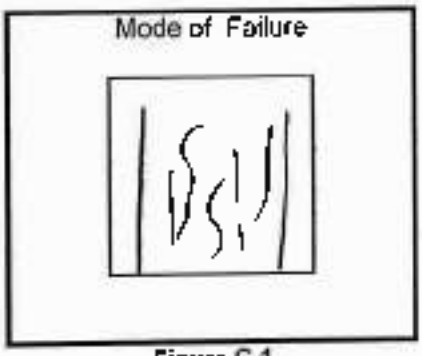


Figure C-1

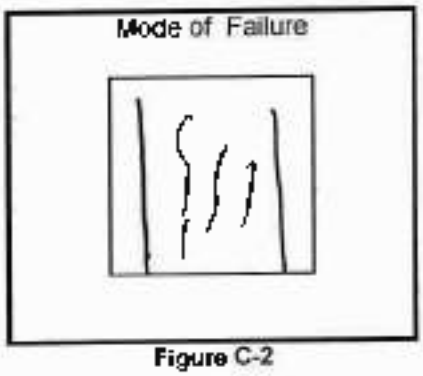


Figure C-2

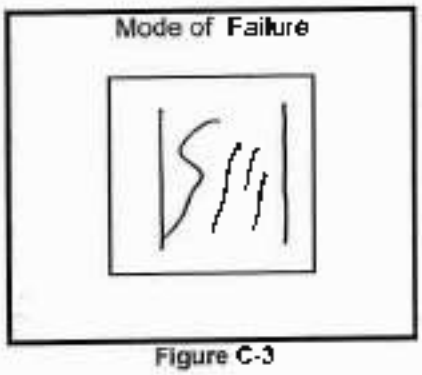


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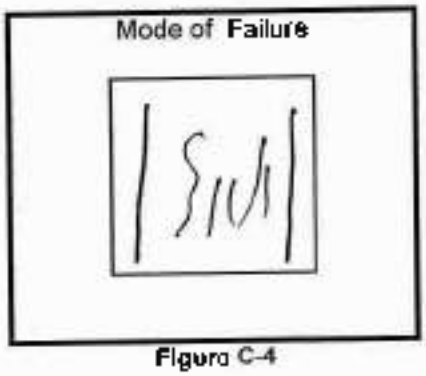


Figure C-4

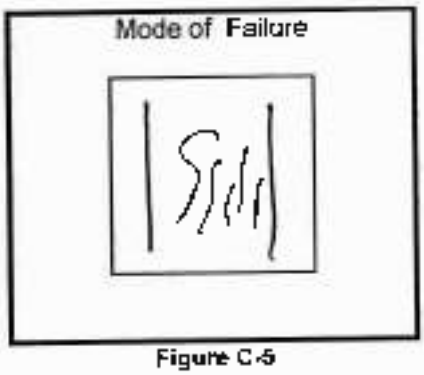


Figure C-5

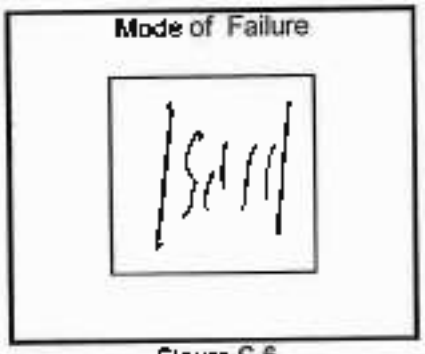


Figure C-6

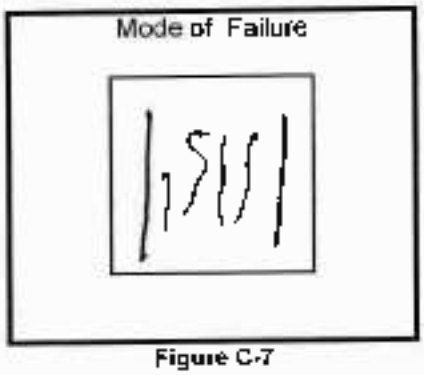


Figure C-7

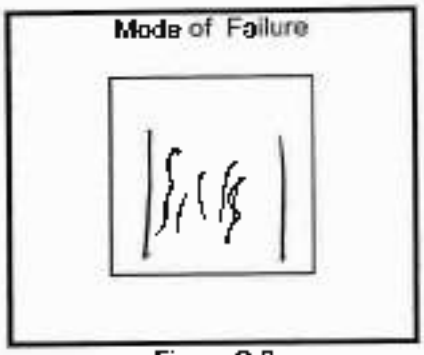


Figure C-8

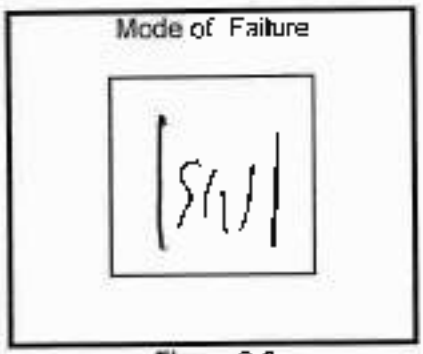


Figure C-9

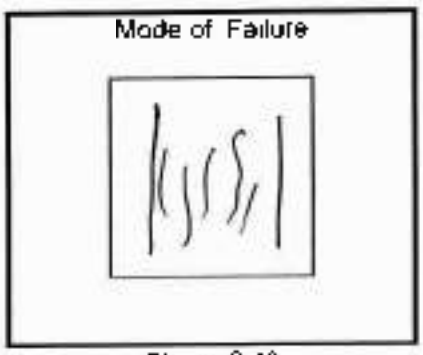


Figure C-10

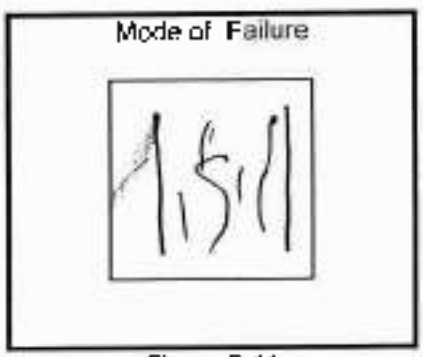


Figure C-11

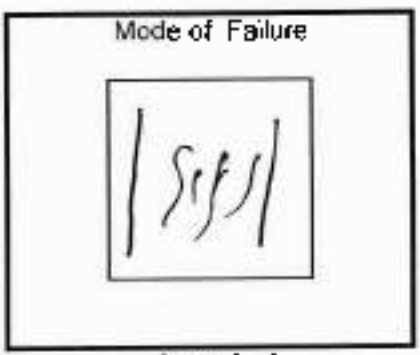


Figure C-12

TYPE OF FRACTURES FOR CORES

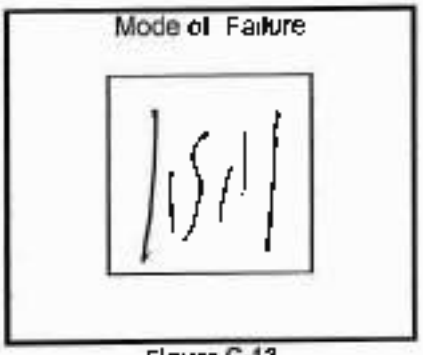


Figure C-13

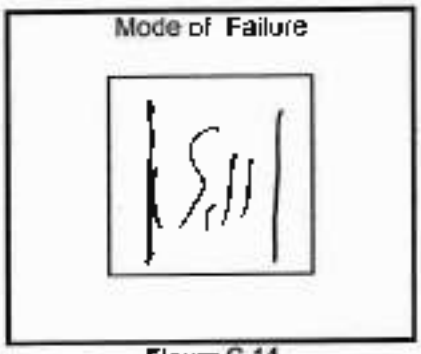


Figure C-14

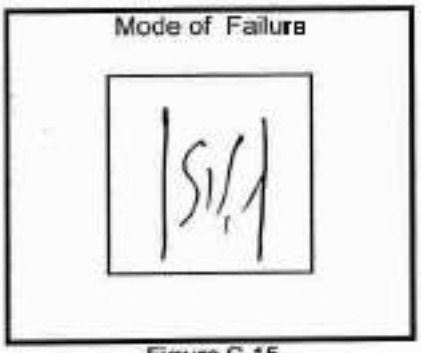


Figure C-15

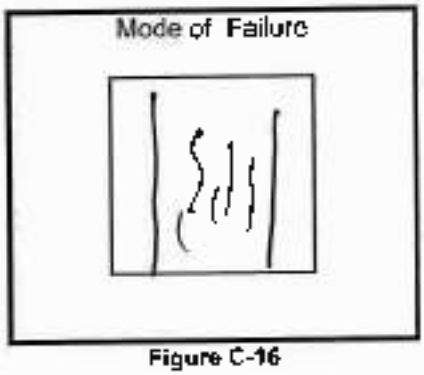


Figure C-16

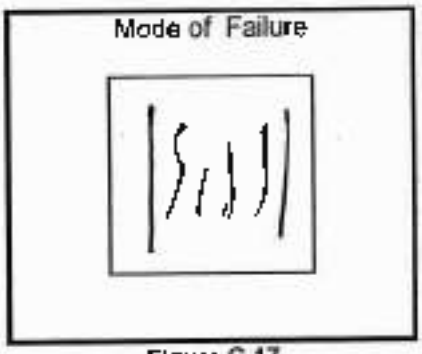


Figure C-17

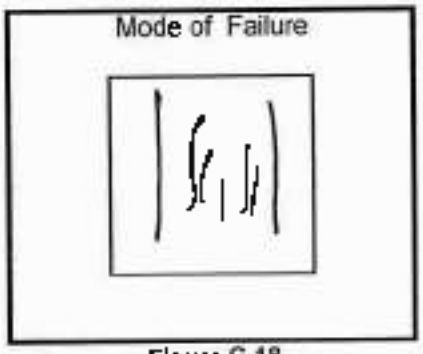


Figure C-18

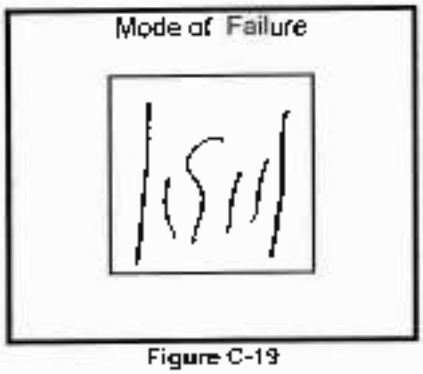


Figure C-19

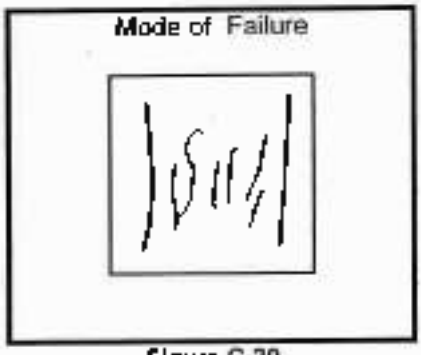


Figure C-20

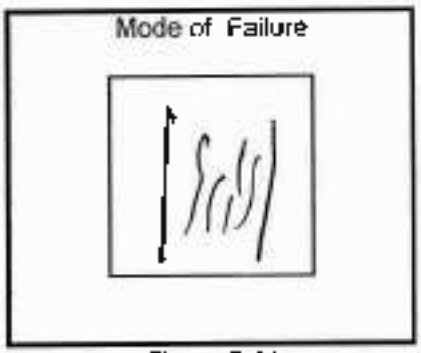


Figure C-21

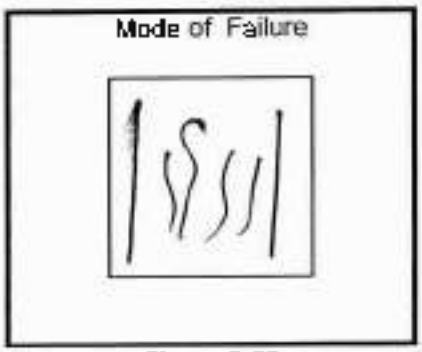


Figure C-22

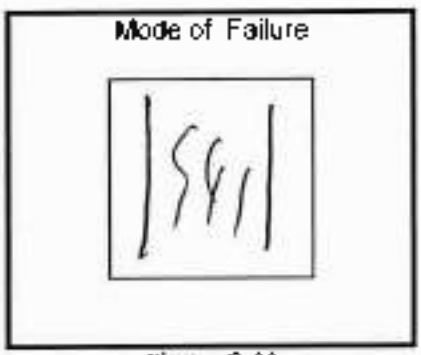


Figure C-23

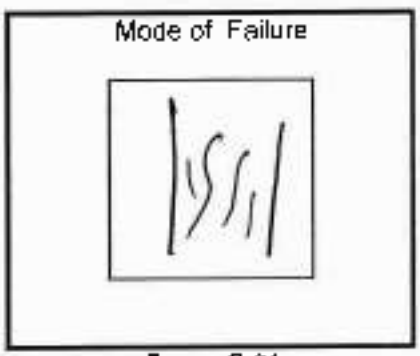


Figure C-24

TYPE OF FRACTURES FOR CORES

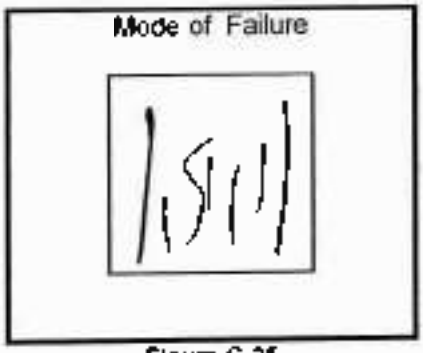


Figure C-25

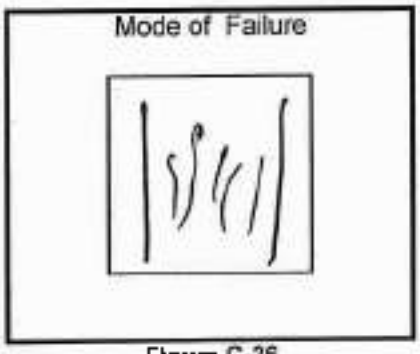


Figure C-26



Figure C-27

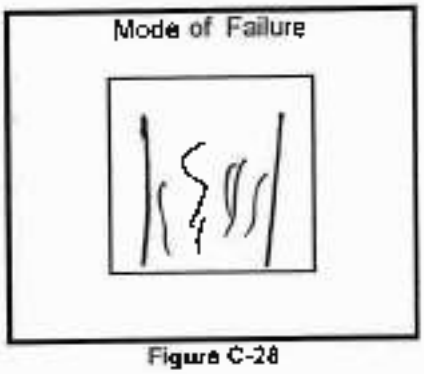


Figure C-28

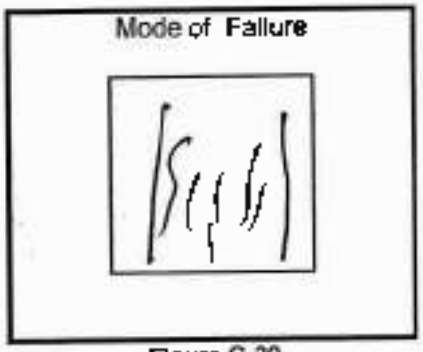


Figure C-29

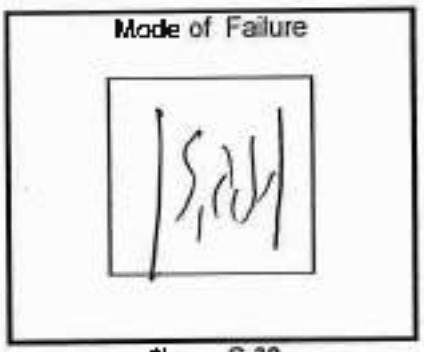


Figure C-30

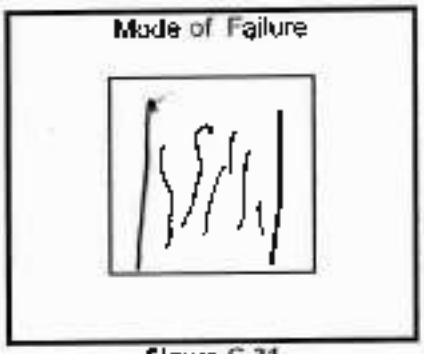


Figure C-31

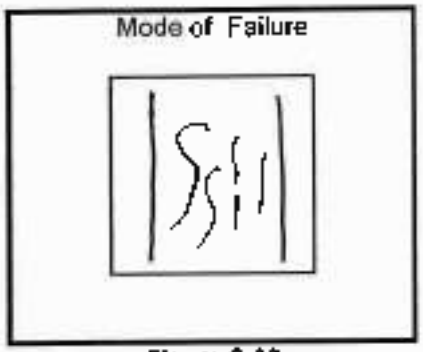


Figure C-32

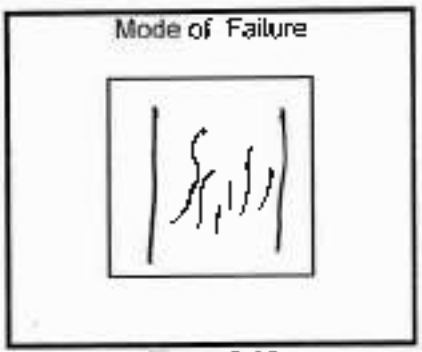


Figure C-33

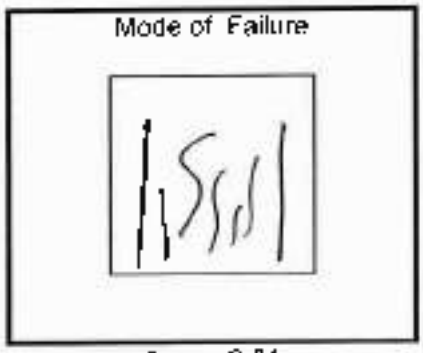


Figure C-34

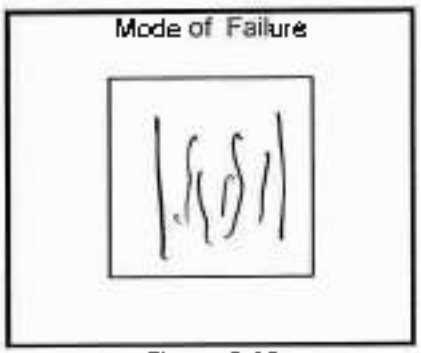


Figure C-35

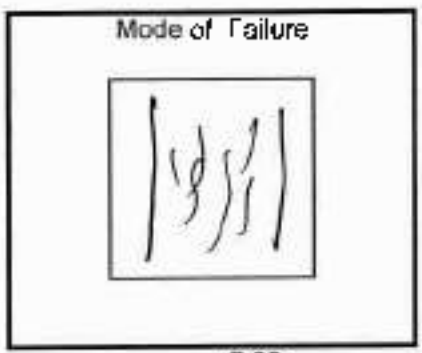


Figure C-36

TYPE OF FRACTURES FOR CORES

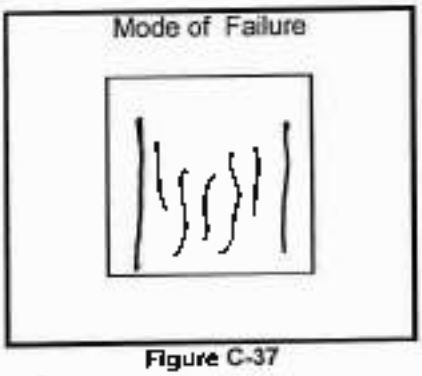


Figure C-37

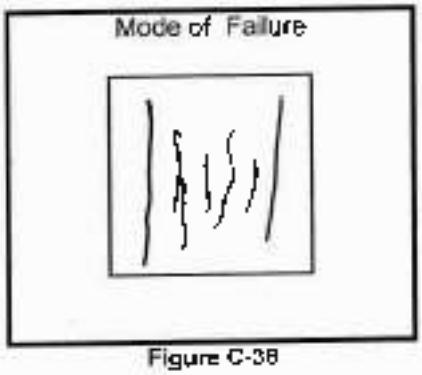


Figure C-38

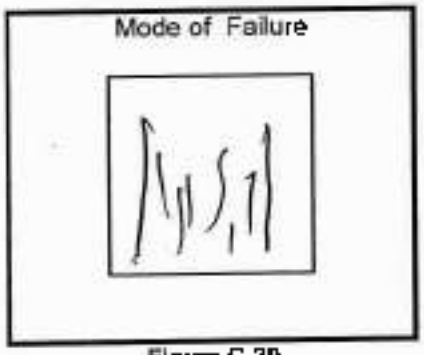


Figure C-39

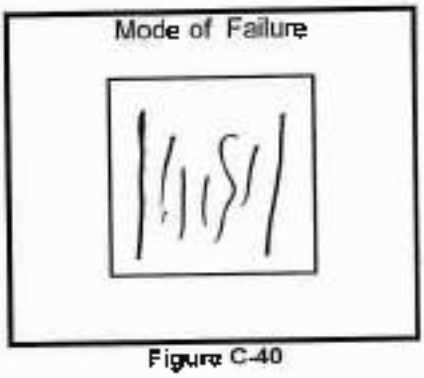


Figure C-40

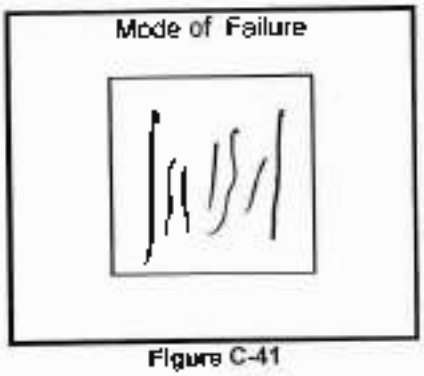


Figure C-41

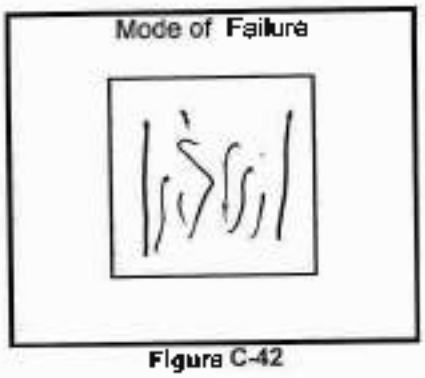


Figure C-42

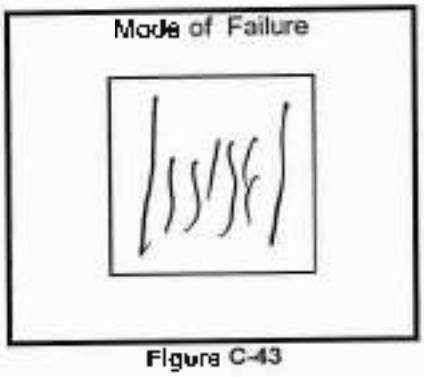


Figure C-43

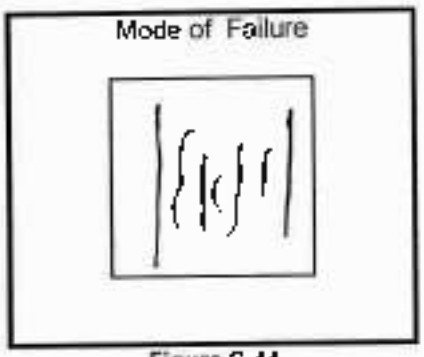


Figure C-44

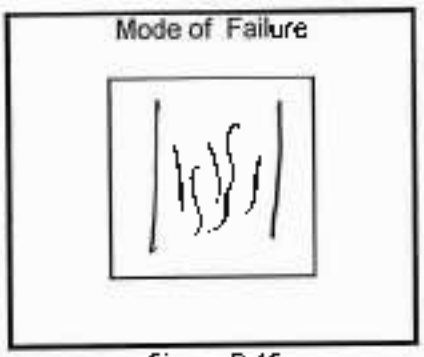


Figure C-45

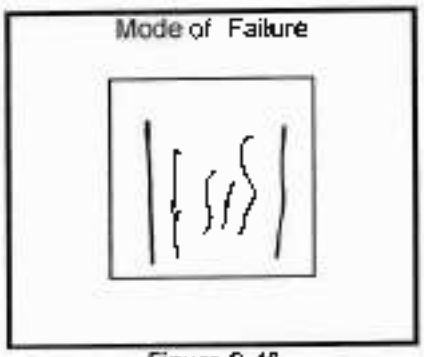


Figure C-46

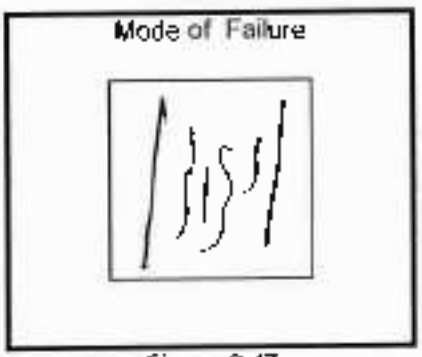


Figure C-47

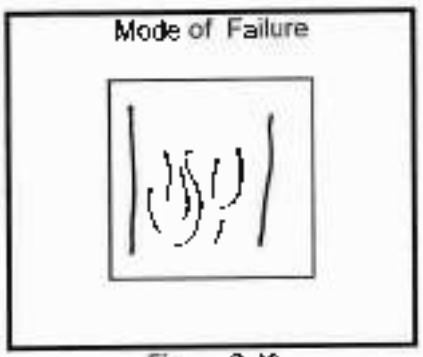


Figure C-48

TYPE OF FRACTURES FOR CORES

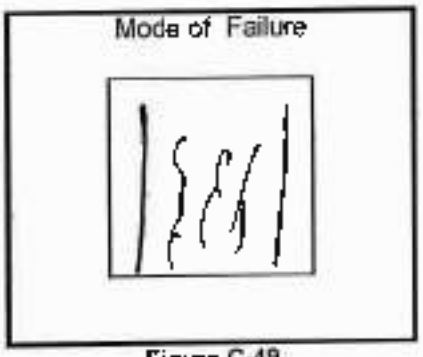


Figure C-49

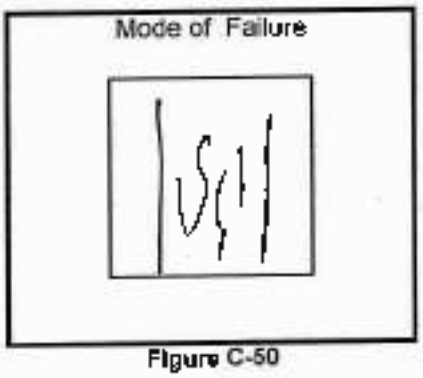


Figure C-50

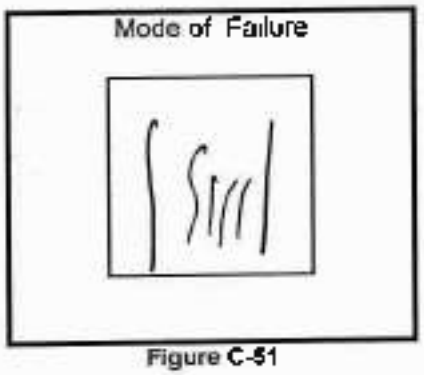


Figure C-51

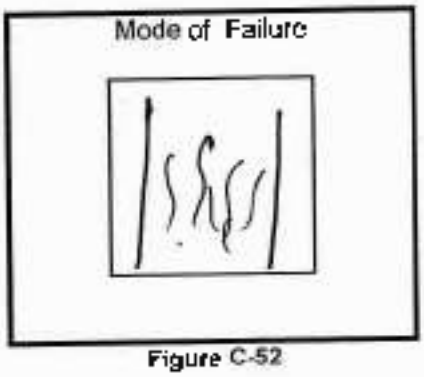


Figure C-52

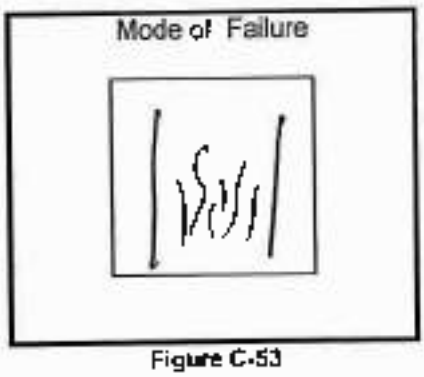


Figure C-53

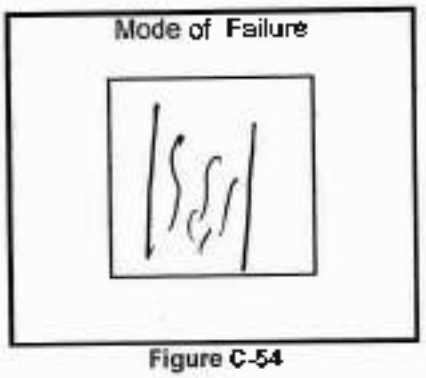


Figure C-54

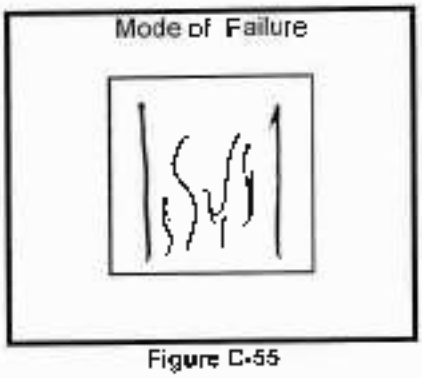


Figure C-55

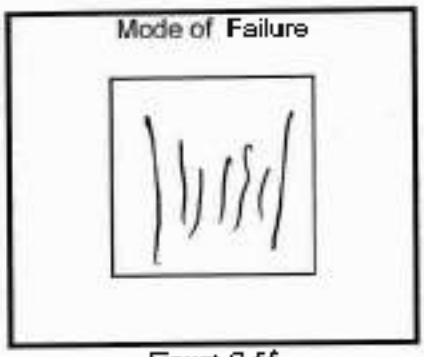


Figure C-56

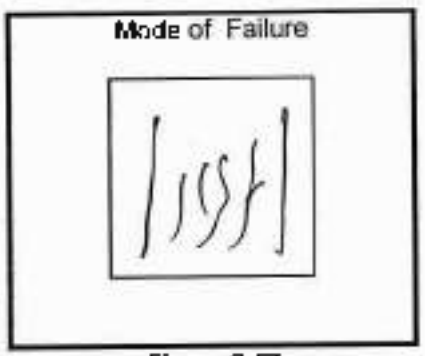


Figure C-57

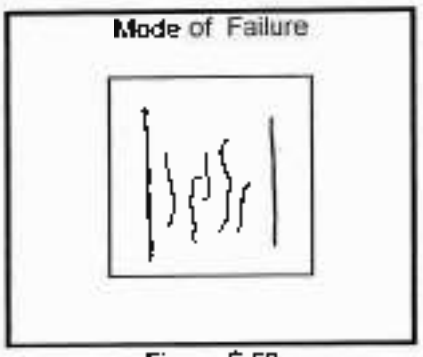


Figure C-58

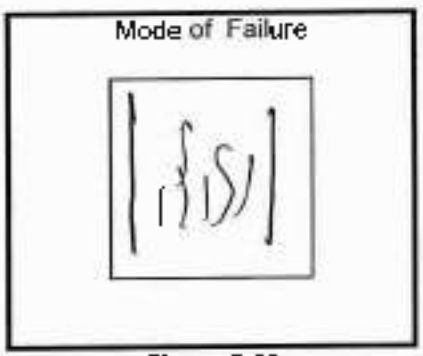


Figure C-59

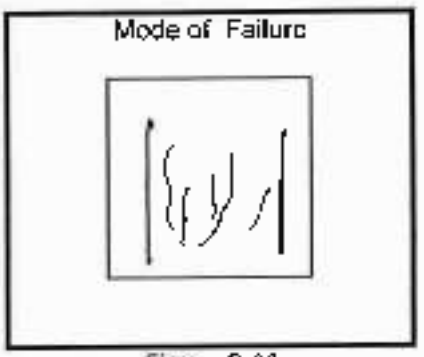


Figure C-60

TYPE OF FRACTURES FOR CORES

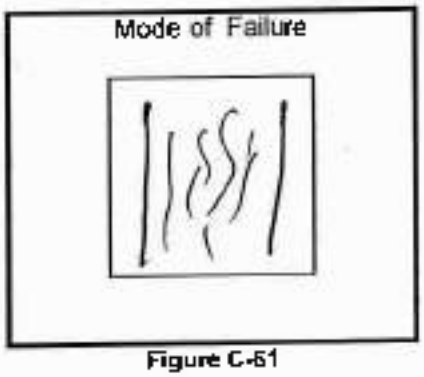


Figure C-61

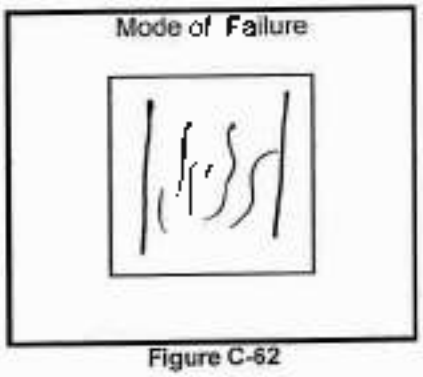


Figure C-62

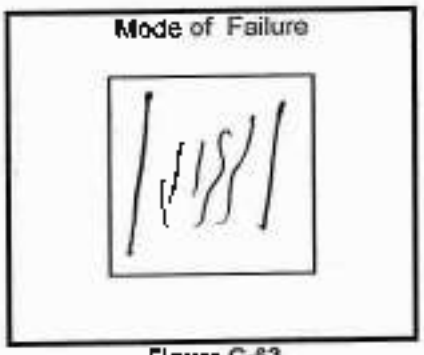


Figure C-63

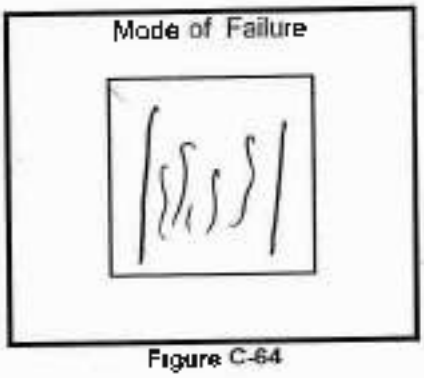


Figure C-64

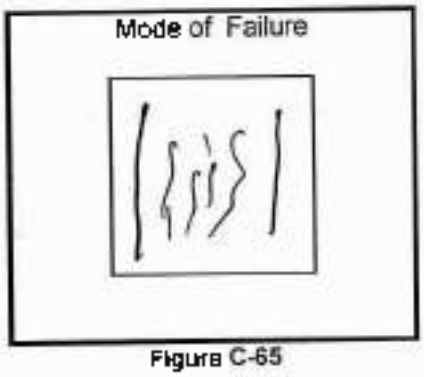


Figure C-65

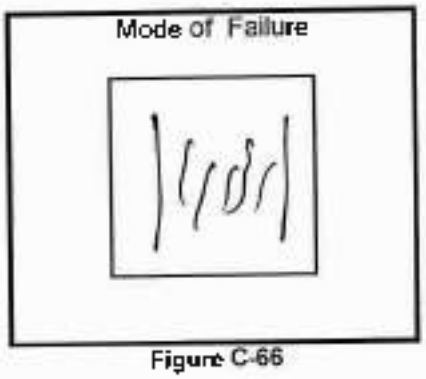


Figure C-66

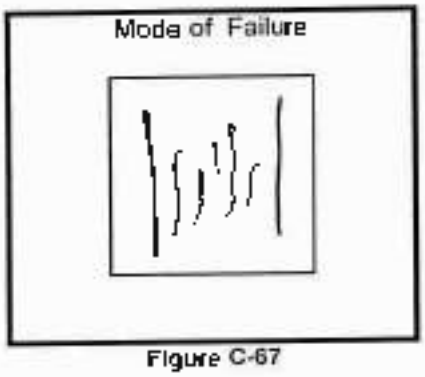


Figure C-67

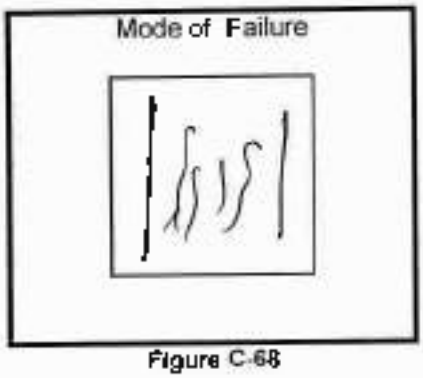


Figure C-68

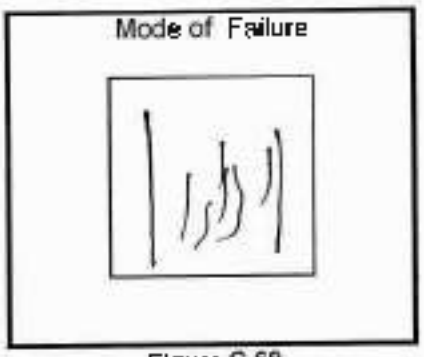


Figure C-69

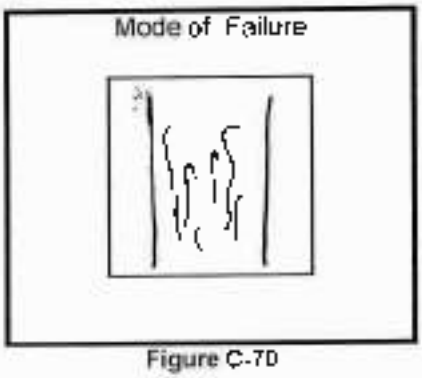


Figure C-70

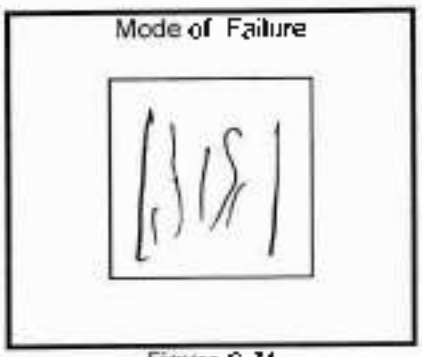


Figure C-71

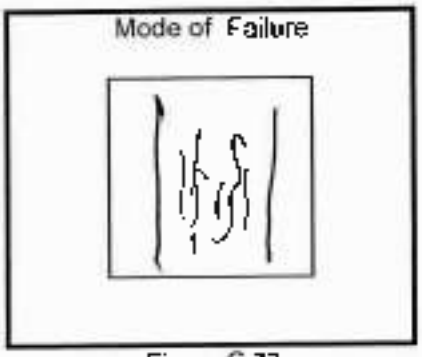


Figure C-72

TYPE OF FRACTURES FOR CORES

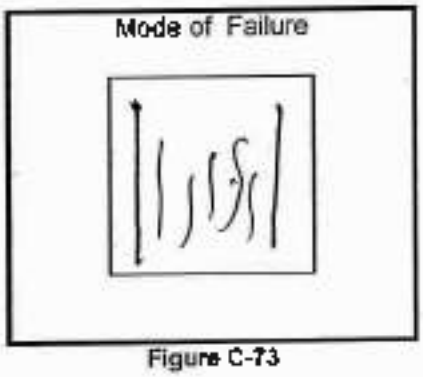


Figure C-73

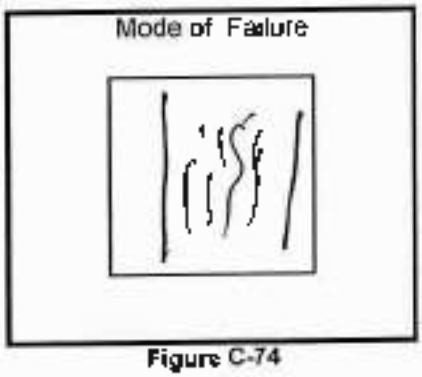


Figure C-74

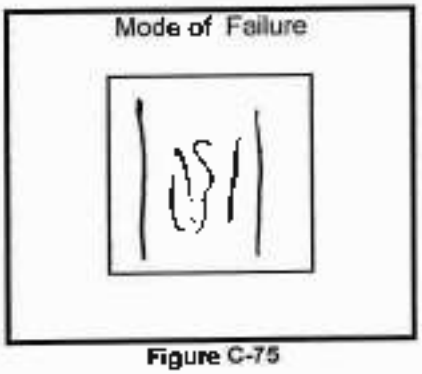
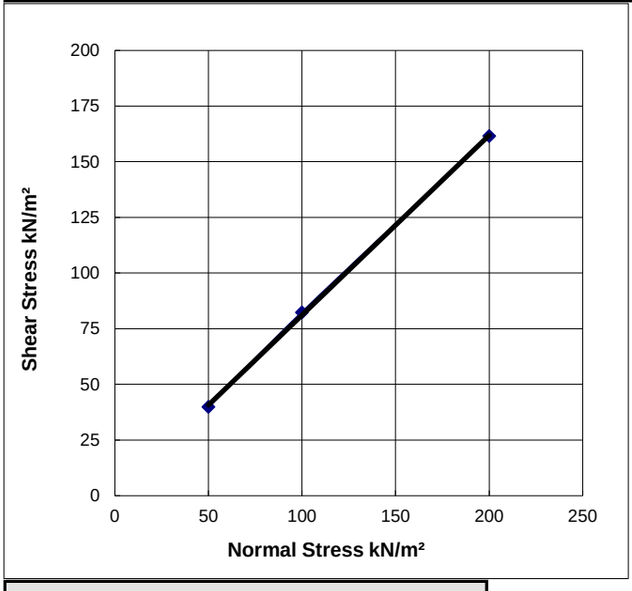


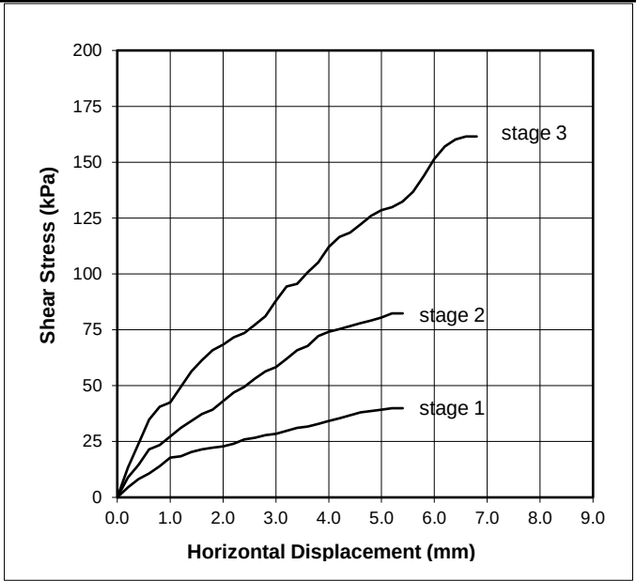
Figure C-75

MATRIX LABORATORY L.L.C.

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B02	**Date Tested**	23-24/06/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





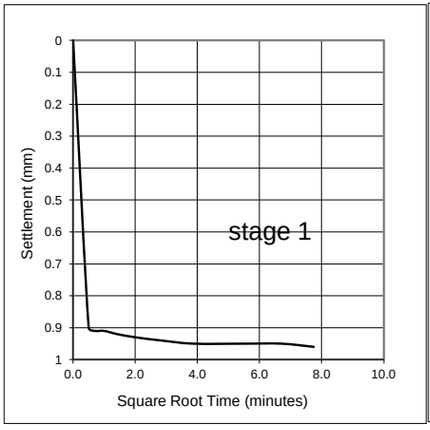
Shear Strength Parameters
Apparent Cohesion = 0.0 kN/m²
Angle of Shearing Resistance = 39.00º

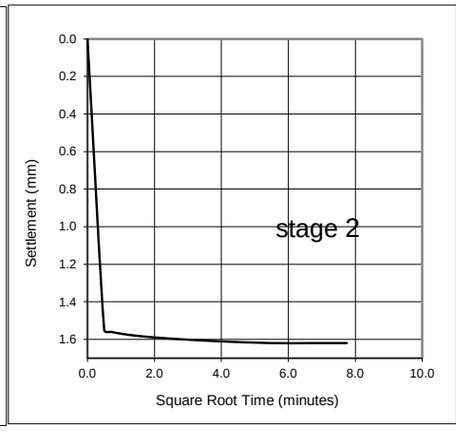
MATRIX LABORATORY L.L.C.

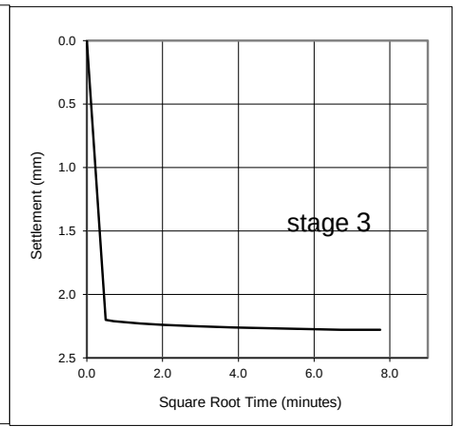
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B02	**Date Tested**	23-24/06/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

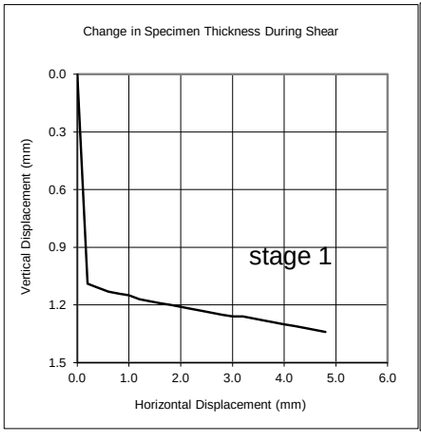
Consolidation Stage

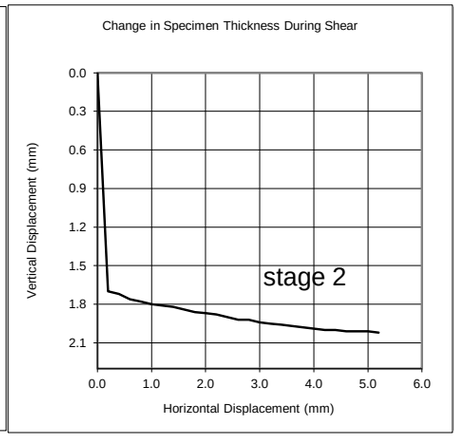


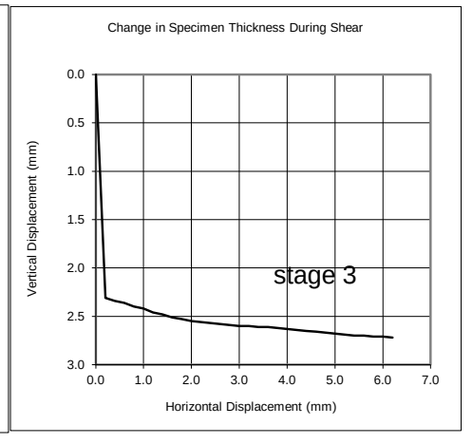




Shearing Stage



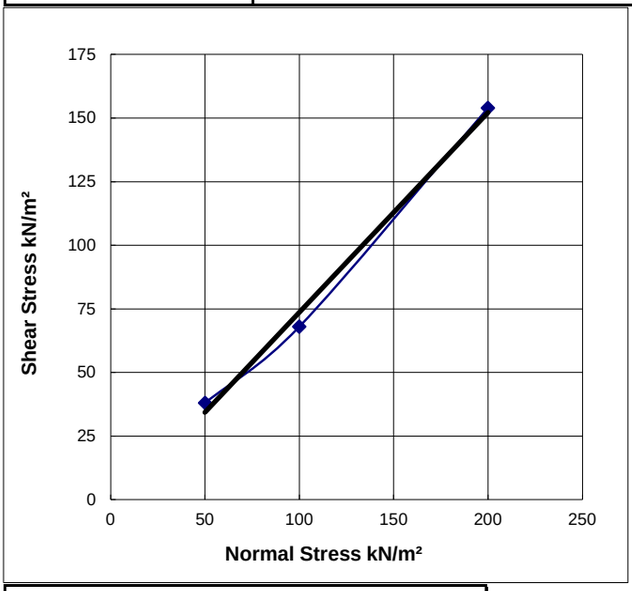


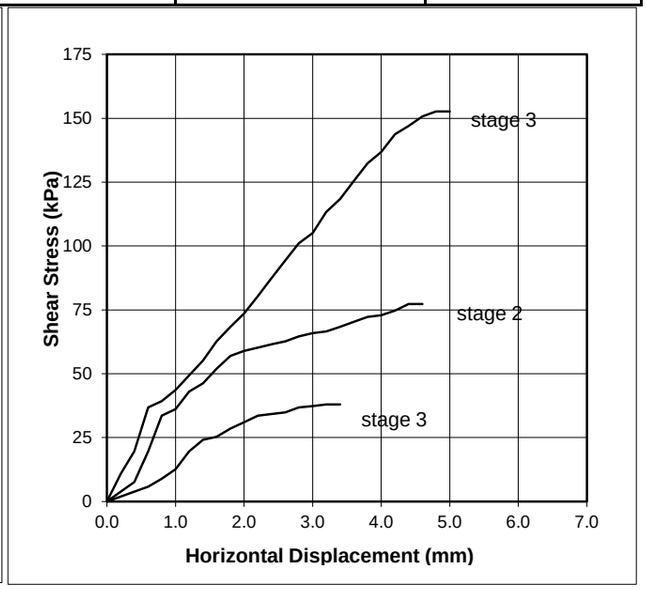


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B05	**Date Tested**	20-21/06/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion = 0.0 kN/m²

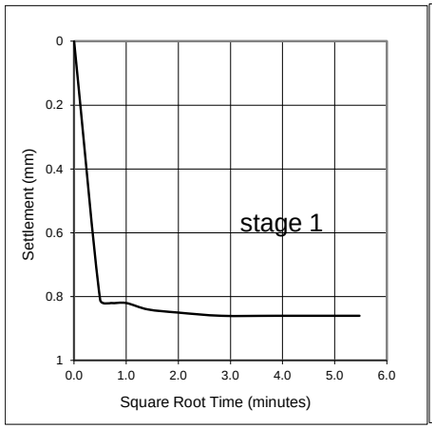
Angle of Shearing Resistance = 37.95º

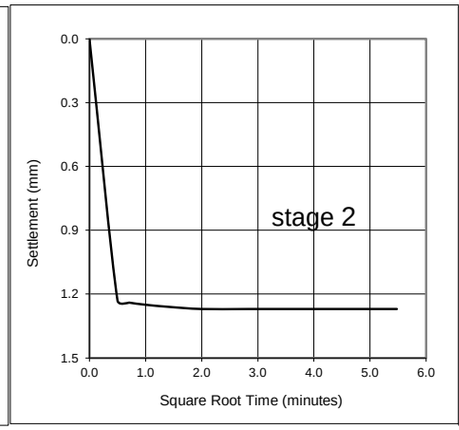
MATRIX LABORATORY L.L.C.

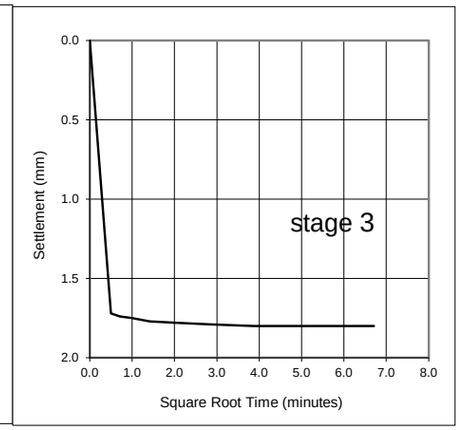
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B05	**Date Tested**	20-21/06/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.70
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

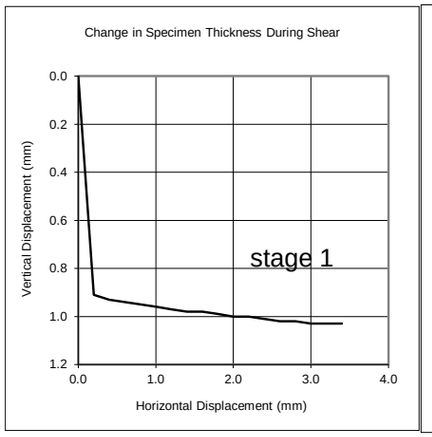
Consolidation Stage

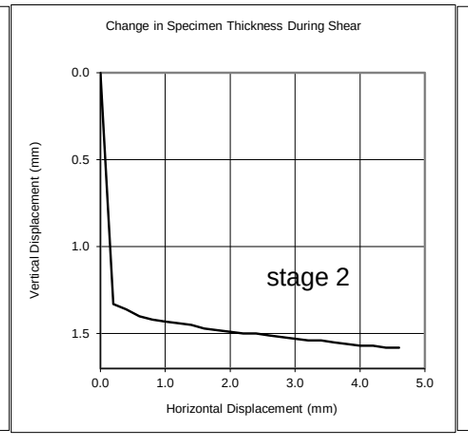






Shearing Stage





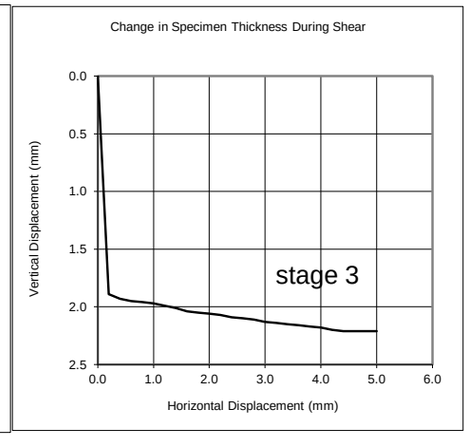
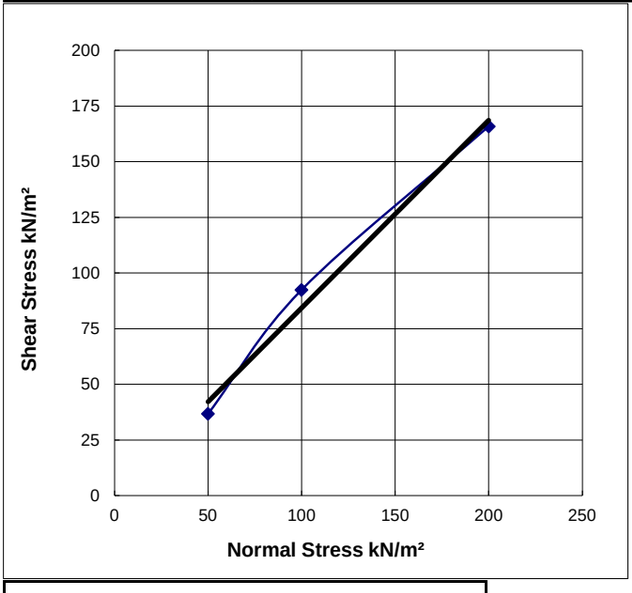
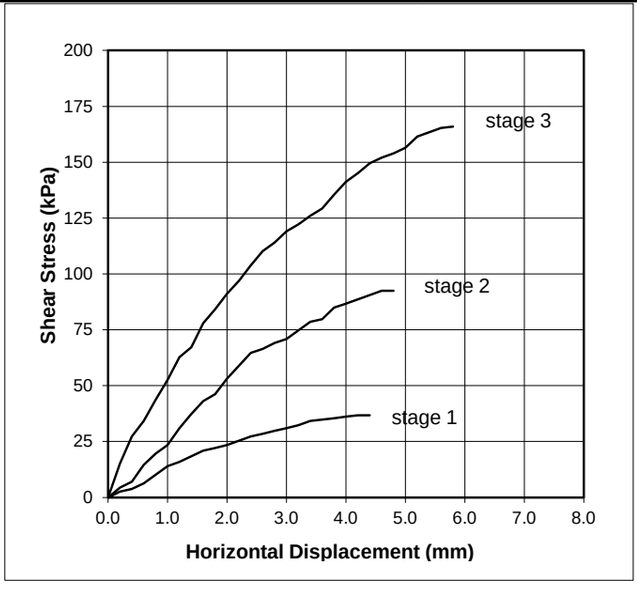


TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C03	**Date Tested**	20-21/06/2015
Depth (m)	1.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion = 0.00 kN/m²

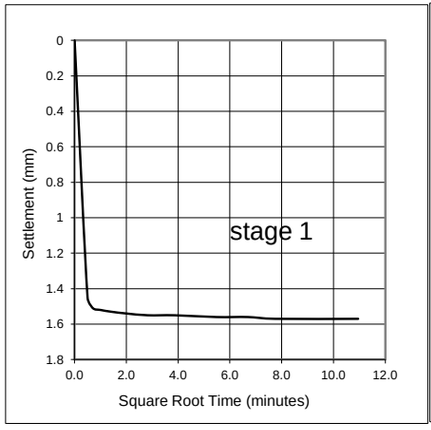
Angle of Shearing Resistance = 40.14º

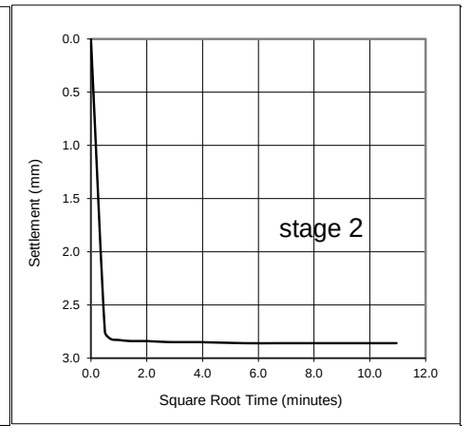
MATRIX LABORATORY L.L.C.

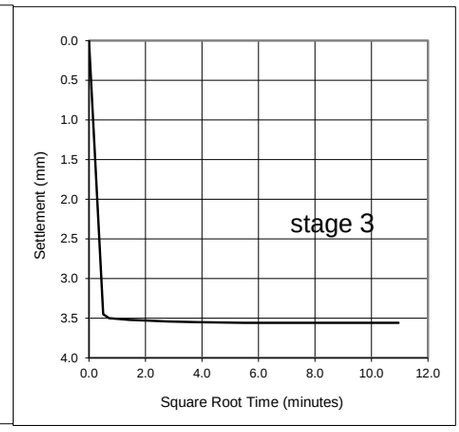
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	42197
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C03	**Date Tested**	20-21/06/2015
Depth (m)	1.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

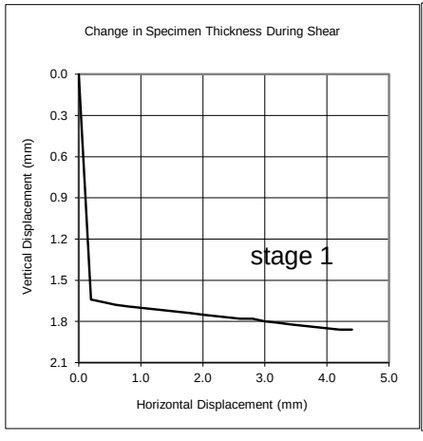
Consolidation Stage

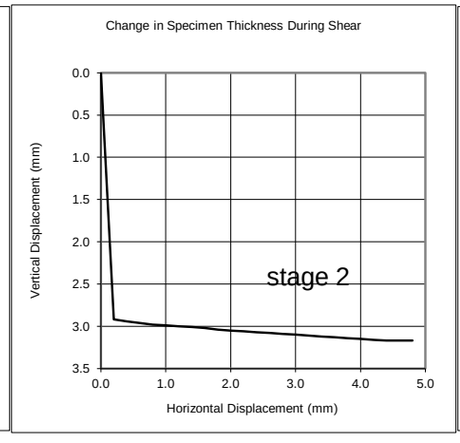


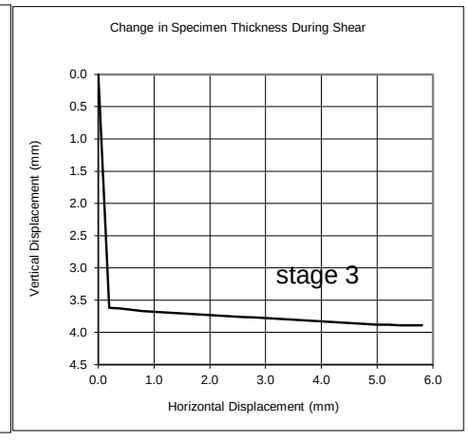




Shearing Stage



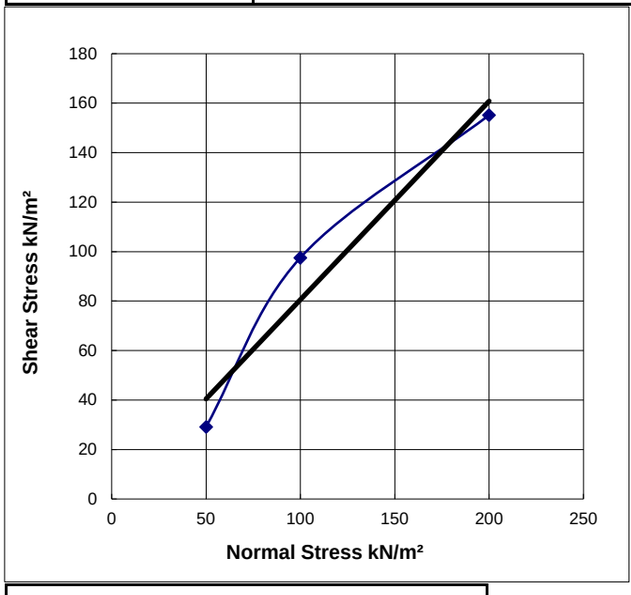


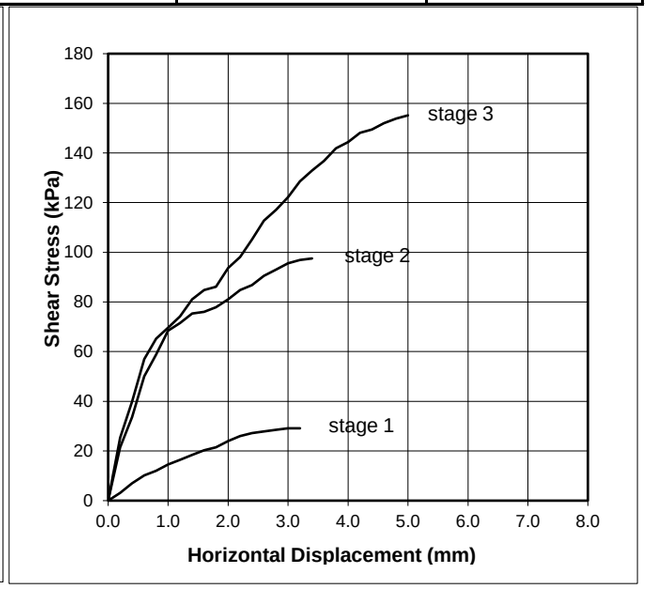


MATRIX LABORATORY L.L.C.

TABLE C8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C09	**Date Tested**	17-18/06/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

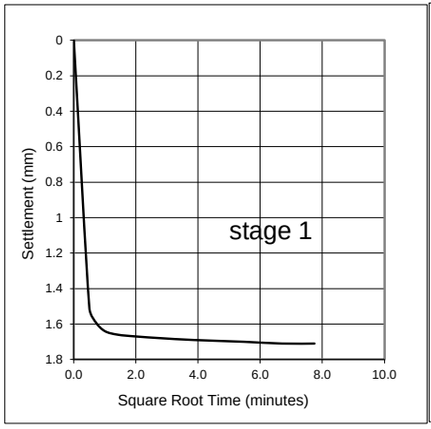
Apparent Cohesion = 0.0 kN/m²

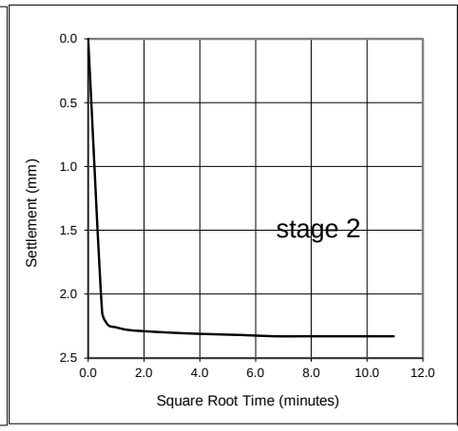
Angle of Shearing Resistance = 38.75º

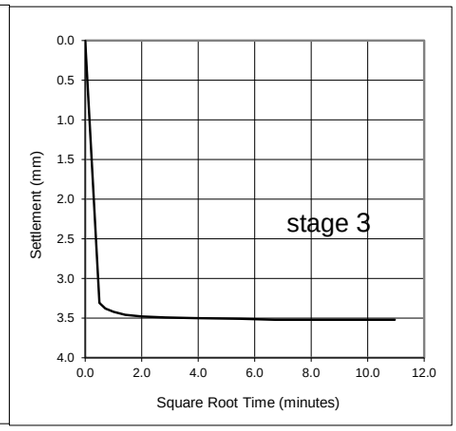
TABLE C8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-1
Consultant	CH2M MACE JV	**Date Reported**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-1
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C09	**Date Tested**	17-18/06/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

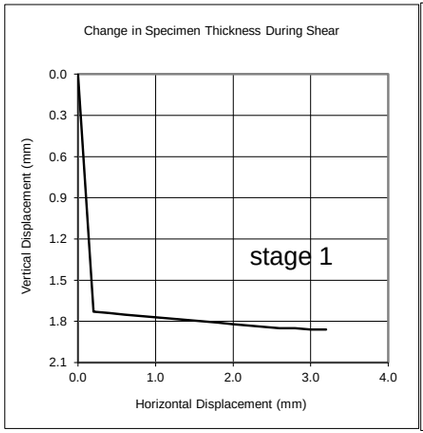
Consolidation Stage

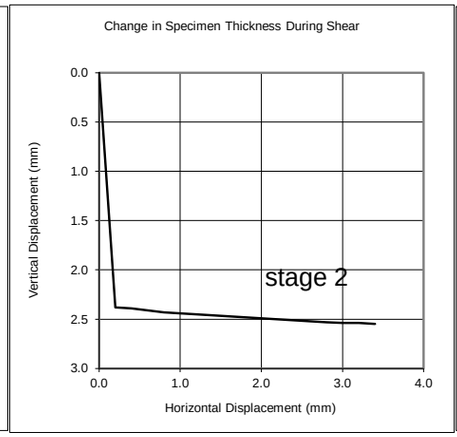


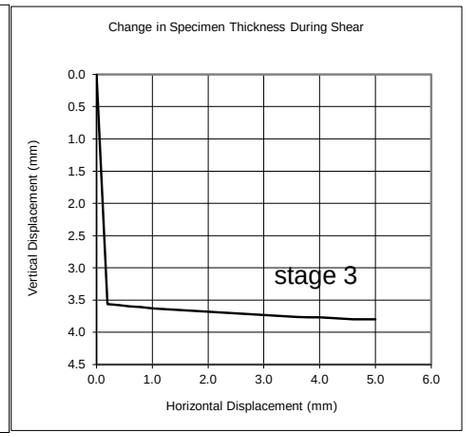




Shearing Stage







APPENDIX C2

LABORATORY TEST RESULTS (ZONE 2)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	22/07/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	24-26/06/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	27-30/06/2015
Test Method	See below	**Date Tested**	28/06-03/07/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A55	SPT2	1.00	1.7	0.05	8.3 @ 27°C	DS-3
BH-A57	SPT3	2.00	1.5	0.02	8.0 @ 27°C	DS-2
BH-B16	SPT3	2.00	0.3	0.04	8.1 @ 28°C	DS-1
BH-B60	SPT2	1.00	0.2	0.02	8.2 @ 27°C	DS-1
BH-C13	SPT3	2.00	1.8	0.09	8.3 @ 28°C	DS-3

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	22/07/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	27-28/06/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	27-28/06/2015
Test Method	See below	**Date Tested**	28-30/06/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B15	16.15	0.42	0.07	8.0 @ 28°C	DS-2
BH-C12	13.60	0.19	0.08	7.8 @ 27°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

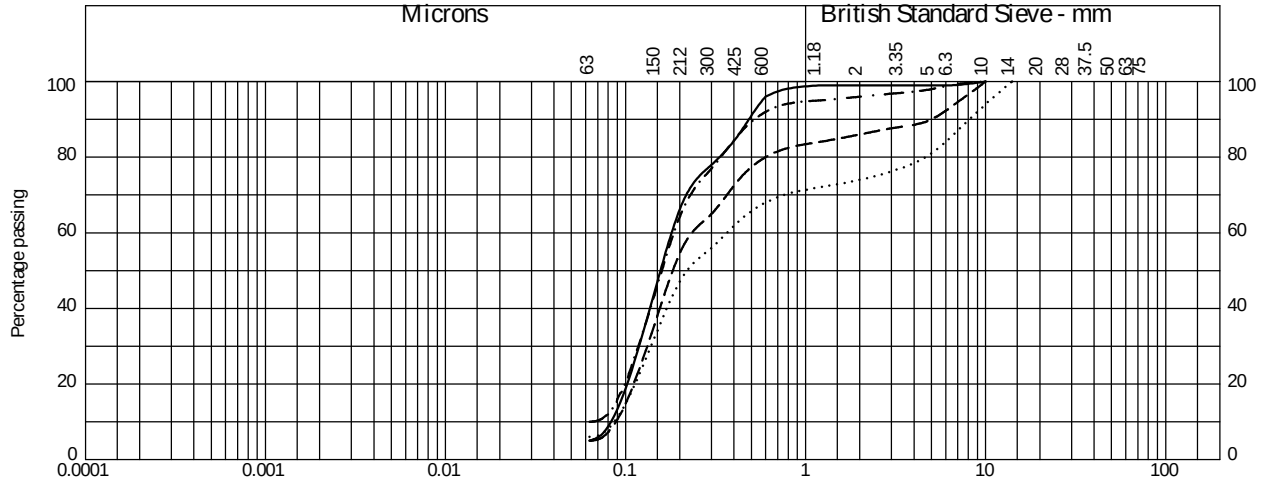
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A55	SPT2	122.5	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A55	SPT4	138.1	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A55	SPT5	121.5	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-A56	SPT2	141.6	–·–·–	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

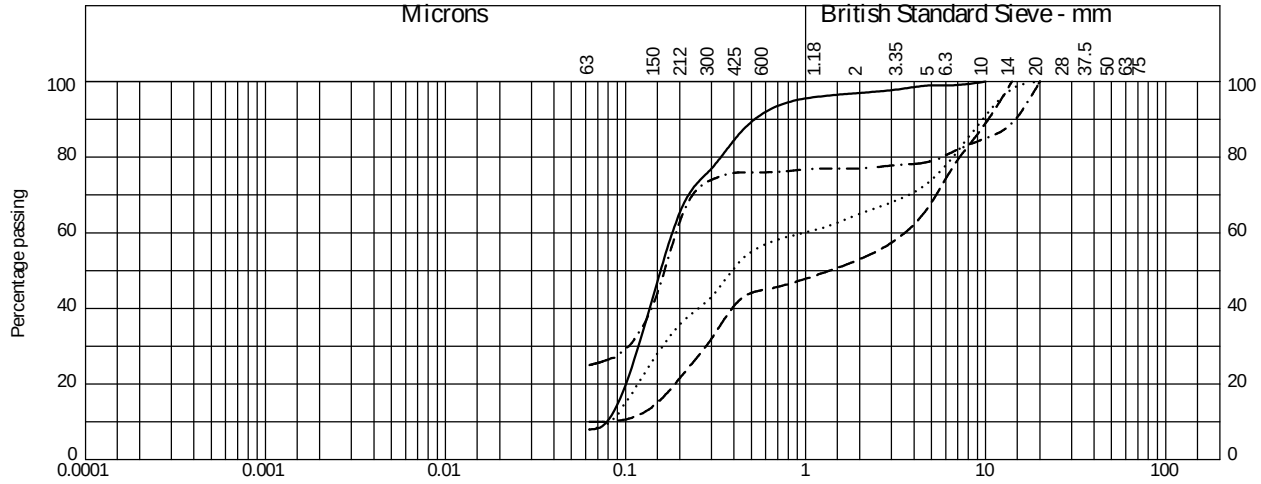
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A56	SPT3	136.9	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-A56	SPT4	140.5	– – –	V. GRAVELLY, SILTY, MEDIUM SAND (S-M)	3.00
BH-A57	SPT2	134.3	.....	V. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A57	SPT4	135.1	– · – · –	V. GRAVELLY, V. SILTY, FINE SAND (SM)	3.00

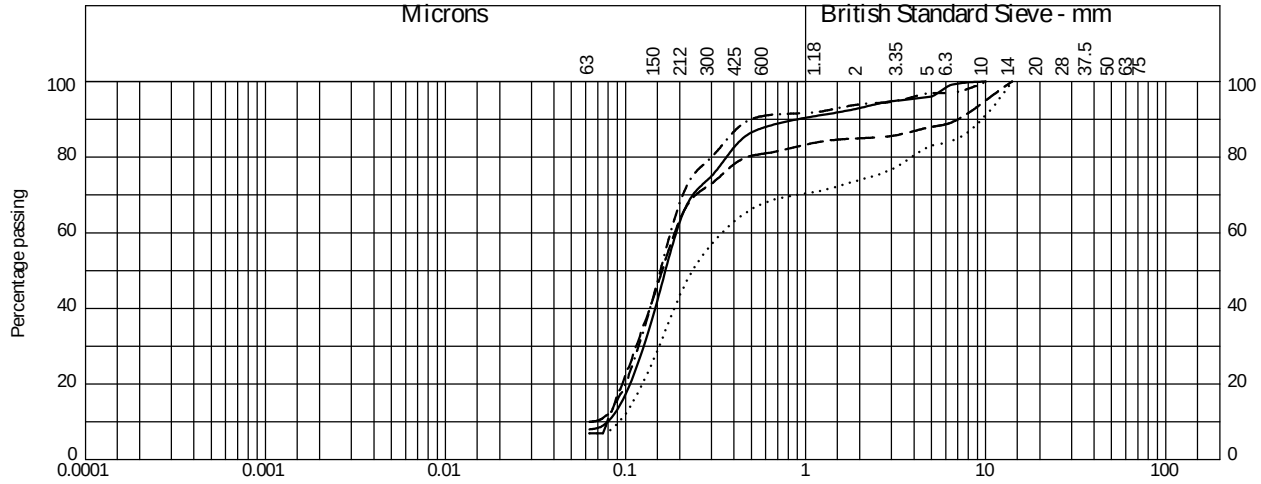
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B15	SPT2	134.7	———	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B15	SPT4	132.2	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B15	SPT6	135.5	.....	V. GRAVELLY, SILTY, M-F SAND (S-M)	5.00
BH-B16	SPT2	141.3	–·–·–	GRAVELLY, SILTY, M-F SAND (S-M)	1.00

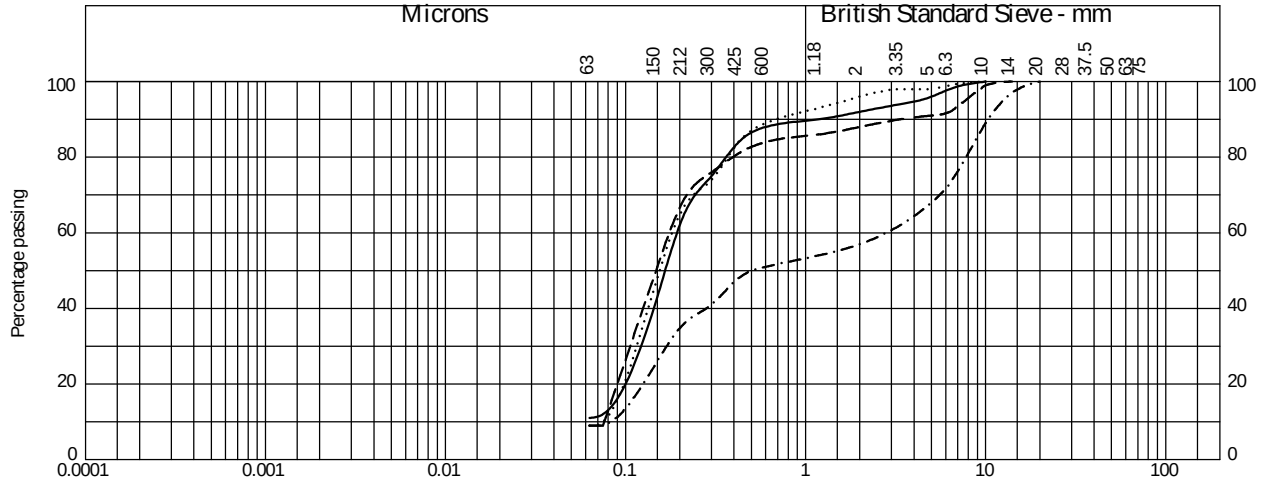
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B16	SPT5	100.5	———	GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-B17	SPT2	124.2	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B17	SPT4	122.1	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-B17	SPT7	133.6	–·–·–	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.00

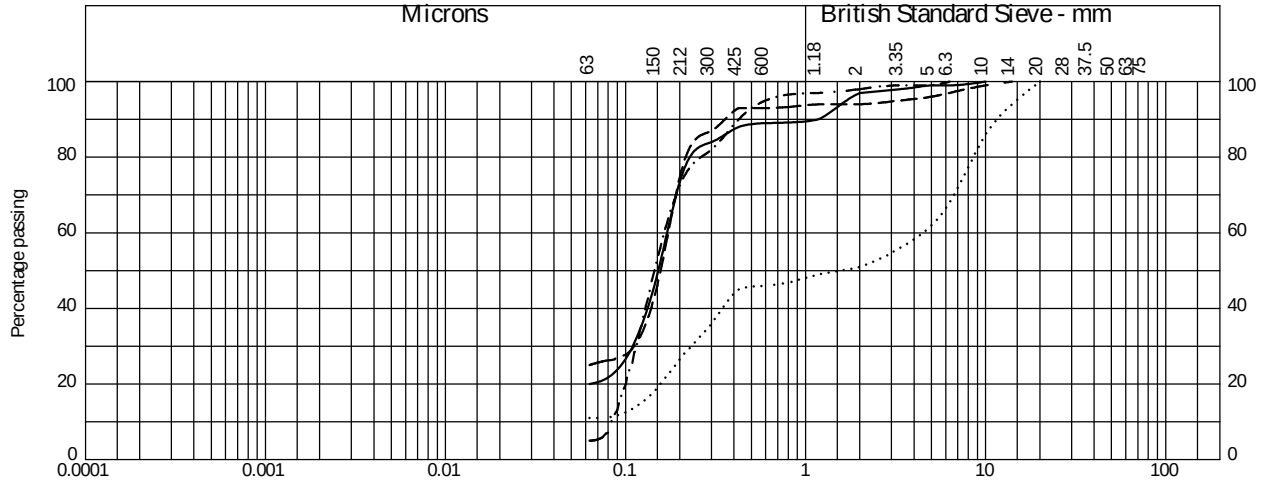
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B60	SPT3	138.9	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-B60	SPT4	139.1	– – –	GRAVELLY, V. SILTY, FINE SAND (SM)	3.00
BH-B60	SPT6	135.9	.....	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-C12	SPT2	123.6	– · – · –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

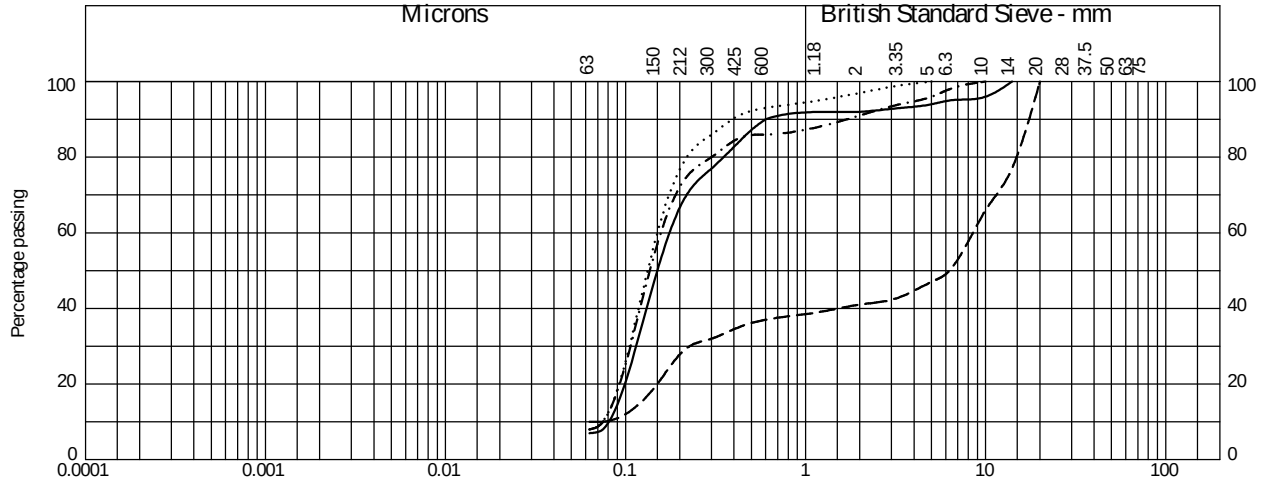
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C12	SPT5	120.6	———	GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-C12	SPT7	121.6	— — —	V. GRAVELLY, SILTY, SAND (S-M)	6.00
BH-C13	SPT2	136.1	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-C13	SPT3	134.1	—·—·—	GRAVELLY, SILTY, FINE SAND (S-M)	2.00

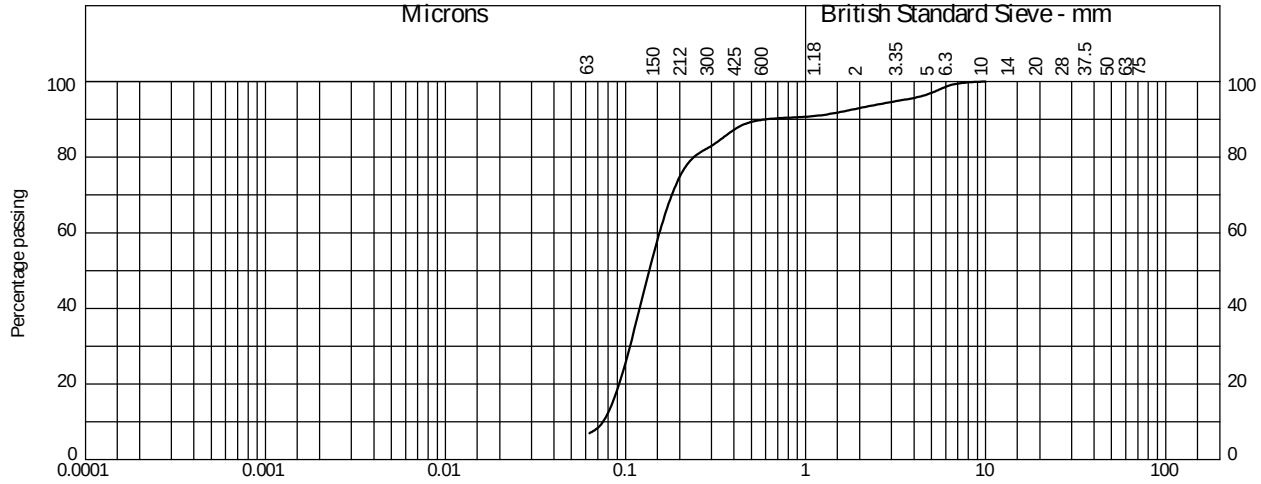
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-2
Contractor	N.P.	Date Reported	22/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-2
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 2)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	23/06-04/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	25/06-06/07/2015
Test Method Var	NIL	Tested By	ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C13	SPT4	139.0	———	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
			– – –		
			.....		
			–.–.–		

The results relate only to the samples tested.

Table C-1 (1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-056A	**Sampling Date**	16/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	98
3.35	97
2	96
1.18	95
0.60	92
0.425	86
0.300	77
0.212	67
0.150	46
0.075	11
0.063	10
0.023	8
0.015	6
0.008	5
0.006	4
0.004	2
0.002	1
0.001	0

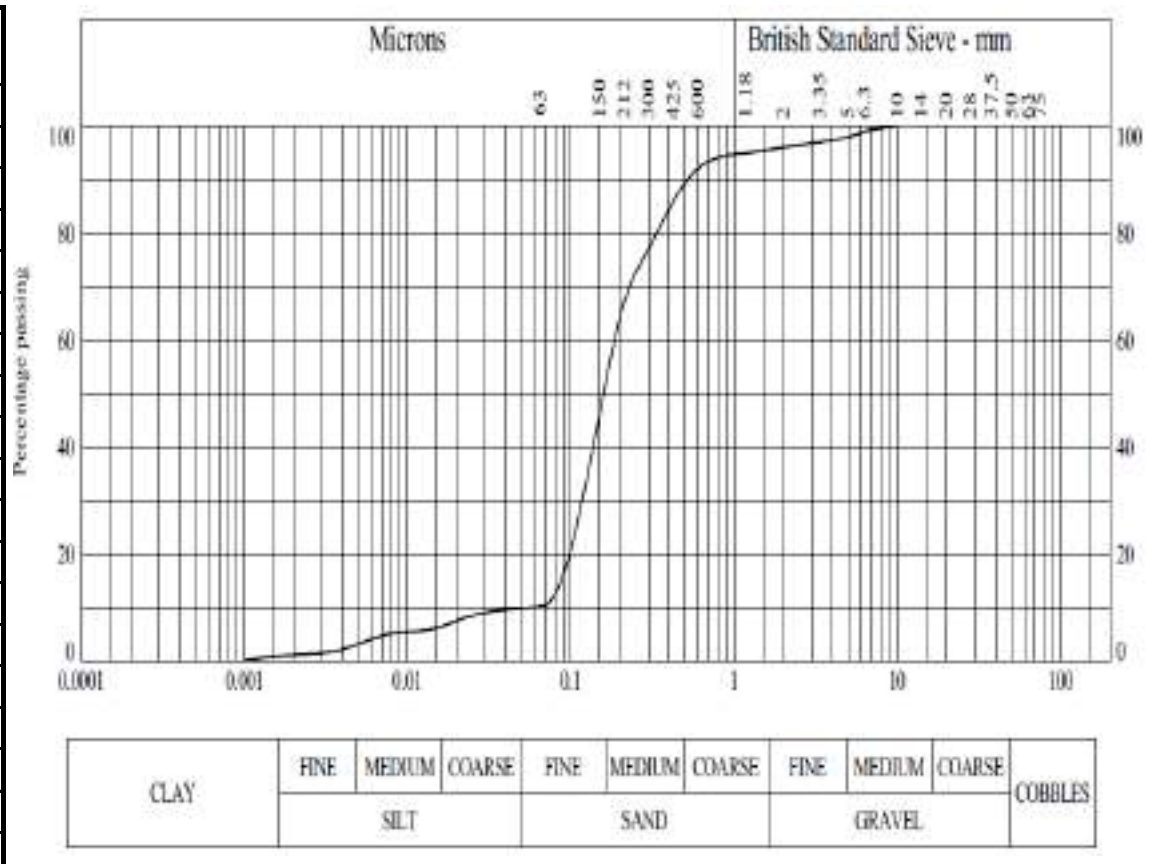


Table C-1 (2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, MEDIUM SAND	**Sampled By**	Matrix
Borehole No.	BH-056A	**Sampling Date**	16/06/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	89
6.3	76
5	68
3.35	59
2	53
1.18	49
0.60	45
0.425	42
0.300	32
0.212	23
0.150	15
0.075	10
0.063	8
0.023	7
0.015	6
0.008	5
0.006	4
0.004	3
0.002	2
0.001	0

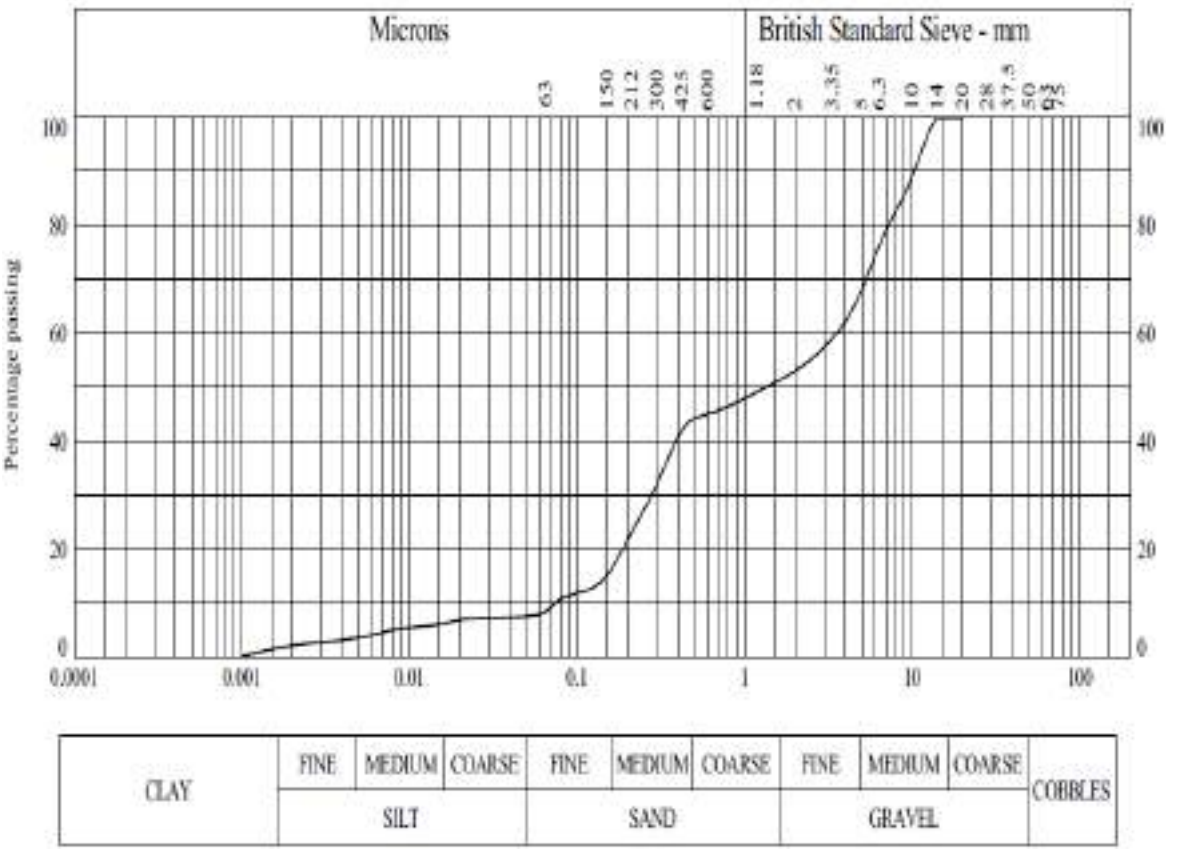


Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-057A	**Sampling Date**	17/06/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	89
10	85
6.3	81
5	79
3.35	78
2	77
1.18	77
0.60	76
0.425	76
0.300	74
0.212	66
0.150	44
0.075	26
0.063	12
0.023	10
0.015	8
0.008	6
0.006	4
0.004	2
0.002	1
0.001	0

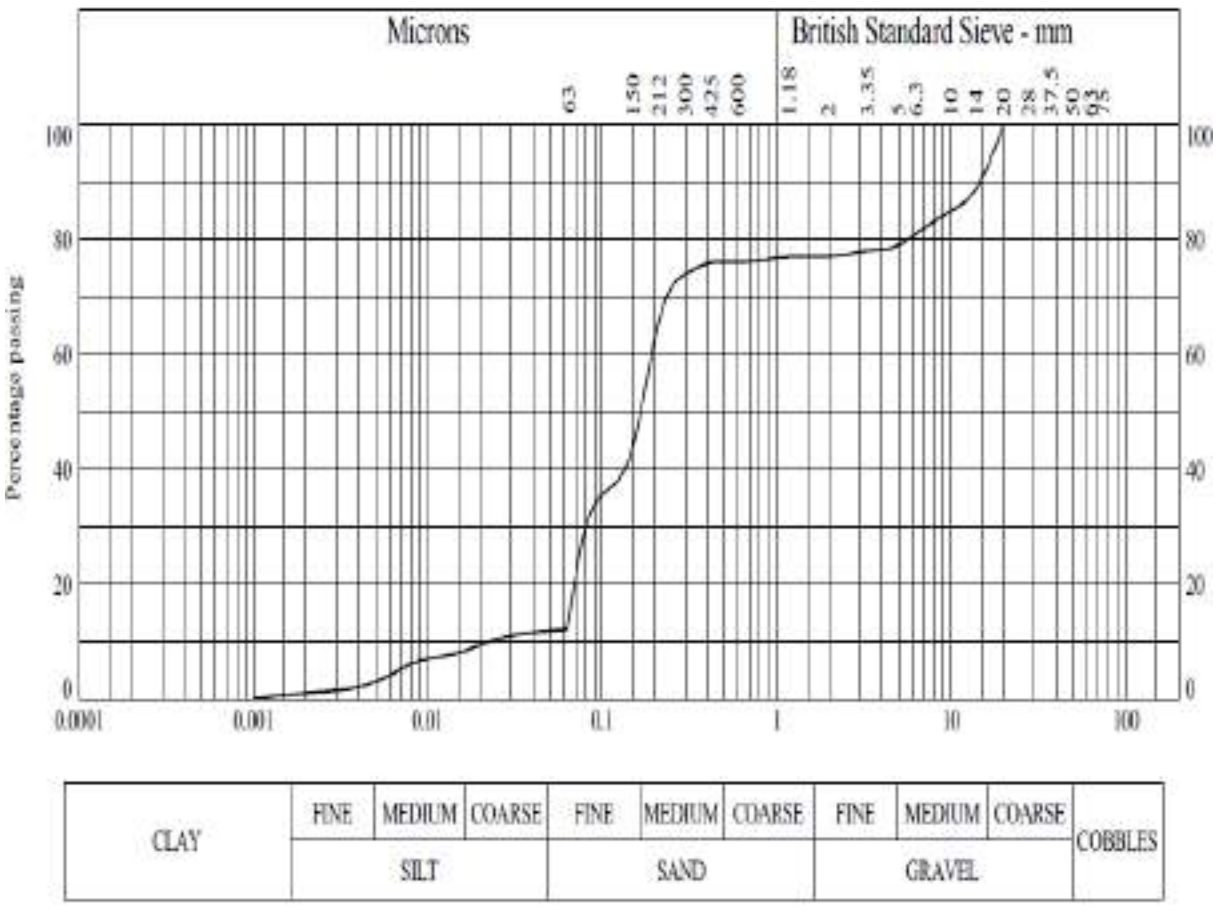


Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B016	**Sampling Date**	11/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	97
5	97
3.35	95
2	94
1.18	92
0.60	91
0.425	88
0.300	80
0.212	71
0.150	47
0.075	11
0.063	10
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

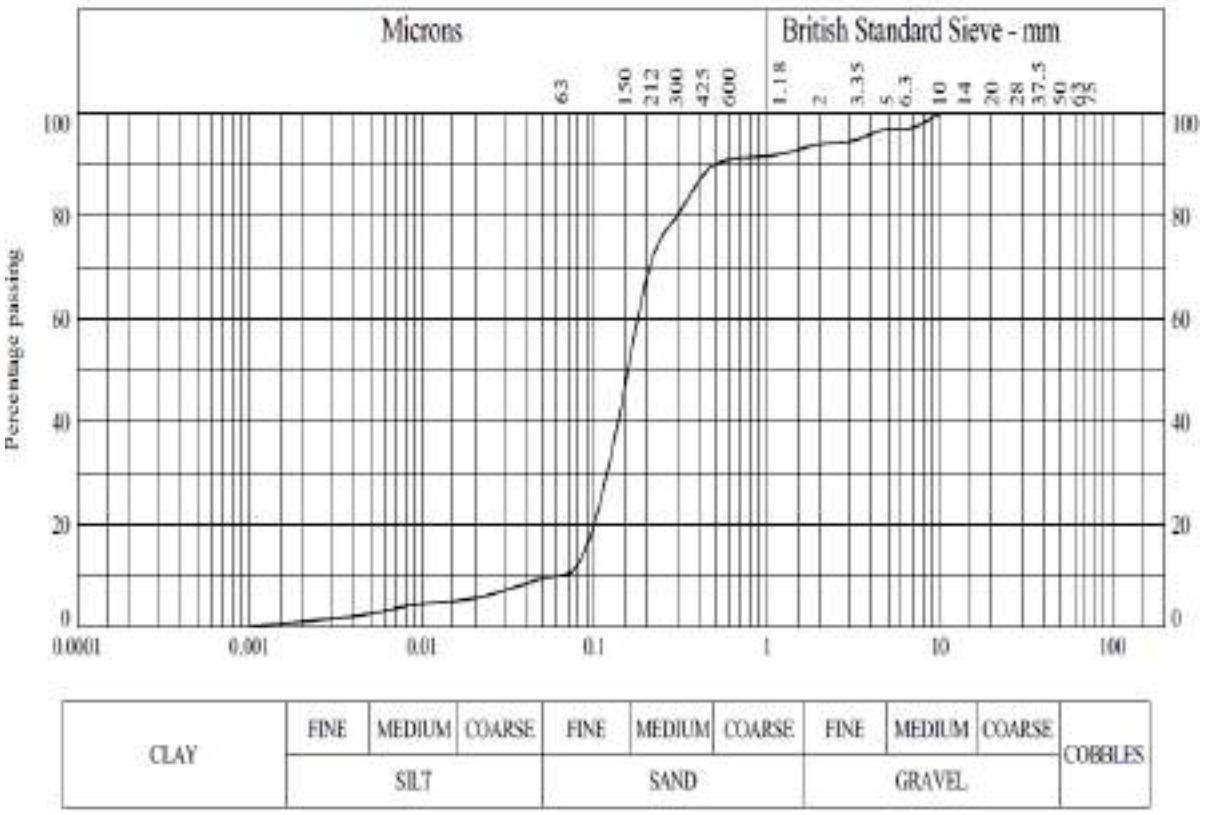


Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B016	**Sampling Date**	16/06/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	0
10	100
6.3	98
5	96
3.35	94
2	92
1.18	90
0.60	88
0.425	84
0.300	75
0.212	65
0.150	43
0.075	12
0.063	11
0.023	10
0.015	8
0.008	6
0.006	4
0.004	3
0.002	2
0.001	0

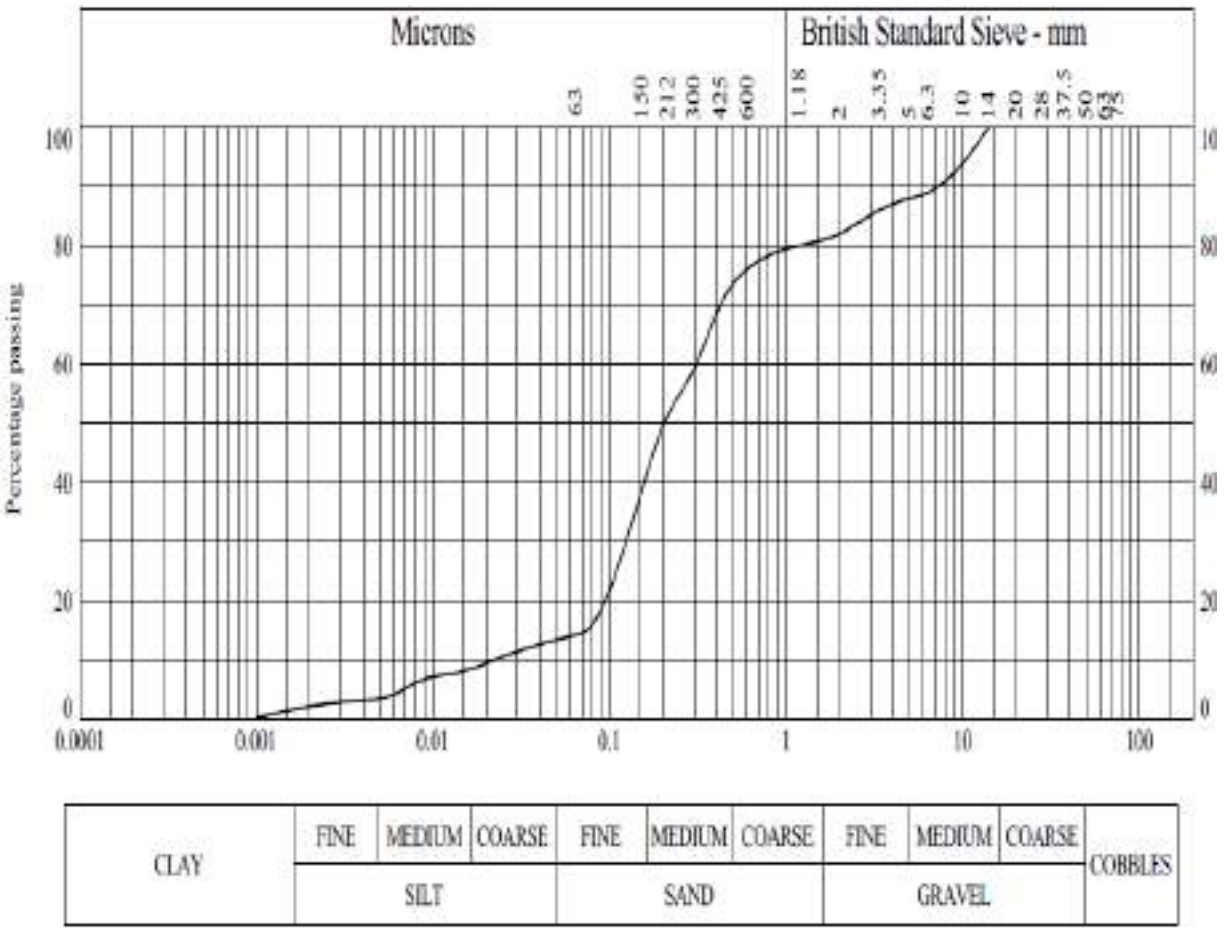


Table C-1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-017B	**Sampling Date**	16/06/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	25/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10.0	100
6.3	99
5.0	98
3.4	98
2.0	96
1.18	93
0.60	89
0.43	84
0.30	74
0.21	67
0.15	48
0.08	25
0.06	15
0.02	8
0.01	6
0.01	4
0.006	3
0.004	2
0.002	1
0.001	0

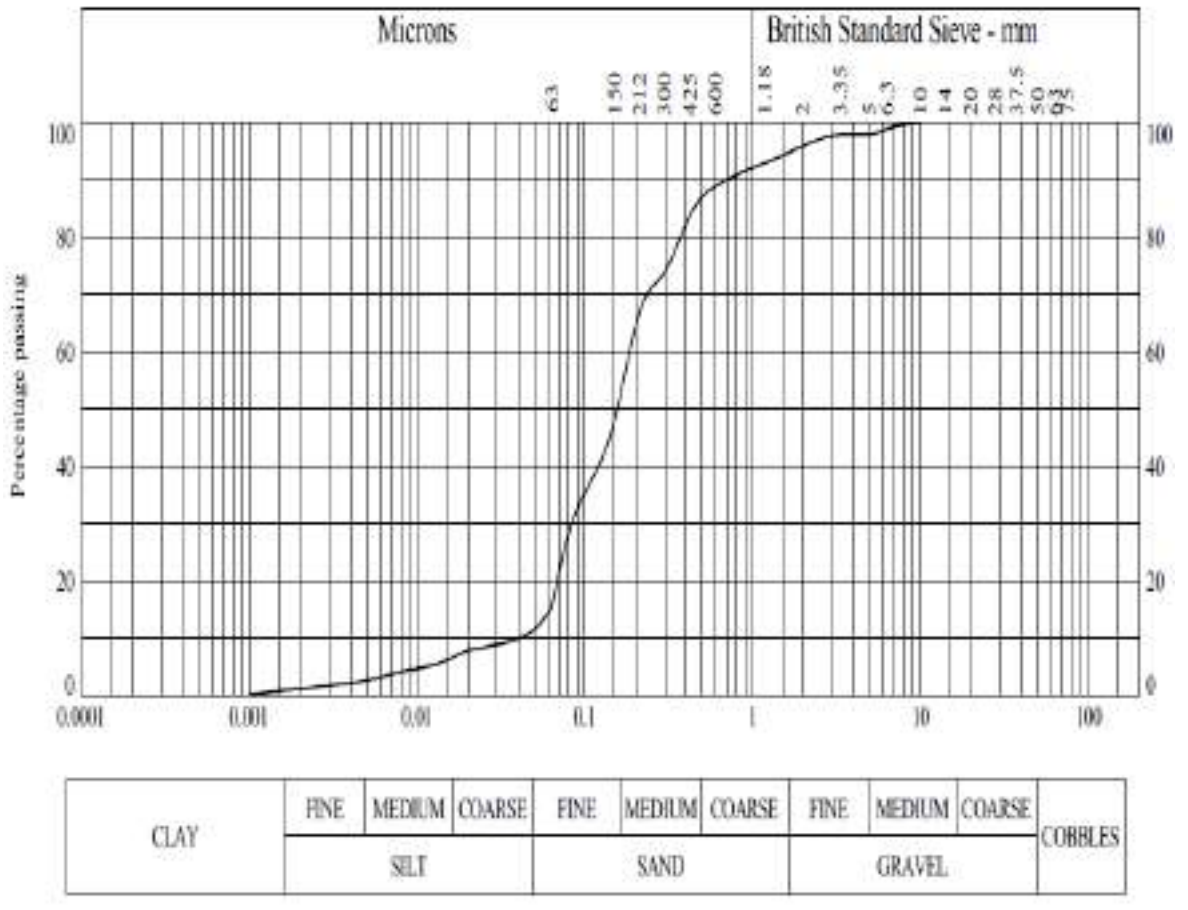


Table C-1 (7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-060B	**Sampling Date**	16/06/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10.0	100
6.3	99
5.0	99
3.4	98
2.0	97
1.18	90
0.60	89
0.425	88
0.300	84
0.212	77
0.150	49
0.075	21
0.063	20
0.023	15
0.015	14
0.008	6
0.006	5
0.004	4
0.002	3
0.001	1

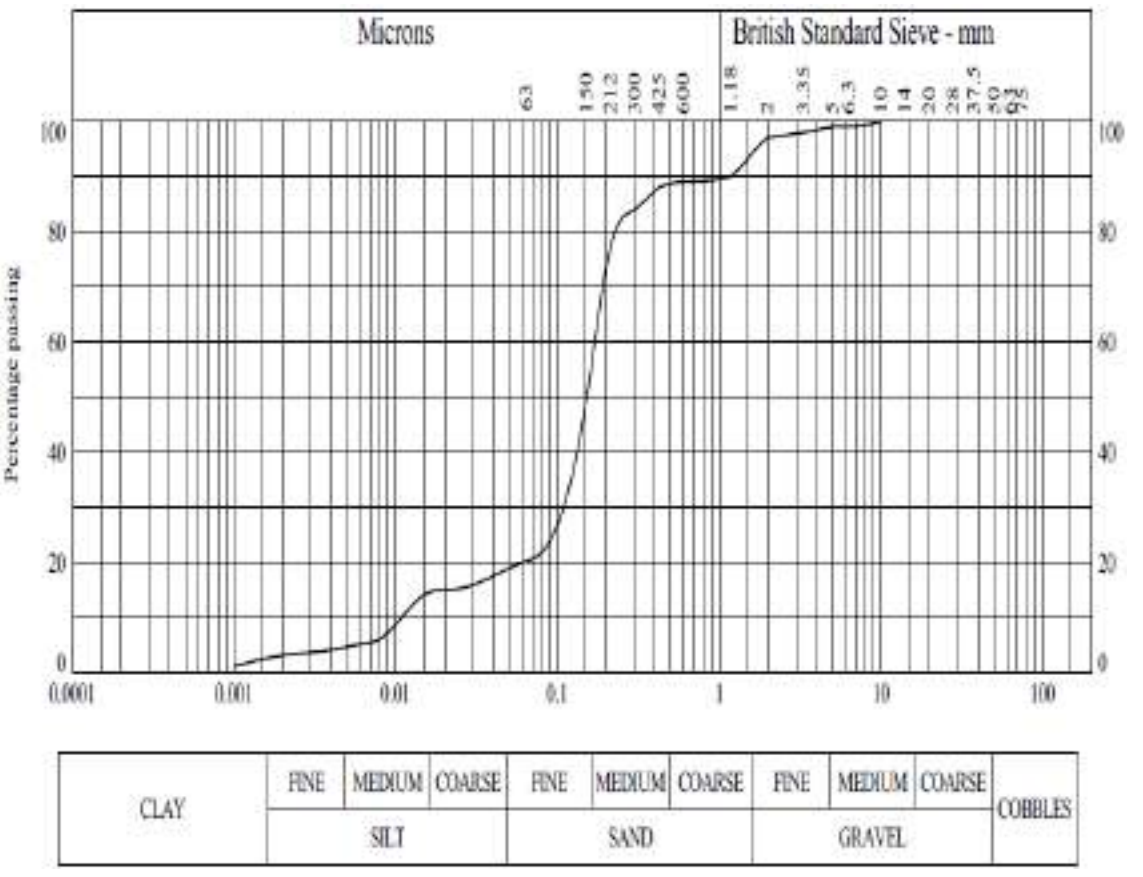


Table C-1 (8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-060B	**Sampling Date**	15/06/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	24/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	97
5	96
3.35	95
2	94
1.18	94
0.6	93
0.425	93
0.3	87
0.212	79
0.150	46
0.075	26
0.063	10
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

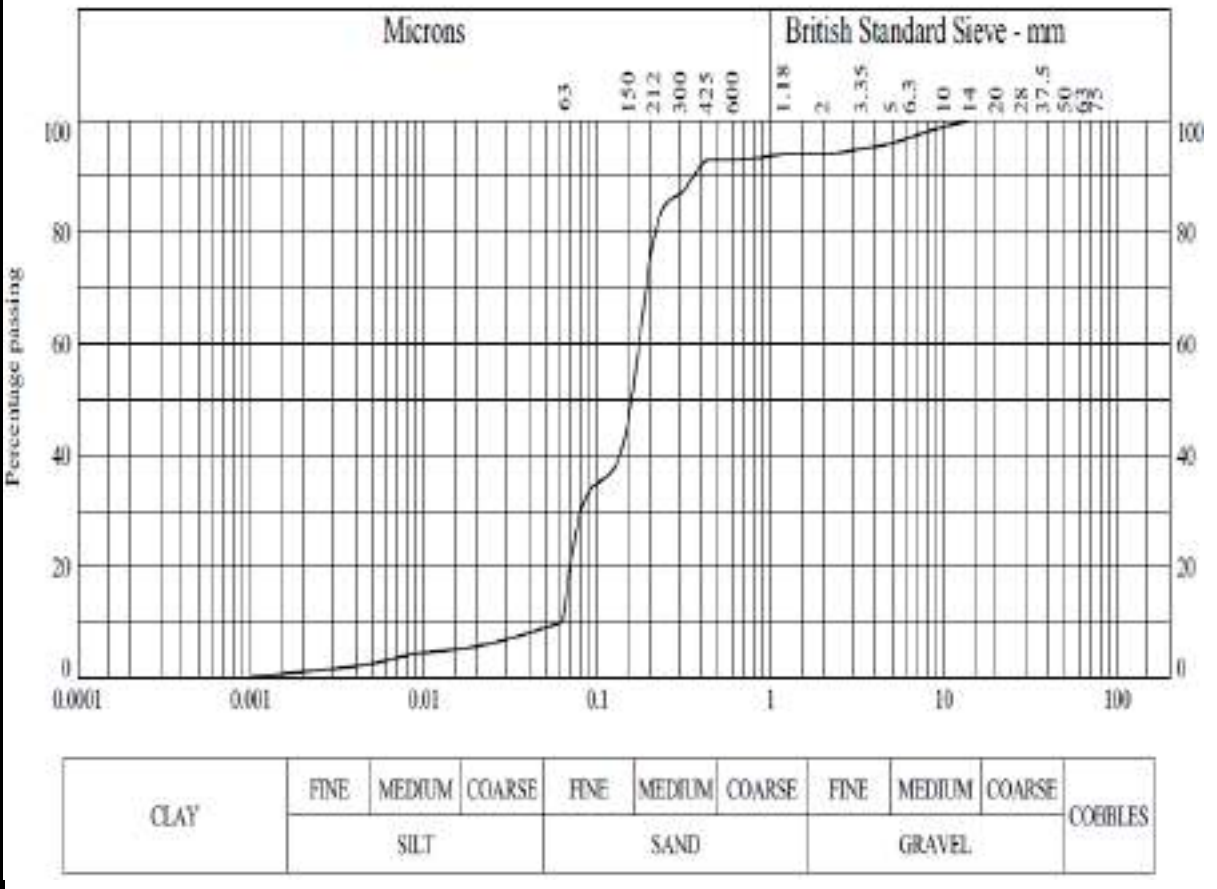


Table C-1 (9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-060B	**Sampling Date**	15/06/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	94
6.3	93
5	92
3.35	92
2	91
1.18	91
0.60	90
0.425	87
0.300	78
0.212	69
0.150	52
0.075	8
0.063	6
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

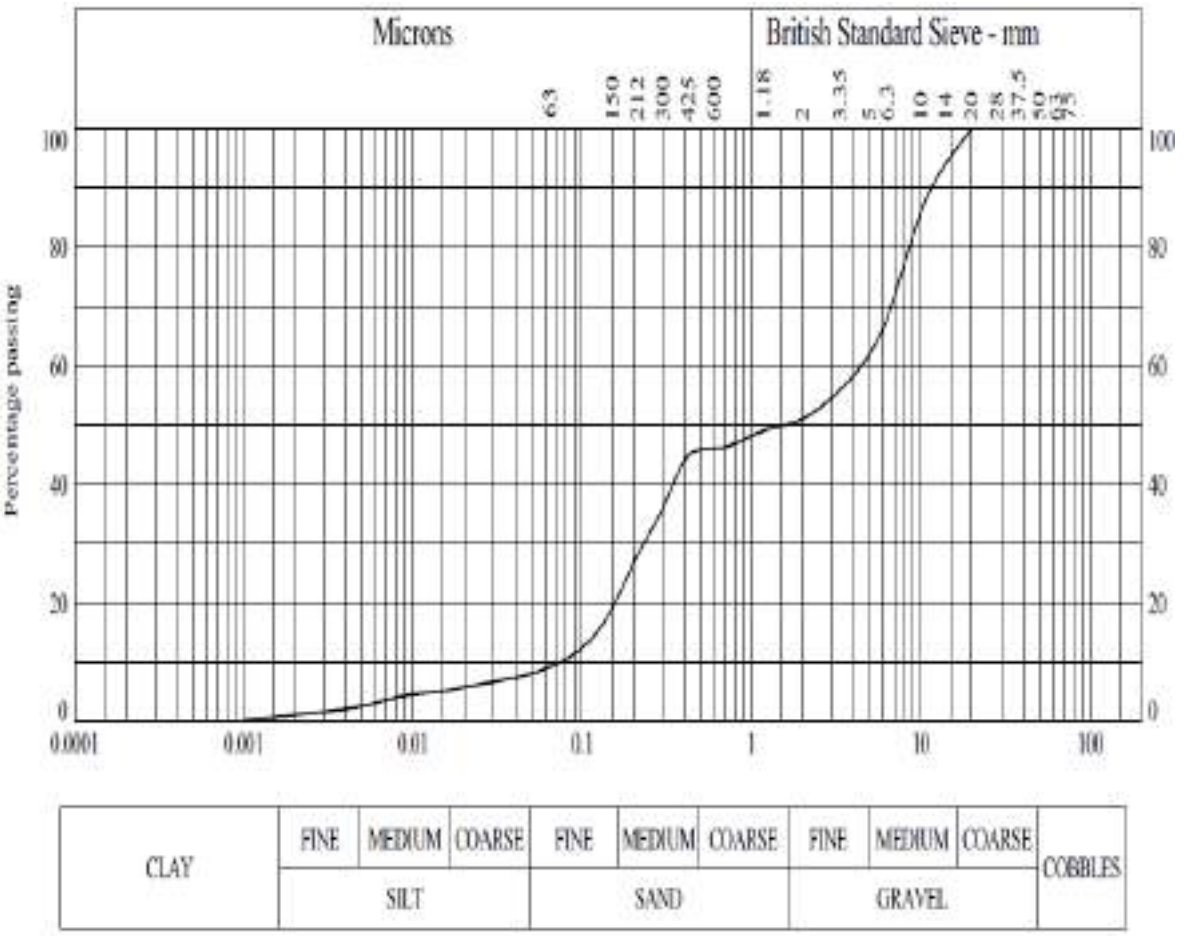


Table C-1 (10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-012C	**Sampling Date**	15/06/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	25/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
0	66
6.3	50
5	47
3.35	43
2	41
1.18	39
0.60	37
0.425	35
0.300	32
0.212	29
0.150	20
0.075	10
0.063	8
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

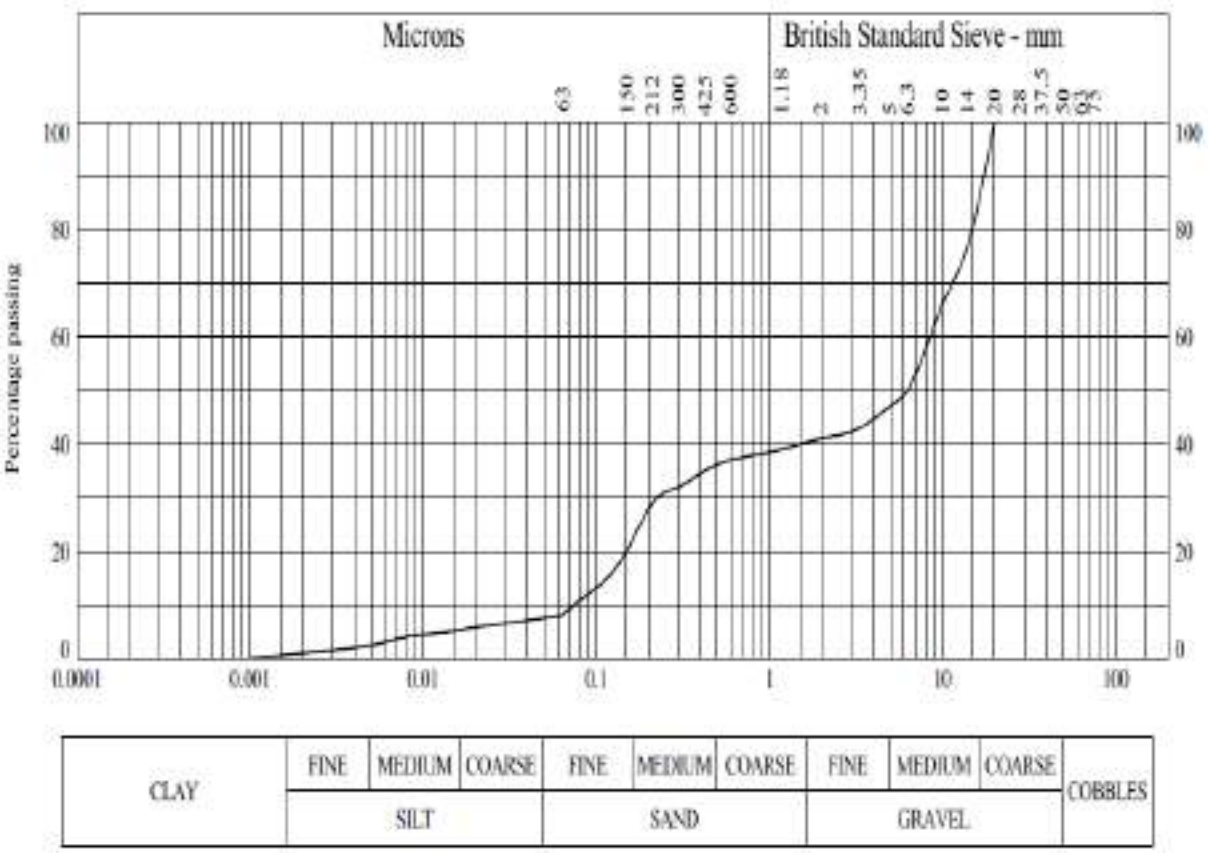


Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-013C	**Sampling Date**	15/06/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	25/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	97
1.18	95
0.60	93
0.425	91
0.300	86
0.212	79
0.150	60
0.075	10
0.063	8
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

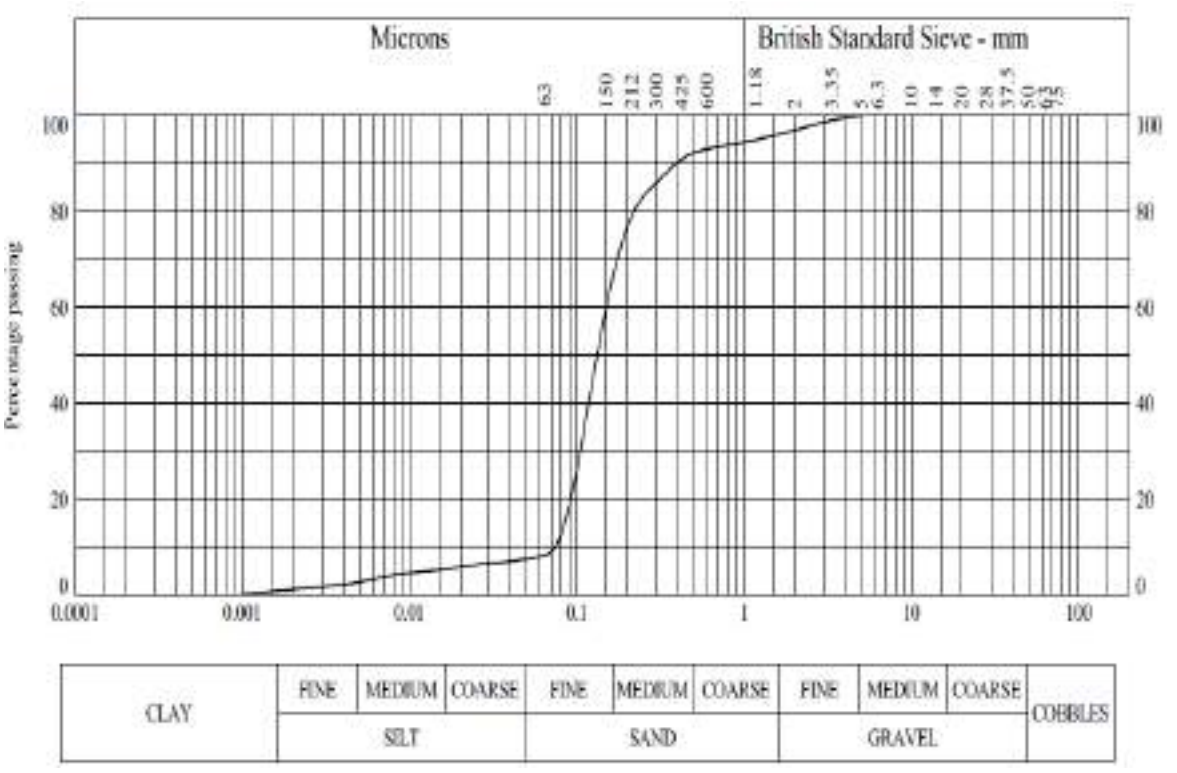


Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-013C	**Sampling Date**	15/06/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	25/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	96
3.35	94
2	91
1.18	88
0.60	86
0.425	85
0.300	80
0.212	74
0.150	57
0.075	10
0.063	8
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

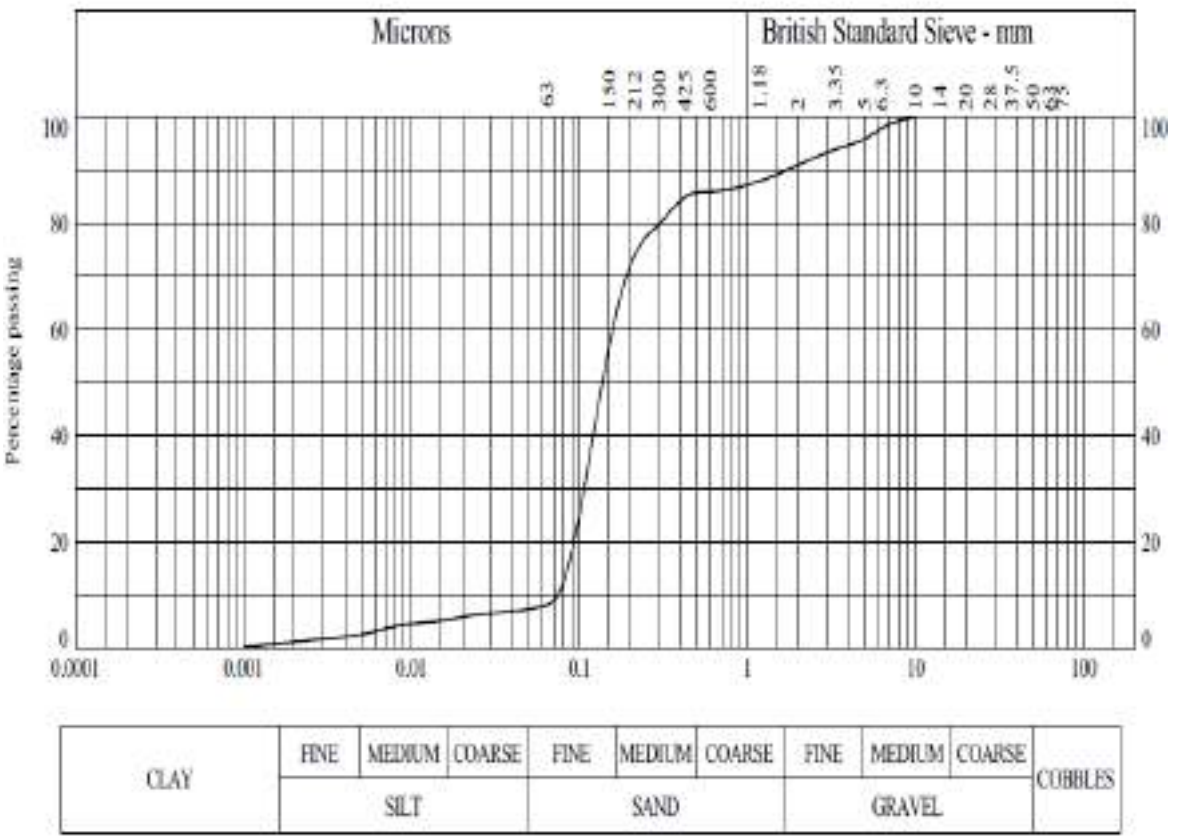


Table C-1 (13)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P	**Date Reported**	22/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-2
Project No.	XSD/15-0143-2		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-013C	**Sampling Date**	15/06/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/06/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	25/06/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	97
3.35	95
2	93
1.18	91
0.60	90
0.425	88
0.300	83
0.212	77
0.150	58
0.075	10
0.063	7
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

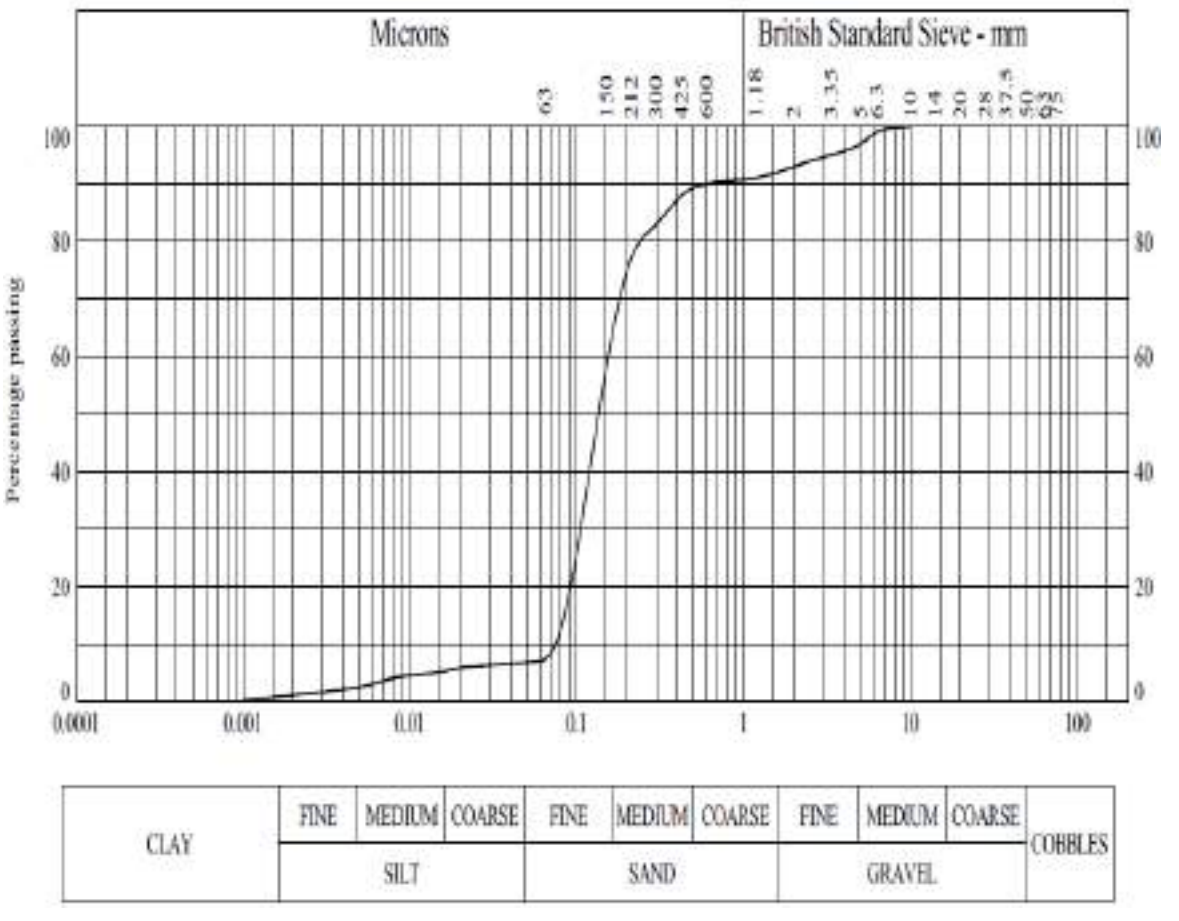


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	21/07/2015
Consultant	CH2M MACE JV	**Date Received**	23/06-01/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	24/06-02/07/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	21-26/06/2015
Tested By	Erwin		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A55	1.00	3.2
BH-A55	2.00	7.4
BH-A55	3.00	8.8
BH-A55	4.00	7.2
BH-A56	1.00	6.2
BH-A56	2.00	8.6
BH-A56	3.00	15.0
BH-A57	1.00	13.0
BH-A57	2.00	9.5
BH-A57	3.00	11.0
BH-B15	1.00	9.1
BH-B15	3.00	6.9
BH-B15	4.00	10.0
BH-B15	5.00	14.0
BH-B15	6.00	9.8

Borehole No.	Depth	Moisture Content (%)
BH-B16	1.00	12.0
BH-B16	3.00	8.5
BH-B16	4.00	6.6
BH-B16	5.00	10.0
BH-B17	1.00	7.8
BH-B17	3.00	8.1
BH-B17	4.00	9.7
BH-B17	5.00	11.0
BH-B17	6.00	10.0
BH-B60	2.00	14.0
BH-B60	3.00	12.4
BH-B60	4.00	11.0
BH-B60	5.00	15.0
BH-C12	1.00	11.0
BH-C12	2.00	9.8
BH-C12	4.00	15.0
BH-C12	5.00	11.0
BH-C12	6.00	12.0
BH-C13	1.00	15.0
BH-C13	2.00	15.0
BH-C13	3.00	15.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	22/07/2015
Consultant	CH2M MACE JV	**Date Received**	23/06/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	23/06/2015
Sample Description	Soil	**Sampling Date**	21/06/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-C12	2.00	2.62

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	22/07/2015
Consultant	CH2M MACE JV	**Date Received**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	13-14/07/2015
Sample Description	SAND	**Sampling Date**	21-25/06/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Arlene
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-A56	1.00	100	0.2
BH-B17	3.00	100	0.2

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	22/07/2015
Consultant	CH2M MACE JV	**Date Received**	25-30/06/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	21-25/06/2015
Sample Description	ROCK CORE	**Date Tested**	27/06-01/07/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Arlene

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-B17	13.50	35.47	80.77
BH-C13	19.70	13.97	31.82

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 6

REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	N.P.	**Date Reported**	22/07/2015
Consultant	CH2M MACE JV	**Date Received**	22/06-04/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	22/06-05/07/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	21-30/06/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Biki
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A55	6.30	1	0.41	Vertical
BH-A55	13.10	2	0.09	Vertical
BH-A56	4.33	3	0.42	Vertical
BH-A56	7.10	4	0.36	Vertical
BH-A56	9.70	5	0.17	Vertical
BH-A56	16.36	6	0.96	Vertical
BH-A57	3.52	7	0.54	Vertical
BH-A57	11.25	8	0.57	Vertical
BH-A57	13.60	9	0.33	Vertical
BH-B15	10.60	10	0.42	Vertical
BH-B15	22.80	11	0.12	Vertical
BH-B15	31.50	12	0.26	Vertical
BH-B16	5.80	13	0.13	Vertical
BH-B16	13.70	14	0.34	Vertical
BH-B16	36.40	15	0.40	Vertical
BH-B17	6.89	16	0.23	Vertical
BH-B17	10.00	17	0.12	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-B17	27.80	18	0.09	Vertical
BH-B17	38.30	19	1.04	Vertical
BH-B60	6.70	20	0.67	Vertical
BH-B60	10.85	21	0.57	Vertical
BH-B60	24.20	22	0.03	Vertical
BH-B60	31.80	23	0.69	Vertical
BH-C12	7.70	24	0.56	Vertical
BH-C12	6.30	25	0.33	Vertical
BH-C12	15.52	26	0.17	Vertical
BH-C12	17.10	27	1.09	Vertical
BH-C12	42.40	28	0.38	Vertical
BH-C13	8.50	29	0.25	Vertical
BH-C13	17.00	30	0.31	Vertical
BH-C13	37.80	31	0.45	Vertical
BH-C13	43.50	32	0.65	Vertical
BH-C13	47.60	33	1.05	Vertical
BH-C13	55.80	34	1.25	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	22/07/2015
Sample Description	Rock	**Date Received**	27/06-05/07/2015
Sample Source	Site	**Date Tested**	28/06-05/07/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin

Sample Details:			Dimensions:		Results:						
BH	**Depth**	**Sample**	**Diameter**	**Height**	**Compresive Strength**	**Strain at Failure**	**Modulus of Elasticity**	**Moisture Content**	**Wet Density**	**Sketch**	**Rock Description**
NO.	**(m)**	**No.**	**(cm)**	**(cm)**	**(N/mm^2)**	**(%)**	**(Mpa)**	**(%)**	**(Mg/m^3)**		
BH-A55	4.80	1	7.40	14.90	1.1	0.81	136.6	8.70	1.86	Figure C-1	cal. SANDSTONE
BH-A55	7.30	2	7.40	15.10	0.6	0.53	107.0	11.80	1.71	Figure C-2	cal. SANDSTONE
BH-A55	12.50	3	7.30	15.10	3.9	1.59	247.5	7.70	2.01	Figure C-3	sil. CALCARENITE
BH-A56	5.30	4	7.50	15.20	3.2	1.45	219.0	6.20	1.75	Figure C-4	cal. SANDSTONE
BH-A56	14.30	5	7.40	15.10	1.7	1.19	145.4	21.50	1.87	Figure C-5	cal. CONGLOMERATE
BH-A57	4.85	6	7.30	15.10	1.5	1.06	137.5	10.00	1.87	Figure C-6	cal. SANDSTONE
BH-A57	9.85	7	7.40	15.20	1.3	0.79	165.2	11.70	1.81	Figure C-7	cal. SANDSTONE
BH-B15	8.10	8	7.30	15.10	2.3	1.39	167.8	12.30	1.81	Figure C-8	cal. SANDSTONE
BH-B15	21.60	9	7.50	15.00	2.6	1.87	138.8	34.30	1.87	Figure C-9	cal. SANDSTONE
BH-B15	32.00	10	7.50	15.00	2.6	1.40	185.4	19.60	1.89	Figure C-10	cal. SILTSTONE
BH-B16	11.00	11	7.00	14.00	1.6	1.36	116.5	12.90	1.85	Figure C-11	cal. SANDSTONE
BH-B16	18.30	12	7.50	15.10	11.2	3.31	338.5	11.30	2.15	Figure C-12	cal. SILTSTONE
BH-B16	24.91	13	7.50	15.10	10.8	3.11	347.2	18.40	1.95	Figure C-13	cal. SILTSTONE
BH-B16	28.05	14	7.50	15.10	13.5	3.44	392.3	18.90	1.77	Figure C-14	cal. SILTSTONE
BH-B17	28.30	15	7.40	15.20	2.4	1.38	174.7	20.20	2.03	Figure C-15	cal. SILTSTONE
BH-B60	22.72	16	7.40	15.10	2.4	1.32	178.4	16.70	1.72	Figure C-16	cal. SILTSTONE
BH-B60	24.00	17	7.50	15.10	2.6	1.46	177.8	11.20	1.54	Figure C-17	cal. SILTSTONE
BH-C12	29.10	18	7.50	15.30	4.7	2.29	205.0	6.90	2.27	Figure C-18	cal. SILTSTONE
BH-C12	31.30	19	7.40	15.10	5.0	1.66	302.5	15.60	2.16	Figure C-19	cal. SILTSTONE
BH-C12	47.00	20	7.00	14.00	1.4	0.86	158.5	11.50	1.86	Figure C-20	cal. SILTSTONE
BH-C13	4.30	21	7.50	15.30	4.2	1.90	219.5	5.00	1.97	Figure C-21	cal. SANDSTONE
BH-C13	7.10	22	7.50	15.00	3.4	1.60	214.0	6.30	1.93	Figure C-22	cal. SANDSTONE
BH-C13	10.50	23	7.50	15.10	7.2	2.32	309.5	7.30	2.07	Figure C-23	cal. SANDSTONE

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-C13	18.20	24	7.30	15.00	4.1	1.67	244.4	19.80	2.15	Figure C-24	cal. SILTSTONE
BH-C13	22.50	25	7.50	15.00	2.1	0.93	225.7	24.10	2.02	Figure C-25	cal. SILTSTONE
BH-C13	24.00	26	7.50	15.00	8.6	2.33	367.2	20.40	1.94	Figure C-26	cal. SILTSTONE
BH-C13	27.10	27	7.30	15.00	3.4	1.20	281.8	32.20	1.78	Figure C-27	cal. SILTSTONE

TYPE OF FRACTURES FOR CORES

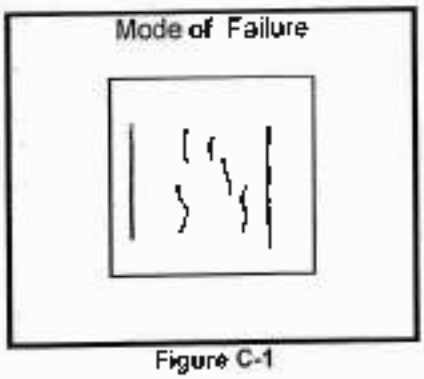


Figure C-1

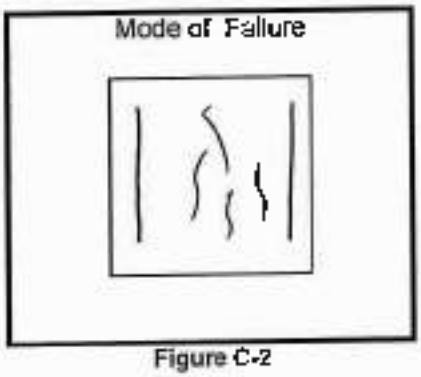


Figure C-2

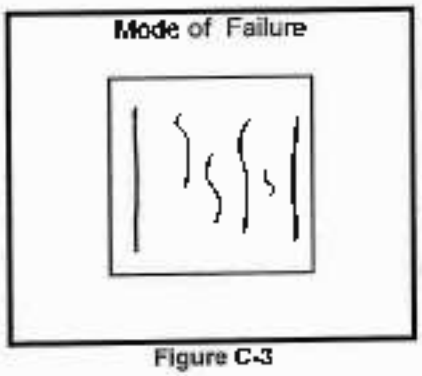


Figure C-3

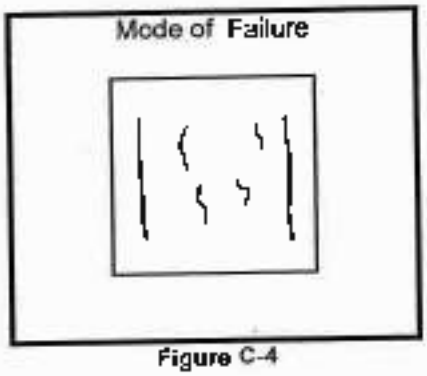


Figure C-4

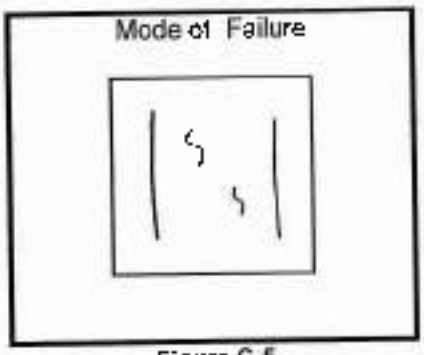


Figure C-5

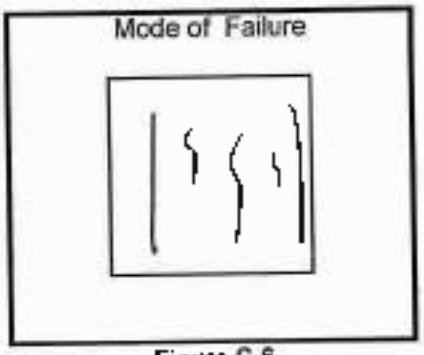


Figure C-6

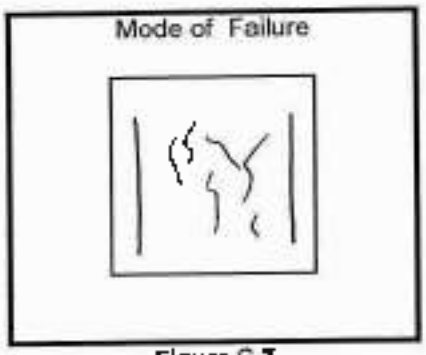


Figure C-7

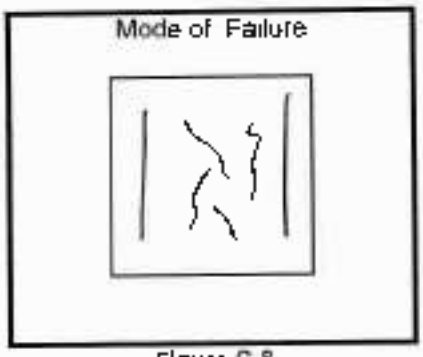


Figure C-8

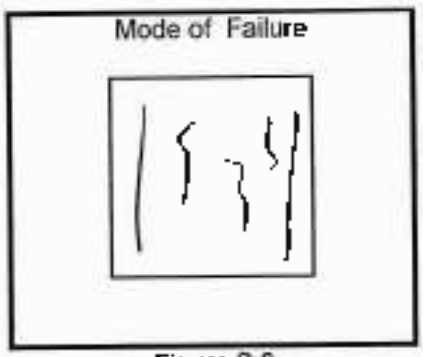


Figure C-9

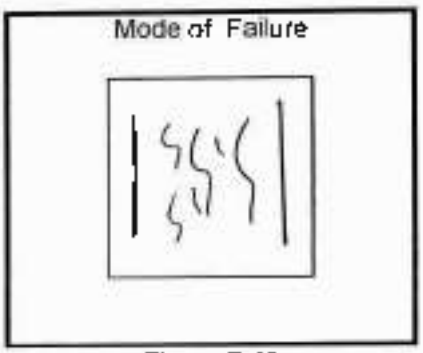


Figure C-10

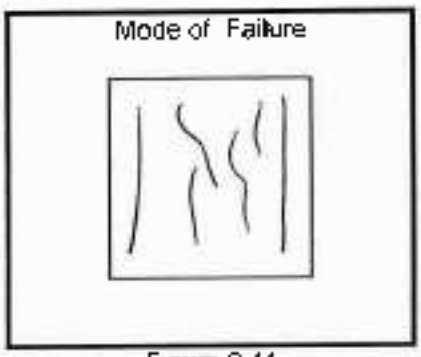


Figure C-11

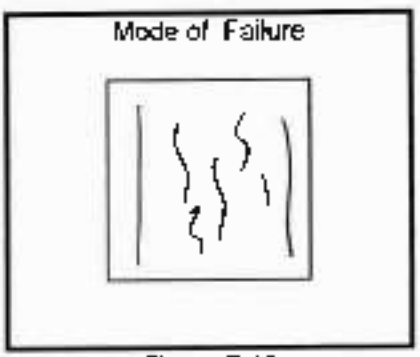


Figure C-12

TYPE OF FRACTURES FOR CORES

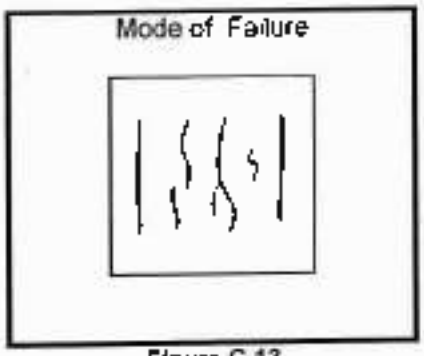


Figure C-13

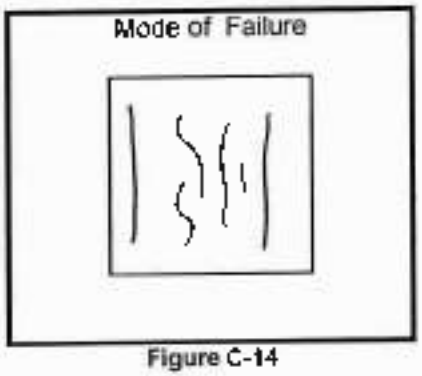


Figure C-14

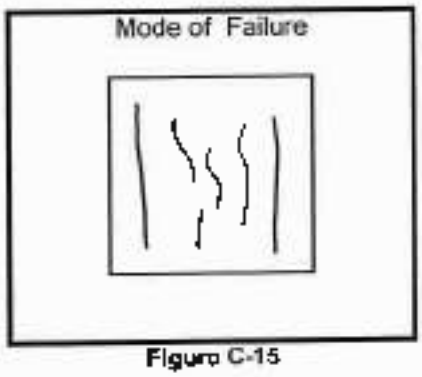


Figure C-15

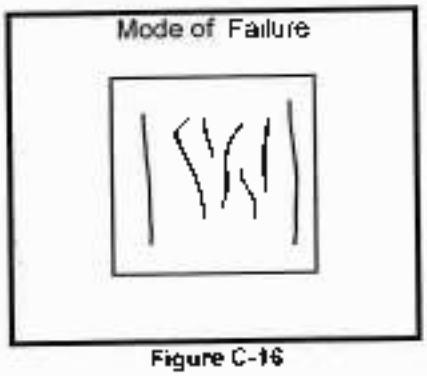


Figure C-16

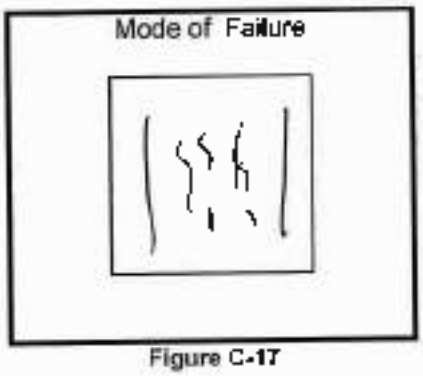


Figure C-17

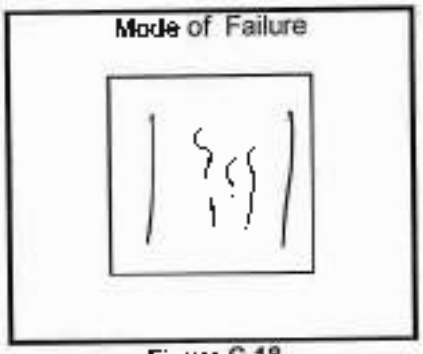


Figure C-18

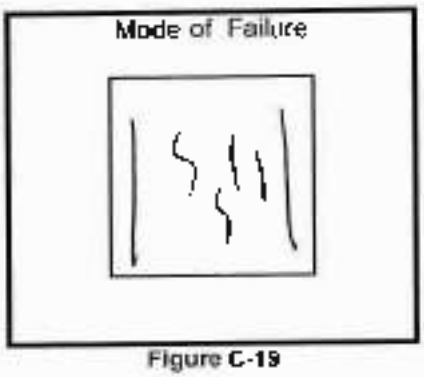


Figure C-19

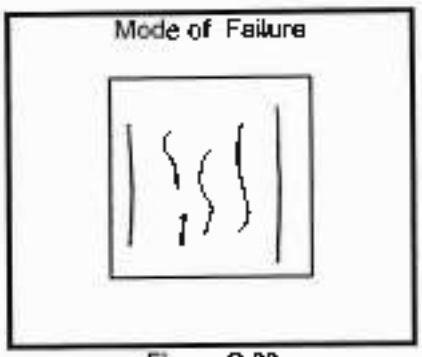


Figure C-20

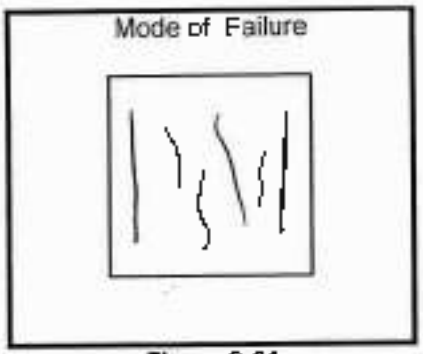


Figure C-21

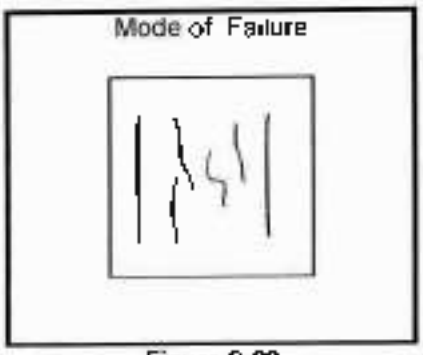


Figure C-22

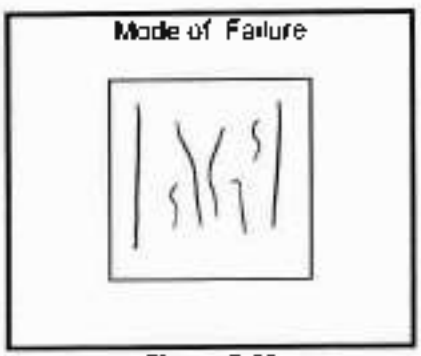


Figure C-23

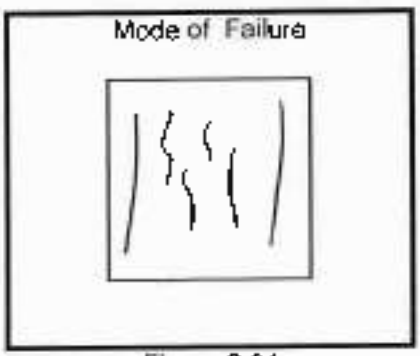


Figure C-24

TYPE OF FRACTURES FOR CORES

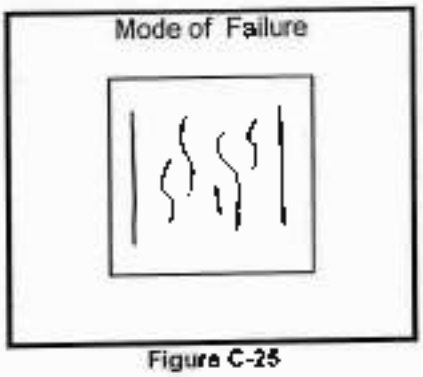


Figure C-25

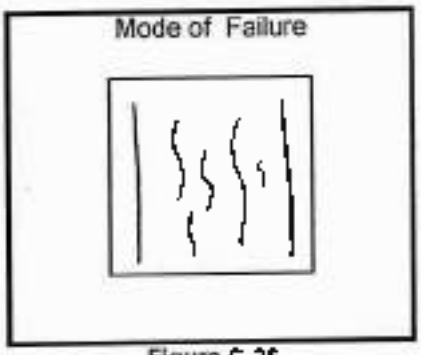


Figure C-26

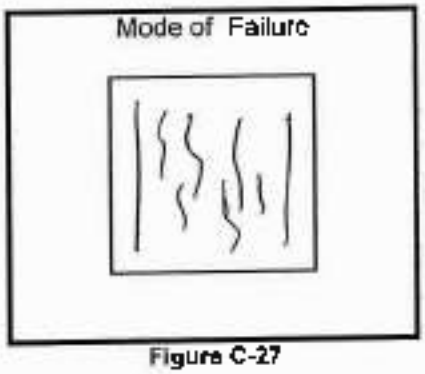
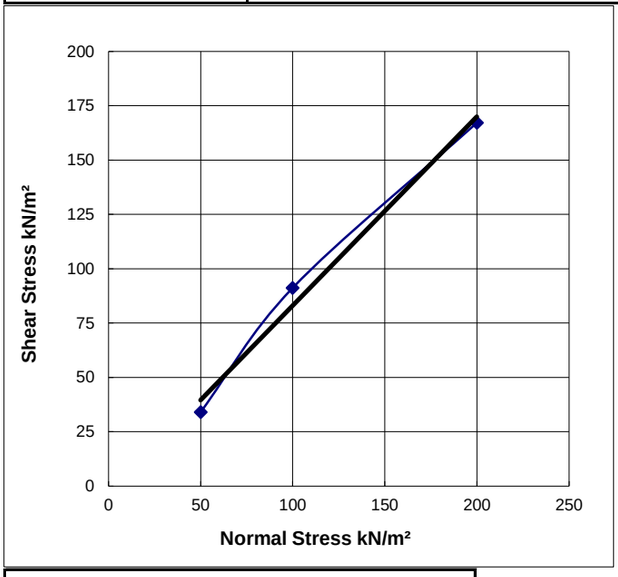
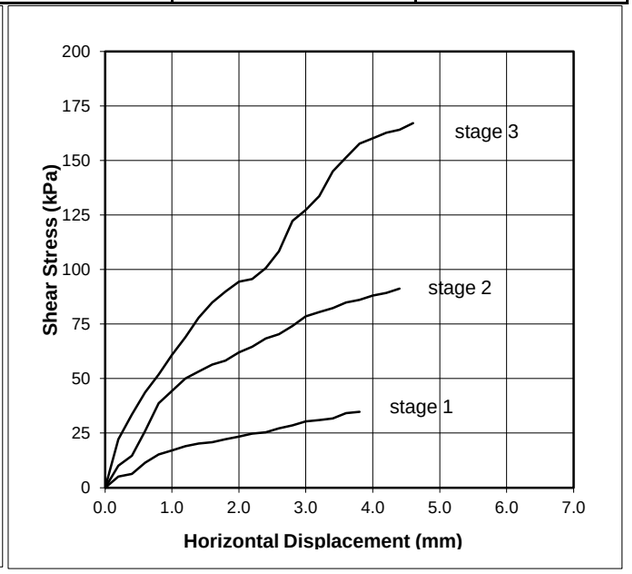


Figure C-27

TABLE C 8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Consultant	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A57	**Date Tested**	28-29/06/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

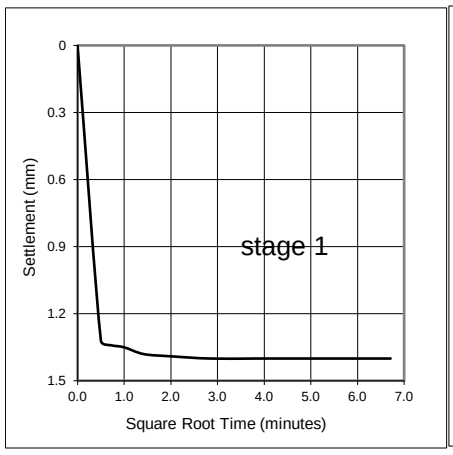
Apparent Cohesion = 0.0 kN/m²

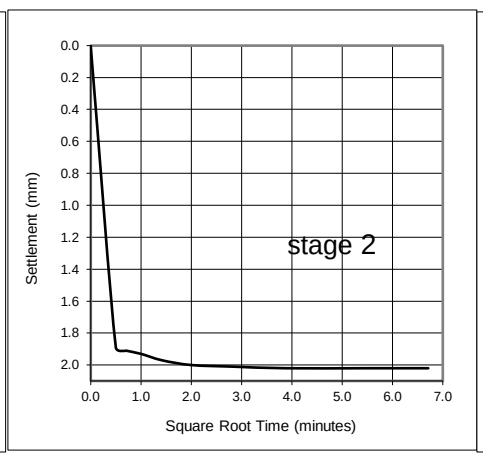
Angle of Shearing Resistance = 41.0º

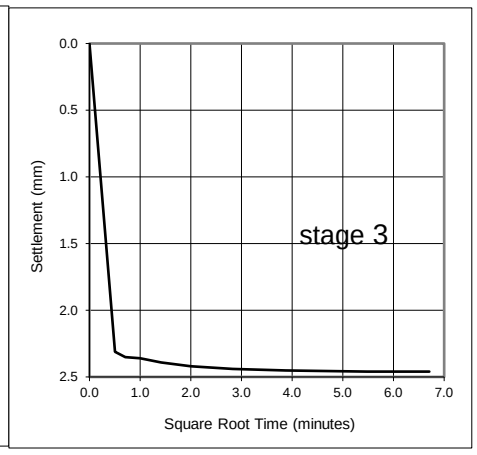
TABLE C 8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	CH2M MACE JV	**Date Reported**	42207
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A57	**Date Tested**	28-29/06/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.63
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

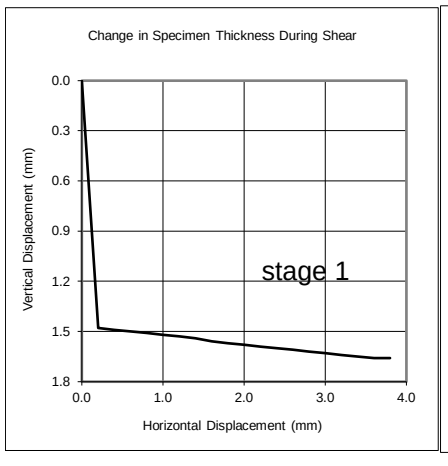
Consolidation Stage

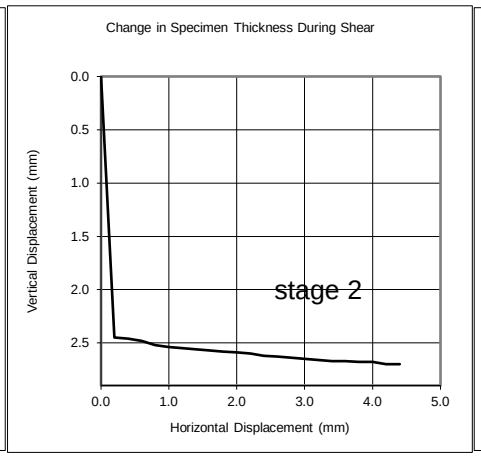


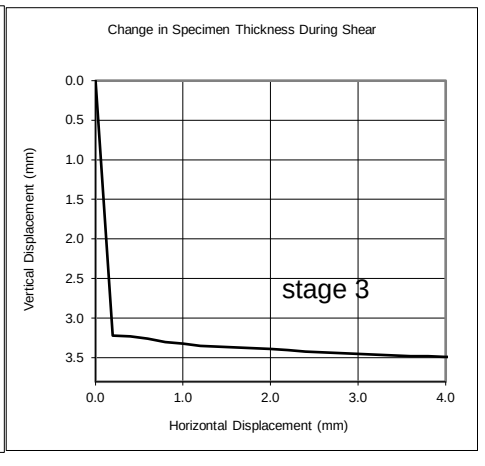




Shearing Stage



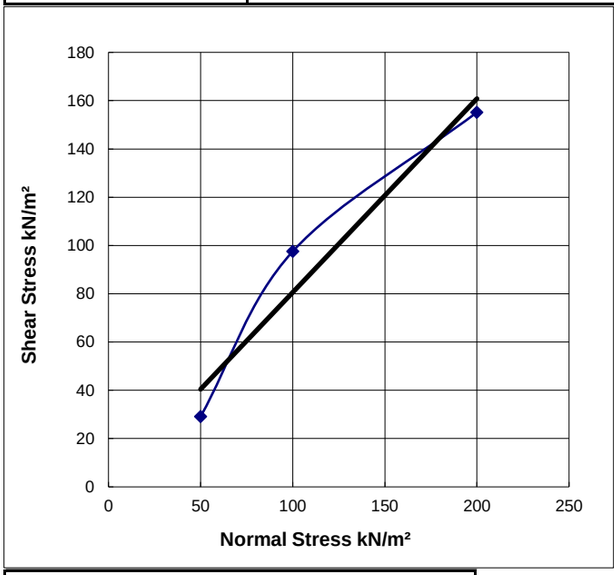


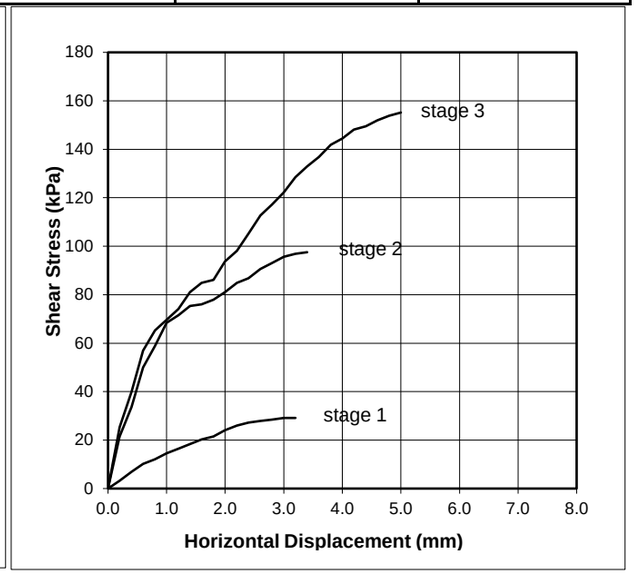


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Consultant	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B15	**Date Tested**	29-30/06/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

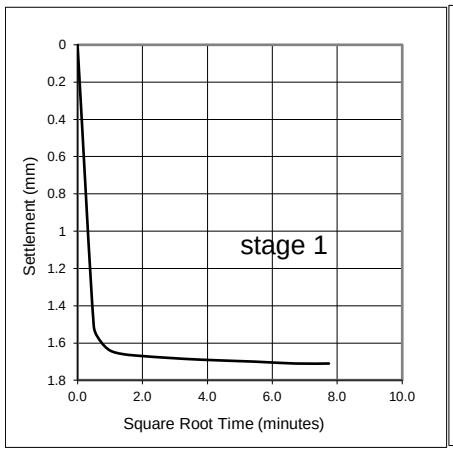
Apparent Cohesion = 0.0 kN/m²

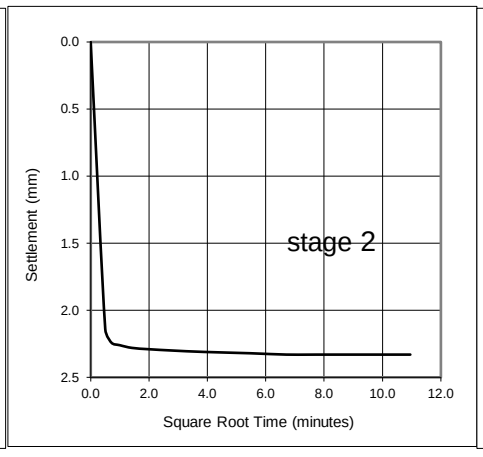
Angle of Shearing Resistance = 38.75º

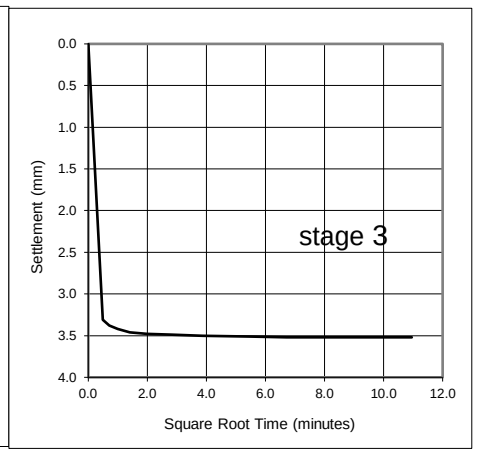
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B15	**Date Tested**	29-30/06/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

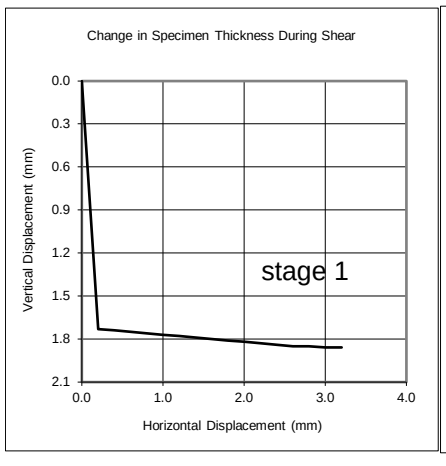
Consolidation Stage

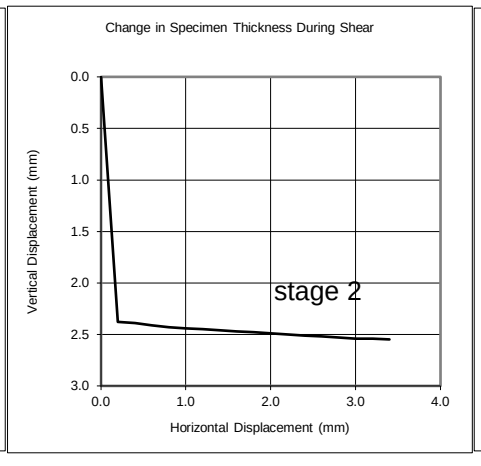


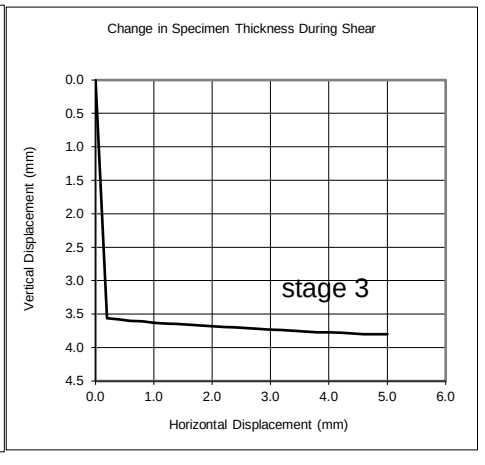




Shearing Stage





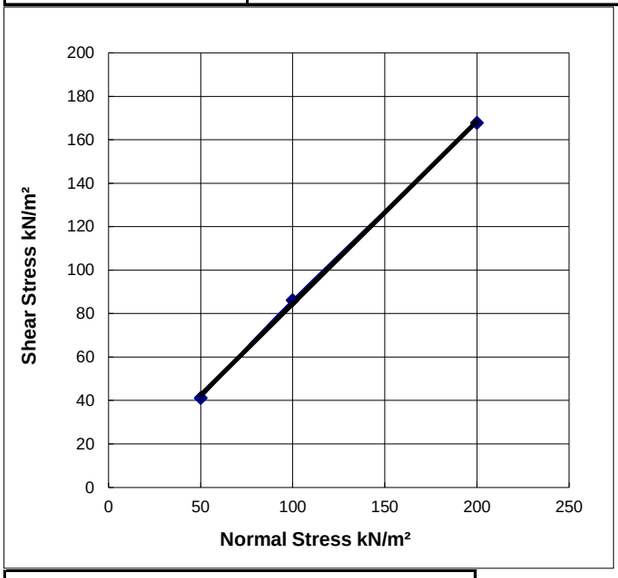


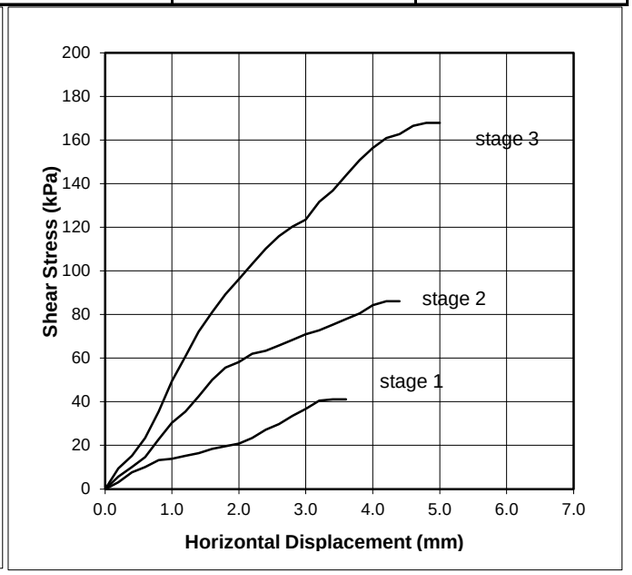
MATRIX LABORATORY L.L.C.

TABLE C 8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Consultant	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B60	**Date Tested**	01-02/07/2015
Depth (m)	2.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

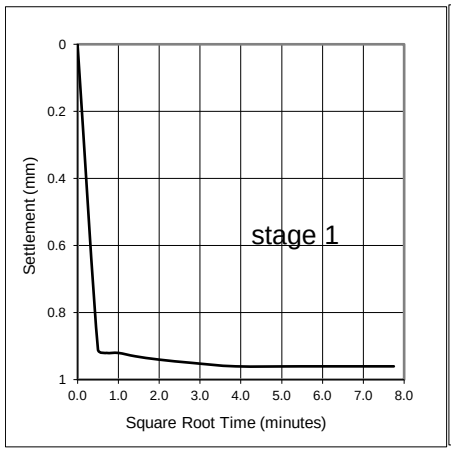
Apparent Cohesion = 0.0 kN/m²

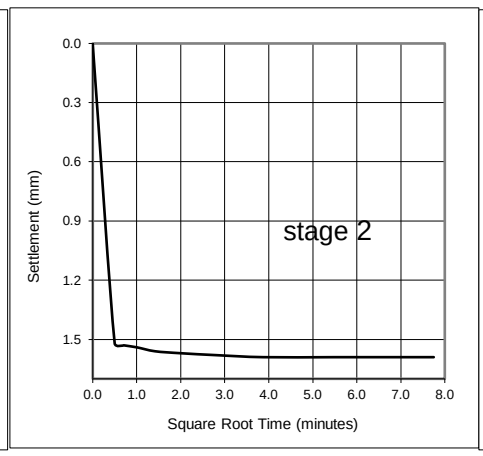
Angle of Shearing Resistance = 40.0º

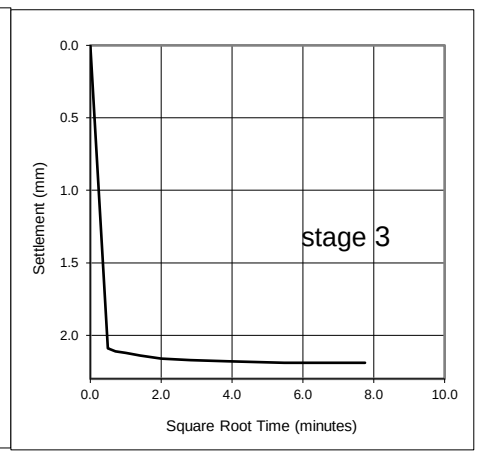
TABLE C 8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Contractor	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B60	**Date Tested**	01-02/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.73
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

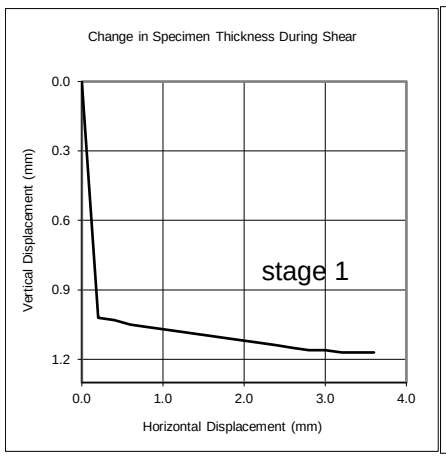
Consolidation Stage

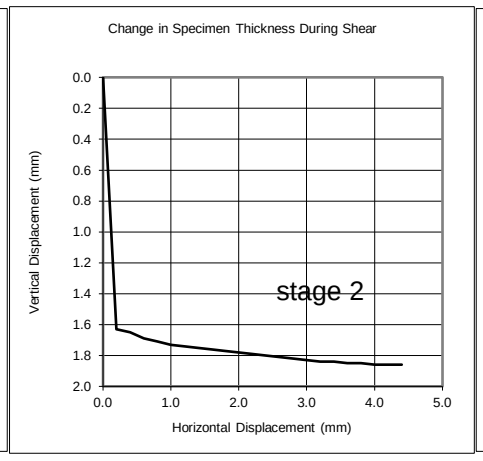


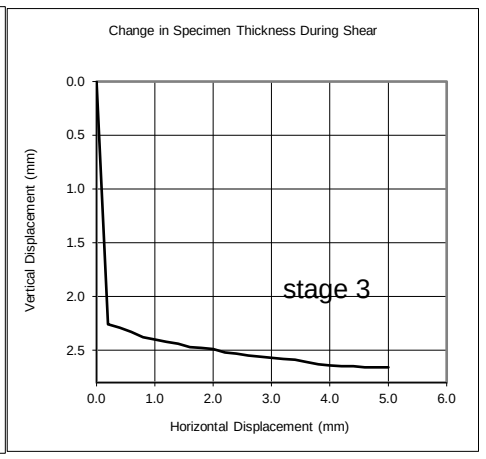




Shearing Stage



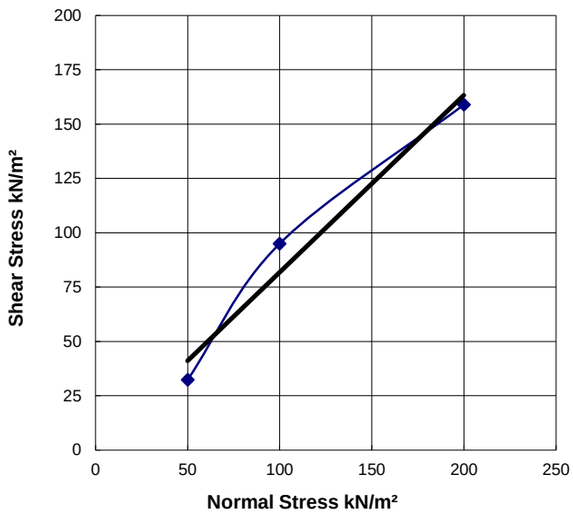


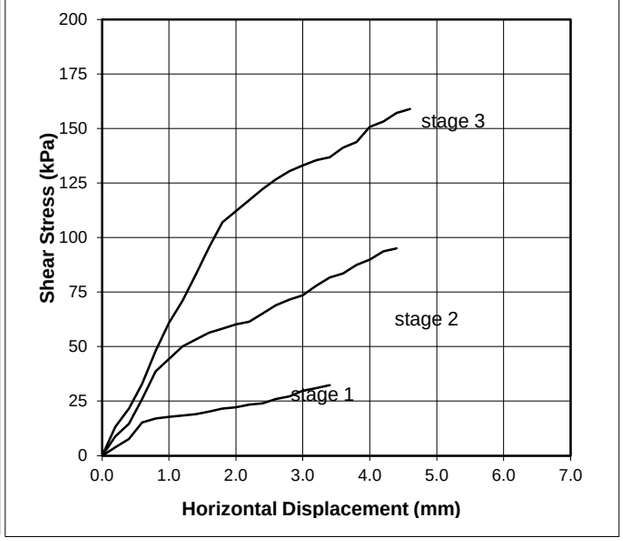


MATRIX LABORATORY L.L.C.

TABLE C 8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Consultant	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C13	**Date Tested**	02-04/07/2015
Depth (m)	1.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

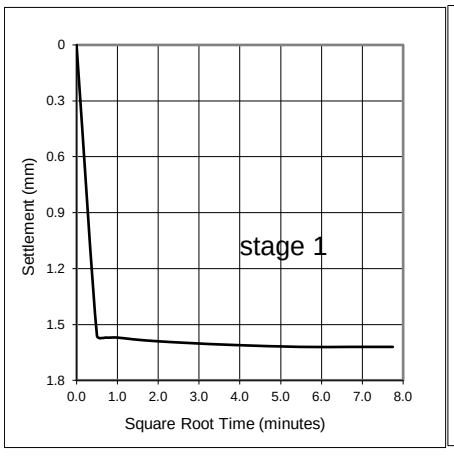
Apparent Cohesion =0.0 kN/m²

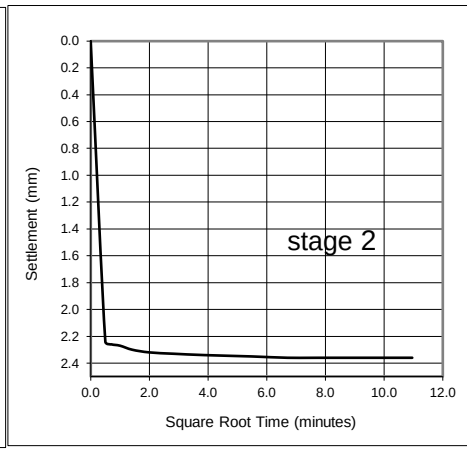
Angle of Shearing Resistance = 39.2º

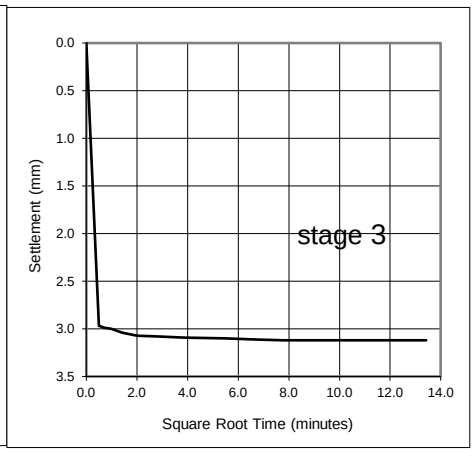
TABLE C 8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-2
Consultant	CH2M MACE JV	**Date Reported**	22/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-2
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C13	**Date Tested**	02-04/07/2015
Depth (m)	1.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

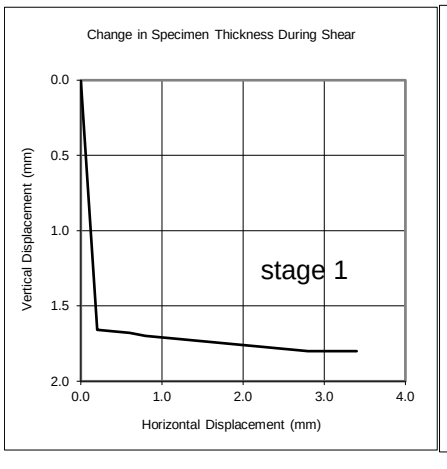
Consolidation Stage

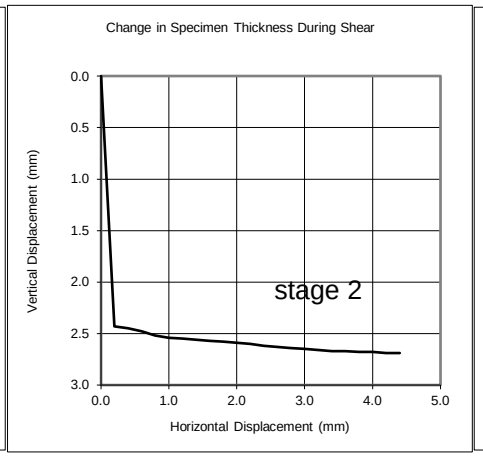


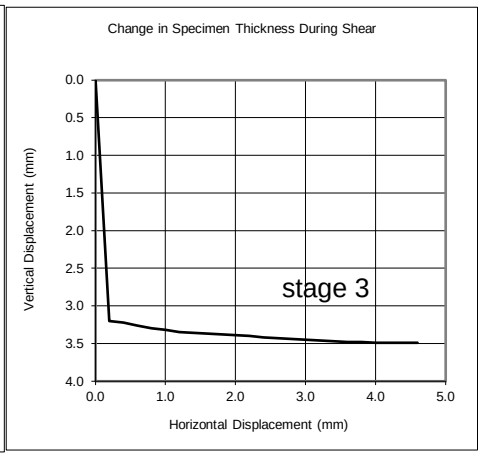




Shearing Stage







APPENDIX C3

LABORATORY TEST RESULTS (ZONE 3)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	28/06-03/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	01-07/07/2015
Test Method	See below	**Date Tested**	02-10/07/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A01	SPT3	2.00	2.5	0.88	8.6 @ 28°C	DS-3
BH-A02	SPT2	1.00	2.7	1.60	8.7 @ 28°C	DS-3
BH-C02	SPT2	1.00	1.4	0.09	8.4 @ 28°C	DS-2
BH-C10	SPT3	2.00	1.9	0.11	8.5 @ 27°C	DS-3
BH-C16	SPT3	2.00	1.0	0.01	7.9 @ 28°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	30/06-07/0/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	30/06-07/0/2015
Test Method	See below	**Date Tested**	01-08/07/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A02	1.80	3.87	1.79	7.5 @ 27°C	DS-4
BH-B09	1.90	0.74	0.04	7.7 @ 28°C	DS-2
BH-C14	10.00	1.80	1.21	7.8 @ 27°C	DS-3

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

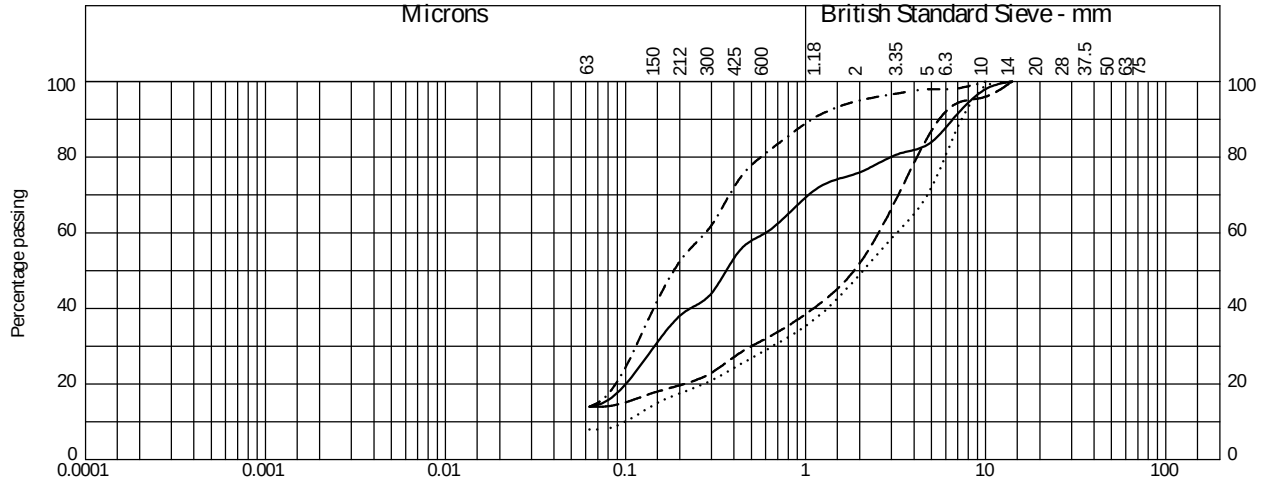
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A01	SPT2	120.4	———	V. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A01	SPT4	128.5	– – –	V. GRAVELLY, SILTY, COARSE SAND (S-M)	3.00
BH-A01	SPT8	72.6	.....	V. GRAVELLY, SILTY, COARSE SAND (S-M)	7.00
BH-A02	SPT2	136.6	–·–·–	GRAVELLY, SILTY, M-F SAND (S-M)	1.00

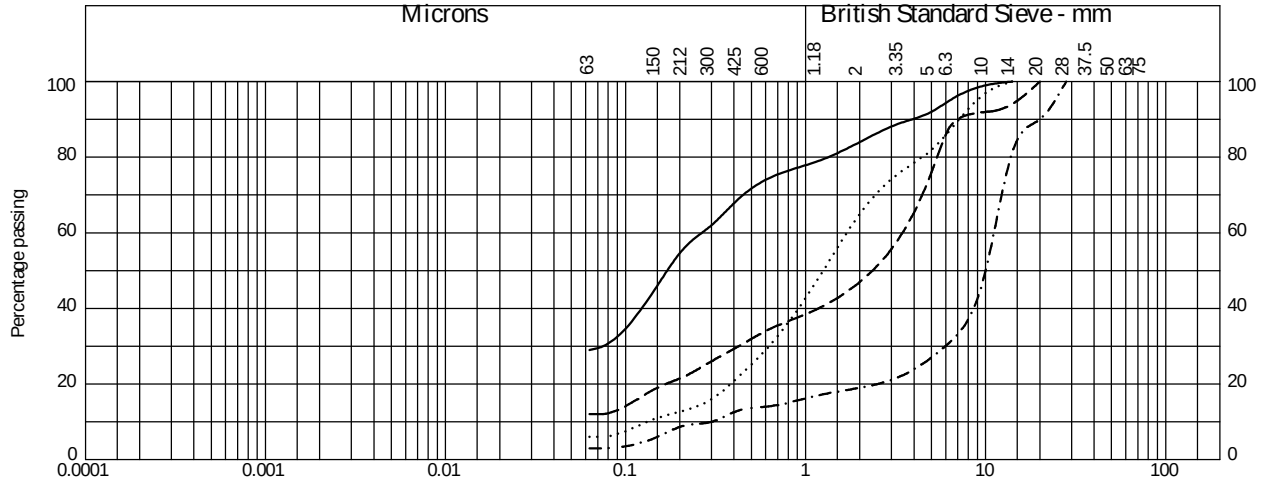
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A02	SPT4	132.8	———	GRAVELLY, V. SILTY, FINE SAND (SM)	3.00
BH-A02	SPT6	136.9	– – –	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-B08	SPT2	133.8	.....	V. GRAVELLY, SILTY, COARSE SAND (S-M)	1.00
BH-B08	SPT5	138.1	– . – . –	V. GRAVELLY, SL. SILTY, SAND (SP)	4.00

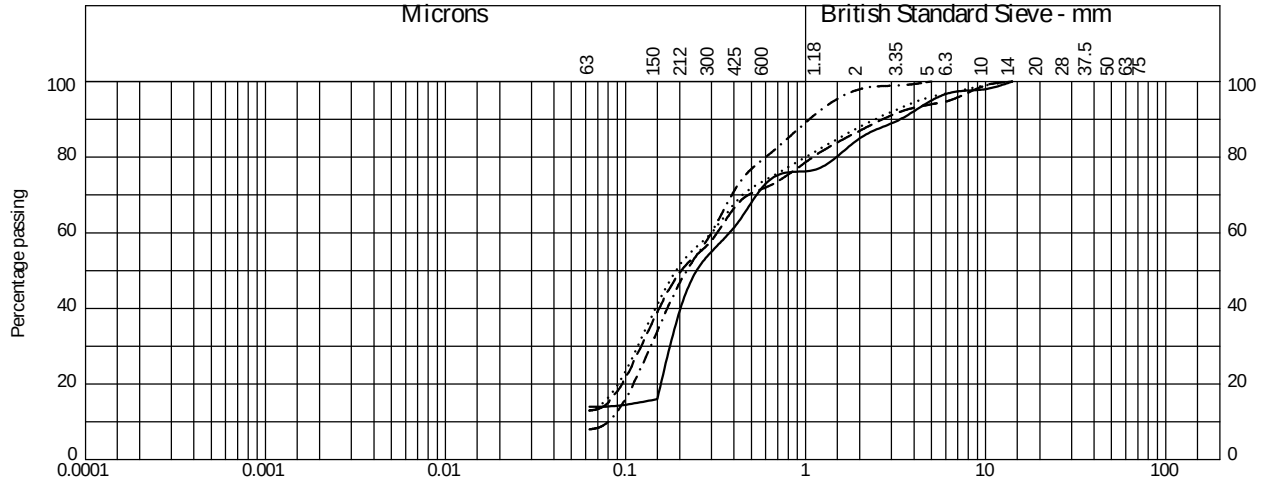
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B09	SPT2	99.2	———	GRAVELLY, SILTY, F-M SAND (S-M)	1.00
BH-B09	SPT3	104.7	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-B09	SPT6	108.6	.....	GRAVELLY, SILTY, M-F SAND (S-M)	5.00
BH-B10	SPT2	127.8	–·–·–	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

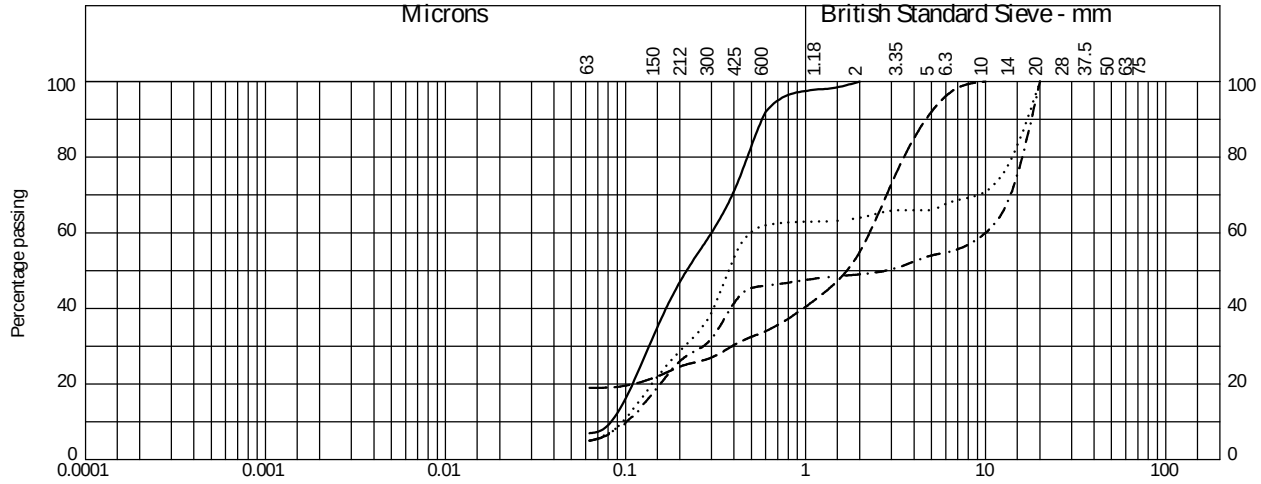
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B10	SPT3	127.7	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-B10	SPT5	137.0	– – –	V. GRAVELLY, SILTY, COARSE SAND (S-M)	4.00
BH-C02	SPT2	146.4	.....	V. GRAVELLY, SILTY, F-M SAND (S-M)	1.00
BH-C02	SPT3	137.5	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00

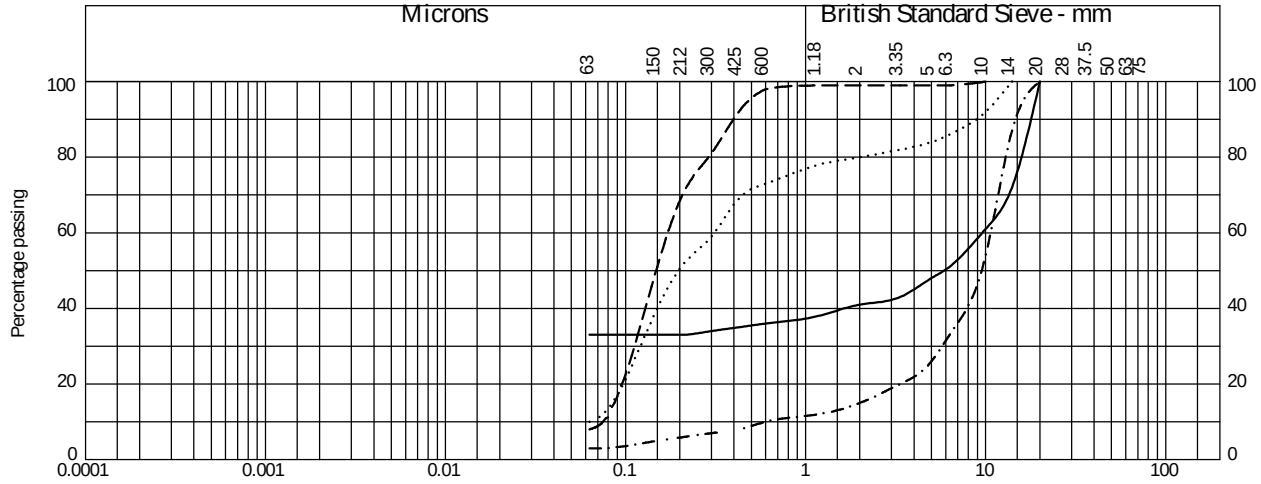
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C02	SPT5	139.7	———	V. GRAVELLY, V. SILTY, SAND (SM)	4.00
BH-C04	SPT2	128.9	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C04	SPT4	132.5	.....	GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-C04	SPT6	123.1	–·–·–	V. GRAVELLY, SL. SILTY, SAND (SP)	5.00

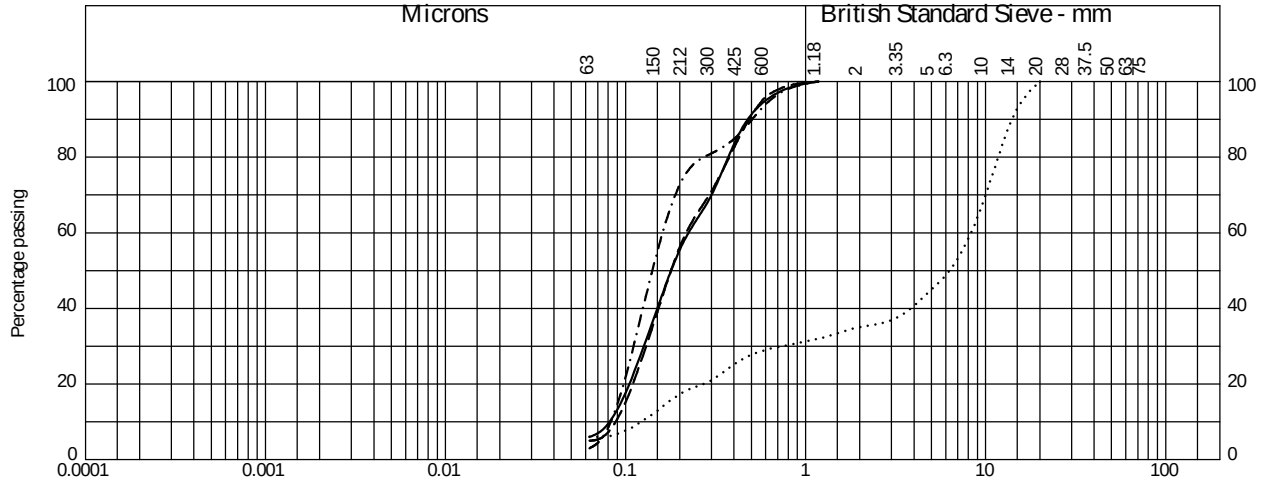
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C06	SPT2	142.8	———	SILTY, M-F SAND (S-M)	1.00
BH-C06	SPT4	124.7	– – –	SILTY, M-F SAND (S-M)	3.00
BH-C06	SPT6	130.6	.....	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-C08	SPT3	136.9	– . – . –	SL. SILTY, FINE SAND (SP)	2.00

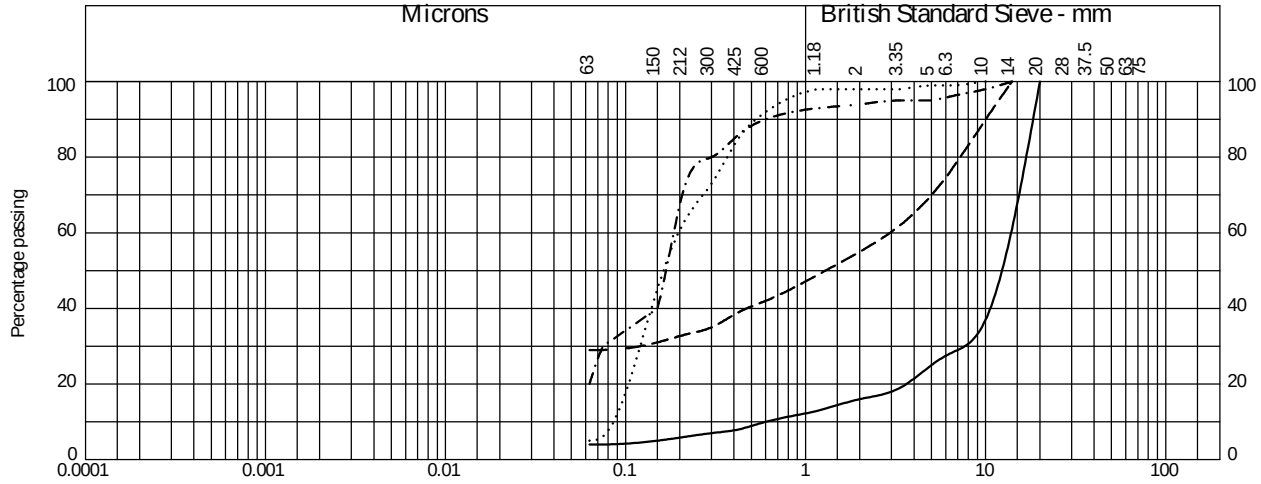
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C08	SPT4	80.1	———	V. GRAVELLY, SL. SILTY, SAND (SP)	3.00
BH-C08	SPT5	134.6	– – –	V. GRAVELLY, V. SILTY, SAND (SM)	4.00
BH-C10	SPT3	143.9	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-C10	SPT5	132.3	–·–·–	GRAVELLY, V. SILTY, SAND (SM)	4.00

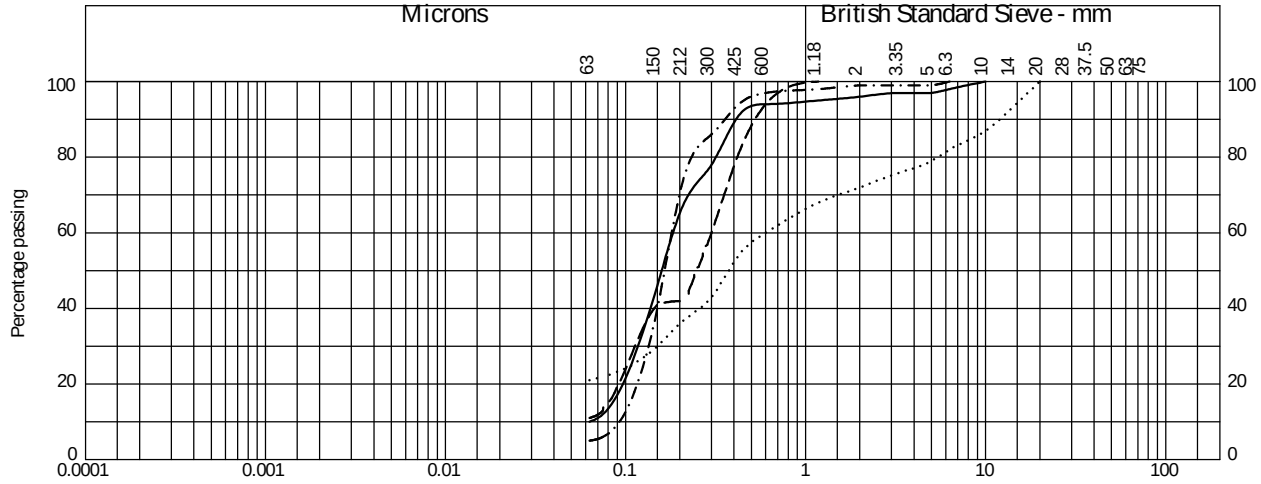
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
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Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C14	SPT2	131.2	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C14	SPT4	123.1	– – –	SILTY, F-M SAND (S-M)	3.00
BH-C14	SPT6	121.2	.....	V. GRAVELLY, V. SILTY, MEDIUM SAND (SM)	5.00
BH-C15	SPT2	125.3	– · – · –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

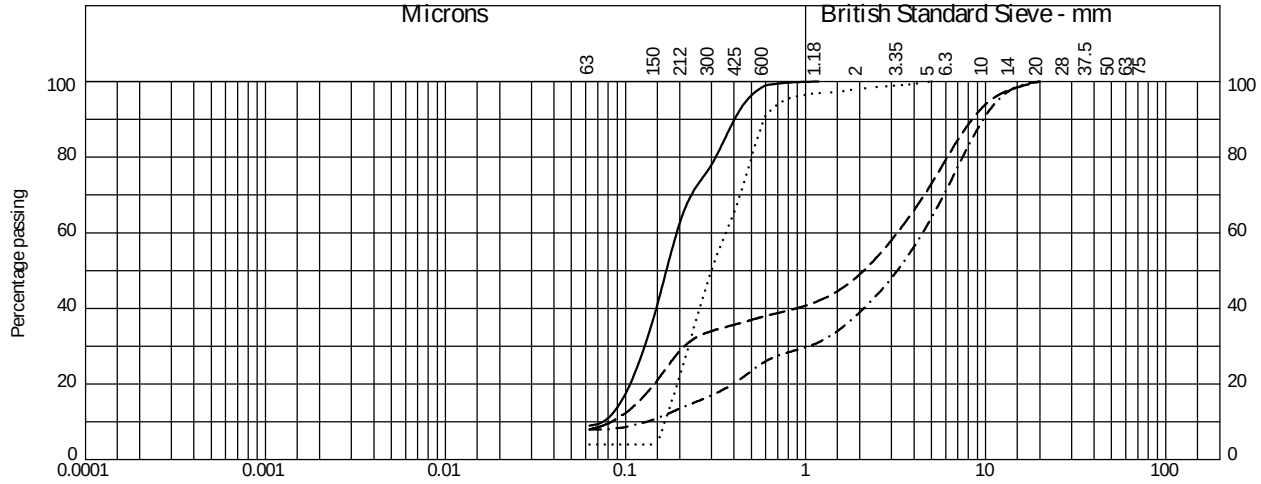
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C15	SPT7	128.2	———	SILTY, M-F SAND (S-M)	6.50
BH-C15	SPT10	125.4	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	9.50
BH-C16	SPT2	145.7	.....	SL. GRAVELLY, SL. SILTY, F-M SAND (SP)	1.00
BH-C16	SPT8	138.1	–·–·–	V. GRAVELLY, SILTY, SAND (S-M)	8.00

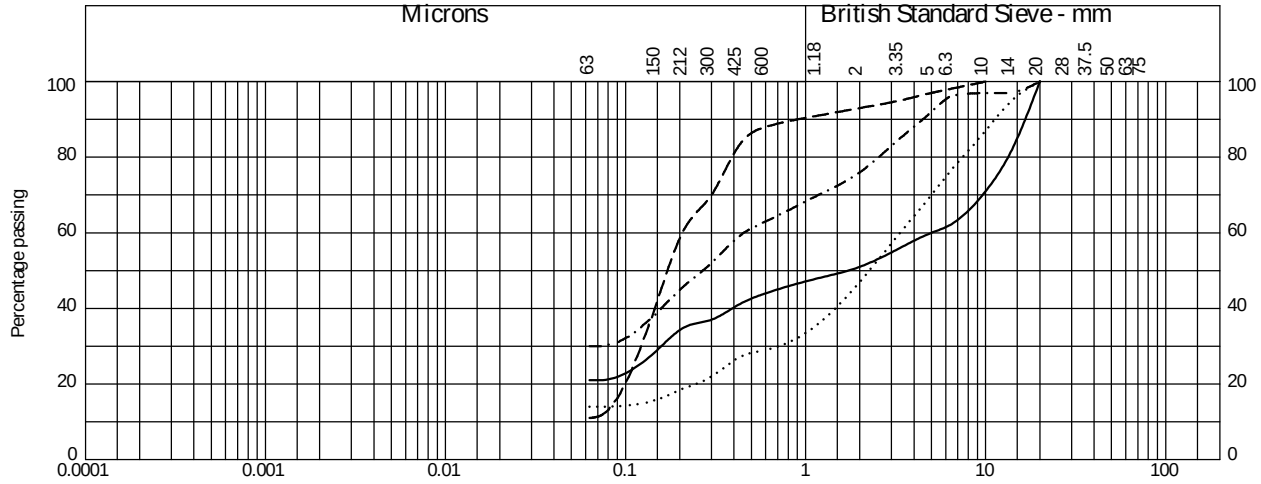
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
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Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C16	SPT15	133.8	———	V. GRAVELLY, V. SILTY, SAND (SM)	12.30
BH-C17	SPT2	133.8	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C17	SPT8	140.1	.....	V. GRAVELLY, SILTY, SAND (S-M)	8.00
BH-C17	SPT21	136.1	–·–·–	V. GRAVELLY, V. SILTY, SAND (SM)	19.50

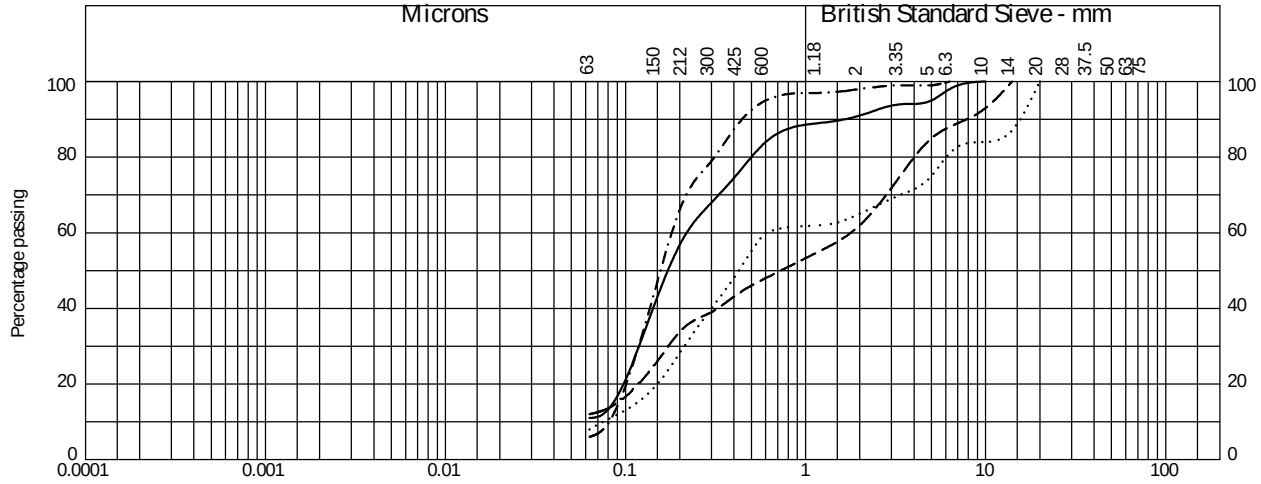
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C18	SPT2	122.7	———	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C18	SPT4	117.6	— — —	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-C18	SPT5	60.9	.....	V. GRAVELLY, V. SILTY SAND (SM)	4.00
BH-C19	SPT2	134.1	—·—·—	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

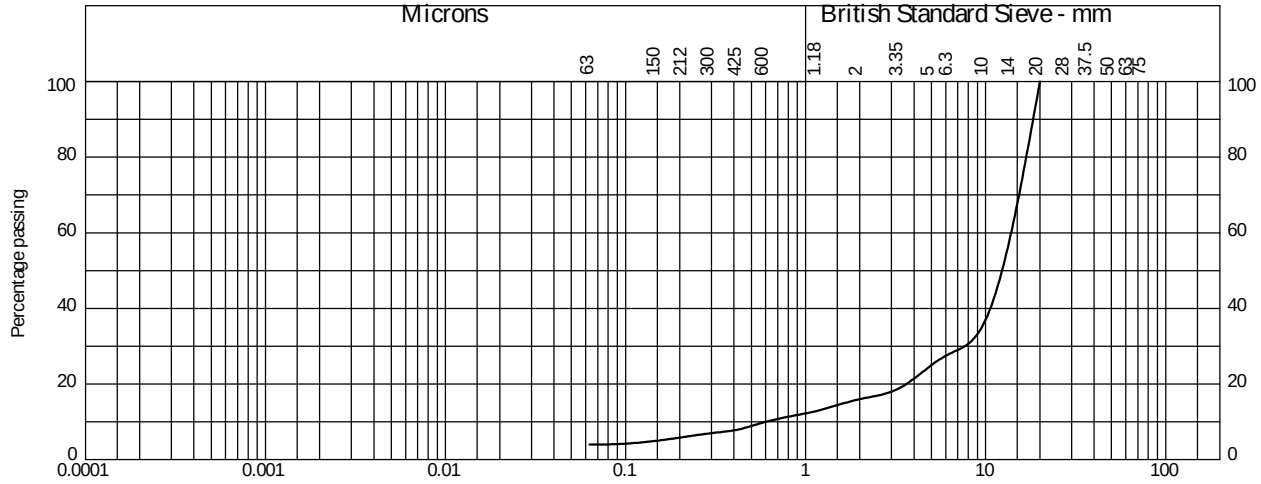
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-3
Contractor	N.P.	Date Reported	26/07/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-3
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 3)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	01-16/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-20/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C19	SPT4	80.1	———	V. GRAVELLY, SL. SILTY, SAND (SP)	3.00
			– – –		
			.....		
			–.–.–		

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

Table C-1 (1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A01	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	89
5	84
3.35	81
2	76
1.18	72
0.60	60
0.425	55
0.300	44
0.212	39
0.150	31
0.075	15
0.063	14
0.023	8
0.015	6
0.008	5
0.006	4
0.004	2
0.002	1
0.001	0

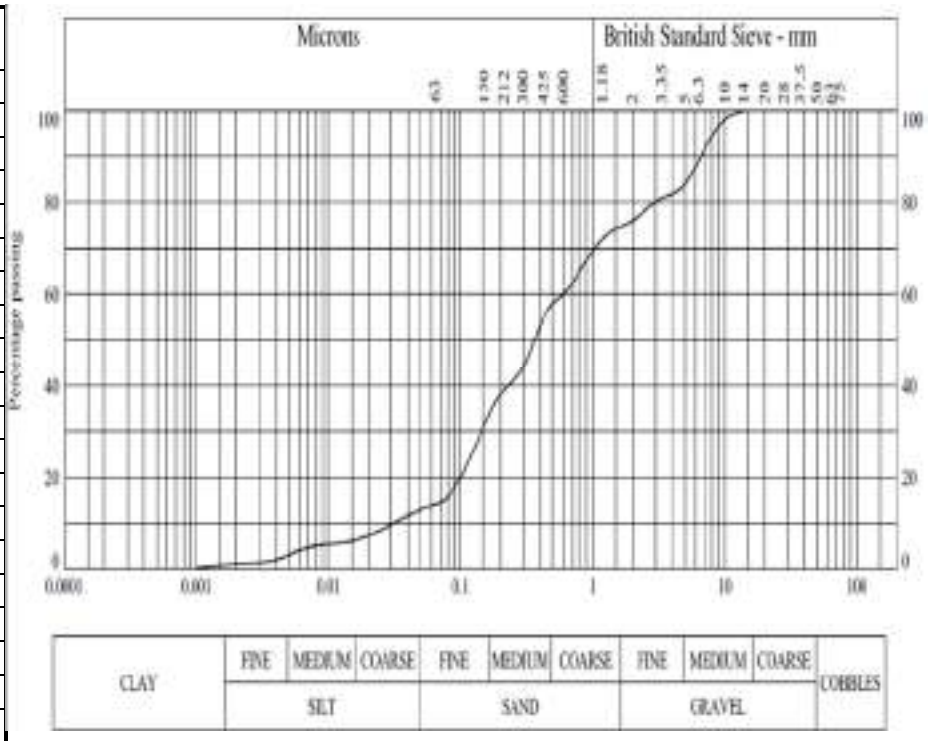


Table C-1 (2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, COARSE SAND	**Sampled By**	Matrix
Borehole No.	BH-A01	**Sampling Date**	28/06-10/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	93
5	87
3.35	71
2	52
1.18	41
0.60	32
0.425	28
0.300	23
0.212	20
0.150	18
0.075	14
0.063	10
0.023	7
0.015	6
0.008	5
0.006	4
0.004	3
0.002	2
0.001	0

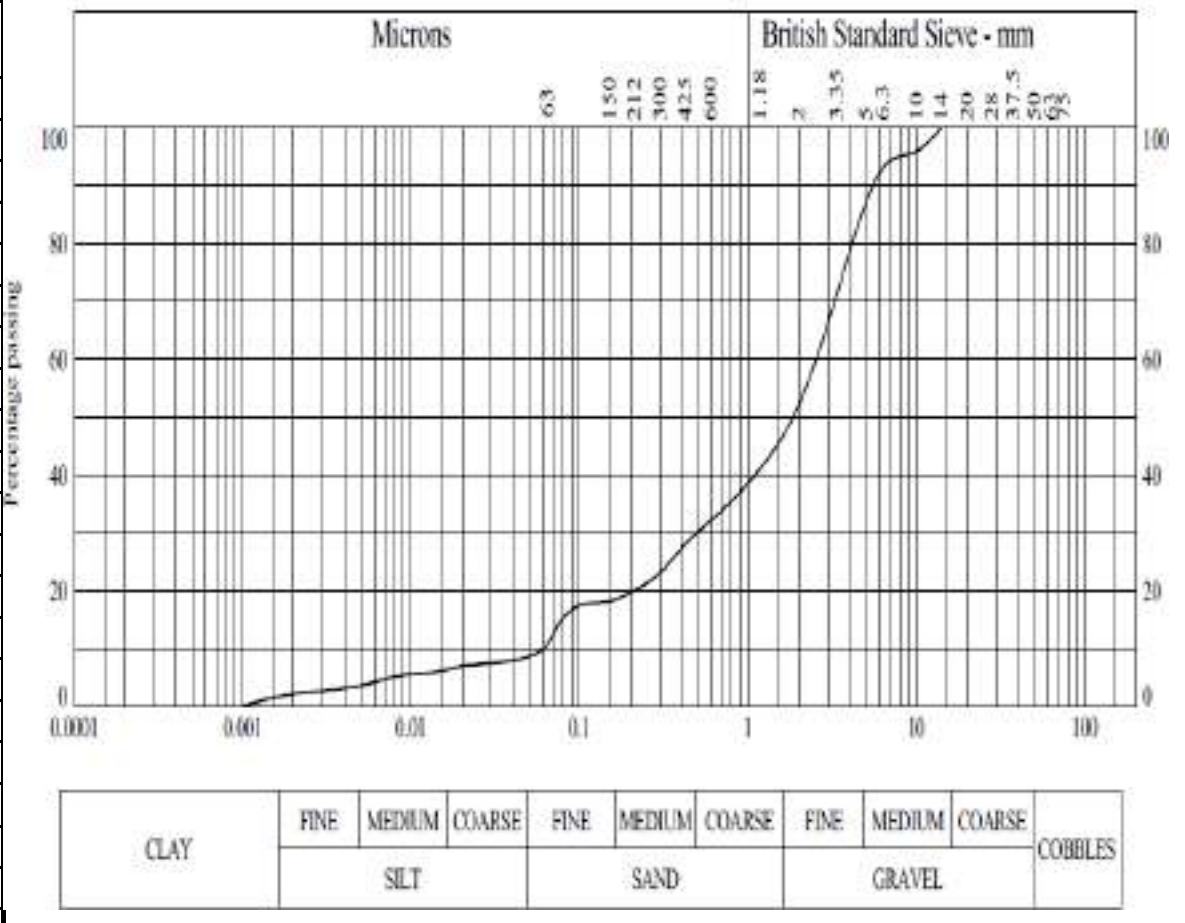


Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A02	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	98
3.35	97
2	95
1.18	91
0.60	81
0.425	74
0.300	62
0.212	54
0.150	42
0.075	16
0.063	14
0.023	10
0.015	8
0.008	6
0.006	4
0.004	2
0.002	1
0.001	0

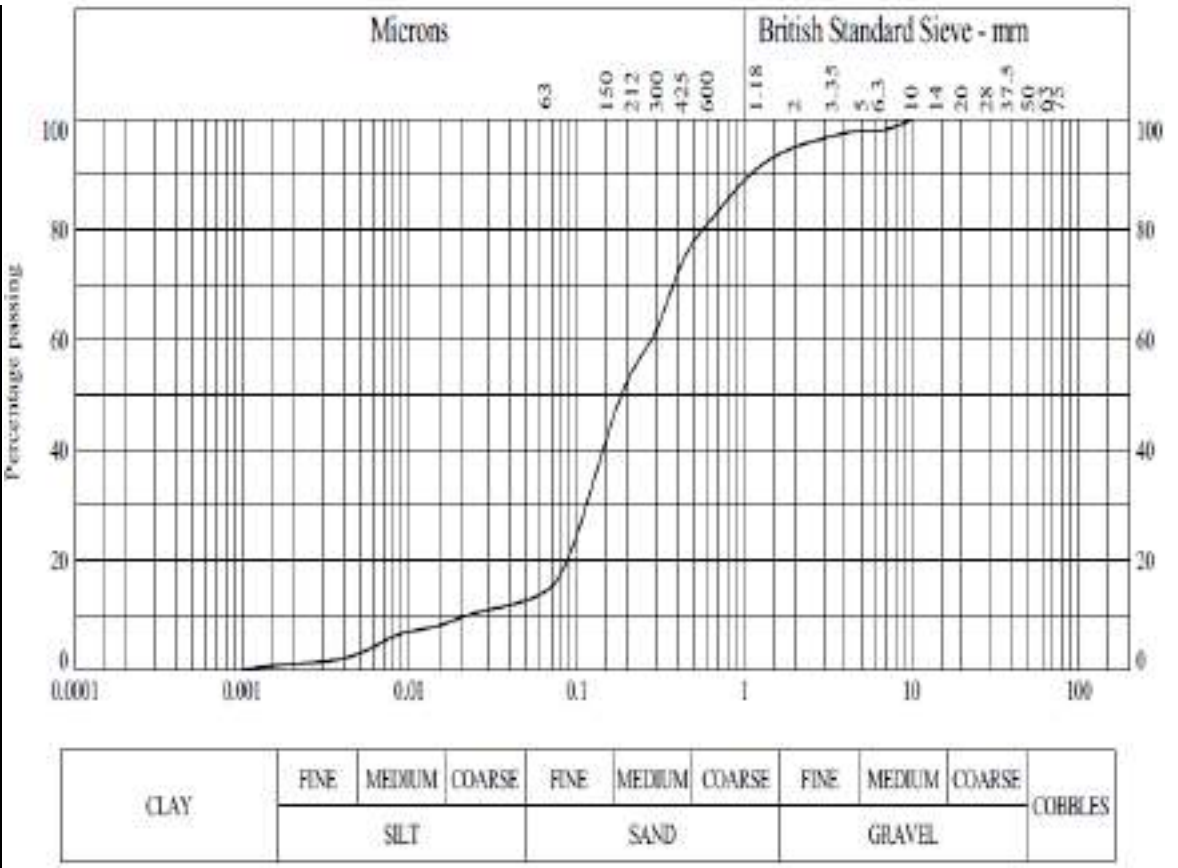


Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A02	**Sampling Date**	28/06-10/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	95
5	92
3.35	89
2	84
1.18	79
0.60	74
0.425	69
0.300	62
0.212	56
0.150	46
0.075	30
0.063	29
0.023	20
0.015	15
0.008	10
0.006	5
0.004	3
0.002	2
0.001	0

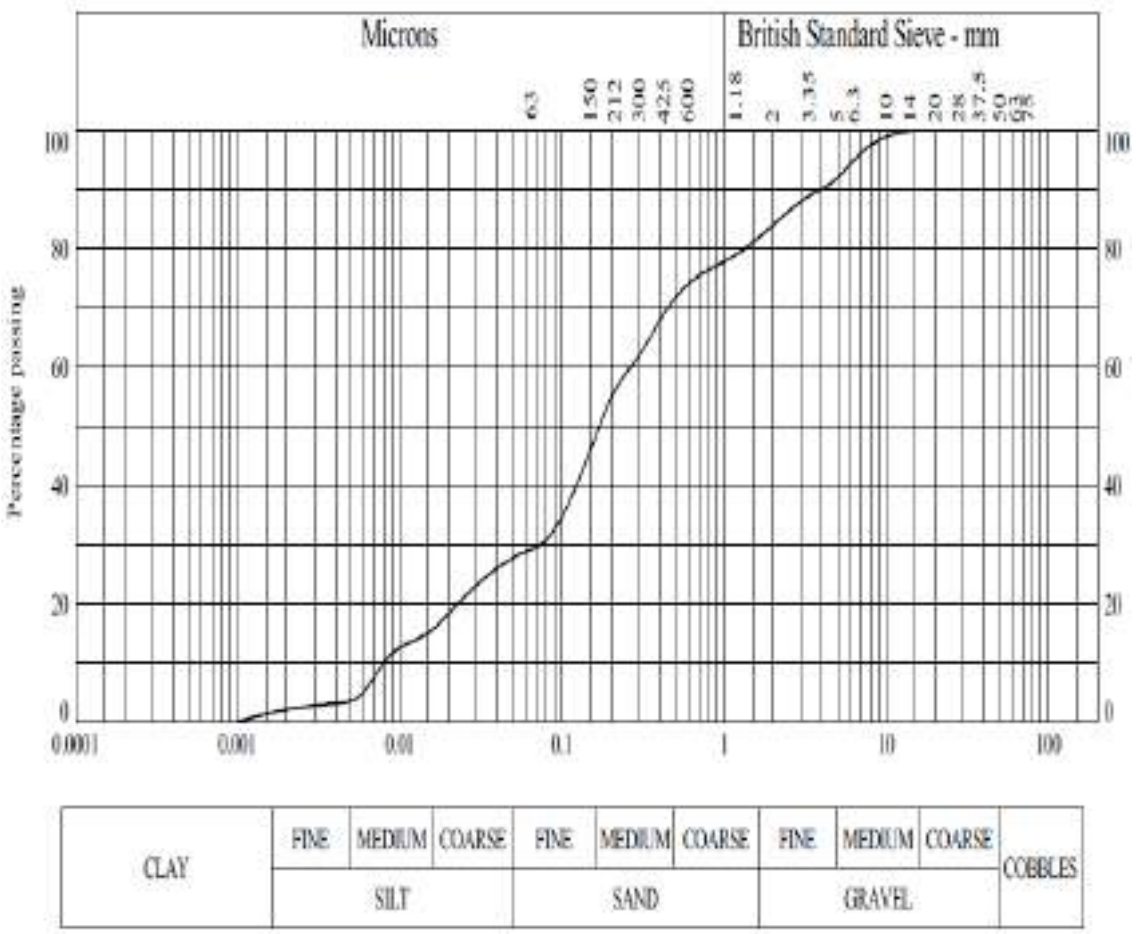


Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-A02	**Sampling Date**	28/06-10/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	92
6.3	88
5	76
3.35	59
2	47
1.18	40
0.60	34
0.425	30
0.300	26
0.212	22
0.150	19
0.075	12
0.063	10
0.023	7
0.015	6
0.008	5
0.006	4
0.004	3
0.002	2
0.001	0

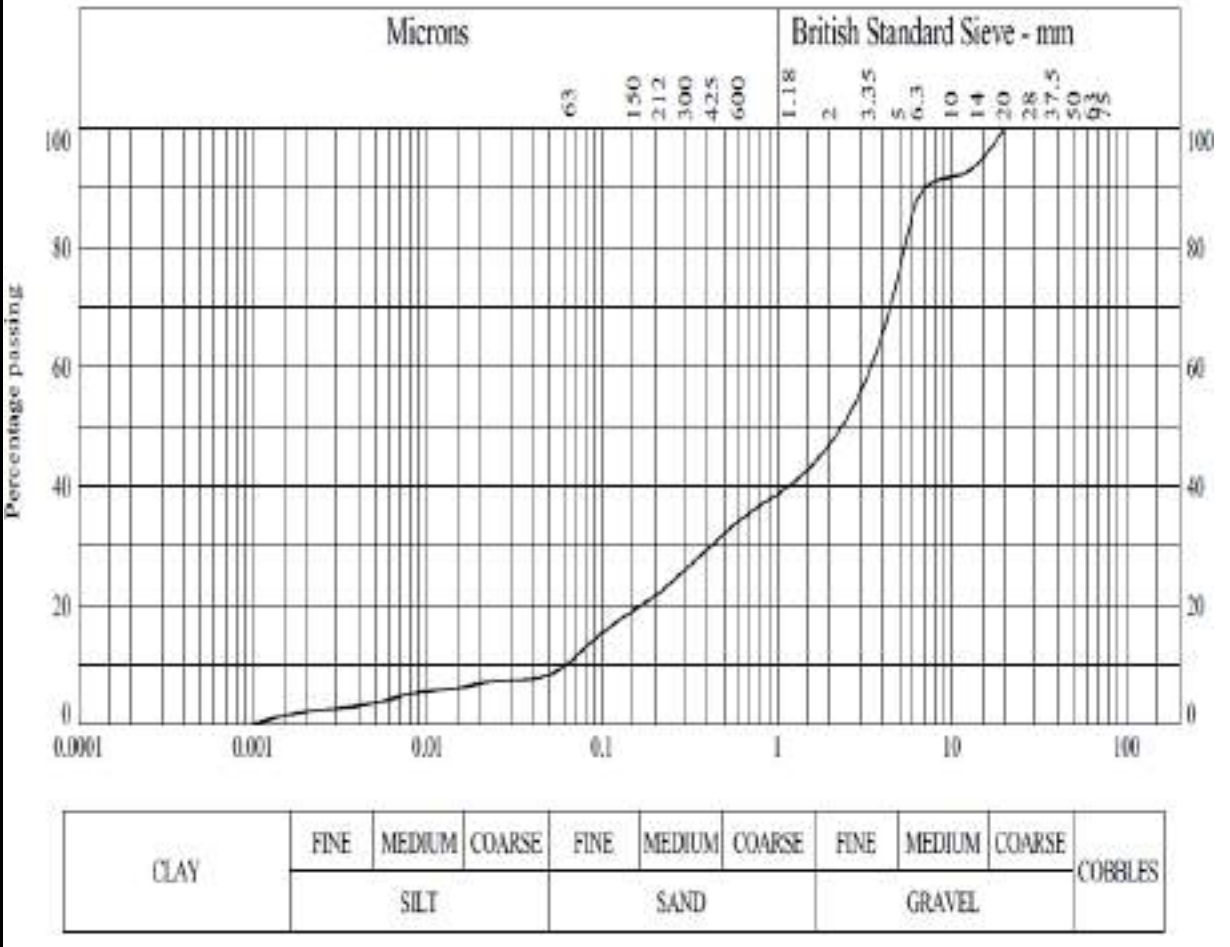


Table C-1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, F-M SAND	**Sampled By**	Matrix
Borehole No.	BH-B09	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10.0	98
6.3	97
5.0	95
3.4	90
2.0	85
1.18	77
0.60	73
0.43	63
0.30	55
0.21	43
0.15	20
0.08	14
0.06	8
0.02	7
0.01	6
0.01	4
0.006	3
0.004	2
0.002	1
0.001	0

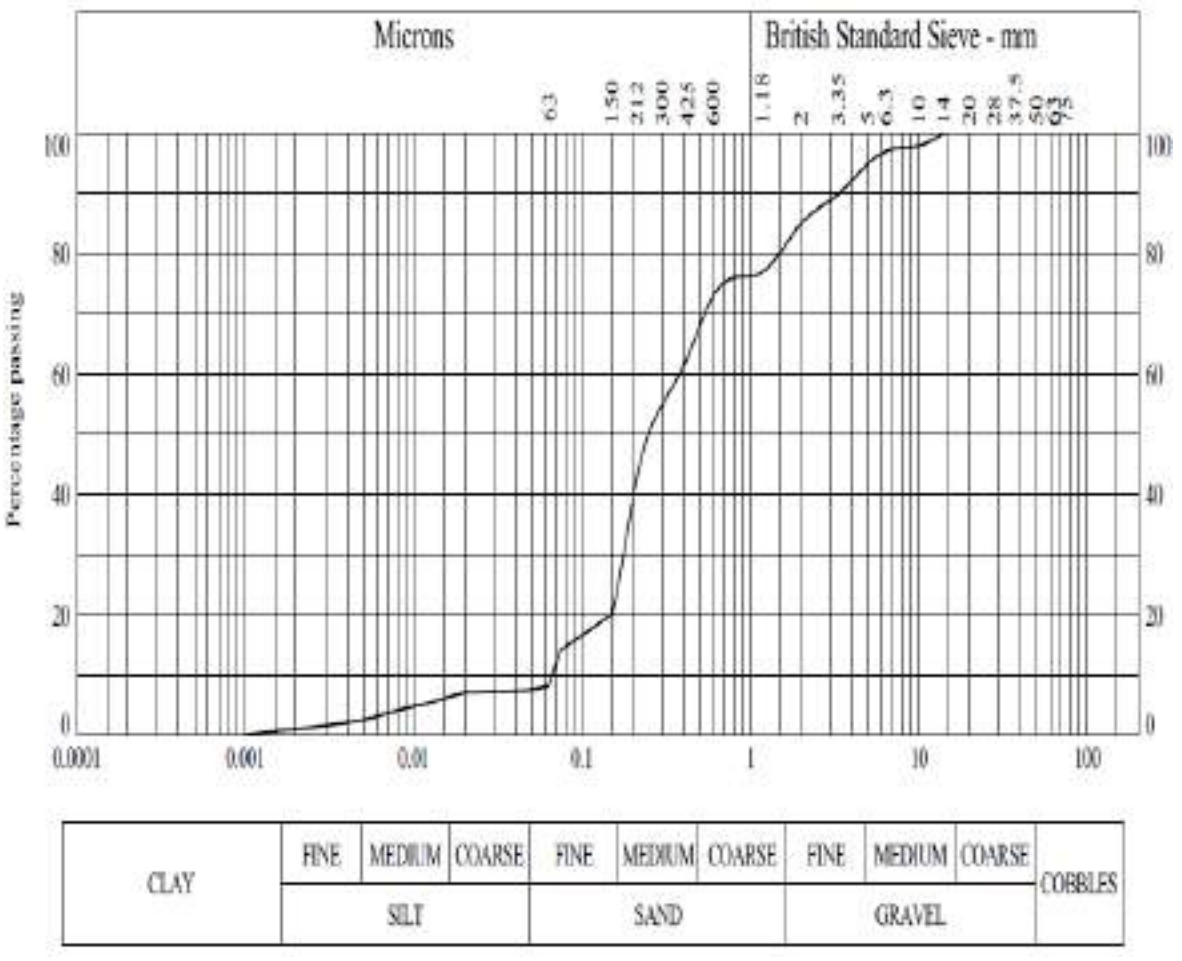


Table C-1 (7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B09	**Sampling Date**	28/06-10/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10.0	99
6.3	95
5.0	94
3.4	92
2.0	87
1.18	81
0.60	72
0.425	68
0.300	58
0.212	51
0.150	39
0.075	20
0.063	10
0.023	8
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

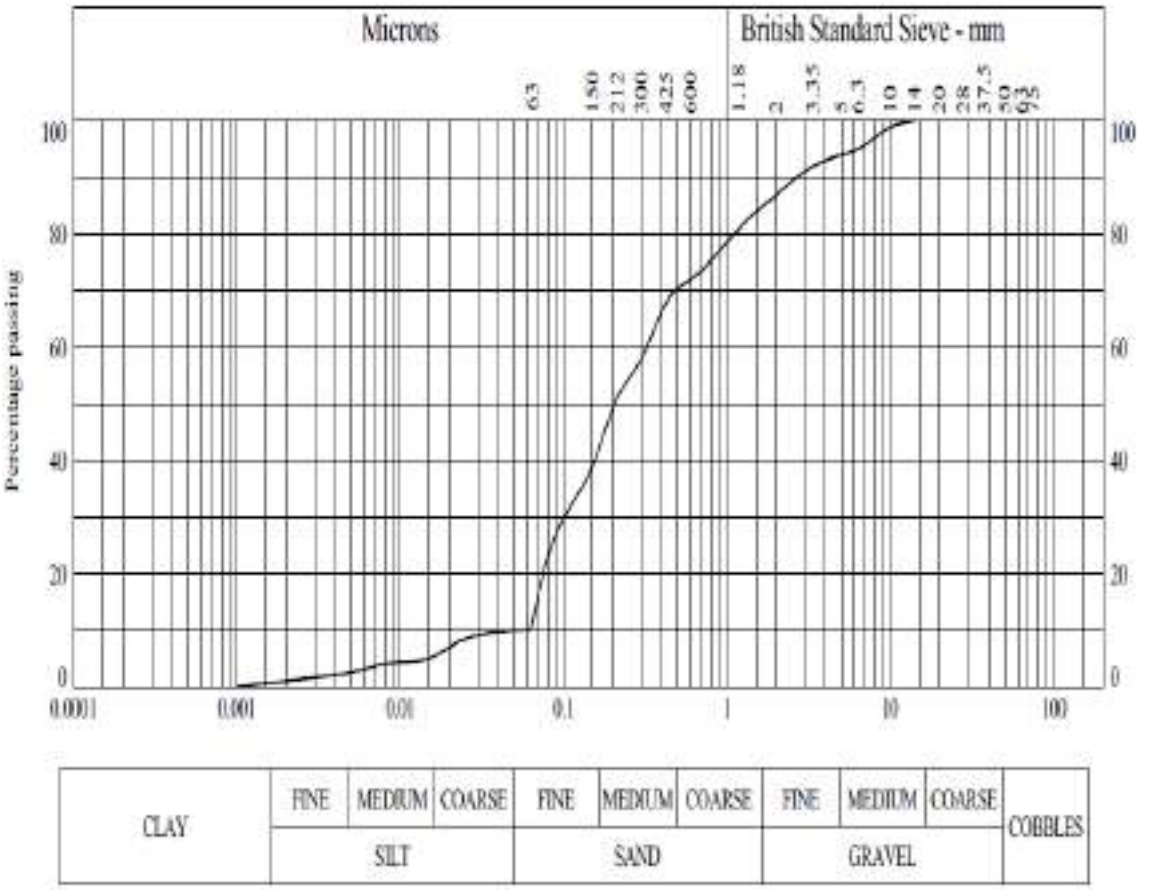


Table C-1 (8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B09	**Sampling Date**	28/06-10/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	97
5	96
3.35	93
2	88
1.18	82
0.6	74
0.425	69
0.3	60
0.212	53
0.150	41
0.075	30
0.063	20
0.023	15
0.015	10
0.008	8
0.006	6
0.004	3
0.002	2
0.001	0

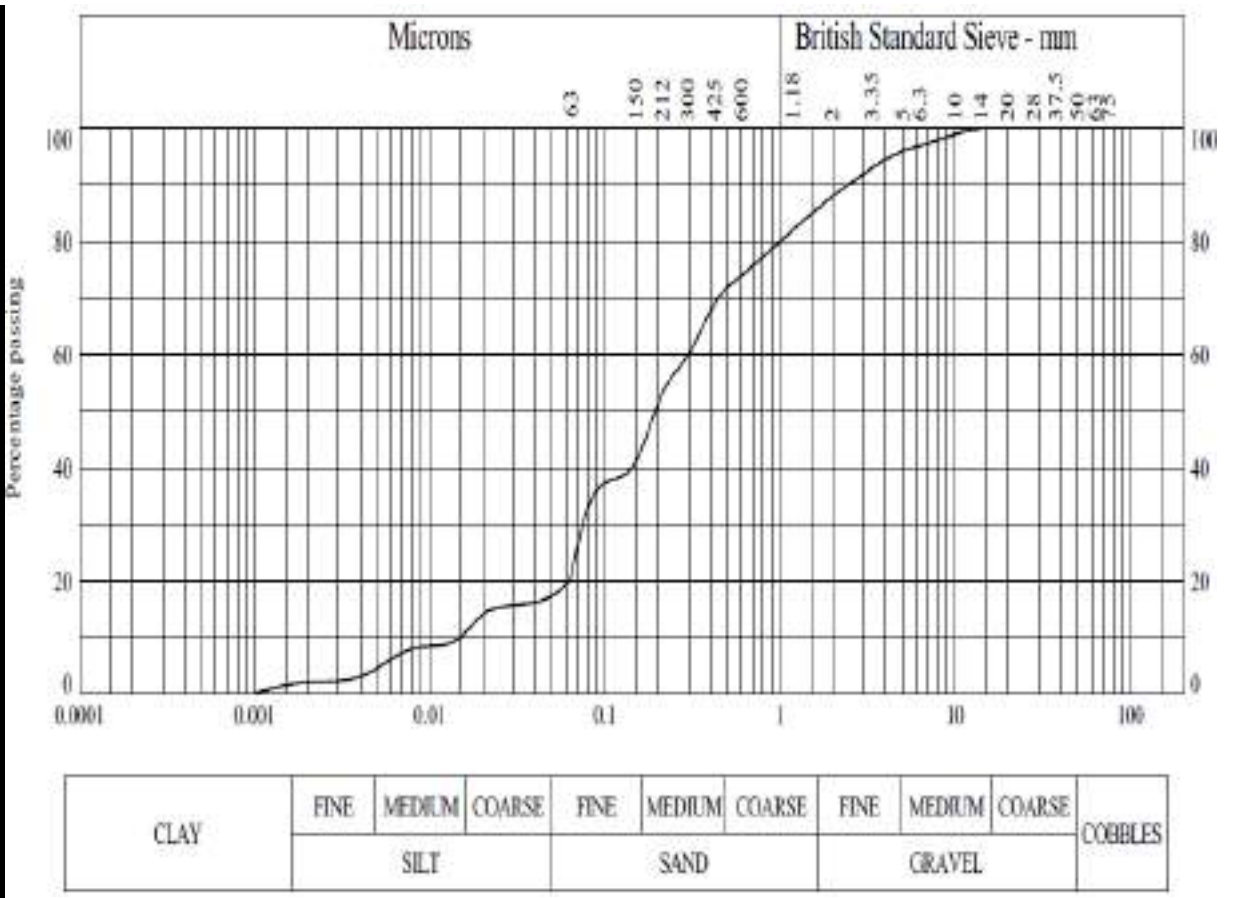


Table C-1 (9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, COARSE SAND	**Sampled By**	Matrix
Borehole No.	BH-B10	**Sampling Date**	28/06-10/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	97
5	92
3.35	78
2	55
1.18	43
0.6	34
0.425	31
0.3	27
0.212	25
0.15	22
0.075	19
0.063	12
0.023	10
0.015	7
0.008	5
0.006	3
0.004	2
0.002	1
0.001	0

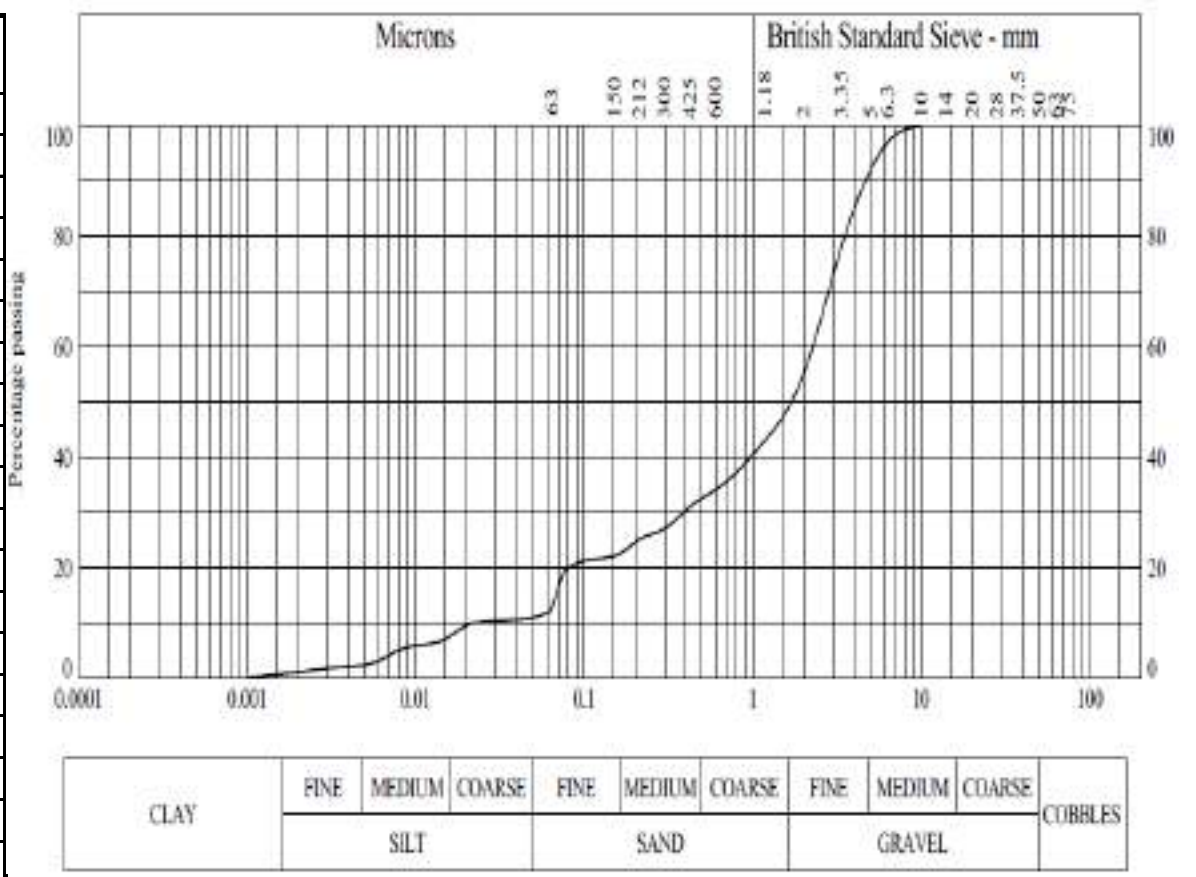


Table C-1 (10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C02	**Sampling Date**	28/06-10/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	85
10.0	75
6.30	65
5.0	55
3.4	40
2.0	32
1.18	25
0.60	22
0.425	20
0.300	18
0.212	13
0.150	10
0.075	9
0.063	8
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

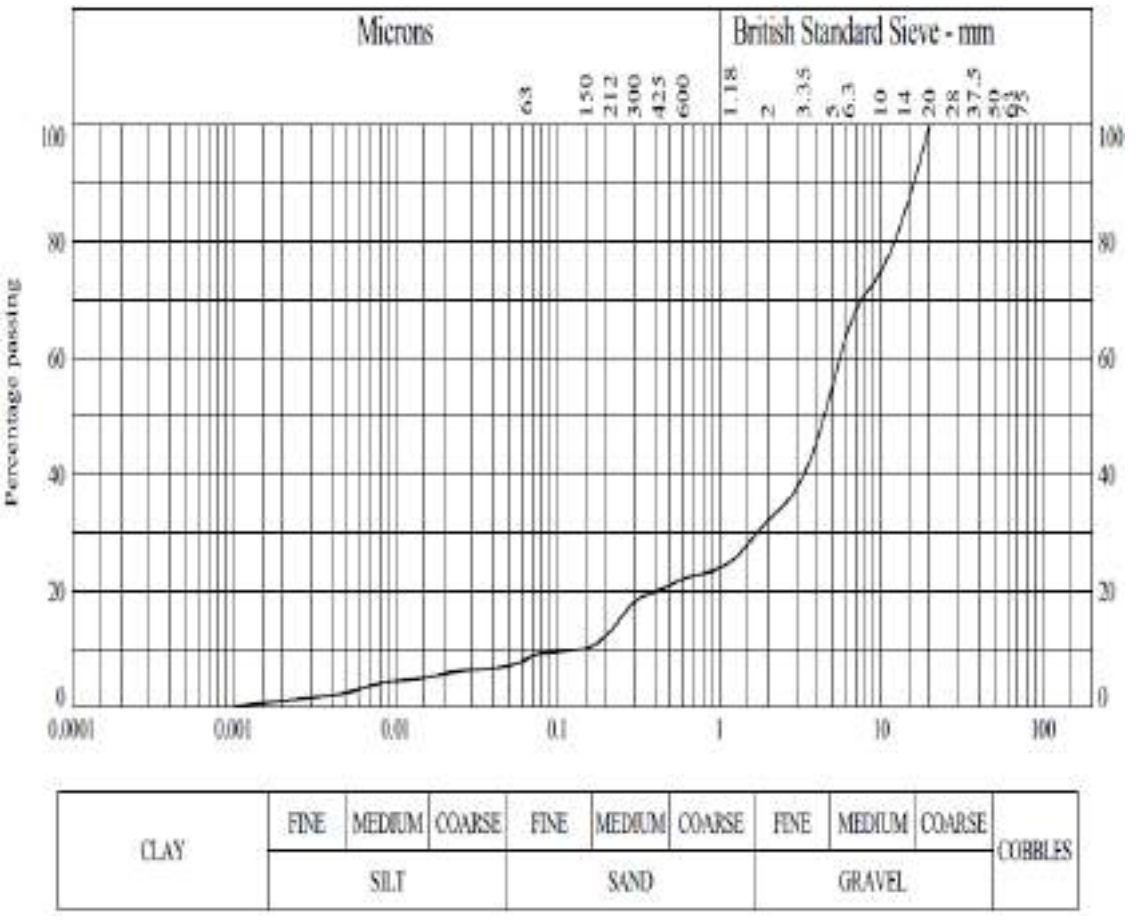


Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C04	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	99
3.35	99
2	99
1.18	99
0.60	98
0.425	92
0.300	81
0.212	71
0.150	51
0.075	10
0.063	8
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

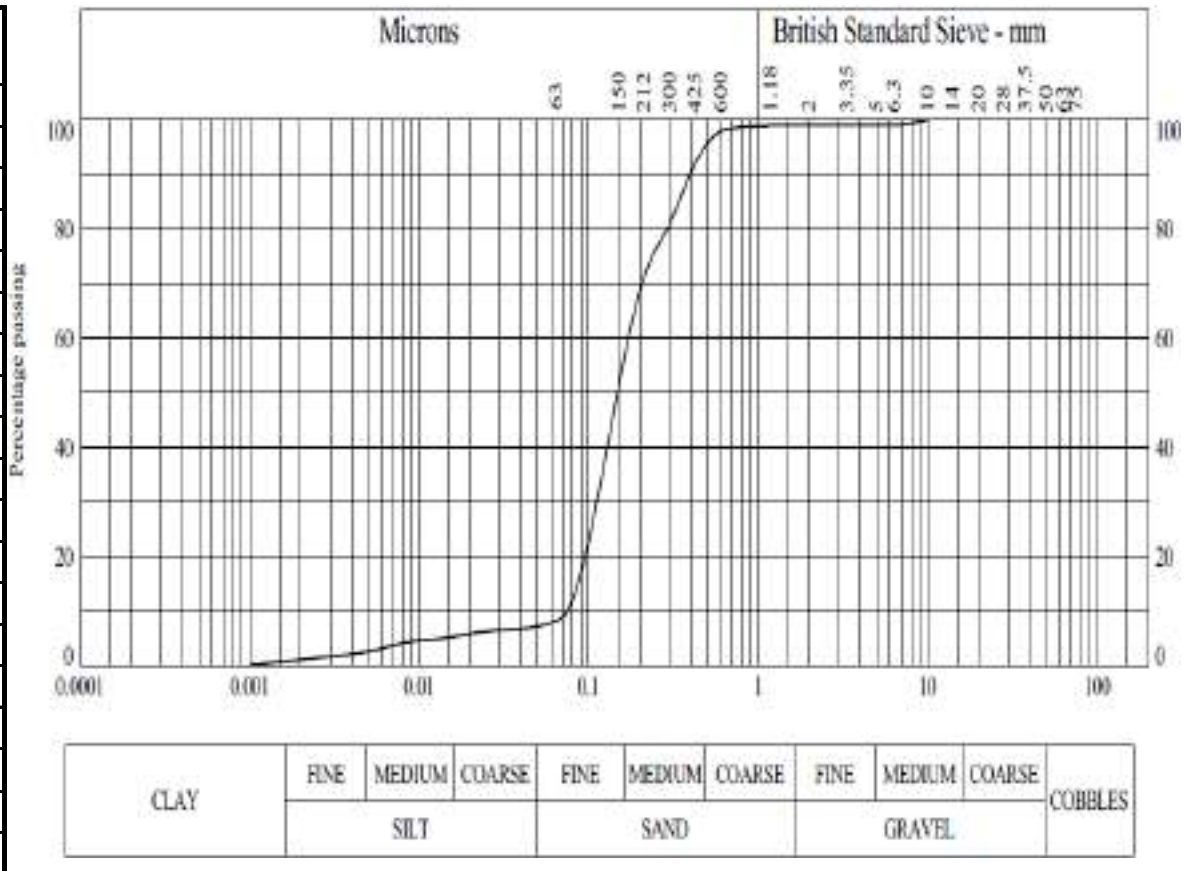


Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C04	**Sampling Date**	28/06-10/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	92
6.3	86
5	84
3.35	82
2	80
1.18	78
0.60	73
0.425	69
0.300	59
0.212	52
0.150	40
0.075	12
0.063	10
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

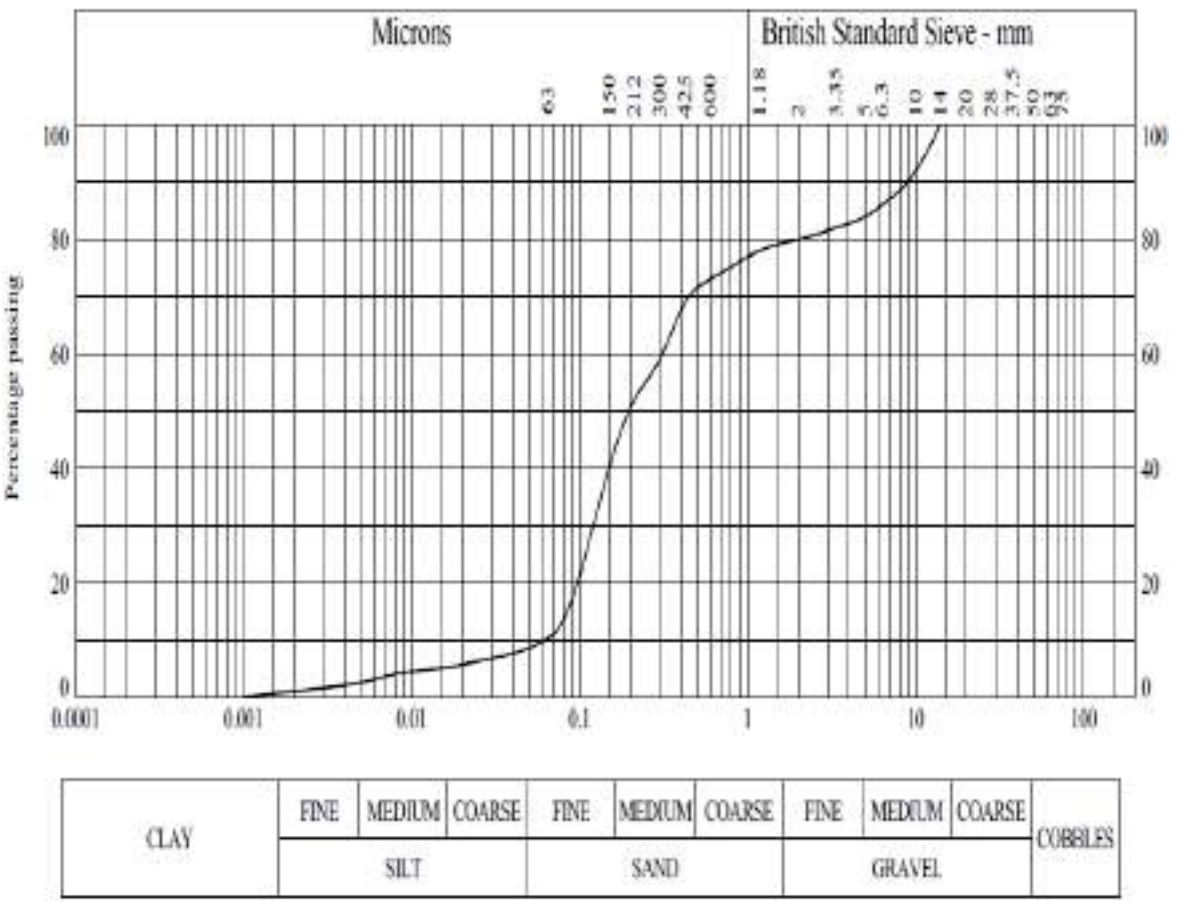


Table C-1 (13)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C08	**Sampling Date**	28/06-10/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10	90
6.3	76
5	70
3.35	62
2	55
1.18	49
0.60	42
0.425	39
0.300	35
0.212	33
0.150	31
0.075	29
0.063	20
0.023	10
0.015	8
0.008	5
0.006	4
0.004	3
0.002	1
0.001	0

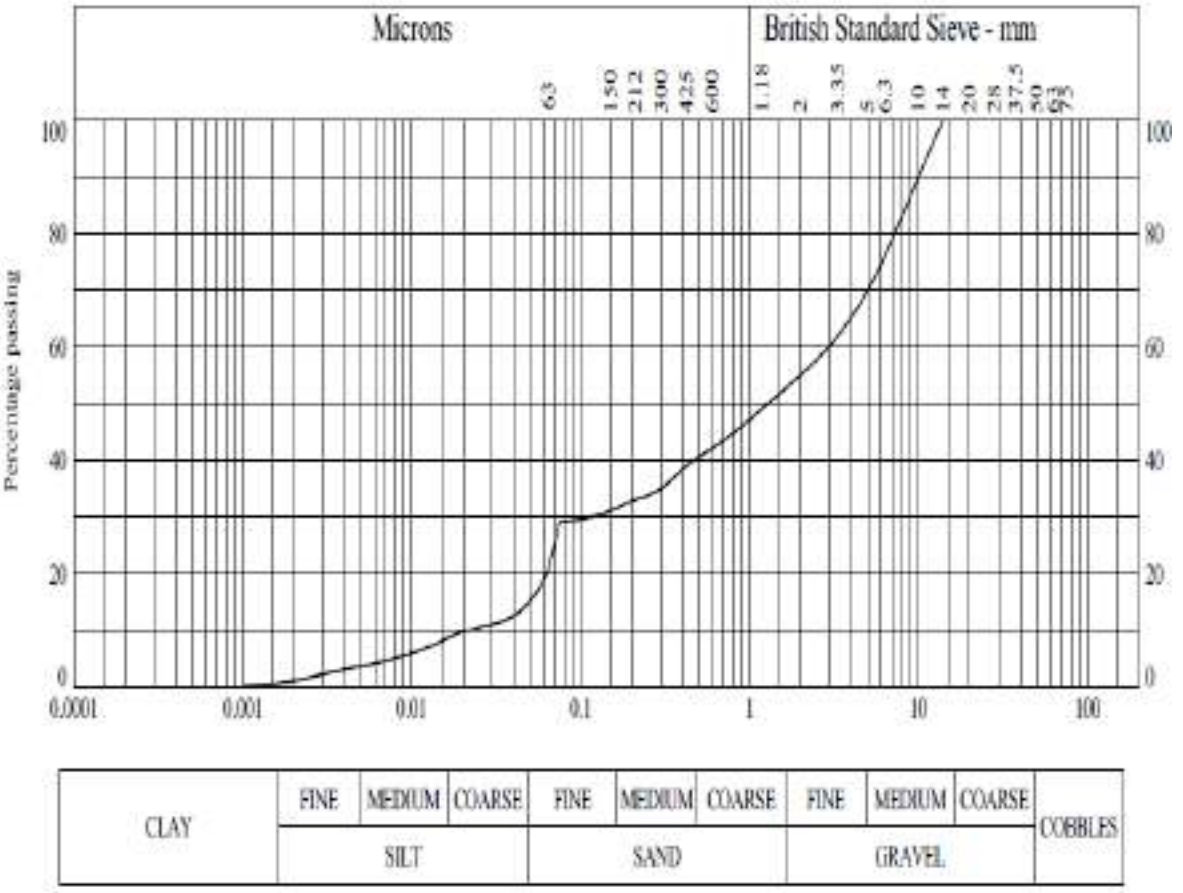


Table C-1 (14)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C10	**Sampling Date**	28/06-10/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10	98
6.3	96
5	95
3.35	95
2	94
1.18	93
0.60	90
0.425	86
0.300	80
0.212	72
0.150	40
0.075	30
0.063	20
0.023	10
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

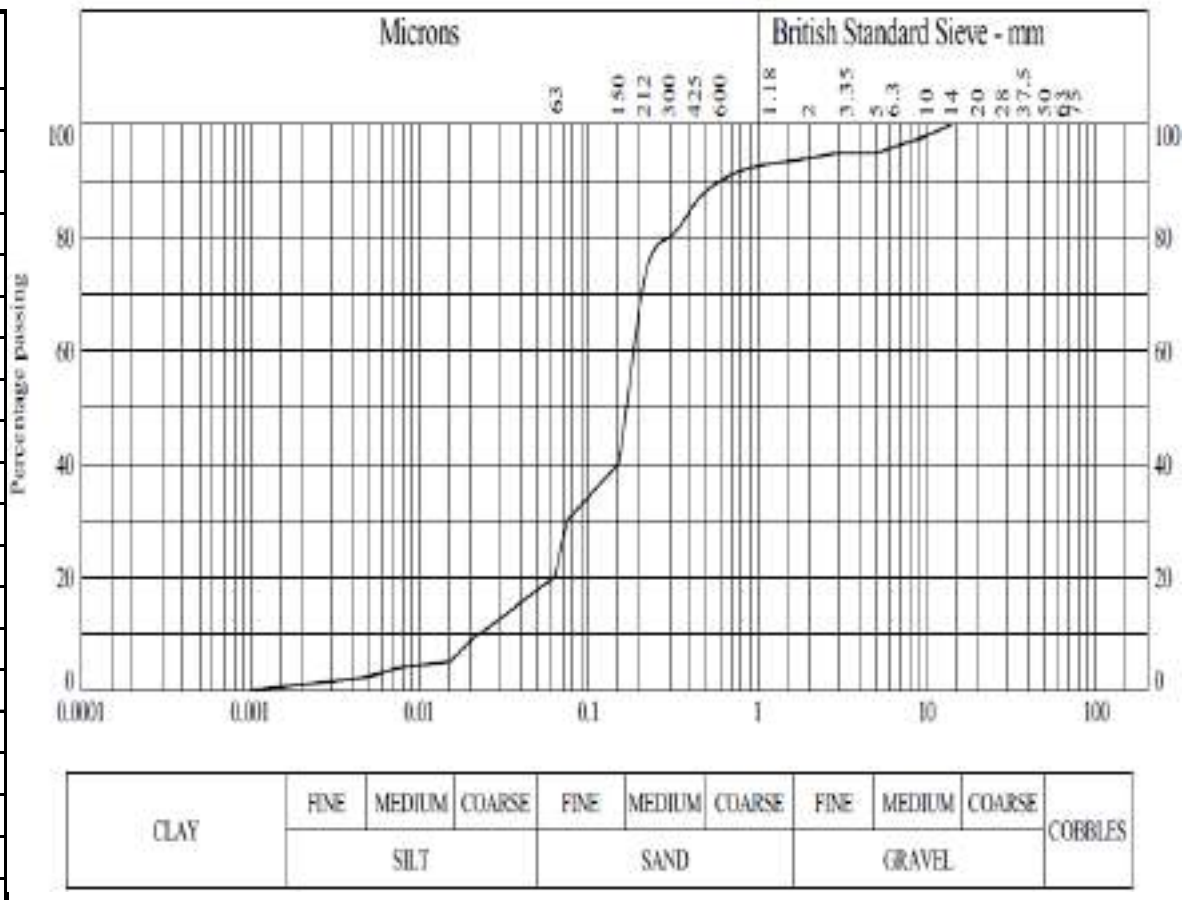


Table C-1 (15)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C14	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	97
3.35	97
2	96
1.18	95
0.60	94
0.425	91
0.300	78
0.212	68
0.150	46
0.075	12
0.063	10
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

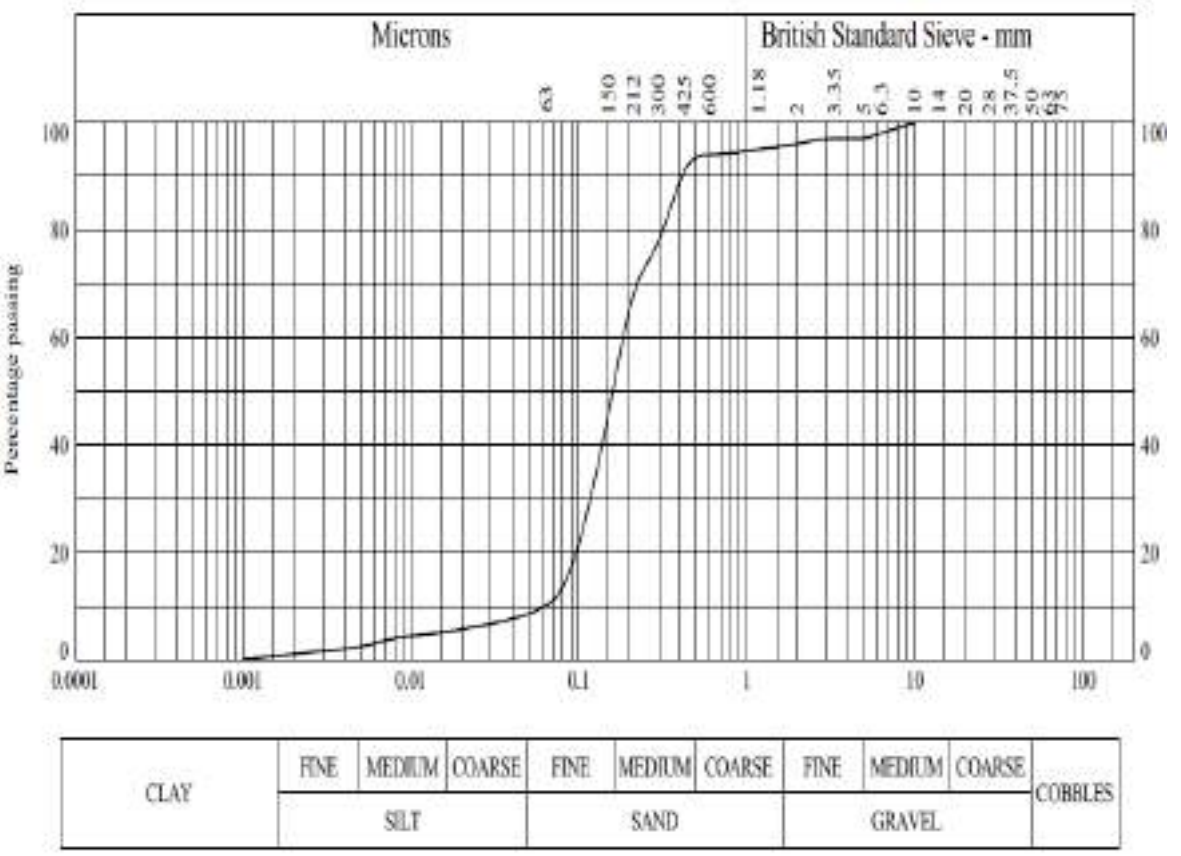


Table C-1 (16)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, F-M SAND	**Sampled By**	Matrix
Borehole No.	BH-C14	**Sampling Date**	28/06-10/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.60	94
0.425	81
0.300	71
0.212	51
0.150	41
0.075	31
0.063	20
0.023	19
0.015	15
0.008	10
0.006	5
0.004	4
0.002	3
0.001	0

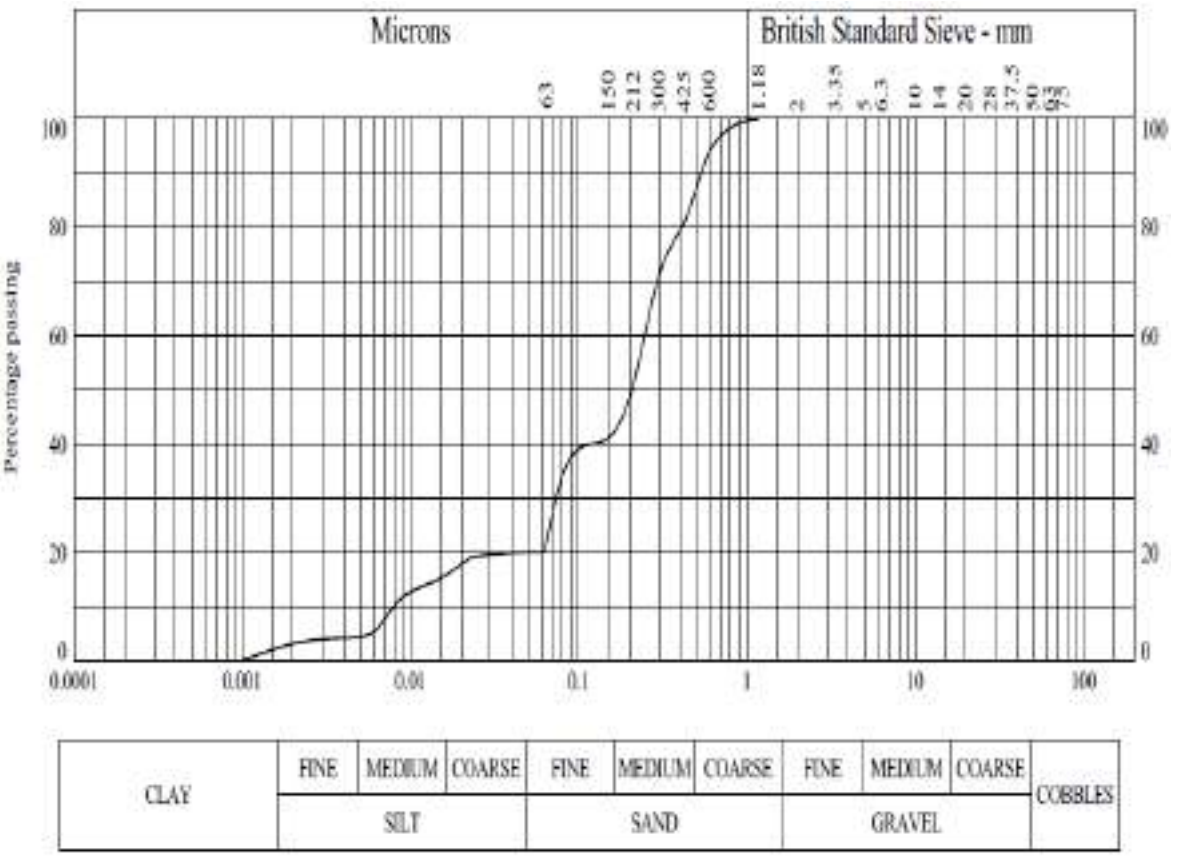


Table C-1 (17)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, MEDIUM SAND	**Sampled By**	Matrix
Borehole No.	BH-C14	**Sampling Date**	28/06-10/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	93
10.0	87
6.3	82
5	79
3.35	76
2	72
1.18	68
0.60	60
0.425	54
0.300	43
0.212	37
0.150	30
0.075	20
0.063	15
0.023	10
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

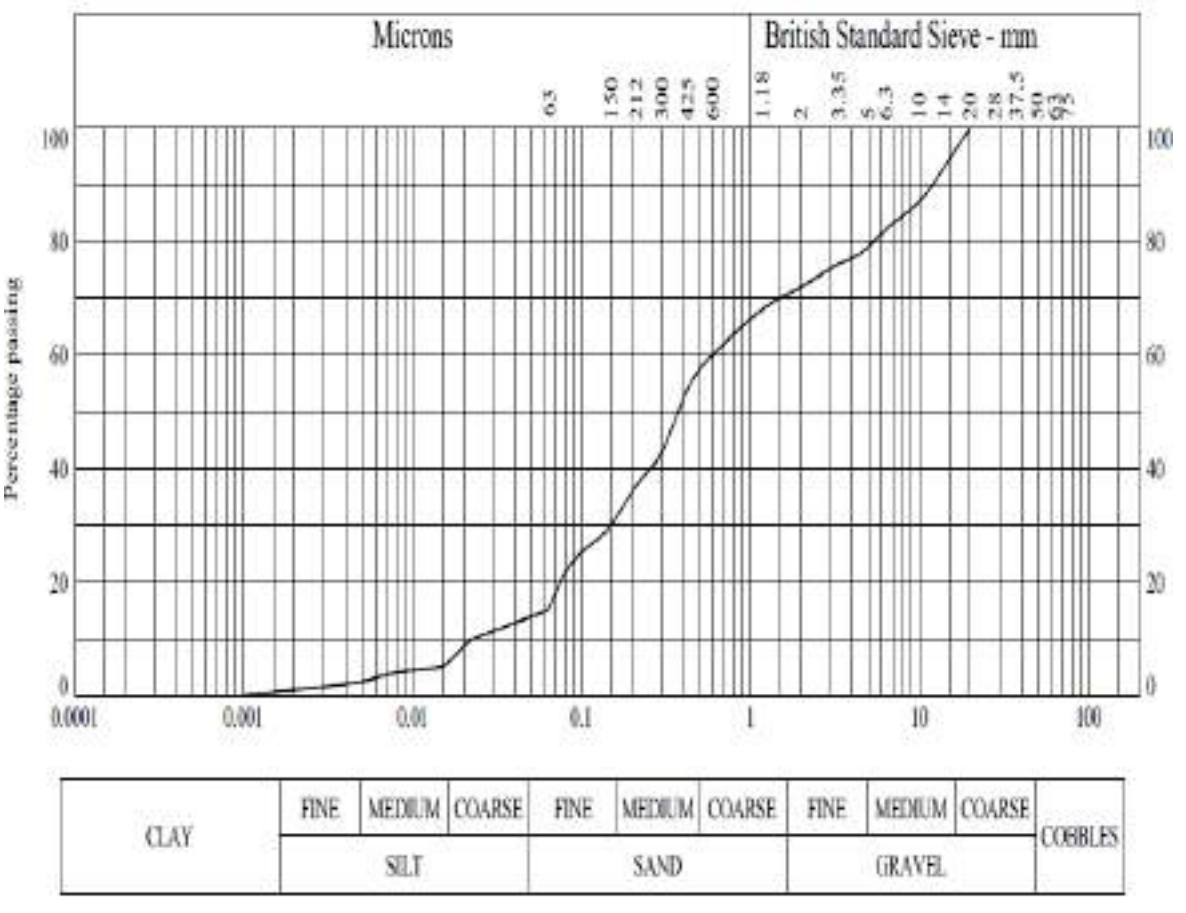


Table C-1 (18)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C15	**Sampling Date**	28/06-10/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.60	99
0.425	92
0.300	78
0.212	66
0.150	41
0.075	10
0.063	9
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

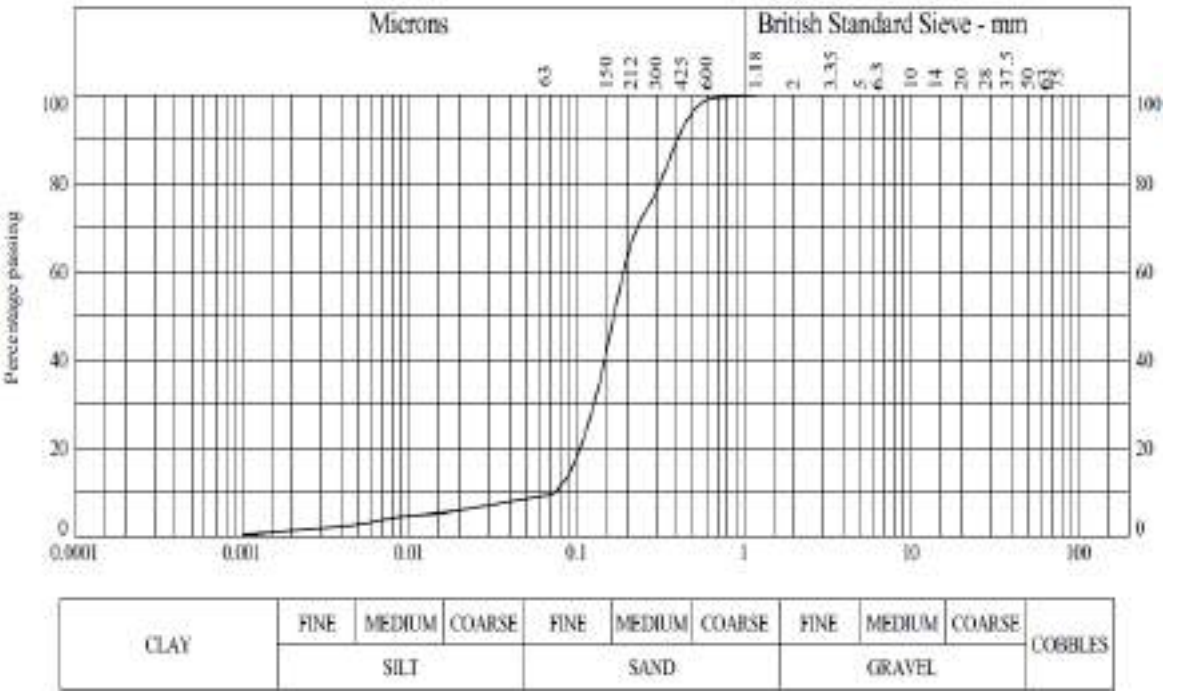


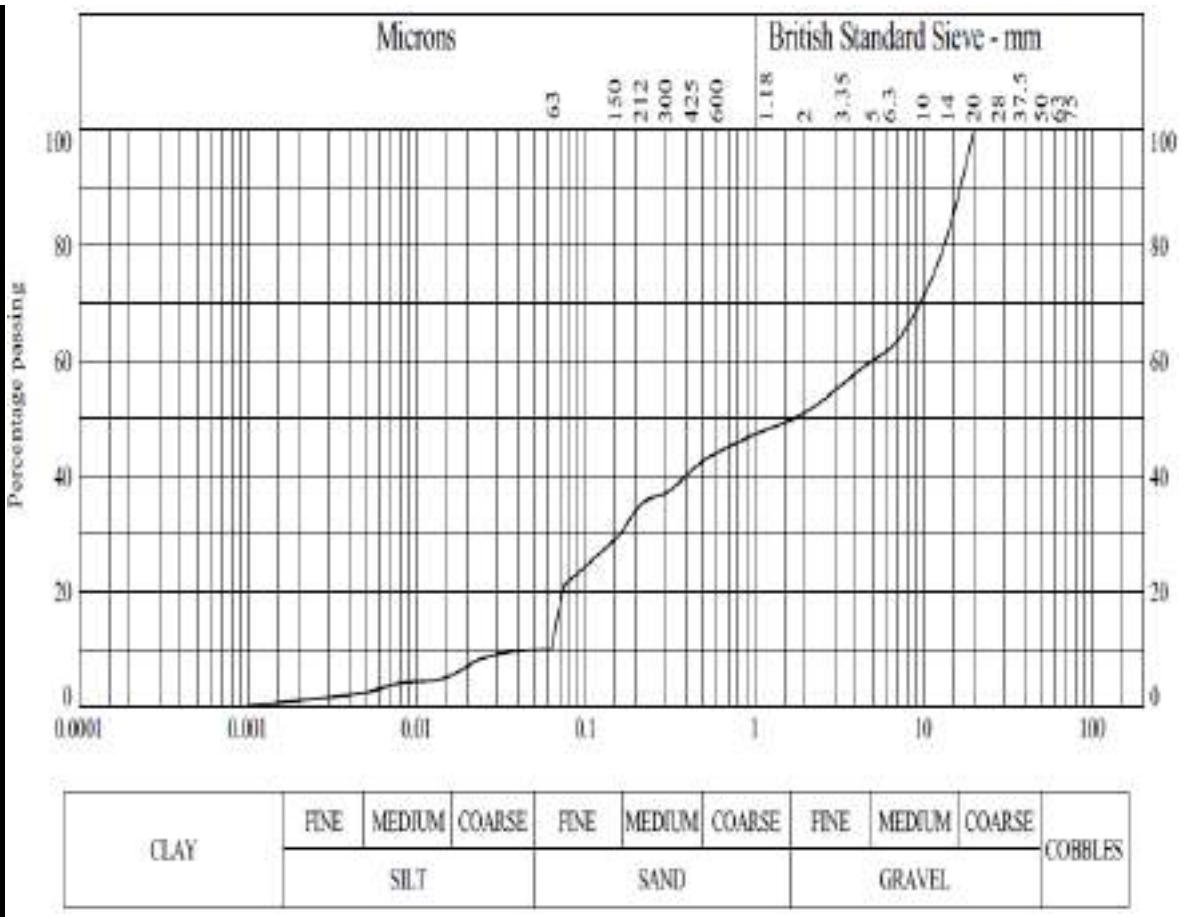
Table C-1 (19)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT15
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C16	**Sampling Date**	28/06-10/07/2015
Depth (m)	12.30	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	82
10.0	71
6.3	62
5.0	60
3.4	56
2.0	51
1.18	48
0.60	44
0.425	41
0.300	37
0.212	35
0.150	29
0.075	21
0.063	10
0.023	8
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

Table C-1 (20)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C17	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10.0	100
6.3	98
5	97
3.35	95
2	93
1.18	91
0.60	88
0.425	83
0.300	70
0.212	61
0.150	42
0.075	12
0.063	11
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

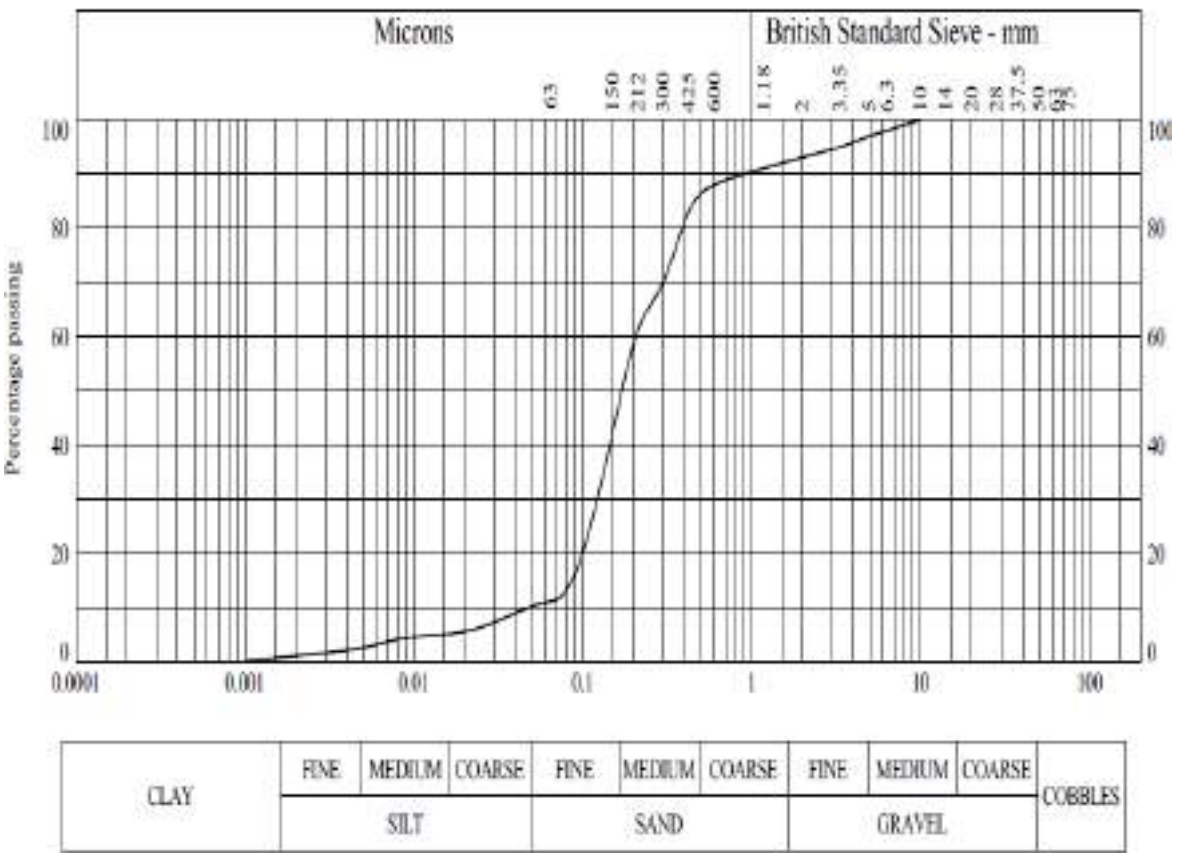


Table C-1 (21)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT8
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C17	**Sampling Date**	28/06-10/07/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	95
10.0	87
6.3	76
5.0	70
3.35	60
2	47
1.18	36
0.60	29
0.425	27
0.300	22
0.212	19
0.150	16
0.075	10
0.063	7
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

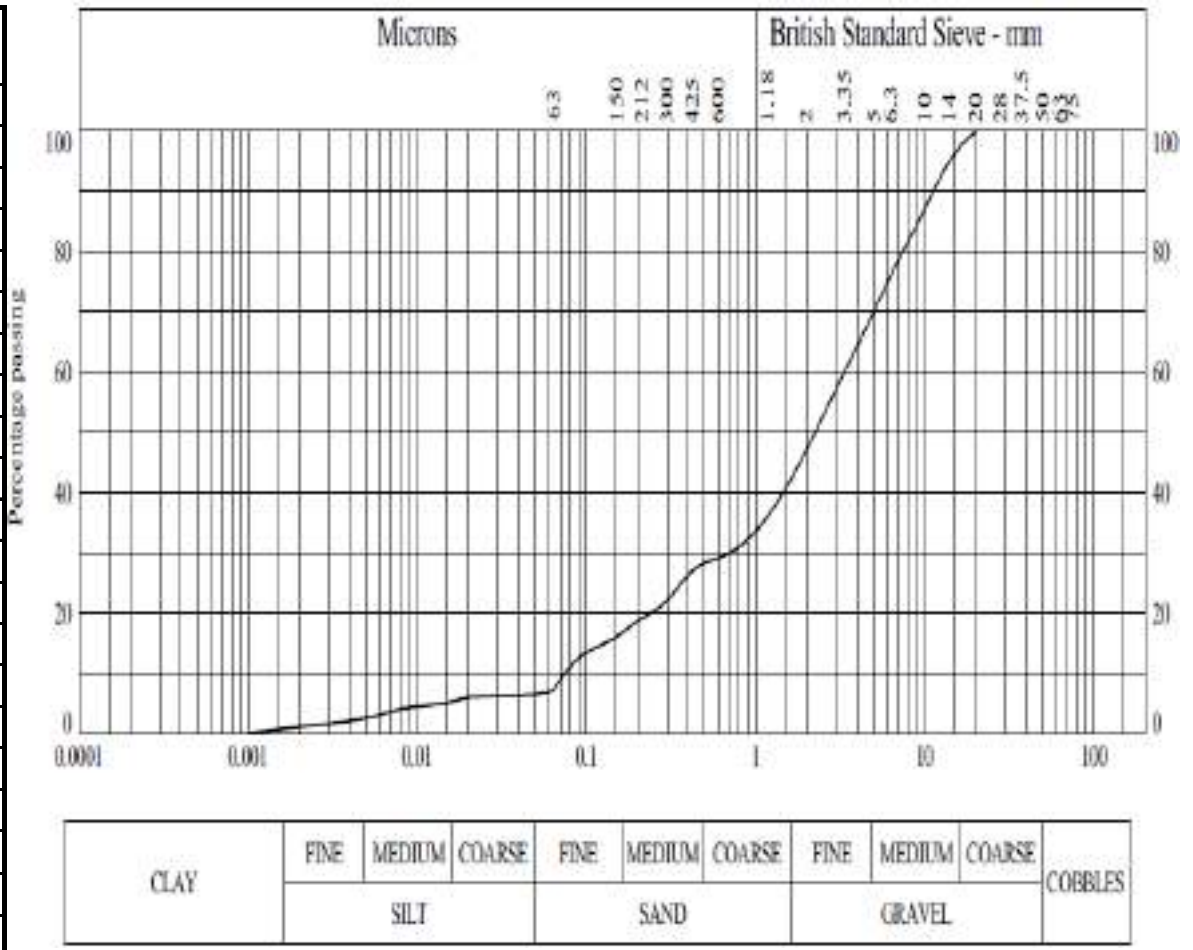


Table C-1 (22)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT21
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C17	**Sampling Date**	28/06-10/07/2015
Depth (m)	19.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	97
10.0	97
6.3	96
5	92
3.35	85
2	76
1.18	70
0.60	63
0.425	59
0.300	52
0.212	46
0.150	39
0.075	30
0.063	30
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

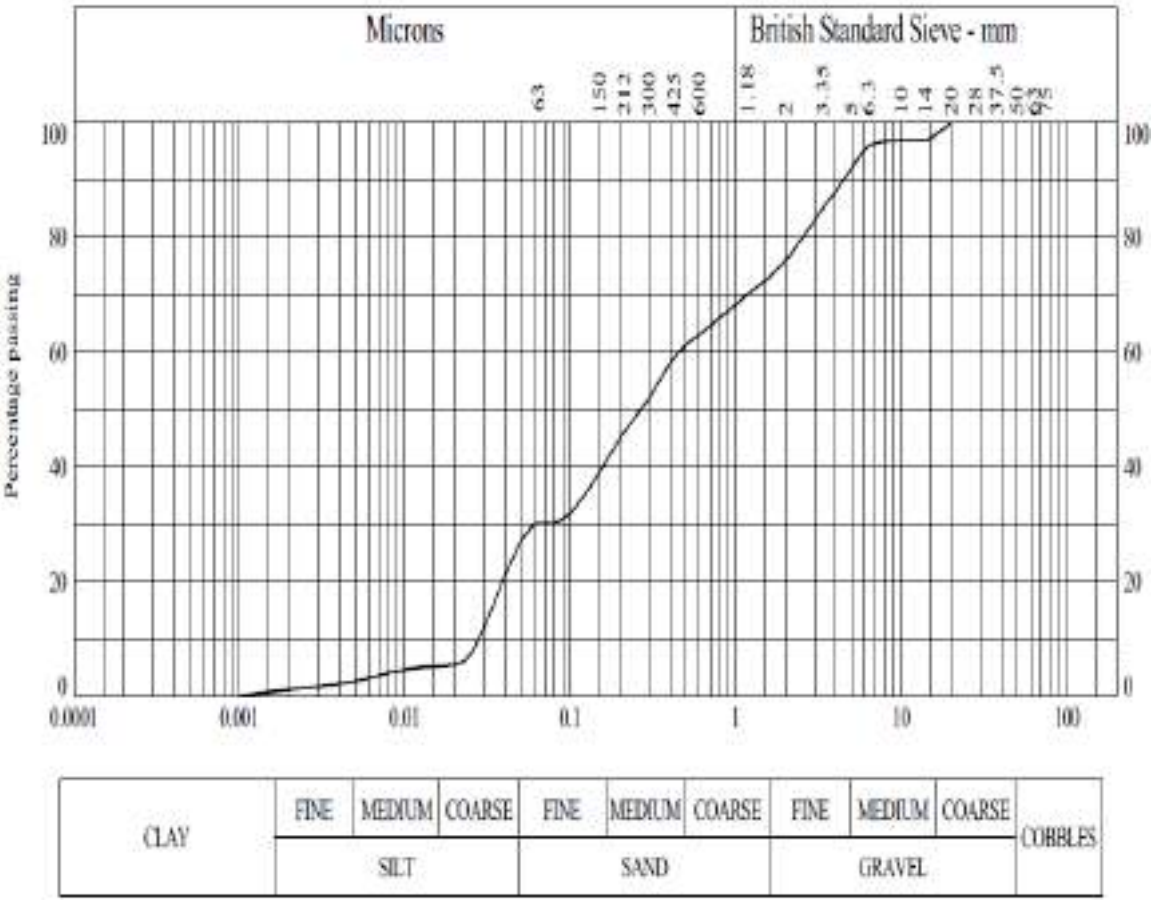


Table C-1 (23)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C18	**Sampling Date**	28/06-10/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	95
3.35	94
2	91
1.18	89
0.60	84
0.425	76
0.300	68
0.212	59
0.150	43
0.075	12
0.063	11
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

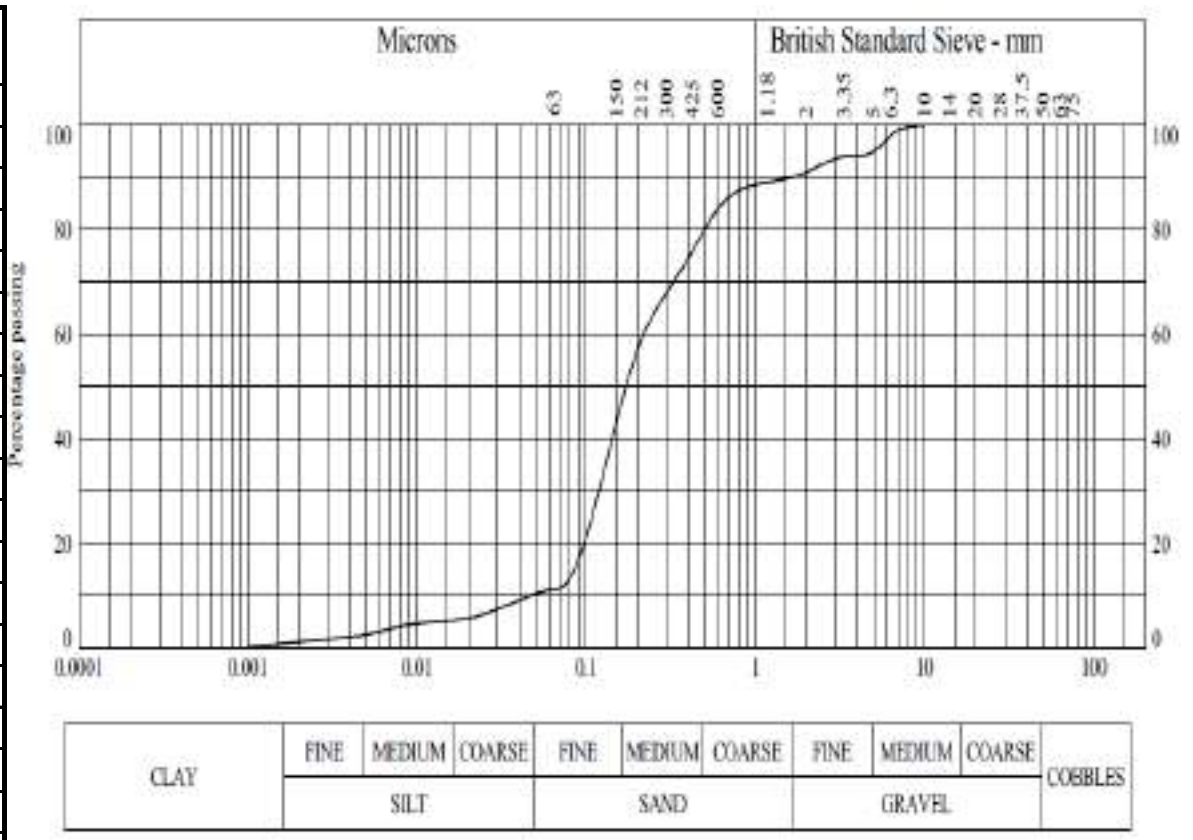


Table C-1 (24)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C18	**Sampling Date**	28/06-10/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10	93
6.3	88
5	85
3.35	75
2	62
1.18	55
0.60	48
0.425	44
0.300	39
0.212	35
0.150	26
0.075	13
0.063	12
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

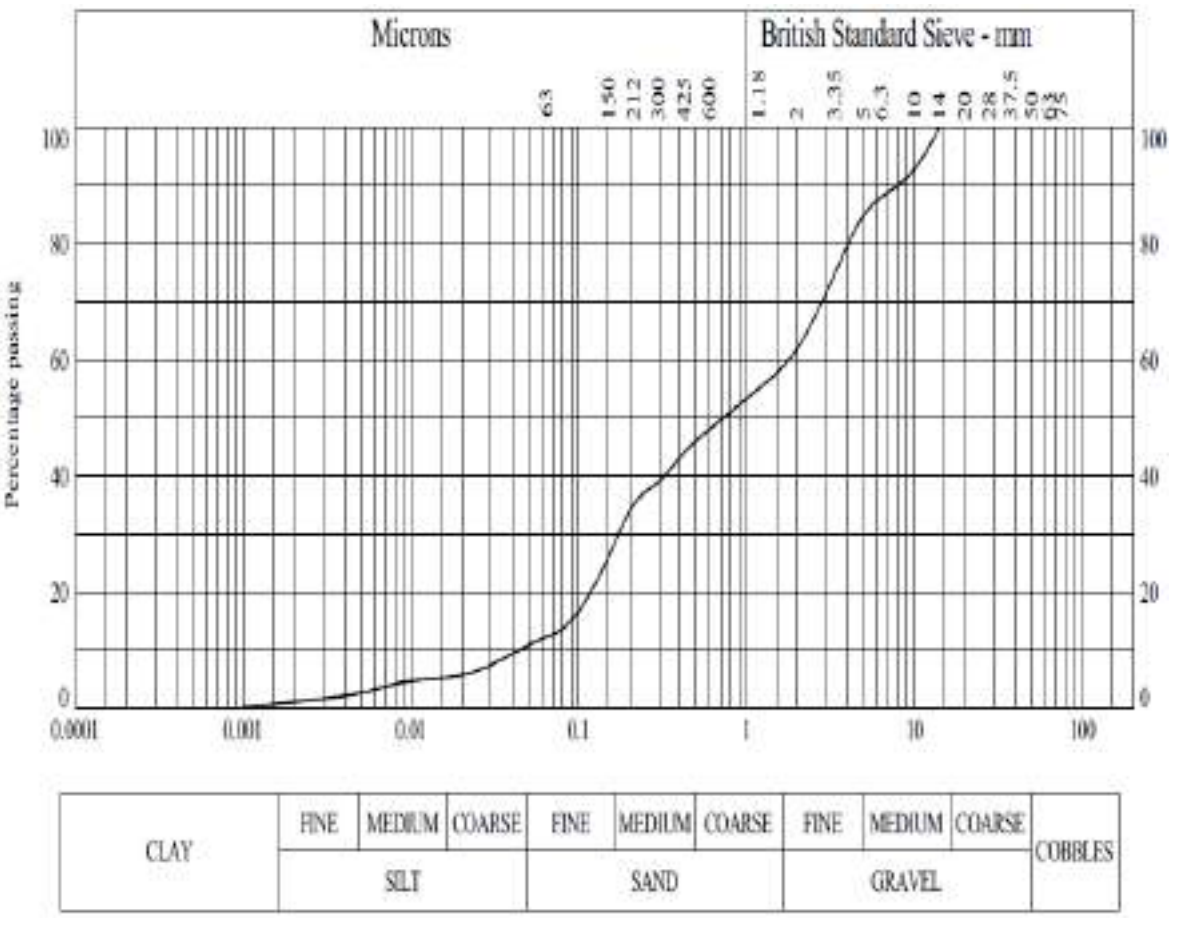


Table C-1 (25)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P	**Date Reported**	26/07/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-3
Project No.	XSD/15-0143-3		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY SAND	**Sampled By**	Matrix
Borehole No.	BH-C18	**Sampling Date**	28/06-10/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01-16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04-20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14.0	87
10.0	84
6.3	81
5	75
3.35	70
2	65
1.18	62
0.60	60
0.425	50
0.300	40
0.212	30
0.150	20
0.075	10
0.063	8
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

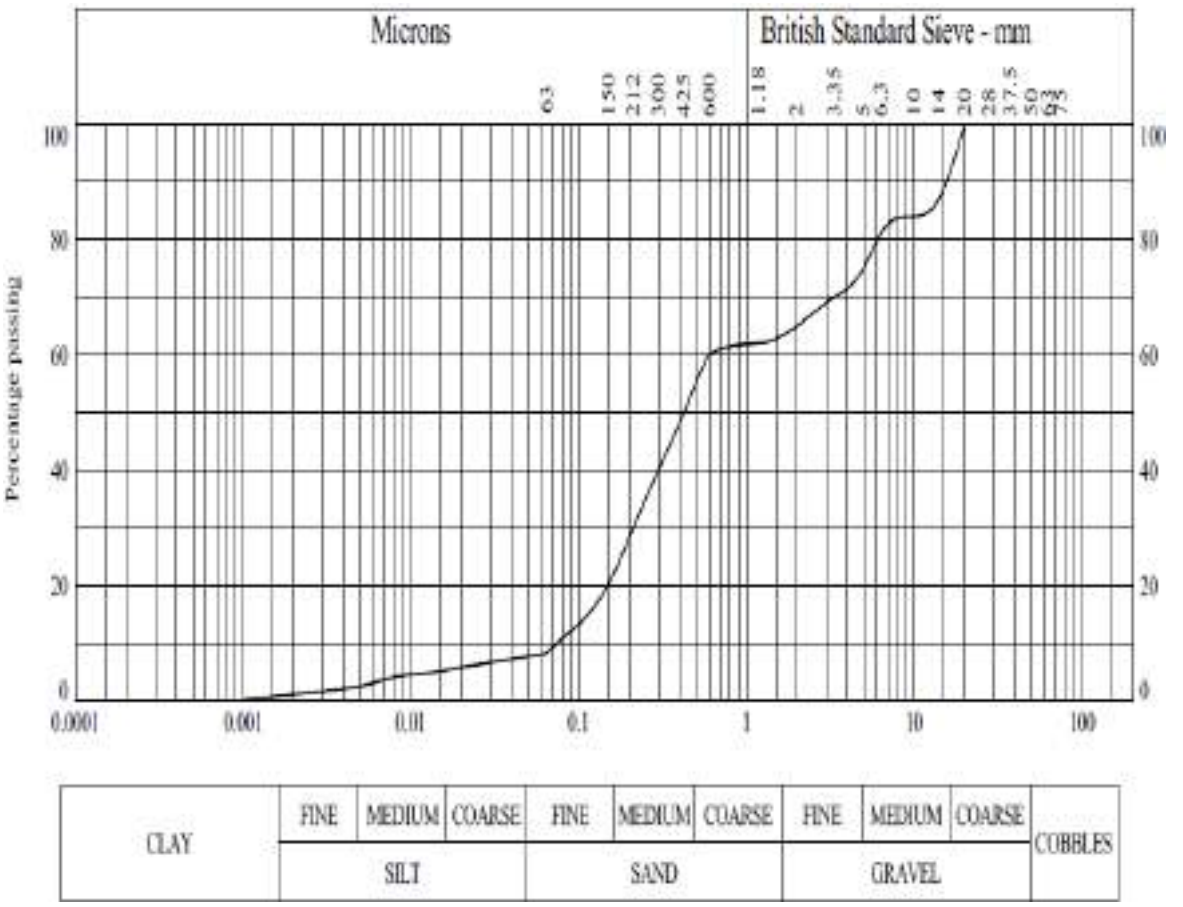


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Date Received**	30/06-16/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	01-19/07/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	26/06-03/07/2015
Tested By	Erwin		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A01	1.00	11.0
BH-A01	3.00	16.0
BH-A01	7.00	8.9
BH-A02	1.00	12.0
BH-A02	3.00	22.0
BH-A02	5.00	22.0
BH-B08	1.00	12.0
BH-B08	4.00	16.0
BH-B08	7.00	28.0
BH-B09	1.00	8.8
BH-B09	2.00	7.8
BH-B09	5.00	16.0
BH-B10	1.00	10.0
BH-B10	2.00	7.9
BH-B10	4.00	29.0

Borehole No.	Depth	Moisture Content (%)
BH-C02	1.00	6.9
BH-C02	2.00	9.7
BH-C02	4.00	22.0
BH-C04	1.00	7.1
BH-C04	3.00	9.6
BH-C04	5.00	6.7
BH-C06	1.00	10.0
BH-C06	3.00	6.9
BH-C06	5.00	12.0
BH-C08	1.00	0.8
BH-C08	2.00	3.2
BH-C08	4.00	5.9
BH-C10	2.00	14.0
BH-C10	4.00	7.8
BH-C14	1.00	6.23
BH-C14	3.00	9.4
BH-C14	5.00	13.6
BH-C15	1.00	7.2
BH-C15	6.50	13.0
BH-C15	9.50	12.3
BH-C16	1.00	18.0
BH-C16	8.00	25.0
BH-C16	12.25	37.0
BH-C17	1.00	17.0
BH-C17	8.00	15.0
BH-C17	19.50	32.0
BH-C18	1.00	7.11
BH-C18	3.00	15.5

Borehole No.	Depth	Moisture Content (%)
BH-C18	4.00	24.5
BH-C19	1.00	10.0
BH-C19	3.00	34.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Date Received**	11/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	12/07/2015
Sample Description	Soil	**Sampling Date**	01/07/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-C15	2.00	2.65

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Date Received**	12/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	13-14/07/2015
Sample Description	SAND	**Sampling Date**	28-29/06/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Arlene
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-B10	1.00	100	0.2
BH-C08	2.00	100	0.1
BH-C18	2.00	100	0.1

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Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Date Received**	01-16/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	28/06-04/07/2015
Sample Description	ROCK CORE	**Date Tested**	05-20/07/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Arlene

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-B09	11.00	9.51	21.65
BH-C08	7.00	16.94	38.57
BH-C17	3.00	10.30	23.47

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Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	N.P.	**Date Reported**	26/07/2015
Consultant	CH2M MACE JV	**Date Received**	30/06-16/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	01-16/07/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	26/06-09/07/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A01	12.00	1	0.35	Vertical
BH-A01	18.80	2	0.50	Vertical
BH-A02	16.12	3	0.31	Vertical
BH-B08	8.50	4	0.09	Vertical
BH-B08	14.40	5	1.20	Vertical
BH-B08	26.50	6	0.54	Vertical
BH-B08	34.80	7	0.65	Vertical
BH-B09	10.00	8	0.86	Vertical
BH-B09	17.00	9	0.45	Vertical
BH-B09	26.40	10	0.02	Vertical
BH-B09	24.00	11	0.22	Vertical
BH-B10	8.92	12	0.36	Vertical
BH-B10	15.75	13	1.23	Vertical
BH-C02	29.80	14	0.03	Vertical
BH-C02	26.90	15	0.47	Vertical
BH-C02	43.60	16	0.33	Vertical
BH-C02	47.80	17	1.08	Vertical
BH-C02	55.10	18	0.54	Vertical
BH-C04	17.50	19	1.43	Vertical
BH-C04	28.22	20	1.93	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-C04	36.50	21	0.45	Vertical
BH-C04	41.30	22	0.45	Vertical
BH-C04	53.50	23	0.33	Vertical
BH-C06	13.20	24	0.32	Vertical
BH-C06	31.50	25	0.18	Vertical
BH-C06	40.80	26	0.45	Vertical
BH-C06	48.60	27	0.33	Vertical
BH-C06	55.80	28	0.47	Vertical
BH-C08	4.40	29	0.74	Vertical
BH-C08	26.50	30	0.84	Vertical
BH-C08	36.80	31	0.65	Vertical
BH-C08	48.40	32	0.36	Vertical
BH-C08	56.50	33	0.25	Vertical
BH-C10	23.70	34	0.33	Vertical
BH-C10	36.85	35	1.03	Vertical
BH-C10	38.50	36	0.16	Vertical
BH-C10	44.40	37	0.15	Vertical
BH-C10	53.50	38	0.45	Vertical
BH-C14	19.60	39	1.81	Vertical
BH-C14	38.50	40	1.05	Vertical
BH-C14	49.20	41	1.20	Vertical
BH-C14	51.60	42	0.54	Vertical
BH-C15	12.45	43	0.11	Vertical
BH-C15	18.60	44	0.07	Vertical
BH-C15	21.40	45	1.21	Vertical
BH-C15	38.10	46	0.32	Vertical
BH-C15	42.50	47	0.46	Vertical
BH-C16	24.50	48	0.07	Vertical
BH-C16	35.80	49	1.66	Vertical
BH-C16	38.00	50	0.76	Vertical
BH-C16	44.00	51	0.44	Vertical
BH-C17	21.28	52	0.43	Vertical
BH-C17	23.30	53	1.08	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-C17	27.80	54	0.65	Vertical
BH-C17	49.10	55	0.36	Vertical
BH-C17	53.75	56	0.49	Vertical
BH-C18	6.70	57	0.56	Vertical
BH-C18	16.30	58	0.46	Vertical
BH-C18	24.53	59	0.05	Vertical
BH-C18	37.50	60	0.48	Vertical
BH-C18	45.00	61	0.33	Vertical
BH-C19	13.85	62	0.26	Vertical
BH-C19	27.30	63	0.08	Vertical
BH-C19	30.00	64	0.05	Vertical
BH-C19	39.10	65	0.06	Vertical
BH-C19	47.40	66	0.25	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	26/07/2015
Sample Description	Rock	**Date Received**	30/06-15/07/2015
Sample Source	Site	**Date Tested**	01-15/07/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	25
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin / Rojan

Sample Details:			Dimensions:		Results:						
BH	**Depth**	**Sample**	**Diameter**	**Height**	**Compresive Strength**	**Strain at Failure**	**Modulus of Elasticity**	**Moisture Content**	**Wet Density**	**Sketch**	**Rock Description**
NO.	**(m)**	**No.**	**(cm)**	**(cm)**	**(N/mm^2)**	**(%)**	**(Mpa)**	**(%)**	**(Mg/m^3)**		
BH-A01	9.38	1	7.50	15.00	2.3	1.20	191.0	26.10	1.91	Figure C-1	cal. SILTSTONE
BH-B08	9.10	2	7.50	15.30	3.7	1.50	247.9	12.30	1.76	Figure C-2	cal. SILTSTONE
BH-B10	14.74	3	7.50	15.20	3.7	1.84	199.6	26.00	1.93	Figure C-3	cal. CONGLOMERATE
BH-B10	33.60	4	7.50	15.00	6.0	2.33	255.7	20.70	2.11	Figure C-4	cal. SILTSTONE
BH-C02	6.20	5	7.50	15.00	6.6	2.67	246.1	15.40	2.03	Figure C-5	cong. SILTSTONE
BH-C02	10.60	6	7.40	15.10	15.7	3.77	417.7	14.90	1.95	Figure C-6	cal. SILTSTONE
BH-C02	12.00	7	7.50	15.20	20.0	4.61	433.6	2.60	2.08	Figure C-7	cal. CONGLOMERATE
BH-C02	16.70	8	7.50	15.10	11.7	3.31	352.4	21.00	1.99	Figure C-8	cal. SILTSTONE
BH-C02	36.10	9	7.30	15.40	2.0	0.91	224.2	15.40	2.10	Figure C-9	cal. SILTSTONE
BH-C04	7.50	10	7.50	15.00	0.9	0.47	182.1	31.60	1.62	Figure C-10	cong. SILTSTONE
BH-C04	11.80	11	7.50	15.00	2.6	1.20	216.3	33.90	1.92	Figure C-11	cal. SILTSTONE
BH-C04	14.50	12	7.40	15.10	17.8	3.97	449.4	14.40	1.90	Figure C-12	cal. SILTSTONE
BH-C04	32.70	13	7.50	15.20	2.8	1.18	238.3	12.90	2.31	Figure C-13	cal. SILTSTONE
BH-C04	43.00	14	7.30	15.10	2.3	1.13	199.8	25.50	1.95	Figure C-14	cal. SILTSTONE
BH-C04	46.00	15	7.50	15.10	1.9	1.19	157.9	32.30	1.90	Figure C-15	cal. SILTSTONE
BH-C06	17.90	16	7.50	15.10	6.3	2.32	270.0	21.80	1.93	Figure C-16	cal. SILTSTONE
BH-C06	20.70	17	7.30	14.90	8.5	2.68	318.9	28.70	1.73	Figure C-17	cal. SILTSTONE
BH-C06	28.35	18	7.50	15.30	4.6	1.31	354.3	12.80	2.00	Figure C-18	cong. SILTSTONE
BH-C06	34.50	19	7.30	15.30	1.4	0.85	165.9	15.40	2.02	Figure C-19	cong. SILTSTONE
BH-C06	37.65	20	7.50	15.20	2.8	1.05	270.4	20.70	2.08	Figure C-20	cong. SILTSTONE
BH-C08	27.50	21	7.50	15.30	8.6	2.68	319.3	14.70	1.95	Figure C-21	cal. SILTSTONE
BH-C08	46.50	22	7.50	15.20	6.5	2.30	282.3	12.20	1.92	Figure C-22	cal. SILTSTONE
BH-C08	53.20	23	7.50	15.20	7.0	2.04	343.3	20.60	1.96	Figure C-23	cal. SILTSTONE

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-C10	12.22	24	7.50	15.00	2.5	1.20	208.0	23.60	1.85	Figure C-24	cal. SILTSTONE
BH-C10	14.30	25	7.50	15.30	4.2	1.11	376.3	13.90	2.17	Figure C-25	cal. SILTSTONE
BH-C10	19.00	26	7.50	15.30	3.1	1.11	275.4	20.10	2.02	Figure C-26	cal. SILTSTONE
BH-C10	22.00	27	7.50	15.20	12.3	3.29	374.6	22.90	1.86	Figure C-27	cal. SILTSTONE
BH-C14	8.50	28	7.40	15.30	1.8	1.76	104.1	26.00	1.91	Figure C-28	cal. SILTSTONE
BH-C14	17.00	29	7.30	15.20	1.7	1.71	97.8	23.50	2.04	Figure C-29	cal. SILTSTONE
BH-C15	22.20	30	7.50	15.20	4.2	1.45	291.8	15.70	1.90	Figure C-30	cal. SILTSTONE
BH-C15	28.80	31	7.40	15.30	1.7	1.83	94.0	24.10	1.94	Figure C-31	cal. SILTSTONE
BH-C16	15.30	32	6.30	13.00	3.8	1.38	272.0	19.00	1.94	Figure C-32	cal. CONGLOMERATE
BH-C16	18.80	33	6.30	13.10	3.0	1.45	209.1	21.70	1.80	Figure C-33	cal. CONGLOMERATE
BH-C16	45.30	34	6.40	15.10	2.2	1.26	177.7	24.60	1.83	Figure C-34	cal. SILTSTONE
BH-C16	51.59	35	6.40	15.10	2.7	1.39	196.3	25.10	1.55	Figure C-35	cal. SILTSTONE
BH-C16	55.00	36	6.40	15.10	2.4	0.99	247.3	26.50	1.78	Figure C-36	cal. SILTSTONE
BH-C16	57.59	37	6.70	15.20	2.0	1.18	173.2	41.40	1.44	Figure C-37	cal. SILTSTONE
BH-C16	59.29	38	6.30	15.30	1.3	0.92	142.9	30.20	1.72	Figure C-38	cal. SILTSTONE
BH-C17	43.00	39	7.50	15.30	4.0	1.70	232.8	16.80	1.81	Figure C-39	cal. SILTSTONE
BH-C17	50.50	40	7.50	15.30	3.4	1.37	247.1	19.30	1.86	Figure C-40	cal. SILTSTONE
BH-C18	13.30	41	7.30	15.10	8.9	2.52	352.2	15.90	1.95	Figure C-41	cal. CONGLOMERATE
BH-C18	26.80	42	7.30	14.80	4.4	1.55	282.6	18.90	2.01	Figure C-42	cal. SILTSTONE
BH-C19	6.20	43	7.20	15.00	2.0	1.20	165.8	14.80	1.86	Figure C-43	cal. CONGLOMERATE
BH-C19	15.75	44	7.30	15.10	5.5	2.05	267.5	17.30	2.00	Figure C-44	cal. SILTSTONE
BH-C19	45.20	45	7.00	15.20	0.5	0.59	79.1	34.40	1.70	Figure C-45	cal. SILTSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

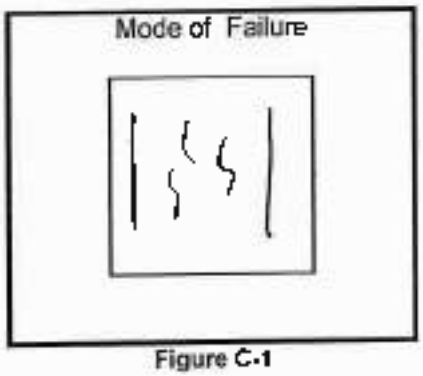


Figure C-1

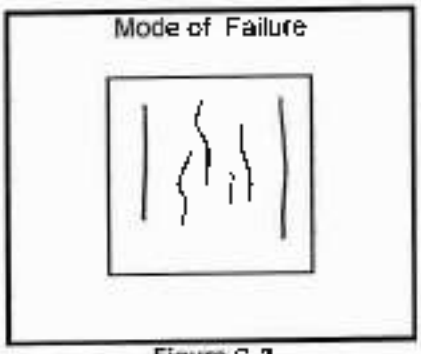


Figure C-2

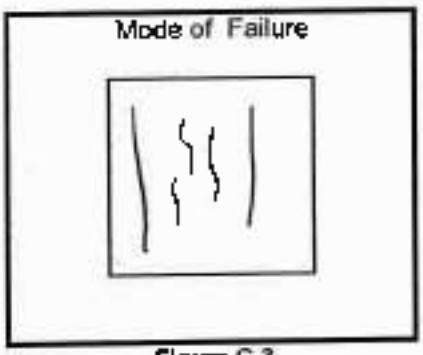


Figure C-3

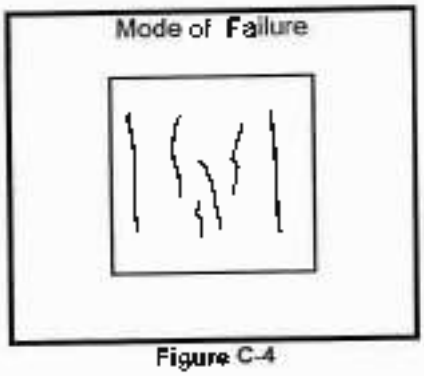


Figure C-4

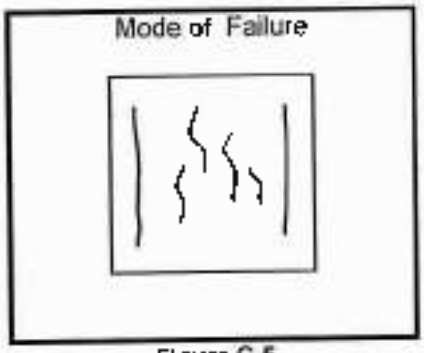


Figure C-5

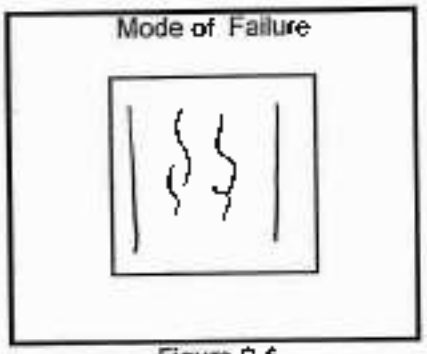


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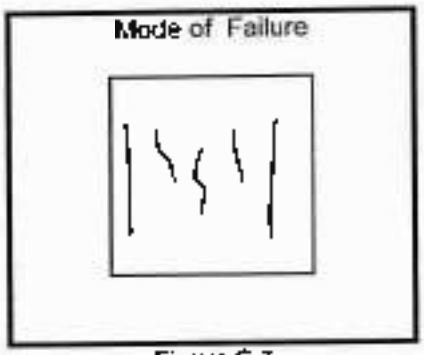


Figure C-7

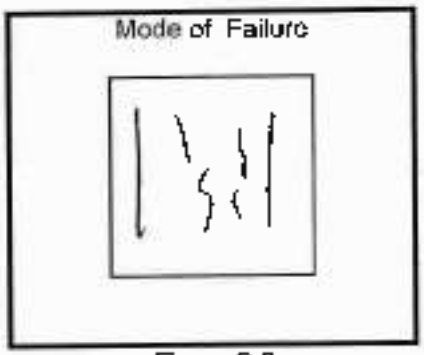


Figure C-8

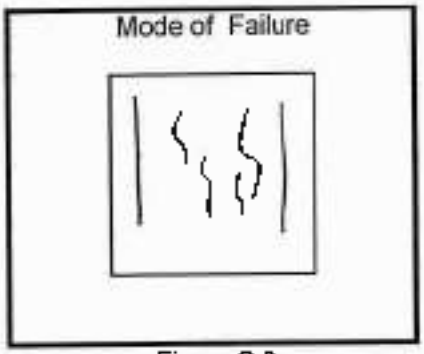


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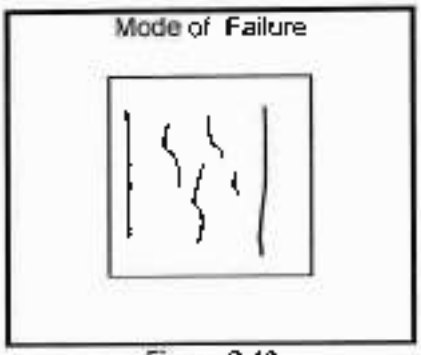


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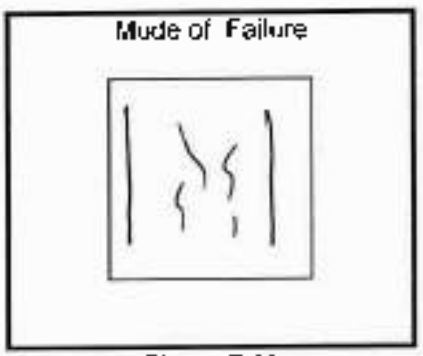


Figure C-11

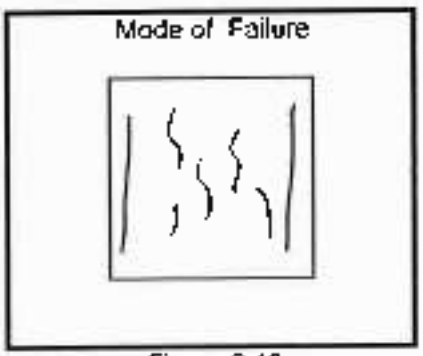


Figure C-12

TYPE OF FRACTURES FOR CORES

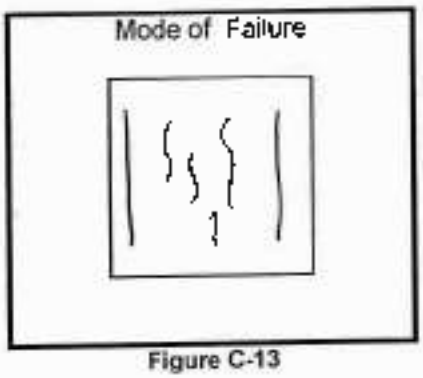


Figure C-13

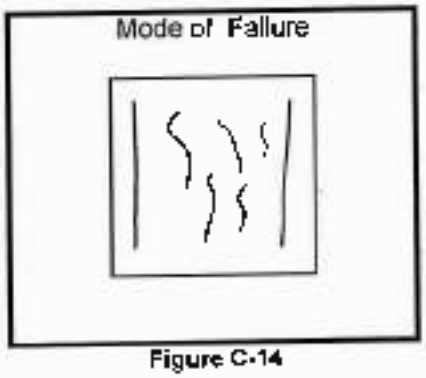


Figure C-14

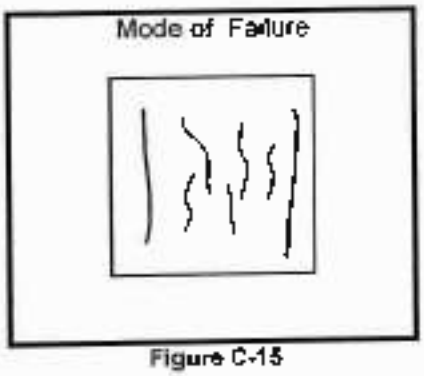


Figure C-15

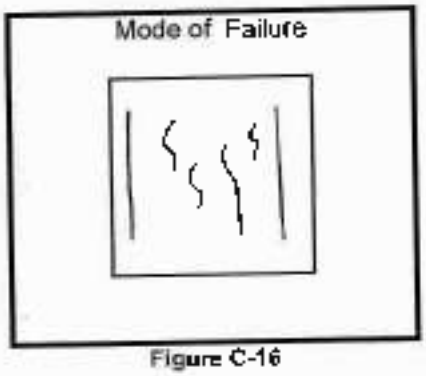


Figure C-16

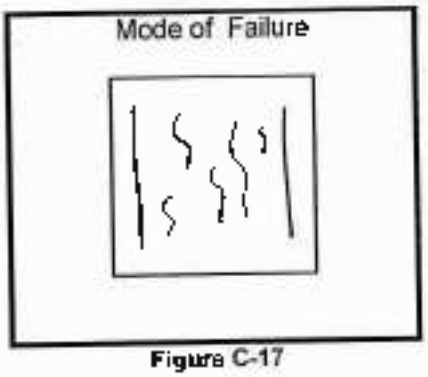


Figure C-17

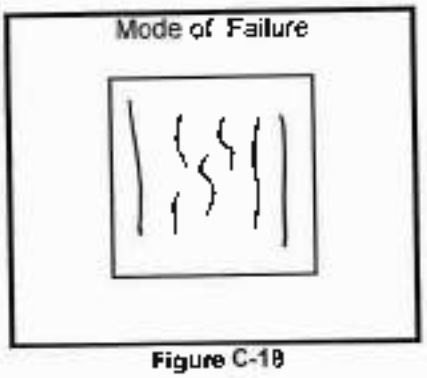


Figure C-18

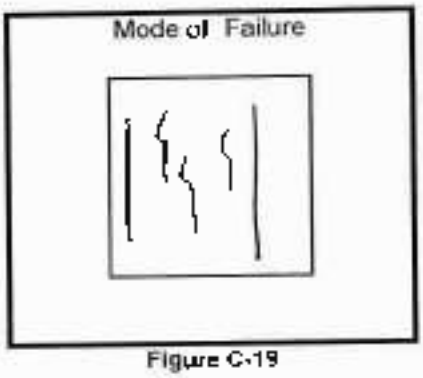


Figure C-19

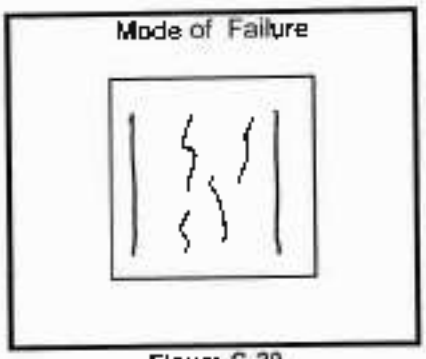


Figure C-20

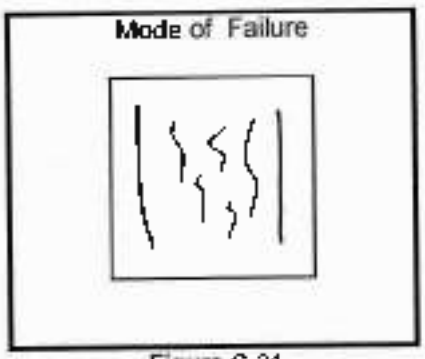


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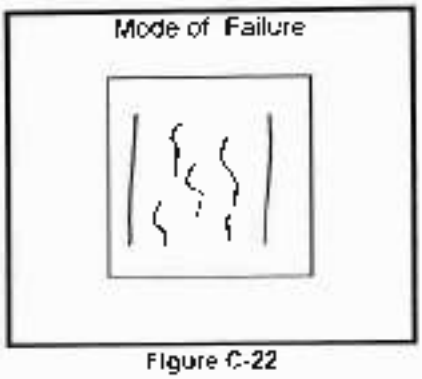


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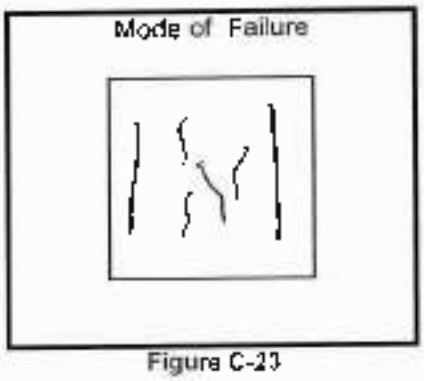


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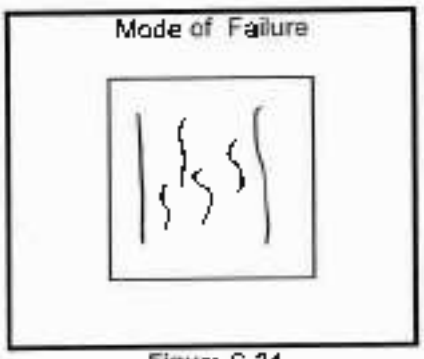


Figure C-24

TYPE OF FRACTURES FOR CORES

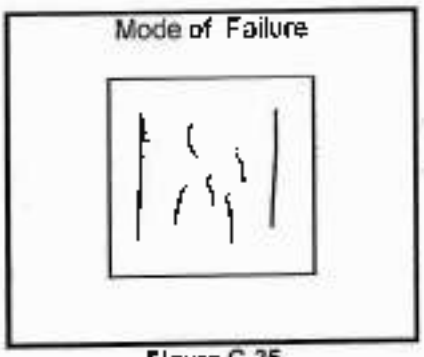


Figure C-25

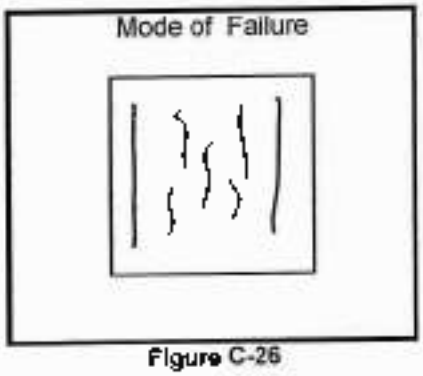


Figure C-26

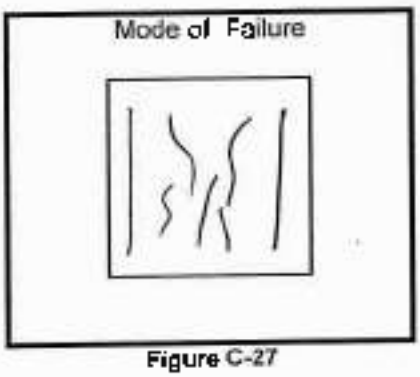


Figure C-27

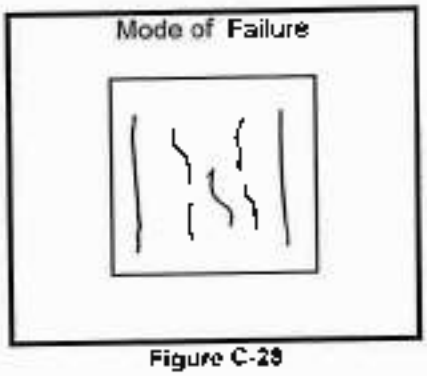


Figure C-28

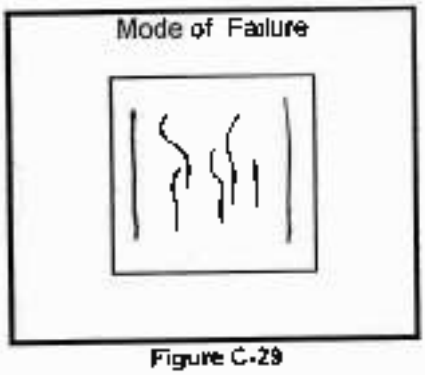


Figure C-29

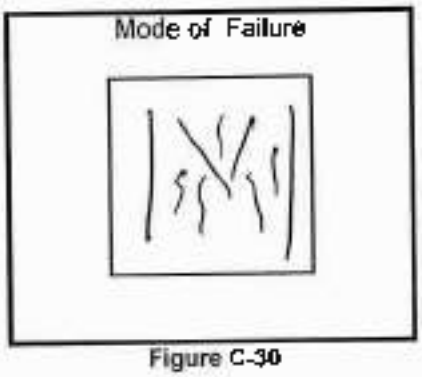


Figure C-30

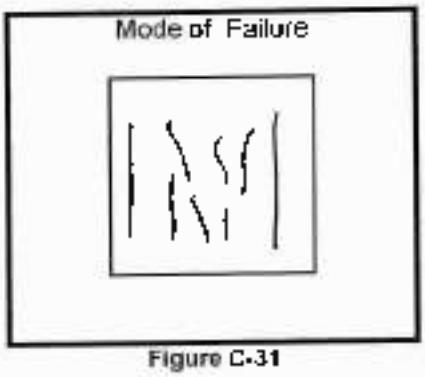


Figure C-31

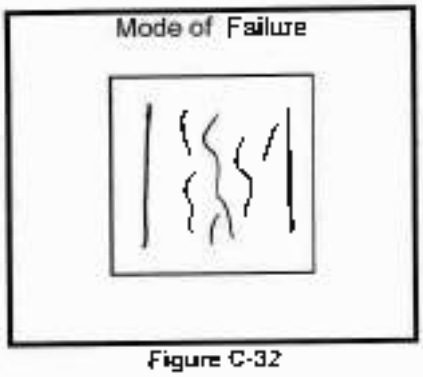


Figure C-32

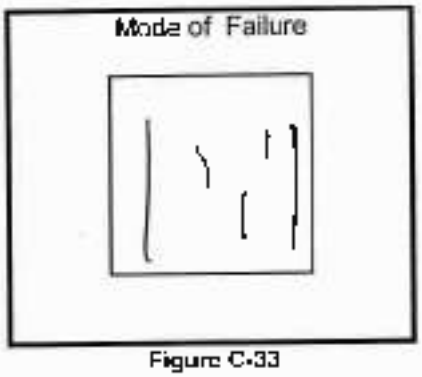


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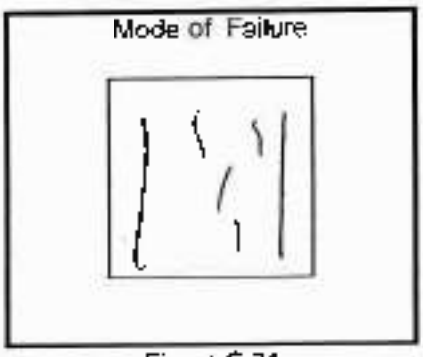


Figure C-34

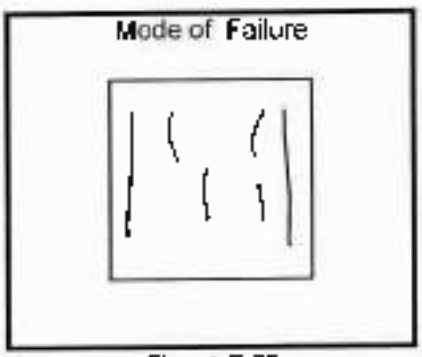


Figure C-35

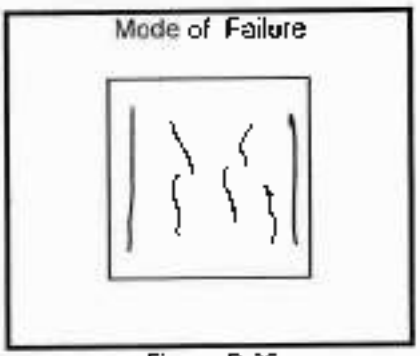


Figure C-36

TYPE OF FRACTURES FOR CORES

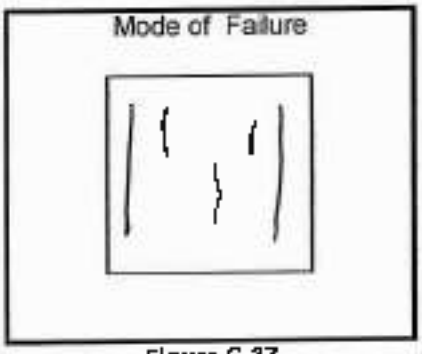


Figure C-37

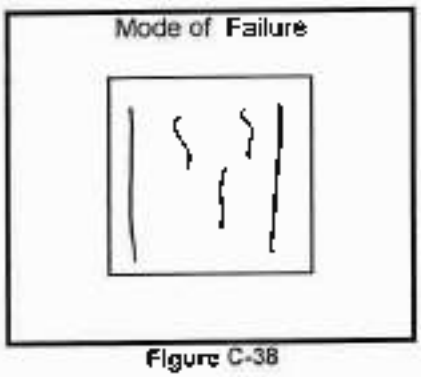


Figure C-38

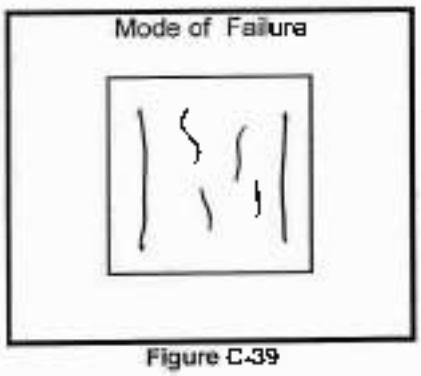


Figure C-39

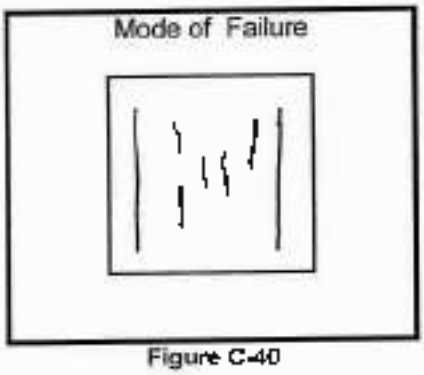


Figure C-40

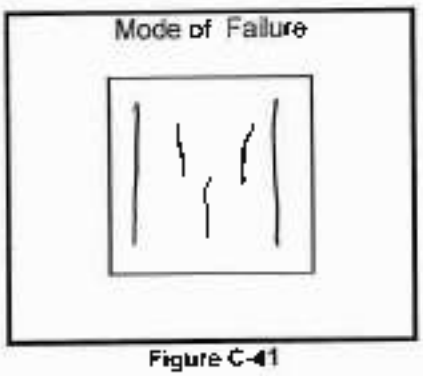


Figure C-41

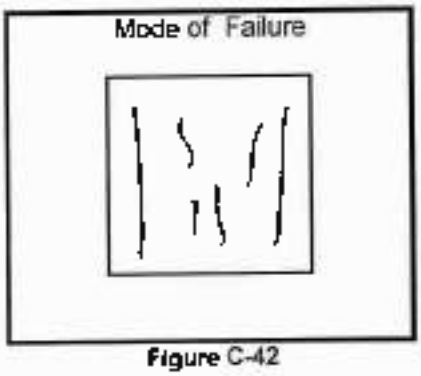


Figure C-42

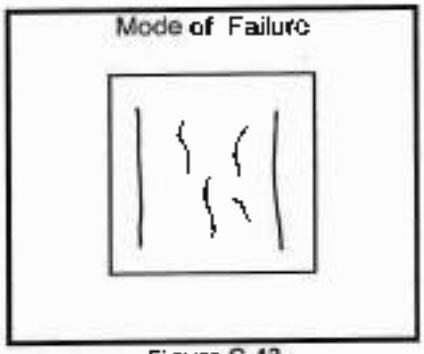


Figure C-43

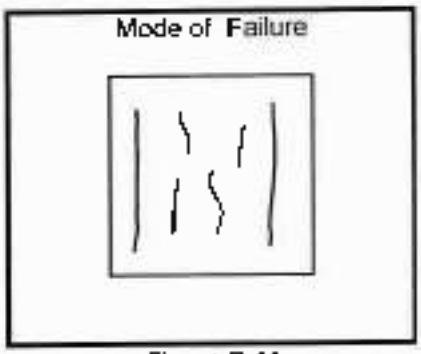


Figure C-44

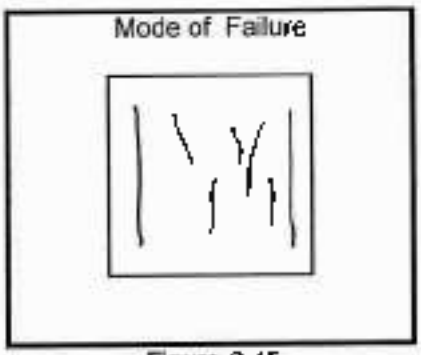
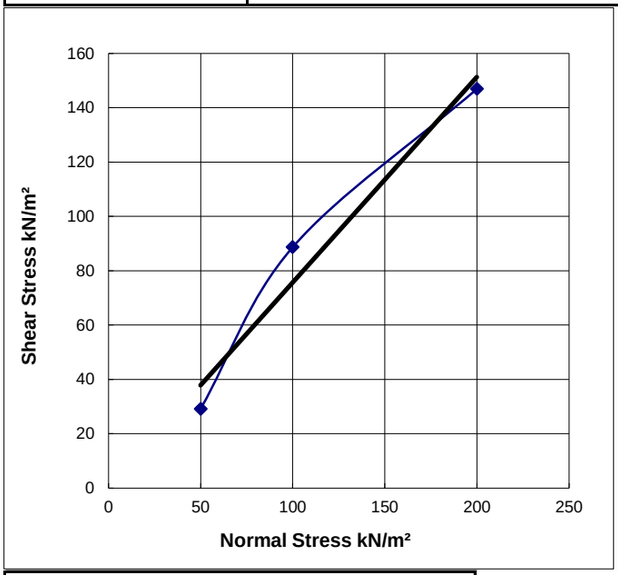


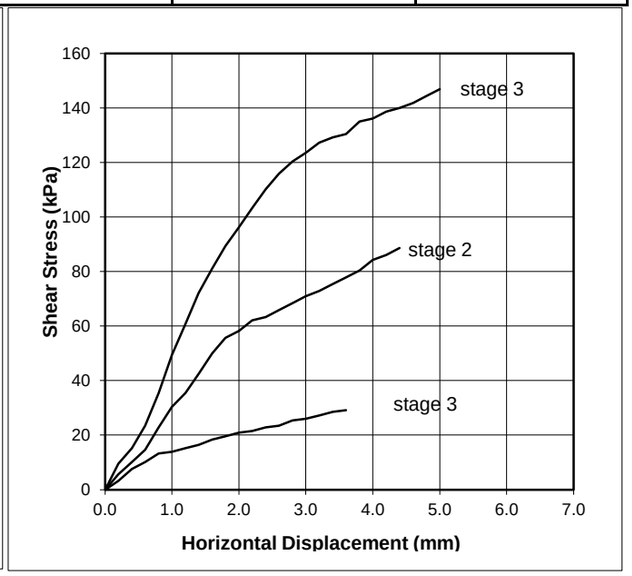
Figure C-45

MATRIX LABORATORY L.L.C.

TABLE C 8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B08	**Date Tested**	29-30/06/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

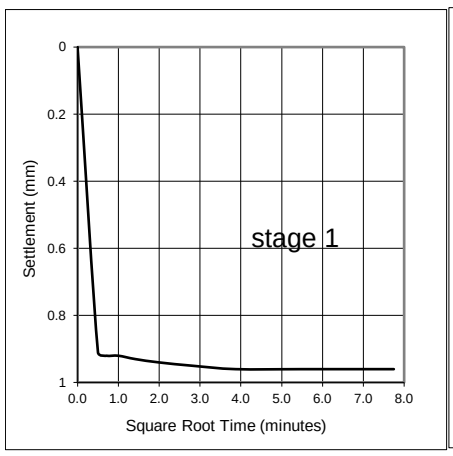
Apparent Cohesion = 0.0 kN/m²

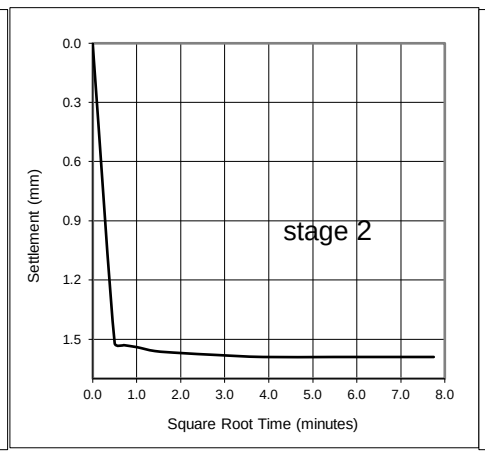
Angle of Shearing Resistance = 37.1º

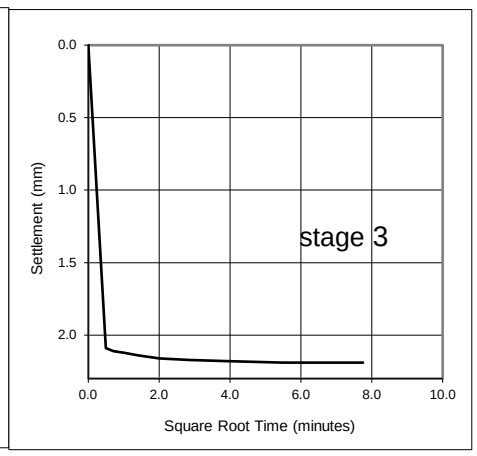
TABLE C 8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B08	**Date Tested**	29-30/06/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.73
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

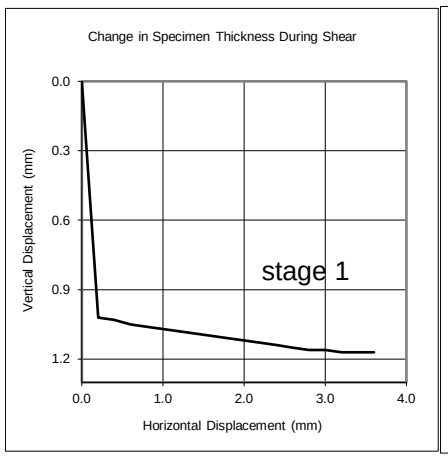
Consolidation Stage

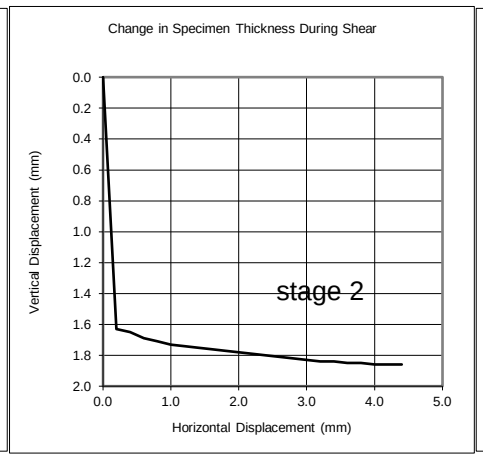


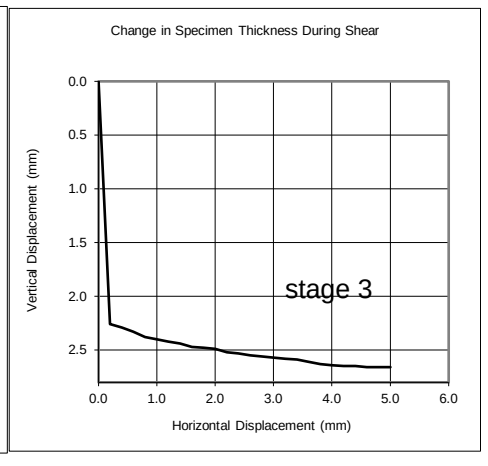




Shearing Stage



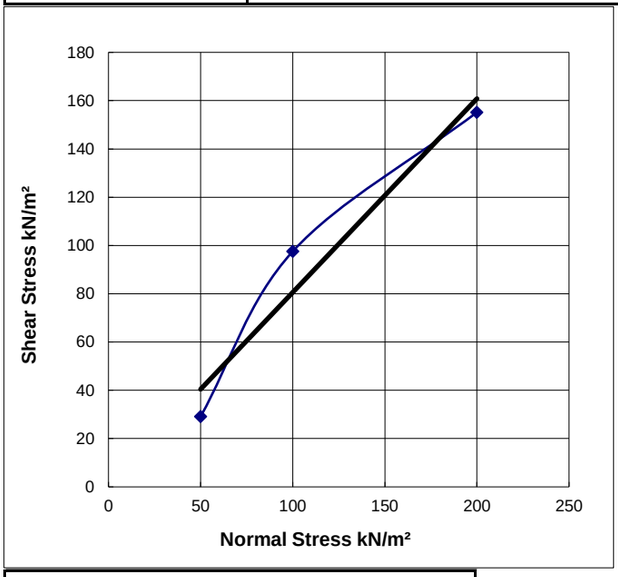


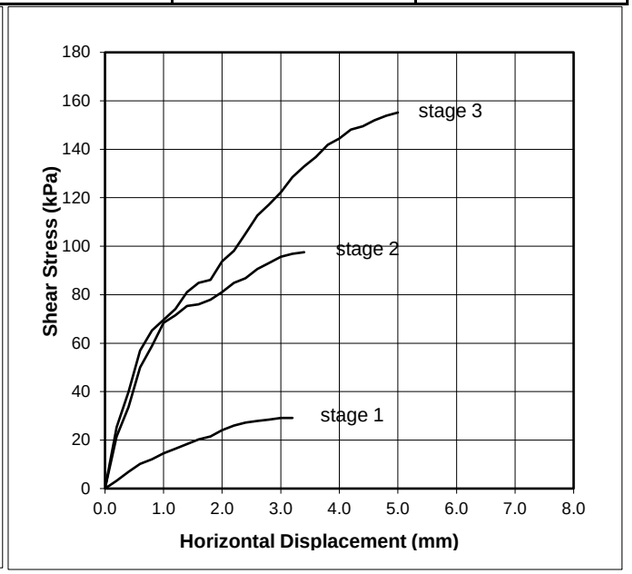


MATRIX LABORATORY L.L.C.

TABLE C 8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B10	**Date Tested**	29-30/06/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

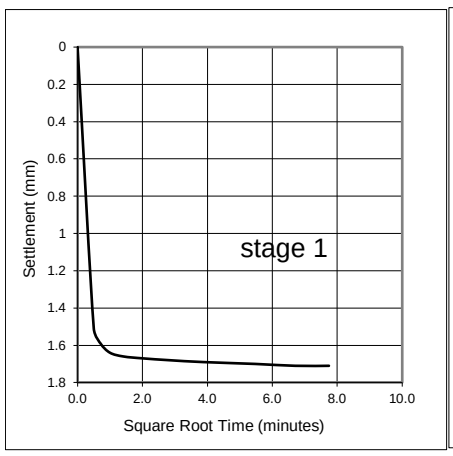
Apparent Cohesion = 0.0 kN/m²

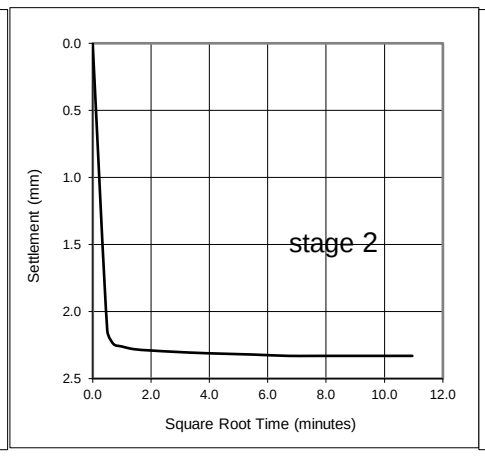
Angle of Shearing Resistance = 38.75º

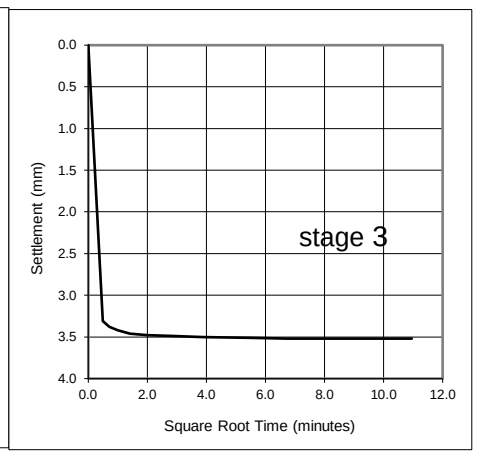
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B10	**Date Tested**	29-30/06/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

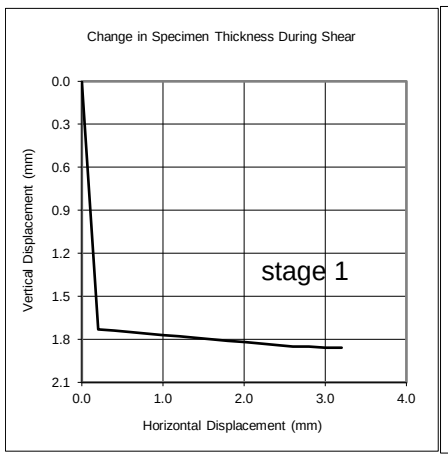
Consolidation Stage

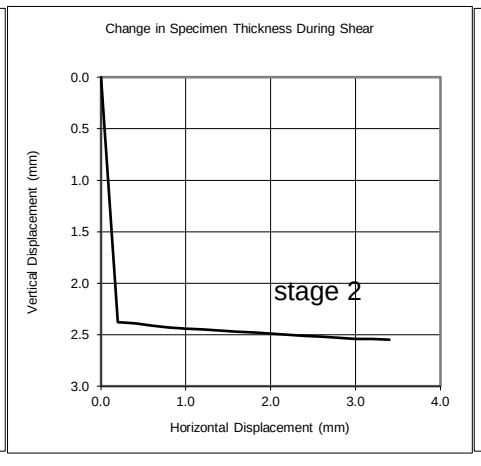


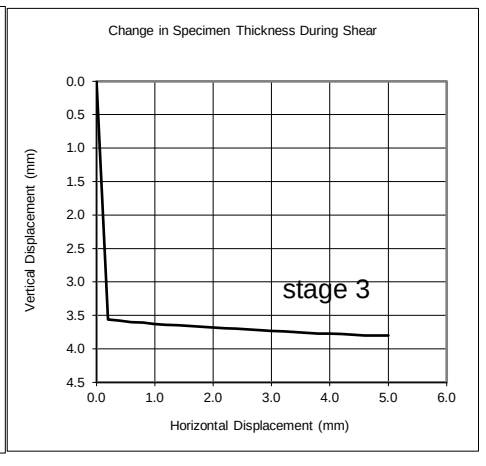




Shearing Stage



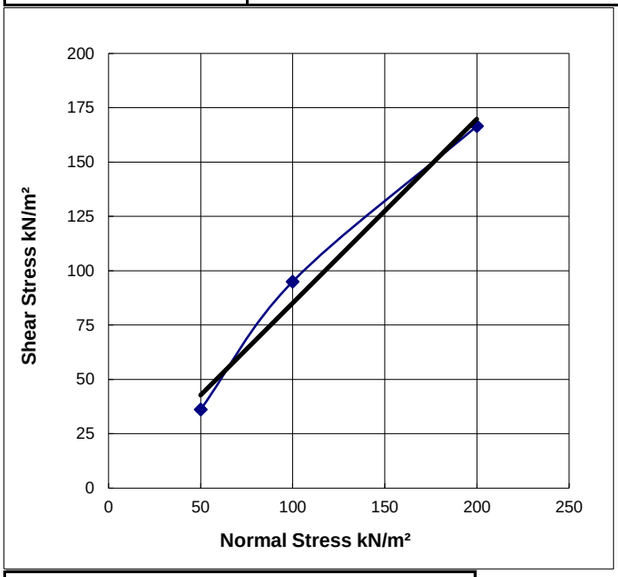


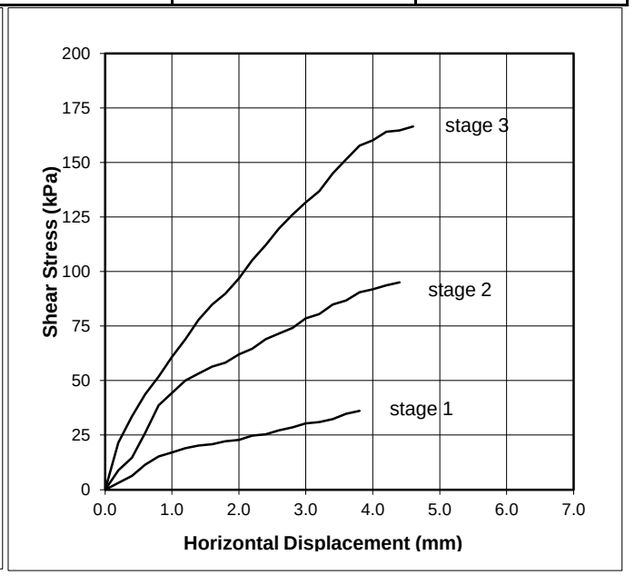


MATRIX LABORATORY L.L.C.

TABLE C 8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C06	**Date Tested**	04-05/07/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

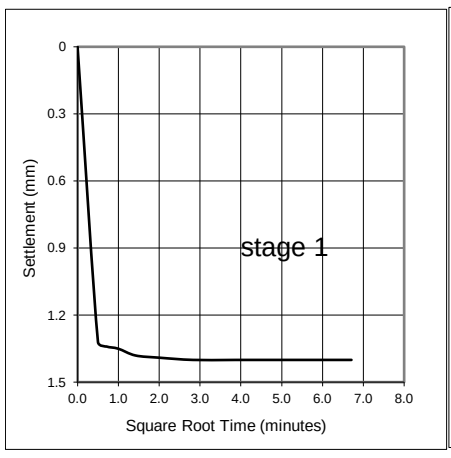
Apparent Cohesion = 0.0 kN/m²

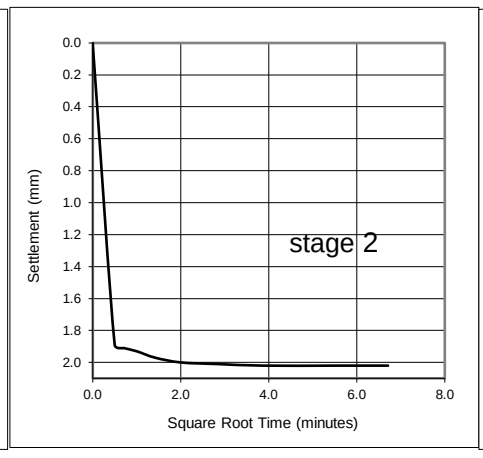
Angle of Shearing Resistance = 40.3º

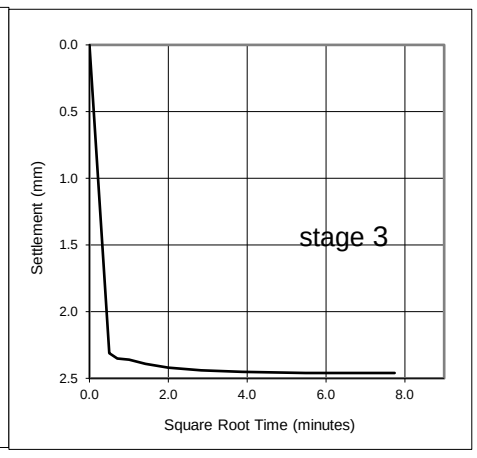
TABLE C 8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED MADINAT AL MAFRAQ PART 1 SERVICE STATION - BANIYAS- EB2-02-P8	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C06	**Date Tested**	04-05/07/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.63
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

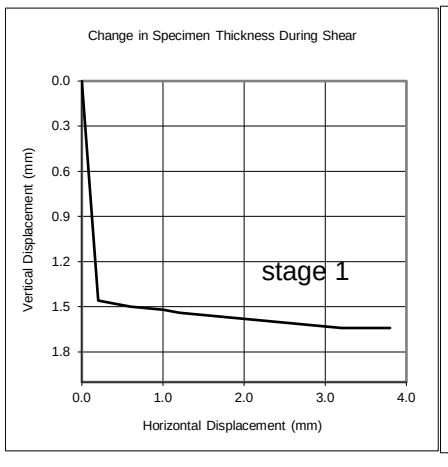
Consolidation Stage

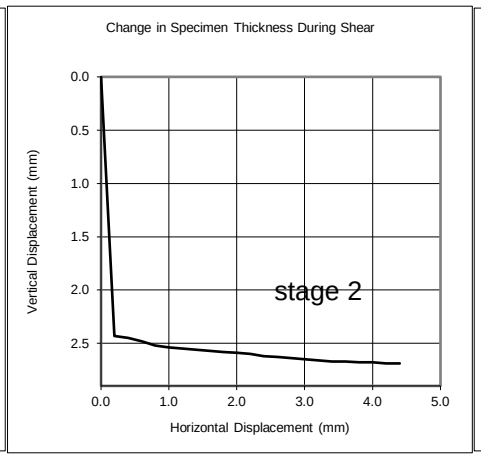






Shearing Stage





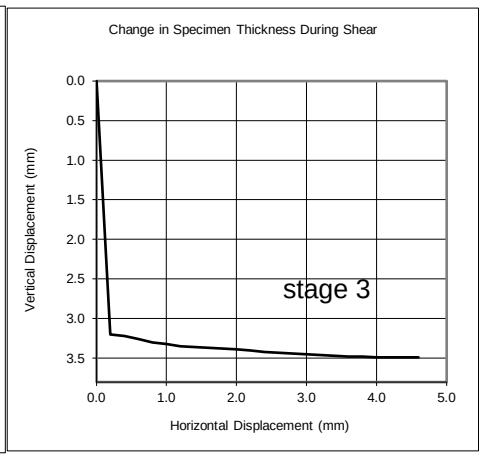
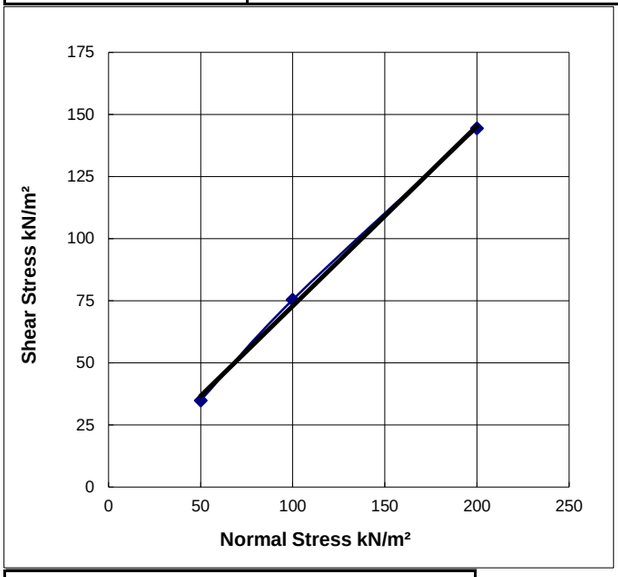
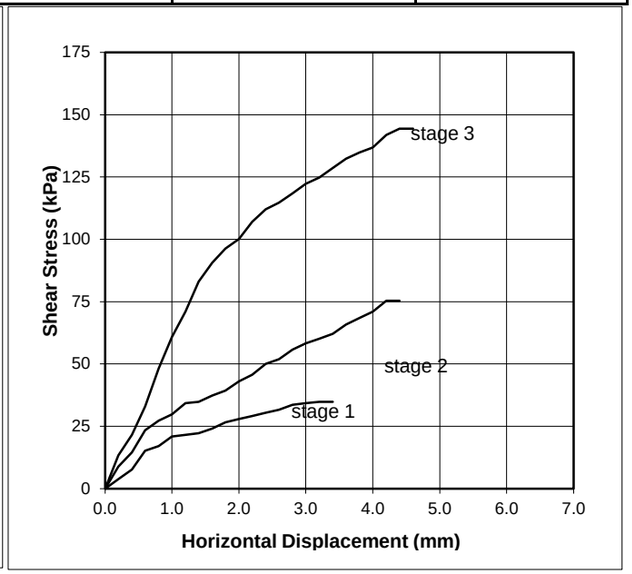


TABLE C 8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C14	**Date Tested**	07-08/07/2015
Depth (m)	1.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

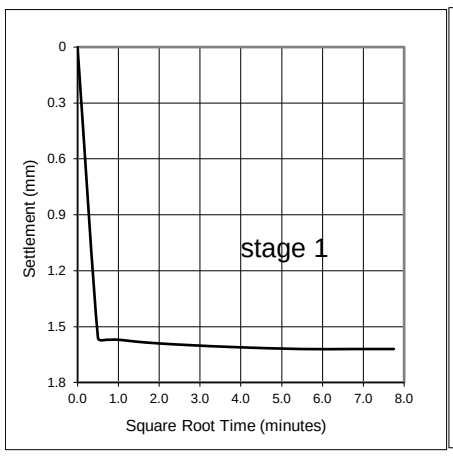
Apparent Cohesion =0.0 kN/m²

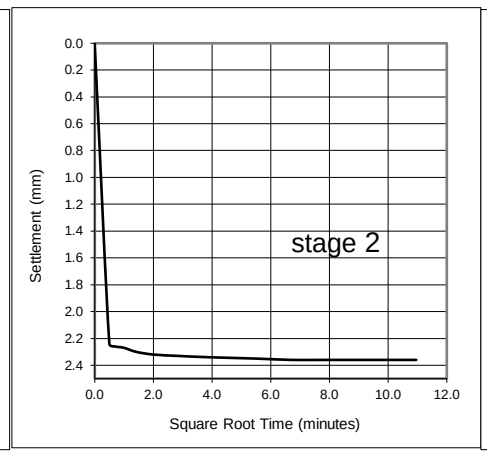
Angle of Shearing Resistance = 36.0º

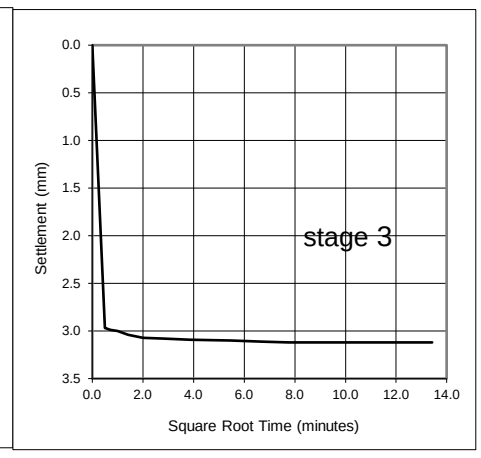
TABLE C 8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C14	**Date Tested**	07-08/07/2015
Depth (m)	1.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

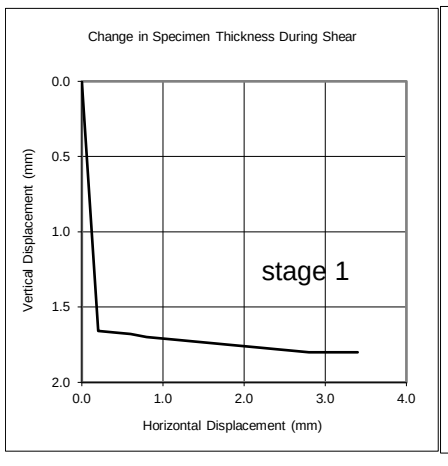
Consolidation Stage

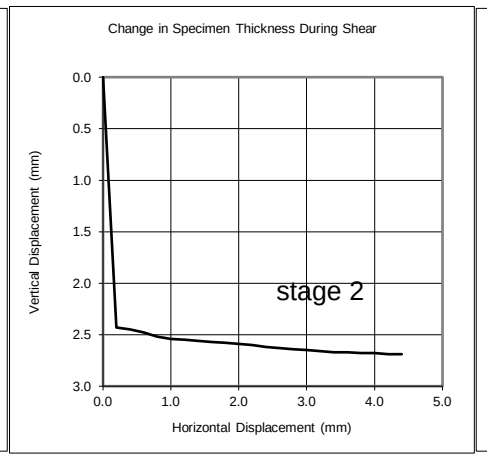


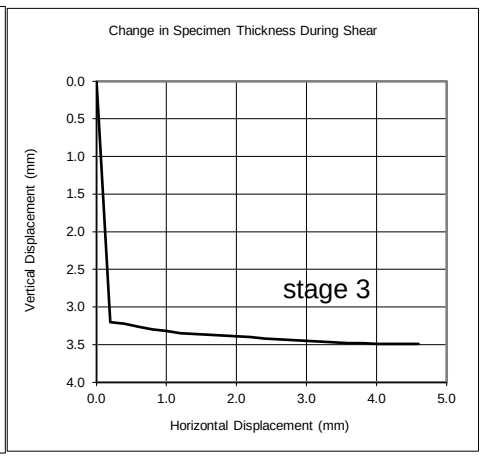




Shearing Stage



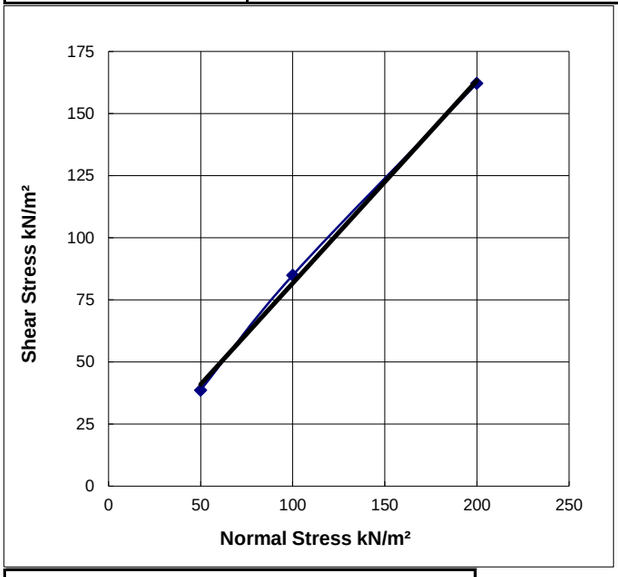


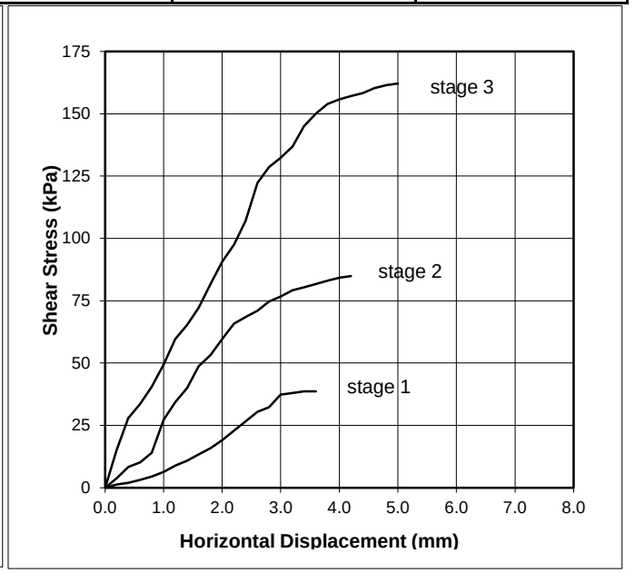


MATRIX LABORATORY L.L.C.

TABLE C 8 - (9)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C16	**Date Tested**	04-05/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

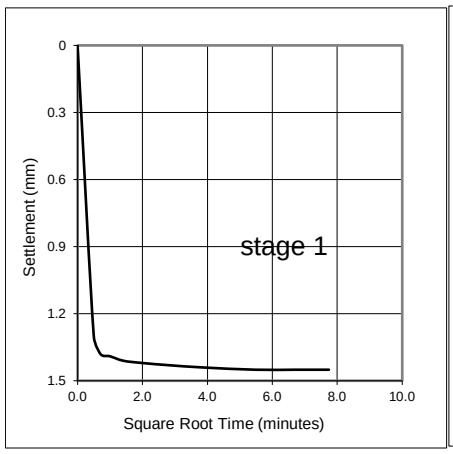
Apparent Cohesion = 0.00 kN/m²

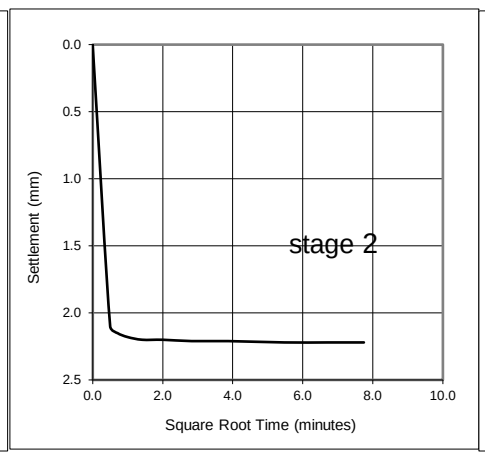
Angle of Shearing Resistance = 39.22º

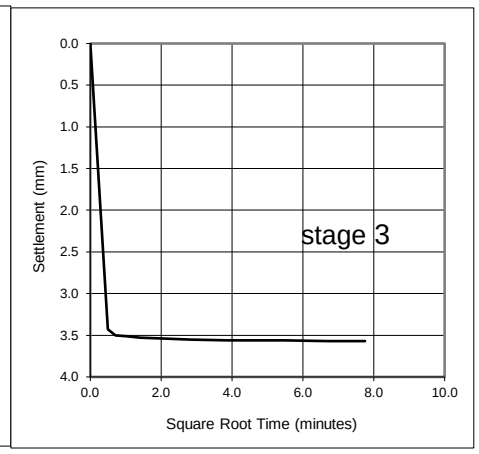
TABLE C8 - (10)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Contractor	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C16	**Date Tested**	04-05/07/2015
Depth (m)	2.00		
Rate of Displacement	1.25 mm/min	**Dry Density (Mg/m³)**	1.66
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	Erwin

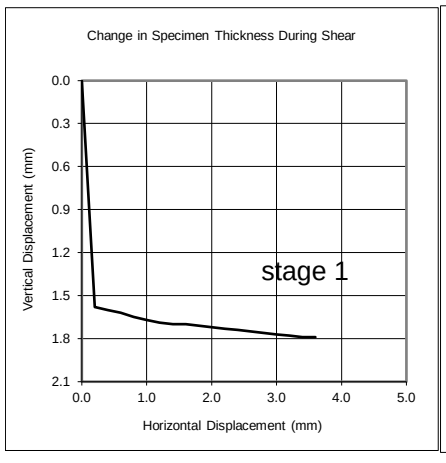
Consolidation Stage

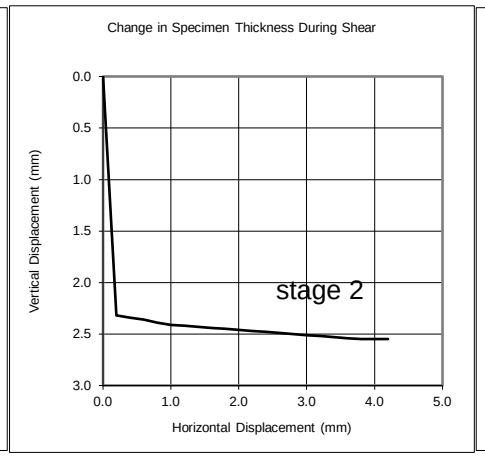


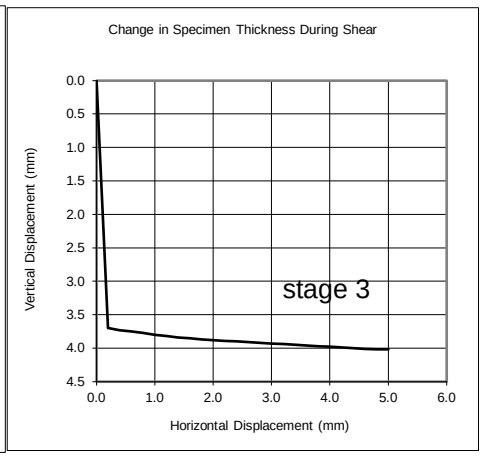




Shearing Stage



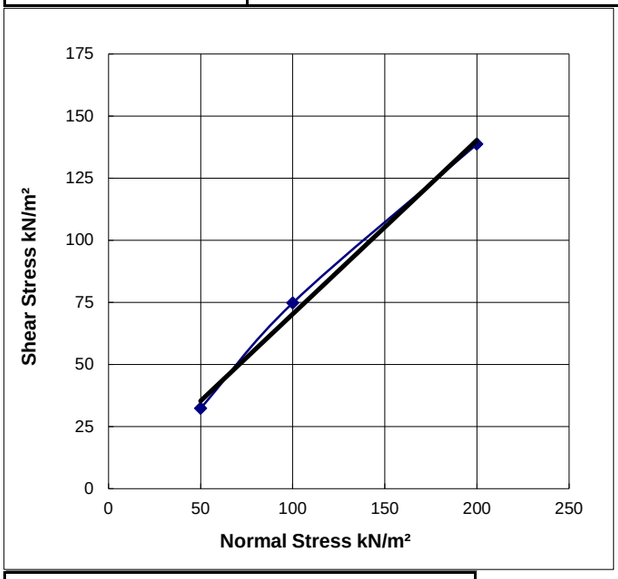


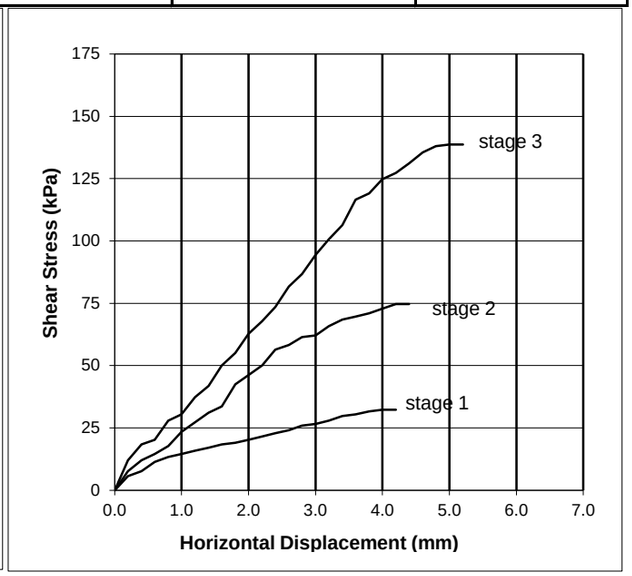


MATRIX LABORATORY L.L.C.

TABLE C 8 - (11)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C19	**Date Tested**	07-08/07/2015
Depth (m)	1.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

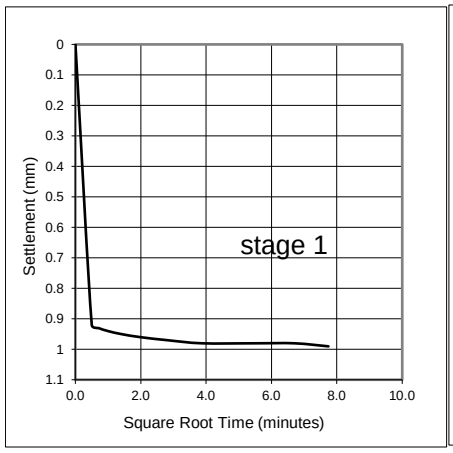
Apparent Cohesion = 0.0 kN/m²

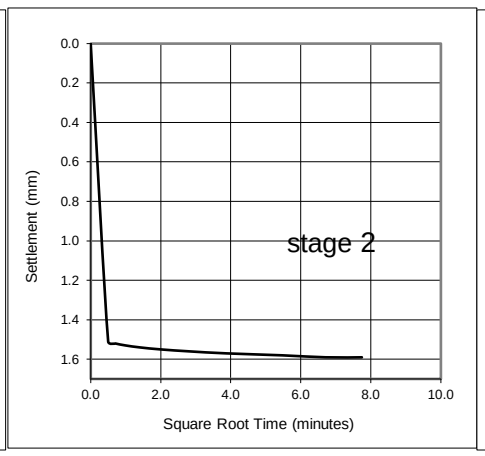
Angle of Shearing Resistance = 35.0º

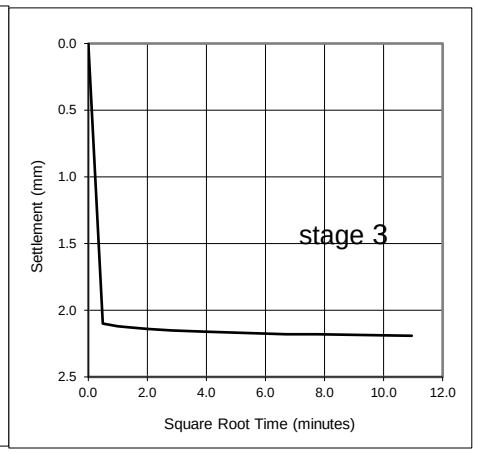
TABLE C8 – (12)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-3
Consultant	CH2M MACE JV	**Date Reported**	26/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-3
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C19	**Date Tested**	07-08/07/2015
Depth (m)	1.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.55
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

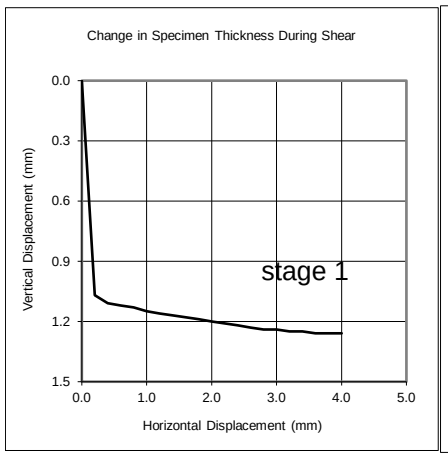
Consolidation Stage

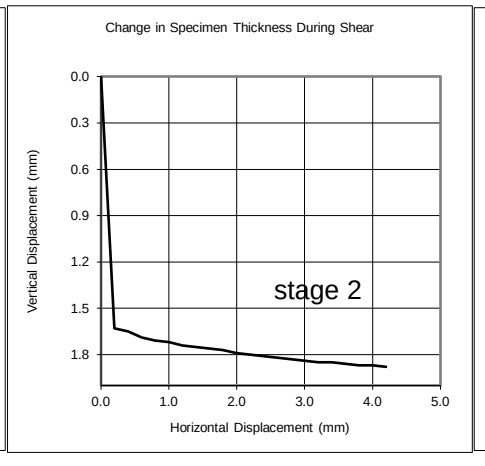


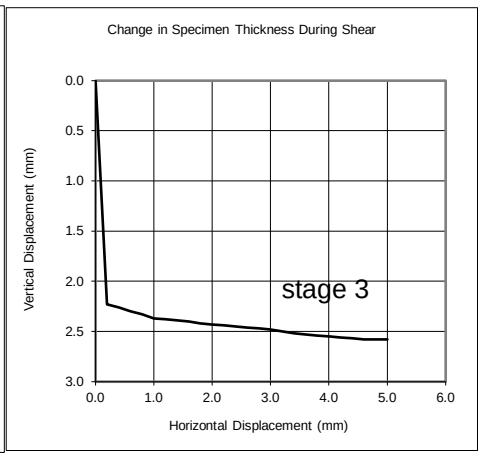




Shearing Stage







APPENDIX C4

LABORATORY TEST RESULTS (ZONE 4)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	06-11/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	12-19/07/2015
Test Method	See below	**Date Tested**	13-22/07/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A03	SPT2	1.00	1.6	0.05	8.0 @ 29°C	DS-3
BH-A06	SPT2	1.00	1.2	0.02	8.0 @ 28°C	DS-2
BH-A09	SPT3	2.00	0.2	0.01	7.9 @ 27°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	08-12/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	08-12/07/2015
Test Method	See below	**Date Tested**	09-14/07/2015
Test Method Var.	Nil	**Tested By**	Arlene
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A04	6.00	2.50	0.08	7.6 @ 28°C	DS-3
BH-A07	10.15	1.40	1.20	7.9 @ 28°C	DS-2
BH-B12	13.10	2.10	0.15	7.8 @ 28°C	DS-3

Test Method
Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation
Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

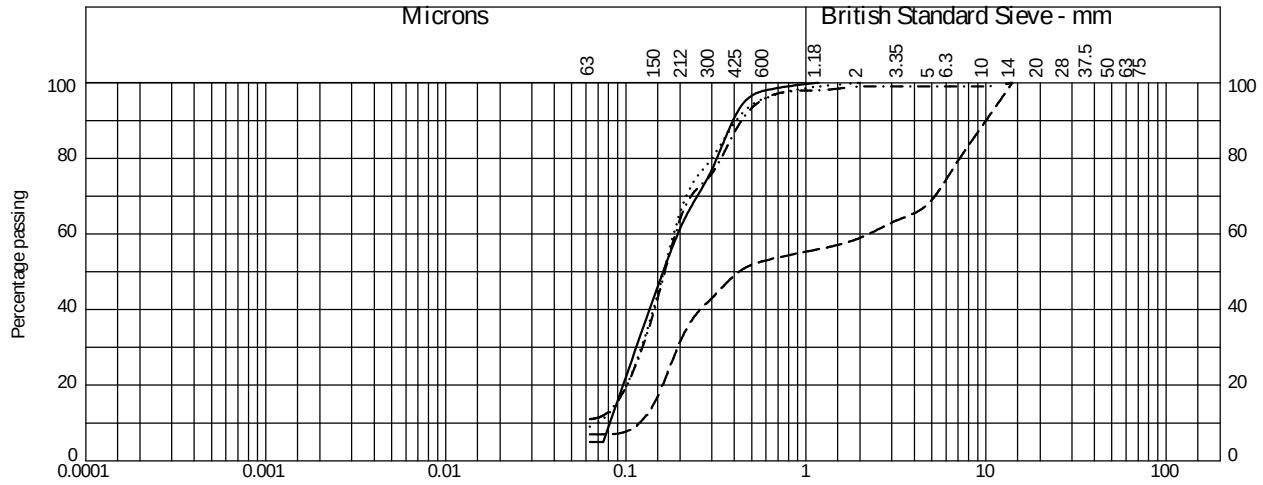
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A03	SPT3	130.00	———	SILTY, M-F SAND (S-M)	2.00
BH-A03	SPT5	138.80	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-A04	SPT2	137.90	.....	SILTY, M-F SAND (S-M)	1.00
BH-A04	SPT3	136.70	– . – . –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00

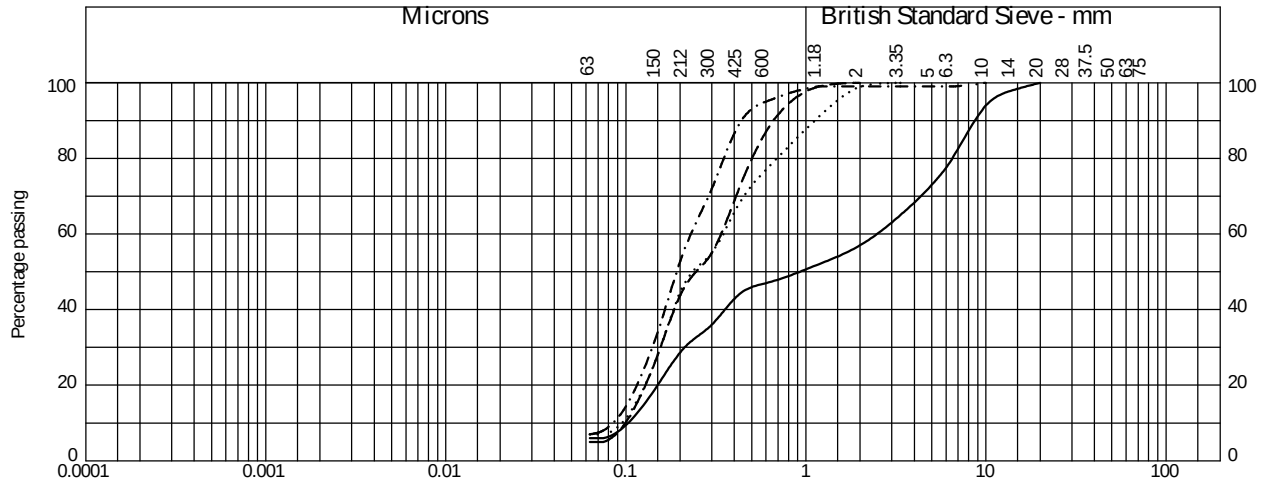
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A04	SPT4	118.10	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-A05	SPT2	140.7	– – –	SILTY, M-F SAND (S-M)	1.00
BH-A05	SPT6	124.2	.....	SL. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A06	SPT3	144.50	– . – . –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00

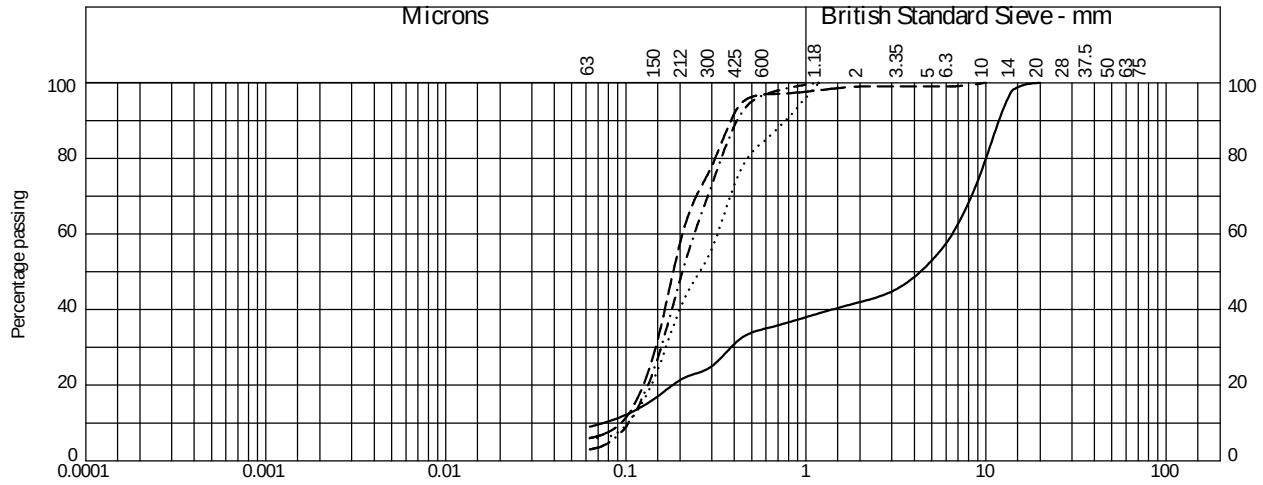
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A06	SPT7	138.90	———	V. GRAVELLY, SILTY, SAND (S-M)	6.50
BH-A07	SPT2	133.70	— — —	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A07	SPT7	110.70	.....	SILTY, M-F SAND (S-M)	6.00
BH-A07	SPT10	120.10	— . — . —	SL. SILTY, M-F SAND (SP)	9.00

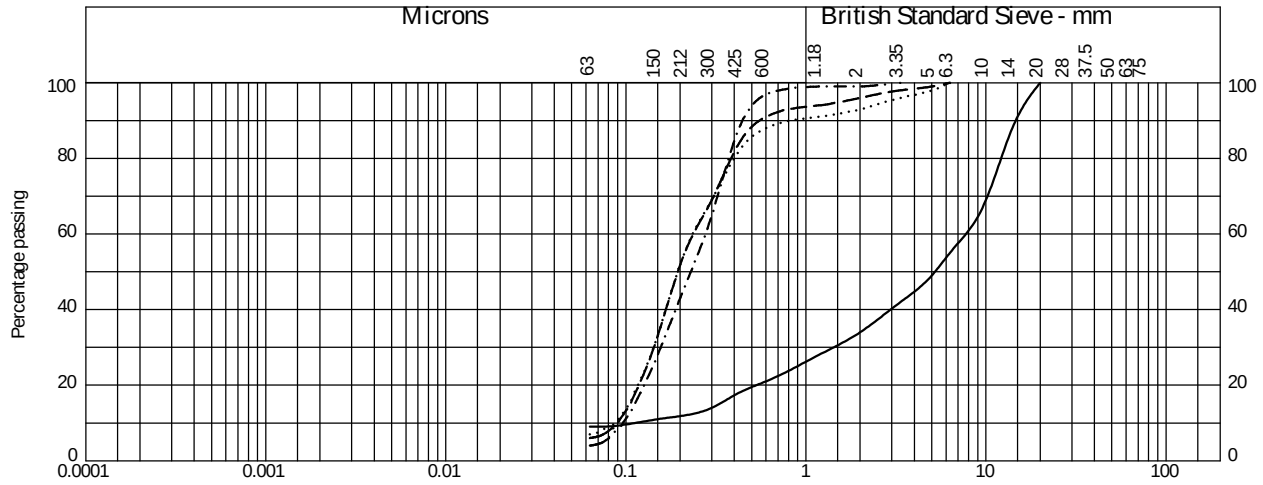
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A07	SPT12	135.40	———	V. GRAVELLY, SILTY, SAND (S-M)	11.00
BH-A08	SPT2	134.40	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A08	SPT4	132.00	.....	GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A08	SPT9	130.70	–.–.–	SL. GRAVELLY, SL. SILTY, F-M SAND (SP)	8.00

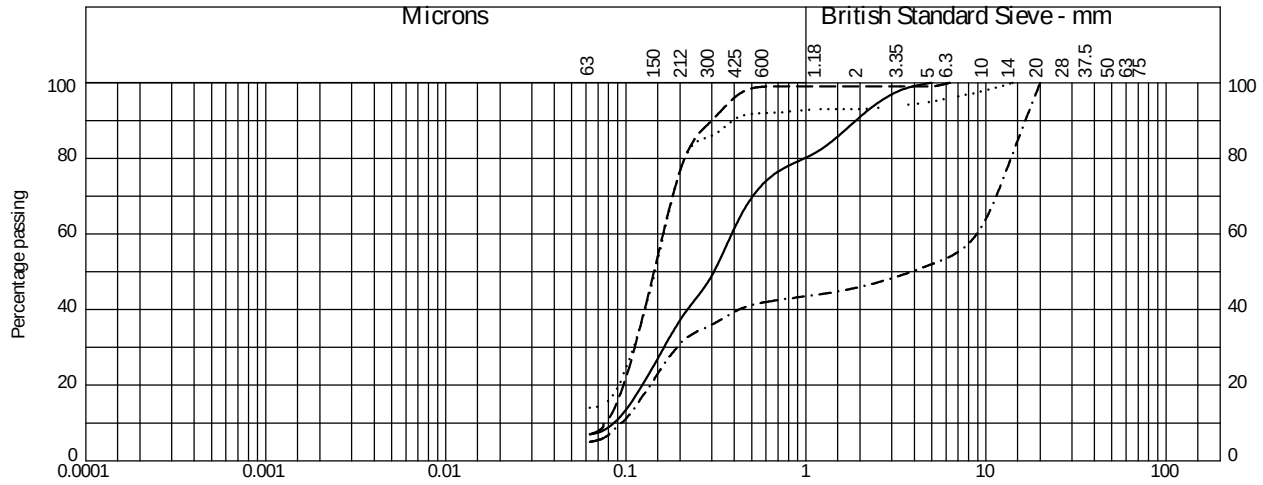
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A08	SPT12	134.60	———	GRAVELLY, SILTY, F-M SAND (S-M)	11.00
BH-A09	SPT2	137.10	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-A09	SPT4	131.90	.....	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-A09	SPT6	131.90	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00

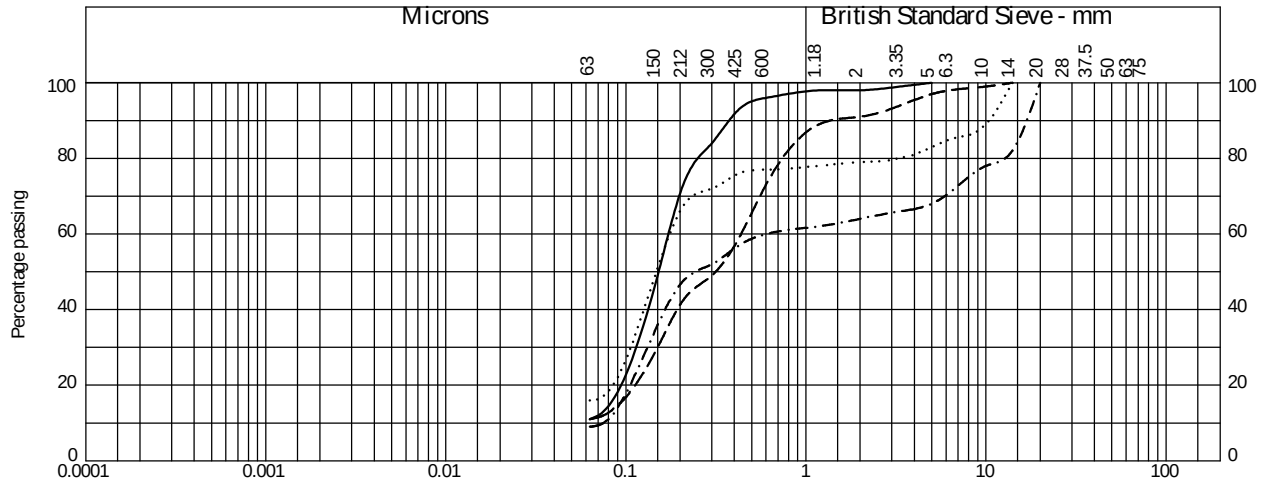
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B11	SPT2	133.30	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B11	SPT5	142.30	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-B11	SPT7	132.90	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.00
BH-B11	SPT9	109.90	–.–.–	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00

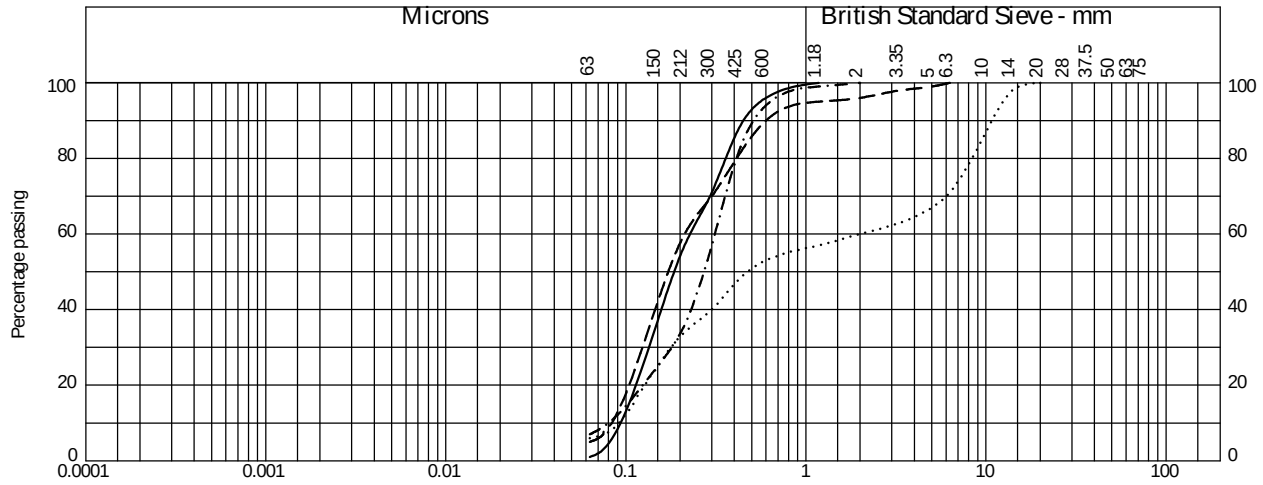
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B12	SPT2	135.9	———	SL. SILTY, M-F SAND (SP)	1.00
BH-B12	SPT3	139.3	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-B12	SPT4	137.7	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B13	SPT2	135.70	– . – . –	SILTY, F-M SAND (S-M)	1.00

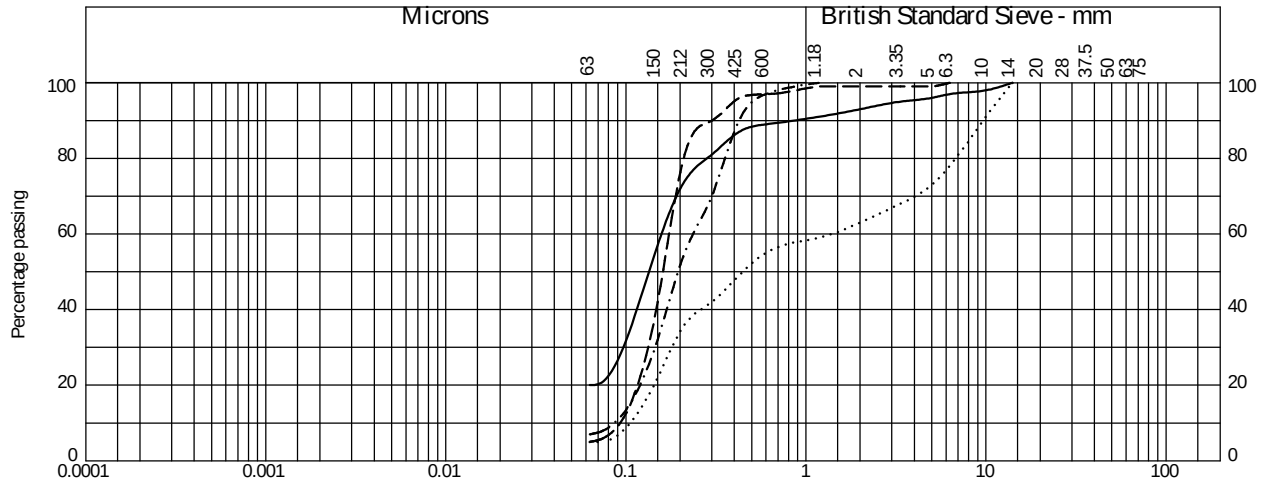
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B13	SPT4	141.4	———	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B14	SPT2	136.70	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B14	SPT6	143.40	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-C20	SPT2	149.70	– . – . –	SILTY, M-F SAND (S-M)	1.00

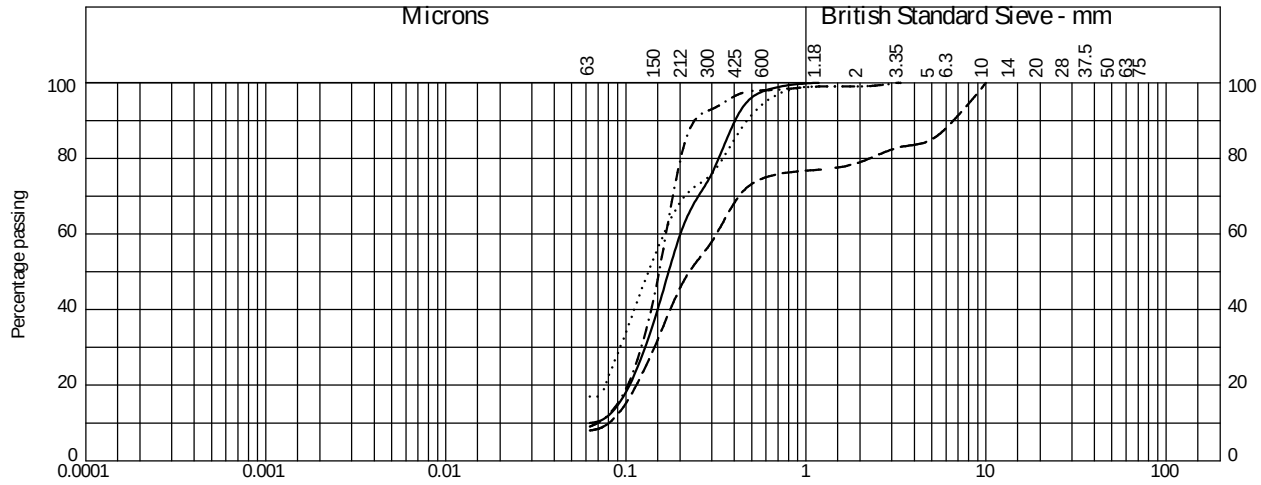
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C20	SPT4	133.70	———	SILTY, M-F SAND (S-M)	3.00
BH-C20	SPT7	133.50	– – –	V. GRAVELLY, SILTY, M-F SAND (S-M)	6.50
BH-C21	SPT2	131.3	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C21	SPT6	143.5	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	5.00

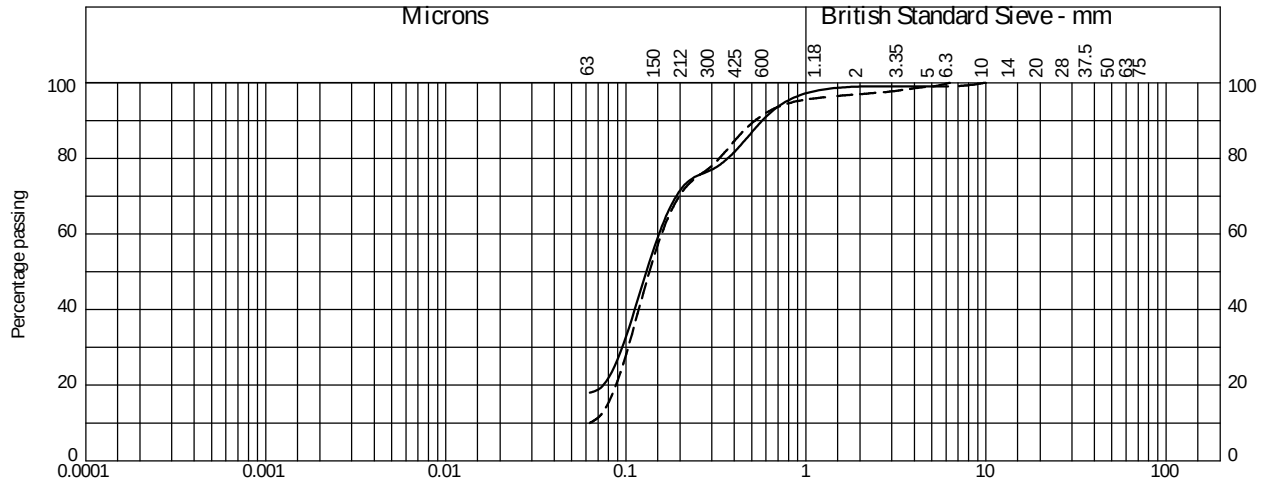
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-4
Contractor	N.P.	Date Reported	02/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-4
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 4)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	12-20/07/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	14-22/07/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C21	SPT8	128.6	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	7.00
BH-C21	SPT10	131.8	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	9.00
			.....		
			–·–·–		

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

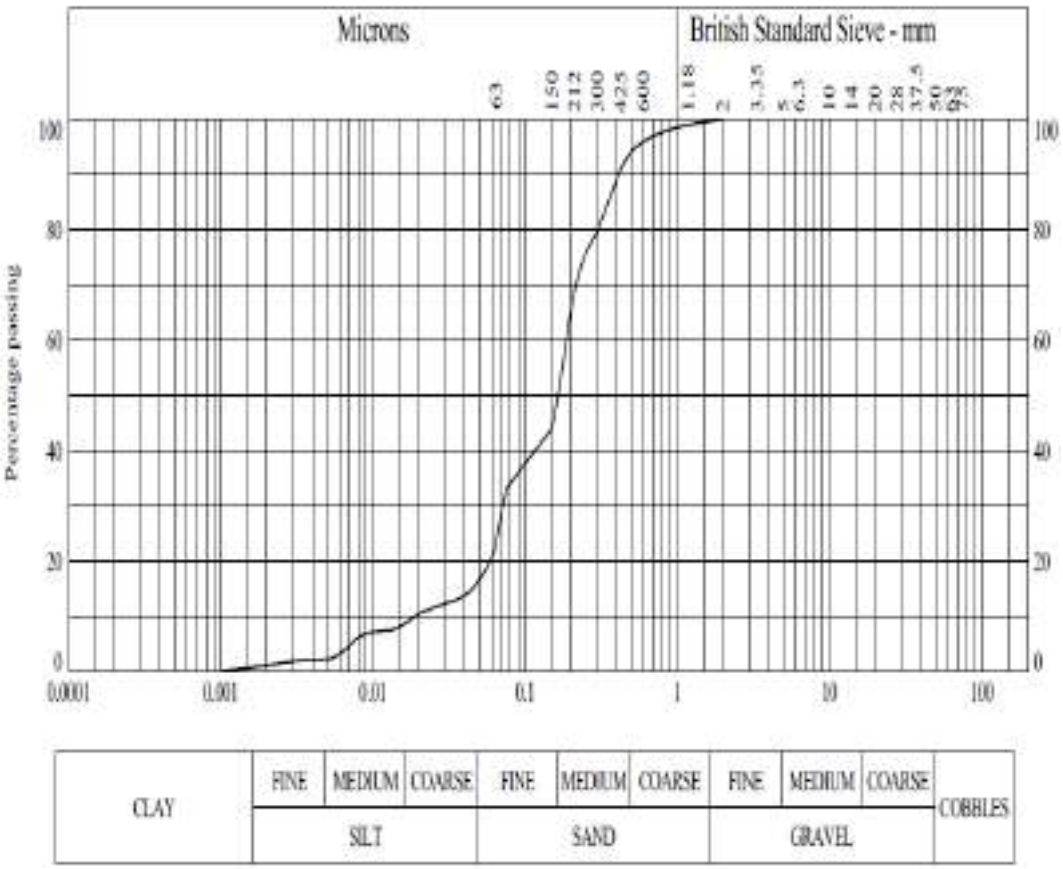
Table C-1 (1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A04	**Sampling Date**	08/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
2	100
1.18	99
0.60	96
0.425	91
0.300	80
0.212	69
0.150	44
0.075	33
0.063	22
0.023	11
0.015	8
0.008	6
0.006	3
0.004	2
0.002	1
0.001	0



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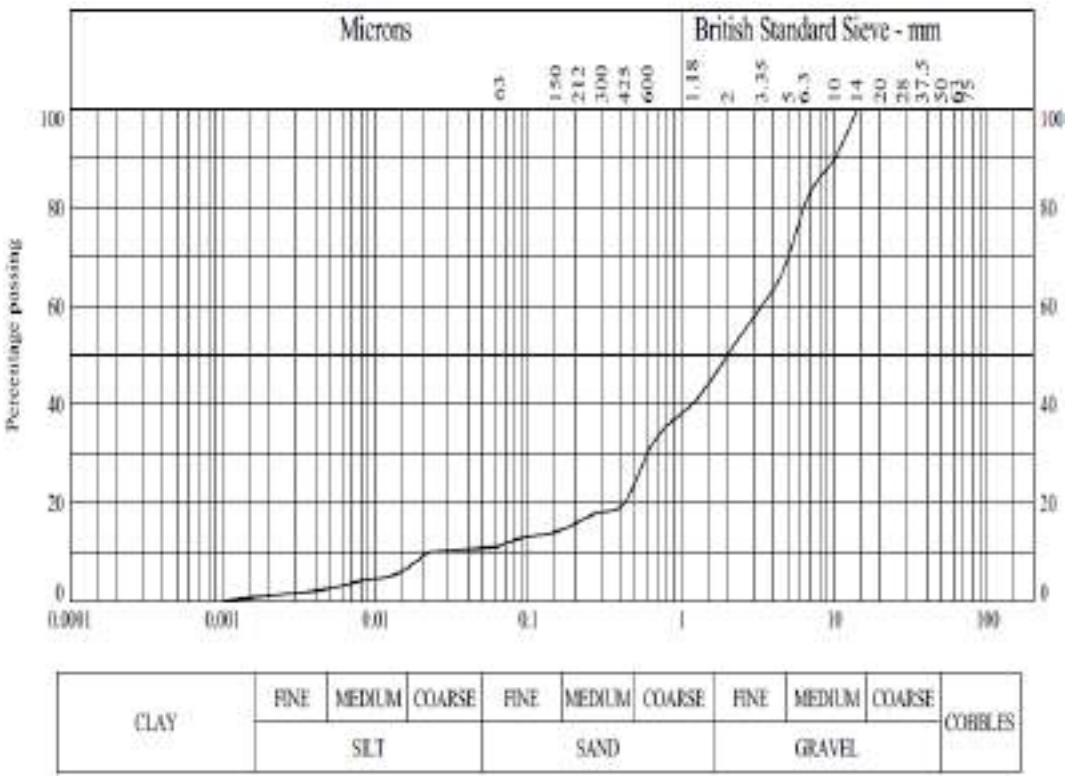
Table C-1 (2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A04	**Sampling Date**	08/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	90
6.3	80
5	70
3.35	60
2	50
1.18	40
0.60	30
0.425	20
0.300	18
0.212	16
0.150	14
0.075	12
0.063	11
0.023	10
0.015	6
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0



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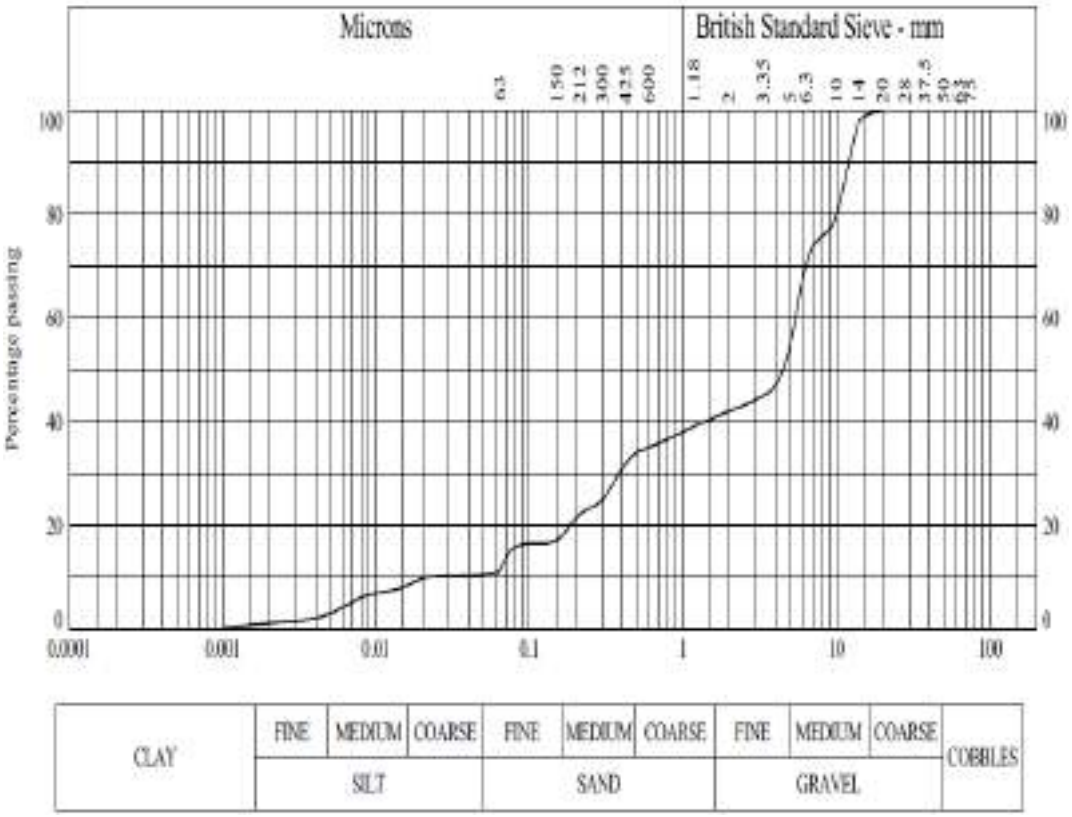
Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A06	**Sampling Date**	08/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	80
6.3	70
5	55
3.35	45
2	42
1.18	39
0.60	35
0.425	32
0.300	25
0.212	22
0.150	17
0.075	15
0.063	11
0.023	10
0.015	8
0.008	6
0.006	4
0.004	2
0.002	1
0.001	0



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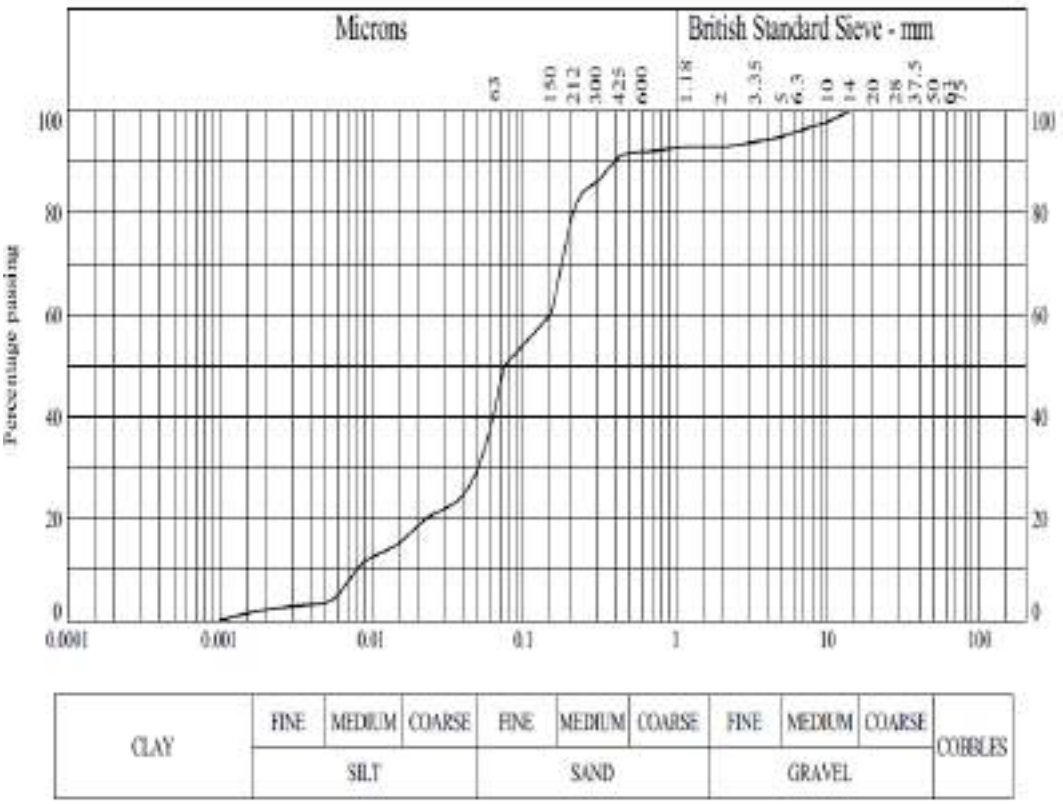
Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A09	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	19/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	21/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	96
5	95
3.35	94
2	93
1.18	93
0.60	92
0.425	91
0.300	86
0.212	80
0.150	60
0.075	50
0.063	40
0.023	20
0.015	15
0.008	10
0.006	5
0.004	3
0.002	2
0.001	0



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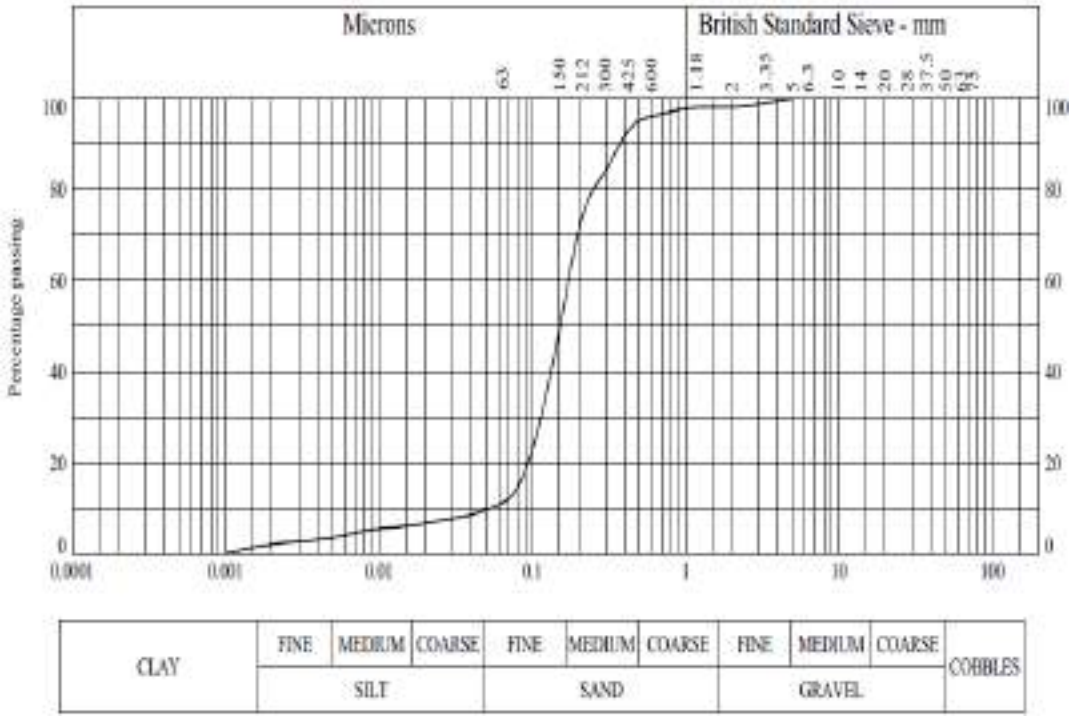
Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-B11	**Sampling Date**	06/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	98
1.18	98
0.60	96
0.425	93
0.300	84
0.212	74
0.150	49
0.075	13
0.063	11
0.023	7
0.015	6
0.008	5
0.006	4
0.004	3
0.002	2
0.001	0



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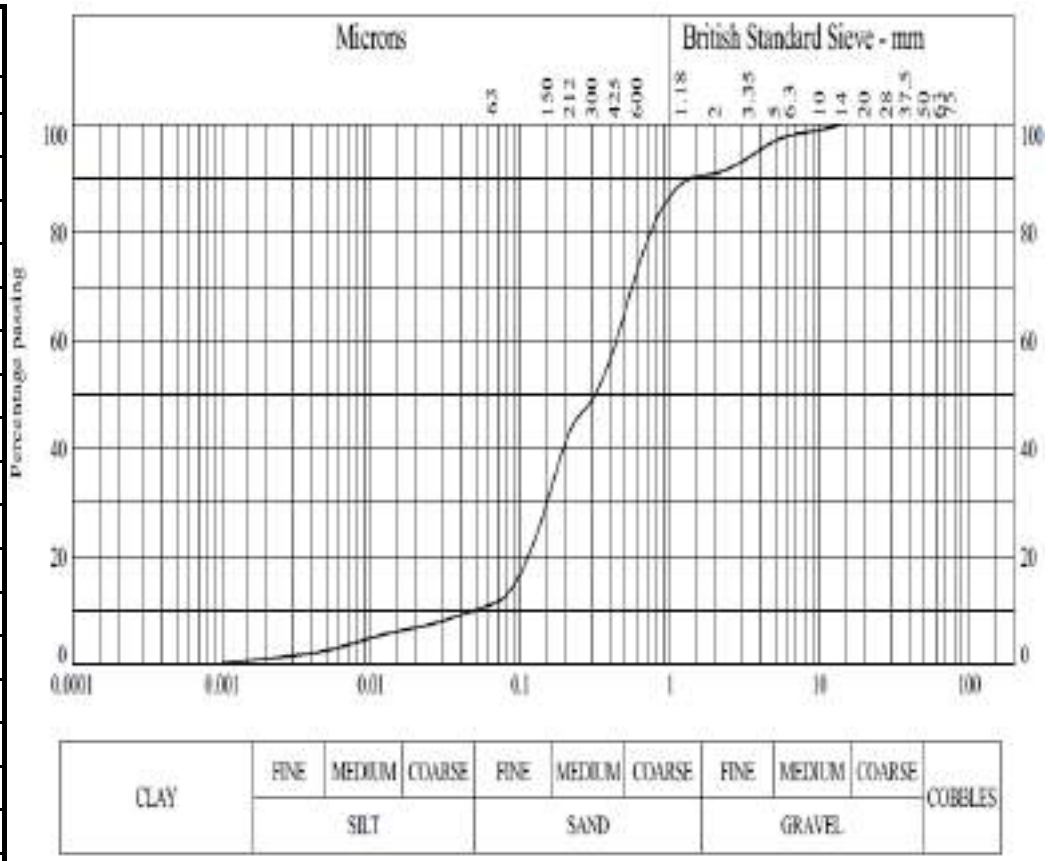
Table C-1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B11	**Sampling Date**	06/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10.0	99
6.3	98
5.0	97
3.4	94
2.0	91
1.18	89
0.60	73
0.43	59
0.30	49
0.21	43
0.15	30
0.08	12
0.06	11
0.02	7
0.01	6
0.01	4
0.006	3
0.004	2
0.002	1
0.001	0



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Table C-1 (7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B11	**Sampling Date**	06/07/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14.0	100
10.0	89
6.3	85
5.0	83
3.4	80
2.0	79
1.18	78
0.60	77
0.425	76
0.300	72
0.212	68
0.150	51
0.075	17
0.063	16
0.023	8
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

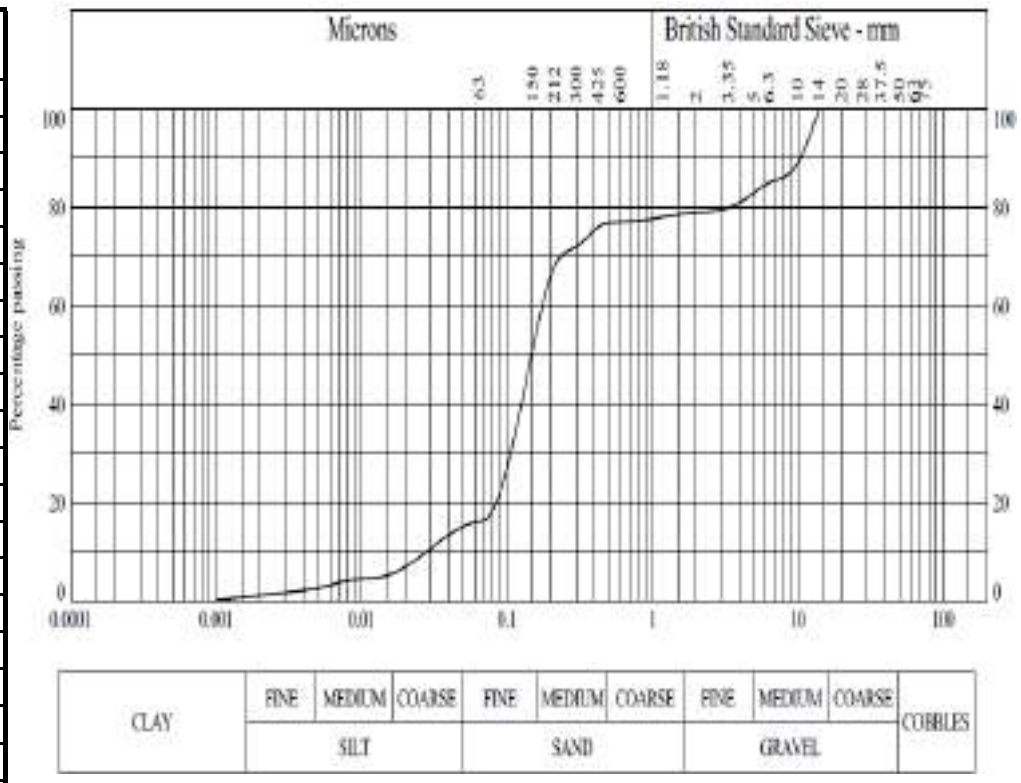


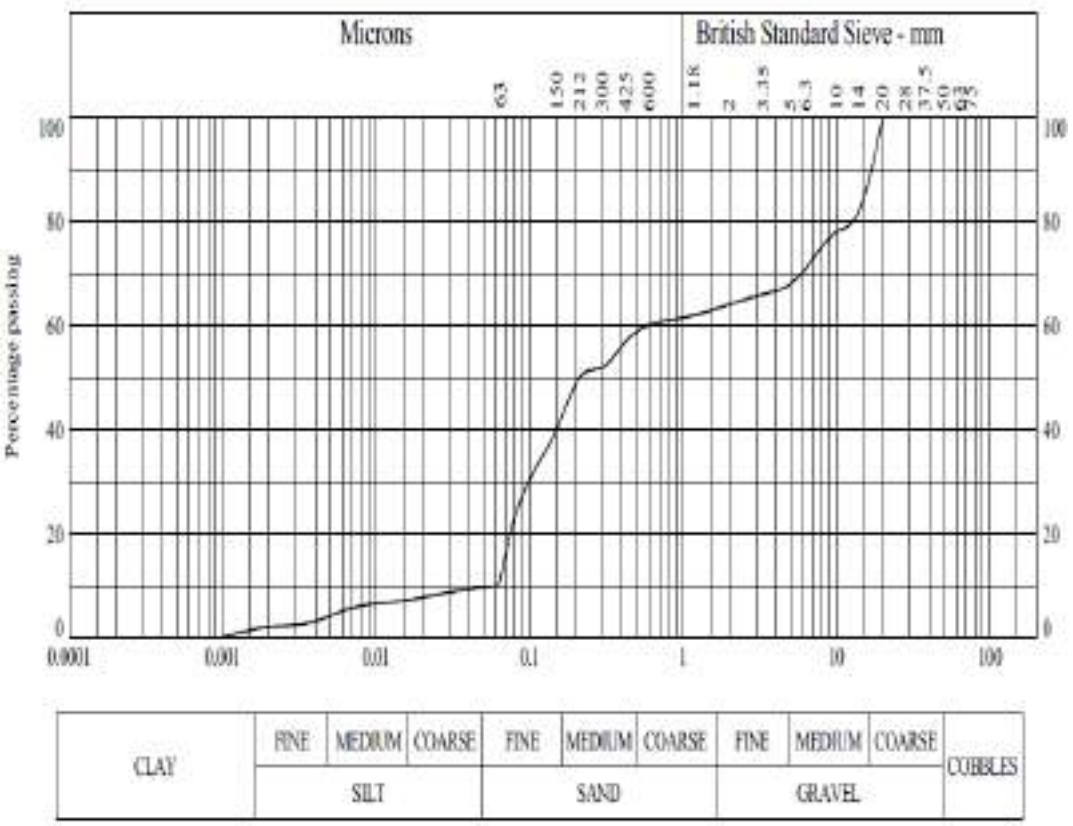
Table C-1 (8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B11	**Sampling Date**	06/07/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20.0	100
14	82
10	78
6.3	71
5	68
3.35	66
2	64
1.18	62
0.6	60
0.425	57
0.3	52
0.212	50
0.150	40
0.075	20
0.063	10
0.023	8
0.015	7
0.008	6
0.006	5
0.004	3
0.002	2
0.001	0



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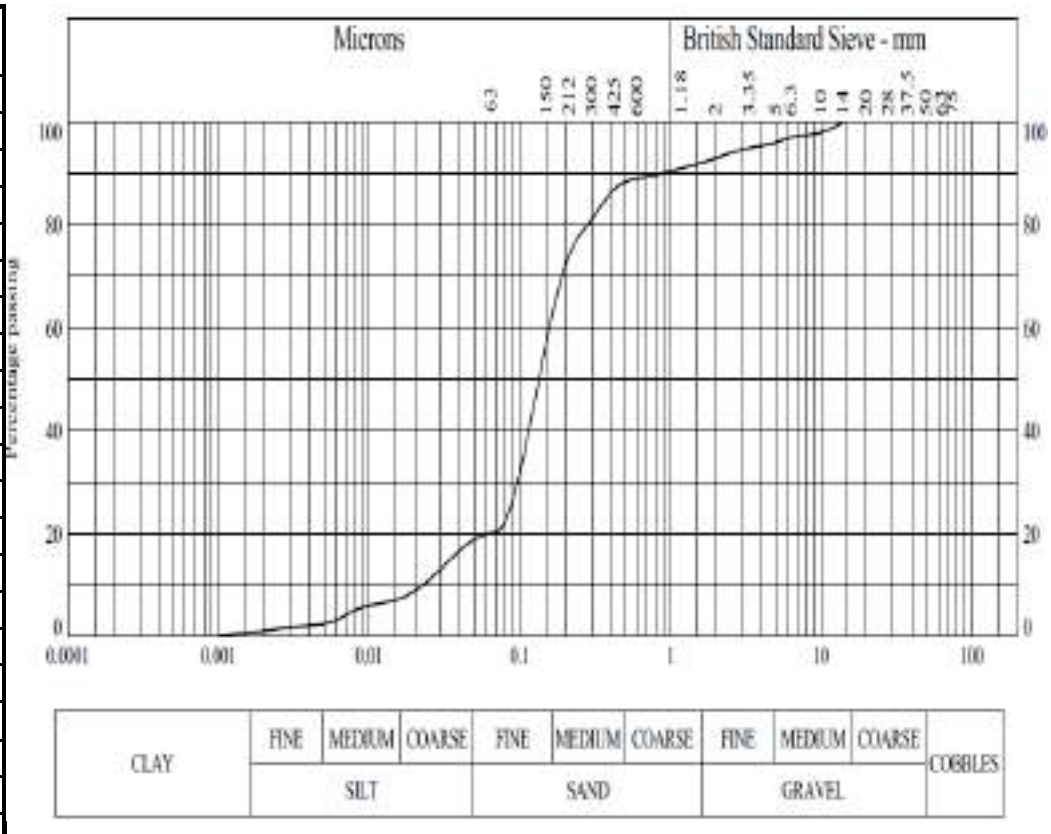
Table C-1 (9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B13	**Sampling Date**	05/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	14/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	97
5	96
3.35	95
2	93
1.18	91
0.6	89
0.425	87
0.3	81
0.212	74
0.15	57
0.075	21
0.063	20
0.023	10
0.015	7
0.008	5
0.006	3
0.004	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

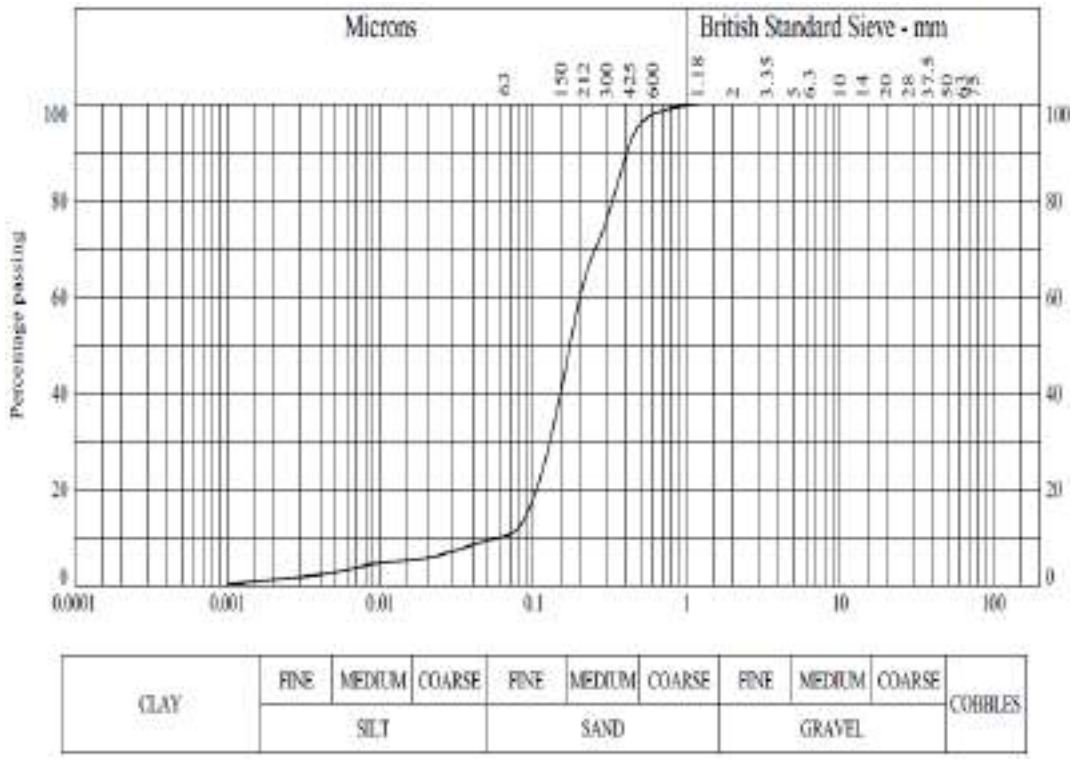
Table C-1 (10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C20	**Sampling Date**	04/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	16/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	20/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.60	98
0.425	92
0.300	76
0.212	63
0.150	40
0.075	11
0.063	10
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0



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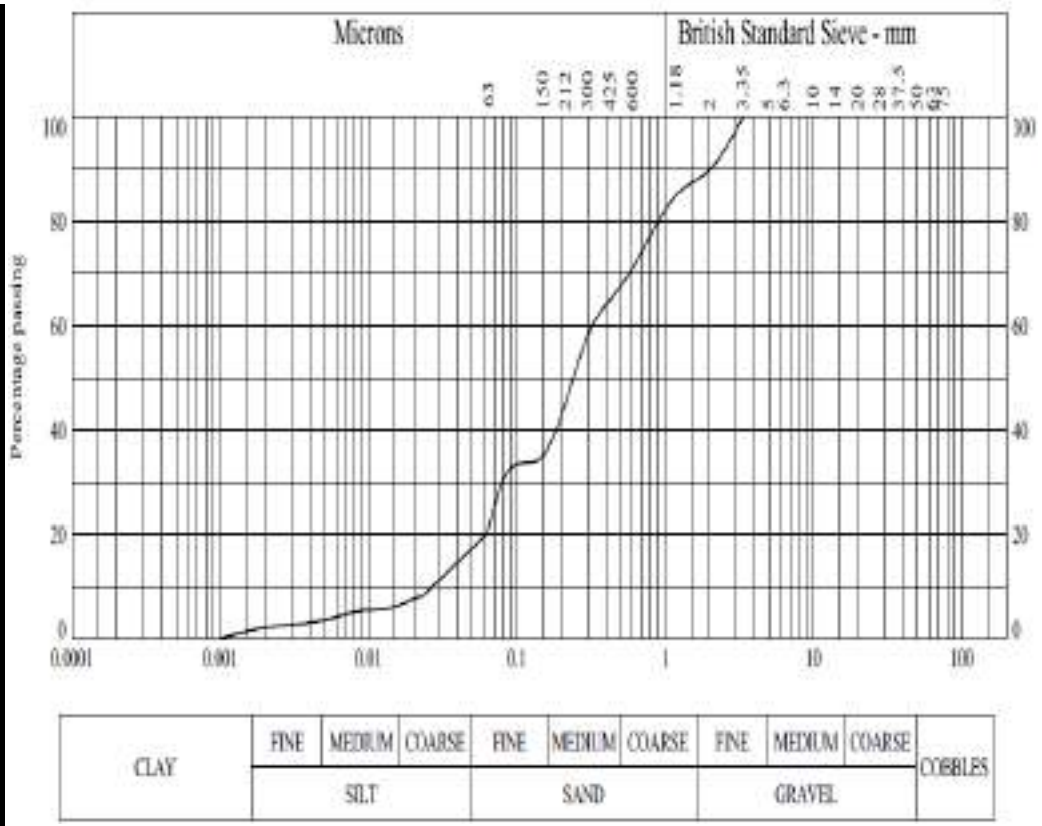
Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C21	**Sampling Date**	04/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	14/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	90
1.18	85
0.60	71
0.425	65
0.300	58
0.212	45
0.150	35
0.075	28
0.063	20
0.023	8
0.015	6
0.008	5
0.006	4
0.004	3
0.002	2
0.001	0



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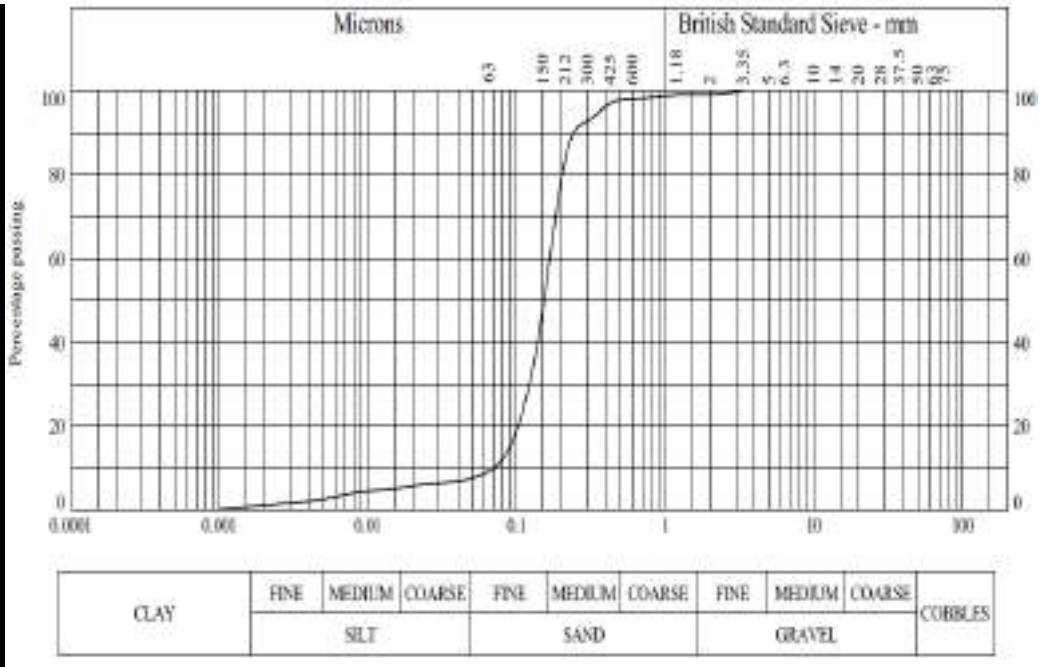
Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C21	**Sampling Date**	04/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	14/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.60	98
0.425	97
0.300	93
0.212	84
0.150	48
0.075	11
0.063	9
0.023	6
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0



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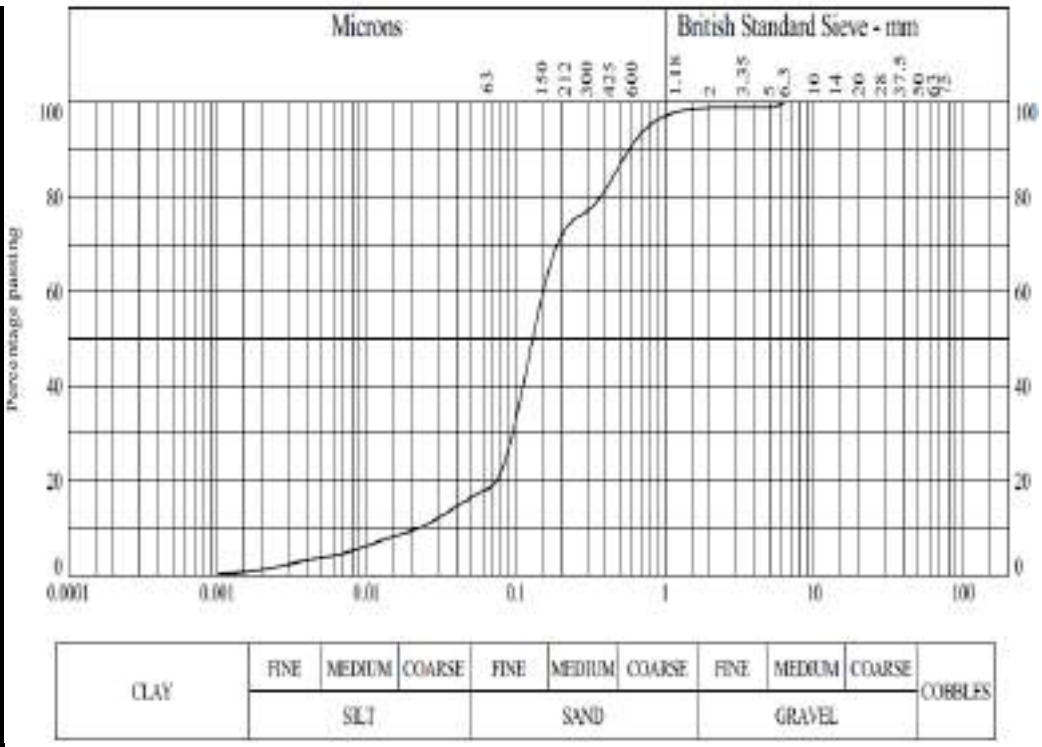
Table C-1 (13)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT8
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C21	**Sampling Date**	04/07/2015
Depth (m)	7.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	14/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	99
1.18	98
0.60	91
0.425	83
0.300	77
0.212	73
0.150	59
0.075	20
0.063	18
0.023	10
0.015	8
0.008	5
0.006	4
0.004	3
0.002	1
0.001	0



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Table C-1 (14)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P	**Date Reported**	02/08/2015
Customer	N.P	**Sample No.**	SPT10
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-4
Project No.	XSD/15-0143-4		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-C21	**Sampling Date**	04/07/2015
Depth (m)	9.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	Matrix
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	14/07/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	99
3.35	98
2	97
1.18	96
0.60	92
0.425	86
0.300	78
0.212	72
0.150	57
0.075	25
0.063	12
0.023	10
0.015	5
0.008	4
0.006	3
0.004	2
0.002	1
0.001	0

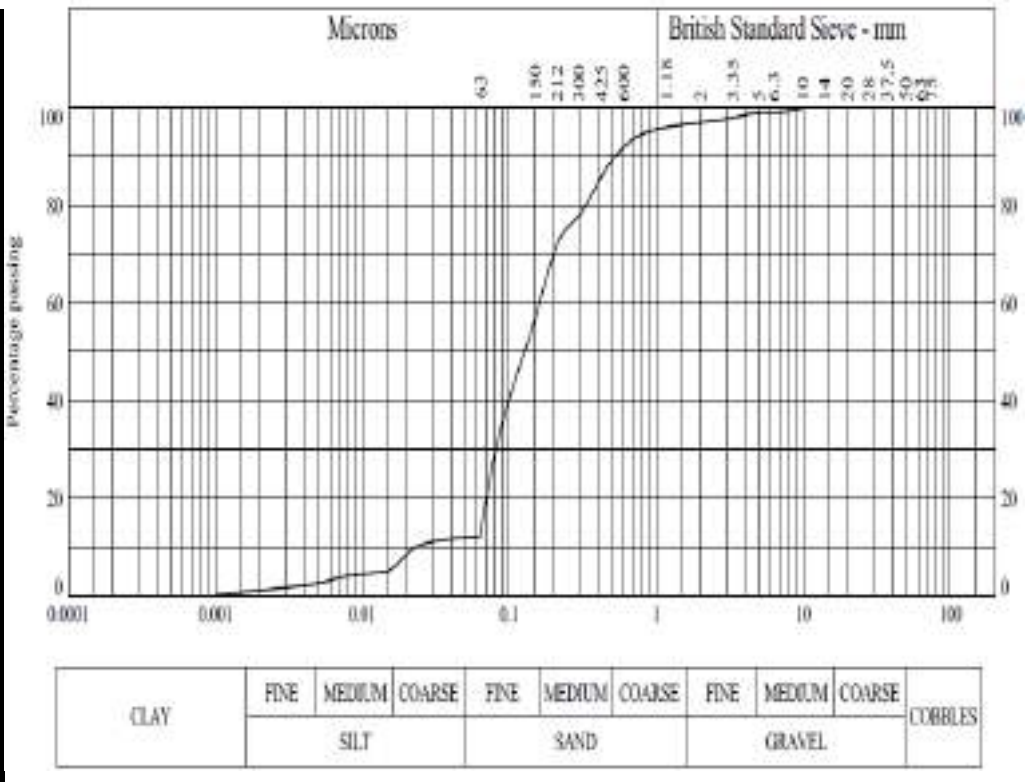


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Date Received**	12-21/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	13-22/07/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	04-11/07/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A03	1.00	7.6
BH-A03	2.00	9.6
BH-A03	4.00	11.7
BH-A04	1.00	13.0
BH-A04	2.00	13.0
BH-A04	5.00	4.3
BH-A05	1.00	7.0
BH-A05	5.00	18.0
BH-A06	2.00	9.0
BH-A06	6.50	15.0
BH-A07	1.00	15.0
BH-A07	6.00	20.0

Borehole No.	Depth	Moisture Content (%)
BH-A07	9.00	14.0
BH-A08	1.00	19.0
BH-A08	3.00	21.0
BH-A08	8.00	15.0
BH-A08	11.00	22.0
BH-A09	1.00	15.0
BH-A09	3.00	16.0
BH-A09	5.00	12.0
BH-B11	1.00	11.0
BH-B11	4.00	12.0
BH-B11	8.00	16.0
BH-B12	1.00	2.4
BH-B12	2.00	7.1
BH-B12	3.00	15.0
BH-B13	1.00	9.0
BH-B13	3.00	12.0
BH-B14	1.00	4.1
BH-B14	5.00	11.2
BH-C20	1.00	19.0
BH-C20	3.00	19.0
BH-C20	6.50	16.0
BH-C21	1.00	6.2

Borehole No.	Depth	Moisture Content (%)
BH-C21	5.00	12.0
BH-C21	7.00	9.1
BH-C21	9.00	21.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Date Received**	09/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	11/07/2015
Sample Description	Soil	**Sampling Date**	06/07/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-B11	2.00	2.60

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Date Received**	12-20/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	13-22/07/2015
Sample Description	SAND	**Sampling Date**	04-11/07/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Arlene
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-A05	2.00	100	<0.1
BH-A06	2.00	100	<0.1
BH-A08	2.00	100	0.1
BH-B14	2.00	100	0.2

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Date Received**	13-16/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	04-11/07/2015
Sample Description	ROCK CORE	**Date Tested**	14-20/07/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Arlene

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-A07	8.18	16.32	37.16
BH-B14	9.00	35.95	81.88

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Dubai, U.A.E

The results relate only to the samples tested.

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TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	N.P.	**Date Reported**	02/08/2015
Consultant	CH2M MACE JV	**Date Received**	09-20/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	09-20/07/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	04-12/07/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A03	7.80	1	1.05	Vertical
BH-A03	14.60	2	0.54	Vertical
BH-A04	9.20	3	0.45	Vertical
BH-A04	17.10	4	0.35	Vertical
BH-A05	7.50	5	1.05	Vertical
BH-A05	17.60	6	0.09	Vertical
BH-A06	16.30	7	1.17	Vertical
BH-A07	16.80	8	1.05	Vertical
BH-A08	14.90	9	0.54	Vertical
BH-A09	5.18	10	0.05	Vertical
BH-A09	12.10	11	0.33	Vertical
BH-B11	9.00	12	0.41	Vertical
BH-B11	18.10	13	0.32	Vertical
BH-B11	26.10	14	0.29	Vertical
BH-B11	33.80	15	0.19	Vertical
BH-B12	4.70	16	0.65	Vertical
BH-B12	8.80	17	0.81	Vertical
BH-B12	9.10	18	0.55	Vertical
BH-B12	18.00	19	1.52	Vertical
BH-B12	24.50	20	1.08	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-B13	6.80	21	0.47	Vertical
BH-B13	15.00	22	1.01	Vertical
BH-B13	30.70	23	0.54	Vertical
BH-B13	38.80	24	0.65	Vertical
BH-B14	7.50	25	0.47	Vertical
BH-B14	27.10	26	1.08	Vertical
BH-B14	32.80	27	0.08	Vertical
BH-C20	13.50	28	0.12	Vertical
BH-C20	21.60	29	0.25	Vertical
BH-C20	34.20	30	1.44	Vertical
BH-C20	42.80	31	0.33	Vertical
BH-C20	58.30	32	0.45	Vertical
BH-C21	16.80	33	1.08	Vertical
BH-C21	23.10	34	0.12	Vertical
BH-C21	37.80	35	1.04	Vertical
BH-C21	41.20	36	0.58	Vertical
BH-C21	57.20	37	0.85	Vertical

Engr. Rabih Dakwar
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Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	02/08/2015
Sample Description	Rock	**Date Received**	15-26/07/2015
Sample Source	Site	**Date Tested**	15-26/07/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	25
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin / Rojan

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-A03	9.80	1	7.50	15.00	4.2	2.07	204.4	18.00	2.09	Figure C-1	cal. CONGLOMERATE
BH-A03	17.30	2	7.40	15.30	2.6	1.24	210.3	30.00	1.92	Figure C-2	cal. CONGLOMERATE
BH-A04	19.50	3	7.40	15.30	2.4	0.98	240.4	10.00	1.92	Figure C-3	cong. SILTSTONE
BH-A05	18.80	4	7.50	15.40	2.8	1.04	273.0	12.70	1.97	Figure C-4	cong. SILTSTONE
BH-A06	10.60	5	7.40	15.20	4.6	1.51	301.4	12.00	2.07	Figure C-5	cong. SILTSTONE
BH-A09	6.50	6	7.50	15.20	4.0	1.58	254.6	8.00	1.96	Figure C-6	cal. SANDSTONE
BH-B11	38.40	7	7.50	15.20	4.8	1.51	320.4	11.70	1.89	Figure C-7	cal. SILTSTONE
BH-B12	5.20	8	7.50	15.20	3.3	1.64	201.9	16.60	1.81	Figure C-8	cal. SANDSTONE
BH-B12	13.60	9	7.50	15.40	3.9	1.36	284.6	22.00	1.86	Figure C-9	cal. SILTSTONE
BH-B12	33.30	10	7.50	15.50	2.9	1.35	212.3	17.40	1.92	Figure C-10	cal. SILTSTONE
BH-B13	4.20	11	7.50	15.20	2.6	1.32	200.6	15.20	1.93	Figure C-11	cal. SANDSTONE
BH-B13	18.60	12	7.50	15.30	3.1	1.37	227.2	20.10	1.91	Figure C-12	cal. SILTSTONE
BH-B13	21.50	13	7.00	15.20	8.5	3.29	259.4	13.70	1.97	Figure C-13	cal. SILTSTONE
BH-B13	35.50	14	7.40	15.20	4.8	2.04	237.2	16.90	1.86	Figure C-14	cal. SILTSTONE
BH-B14	9.10	15	7.40	15.00	2.1	0.93	225.0	8.30	1.77	Figure C-15	cal. SANDSTONE
BH-B14	11.10	16	7.50	15.20	1.9	0.92	205.8	12.50	1.85	Figure C-16	cal. SANDSTONE
BH-B14	25.60	17	7.50	15.20	4.8	1.64	295.0	16.00	1.89	Figure C-17	cal. SILTSTONE
BH-B14	31.00	18	7.40	15.20	7.5	1.91	394.0	11.70	2.04	Figure C-18	cal. SILTSTONE
BH-B14	35.30	19	7.40	15.40	3.5	1.43	245.7	13.80	2.06	Figure C-19	cal. SILTSTONE
BH-C20	8.85	20	7.50	15.50	2.3	1.10	205.9	14.80	1.98	Figure C-20	cal. SANDSTONE
BH-C20	26.40	21	7.40	15.30	3.7	1.24	298.7	12.90	1.97	Figure C-21	cal. SILTSTONE
BH-C20	36.85	22	7.50	15.40	4.3	1.82	234.9	10.80	1.99	Figure C-22	cal. SILTSTONE
BH-C20	46.83	23	6.30	15.10	4.3	1.52	284.9	15.10	1.97	Figure C-23	cong. SILTSTONE
BH-C20	56.50	24	7.50	15.20	3.4	1.64	207.2	15.50	1.85	Figure C-24	cal. SILTSTONE

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-C21	24.20	25	7.50	15.20	3.8	1.58	241.3	12.50	1.86	Figure C-25	cal. SILTSTONE
BH-C21	43.70	26	7.40	15.40	2.1	1.17	176.5	17.80	2.00	Figure C-26	cal. SILTSTONE
BH-C21	54.80	27	7.50	15.50	4.1	1.87	220.0	14.90	1.82	Figure C-27	cal. SILTSTONE

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The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

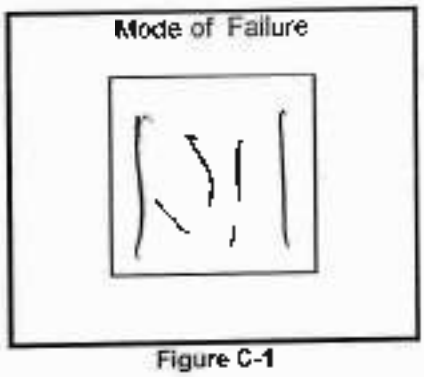


Figure C-1

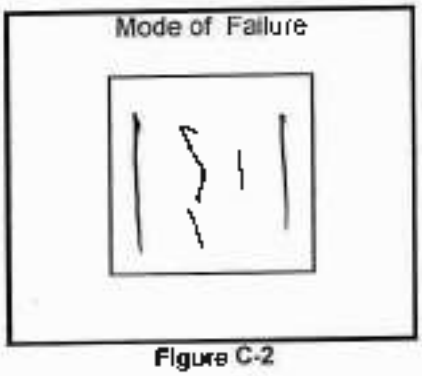


Figure C-2

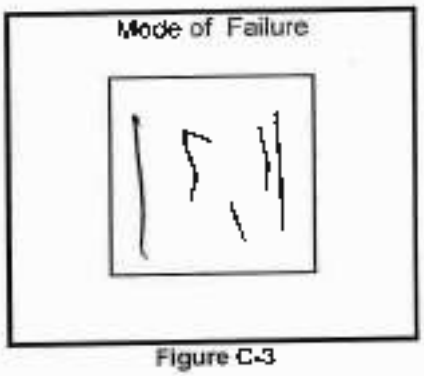


Figure C-3

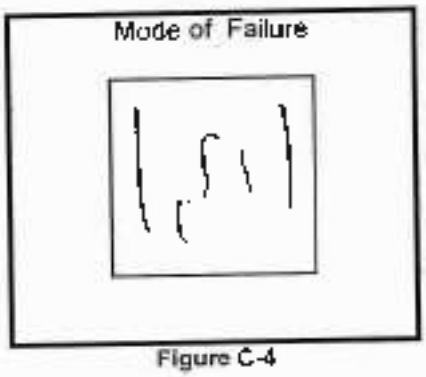


Figure C-4

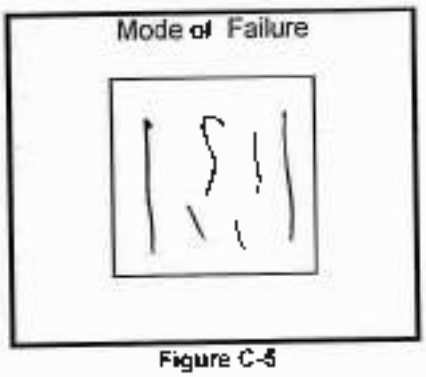


Figure C-5

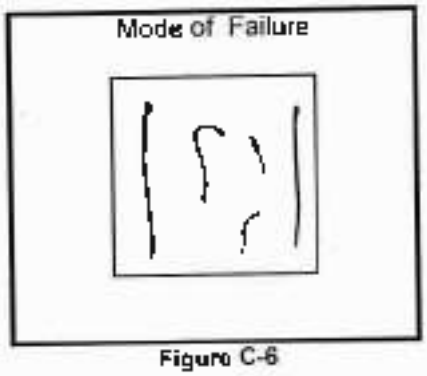


Figure C-6

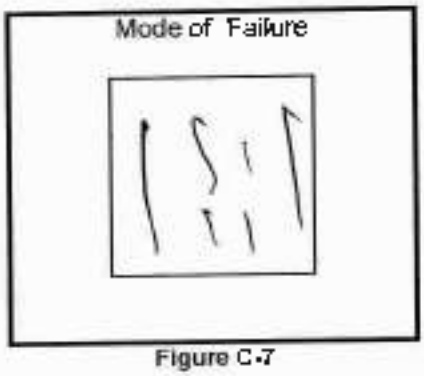


Figure C-7

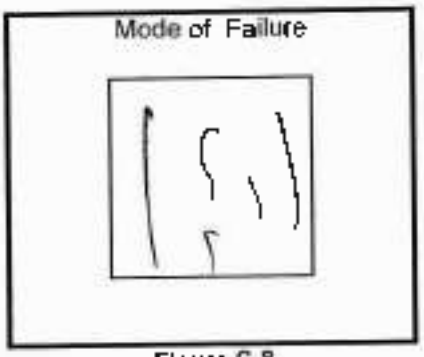


Figure C-8

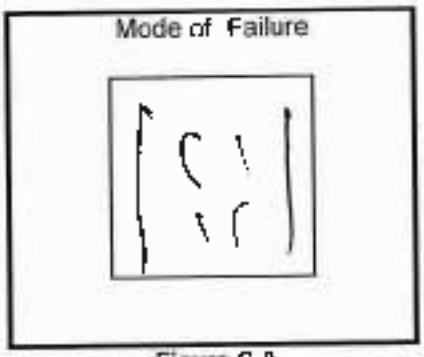


Figure C-9

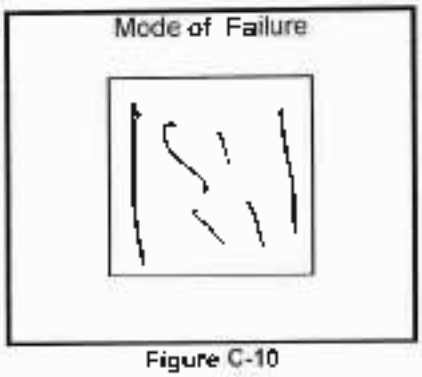


Figure C-10

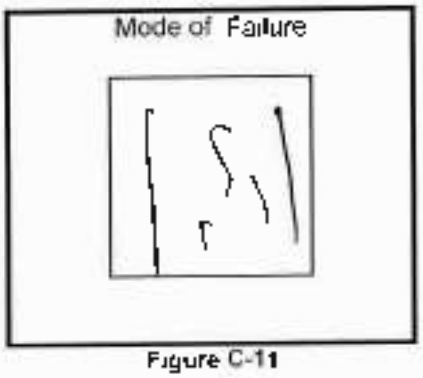


Figure C-11

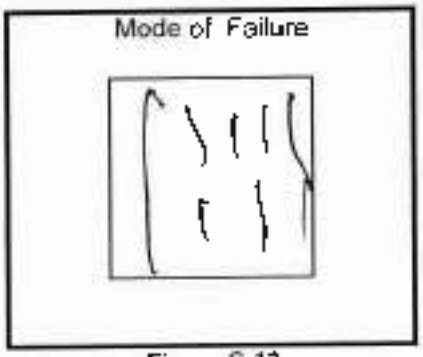


Figure C-12

TYPE OF FRACTURES FOR CORES

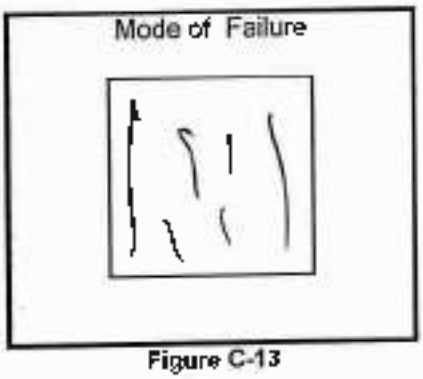


Figure C-13

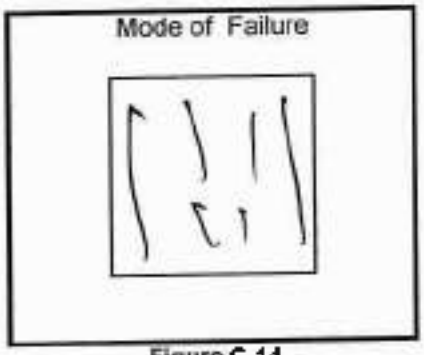


Figure C-14

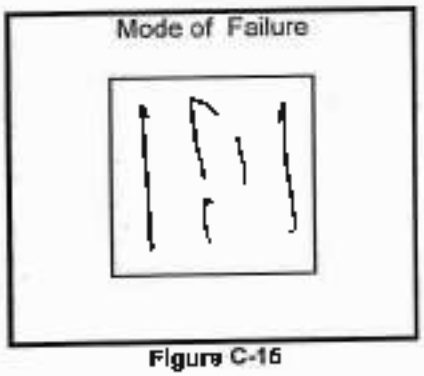


Figure C-15

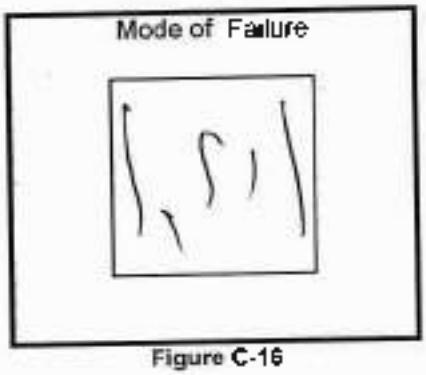


Figure C-16

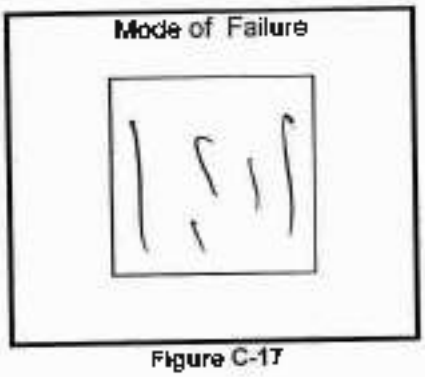


Figure C-17

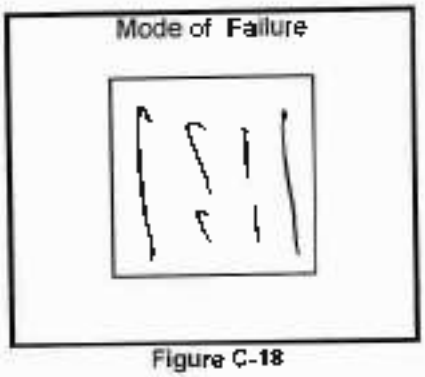


Figure C-18

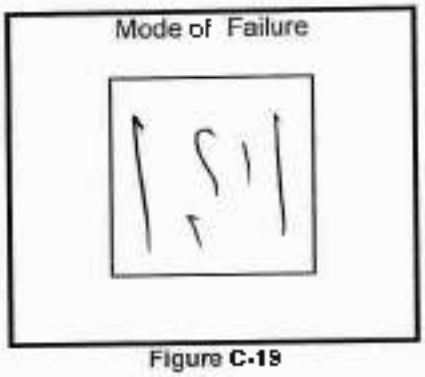


Figure C-19

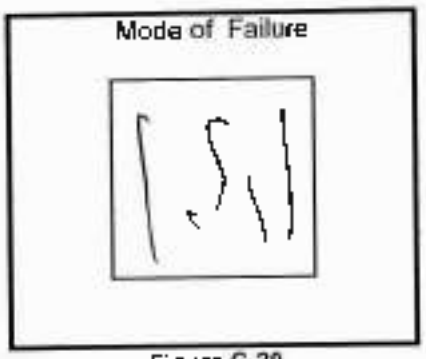


Figure C-20

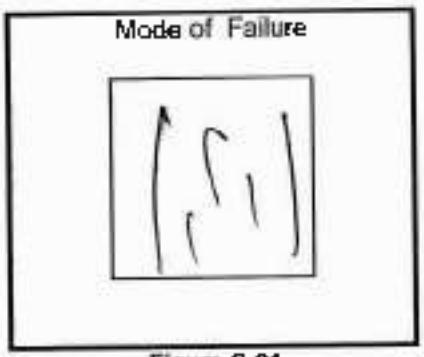


Figure C-21

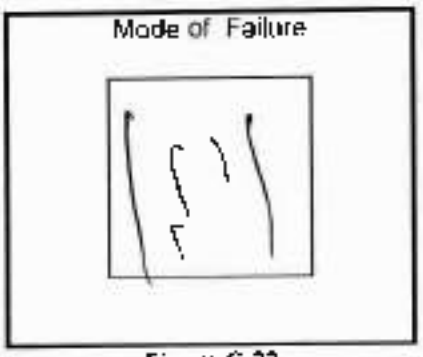


Figure C-22

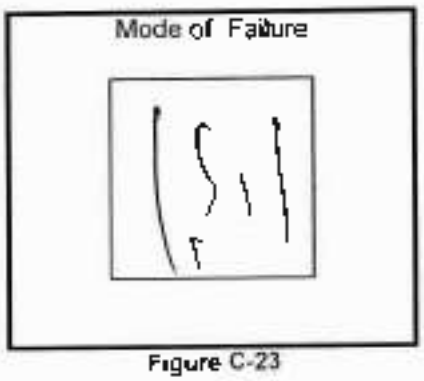


Figure C-23

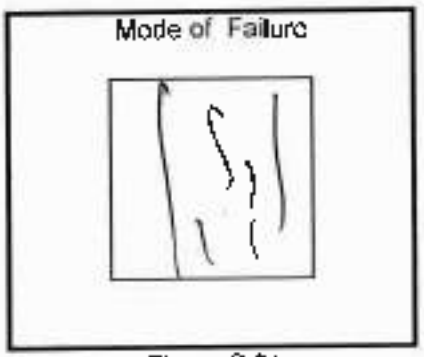


Figure C-24

TYPE OF FRACTURES FOR CORES

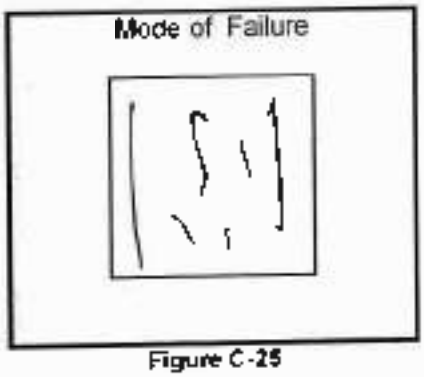


Figure C-25

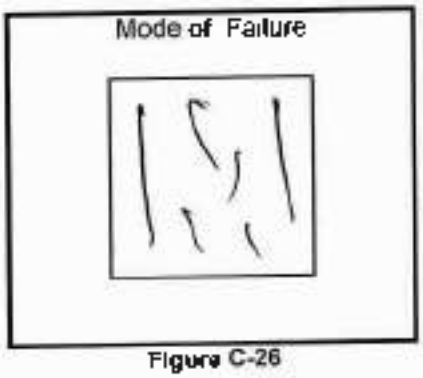


Figure C-26

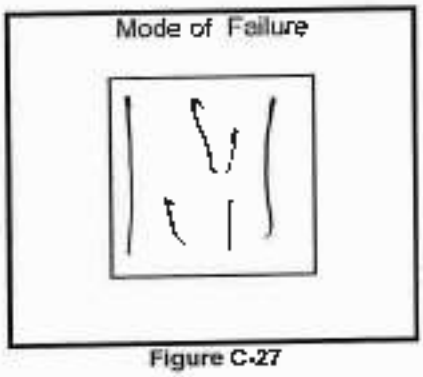
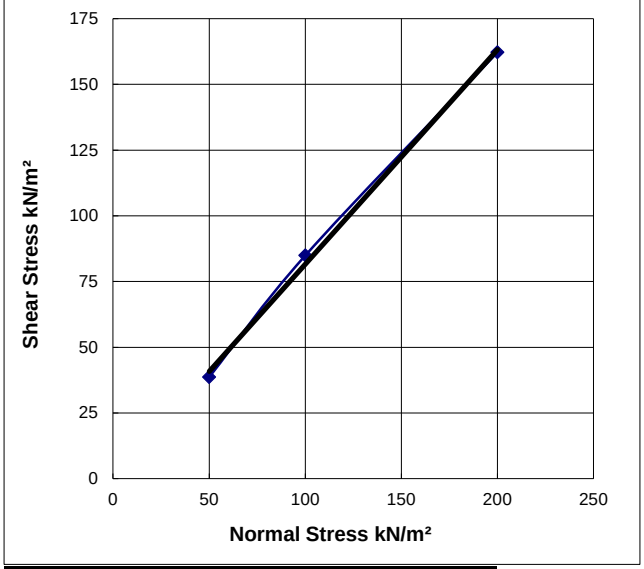


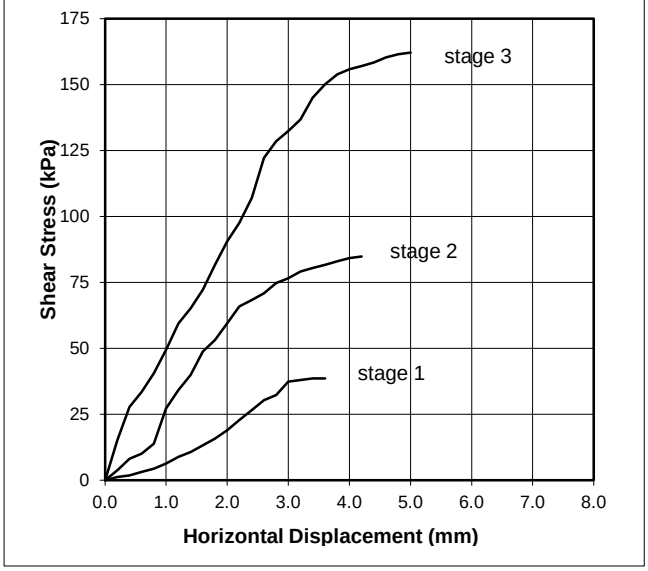
Figure C-27

MATRIX LABORATORY L.L.C.

TABLE C 8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Consultant	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT8
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A06	**Date Tested**	11-12/07/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

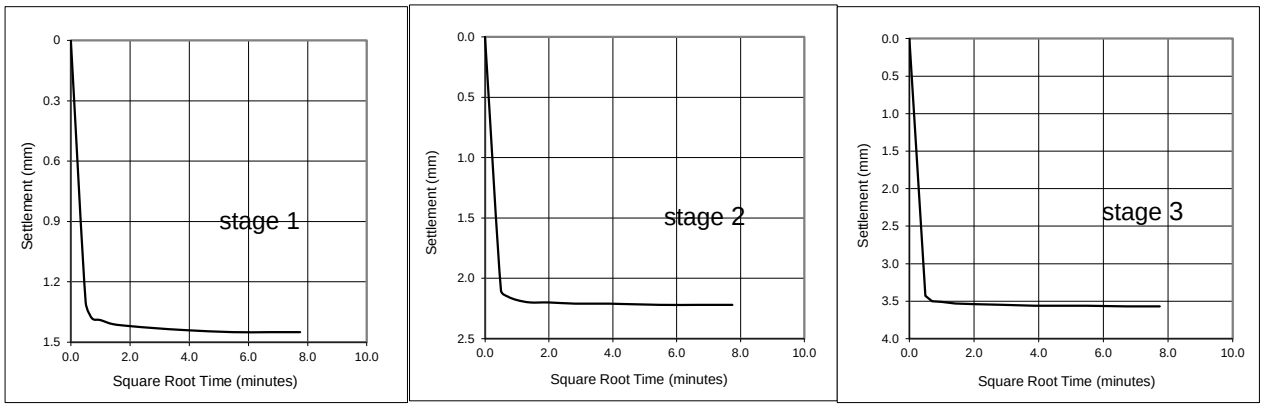
Apparent Cohesion = 0.00 kN/m²

Angle of Shearing Resistance = 39.22º

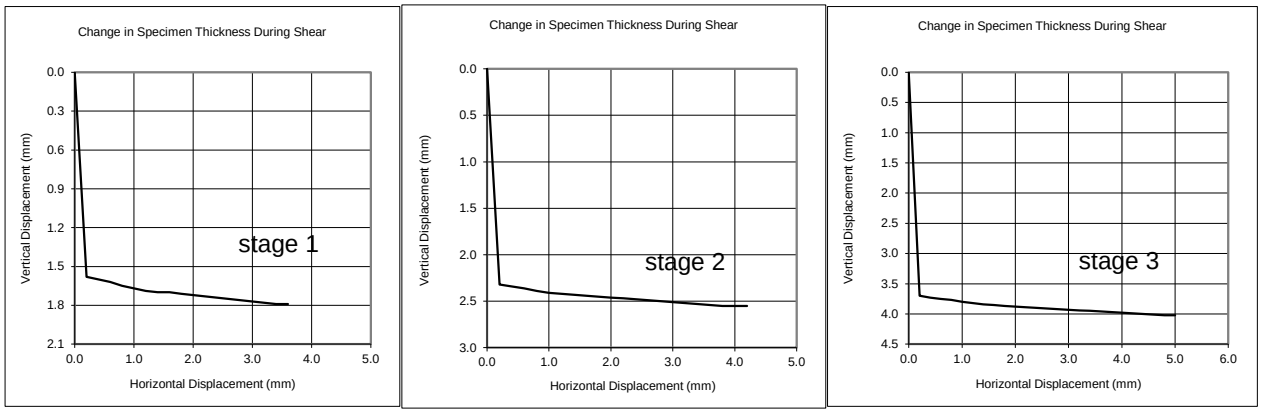
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Consultant	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT8
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A06	**Date Tested**	11-12/07/2015
Depth (m)	3.00		
Rate of Displacement	1.25 mm/min	**Dry Density (Mg/m³)**	1.66
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	Erwin

Consolidation Stage



Shearing Stage

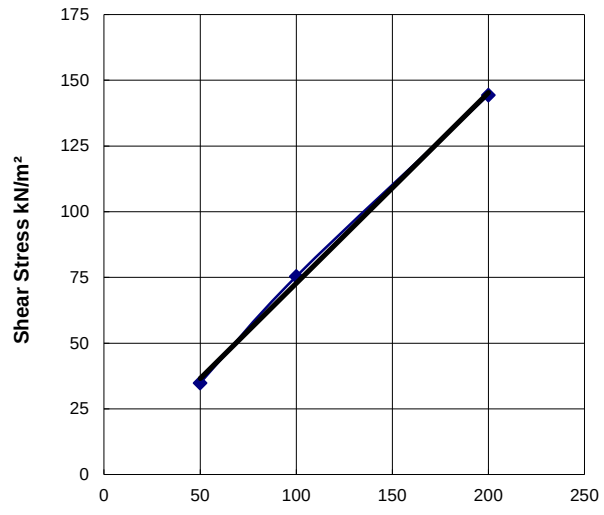


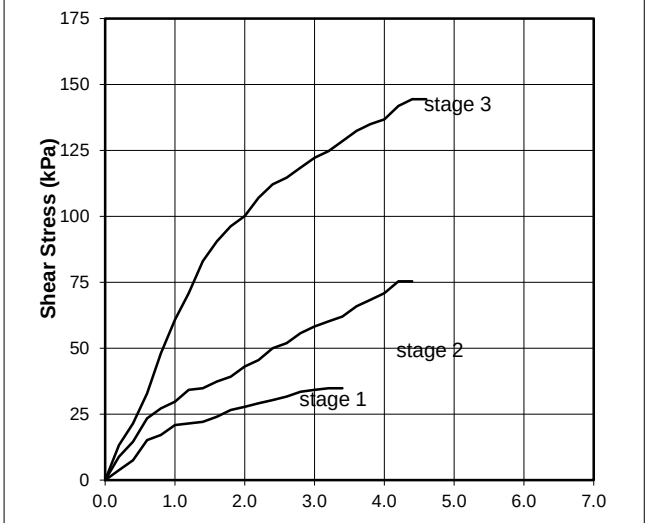
MATRIX LABORATORY L.L.C.

TABLE C 8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Consultant	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A08	**Date Tested**	13-14/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

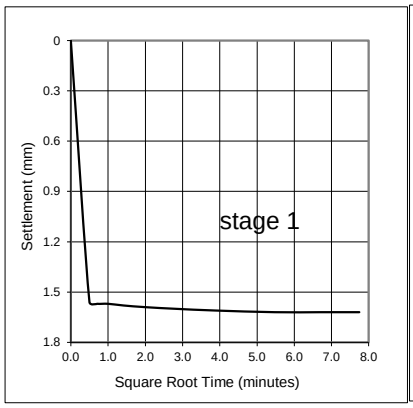
Apparent Cohesion =0.0 kN/m²

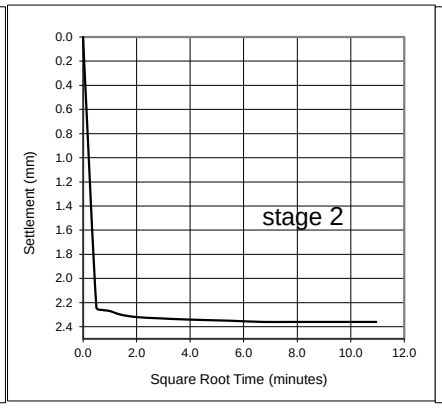
Angle of Shearing Resistance = 36.0º

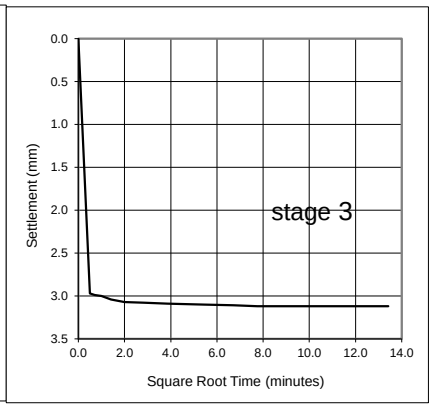
TABLE C 8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A08	**Date Tested**	13-14/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

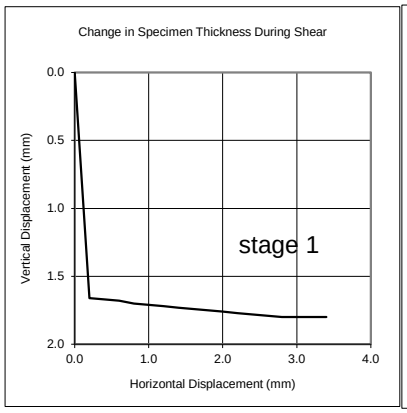
Consolidation Stage

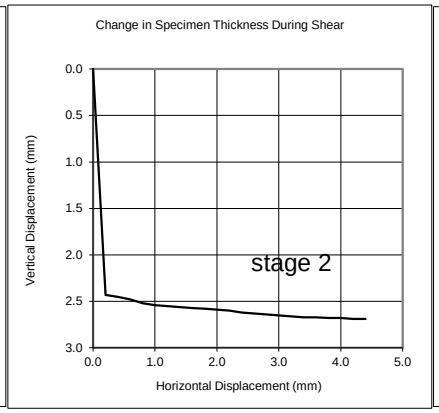


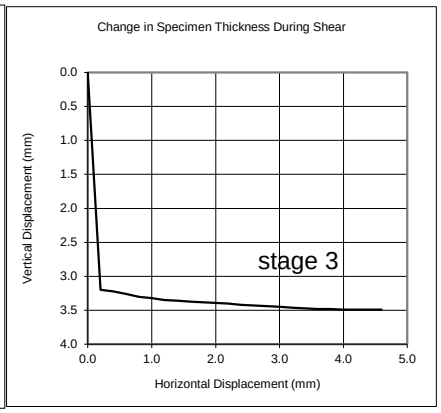




Shearing Stage



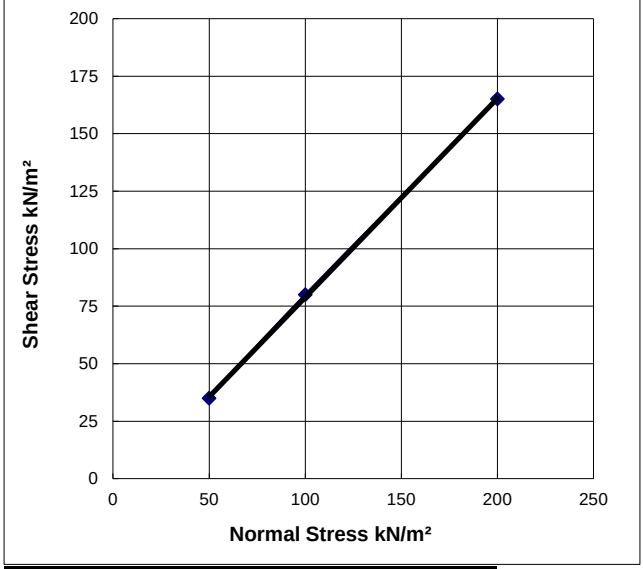


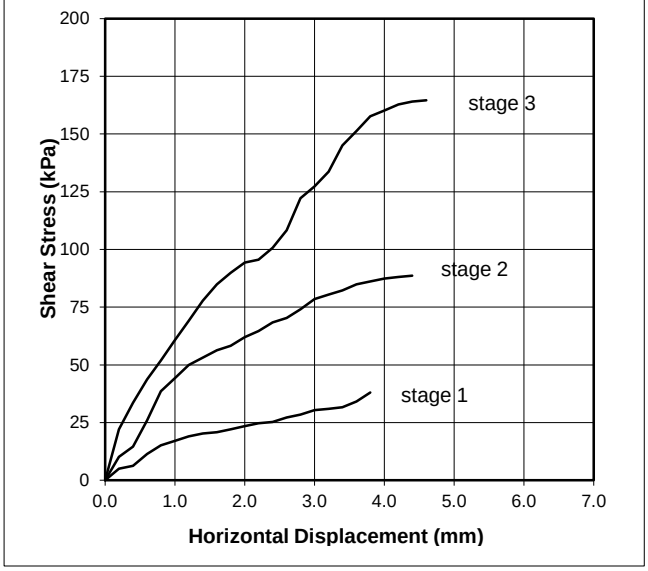


MATRIX LABORATORY L.L.C.

TABLE C 8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Consultant	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B12	**Date Tested**	13-14/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

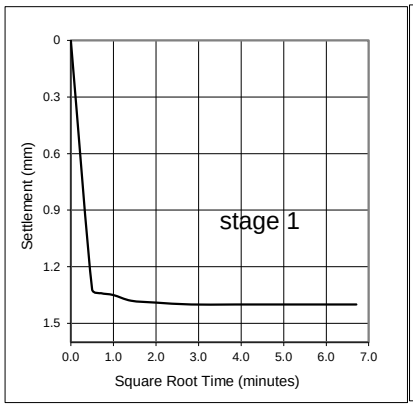
Apparent Cohesion = 0.0 kN/m²

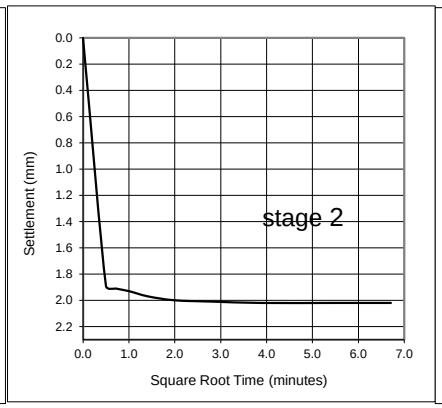
Angle of Shearing Resistance = 40.9º

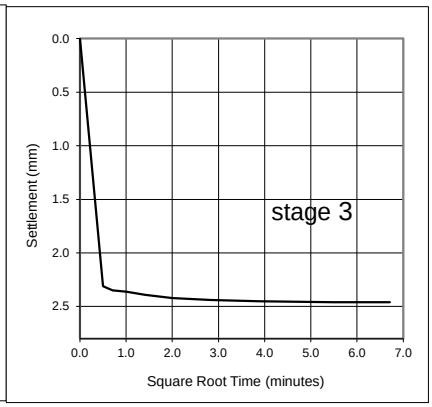
TABLE C 8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B12	**Date Tested**	13-14/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.63
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

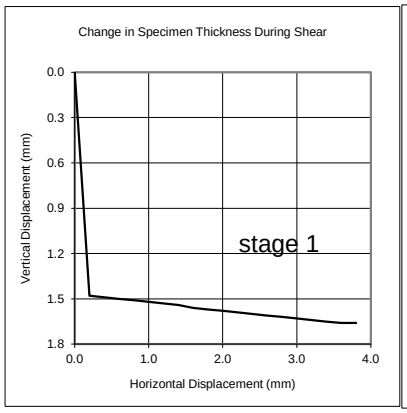
Consolidation Stage

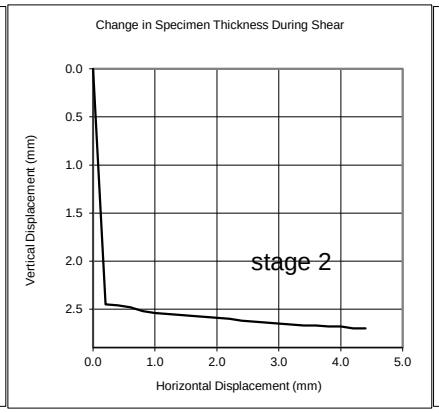


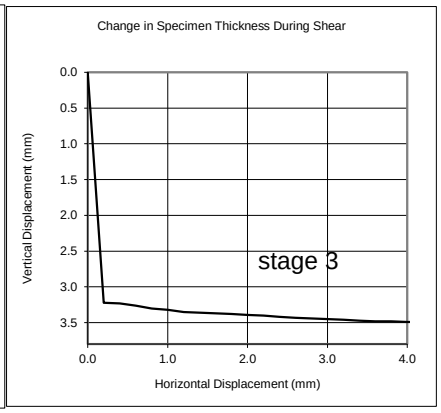




Shearing Stage





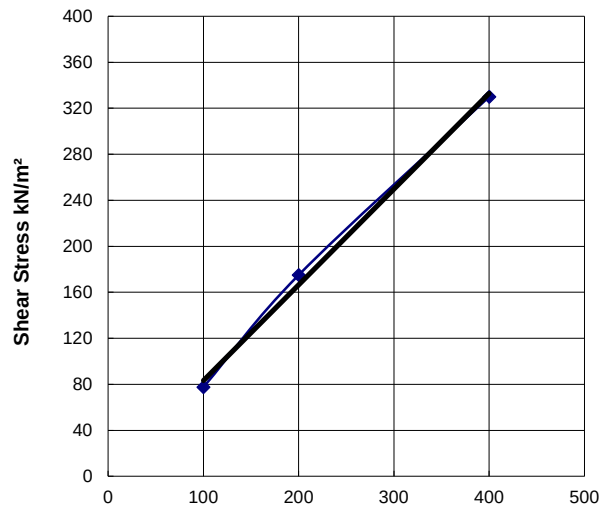


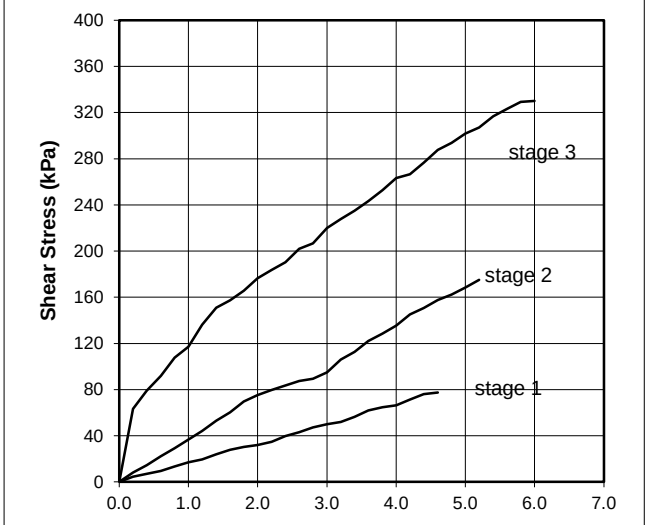
MATRIX LABORATORY L.L.C.

TABLE C 8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Consultant	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C02	**Date Tested**	08-09/07/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters
Apparent Cohesion = 0 kN/m²
Angle of Shearing Resistance = 40.00º

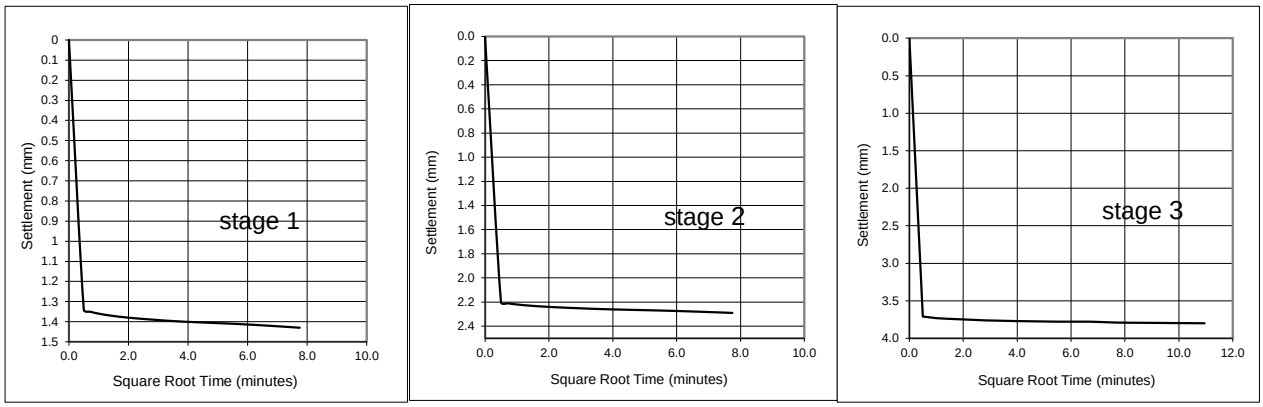
TABLE C 8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-4
Contractor	CH2M MACE JV	**Date Reported**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 521-9784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-4

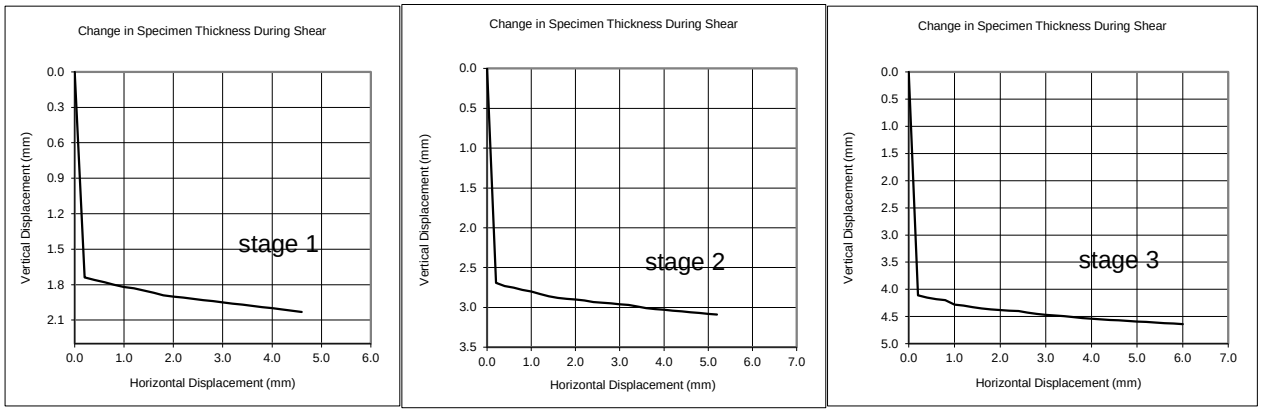
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C02	**Date Tested**	08-09/07/2015
Depth (m)	3.00		

Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.66
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	JOMESH

Consolidation Stage



Shearing Stage



APPENDIX C5

LABORATORY TEST RESULTS (ZONE 5)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Sampling Date**	11-13/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	26/07-04/08/2015
Test Method	See below	**Date Tested**	27/07-08/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A10	SPT2	1.00	0.3	0.02	7.9 @ 29°C	DS-1
BH-A12	SPT2	1.00	1.4	0.12	8.2 @ 27°C	DS-2
BH-A15	SPT3	2.00	0.3	0.02	8.2 @ 28°C	DS-1
BH-B59	SPT3	2.00	0.1	0.01	8.2 @ 29°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Sampling Date**	27-29/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	27-29/07/2015
Test Method	See below	**Date Tested**	27-30/07/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A12	9.80	1.40	0.15	8.4 @ 26°C	DS-2
BH-B57	10.70	2.06	0.82	8.2 @ 27°C	DS-3

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

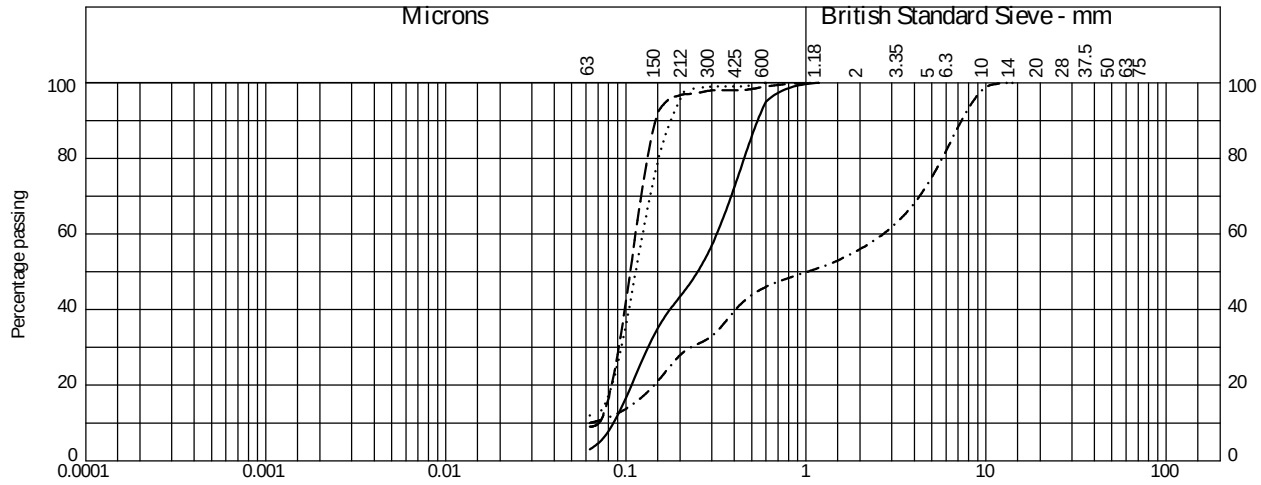
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A10	SPT3	135.6	———	SL. SILTY, F-M SAND (SP)	2.00
BH-A10	SPT5	135.6	– – –	SILTY, FINE SAND (S-M)	4.00
BH-A10	SPT6	135.9	.....	SILTY, FINE SAND (S-M)	5.00
BH-A10	SPT7	135.4	– · – · –	V. GRAVELLY, SILTY, SAND (S-M)	6.50

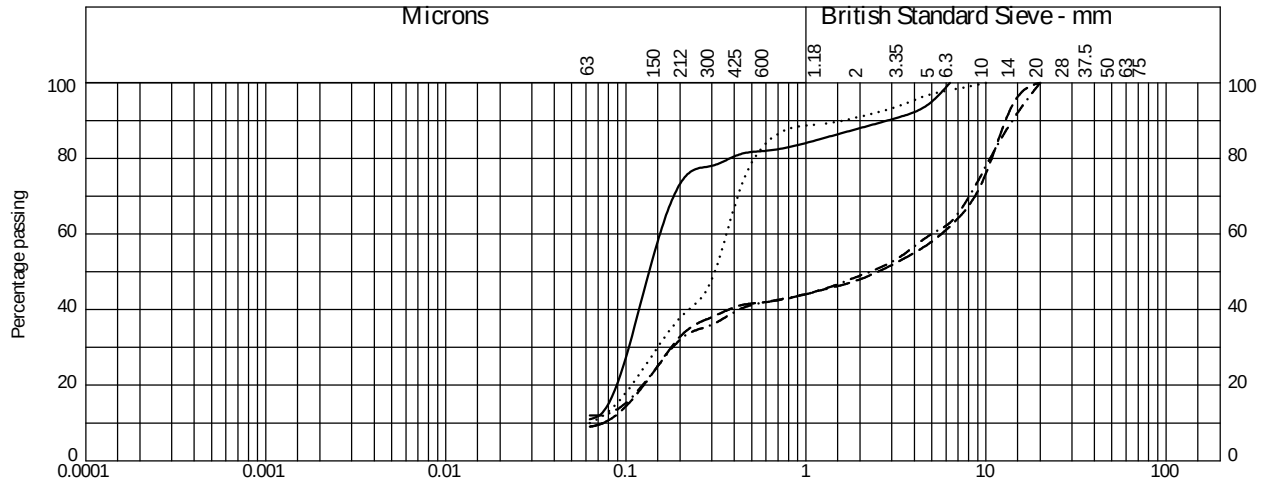
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A11	SPT3	132.3	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-A11	SPT5	135.7	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-A12	SPT2	140.7	.....	GRAVELLY, SILTY, F-M SAND (S-M)	1.00
BH-A12	SPT4	136.1	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00

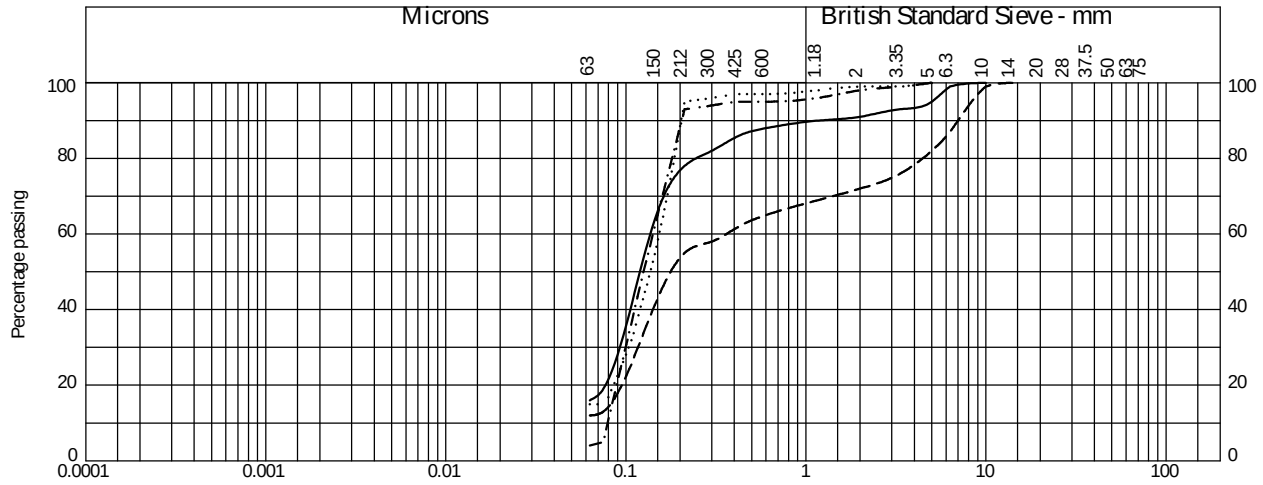
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A13	SPT2	140.2	———	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-A13	SPT4	146.5	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-A14	SPT2	130.0	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-A14	SPT4	136.4	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00

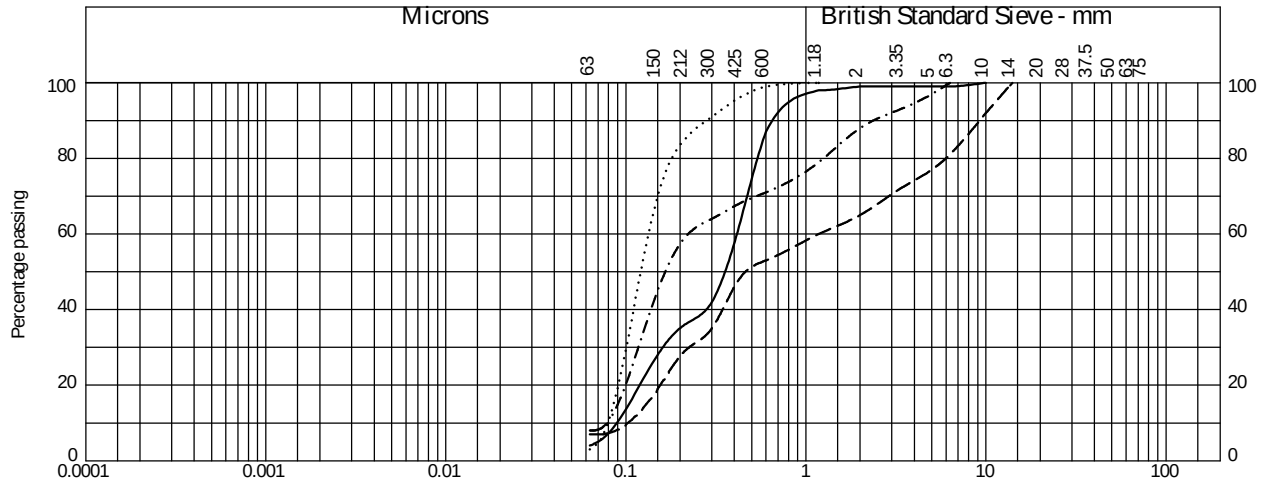
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A15	SPT2	132.8	———	SL. GRAVELLY, SL. SILTY, F-M SAND (SP)	1.00
BH-A15	SPT4	134.7	– – –	V. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A16	SPT3	134.6	.....	SL. SILTY, FINE SAND (SP)	2.00
BH-A16	SPT4	126.7	– · – · –	GRAVELLY, SILTY, FINE SAND (S-M)	3.00

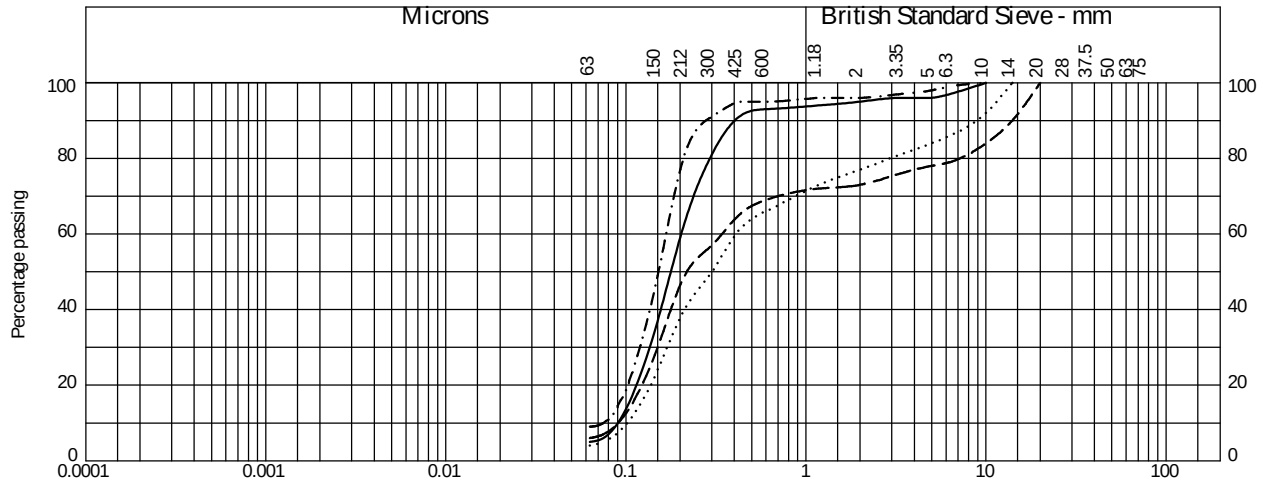
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A42	SPT2	133.0	———	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A42	SPT3	132.7	– – –	V. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-A42	SPT4	136.4	.....	V. GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00
BH-A44	SPT2	134.6	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00

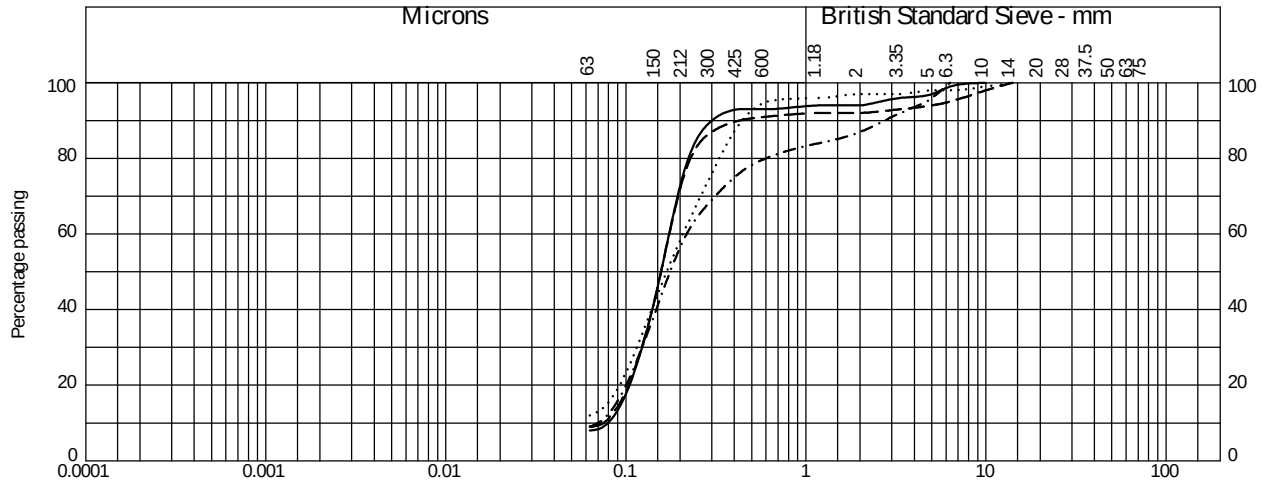
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A44	SPT3	140.1	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-A44	SPT4	135.7	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-A44	SPT5	135.4	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-B56	SPT2	137.7	– · – · –	GRAVELLY, SILTY, M-F SAND (S-M)	1.00

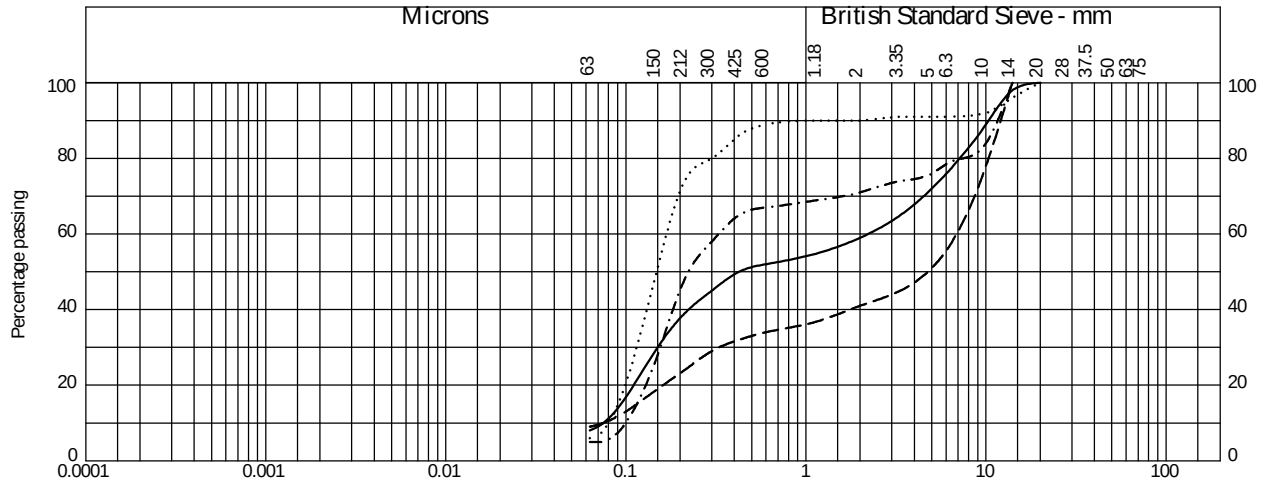
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B56	SPT4	135.8	———	V. GRAVELLY, SILTY, FINE SAND (S-M))	3.00
BH-B56	SPT5	134.5	– – –	V. GRAVELLY, SILTY, SAND (S-M)	4.00
BH-B57	SPT2	130.4	.....	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B57	SPT3	133.8	– · – · –	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00

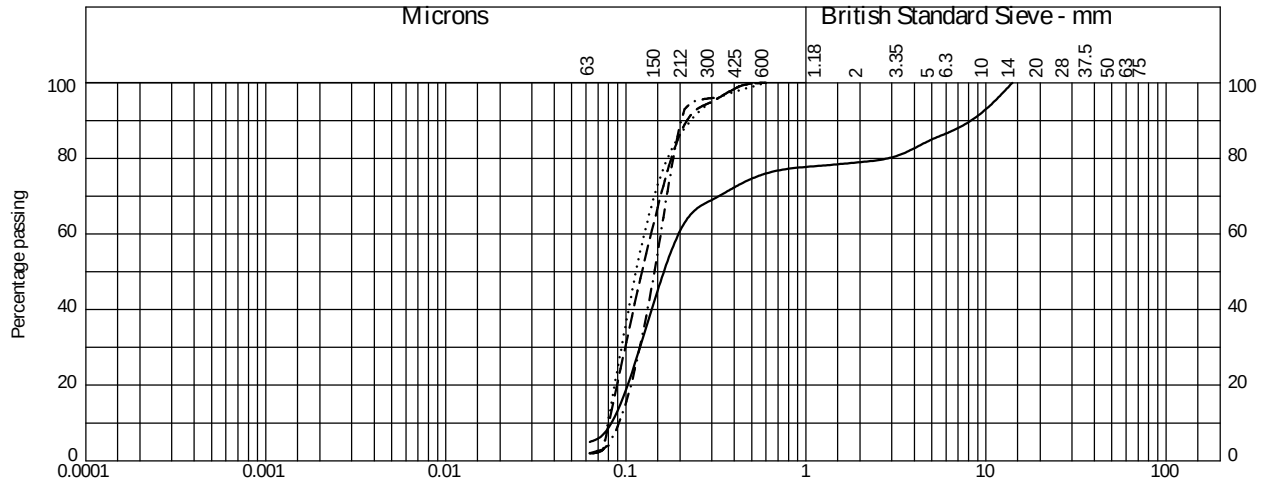
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B57	SPT4	124.1	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B58	SPT2	133.1	– – –	SL. SILTY, FINE SAND (SP)	1.00
BH-B58	SPT4	122.4	.....	SL. SILTY, FINE SAND (SP)	3.00
BH-B58	SPT7	128.5	– . – . –	SL. SILTY, FINE SAND (SP)	6.50

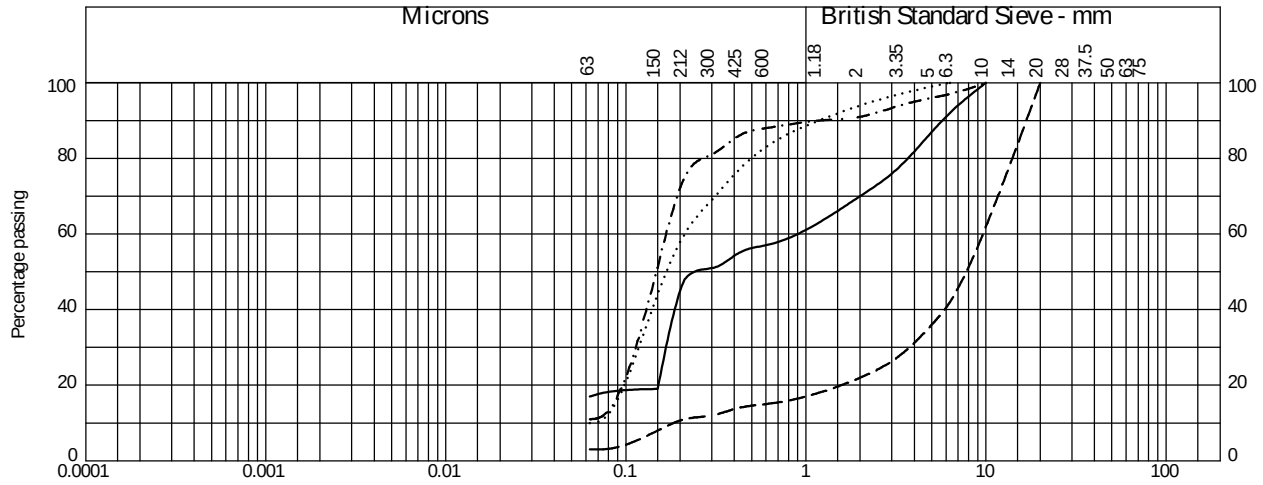
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B58	SPT9	130.0	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	9.50
BH-B58	SPT12	139.8	– – –	V. GRAVELLY, SL. SILTY, SAND (SP)	11.00
BH-B59	SPT2	136.0	.....	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B59	SPT4	127.4	–.–.–	GRAVELLY, SILTY, FINE SAND (S-M)	3.00

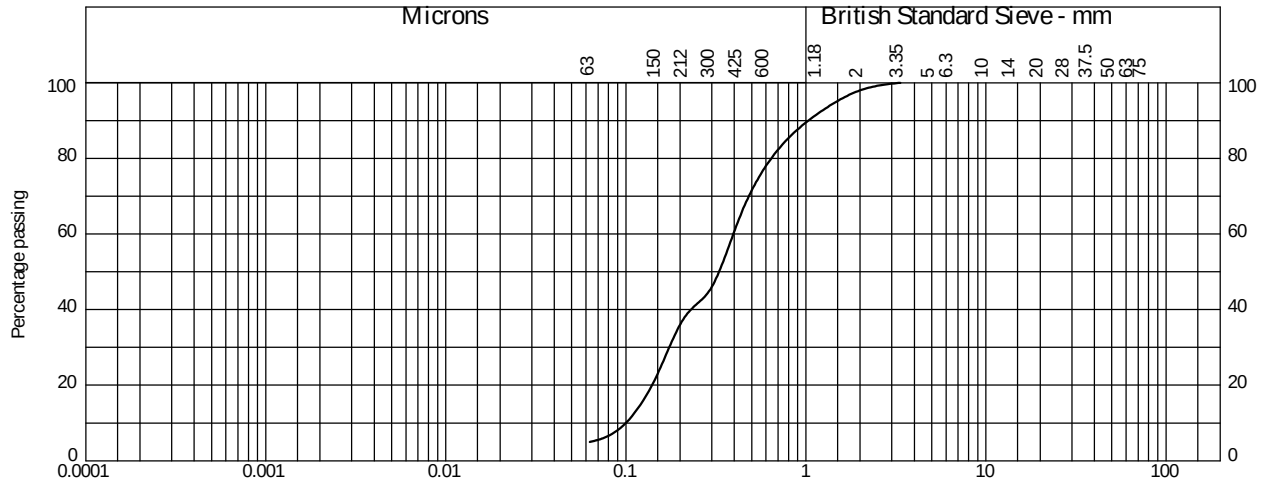
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-5
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-5
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	21/07-10/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	23/07-12/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B59	SPT7	135.1	———	SL. GRAVELLY, SILTY, SAND (S-M)	5.00
			– – –		
			.....		
			–·–·–		

The results relate only to the samples tested.

Table C-1 (1)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA10	**Sampling Date**	11/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	99
0.425	98
0.300	98
0.212	97
0.15	92
0.075	75
0.063	60
0.028	40
0.018	30
0.010	20
0.007	10
0.005	8
0.002	4
0.001	0

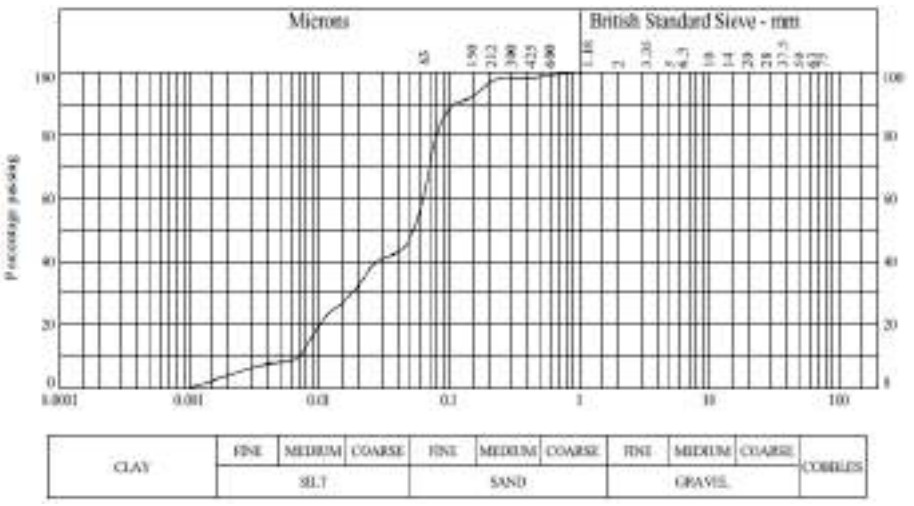


Table C-1 (2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA10	**Sampling Date**	11/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.600	100
0.425	99
0.300	99
0.212	98
0.15	79
0.075	50
0.063	40
0.028	30
0.018	20
0.010	10
0.007	9
0.005	7
0.002	3
0.001	0

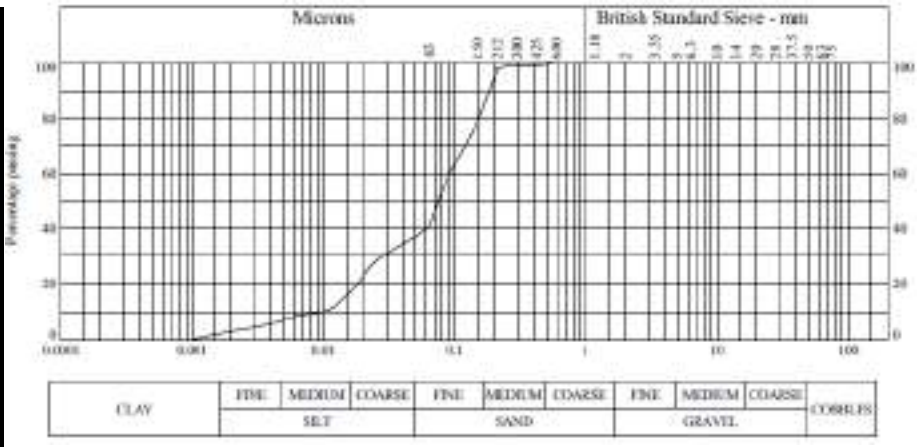


Table C-1 (3)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA10	**Sampling Date**	11/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	84
5	75
3.35	64
2	56
1.18	51
0.600	46
0.425	41
0.300	33
0.212	29
0.15	21
0.075	11
0.063	10
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

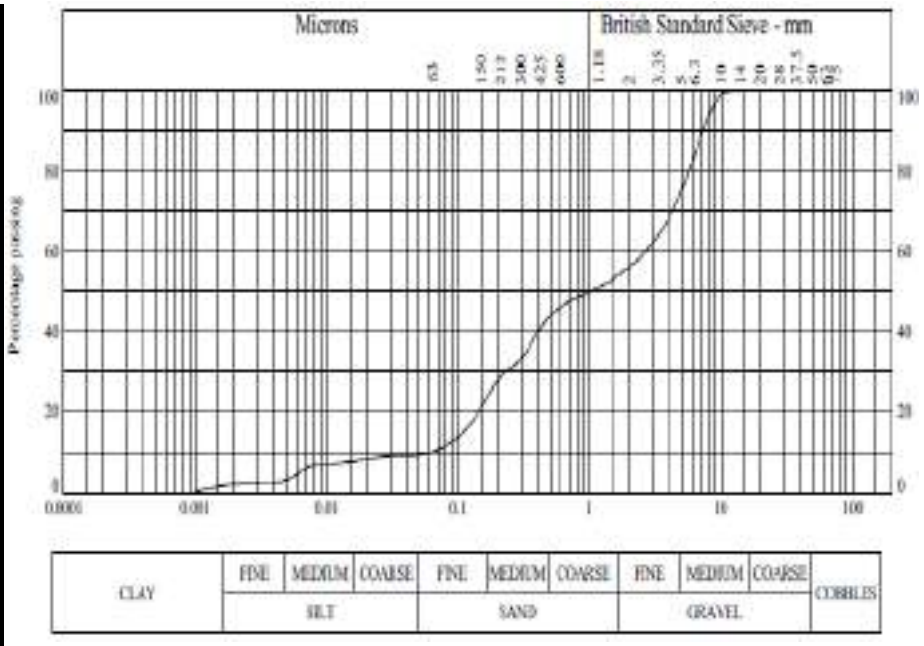


Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA11	**Sampling Date**	11/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	95
3.35	91
2	88
1.18	85
0.600	82
0.425	81
0.300	78
0.212	75
0.15	58
0.075	40
0.063	30
0.028	25
0.018	20
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

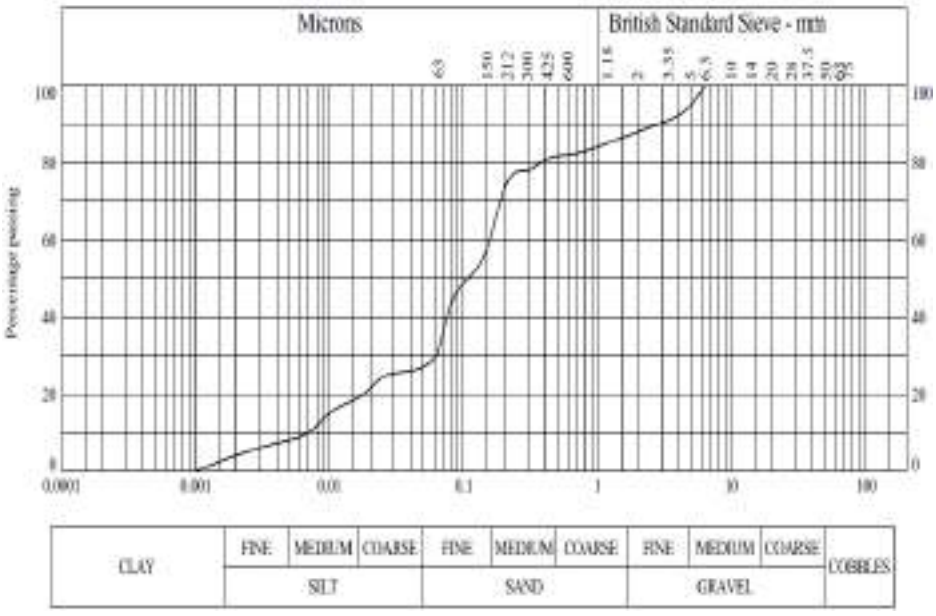


Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA11	**Sampling Date**	11/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	76
6.3	62
5	58
3.35	53
2	48
1.18	45
0.600	42
0.425	41
0.300	38
0.212	34
0.15	25
0.075	22
0.063	20
0.028	18
0.018	15
0.010	10
0.007	8
0.005	5
0.002	2
0.001	0

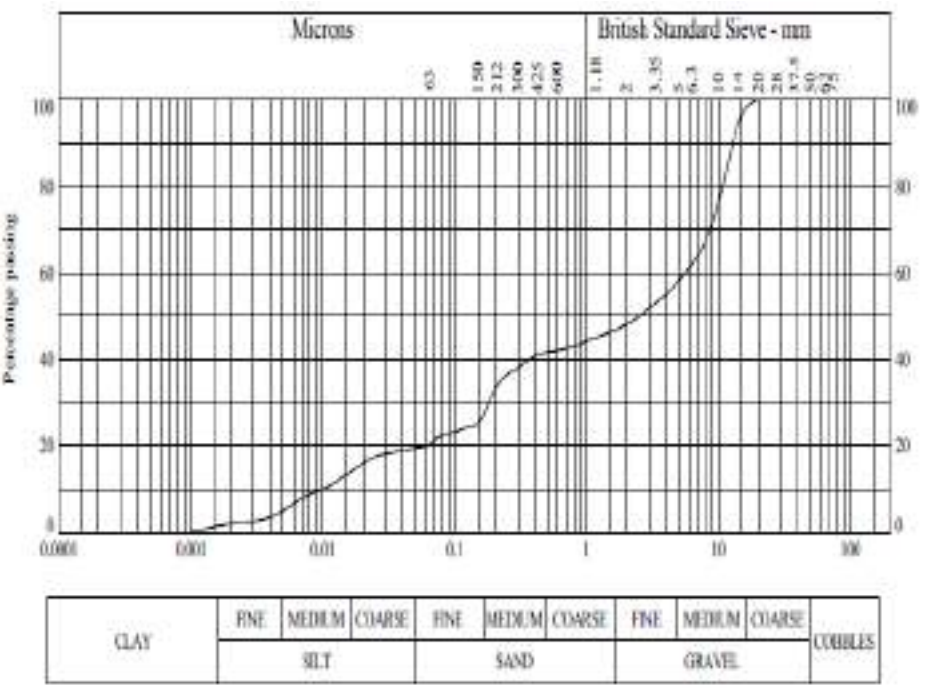


Table C-1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, F-M SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA12	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	28/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	97
3.35	94
2	91
1.18	89
0.600	84
0.425	71
0.300	48
0.212	39
0.15	30
0.075	12
0.063	10
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

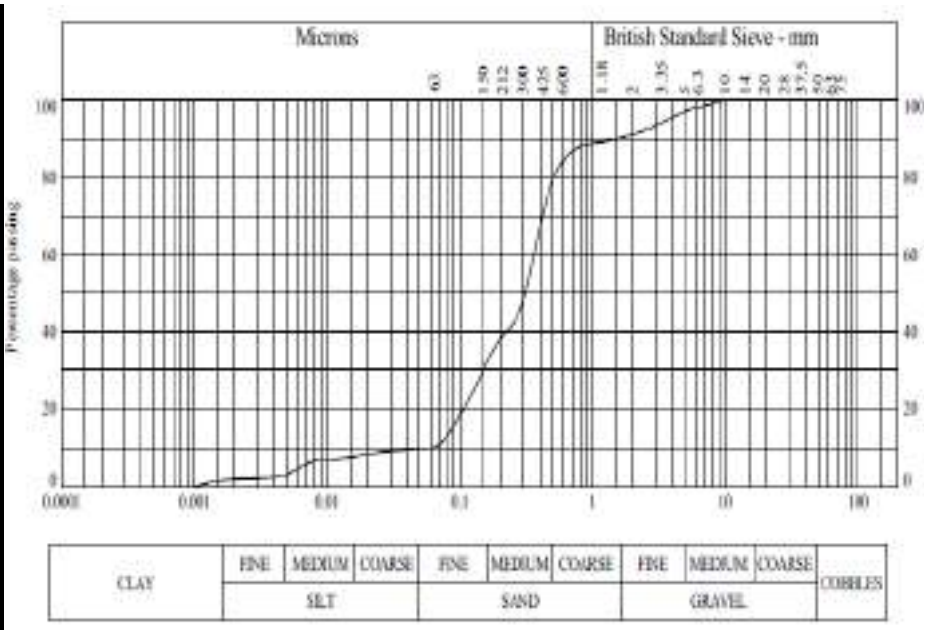


Table C-1 (7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA12	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	90
10	78
6.3	63
5	60
3.35	54
2	49
1.18	45
0.600	42
0.425	40
0.300	36
0.212	33
0.15	25
0.075	12
0.063	10
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

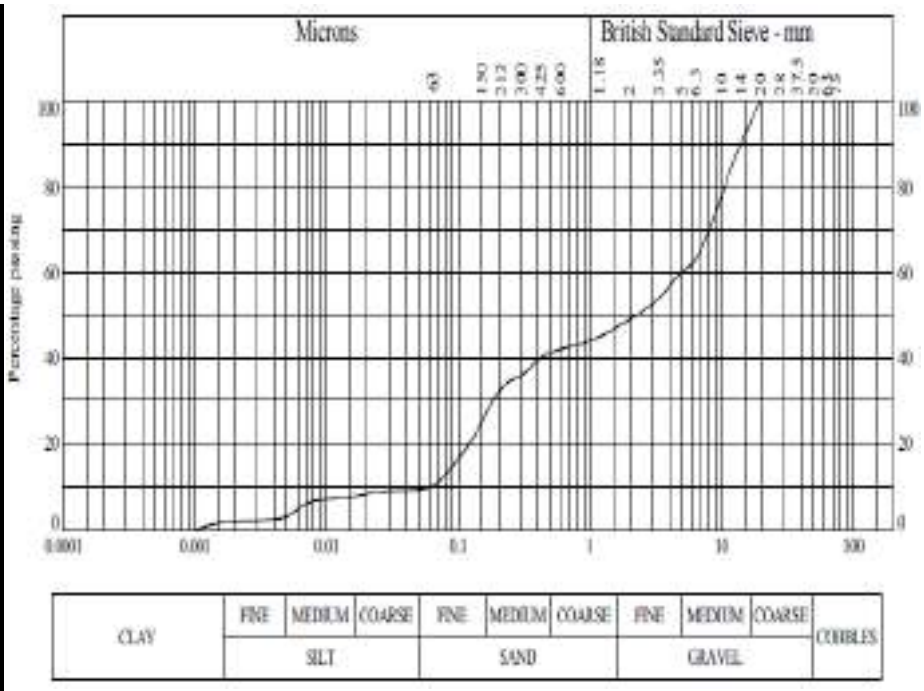


Table C-1 (8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA13	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	95
3.35	93
2	91
1.18	90
0.600	88
0.425	86
0.300	82
0.212	78
0.15	66
0.075	40
0.063	25
0.028	15
0.018	10
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

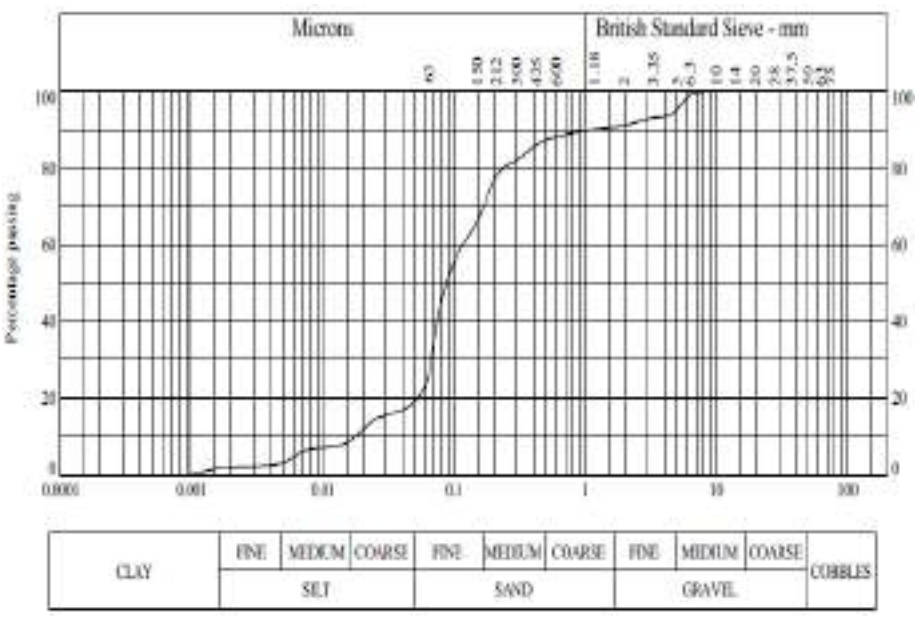


Table C-1 (9)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA13	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	87
5	82
3.35	76
2	72
1.18	69
0.600	65
0.425	62
0.300	58
0.212	55
0.15	43
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

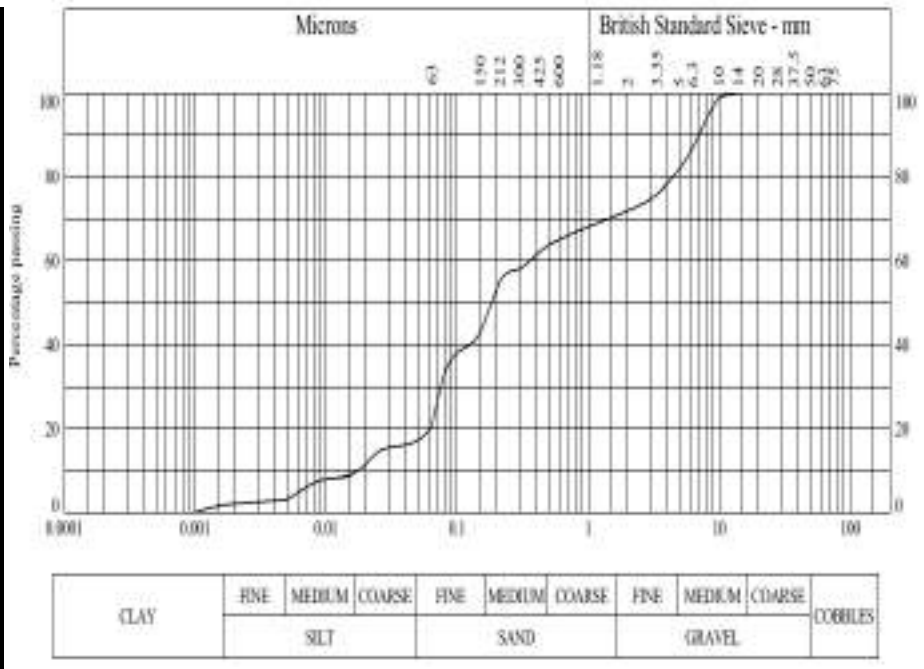


Table C-1 (10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA14	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	99
1.18	98
0.600	97
0.425	97
0.300	96
0.212	95
0.15	58
0.075	15
0.063	15
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

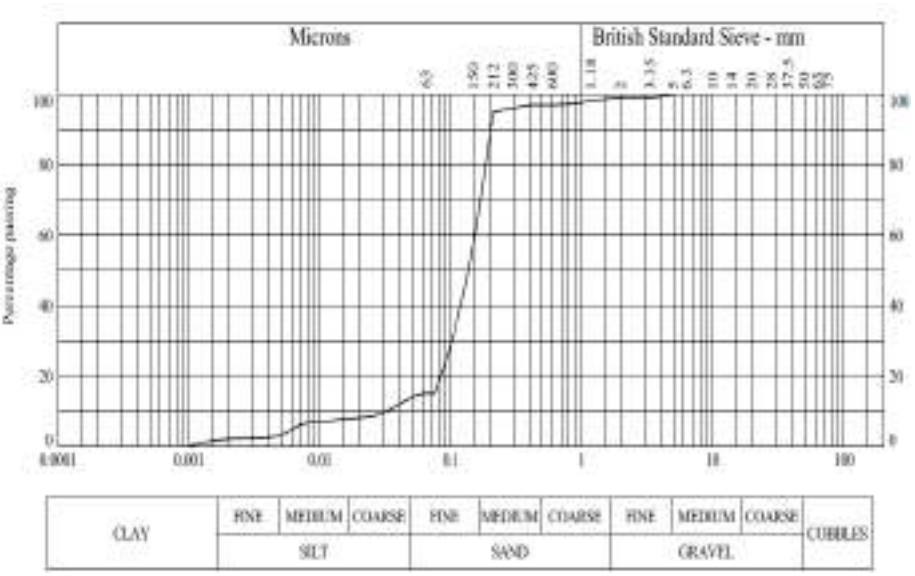


Table C-1 (11)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHA15	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	92
6.3	81
5	77
3.35	72
2	65
1.18	60
0.600	53
0.425	48
0.300	35
0.212	29
0.15	19
0.075	15
0.063	10
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

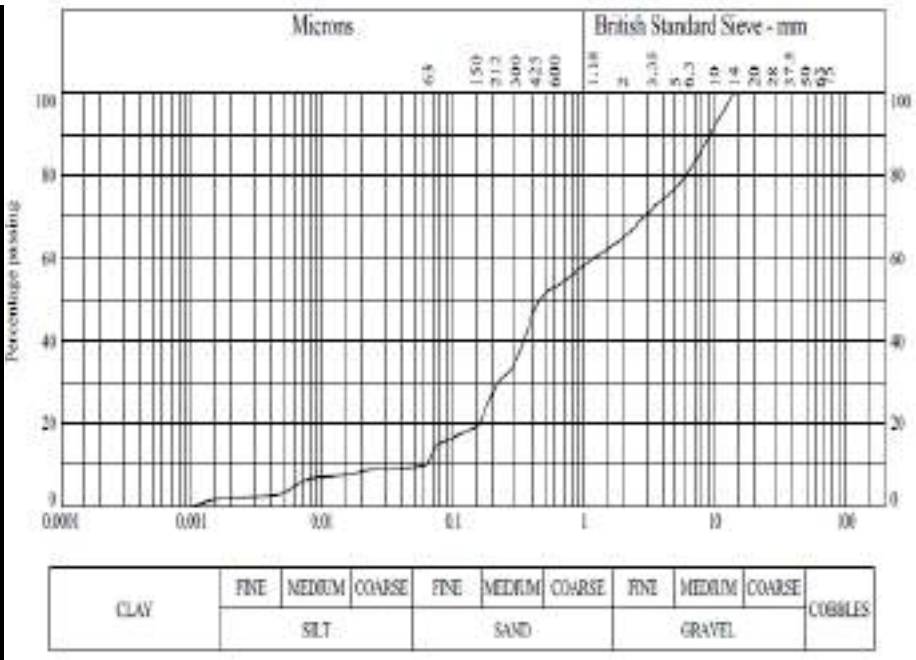


Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA16	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	97
3.35	93
2	88
1.18	79
0.600	71
0.425	68
0.300	64
0.212	59
0.15	45
0.075	9
0.063	8
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

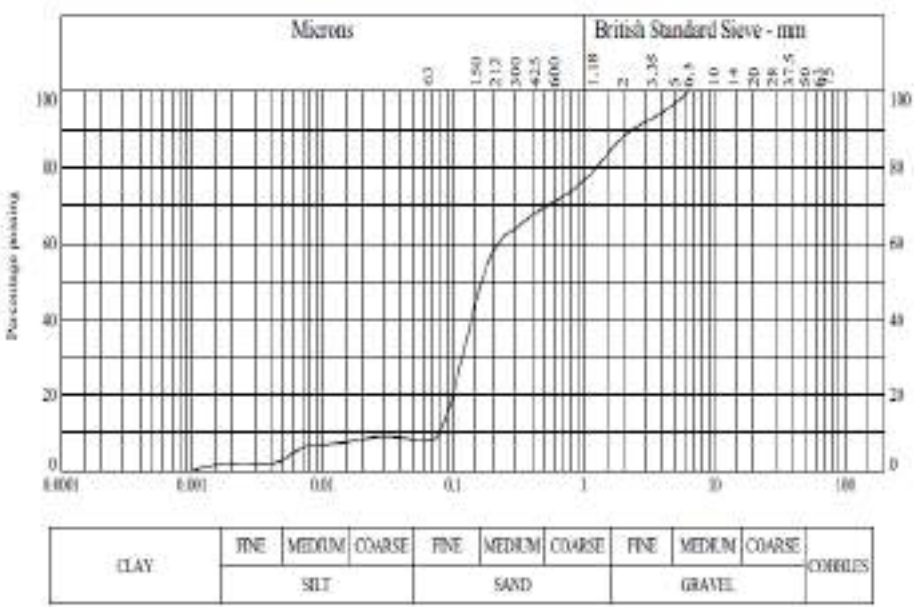


Table C-1 (13)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHA42	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	97
5	96
3.35	96
2	95
1.18	94
0.600	93
0.425	91
0.300	81
0.212	63
0.15	37
0.075	20
0.063	15
0.028	10
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

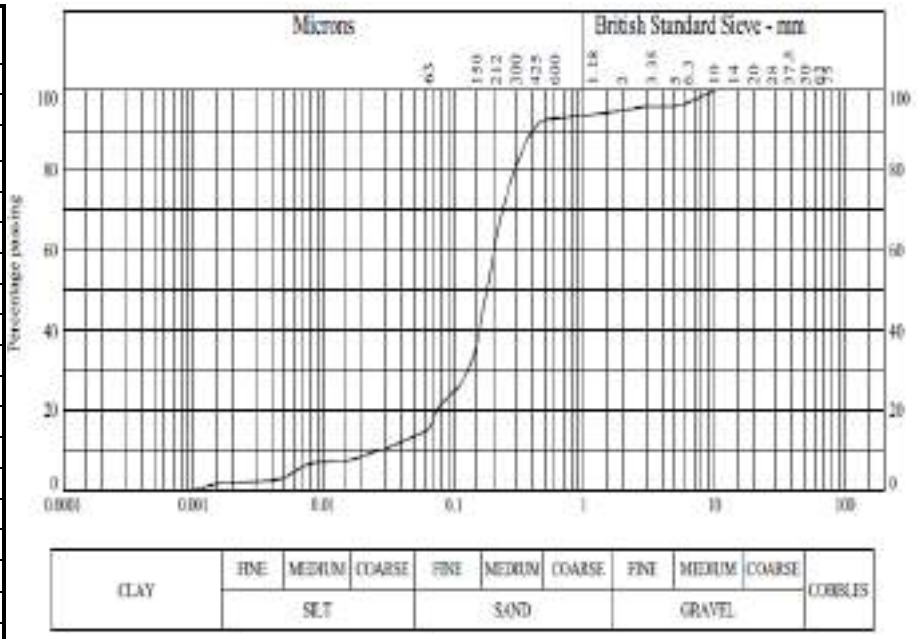


Table C-1 (14)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHA42	**Sampling Date**	11/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	90
10	84
6.3	79
5	78
3.35	76
2	73
1.18	72
0.600	69
0.425	65
0.300	57
0.212	49
0.15	30
0.075	20
0.063	15
0.028	10
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

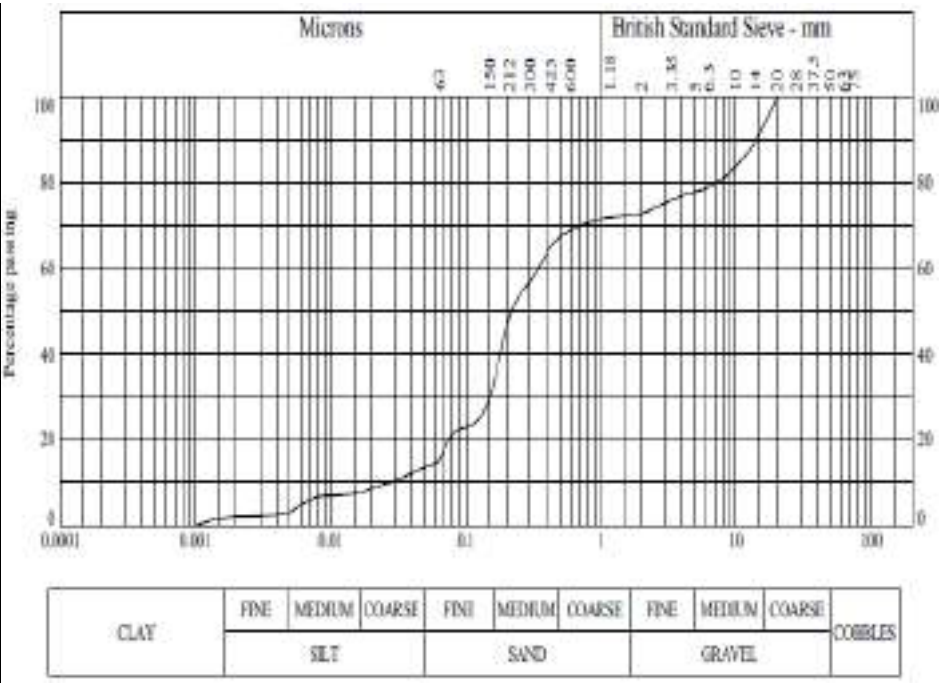


Table C-1 (15)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA44	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	98
3.35	97
2	96
1.18	96
0.600	95
0.425	95
0.300	91
0.212	81
0.15	49
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

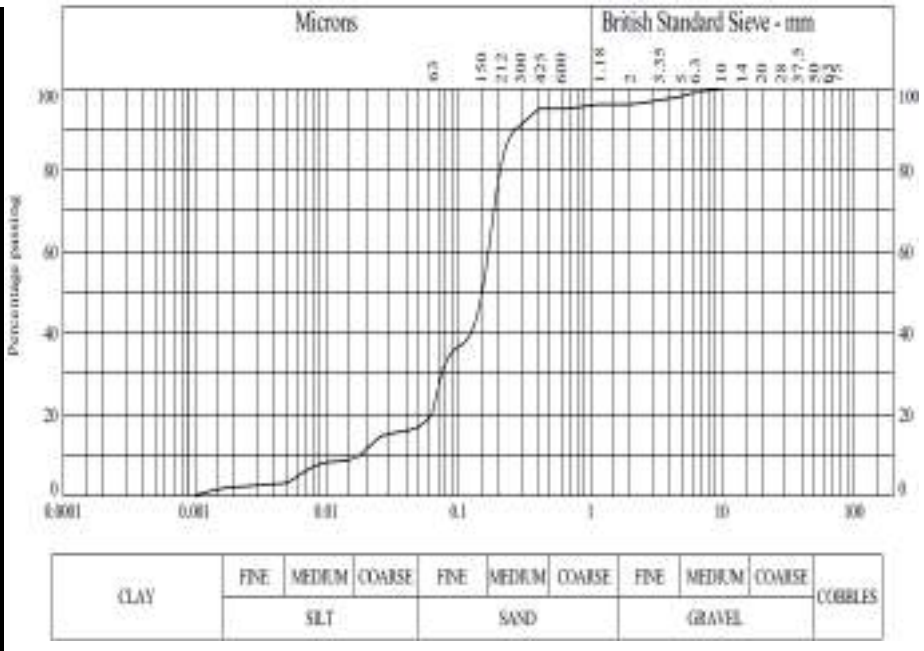


Table C-1 (16)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA44	**Sampling Date**	11/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	97
3.35	96
2	94
1.18	94
0.600	93
0.425	93
0.300	90
0.212	77
0.15	46
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

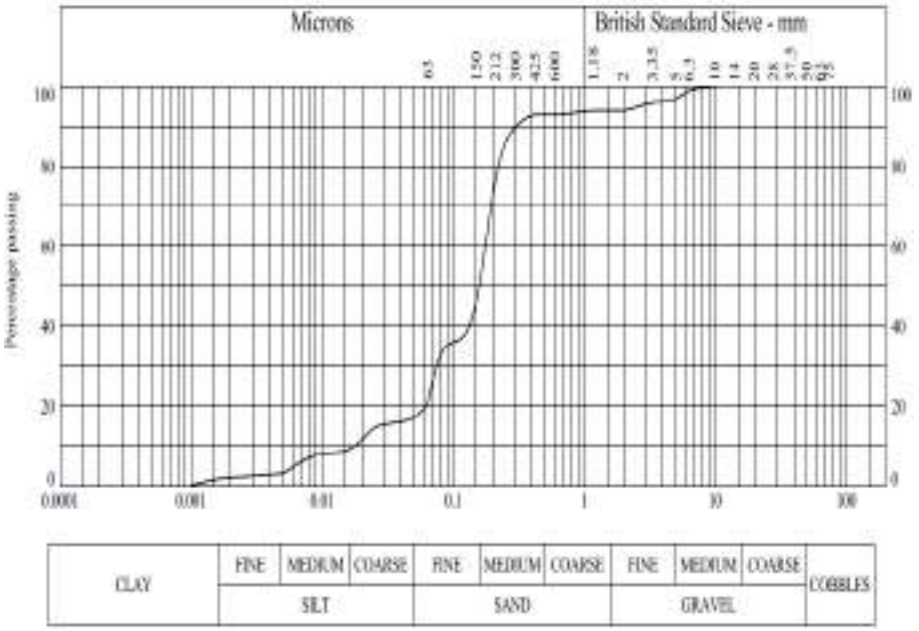


Table C-1 (17)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA44	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	95
5	94
3.35	93
2	92
1.18	92
0.600	91
0.425	90
0.300	87
0.212	76
0.15	46
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

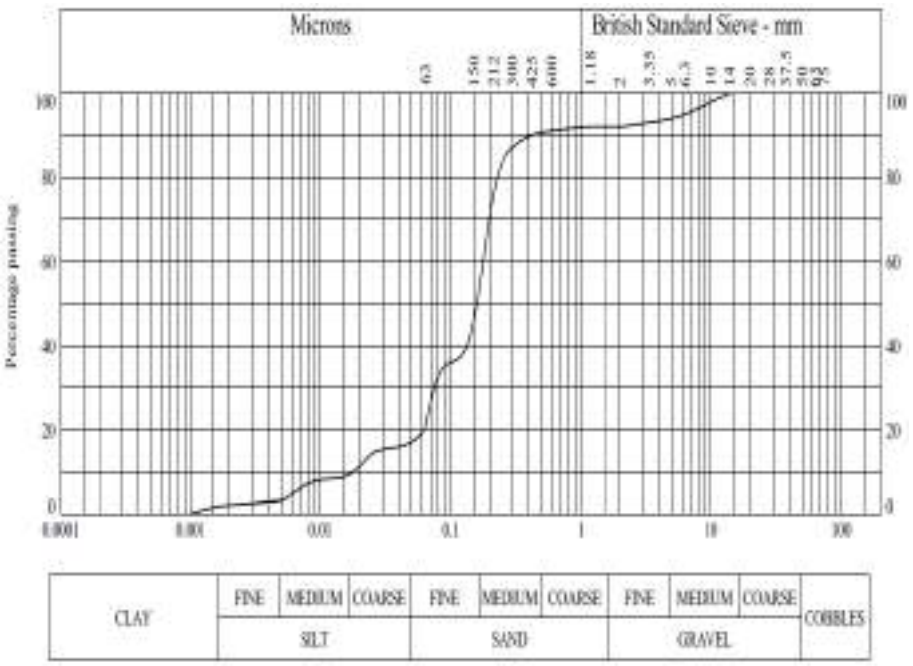


Table C-1 (18)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHA44	**Sampling Date**	11/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	98
5	98
3.35	97
2	97
1.18	96
0.600	95
0.425	89
0.300	76
0.212	61
0.15	44
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

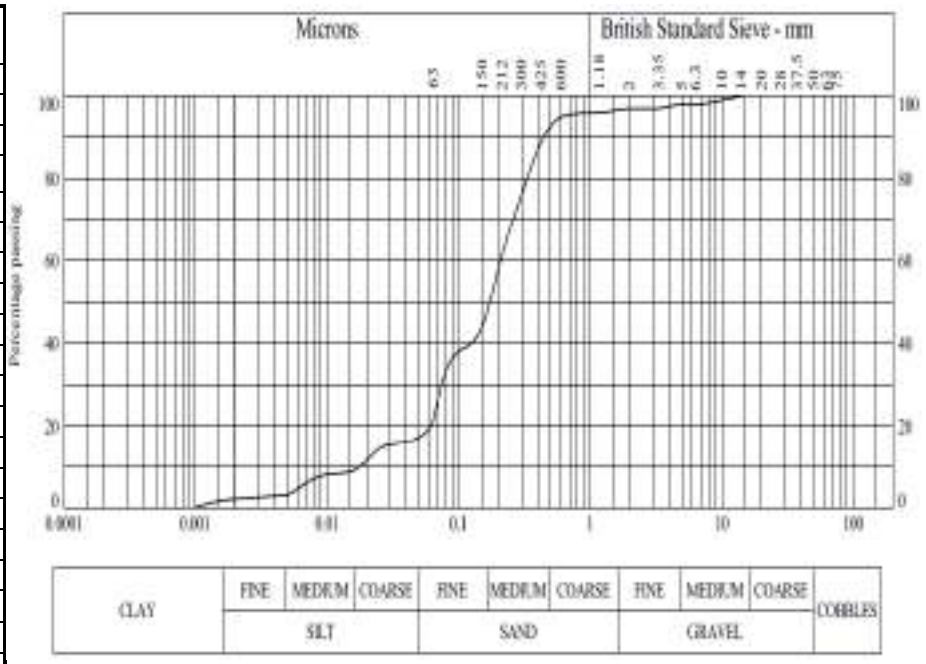


Table C-1 (19)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B56	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	96
3.35	92
2	87
1.18	84
0.600	80
0.425	76
0.300	69
0.212	59
0.15	41
0.075	11
0.063	9
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

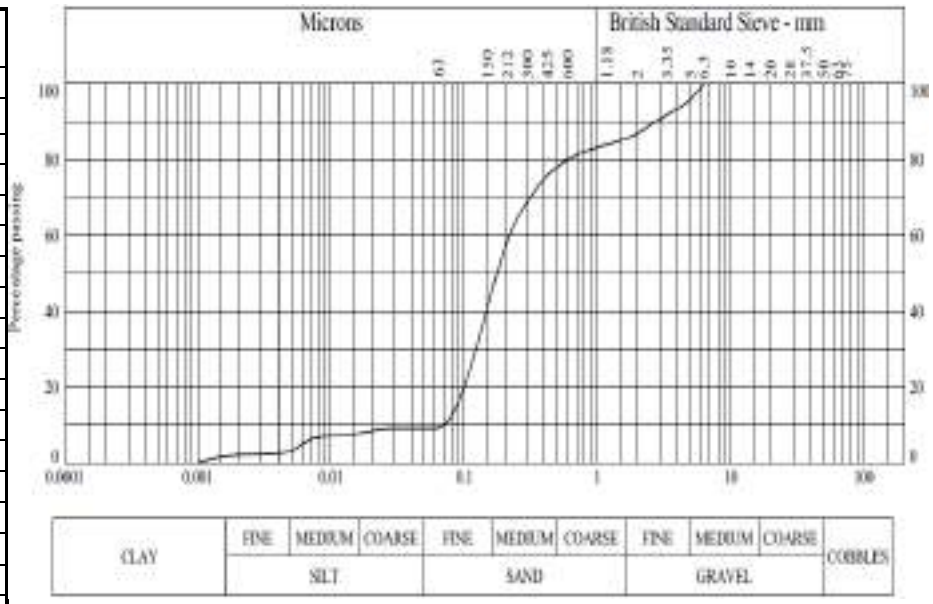


Table C-1 (20)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SNAD	**Sampled By**	Matrix
Borehole No.	BH-B56	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	89
6.3	77
5	72
3.35	65
2	59
1.18	55
0.600	52
0.425	50
0.300	45
0.212	39
0.15	30
0.075	15
0.063	12
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

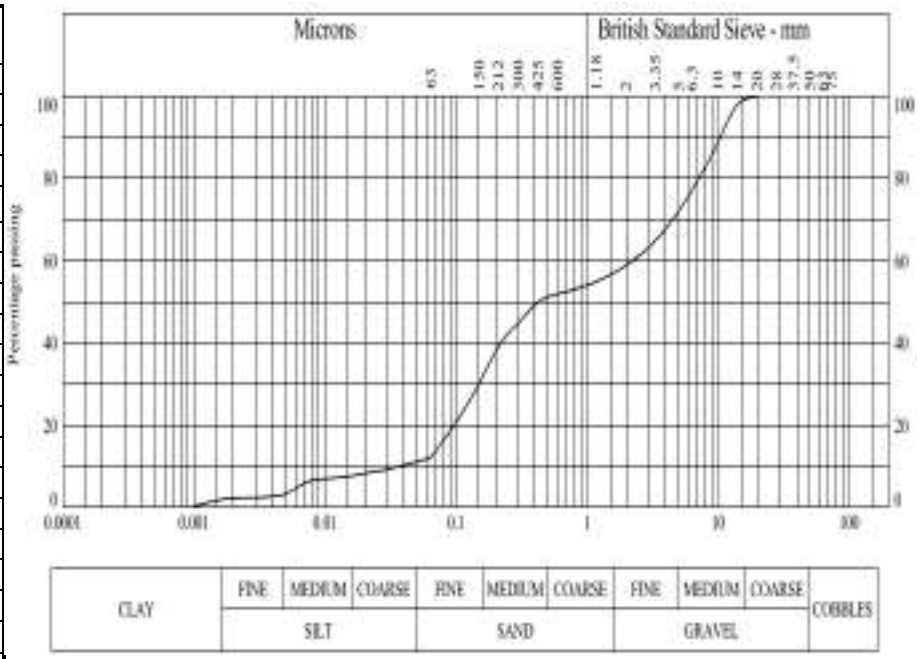


Table C-1 (21)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SNAD	**Sampled By**	Matrix
Borehole No.	BH-B56	**Sampling Date**	11/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	78
6.3	57
5	51
3.35	45
2	41
1.18	37
0.600	34
0.425	32
0.300	29
0.212	24
0.15	19
0.075	15
0.063	12
0.028	10
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

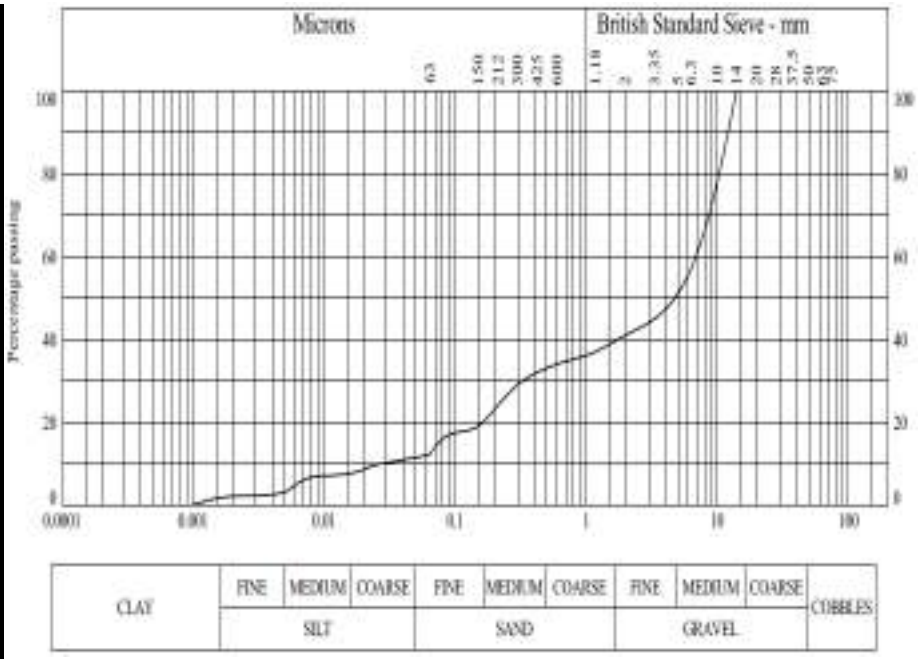


Table C-1 (22)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B57	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	96
10	92
6.3	91
5	91
3.35	91
2	90
1.18	90
0.600	89
0.425	86
0.300	80
0.212	74
0.15	51
0.075	35
0.063	30
0.028	20
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

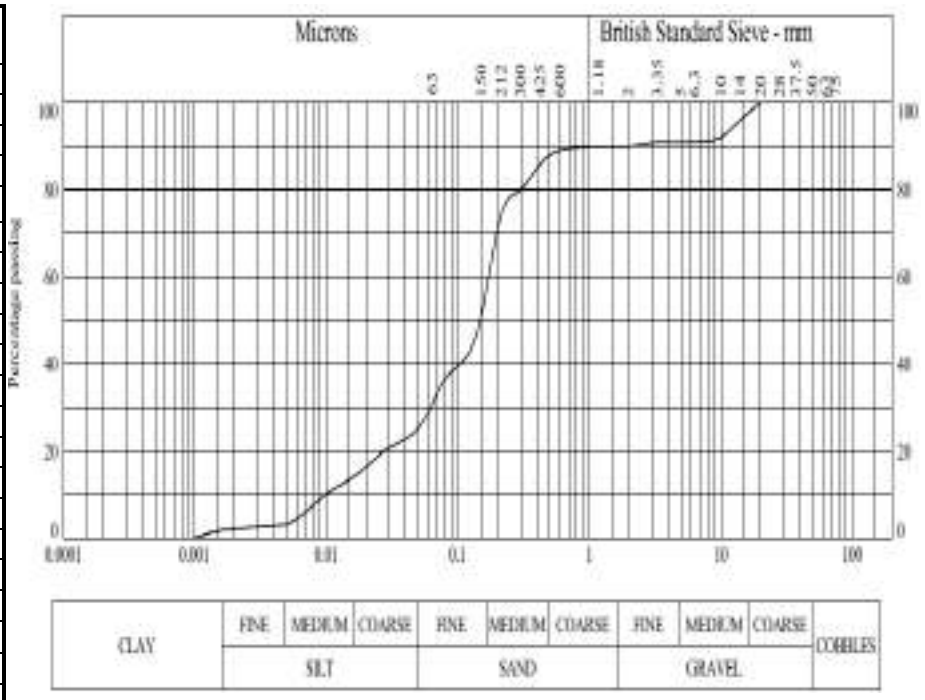


Table C-1 (23)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B57	**Sampling Date**	11/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	84
6.3	79
5	76
3.35	74
2	71
1.18	69
0.600	67
0.425	65
0.300	58
0.212	48
0.15	30
0.075	25
0.063	20
0.028	18
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

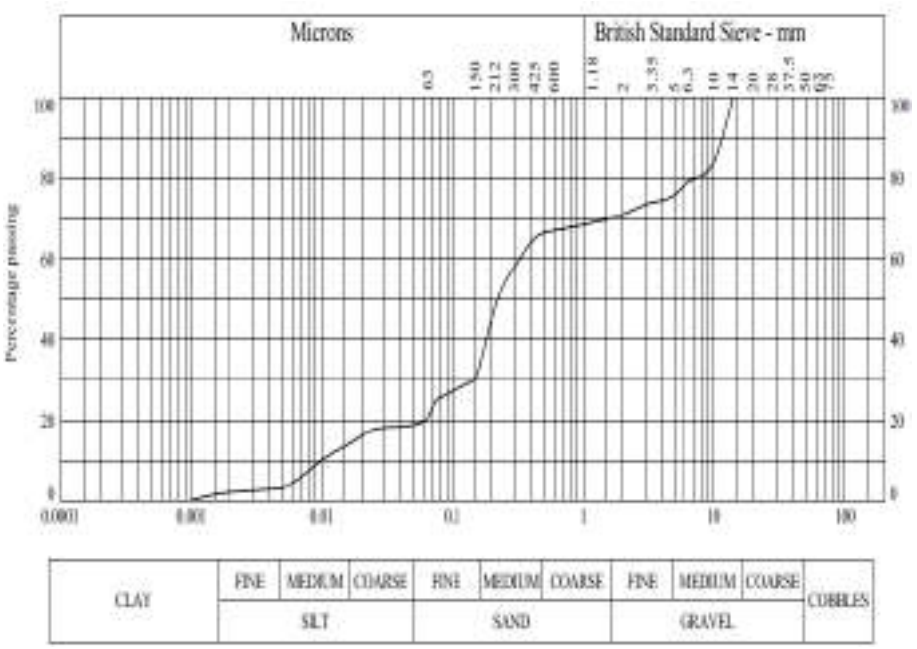


Table C-1 (24)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B57	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	21/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	23/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	93
6.3	87
5	85
3.35	81
2	79
1.18	78
0.600	76
0.425	73
0.300	69
0.212	63
0.15	45
0.075	30
0.063	25
0.028	18
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

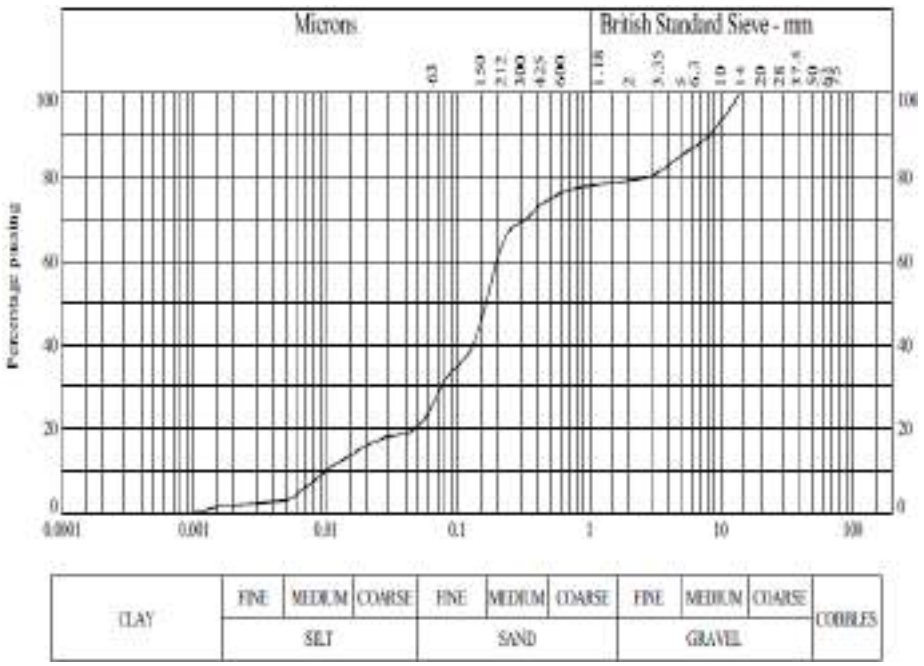


Table C-1 (25)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT10
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B58	**Sampling Date**	11/07/2015
Depth (m)	9.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	92
5	87
3.35	78
2	70
1.18	63
0.600	57
0.425	55
0.300	51
0.212	48
0.15	19
0.075	18
0.063	17
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

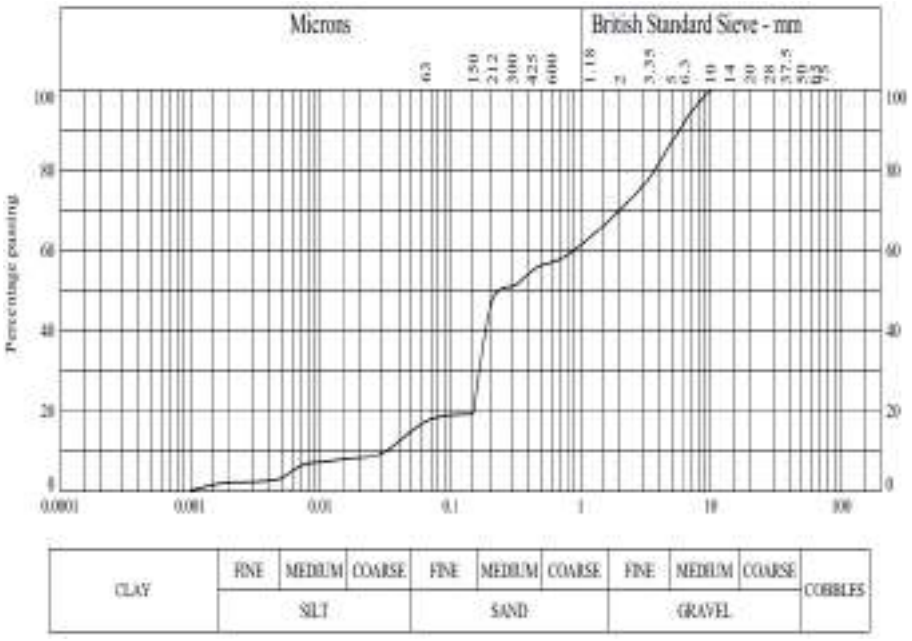


Table C-1 (26)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B59	**Sampling Date**	11/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	97
2	94
1.18	90
0.600	83
0.425	77
0.300	69
0.212	60
0.15	44
0.075	35
0.063	25
0.028	15
0.018	10
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

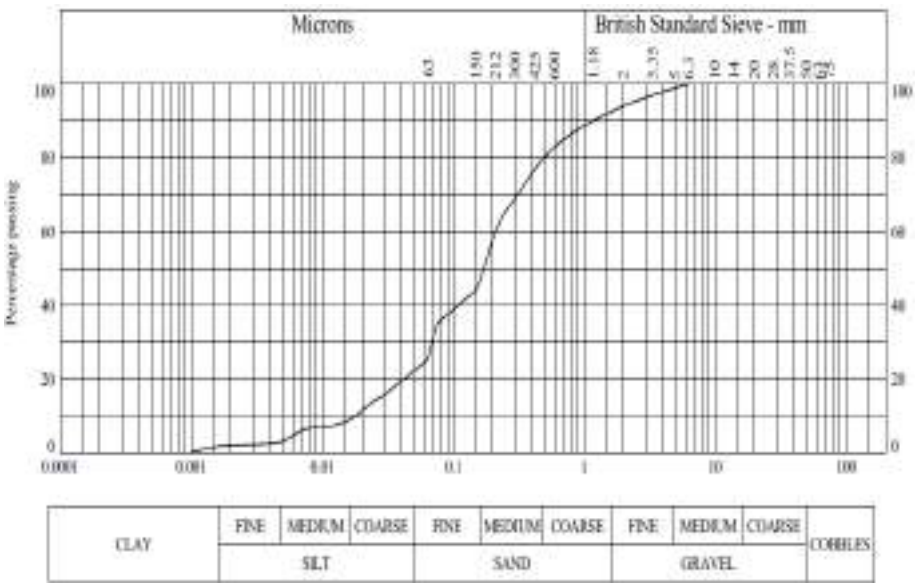


Table C-1 (27)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B59	**Sampling Date**	11/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	97
5	96
3.35	94
2	91
1.18	90
0.600	88
0.425	86
0.300	81
0.212	75
0.15	51
0.075	35
0.063	25
0.028	15
0.018	10
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

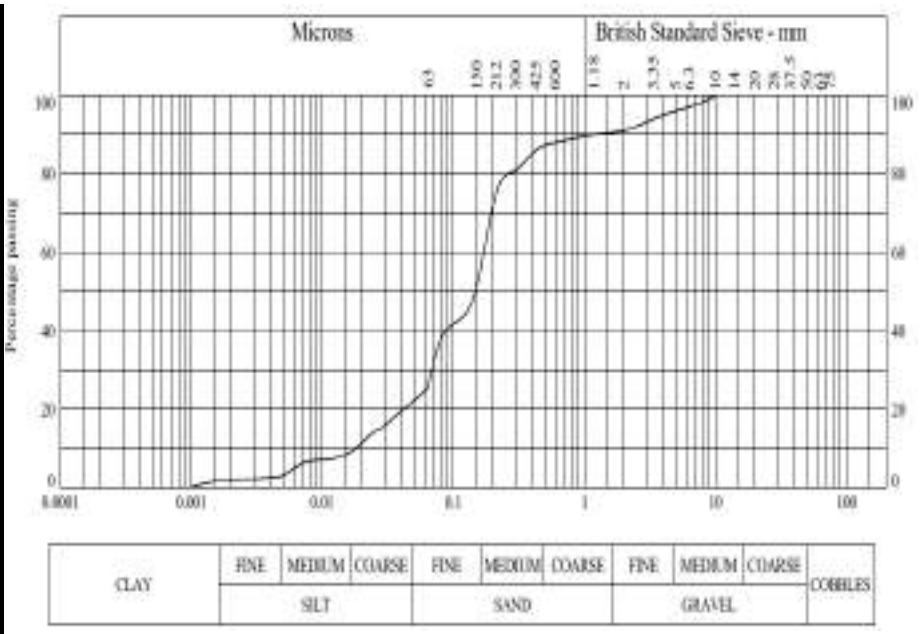


Table C-1 (28)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-5
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 5)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, SAND	**Sampled By**	Matrix
Borehole No.	BH-B59	**Sampling Date**	11/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	98
1.18	92
0.600	78
0.425	64
0.300	46
0.212	38
0.15	23
0.075	20
0.063	15
0.028	10
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

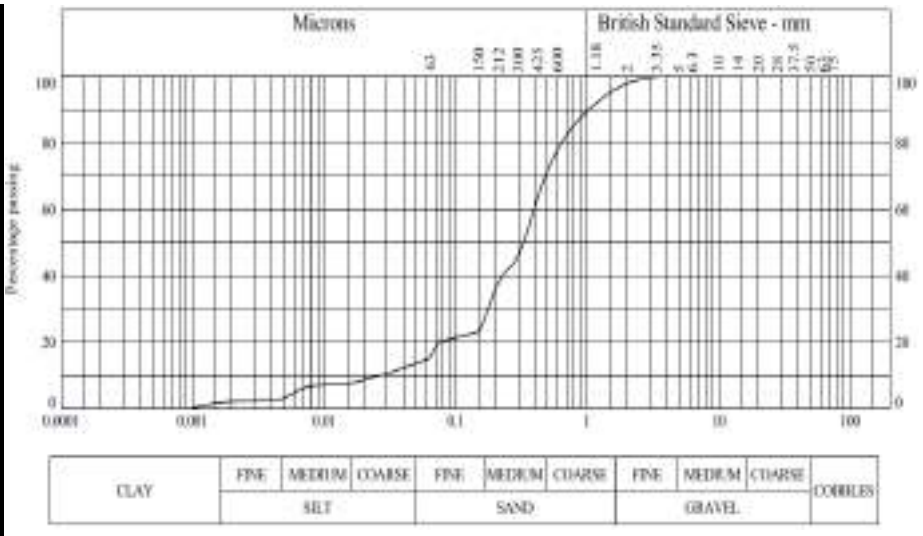


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	21/07-10/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	22/07-10/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	11-14/07/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A10	2.00	16.0
BH-A10	3.00	11.0
BH-A10	4.00	8.1
BH-A10	6.50	13.3
BH-A11	2.00	7.8
BH-A11	3.00	9.5
BH-A11	4.00	15.0
BH-A12	1.00	4.3
BH-A12	2.00	34.0
BH-A12	3.00	9.7
BH-A13	1.00	8.7
BH-A13	2.00	10.0
BH-A13	3.00	14.0
BH-A14	1.00	9.6
BH-A14	2.00	12.0

Borehole No.	Depth	Moisture Content (%)
BH-A14	3.00	9.7
BH-A15	1.00	11.0
BH-A15	2.00	13.0
BH-A15	3.00	8.7
BH-A42	1.00	13.0
BH-A42	2.00	13.0
BH-A42	3.00	17.0
BH-A44	1.00	5.8
BH-A44	2.00	5.9
BH-A44	3.00	2.2
BH-A44	4.00	11.0
BH-B56	1.00	11.0
BH-B56	2.00	19.0
BH-B56	3.00	7.5
BH-B56	4.00	4.5
BH-B57	1.00	10.0
BH-B57	2.00	12.0
BH-B57	3.00	13.0
BH-B58	1.00	1.2
BH-B58	2.00	8.5
BH-B58	3.00	6.2
BH-B58	4.00	2.3
BH-B58	6.50	9.4
BH-B58	8.00	10.0
BH-B58	9.50	15.0
BH-B58	11.00	28.0
BH-B59	1.00	22.3
BH-B59	3.00	28.0

Borehole No.	Depth	Moisture Content (%)
BH-B59	5.00	18.0
BH-B59	6.50	1.7
BH-B59	8.00	22.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	15/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	16/07/2015
Sample Description	Soil	**Sampling Date**	12/07/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-A14	2.00	2.59

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	02-05/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	03-11/08/2015
Sample Description	SAND	**Sampling Date**	11-13/07/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-A13	1.00	100	0.1
BH-B56	2.00	100	0.2

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	20/07-02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	11-20/07/2015
Sample Description	ROCK CORE	**Date Tested**	21/07-03/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-A12	8.00	29.76	67.78
BH-A13	7.00	31.31	71.29
BH-A42	15.70	10.44	23.77
BH-B57	6.00	37.90	86.31

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-5
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	20/07-12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	21/07-12/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	11-20/07/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A10	17.00	1	0.35	Vertical
BH-A10	19.50	2	0.42	Vertical
BH-A11	4.25	3	0.52	Vertical
BH-A11	10.50	4	0.26	Vertical
BH-A12	6.00	5	0.72	Vertical
BHA12	9.00	6	0.45	Vertical
BH-A12	11.40	7	0.51	Vertical
BH-A13	4.50	8	0.59	Vertical
BH-A13	9.00	9	0.56	Vertical
BH-A13	13.10	10	0.66	Vertical
BH-A14	3.30	11	0.38	Vertical
BH-A14	18.50	12	0.47	Vertical
BH-A15	6.50	13	0.43	Vertical
BH-A15	11.50	14	0.79	Vertical
BH-A16	7.80	15	0.40	Vertical
BH-A16	10.00	16	0.33	Vertical
BH-A42	5.00	17	0.63	Vertical
BH-A42	14.80	18	0.14	Vertical
BH-A42	9.00	19	0.33	Vertical
BH-A42	9.90	20	0.39	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-A44	8.30	21	0.21	Vertical
BH-A44	16.90	22	0.15	Vertical
BH-B56	4.27	23	0.66	Vertical
BH-B56	11.50	24	0.39	Vertical
BH-B57	9.10	25	0.42	Vertical
BH-B57	3.21	26	0.21	Vertical
BH-B57	15.90	27	0.90	Vertical
BH-B57	12.30	28	0.21	Vertical
BH-B57	12.50	29	0.61	Vertical
BH-B58	17.00	30	0.35	Vertical
BH-B58	19.00	31	0.65	Vertical
BH-B59	8.23	32	0.23	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-5
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	26/07-08/08/2015
Sample Source	Site	**Date Tested**	26/07-08/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin

Sample Details:			Dimensions:		Results:						
BH	**Depth**	**Sample**	**Diameter**	**Height**	**Compresive Strength**	**Strain at Failure**	**Modulus of Elasticity**	**Moisture Content**	**Wet Density**	**Sketch**	**Rock Description**
NO.	**(m)**	**No.**	**(cm)**	**(cm)**	**(N/mm^2)**	**(%)**	**(Mpa)**	**(%)**	**(Mg/m^3)**		
BH-A-10	15.10	2	7.40	15.10	1.2	1.13	105.0	32.10	1.71	Figure C-01	CAL. SANDSTONE
BH-A10	19.00	1	7.50	15.00	6.8	2.53	267.6	11.10	1.87	Figure C-02	CAL. SANDSTONE
BH-A-11	5.25	3	7.50	15.00	4.6	1.53	297.6	12.10	1.91	Figure C-03	CAL. SANDSTONE
BH-A-11	8.00	4	7.50	15.10	3.7	1.13	323.1	15.60	1.60	Figure C-04	CAL. SANDSTONE
BH-A12	3.28	5	7.50	15.20	2.7	0.72	369.1	5.40	1.77	Figure C-05	SIL. CALCARENITE
BH-A12	7.50	6	7.40	15.00	2.9	0.73	403.2	11.40	1.74	Figure C-06	SIL. CALCARENITE
BH-A14	4.80	7	7.50	15.00	5.1	1.93	263.9	13.90	1.99	Figure C-07	CAL. SANDSTONE
BH-A14	19.30	8	7.50	15.00	3.9	1.00	392.2	19.10	1.95	Figure C-08	CAL. SANDSTONE
BH-A15	5.30	9	7.50	15.10	8.5	2.58	329.7	10.40	2.00	Figure C-09	CAL. SANDSTONE
BH-A16	16.80	10	7.50	15.00	5.5	1.67	332.1	6.40	1.89	Figure C-10	CAL. SANDSTONE
BH-A42	19.00	11	7.50	15.00	9.8	2.53	387.5	15.20	2.14	Figure C-11	CAL. SILTSTONE
BH-A44	7.00	12	7.50	15.10	6.4	2.25	282.9	21.90	2.13	Figure C-12	CAL. SANDSTONE
BH-B56	28.40	13	7.10	15.20	1.5	0.99	156.3	16.60	2.08	Figure C-13	CAL. SILTSTONE
BH-B56	37.00	14	7.50	15.10	5.3	1.59	331.4	10.20	1.63	Figure C-14	CAL. SILTSTONE
BH-B57	31.00	15	7.50	15.00	7.5	1.93	387.9	18.70	2.04	Figure C-15	CAL. SILTSTONE
BH-B58	12.00	16	7.50	15.10	9.9	2.58	384.9	12.40	2.00	Figure C-16	CAL. SILTSTONE
BH-B59	10.73	17	6.30	13.30	5.7	1.43	400.8	11.20	2.06	Figure C-17	CAL. SANDSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

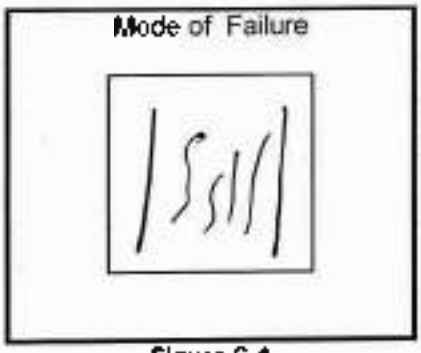


Figure C-1

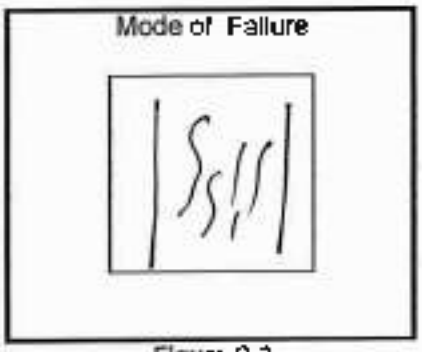


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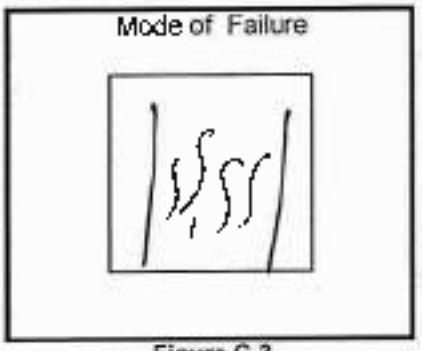


Figure C-3

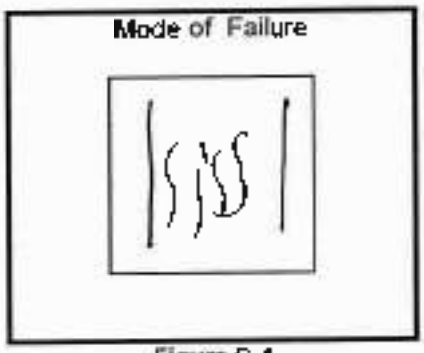


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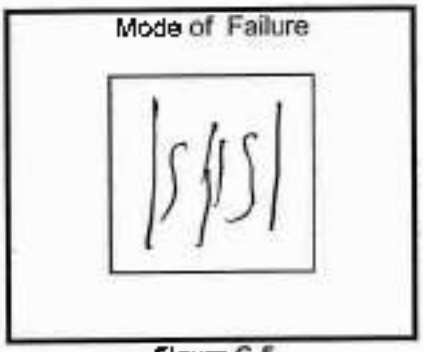


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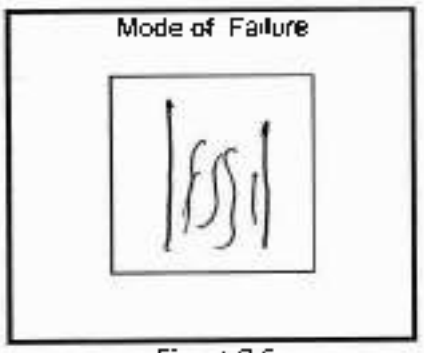


Figure C-6

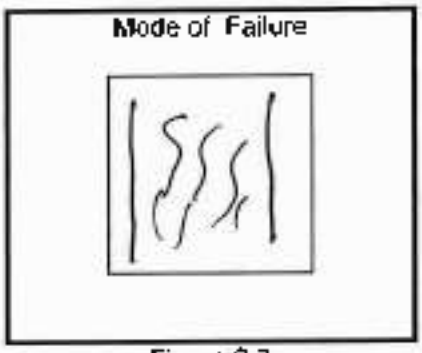


Figure C-7

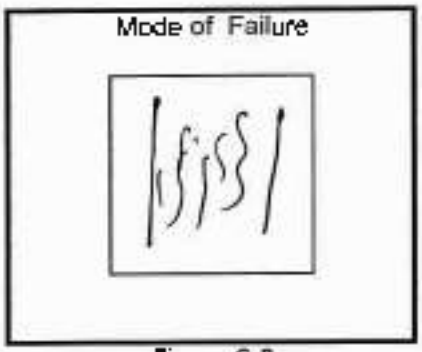


Figure C-8

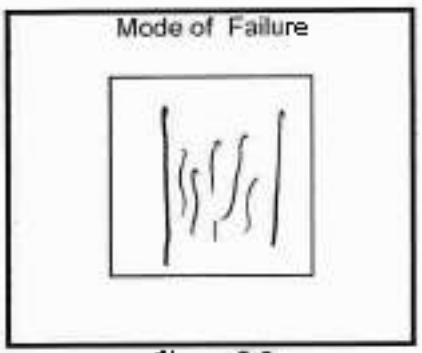


Figure C-9

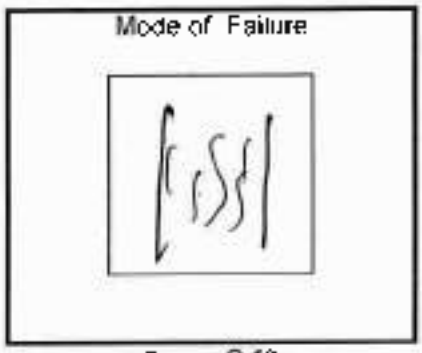


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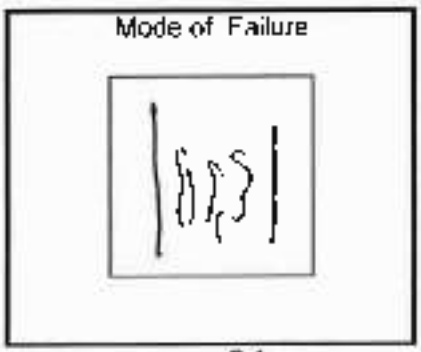


Figure C-11

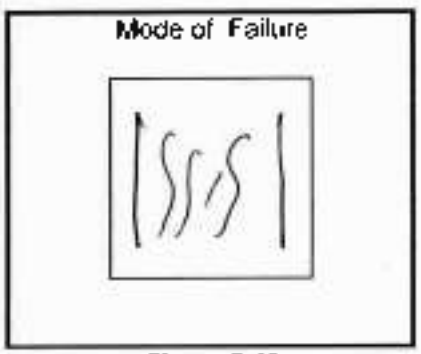


Figure C-12

TYPE OF FRACTURES FOR CORES

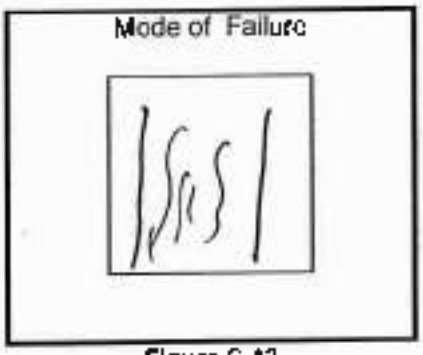


Figure C-13

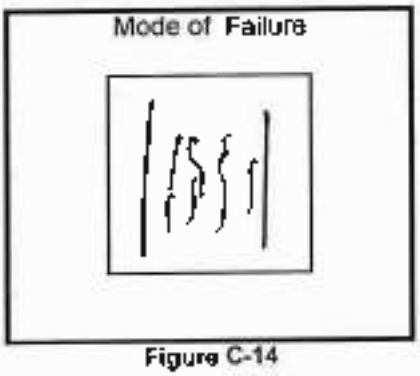


Figure C-14

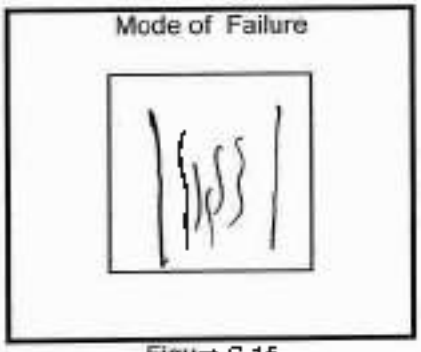


Figure C-15

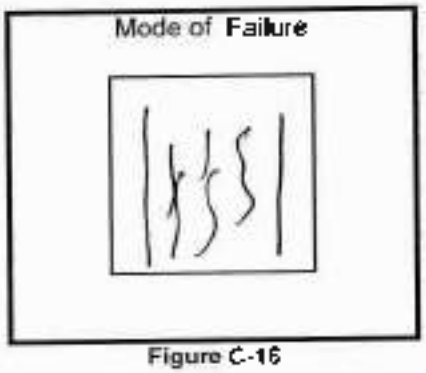


Figure C-16

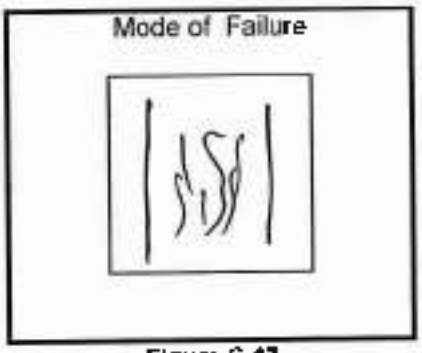
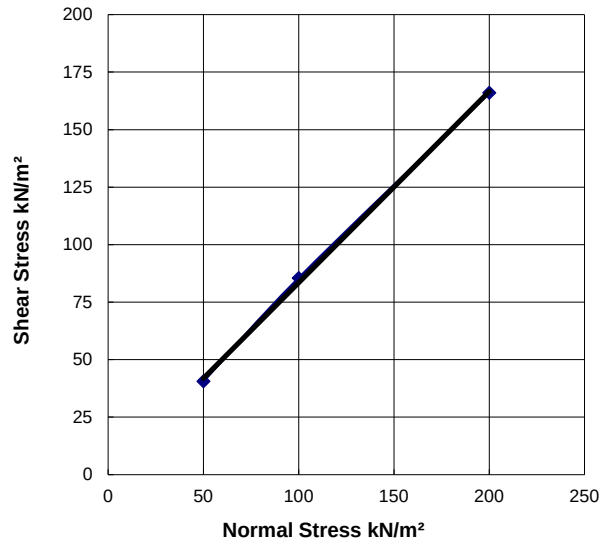


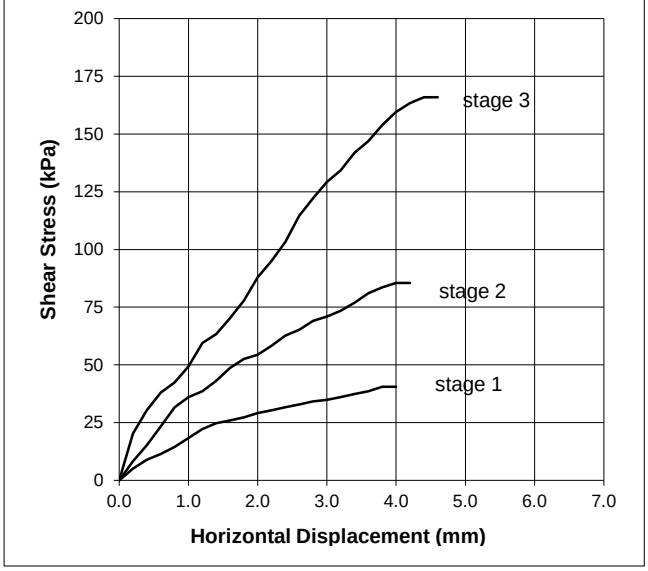
Figure C-17

MATRIX LABORATORY L.L.C.

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A11	**Date Tested**	16-18/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN



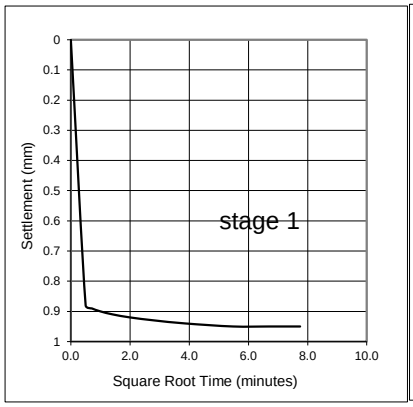


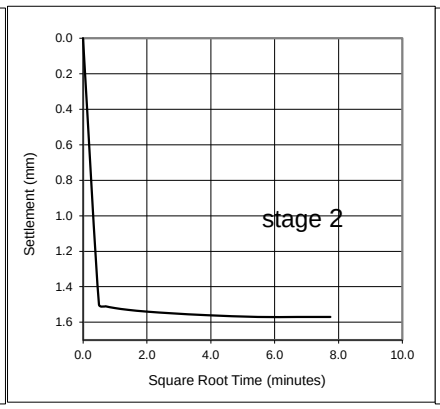
Shear Strength Parameters
Apparent Cohesion = 0.0 kN/m²
Angle of Shearing Resistance = 40.00º

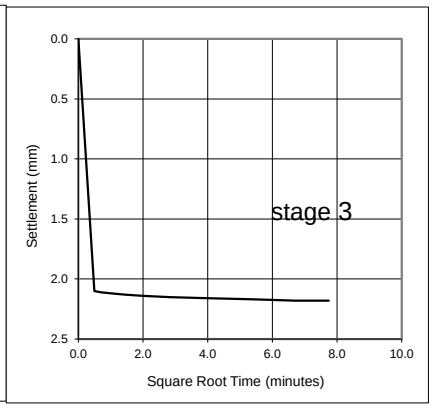
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED (B+G+4P+35+ROOF) THE CONSTELLA TOWER	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A11	**Date Tested**	16-18/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

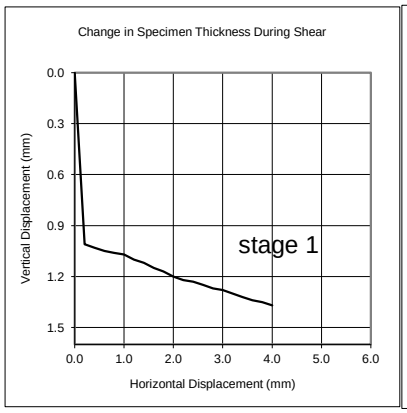
Consolidation Stage

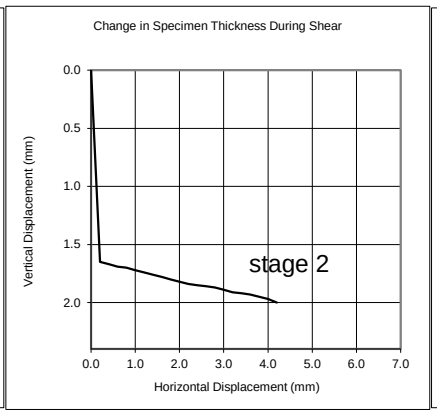


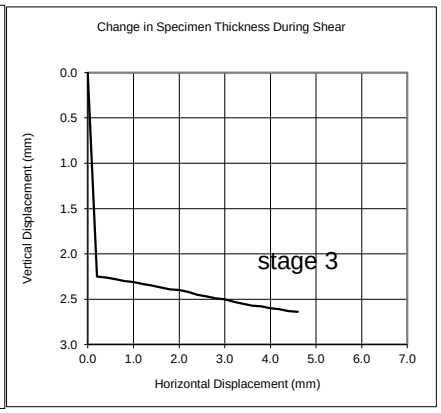




Shearing Stage



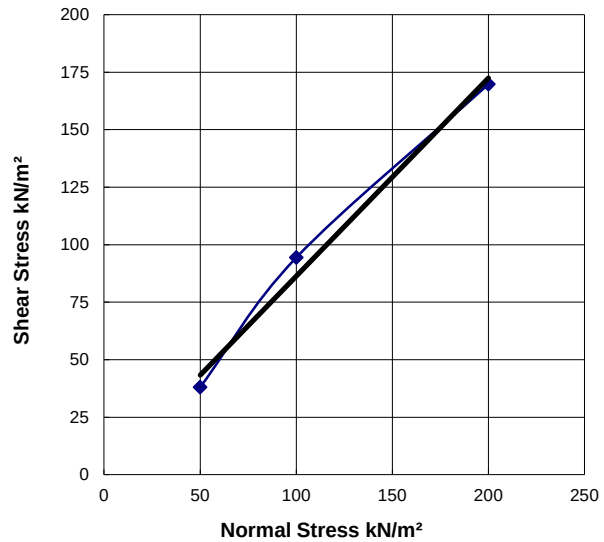


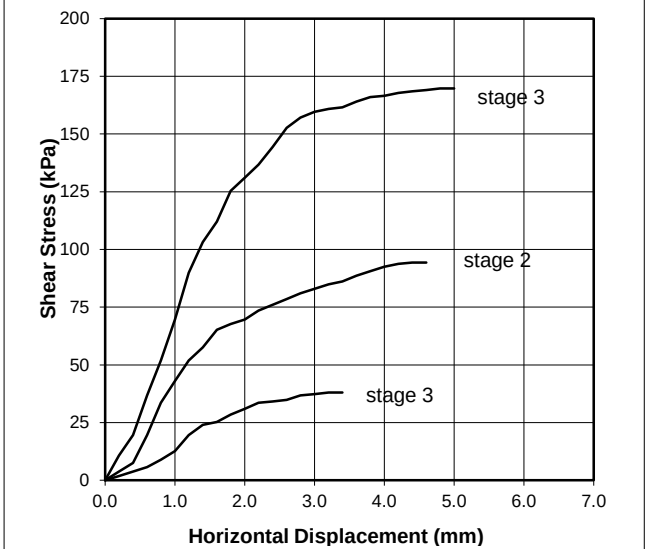


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A14	**Date Tested**	15-16/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

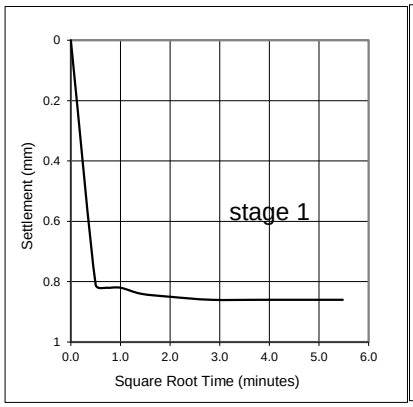
Apparent Cohesion = 0.0 kN/m²

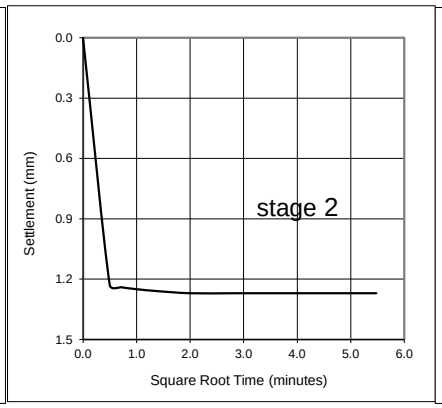
Angle of Shearing Resistance = 40.7º

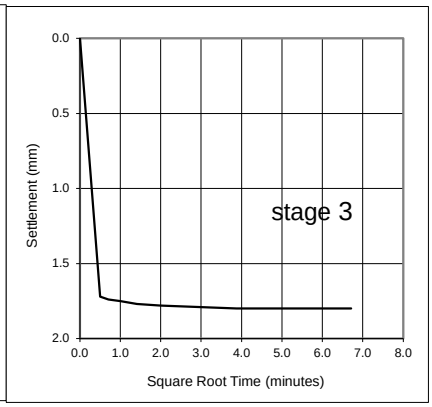
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A14	**Date Tested**	15-16/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.70
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	JOMESH

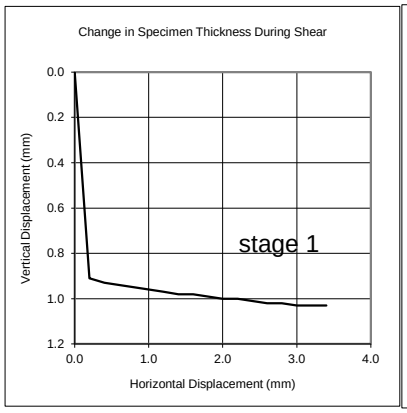
Consolidation Stage

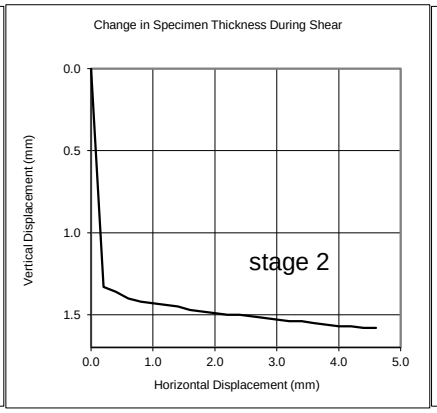


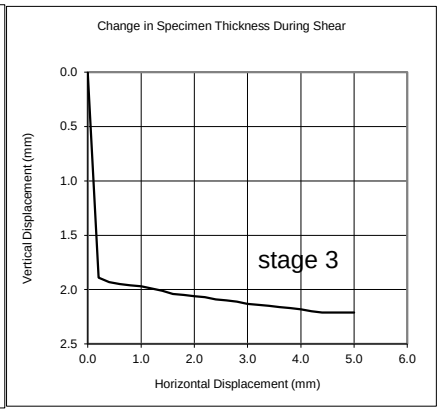




Shearing Stage





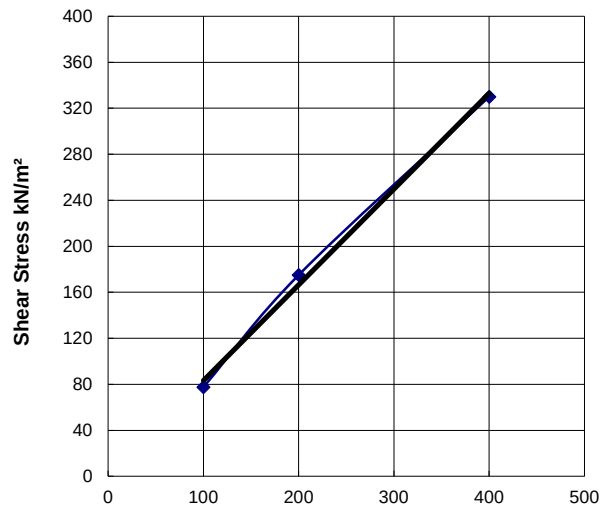


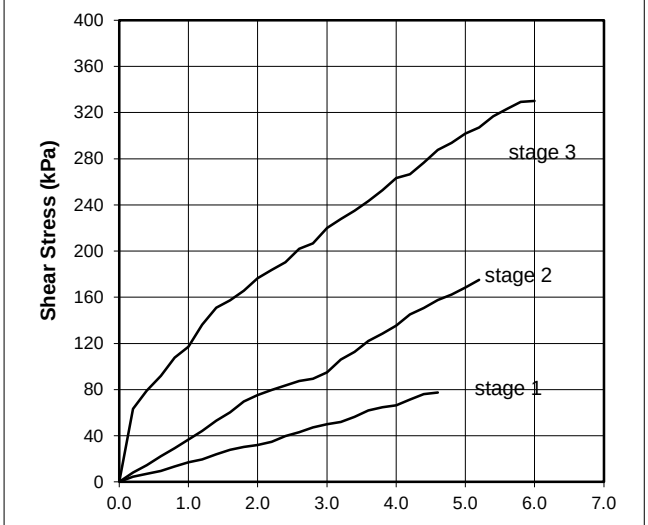
MATRIX LABORATORY L.L.C.

TABLE C 8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A42	**Date Tested**	18-19/07/2015
Depth (m)	1.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters
Apparent Cohesion = 0 kN/m²
Angle of Shearing Resistance = 40.00º

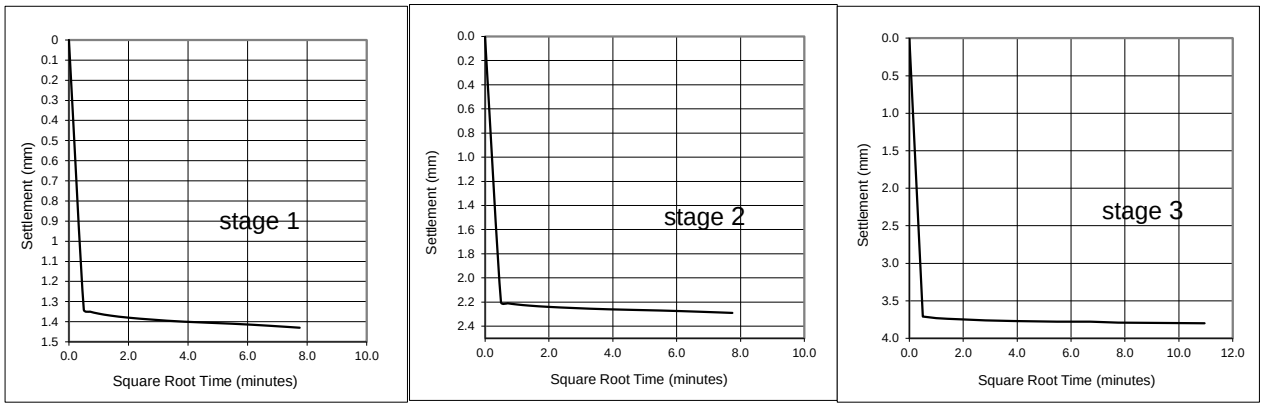
TABLE C 8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5

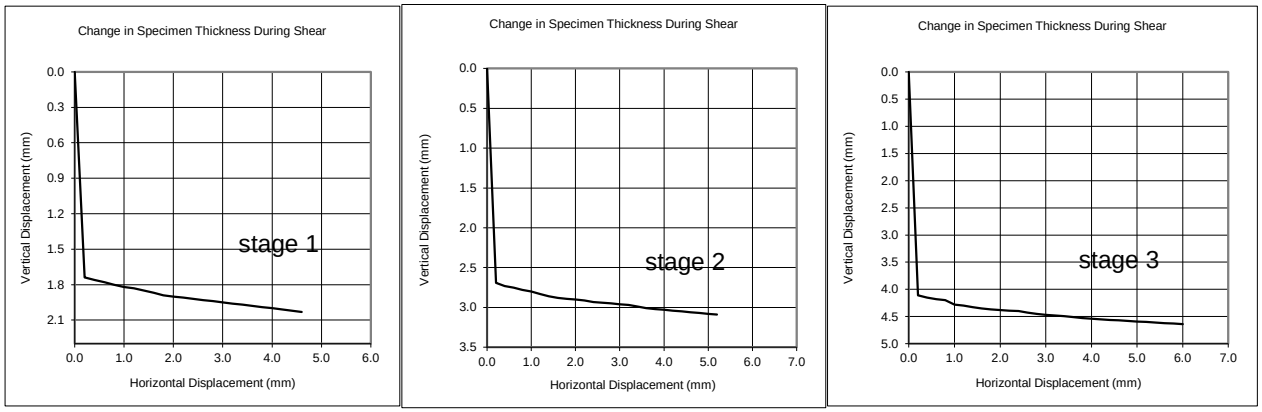
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A42	**Date Tested**	18-19/07/2015
Depth (m)	1.00		

Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.66
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	JOMESH

Consolidation Stage



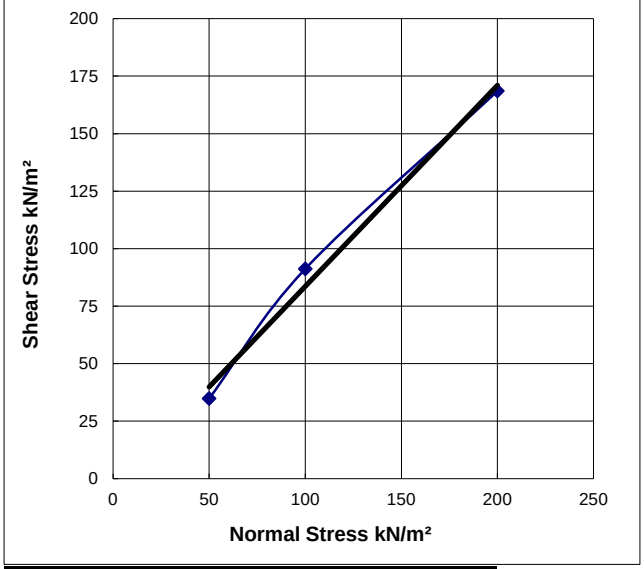
Shearing Stage

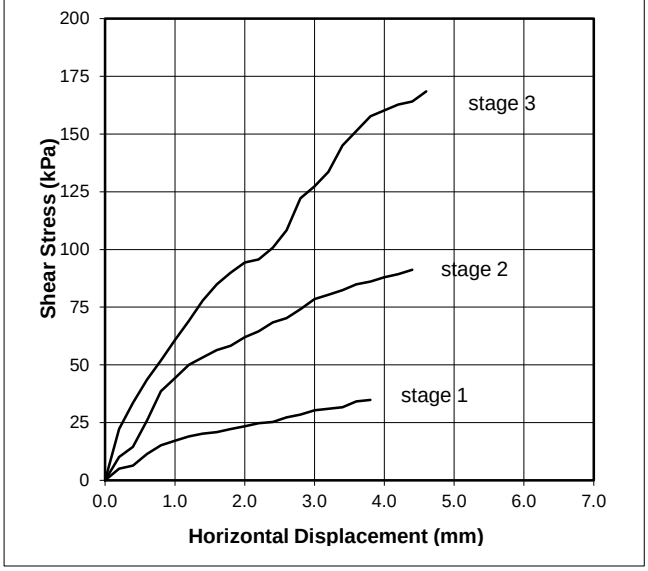


MATRIX LABORATORY L.L.C.

TABLE C 8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B57	**Date Tested**	14-15/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

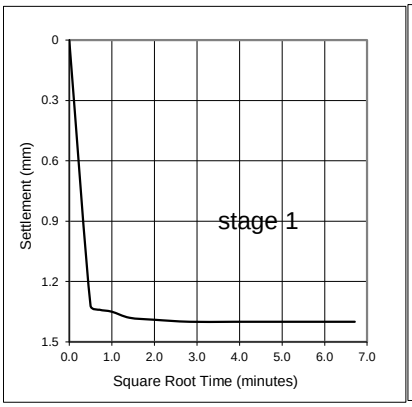
Apparent Cohesion = 0.0 kN/m²

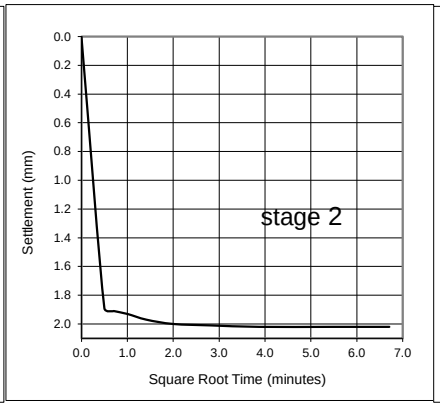
Angle of Shearing Resistance = 41.1°

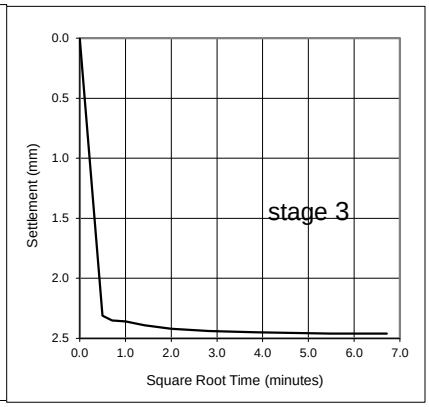
TABLE C 8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-5
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-5
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B57	**Date Tested**	14-15/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.63
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

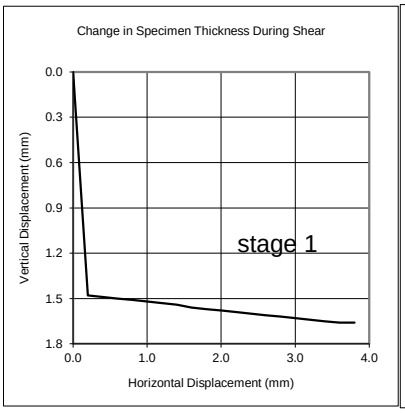
Consolidation Stage

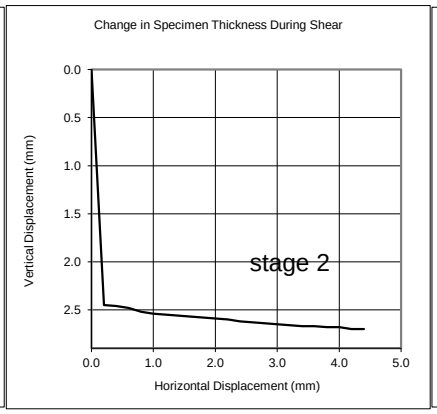


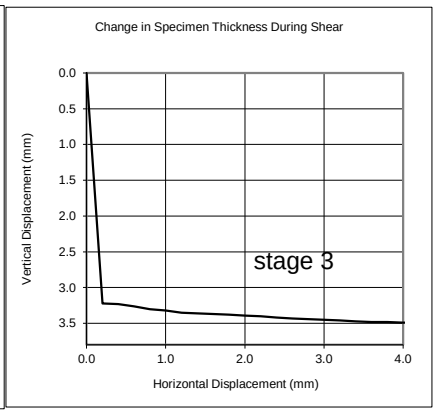




Shearing Stage







APPENDIX C6

LABORATORY TEST RESULTS (ZONE 6)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)	**Sampling Date**	19-23/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	23-29/07/2015
Test Method	See below	**Date Tested**	25/07-02/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B31	SPT2	1.00	0.1	0.01	7.8 @ 29°C	DS-1
BH-B36	SPT2	1.00	1.5	0.04	7.9 @ 29°C	DS-2
BH-B42	SPT2	1.00	0.1	0.01	7.8 @ 29°C	DS-1
BH-C29	SPT2	1.00	0.7	0.05	7.9 @ 28°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)	**Sampling Date**	29/07-01/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	29/07-01/08/2015
Test Method	See below	**Date Tested**	29/07-03/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B33	11.00	0.23	0.03	7.7 @ 27°C	DS-1
BH-B37	8.15	0.35	0.09	7.9 @ 28°C	DS-1
BH-C29	9.40	0.12	0.22	7.8 @ 28°C	DS-1

Test Method
Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation
Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

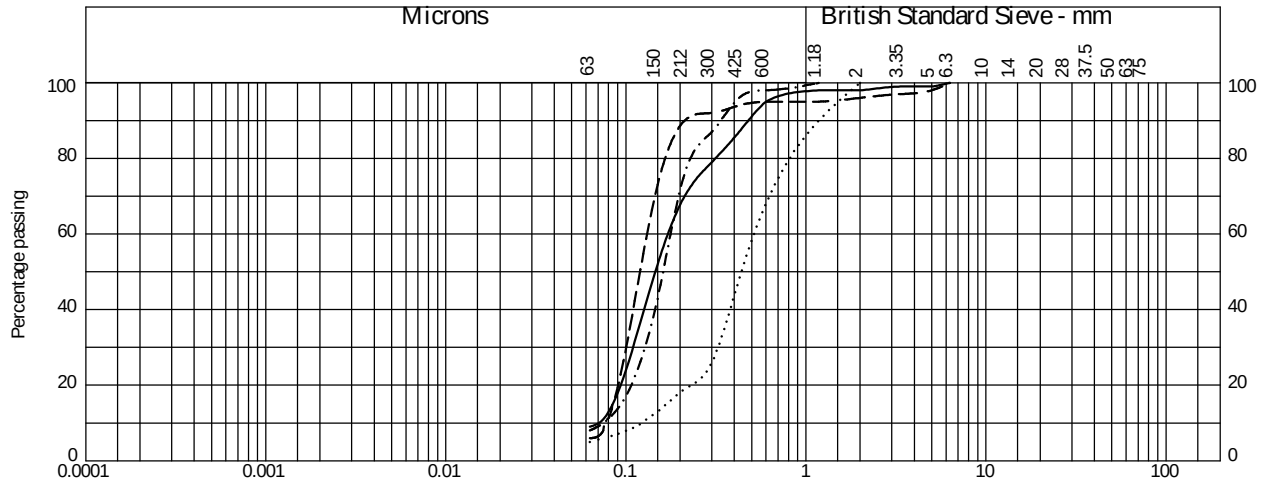
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B31	SPT3	133.2	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-B31	SPT5	126.7	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B31	SPT6	133.2	.....	SILTY, C-M SAND (S-M)	5.00
BH-B31	SPT9	133.2	–·–·–	SILTY, M-F SAND (S-M)	7.73

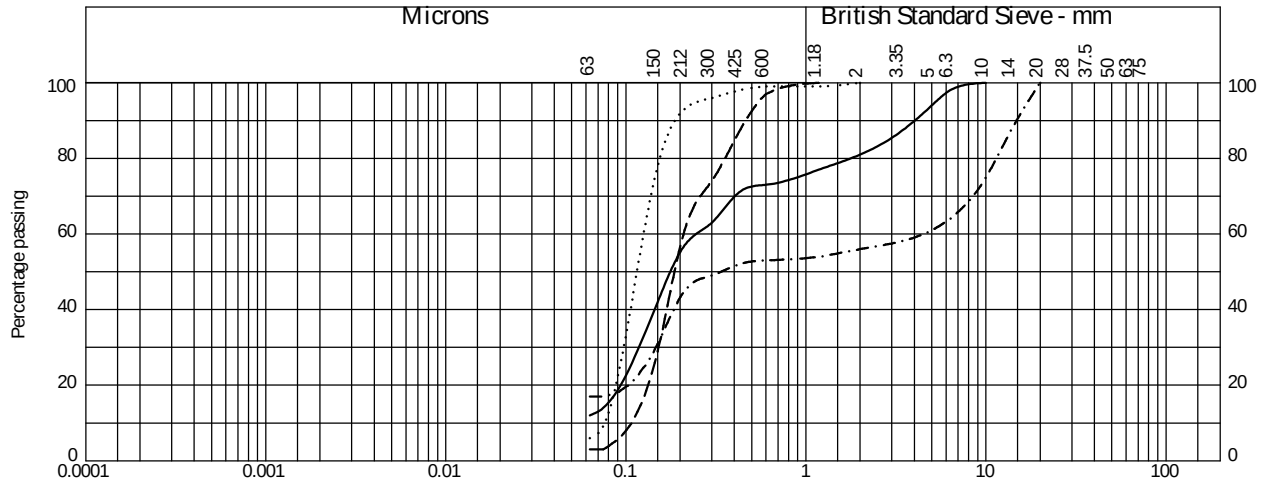
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B31	SPT11	125.5	———	GRAVELLY, SILTY, FINE SAND (S-M)	9.08
BH-B32	SPT3	130.7	– – –	SL. SILTY, M-F SAND (SP)	2.00
BH-B32	SPT5	115.5	.....	SILTY, FINE SAND (S-M)	4.00
BH-B32	SPT7	133.3	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.00

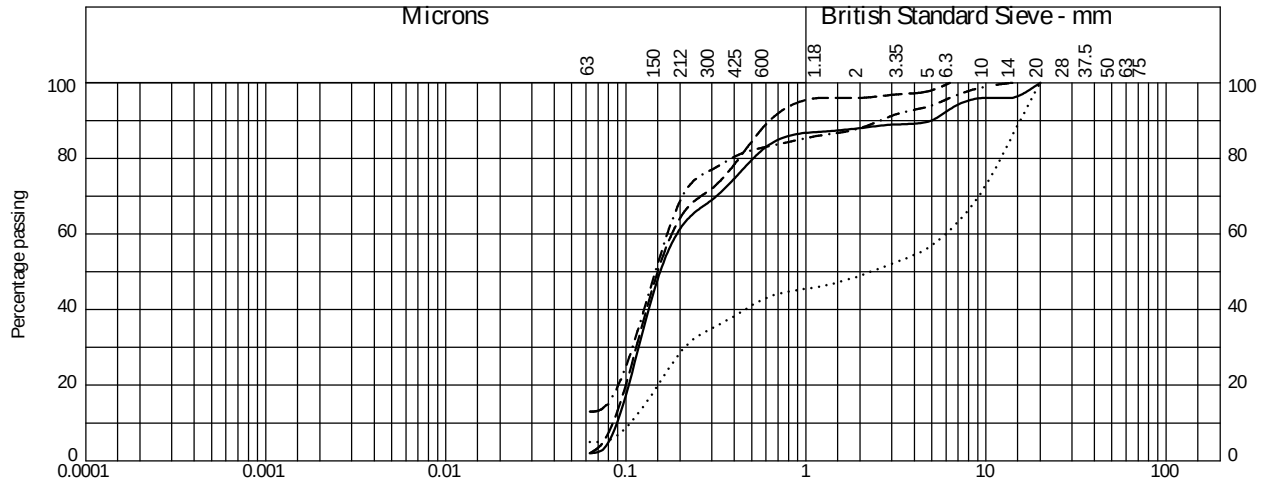
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B33	SPT2	137.6	———	GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00
BH-B33	SPT5	140.9	– – –	SL. GRAVELLY, SL. SILTY, FINE SAND (SP)	4.00
BH-B33	SPT6	124.6	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B34	SPT2	124.2	– . – . –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00

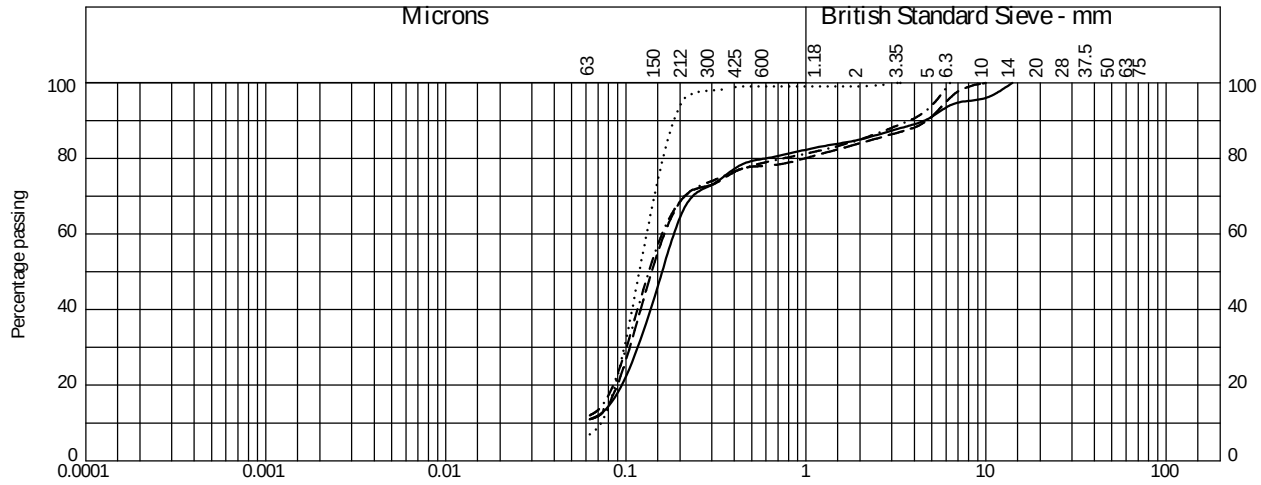
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B34	SPT5	127.0	———	GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B34	SPT7	126.2	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-B35	SPT2	138.9	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B35	SPT6	117.8	– . – . –	GRAVELLY, SILTY, FINE SAND (S-M)	5.00

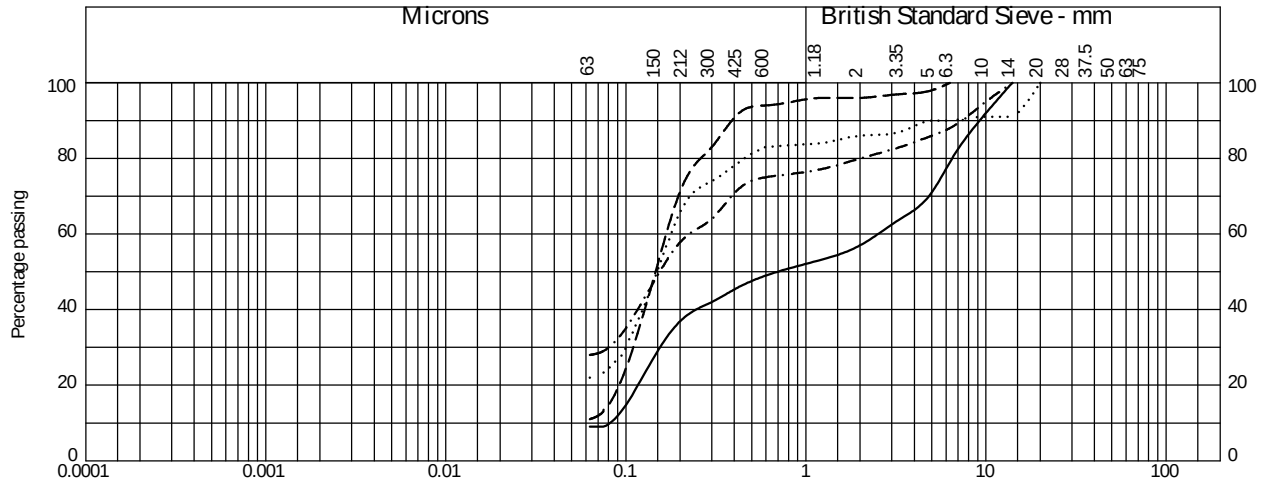
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B35	SPT9	125.8	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-B36	SPT2	135.9	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B36	SPT4	142.2	.....	GRAVELLY, V. SILTY, FINE SAND (SM)	3.00
BH-B36	SPT4	126.9	– . – . –	GRAVELLY, V. SILTY, FINE SAND (SM)	4.00

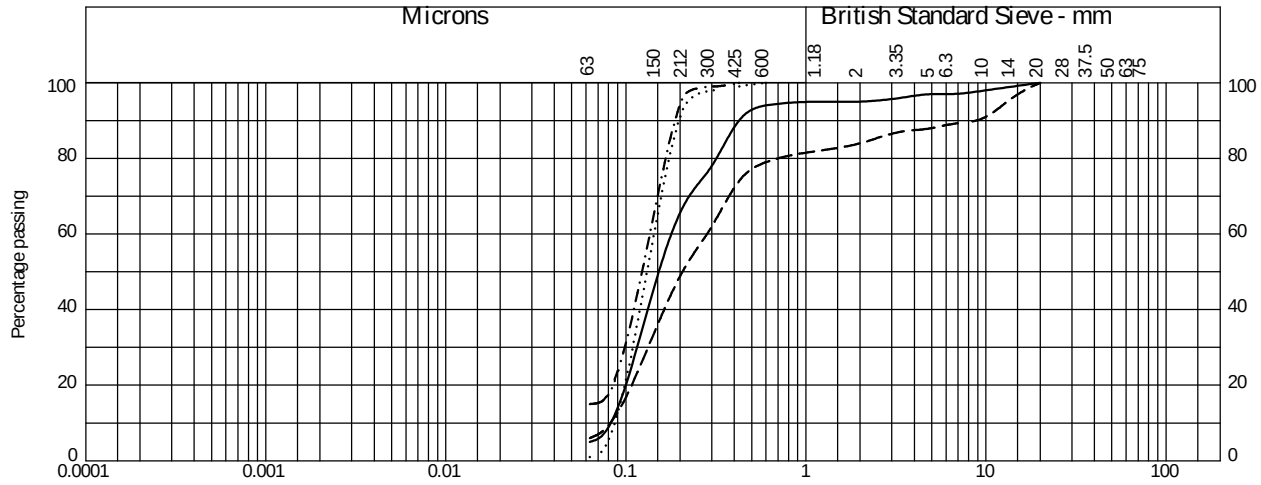
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B37	SPT2	123.0	———	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B37	SPT4	123.5	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-B38	SPT2	121.5	.....	SILTY, FINE SAND (S-M)	1.00
BH-B38	SPT4	126.1	– . – . –	SILTY, FINE SAND (S-M)	3.00

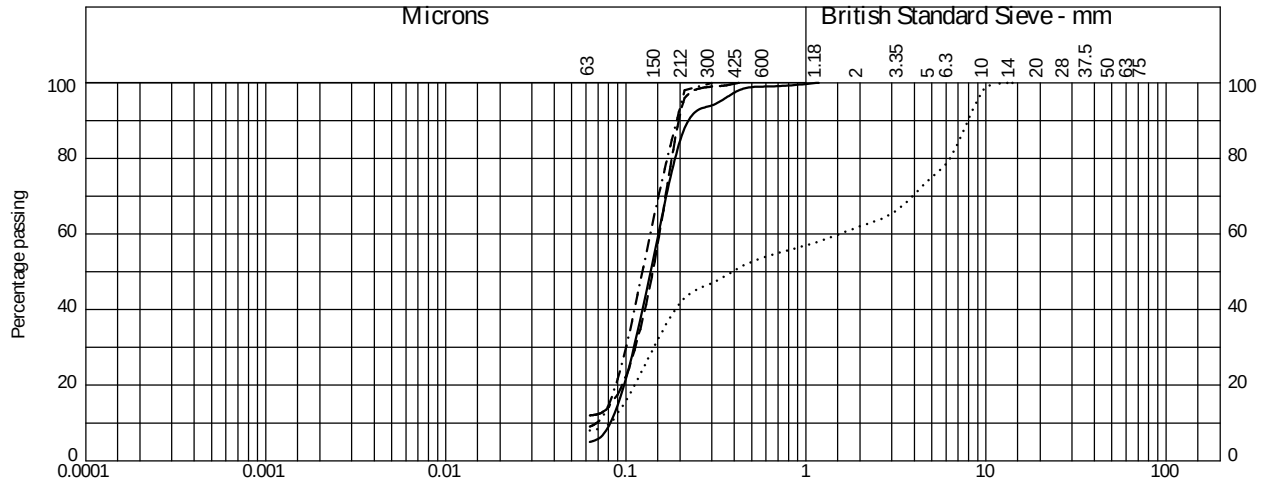
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B39	SPT2	112.6	———	SILTY, FINE SAND (S-M)	1.00
BH-B39	SPT4	132.9	– – –	SILTY, FINE SAND (S-M)	3.00
BH-B39	SPT5	137.0	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B40	SPT2	126.6	– . – . –	SILTY, FINE SAND (S-M)	1.00

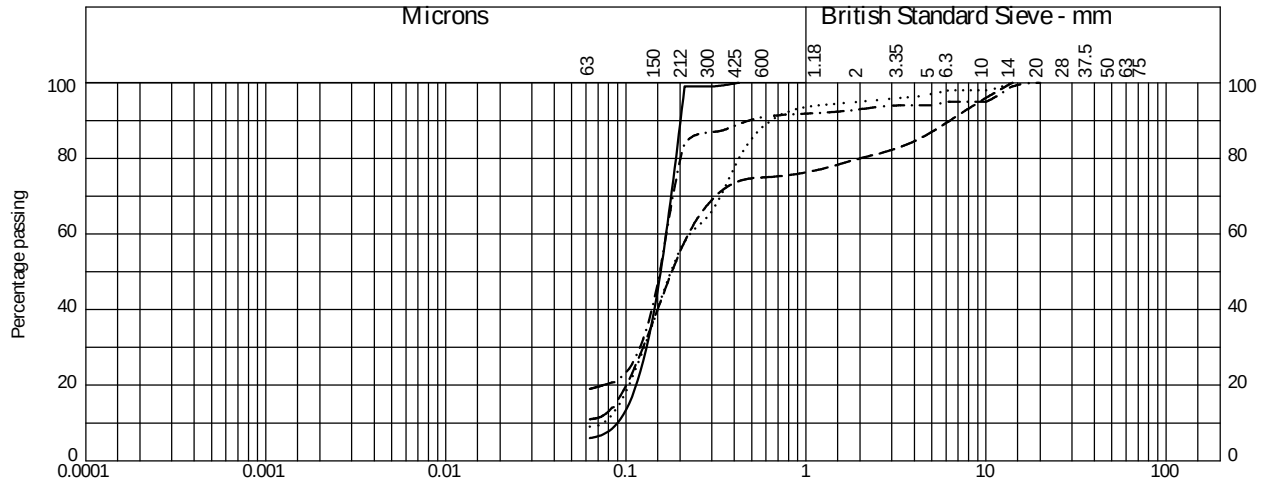
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B40	SPT4	115.1	———	SILTY, FINE SAND (S-M)	3.00
BH-B40	SPT5	122.8	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B41	SPT2	130.2	.....	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B41	SPT4	117.4	–·–·–	GRAVELLY, SILTY, FINE SAND (S-M)	3.00

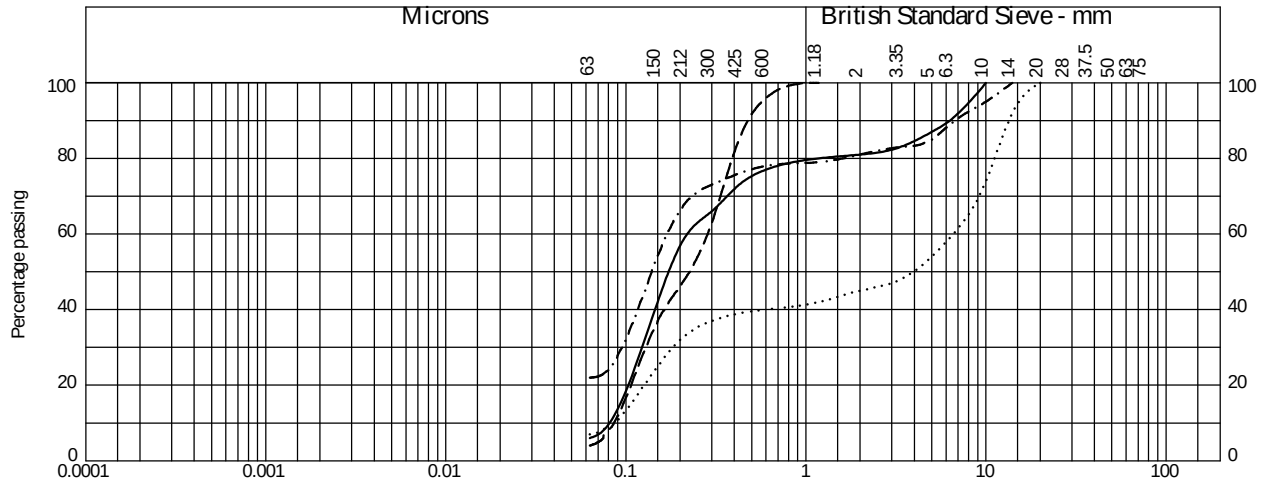
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B41	SPT7	133.2	———	GRAVELLY, SILTY, FINE SAND (S-M)	6.00
BH-B42	SPT2	133.5	– – –	SL. SILTY, F-M SAND (SP)	1.00
BH-B42	SPT4	136.0	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B43	SPT2	125.4	– . – . –	GRAVELLY, V. SILTY, FINE SAND (SM)	1.00

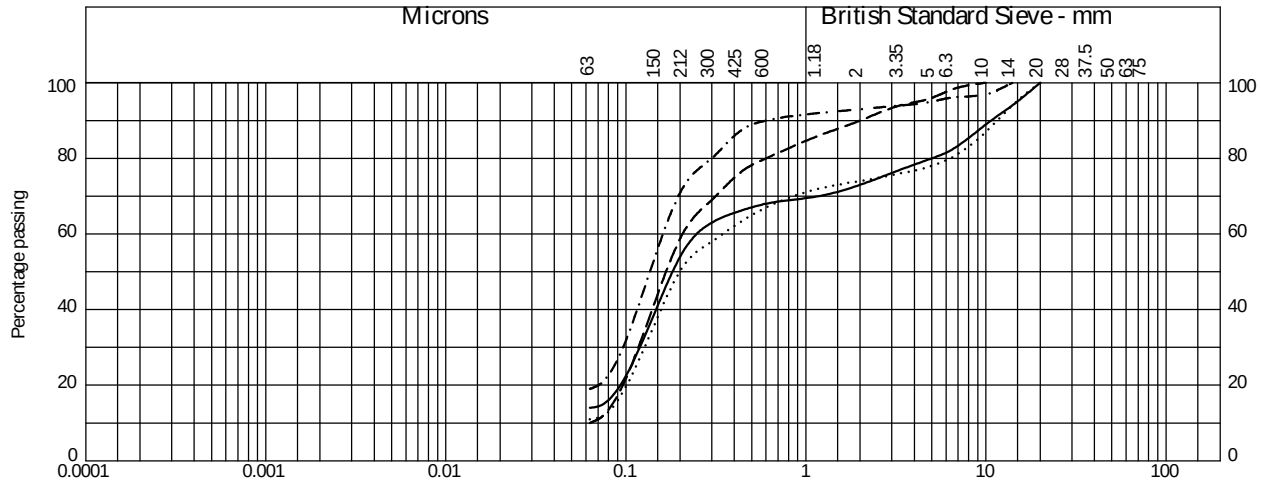
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B43	SPT6	113.7	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-B61	SPT2	112.8	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B61	SPT3	125.1	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-C29	SPT2	117.6	– . – . –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00

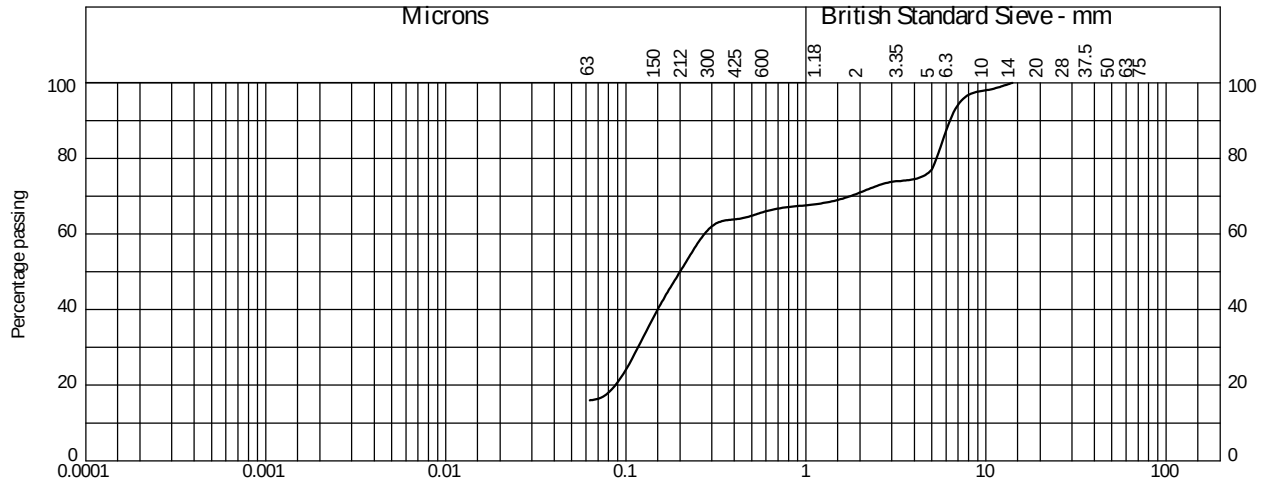
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-6
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-6
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 6)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	20/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	22/07-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C29	SPT4	129.1	———	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
			– – –		
			.....		
			–·–·–		

The results relate only to the samples tested.

Table C-1 (1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B31	**Sampling Date**	23/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	98
1.18	98
0.600	95
0.425	87
0.300	79
0.212	70
0.15	52
0.075	35
0.063	30
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

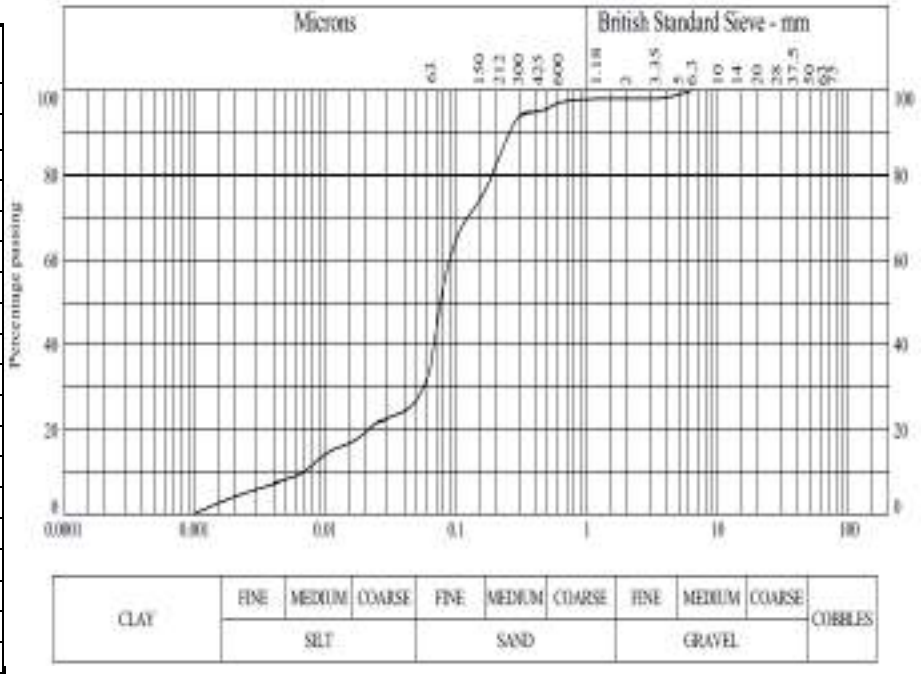


Table C-1 (2)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B31	**Sampling Date**	23/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	97
2	96
1.18	95
0.600	95
0.425	94
0.300	92
0.212	90
0.15	73
0.075	50
0.063	35
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

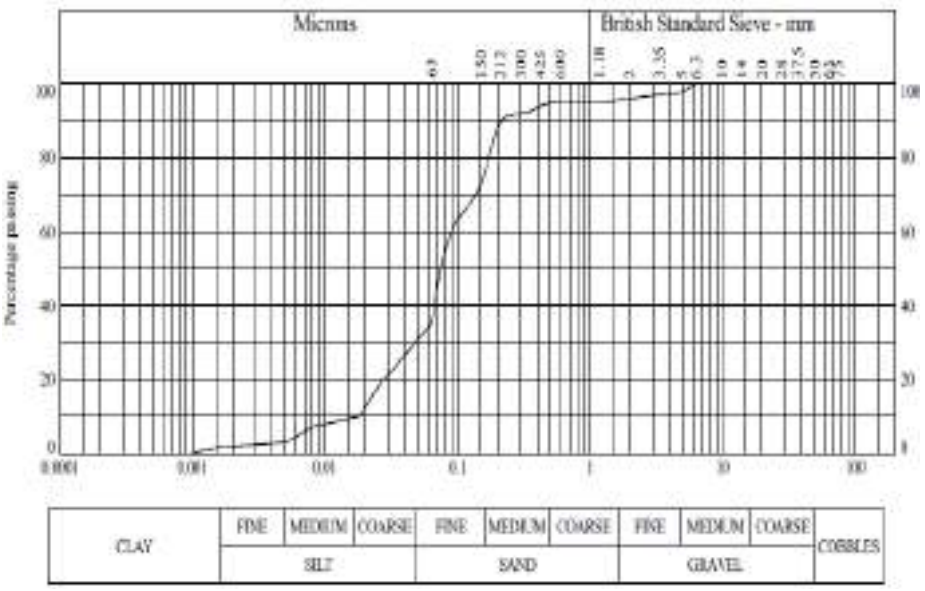


Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, C-M SAND	**Sampled By**	Matrix
Borehole No.	BH-B31	**Sampling Date**	23/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
2	100
1.18	90
0.600	68
0.425	48
0.300	26
0.212	19
0.15	15
0.075	13
0.063	10
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

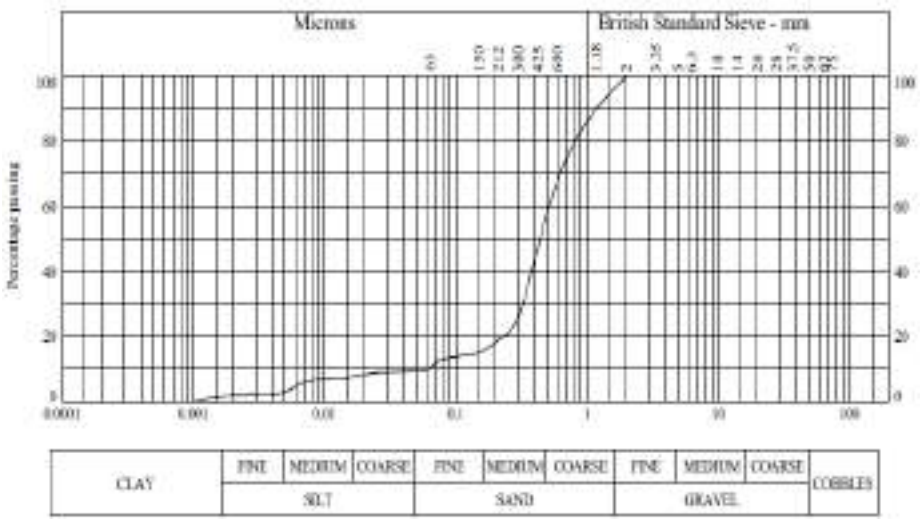


Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B31	**Sampling Date**	23/07/2015
Depth (m)	7.73	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	98
0.425	96
0.300	87
0.212	76
0.15	43
0.075	30
0.063	25
0.028	20
0.018	10
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

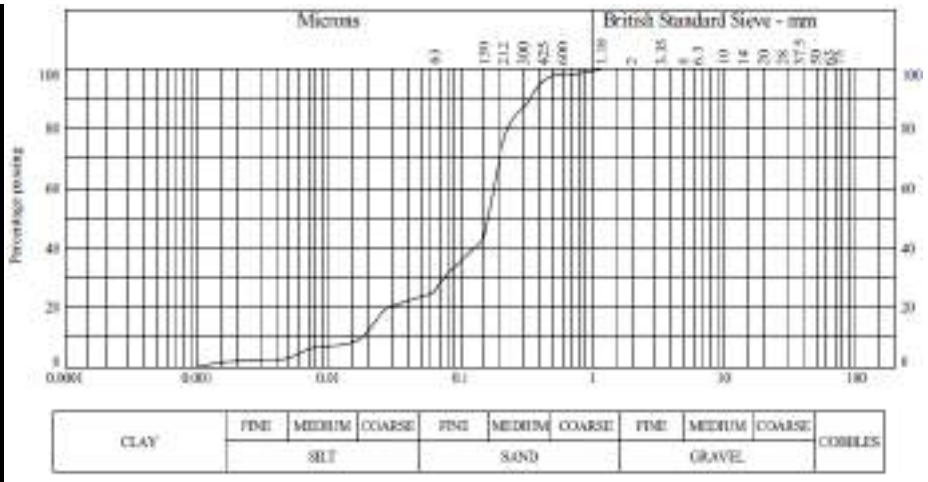


Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT11
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B31	**Sampling Date**	23/07/2015
Depth (m)	9.08	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	94
3.35	87
2	81
1.18	77
0.600	73
0.425	71
0.300	63
0.212	57
0.15	42
0.075	30
0.063	25
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

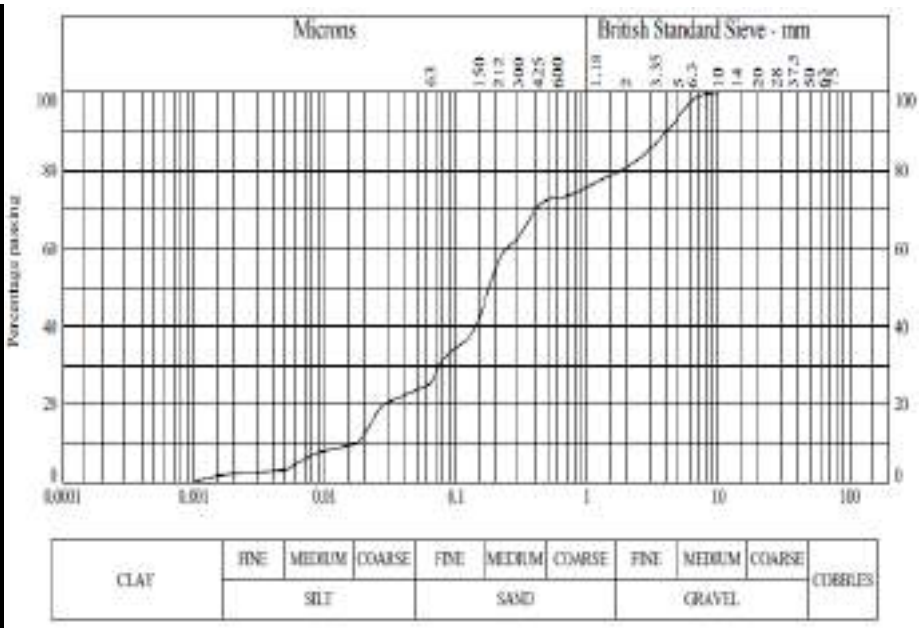


Table C-1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B32	**Sampling Date**	19/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	20/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	22/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
2	100
1.18	99
0.600	99
0.425	98
0.300	96
0.212	93
0.15	78
0.075	50
0.063	35
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

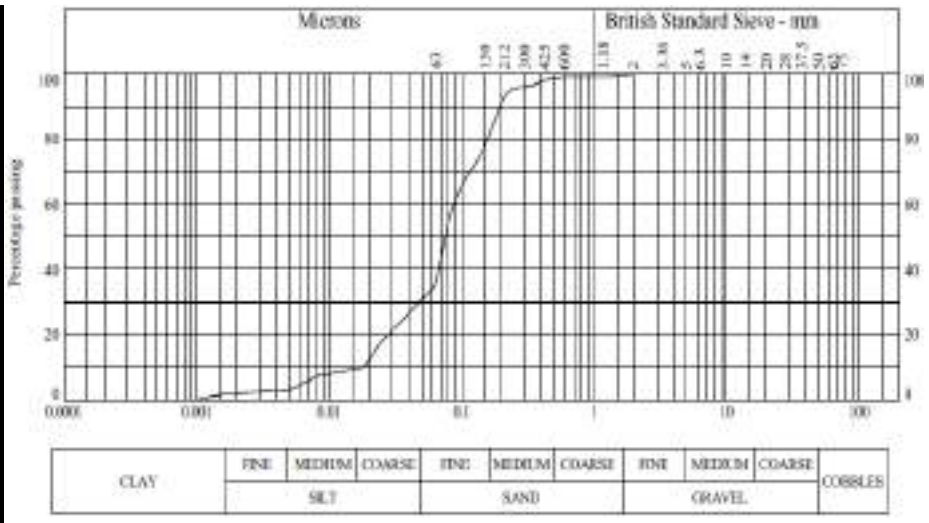


Table C-1 (7)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B32	**Sampling Date**	19/07/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	20/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	22/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	88
10	75
6.3	64
5	61
3.35	58
2	56
1.18	54
0.600	53
0.425	52
0.300	49
0.212	45
0.15	31
0.075	17
0.063	15
0.028	12
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

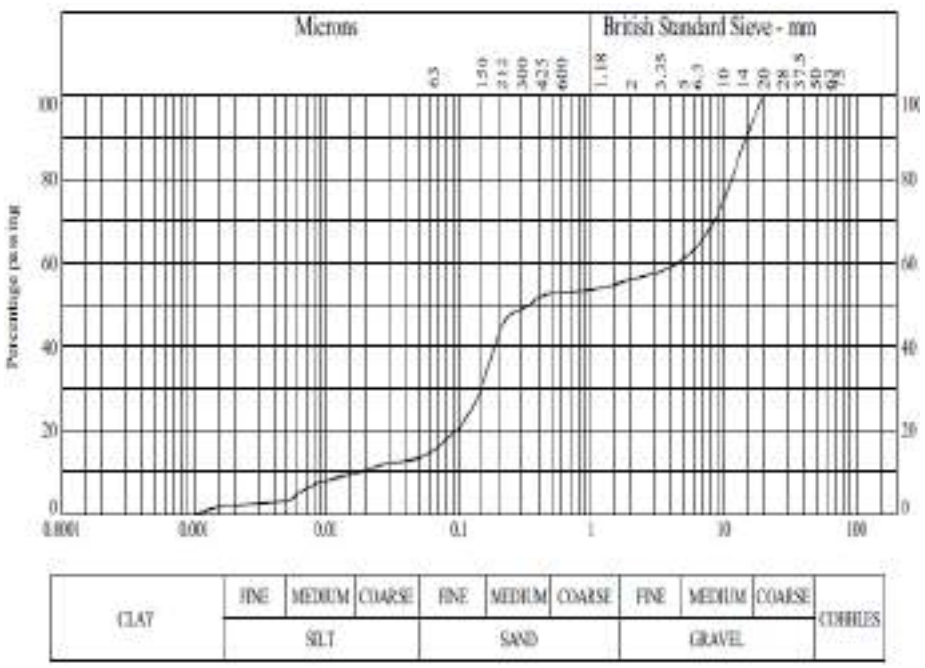


Table C-1 (8)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B33	**Sampling Date**	20/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	86
10	73
6.3	61
5	57
3.35	53
2	49
1.18	46
0.600	43
0.425	39
0.300	35
0.212	30
0.15	20
0.075	15
0.063	12
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

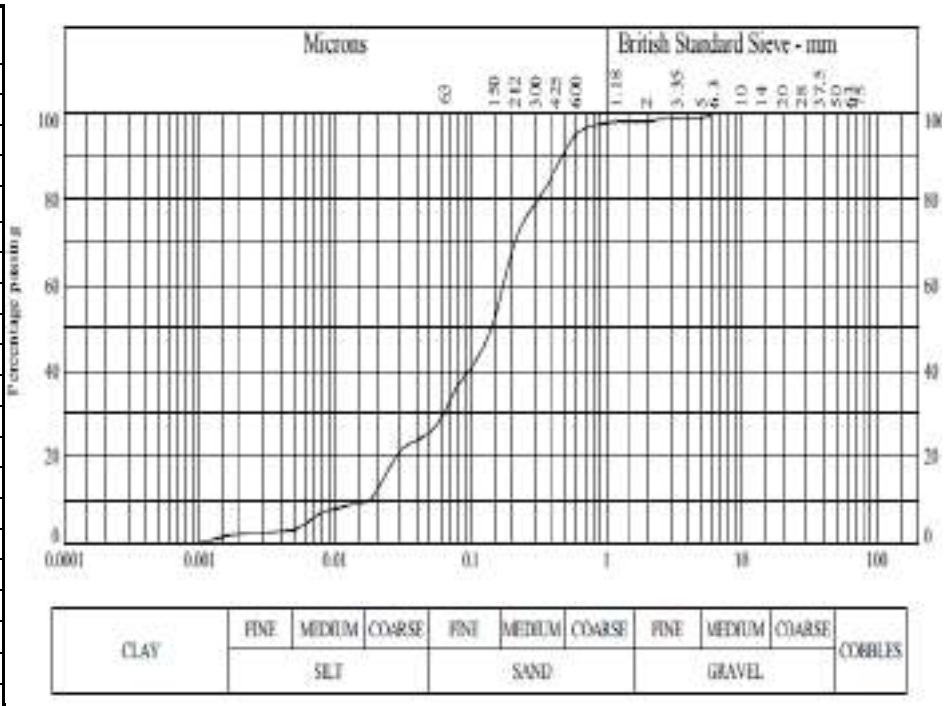


Table C-1 (9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B34	**Sampling Date**	20/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	26/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	96
5	94
3.35	92
2	88
1.18	86
0.600	83
0.425	81
0.300	77
0.212	71
0.15	52
0.075	35
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

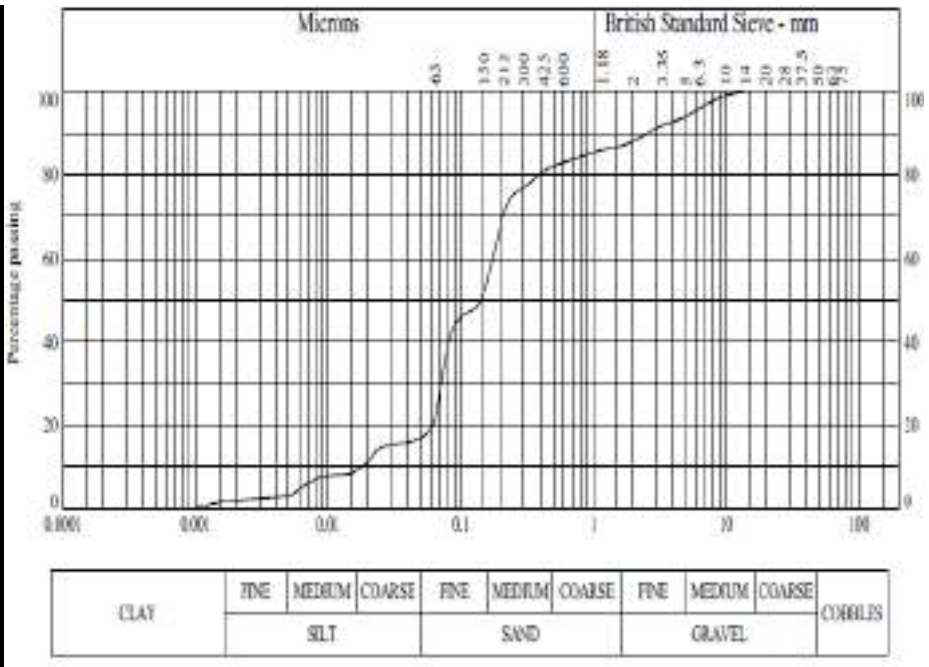


Table C-1 (10)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B34	**Sampling Date**	20/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	26/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	94
5	91
3.35	88
2	85
1.18	83
0.600	80
0.425	78
0.300	73
0.212	67
0.15	46
0.075	30
0.063	25
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

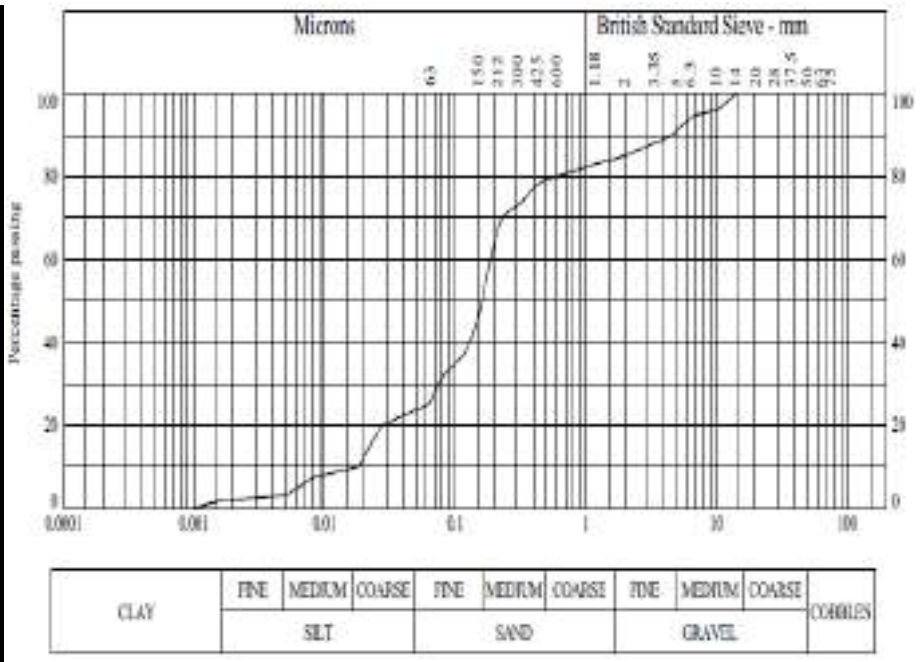


Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B34	**Sampling Date**	20/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	26/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	96
5	91
3.35	87
2	84
1.18	81
0.600	78
0.425	77
0.300	73
0.212	70
0.15	55
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

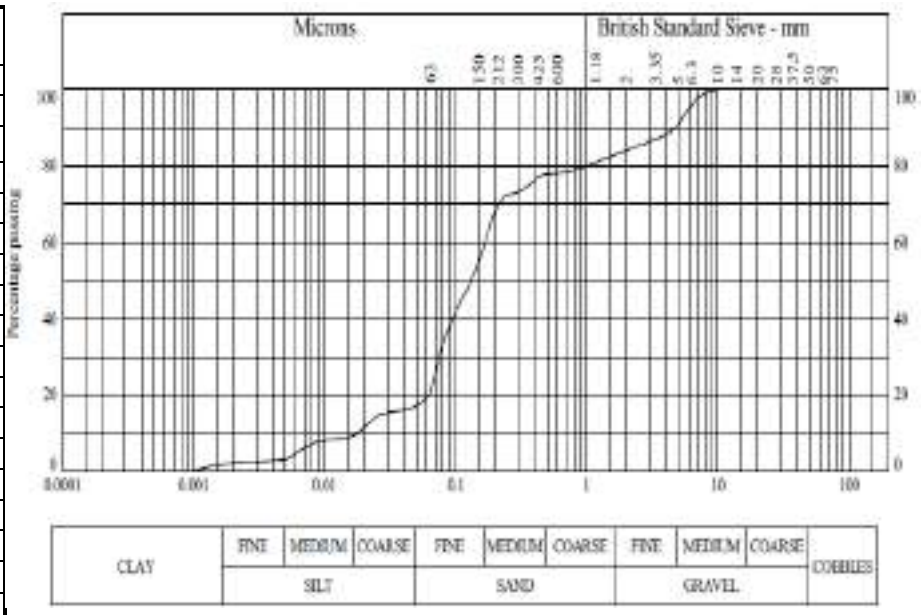


Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B34	**Sampling Date**	19/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.600	99
0.425	99
0.300	98
0.212	96
0.15	74
0.075	50
0.063	35
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

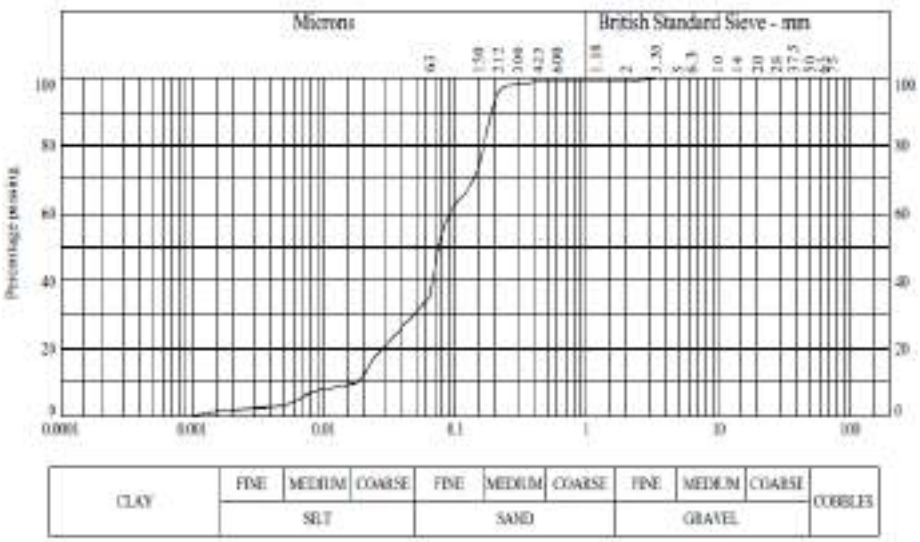


Table C-1 (13)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B34	**Sampling Date**	19/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	94
3.35	89
2	85
1.18	82
0.600	79
0.425	77
0.300	74
0.212	70
0.15	57
0.075	35
0.063	30
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

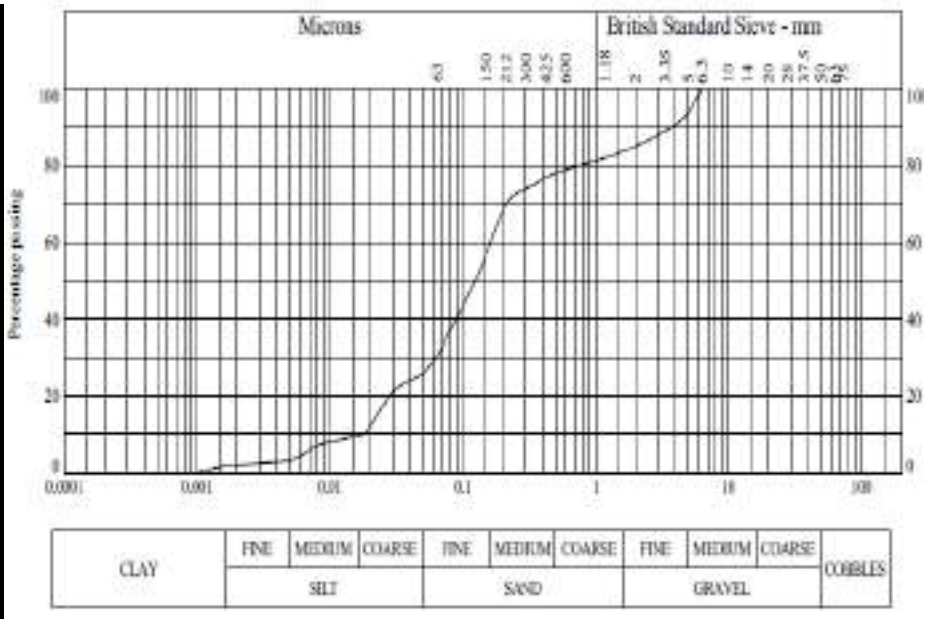


Table C-1 (14)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B34	**Sampling Date**	19/07/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	92
6.3	79
5	71
3.35	64
2	57
1.18	53
0.600	49
0.425	46
0.300	42
0.212	38
0.15	29
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

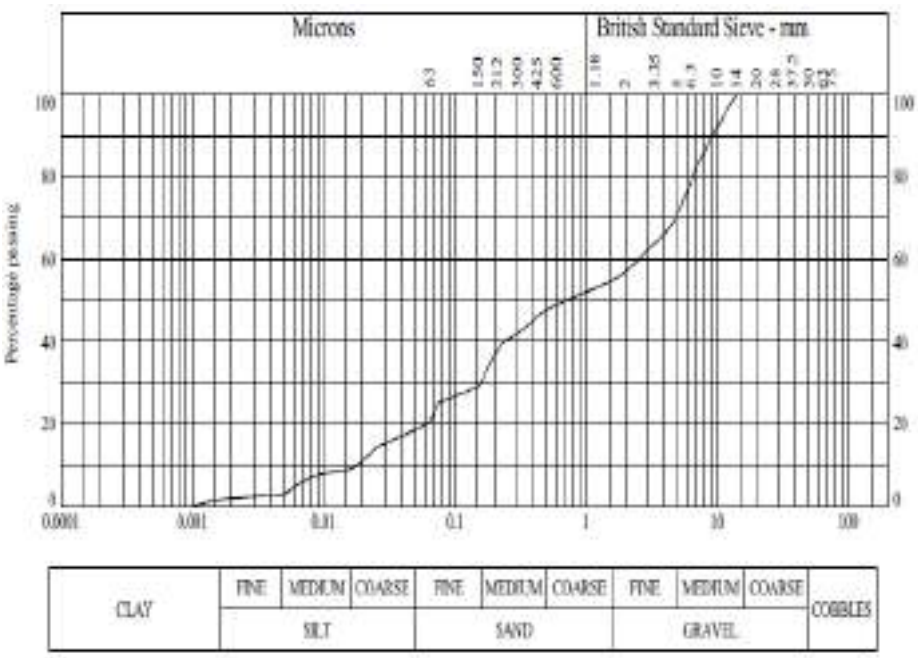


Table C-1 (15)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B36	**Sampling Date**	21/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	97
2	96
1.18	96
0.600	94
0.425	92
0.300	83
0.212	74
0.15	52
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

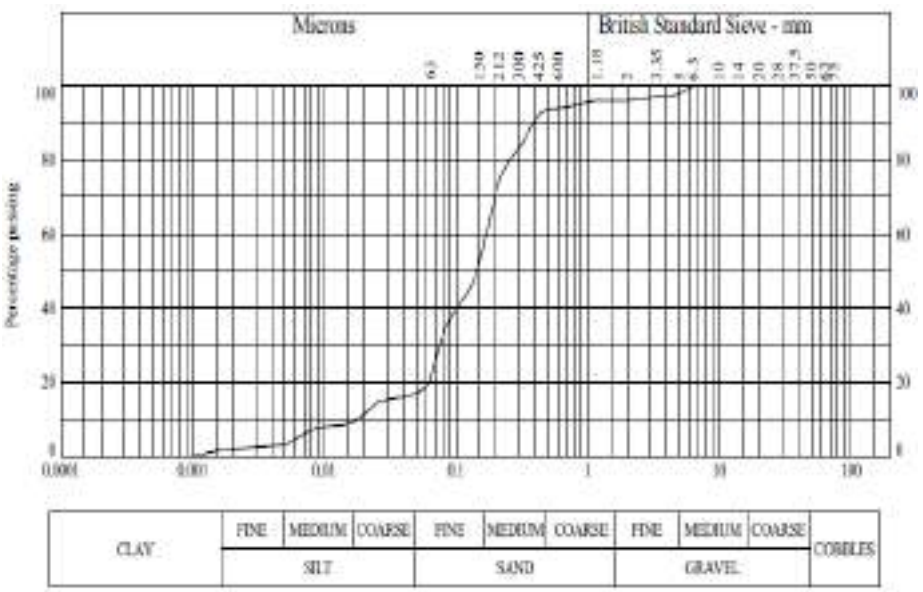


Table C-1 (16)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B36	**Sampling Date**	21/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	91
10	91
6.3	90
5	90
3.35	87
2	86
1.18	84
0.600	83
0.425	79
0.300	74
0.212	68
0.15	50
0.075	23
0.063	22
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

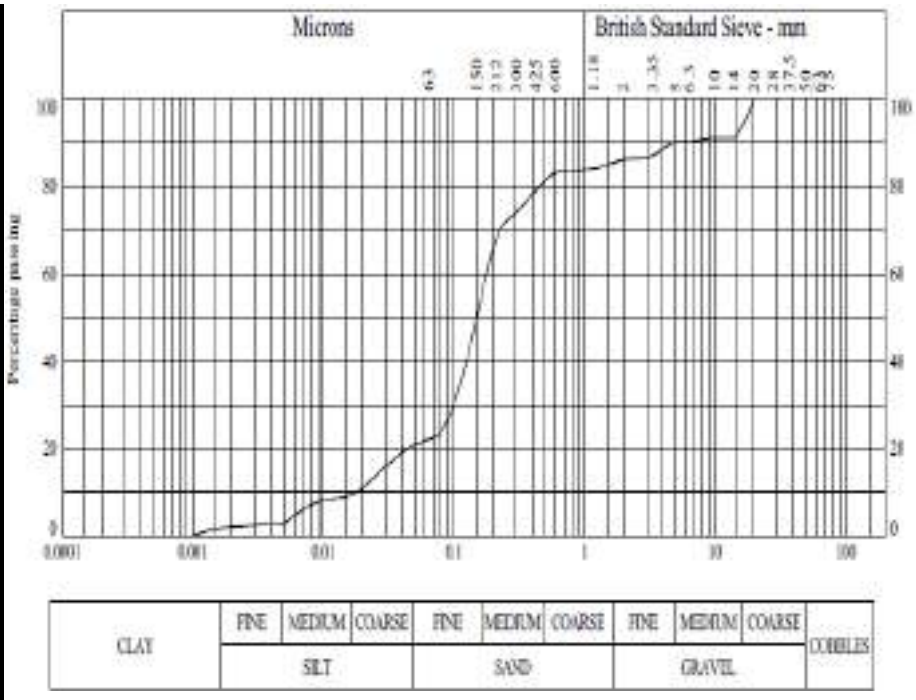


Table C-1 (17)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY SAND	**Sampled By**	Matrix
Borehole No.	BH-B36	**Sampling Date**	21/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	95
6.3	88
5	86
3.35	83
2	80
1.18	77
0.600	75
0.425	72
0.300	64
0.212	59
0.15	49
0.075	29
0.063	28
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

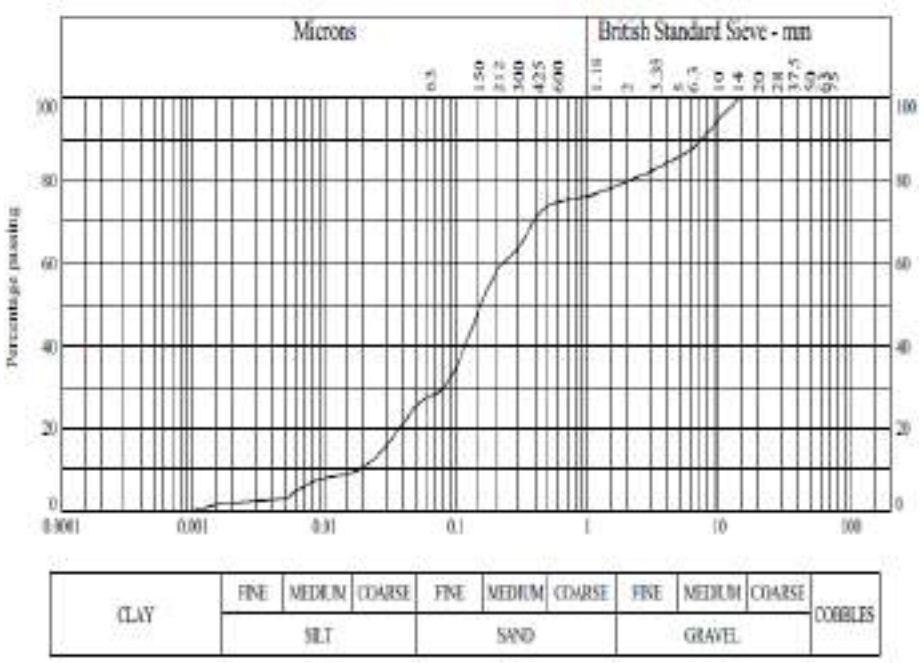


Table C-1 (18)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B37	**Sampling Date**	21/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	97
6.3	97
5	96
3.35	95
2	95
1.18	94
0.600	90
0.425	78
0.300	68
0.212	49
0.15	30
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

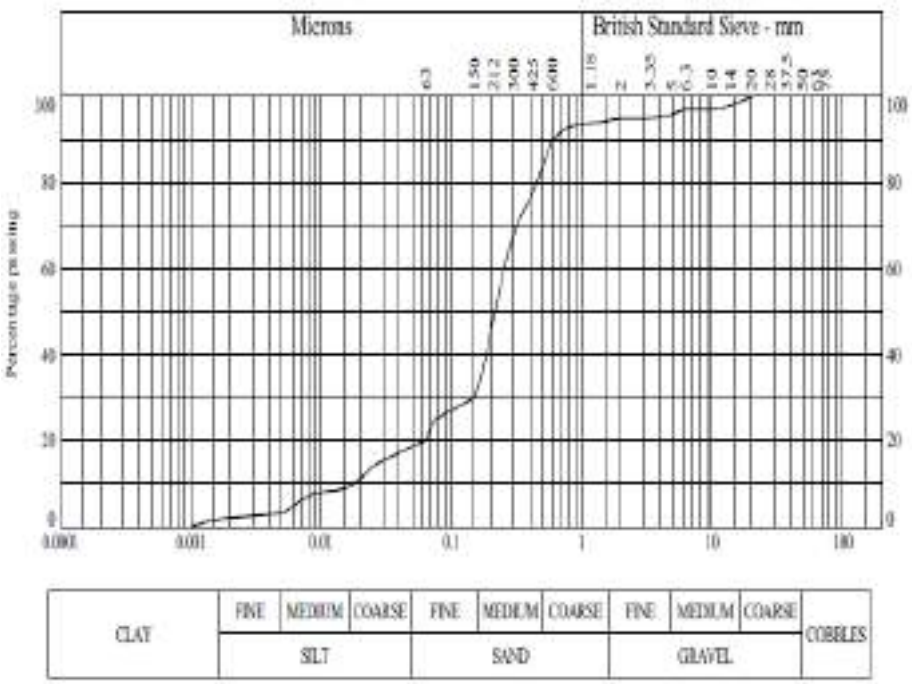


Table C-1 (19)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B37	**Sampling Date**	21/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	96
10	91
6.3	89
5	88
3.35	87
2	84
1.18	82
0.600	79
0.425	74
0.300	62
0.212	51
0.15	36
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

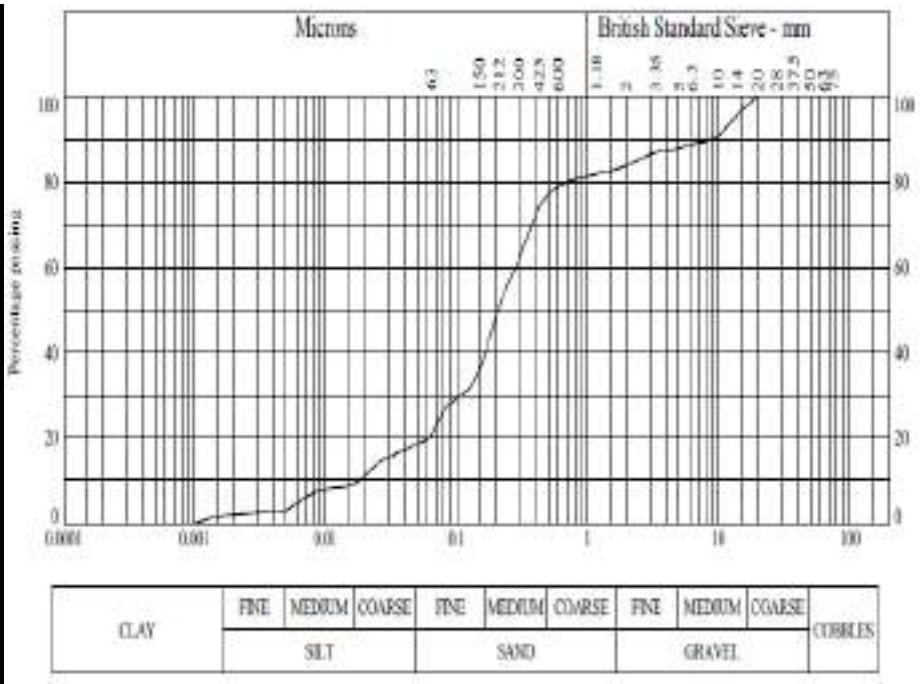


Table C-1 (20)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SNAD	**Sampled By**	Matrix
Borehole No.	BH-B38	**Sampling Date**	30/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.425	100
0.300	99
0.212	97
0.15	70
0.075	16
0.063	15
0.028	14
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

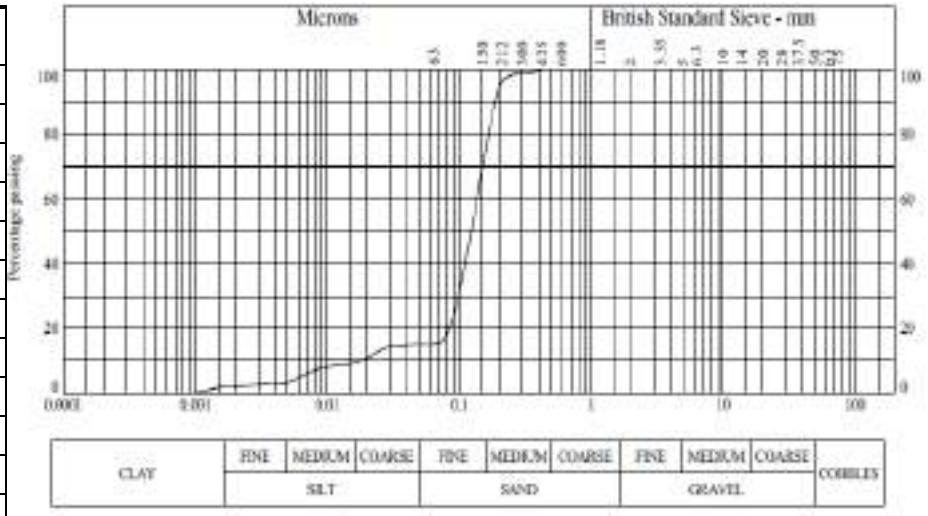


Table C-1 (21)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B39	**Sampling Date**	21/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	99
0.425	98
0.300	94
0.212	88
0.15	59
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

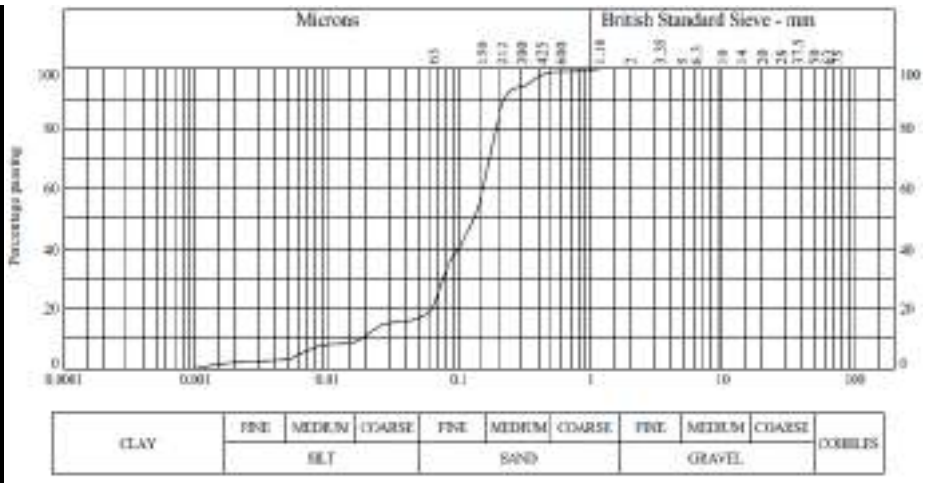


Table C-1 (22)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B39	**Sampling Date**	21/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.425	100
0.300	99
0.212	96
0.15	57
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

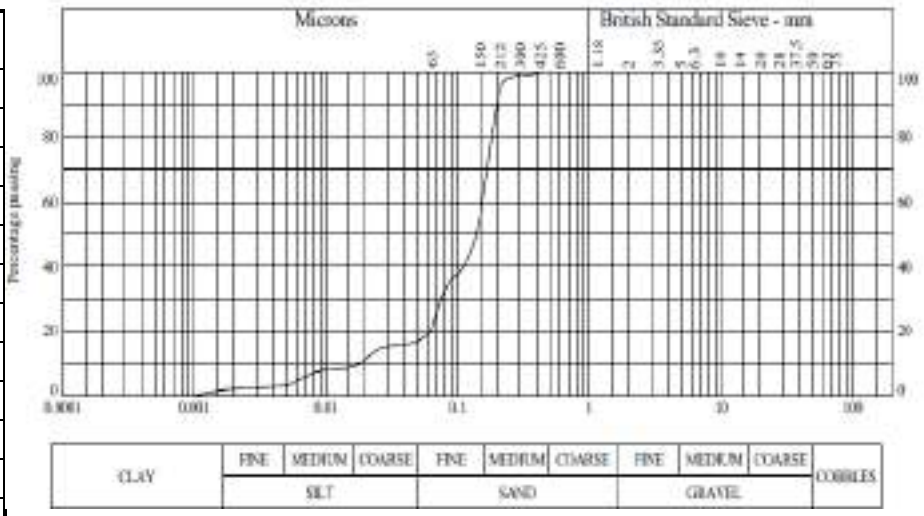


Table C-1 (23)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B39	**Sampling Date**	21/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	80
5	75
3.35	67
2	62
1.18	58
0.600	54
0.425	51
0.300	47
0.212	43
0.15	32
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

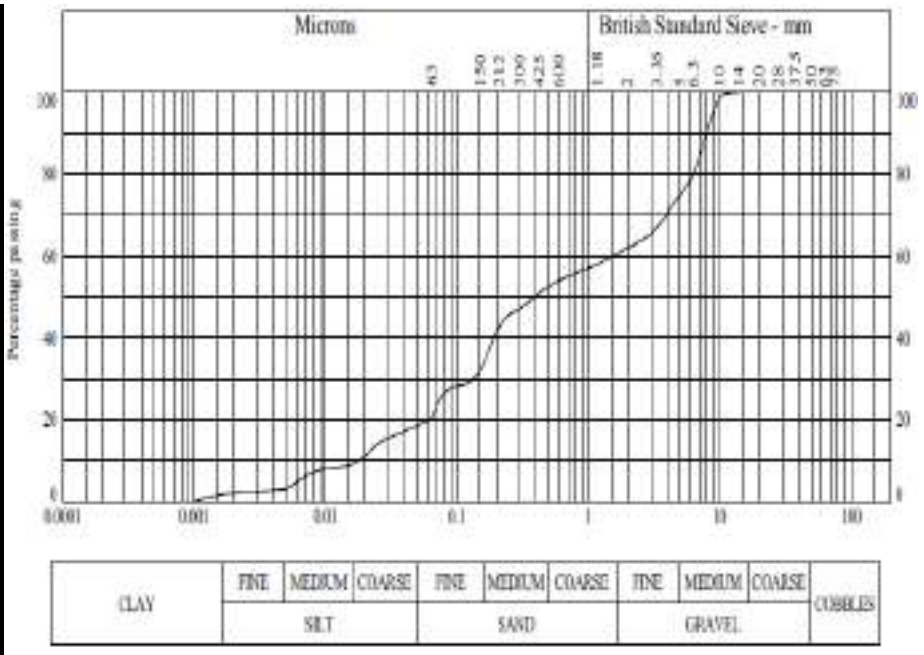


Table C-1 (24)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B40	**Sampling Date**	09/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.300	100
0.212	98
0.15	69
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

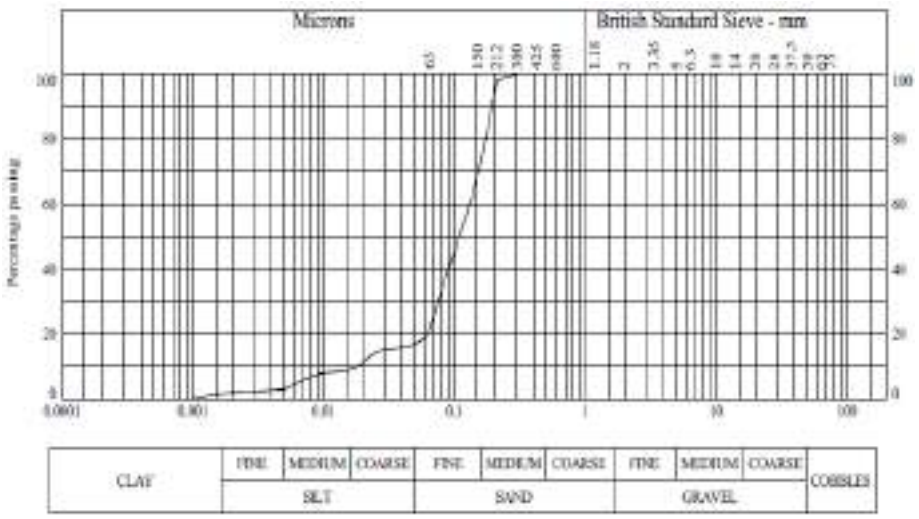


Table C-1 (25)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B40	**Sampling Date**	09/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.425	100
0.300	99
0.212	99
0.15	45
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

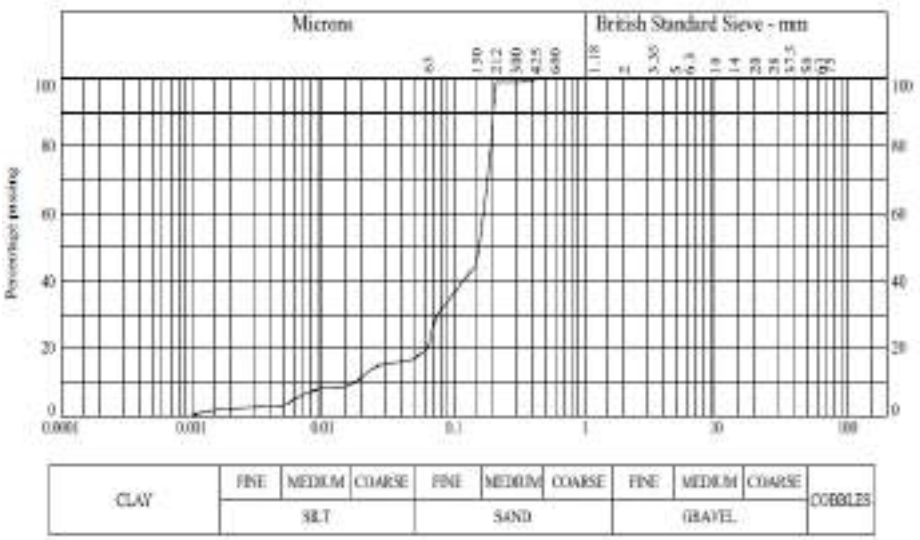


Table C-1 (26)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B40	**Sampling Date**	09/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	90
5	87
3.35	83
2	80
1.18	77
0.600	75
0.425	74
0.300	69
0.212	58
0.15	40
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

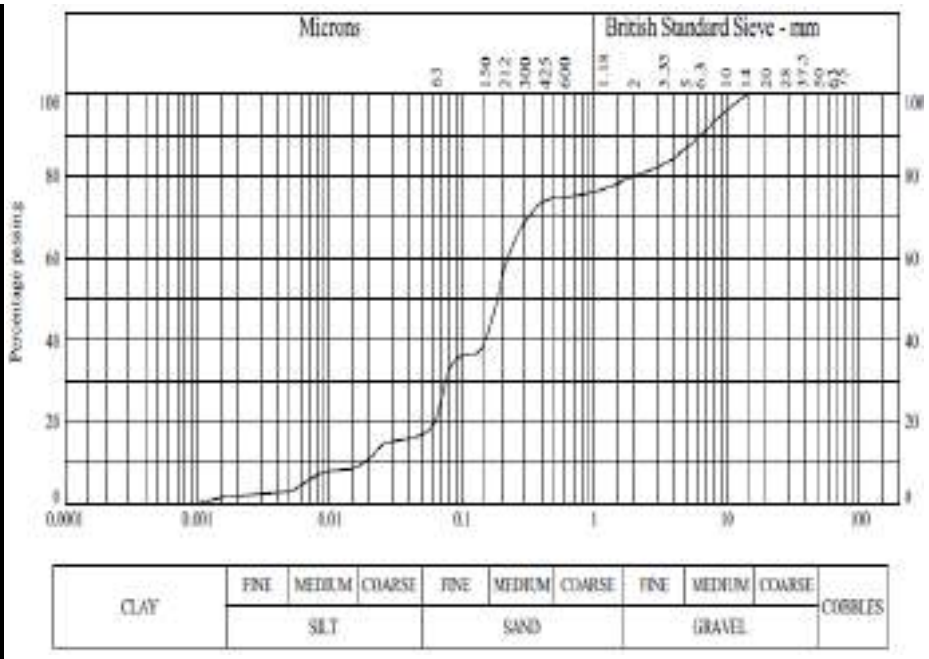


Table C-1 (27)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B41	**Sampling Date**	25/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	98
5	97
3.35	96
2	95
1.18	94
0.600	89
0.425	80
0.300	66
0.212	58
0.15	40
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

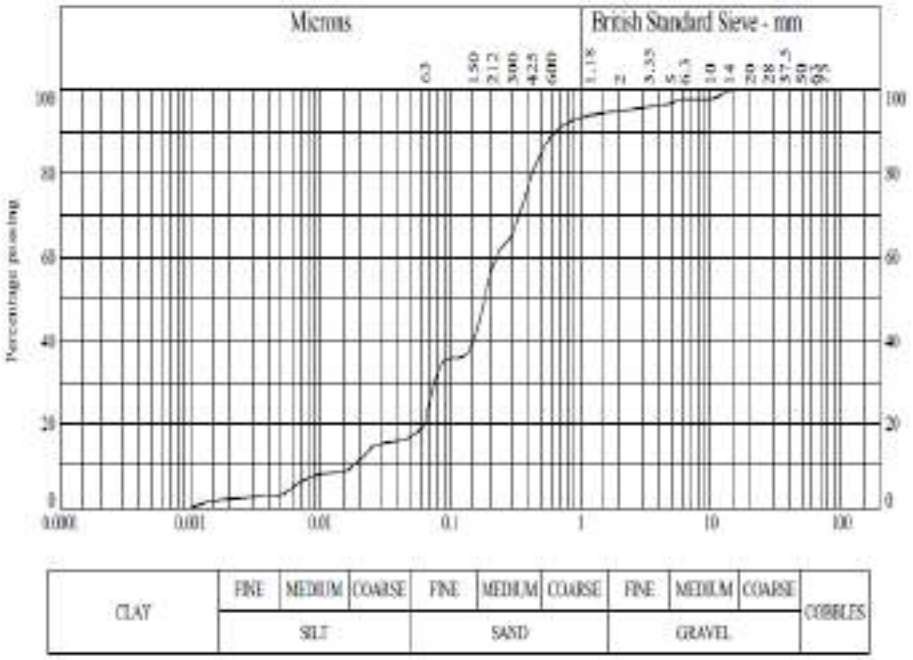


Table C- (28)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B41	**Sampling Date**	25/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	99
10	95
6.3	95
5	94
3.35	94
2	93
1.18	92
0.600	91
0.425	89
0.300	87
0.212	84
0.15	47
0.075	20
0.063	19
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

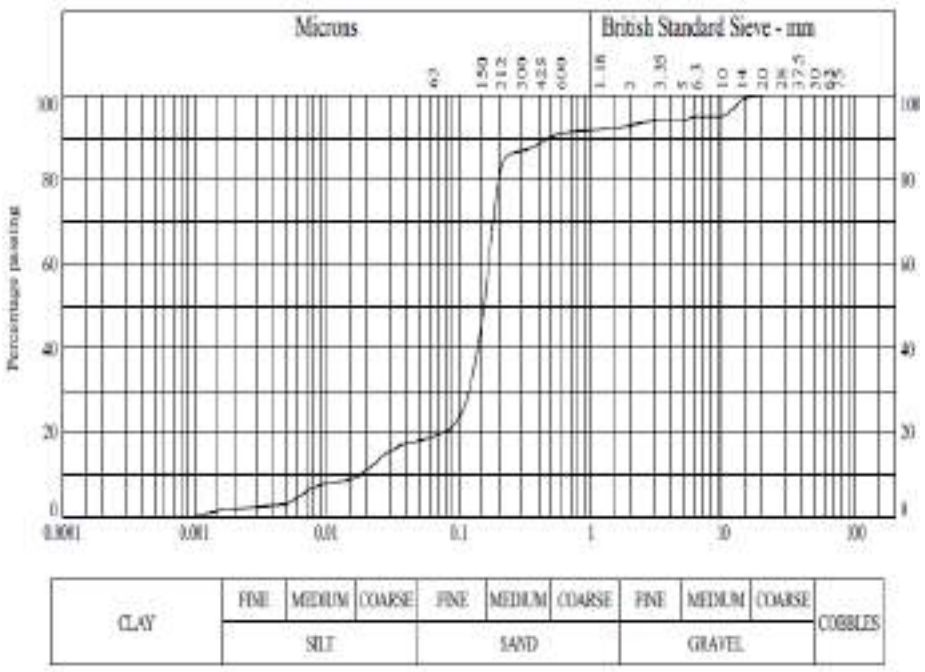


Table C-1 (29)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B41	**Sampling Date**	25/07/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	90
5	87
3.35	83
2	81
1.18	80
0.600	77
0.425	73
0.300	66
0.212	59
0.15	42
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

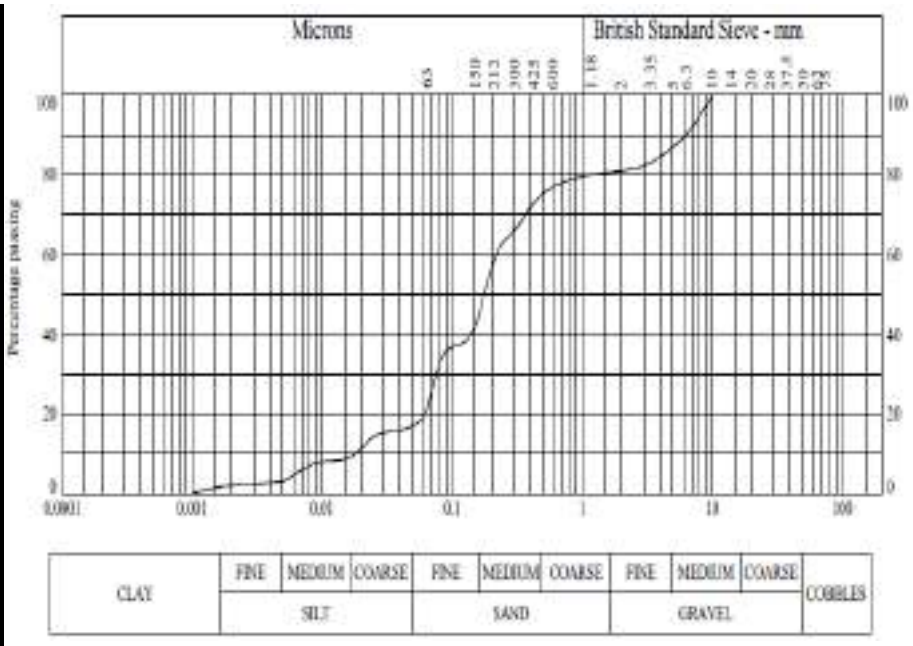


Table C-1 (30)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B42	**Sampling Date**	22/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	26/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	92
10	74
6.3	59
5	54
3.35	48
2	45
1.18	42
0.600	40
0.425	39
0.300	37
0.212	33
0.15	25
0.075	20
0.063	15
0.028	12
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

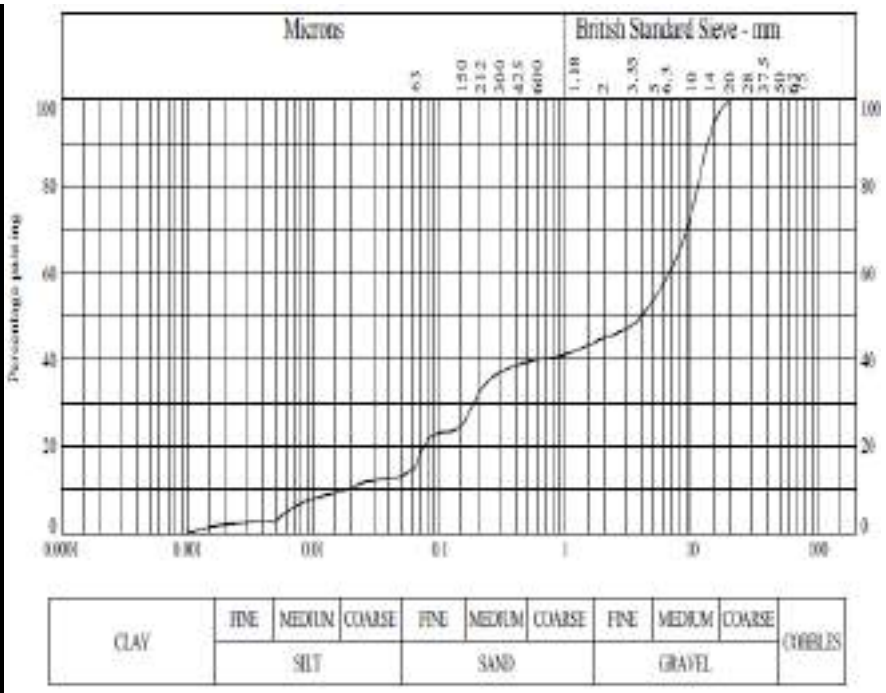


Table C-1 (31)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, V. SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B43	**Sampling Date**	25/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	95
6.3	89
5	85
3.35	83
2	81
1.18	79
0.600	78
0.425	76
0.300	73
0.212	68
0.15	54
0.075	23
0.063	22
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

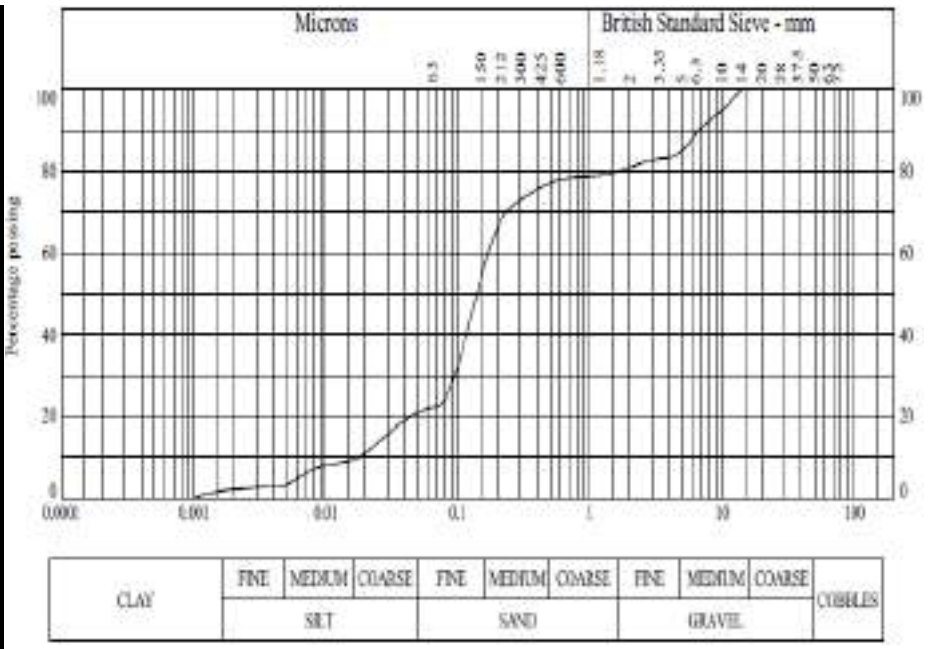


Table C-1 (32)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B43	**Sampling Date**	25/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	89
6.3	82
5	80
3.35	77
2	73
1.18	70
0.600	68
0.425	66
0.300	63
0.212	56
0.15	41
0.075	35
0.063	25
0.028	20
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

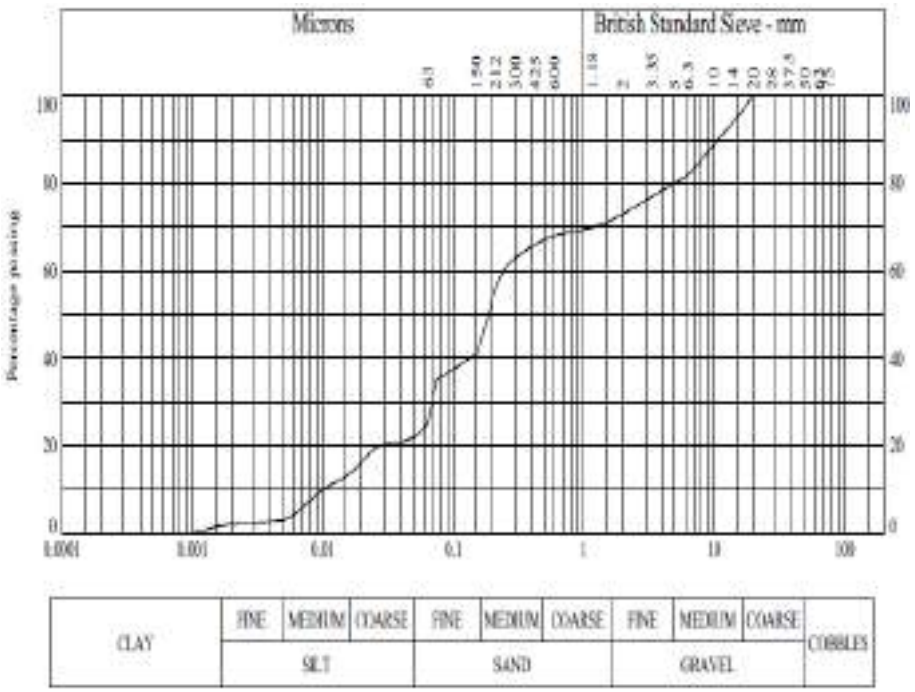


Table C-1 (33)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B61	**Sampling Date**	25/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	96
3.35	94
2	90
1.18	86
0.600	80
0.425	76
0.300	69
0.212	61
0.15	44
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

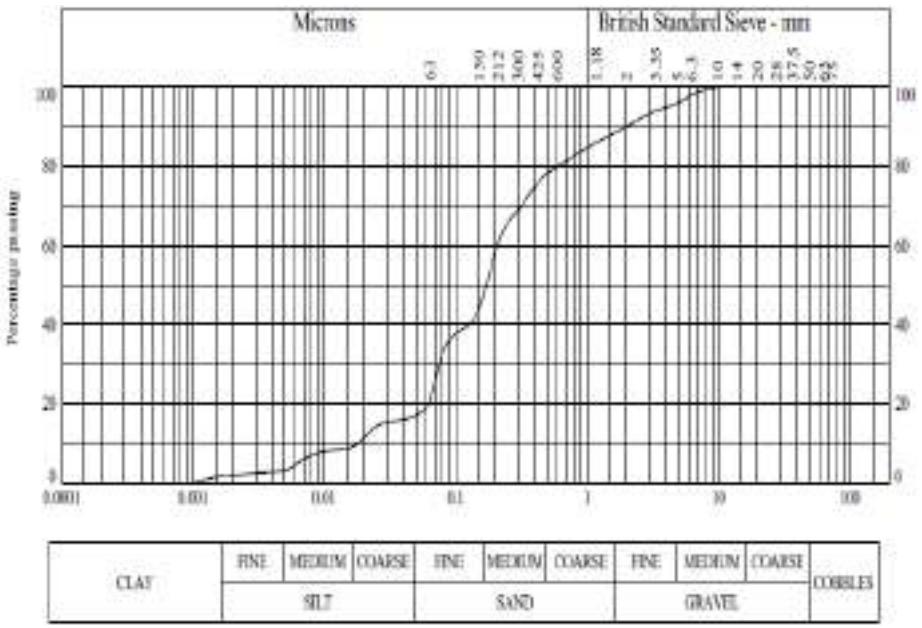


Table C-1 (34)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B61	**Sampling Date**	25/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	87
6.3	80
5	78
3.35	76
2	74
1.18	72
0.600	67
0.425	63
0.300	58
0.212	52
0.15	38
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

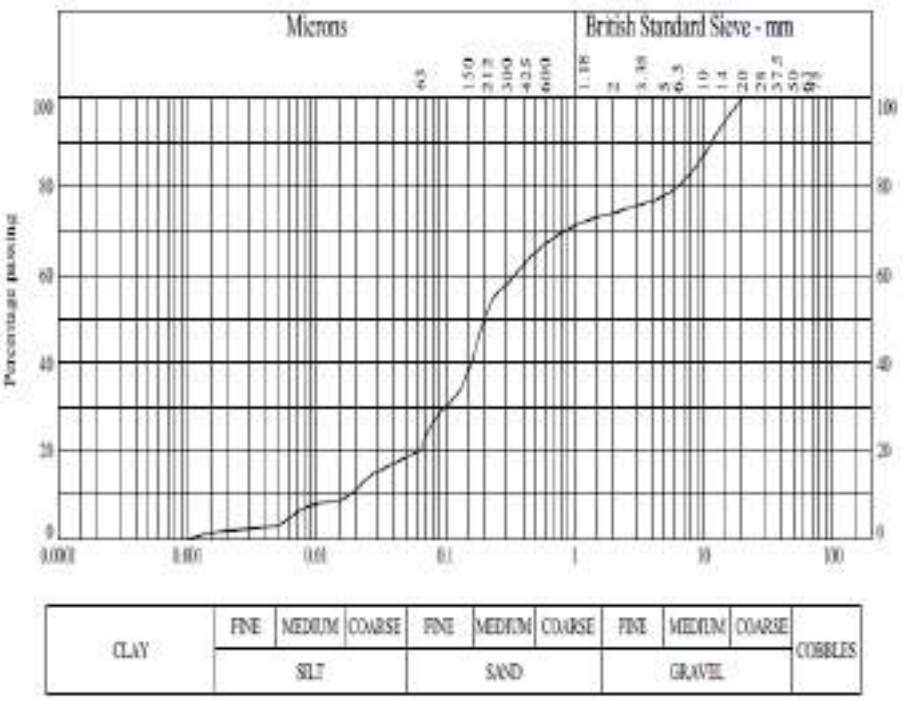


Table C-1 (35)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C29	**Sampling Date**	19/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	26/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	97
6.3	96
5	95
3.35	94
2	93
1.18	92
0.600	90
0.425	87
0.300	80
0.212	73
0.15	56
0.075	21
0.063	19
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

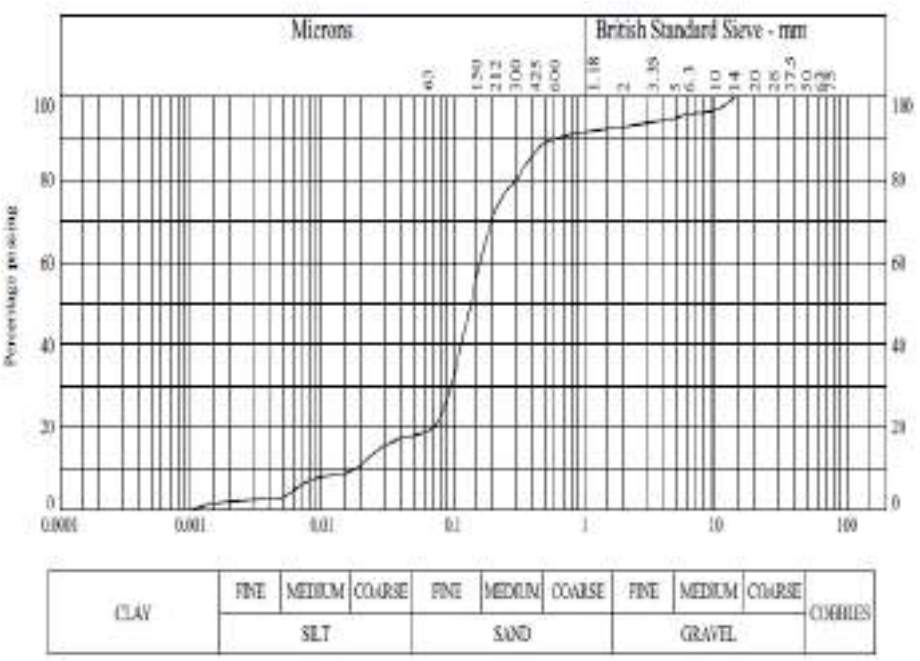


Table C-1 (36)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-6
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C29	**Sampling Date**	19/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	23/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	26/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	90
5	77
3.35	74
2	71
1.18	68
0.600	66
0.425	64
0.300	62
0.212	52
0.15	40
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

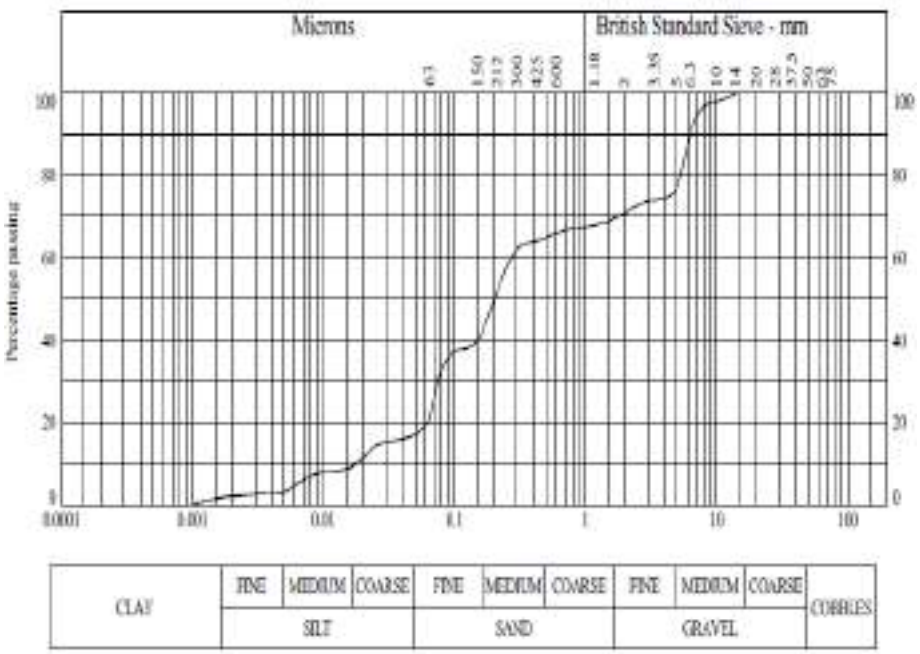


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	20/07-12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	21/07-13/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	19/07-09/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-B31	2.00	13.0
BH-B31	4.00	12.0
BH-B31	5.00	21.0
BH-B31	6.50	9.5
BH-B31	7.73	23.0
BH-B31	9.08	15.0
BH-B32	2.00	12.0
BH-B32	3.00	10.0
BH-B32	5.00	8.5
BH-B32	6.00	16.0
BH-B33	1.00	16.0
BH-B33	3.00	11.0
BH-B33	4.00	7.1
BH-B33	5.00	9.5
BH-B34	1.00	16.0

Borehole No.	Depth	Moisture Content (%)
BH-B34	3.00	18.0
BH-B34	4.00	17.0
BH-B34	6.50	13.0
BH-B35	1.00	5.0
BH-B35	2.00	9.3
BH-B35	4.00	7.4
BH-B35	5.00	6.5
BH-B35	6.50	10.0
BH-B35	8.00	6.9
BH-B36	1.00	13.0
BH-B36	3.00	9.6
BH-B36	4.00	15.0
BH-B37	1.00	6.7
BH-B37	2.00	4.9
BH-B37	3.00	13.0
BH-B39	1.00	2.8
BH-B39	2.00	8.5
BH-B39	3.00	2.9
BH-B39	4.00	9.7
BH-B40	1.00	3.7
BH-B40	2.00	10.0
BH-B40	3.00	6.3
BH-B41	1.00	11.0
BH-B41	3.00	8.5
BH-B41	4.00	8.4
BH-B41	5.00	11.0
BH-B41	6.00	19.0
BH-B42	1.00	9.0

Borehole No.	Depth	Moisture Content (%)
BH-B42	2.00	9.9
BH-B42	3.00	10.0
BH-B43	1.00	11.0
BH-B43	2.00	14.0
BH-B61	1.00	15.0
BH-B61	2.00	12.0
BH-C29	1.00	14.0
BH-C29	2.00	6.3
BH-C29	3.00	12.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	23/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	25/07/2015
Sample Description	Soil	**Sampling Date**	21/07/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-B36	2.00	2.65

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	03-04/08/2015
Sample Description	SAND	**Sampling Date**	20-25/07/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-B33	3.00	100	0.2
BH-B39	2.00	100	0.2
BH-B61	1.00	100	0.2

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	29/07-02/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	19-27/07/2015
Sample Description	ROCK CORE	**Date Tested**	30/07-03/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-B35	10.00	25.69	58.50
BH-B41	8.50	30.65	69.79

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

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TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-6
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	20/07-13/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	21/07-15/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	19/07/-10/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-B31	9.60	1	0.43	Vertical
BH-B31	15.90	2	0.35	Vertical
BH-B32	7.50	3	0.40	Vertical
BH-B32	11.50	4	0.42	Vertical
BH-B32	14.00	5	0.59	Vertical
BH-B32	20.00	6	0.03	Vertical
BH-B32	22.80	7	0.07	Vertical
BH-B33	8.00	8	1.05	Vertical
BH-B33	26.40	9	0.38	Vertical
BH-B34	21.34	10	0.49	Vertical
BH-B34	36.81	11	0.61	Vertical
BH-B35	35.00	12	0.82	Vertical
BH-B35	39.00	13	0.73	Vertical
BH-B36	15.60	14	0.41	Vertical
BH-B36	34.15	15	0.61	Vertical
BH-B36	38.50	16	0.71	Vertical
BH-B37	4.20	17	0.59	Vertical
BH-B37	8.40	18	0.49	Vertical
BH-B37	9.70	19	0.47	Vertical
BH-B37	14.00	20	0.08	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-B38	3.50	21	0.28	Vertical
BH-B39	10.60	22	0.65	Vertical
BH-B39	28.10	23	0.94	Vertical
BH-B40	39.00	24	0.59	Vertical
BH-B41	34.00	25	0.47	Vertical
BH-B42	6.00	26	0.28	Vertical
BH-B43	3.60	27	0.26	Vertical
BH-B43	9.70	28	0.85	Vertical
BH-B61	4.30	29	0.53	Vertical
BH-B61	7.40	30	0.49	Vertical
BH-B61	7.80	31	0.74	Vertical
BH-B61	35.50	32	0.33	Vertical
BH-B61	37.80	33	0.31	Vertical
BH-C29	4.25	34	0.68	Vertical
BH-C29	7.00	35	0.36	Vertical
BH-C29	21.75	36	0.75	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-6
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	29/07-13/08/2015
Sample Source	Site	**Date Tested**	30/07-15-08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin

Sample Details:			Dimensions:		Results:						
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density	Sketch	Rock Description
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-B31	27.44	1	7.50	15.00	8.9	2.53	352.3	12.30	2.02	Figure C-01	CAL. SILTSTONE
BH-B31	29.00	2	7.50	15.00	4.8	1.47	325.0	17.30	2.03	Figure C-02	CAL. SANDSTONE
BH-B31	33.42	3	6.30	15.00	7.7	1.73	444.9	13.90	2.03	Figure C-03	CAL. SILTSTONE
BH-B32	12.50	4	7.40	15.00	5.8	1.53	380.1	14.50	2.10	Figure C-04	CAL. SILTSTONE
BH-B33	8.50	5	7.40	15.00	3.6	1.00	360.3	18.20	2.05	Figure C-05	CAL. SANDSTONE
BH-B33	15.00	6	7.50	15.10	8.4	2.12	396.4	12.00	1.86	Figure C-06	CONG. SILTSTONE
BH-B33	22.50	7	7.50	15.10	7.9	1.92	409.8	16.70	1.64	Figure C-07	CAL. SILTSTONE
BH-B34	22.00	8	7.50	15.00	3.9	1.20	328.0	10.60	1.87	Figure C-08	CAL. SANDSTONE
BH-B34	32.31	9	6.30	14.80	4.7	1.49	318.7	10.20	2.12	Figure C-09	CAL. SANDSTONE
BH-B35	36.50	10	7.50	15.00	9.4	2.33	404.4	19.80	2.03	Figure C-10	CAL. SILTSTONE
BH-B36	8.30	11	7.50	15.10	4.2	1.19	349.6	5.60	1.88	Figure C-11	CAL. SANDSTONE
BH-B36	11.20	12	7.40	15.00	4.7	1.93	242.3	11.40	1.71	Figure C-12	CAL. SILTSTONE
BH-B36	37.20	13	7.30	14.80	7.3	1.89	384.0	11.30	2.32	Figure C-13	CAL. SILTSTONE
BH-B37	6.70	14	7.50	15.00	6.4	2.13	298.9	14.10	1.62	Figure C-14	CONG. SILTSTONE
BH-B37	20.00	15	7.50	15.00	6.4	2.40	265.3	20.00	1.97	Figure C-15	CONG. SILTSTONE
BH-B37	32.00	16	7.50	15.00	20.7	5.33	388.1	7.90	2.23	Figure C-16	CONG. SILTSTONE
BH-B38	5.00	17	7.40	14.80	7.6	1.89	401.4	9.90	1.89	Figure C-17	CAL. SANDSTONE
BH-B38	26.00	18	7.50	15.00	8.5	2.67	317.7	14.80	2.04	Figure C-18	CAL. SILTSTONE
BH-B39	26.40	19	7.50	15.00	8.3	2.53	328.8	14.60	2.02	Figure C-19	CAL. SILTSTONE
BH-B39	35.59	20	7.40	15.00	1.7	1.40	118.7	22.10	1.89	Figure C-20	CAL. SANDSTONE
BH-B39	17.80	21	7.50	15.10	10.3	2.95	348.6	22.50	1.73	Figure C-21	CAL. SANDSTONE
BH-B39	13.50	22	7.50	15.10	4.1	1.46	279.1	17.90	1.85	Figure C-22	CONG. SILTSTONE
BH-B40	39.50	23	7.50	15.10	12.7	3.84	331.6	15.90	2.20	Figure C-23	CONG. SILTSTONE
BH-B42	7.50	24	7.50	15.00	8.4	2.60	323.2	18.30	2.03	Figure C-24	CAL. SANDSTONE

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Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-B42	15.50	25	7.40	14.90	13.6	3.42	397.7	17.40	2.35	Figure C-25	CONG. SILTSTONE
BH-B43	13.00	26	7.10	15.00	2.3	1.40	165.8	18.50	1.99	Figure C-26	CAL. SILTSTONE
BH-B61	16.40	27	6.80	15.00	1.3	1.33	95.1	14.50	2.19	Figure C-27	CAL. SILTSTONE
BH-B61	25.00	28	7.40	15.00	2.1	1.67	127.9	19.30	2.02	Figure C-28	CAL. SILTSTONE
BH-C29	6.75	29	7.00	15.00	3.3	0.73	447.0	5.30	1.89	Figure C-29	CAL. SANDSTONE
BH-C29	9.85	30	7.50	15.10	4.7	1.46	324.5	1.30	1.72	Figure C-30	CAL. SANDSTONE

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

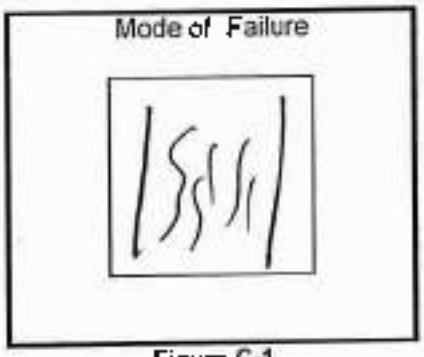


Figure C-1

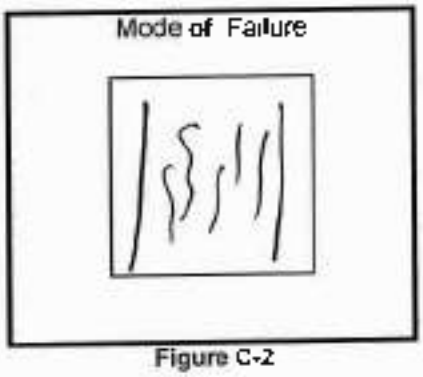


Figure C-2

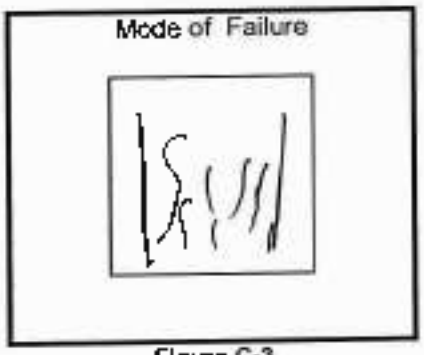


Figure C-3

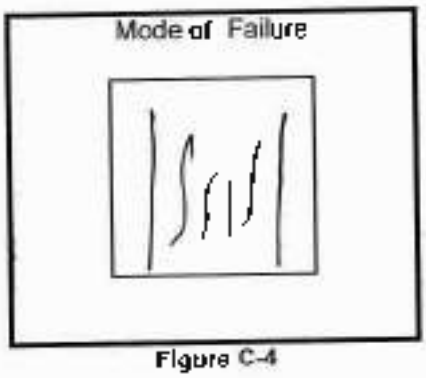


Figure C-4

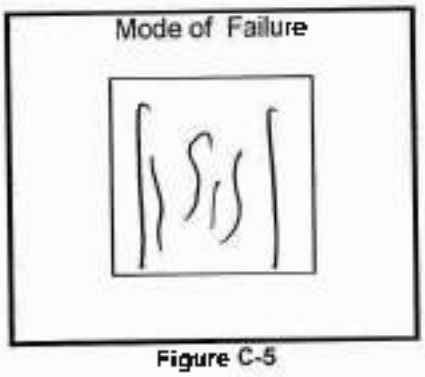


Figure C-5

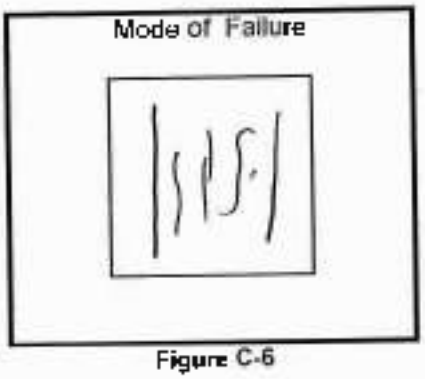


Figure C-6

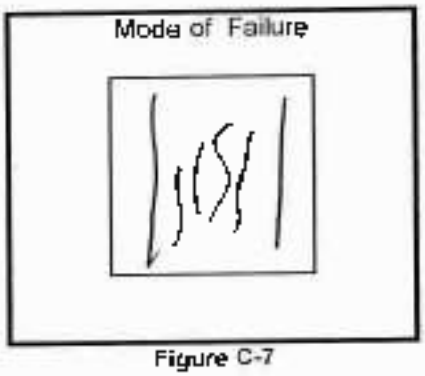


Figure C-7

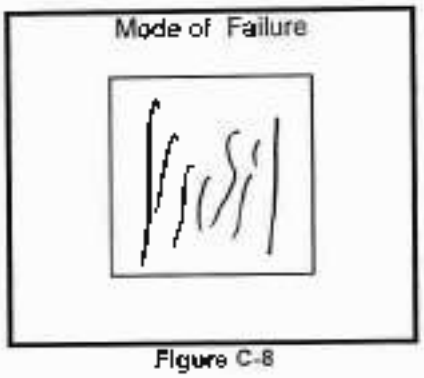


Figure C-8

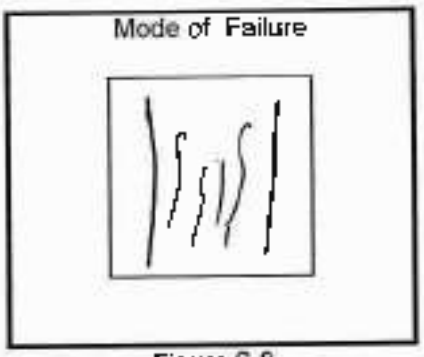


Figure C-9

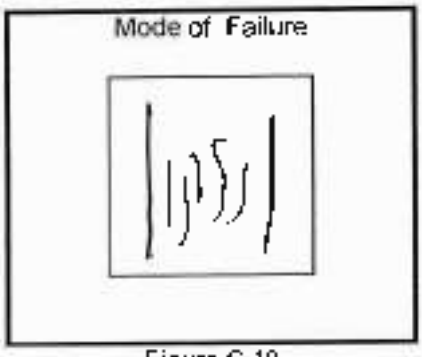


Figure C-10

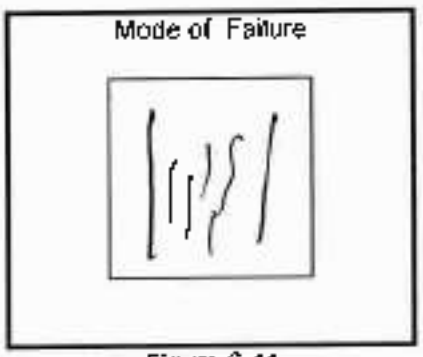


Figure C-11

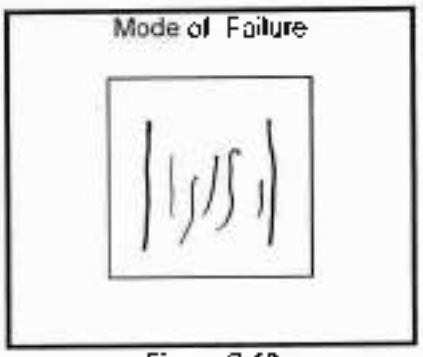


Figure C-12

TYPE OF FRACTURES FOR CORES

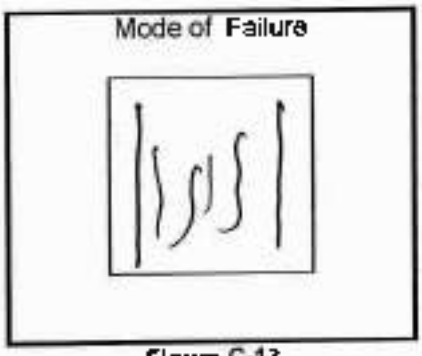


Figure C-13

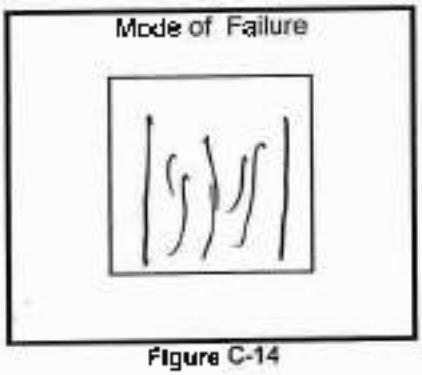


Figure C-14

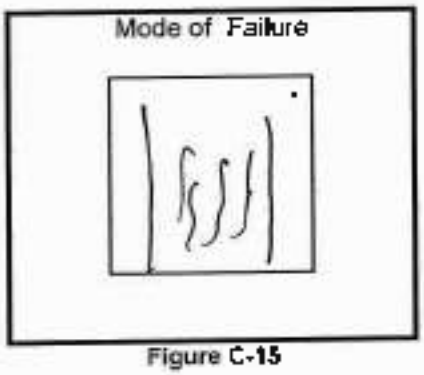


Figure C-15

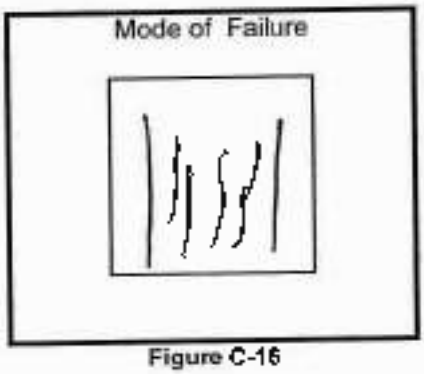


Figure C-16

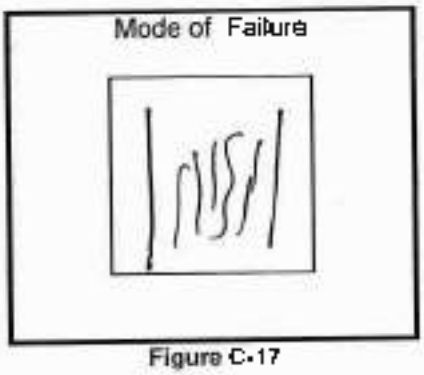


Figure C-17

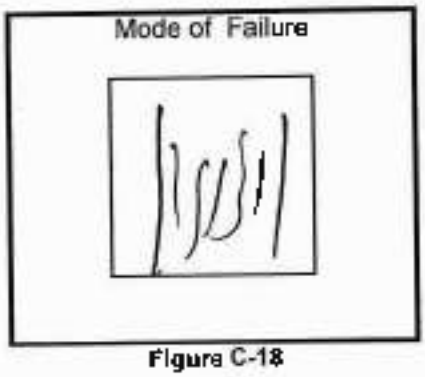


Figure C-18

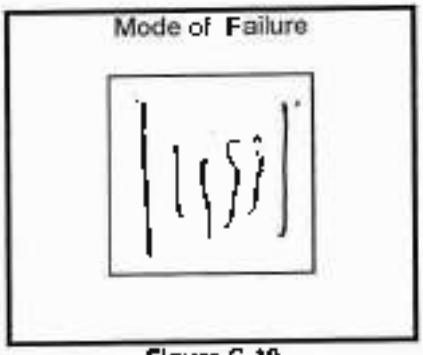


Figure C-19

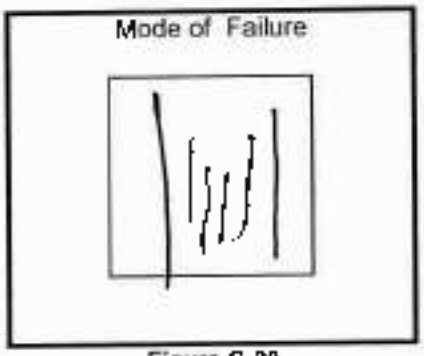


Figure C-20

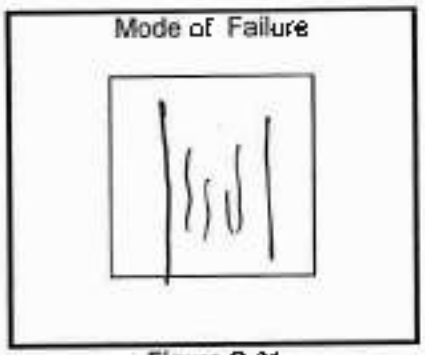


Figure C-21

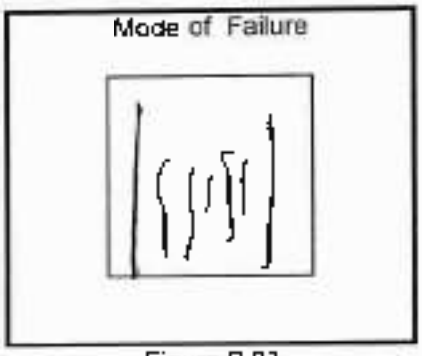


Figure C-22

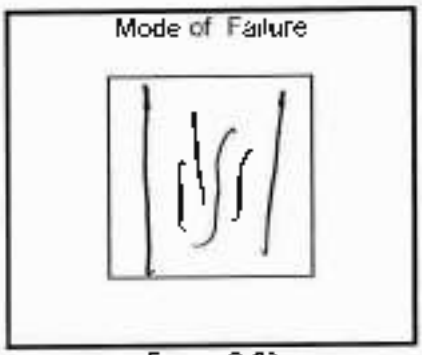


Figure C-23

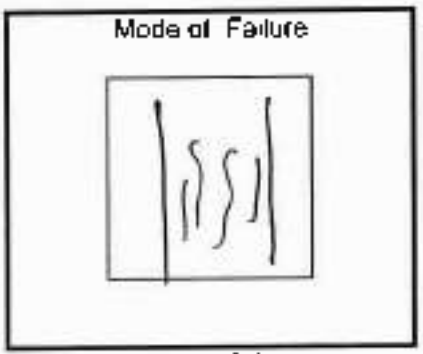


Figure C-24

TYPE OF FRACTURES FOR CORES

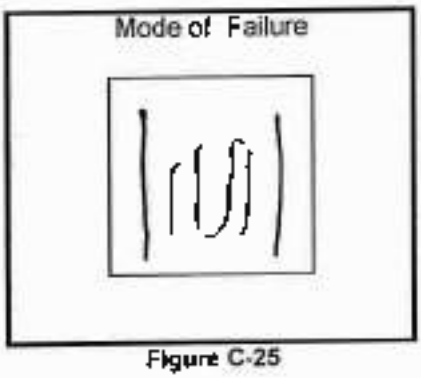


Figure C-25

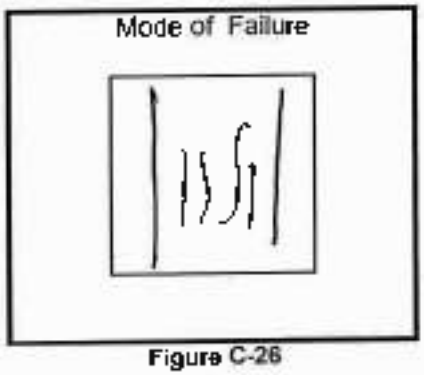


Figure C-26

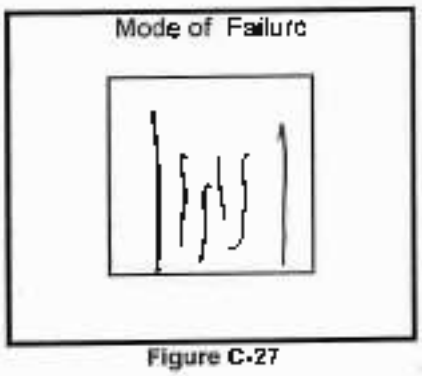


Figure C-27

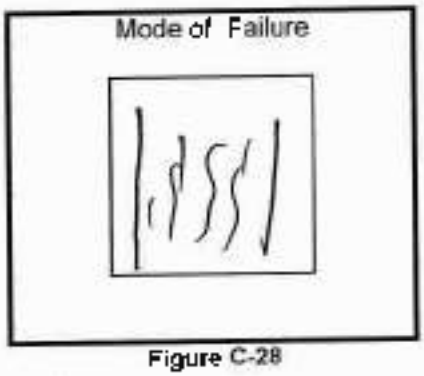


Figure C-28

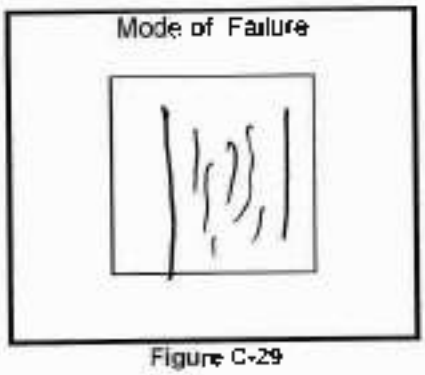


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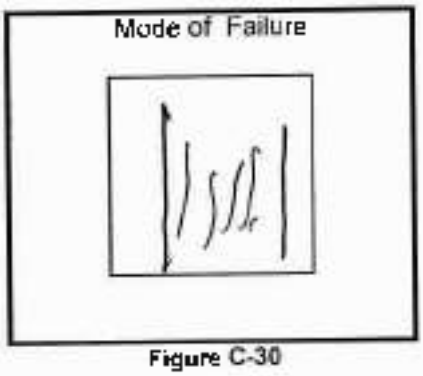


Figure C-30

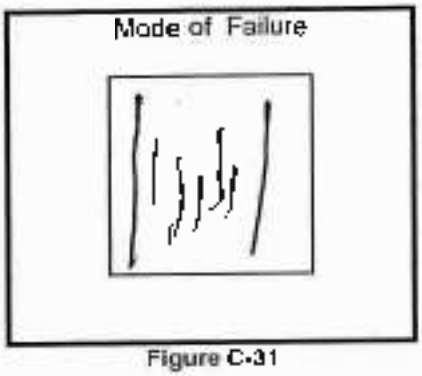


Figure C-31

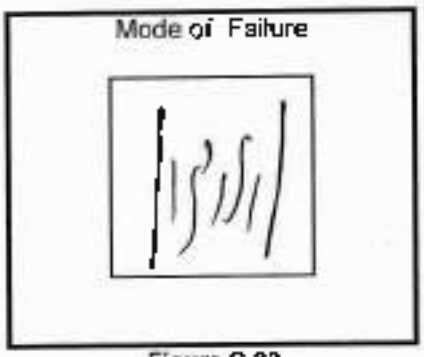


Figure C-32

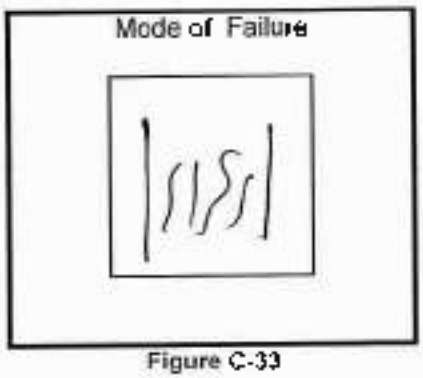


Figure C-33

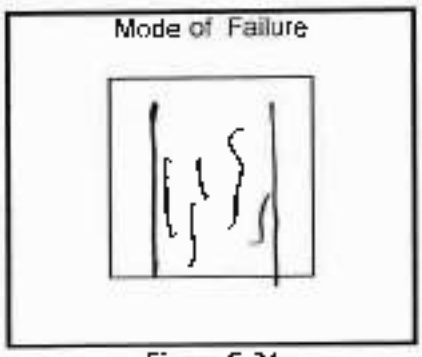


Figure C-34

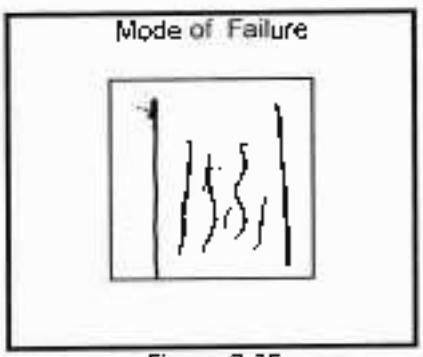


Figure C-35

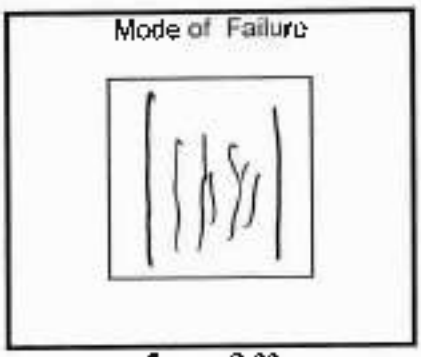
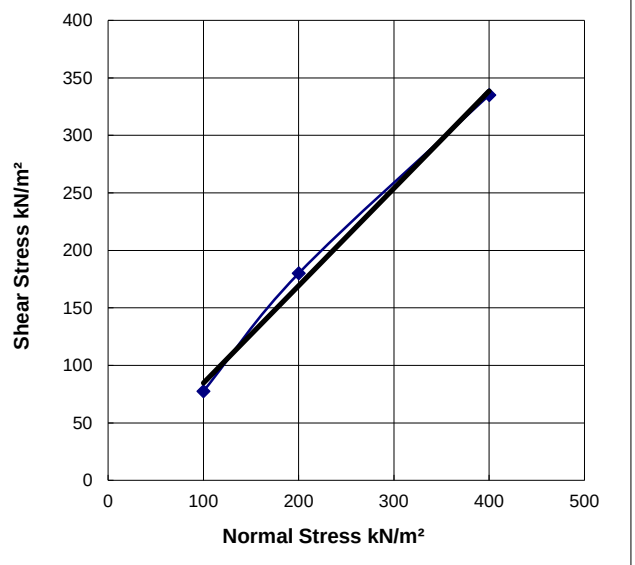


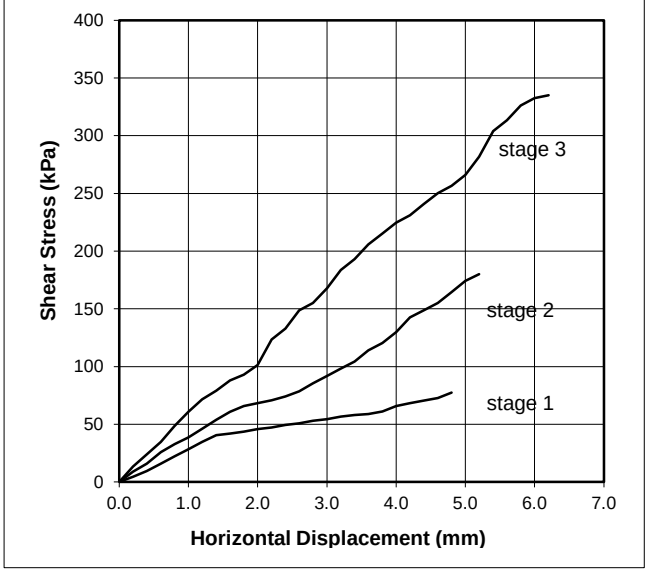
Figure C-36

MATRIX LABORATORY L.L.C.

TABLE C-8 (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B34	**Date Tested**	23-25/07/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN



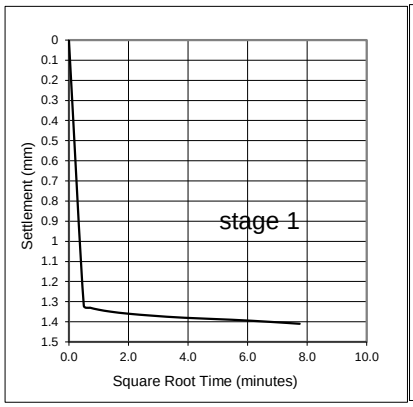


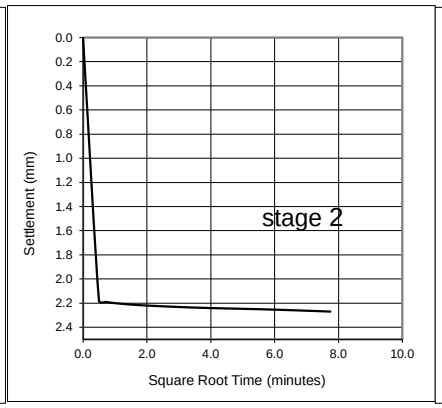
Shear Strength Parameters
Apparent Cohesion = 0.0 kN/m²
Angle of Shearing Resistance = 40.24º

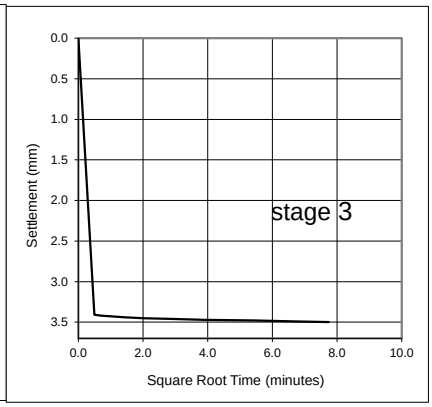
TABLE C- 8 (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B34	**Date Tested**	23-25/07/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.64
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

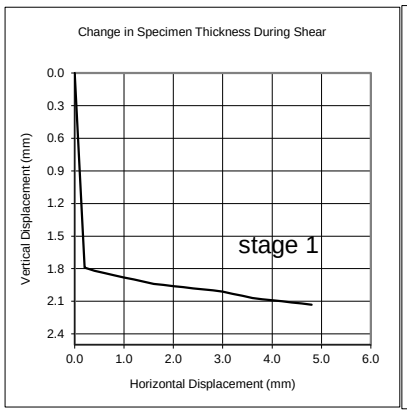
Consolidation Stage

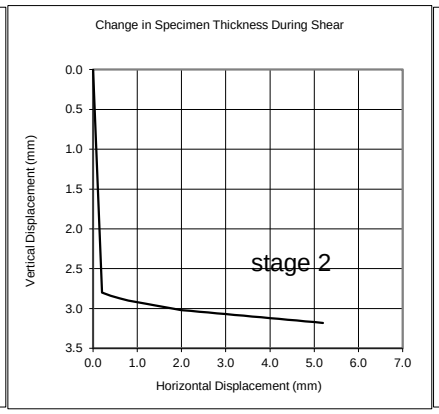


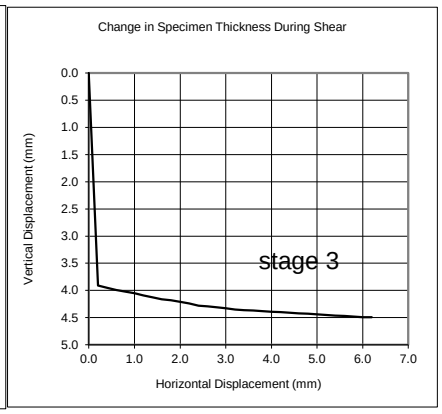




Shearing Stage





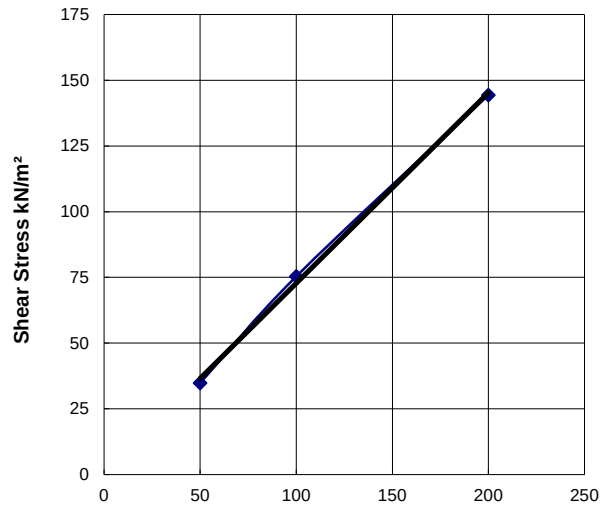


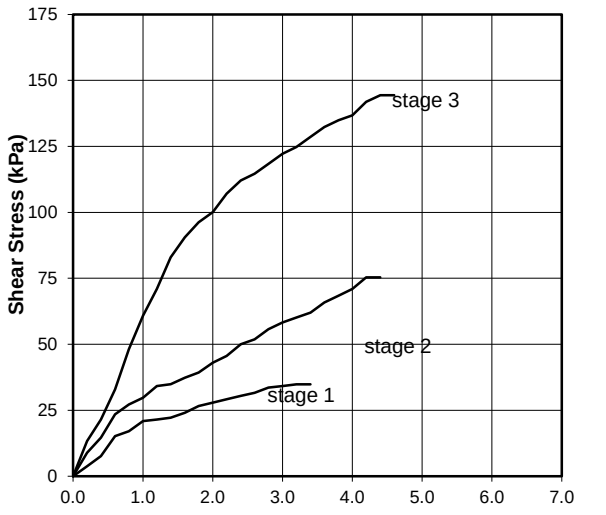
MATRIX LABORATORY L.L.C.

TABLE C-8 (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B36	**Date Tested**	25-26/07/2015
Depth (m)	2.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

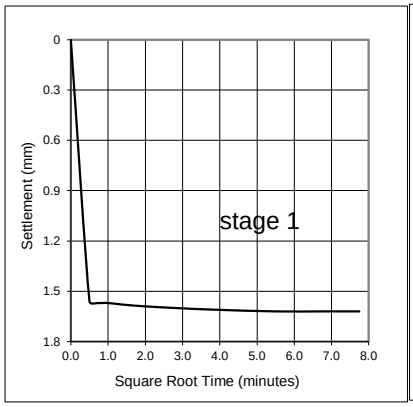
Apparent Cohesion =0.0 kN/m²

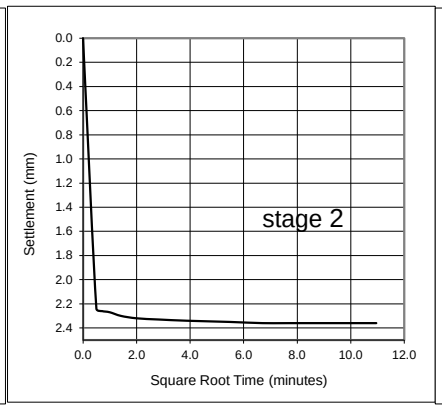
Angle of Shearing Resistance = 36.0º

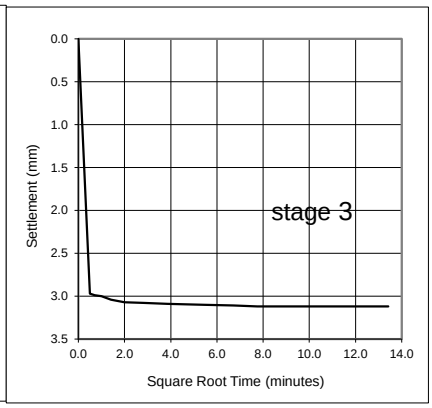
TABLE C-8 (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B36	**Date Tested**	25-26/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

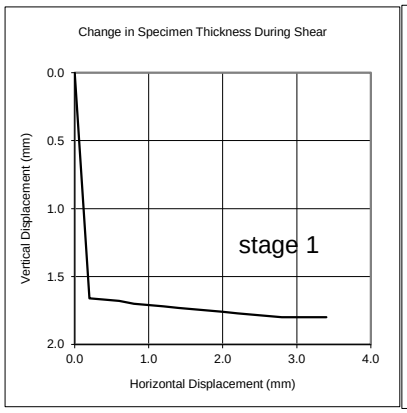
Consolidation Stage

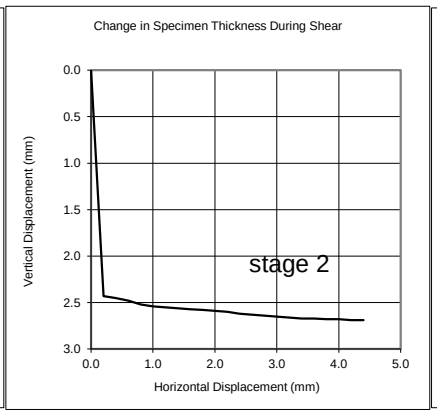


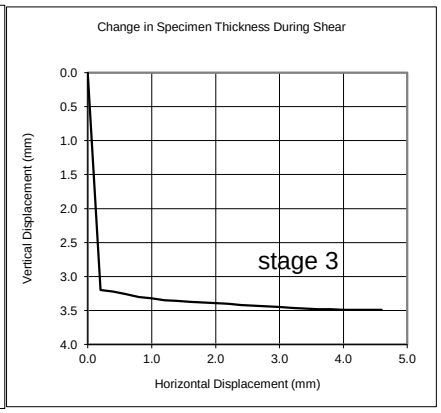




Shearing Stage



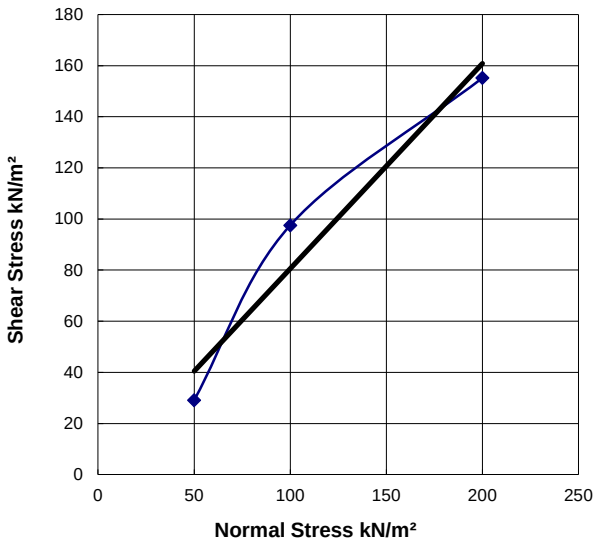


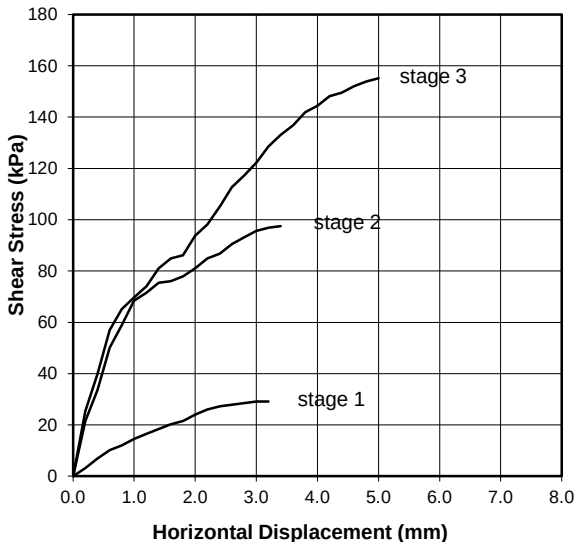


MATRIX LABORATORY L.L.C.

TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B40	**Date Tested**	12-13/07/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

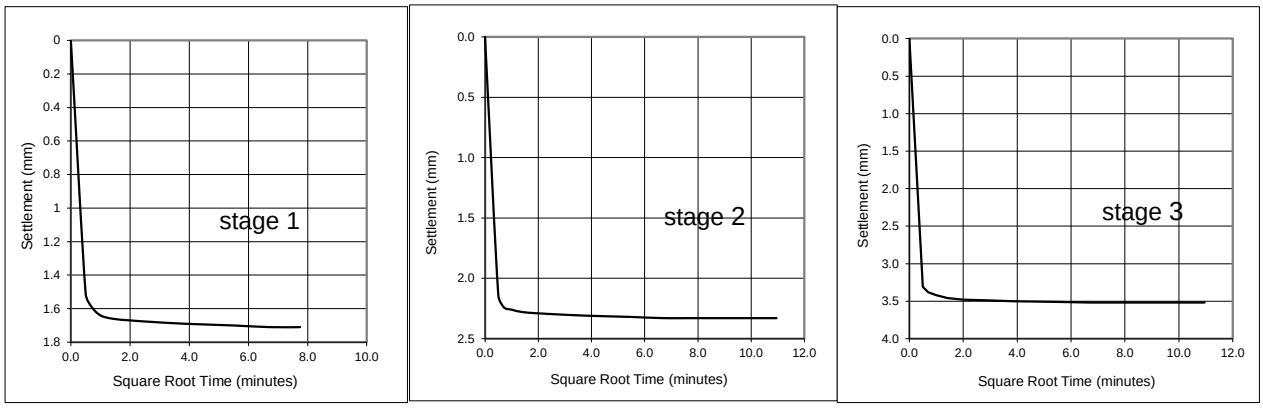
Apparent Cohesion = 0.0 kN/m²

Angle of Shearing Resistance = 38.75º

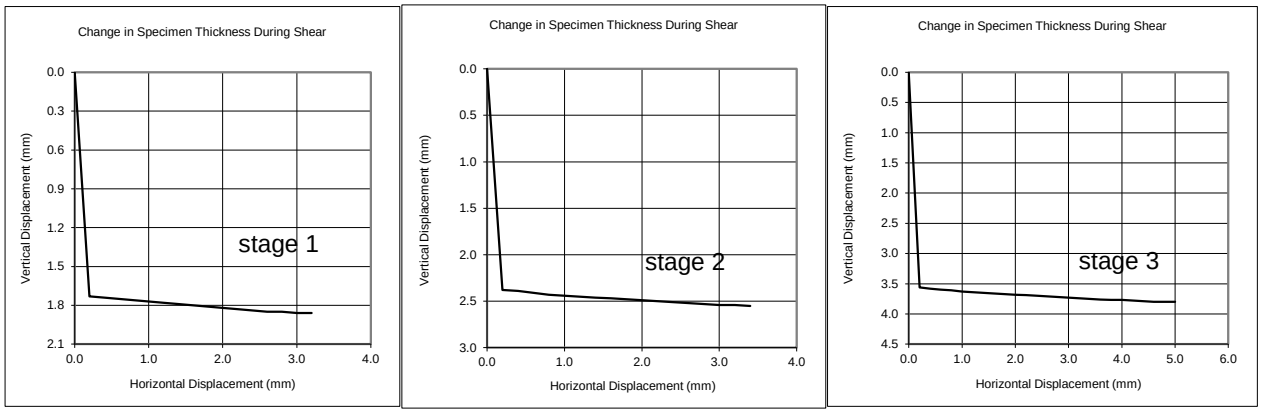
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B40	**Date Tested**	12-13/07/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

Consolidation Stage



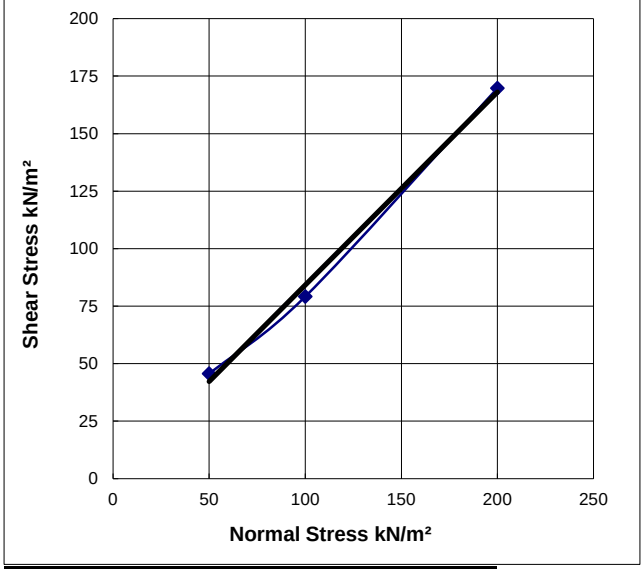
Shearing Stage

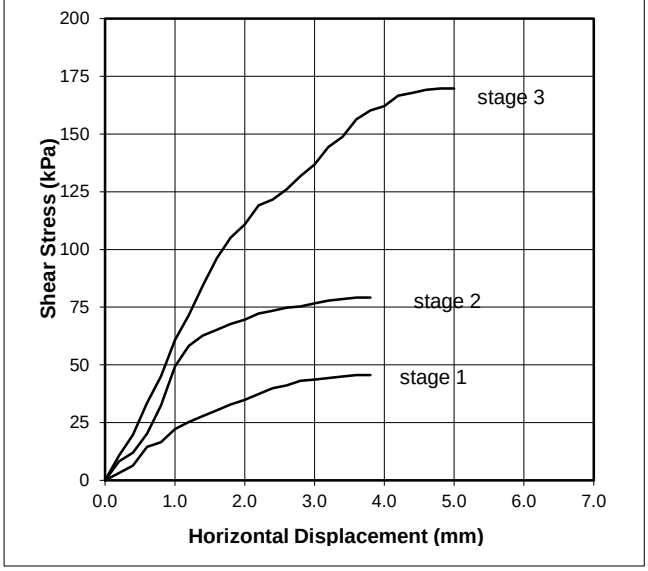


MATRIX LABORATORY L.L.C.

TABLE C8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C29	**Date Tested**	22-23/07/2015
Depth (m)	1.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

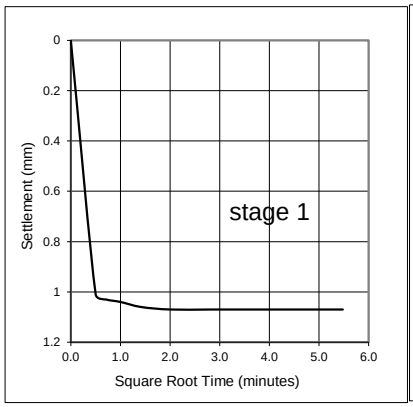
Apparent Cohesion = 0.0 kN/m²

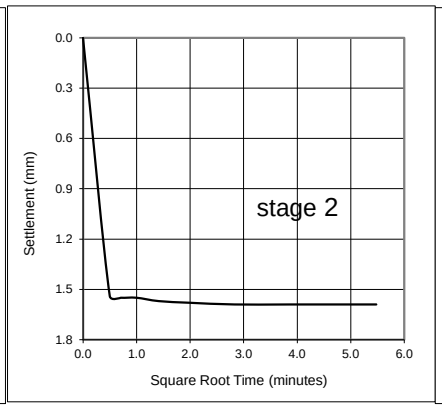
Angle of Shearing Resistance = 40.0º

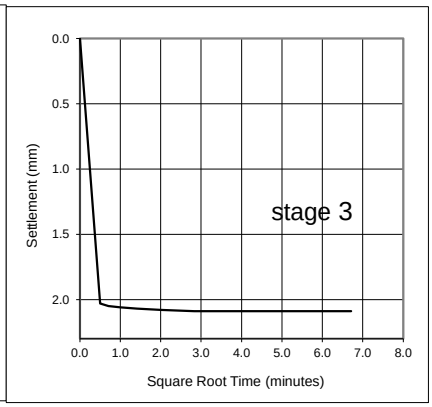
TABLE C8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-6
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-6
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C29	**Date Tested**	22-23/07/2015
Depth (m)	1.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.74
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

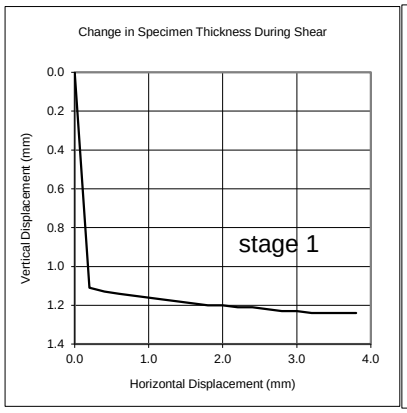
Consolidation Stage

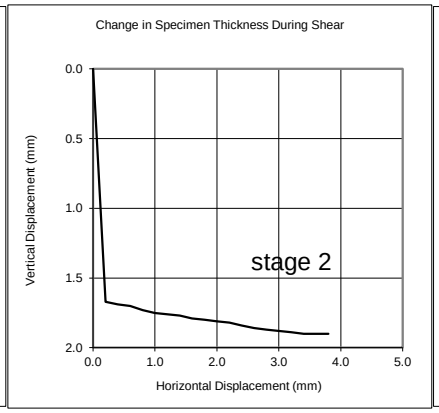


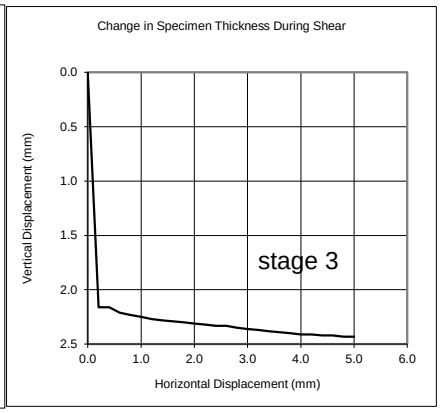




Shearing Stage







APPENDIX C7

LABORATORY TEST RESULTS (ZONE 7)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Sampling Date**	26-30/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	29/07-10/08/2015
Test Method	See below	**Date Tested**	30-07-13/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B18	SPT2	1.00	0.1	0.01	8.5 @ 27°C	DS-1
BH-B20	SPT2	1.00	0.1	0.01	8.6 @ 28°C	DS-1
BH-B47	SPT3	2.00	1.0	0.01	8.4 @ 27°C	DS-2
BH-C24	SPT3	2.00	0.2	0.01	7.8 @ 29°C	DS-1
BH-C28	SPT2	1.00	0.5	0.04	8.3 @ 27°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Sampling Date**	28/07-02/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	28/07-02/08/2015
Test Method	See below	**Date Tested**	29-07-04/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B19	20.10	0.42	0.15	7.8 @ 27°C	DS-2
BH-C22	15.20	0.31	0.20	7.9 @ 28°C	DS-1
BH-C26	17.20	0.33	0.21	7.7 @ 27°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

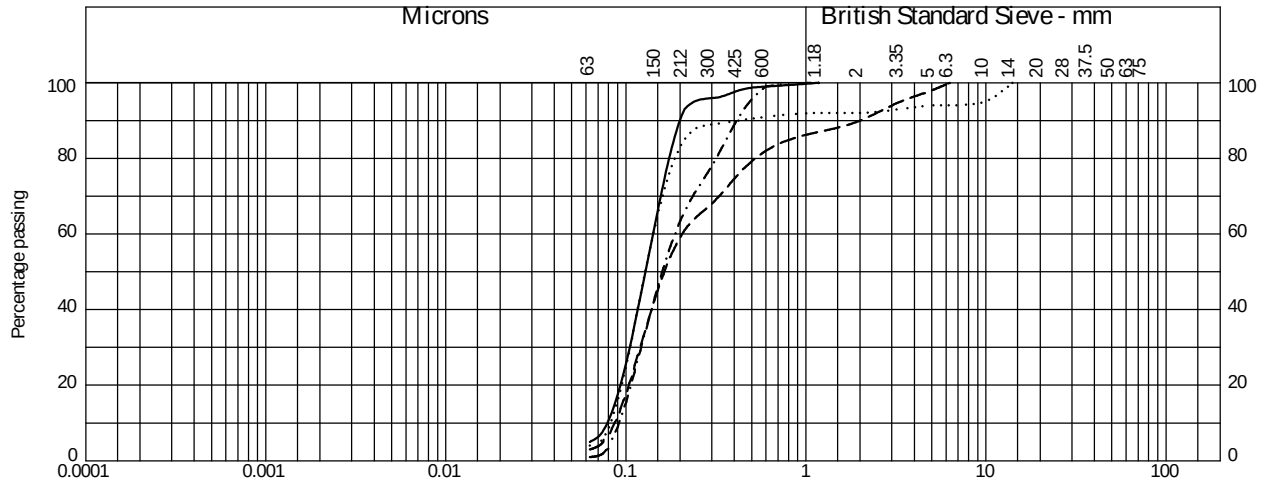
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A59	SPT2	131.3	———	SILTY, FINE SAND (S-M)	1.00
BH-A59	SPT4	125.5	– – –	GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00
BH-A59	SPT6	130.9	.....	GRAVELLY, SL. SILTY, FINE SAND (SP)	5.00
BH-B18	SPT3	119.6	– . – . –	SL. SILTY, M-F SAND (SP)	2.00

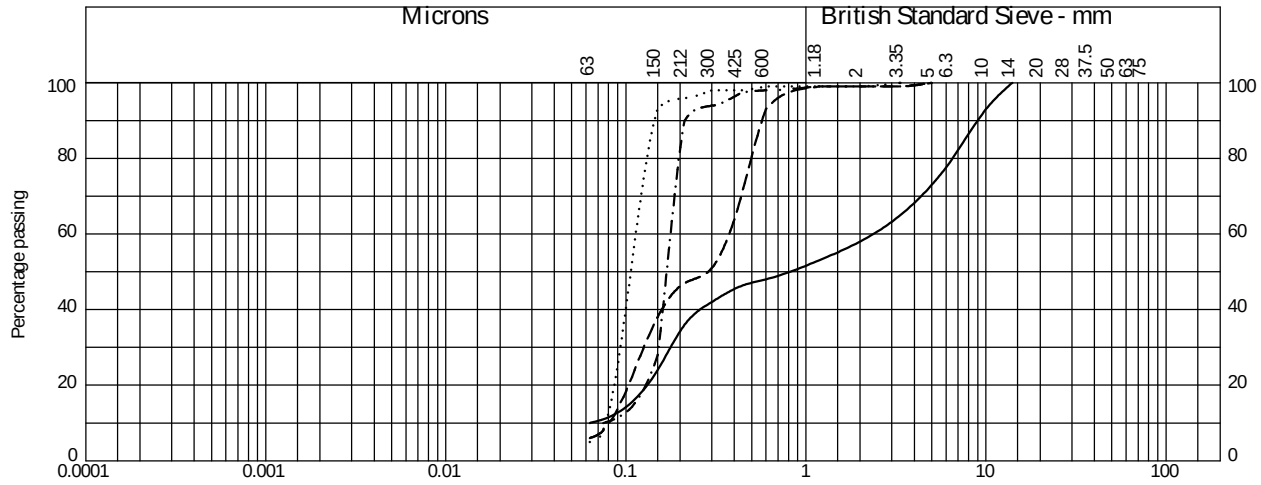
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B18	SPT5	135.6	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B19	SPT2	138.9	– – –	SL. GRAVELLY, SILTY, F-M SAND (S-M)	1.00
BH-B19	SPT4	130.9	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B19	SPT6	136.0	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	5.00

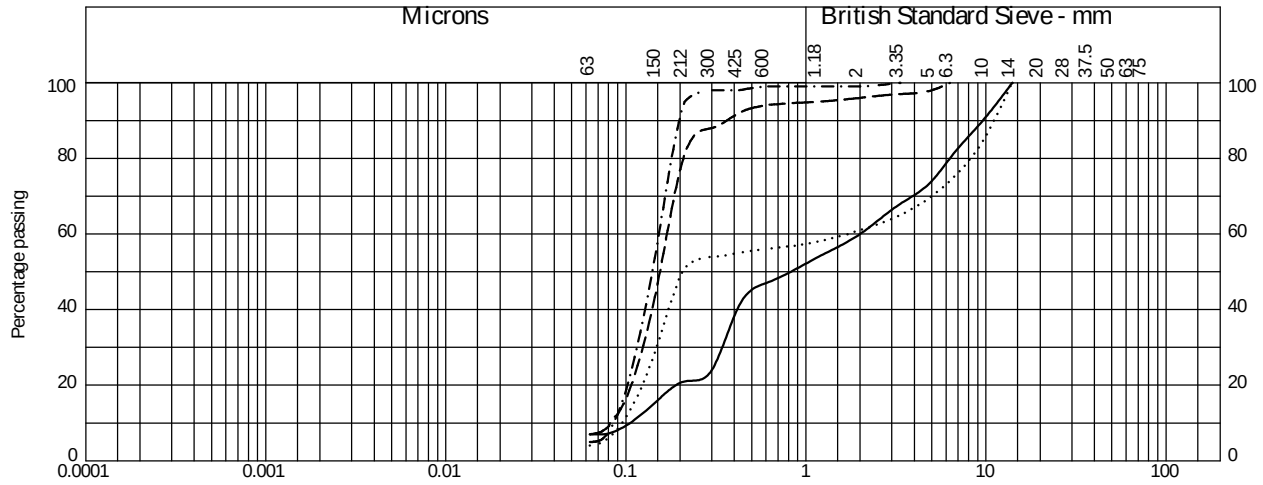
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B19	SPT7	145.7	———	V. GRAVELLY, SILTY, MEDIUM SAND (S-M)	6.50
BH-B20	SPT3	130.2	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-B20	SPT6	123.5	.....	V. GRAVELLY, SL. SILTY, FINE SAND (SM)	5.00
BH-B44	SPT2	142.0	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00

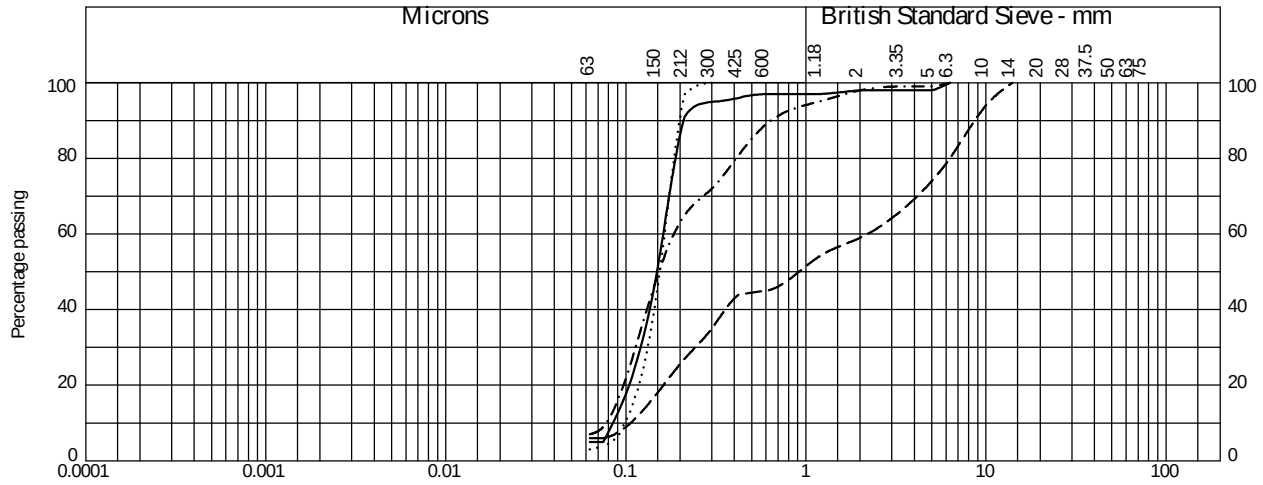
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B44	SPT3	128.9	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-B44	SPT6	121.7	– – –	V. GRAVELLY, SILTY, M-F SAND (S-M)	5.00
BH-B45	SPT2	122.5	.....	SL. SILTY, FINE SAND (SP)	1.00
BH-B45	SPT4	119.1	– . – . –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	3.00

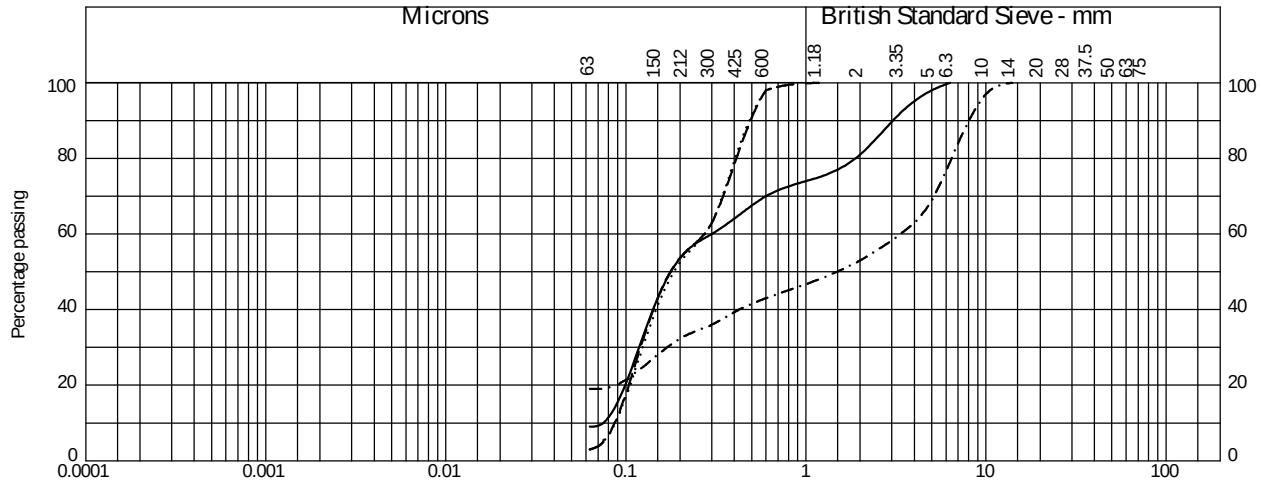
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B45	SPT6	132.9	———	GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B46	SPT2	133.9	– – –	SL. SILTY, M-F SAND (SP)	1.00
BH-B46	SPT5	132.0	.....	SL. SILTY, M-F SAND (SP)	4.00
BH-B46	SPT7	114.1	– . – . –	SILTY, SANDY GRAVEL (SG)	6.50

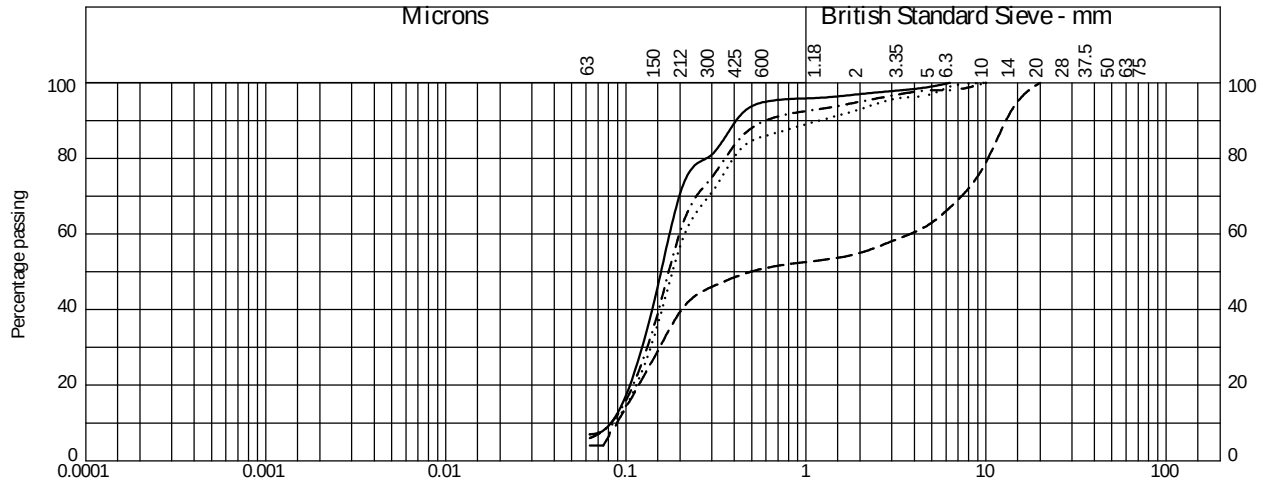
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B47	SPT2	137.5	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B47	SPT6	117.7	– – –	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	5.00
BH-C22	SPT2	125.6	.....	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C22	SPT9	128.9	– . – . –	GRAVELLY, SILTY, M-F SAND (S-M)	9.50

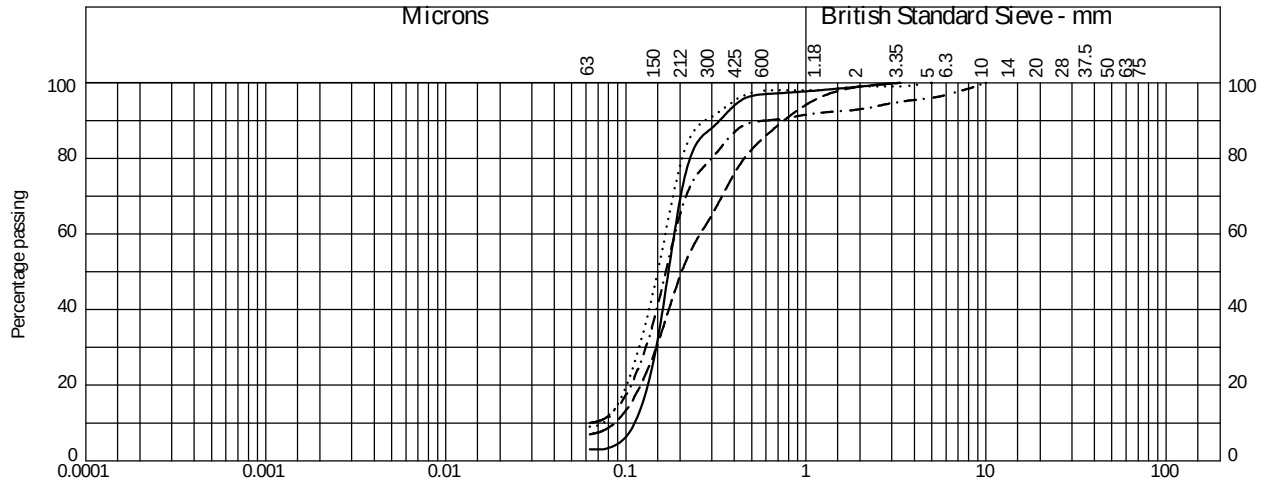
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C23	SPT2	131.1	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-C23	SPT8	117.1	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	8.00
BH-C24	SPT2	103.2	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-C24	SPT7	131.8	– · – · –	GRAVELLY, SILTY, M-F SAND (S-M)	6.50

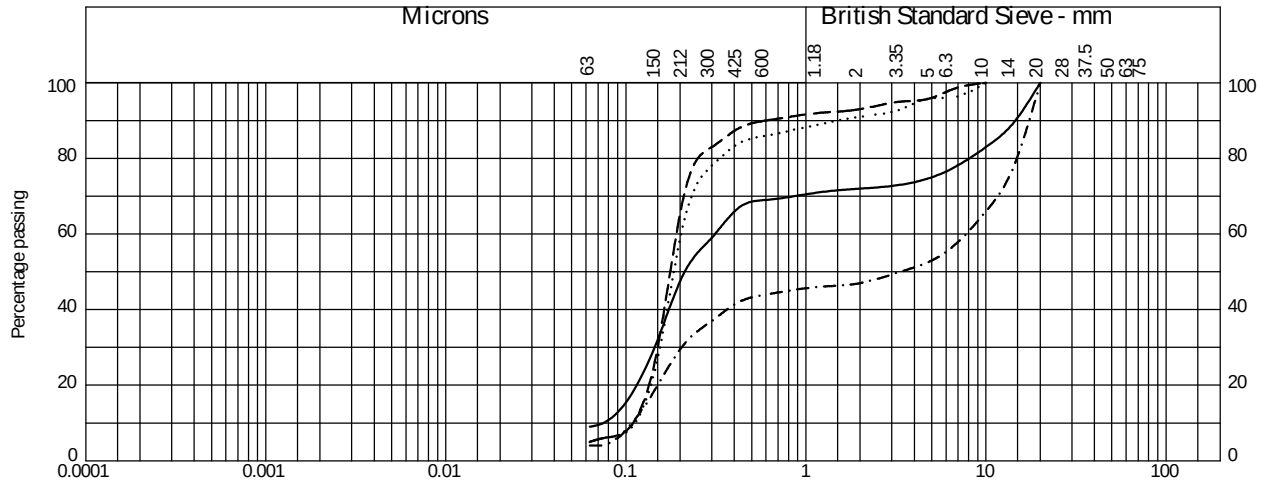
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C24	SPT9	137.9	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	9.50
BH-C25	SPT2	133.8	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-C25	SPT5	136.6	.....	GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-C25	SPT7	134.7	–·–·–	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	6.00

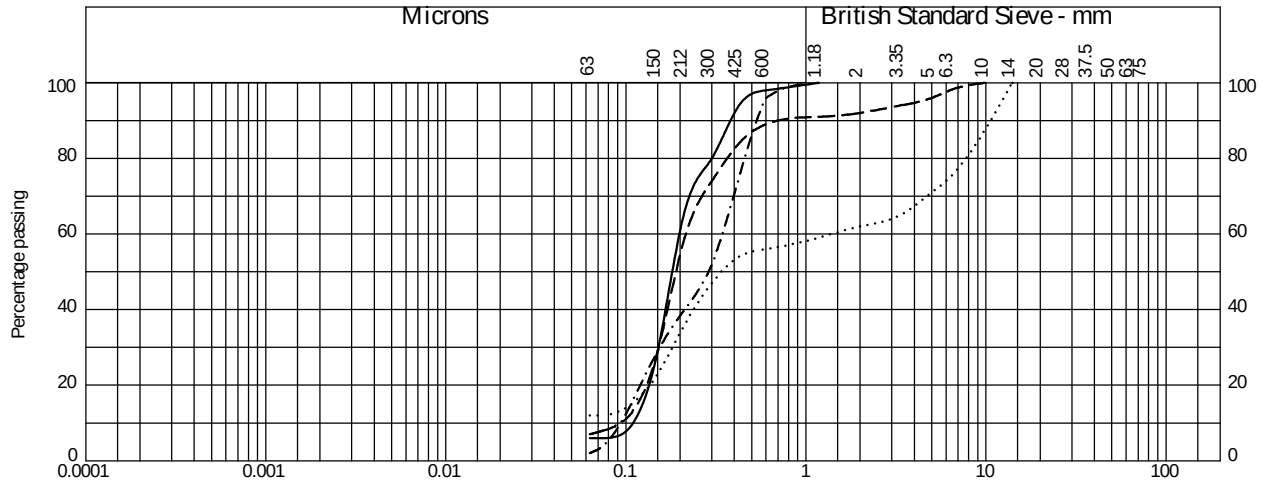
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C26	SPT2	139.0	———	SILTY, M-F SAND (S-M)	1.00
BH-C26	SPT7	135.5	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	6.50
BH-C26	SPT10	137.3	.....	V. GRAVELLY, SILTY, M-F SAND (S-M)	9.50
BH-C27	SPT2	134.8	–.–.–	SL. SILTY, F-M SAND (SP)	1.00

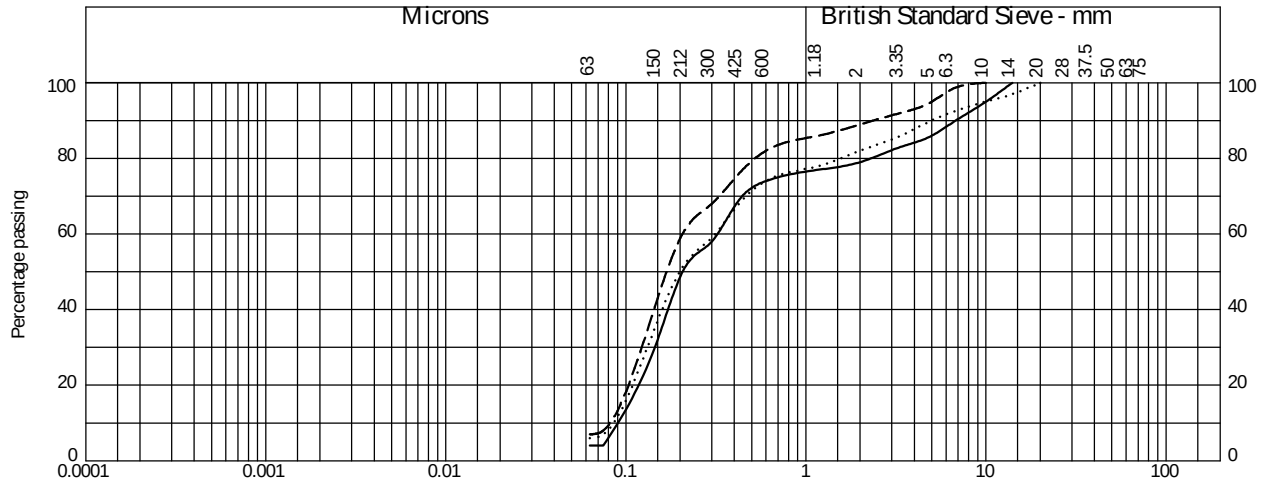
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-7
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-7
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	29/07-12/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	01-15/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-C27	SPT4	137.7	———	V. GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00
BH-C28	SPT3	146.2	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-C28	SPT7	137.6	.....	GRAVELLY, SILTY, M-F SAND (S-M)	6.50
			–·–·–		

The results relate only to the samples tested.

Table C-1 (1)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA18	**Sampling Date**	26/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	93
6.3	79
5	73
3.35	65
2	58
1.18	53
0.600	48
0.425	46
0.300	42
0.212	36
0.15	24
0.075	20
0.063	18
0.028	15
0.018	13
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

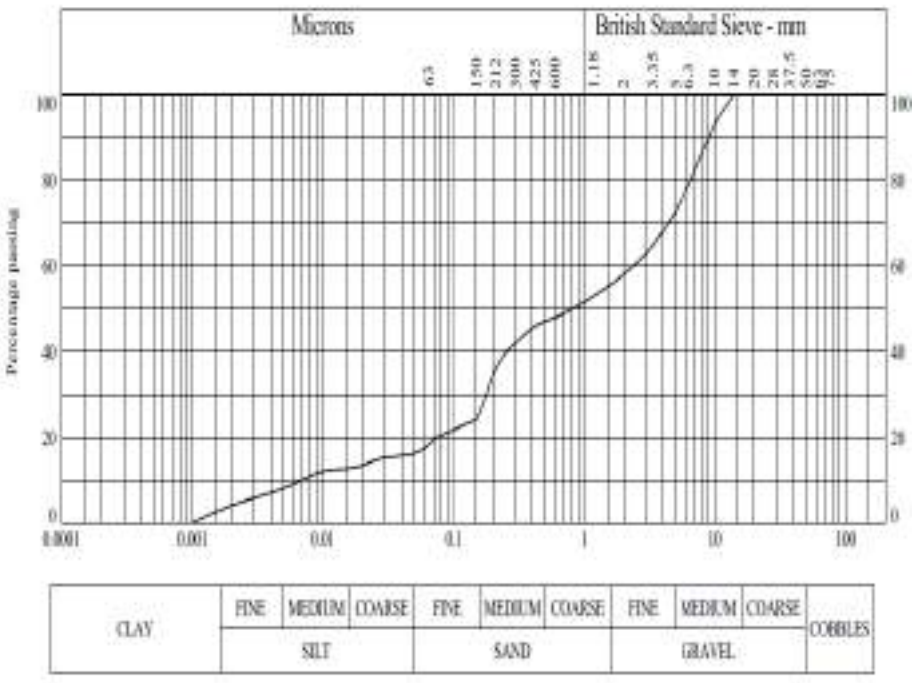


Table C-1 (2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHA59	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	99
0.425	98
0.300	96
0.212	93
0.15	66
0.075	40
0.063	30
0.028	25
0.018	20
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

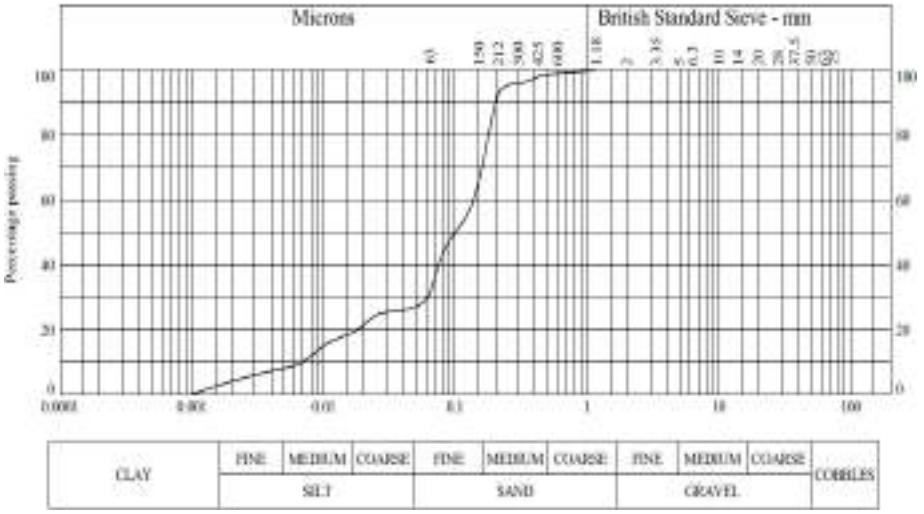


Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, F-M SAND	**Sampled By**	Matrix
Borehole No.	BHB19	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	99
1.18	99
0.600	93
0.425	68
0.300	51
0.212	47
0.15	38
0.075	30
0.063	25
0.028	20
0.018	13
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

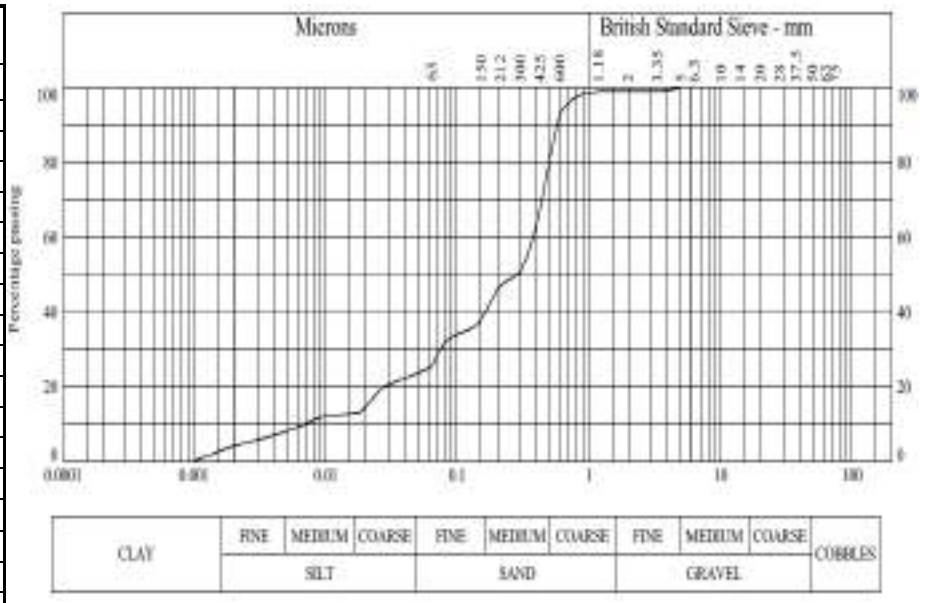


Table C-1 (4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHB19	**Sampling Date**	26/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.600	99
0.425	98
0.300	98
0.212	96
0.15	93
0.075	50
0.063	35
0.028	20
0.018	13
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

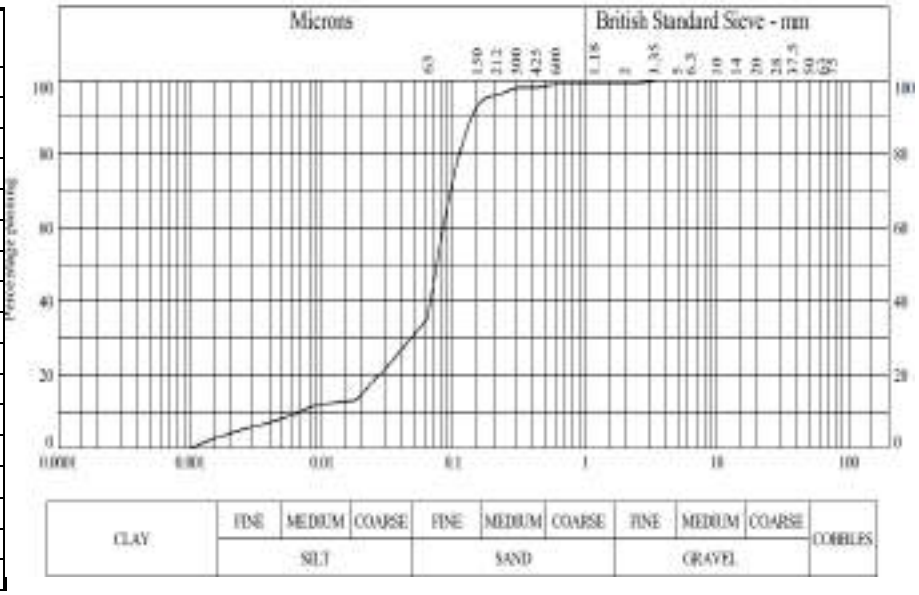


Table C-1 (5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BHB19	**Sampling Date**	26/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	99
1.18	99
0.600	98
0.425	97
0.300	94
0.212	90
0.15	28
0.075	20
0.063	15
0.028	12
0.018	10
0.010	9
0.007	8
0.005	6
0.002	4
0.001	0

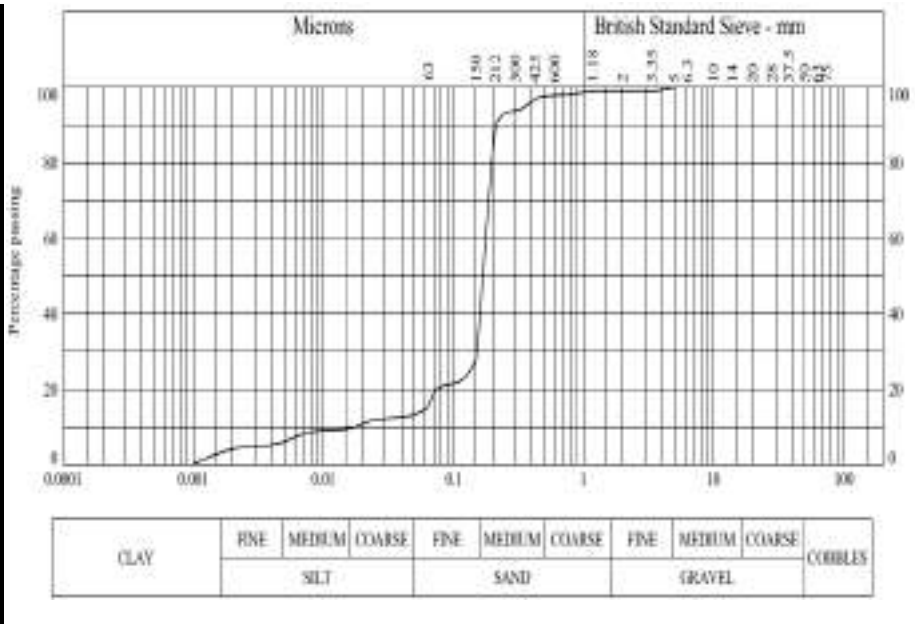


Table C-1 (6)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, MEDIUM SAND	**Sampled By**	Matrix
Borehole No.	BHB19	**Sampling Date**	26/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	91
6.3	80
5	74
3.35	68
2	60
1.18	54
0.600	47
0.425	41
0.300	24
0.212	20
0.15	18
0.075	19
0.063	17
0.028	15
0.018	12
0.010	10
0.007	9
0.005	8
0.002	4
0.001	0

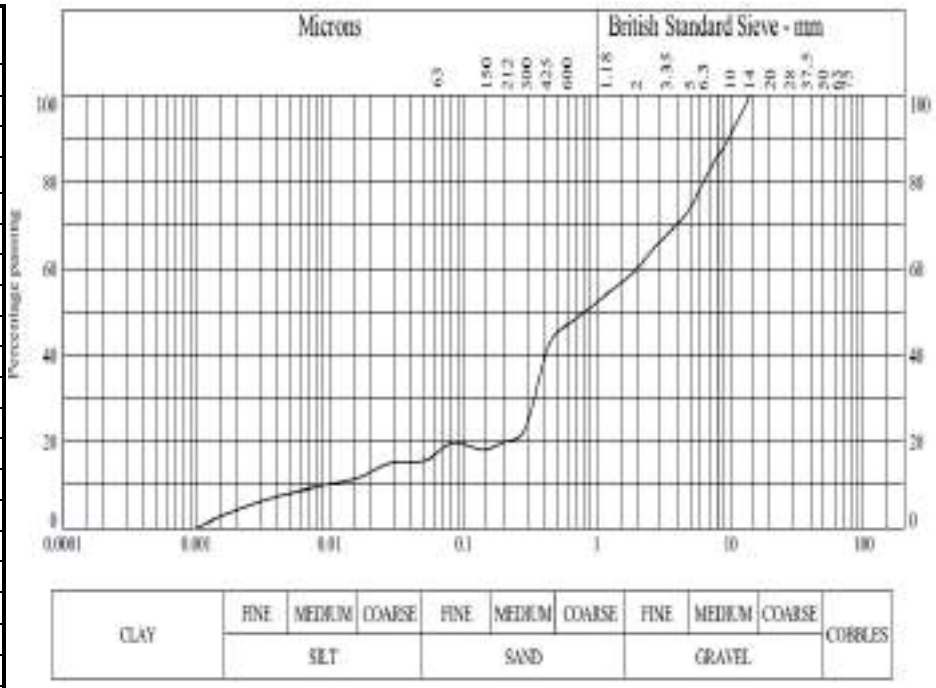


Table C-1 (7)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B20	**Sampling Date**	26/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	97
2	96
1.18	95
0.600	94
0.425	92
0.300	88
0.212	81
0.15	47
0.075	30
0.063	25
0.028	20
0.018	15
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

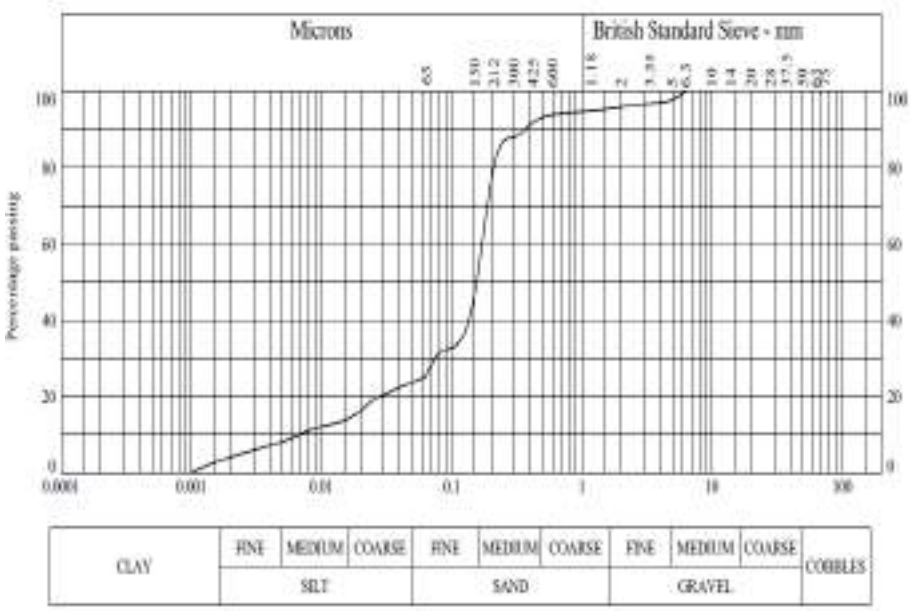


Table C-1 (8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B44	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.600	99
0.425	98
0.300	98
0.212	95
0.15	58
0.075	30
0.063	25
0.028	20
0.018	15
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

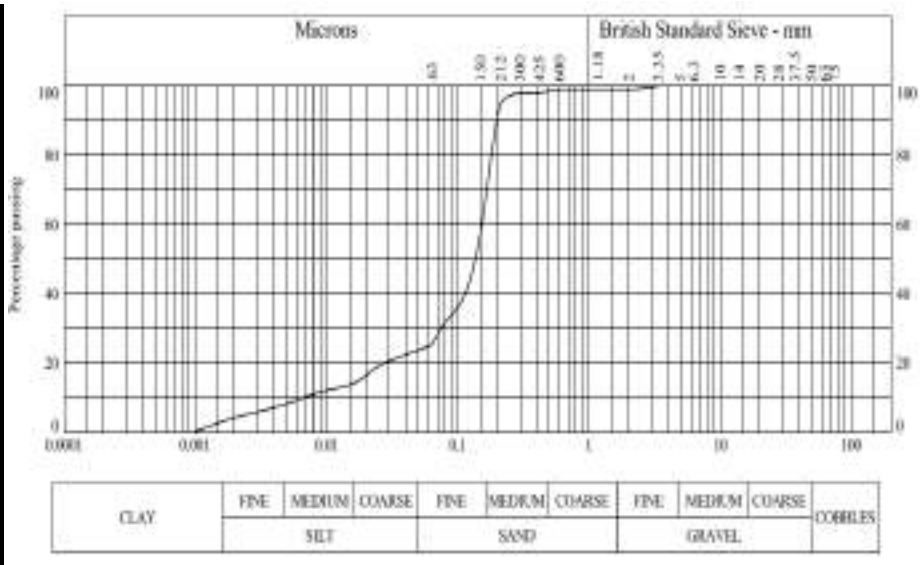


Table C-1 (9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B44	**Sampling Date**	26/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	98
2	98
1.18	97
0.600	97
0.425	96
0.300	95
0.212	91
0.15	51
0.075	35
0.063	30
0.028	25
0.018	20
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

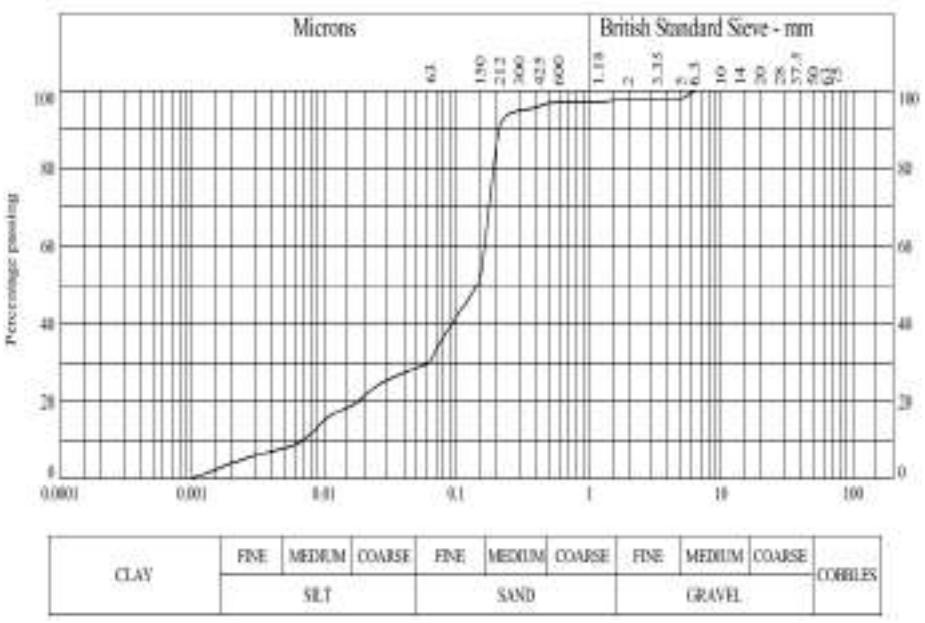


Table C-1 (10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B44	**Sampling Date**	26/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	94
6.3	80
5	74
3.35	66
2	59
1.18	54
0.600	45
0.425	44
0.300	35
0.212	27
0.15	20
0.075	18
0.063	16
0.028	15
0.018	13
0.010	10
0.007	9
0.005	8
0.002	4
0.001	0

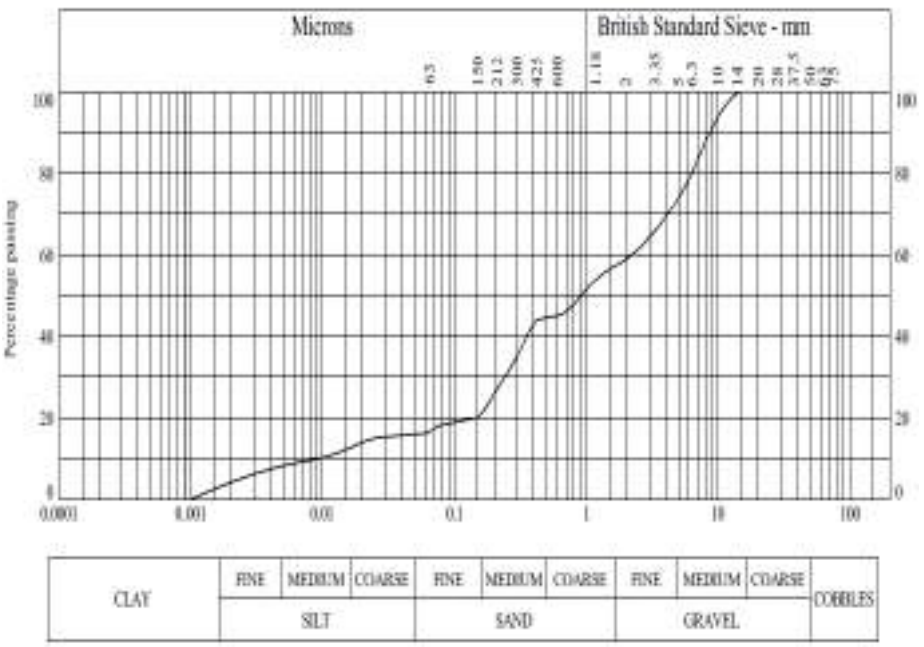


Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B45	**Sampling Date**	26/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	98
1.18	95
0.600	89
0.425	81
0.300	72
0.212	65
0.15	49
0.075	30
0.063	25
0.028	20
0.018	18
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

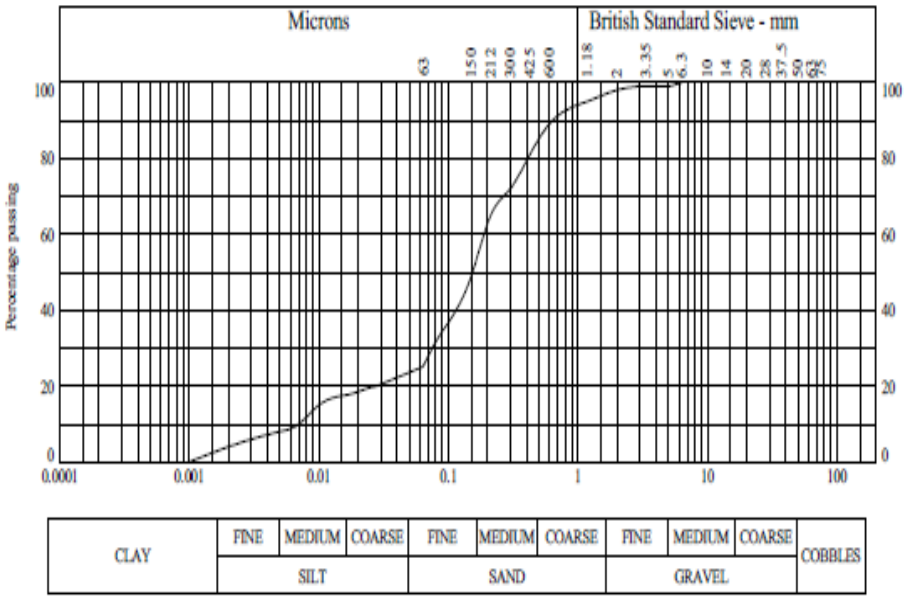


Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B45	**Sampling Date**	26/07/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	92
2	81
1.18	75
0.600	70
0.425	65
0.300	60
0.212	55
0.15	43
0.075	30
0.063	25
0.028	20
0.018	18
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

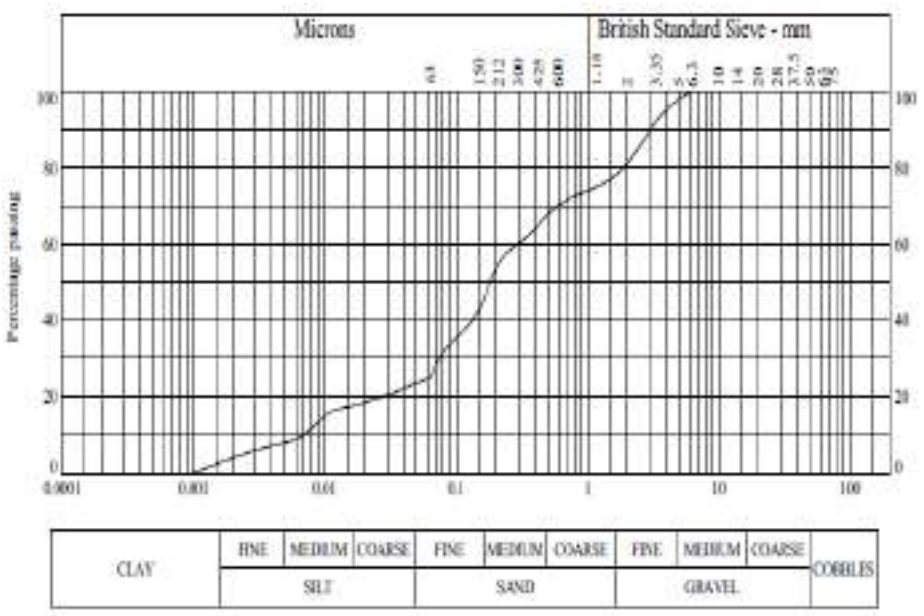


Table C-1 (13)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SILTY, SANDY GRAVEL	**Sampled By**	Matrix
Borehole No.	BHB46	**Sampling Date**	26/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	97
6.3	79
5	69
3.35	60
2	53
1.18	48
0.600	43
0.425	40
0.300	36
0.212	33
0.15	28
0.075	25
0.063	20
0.028	15
0.018	13
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

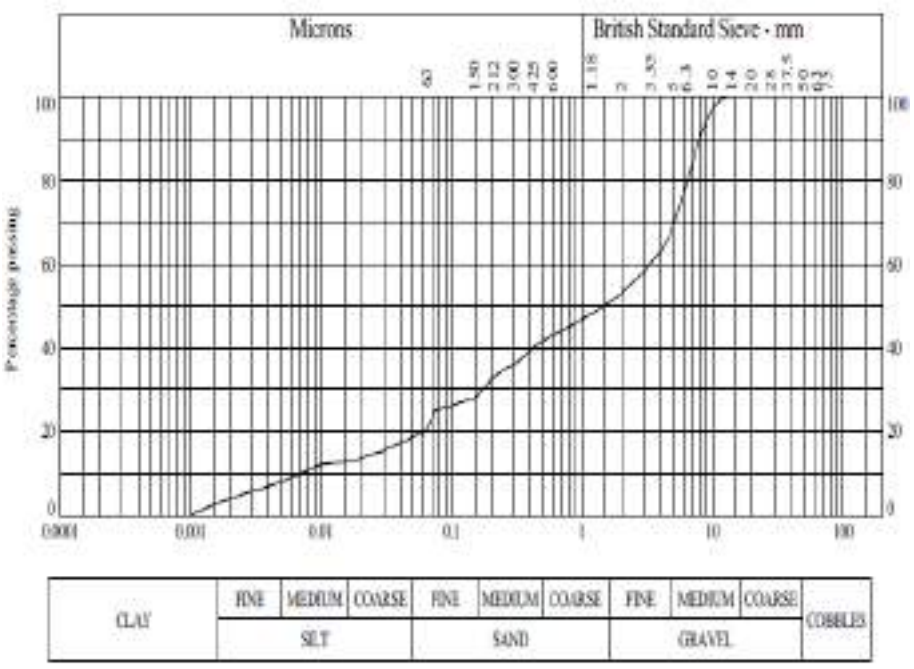


Table C-1 (14)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	DUBAI WORLD TRADE CENTER - L.L.C.	**Date Reported**	23/08/2015
Customer	DUBAI WORLD TRADE CENTER - L.L.C.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHB47	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	98
2	97
1.18	96
0.600	95
0.425	91
0.300	81
0.212	74
0.15	46
0.075	30
0.063	25
0.028	15
0.018	13
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

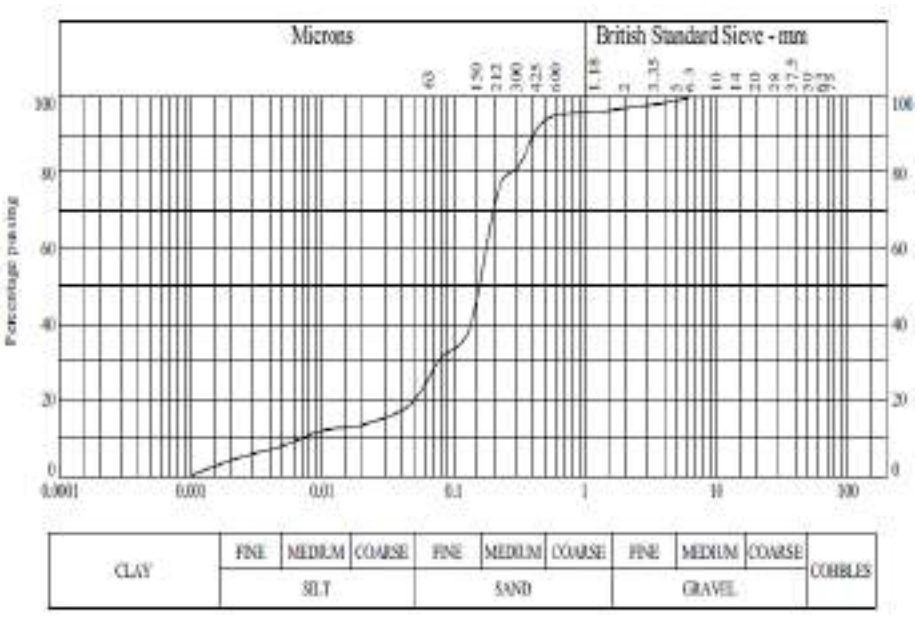


Table C-1 (15)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY,M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHC22	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	97
3.35	96
2	93
1.18	90
0.600	86
0.425	82
0.300	71
0.212	60
0.15	36
0.075	25
0.063	20
0.028	15
0.018	13
0.010	12
0.007	10
0.005	8
0.002	4
0.001	0

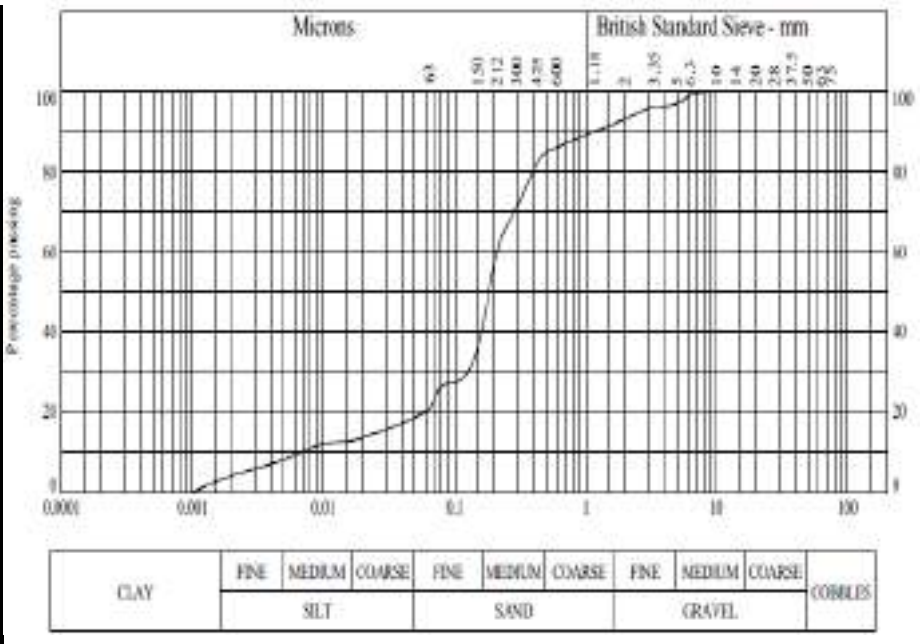


Table C-1 (16)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY,M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHC22	**Sampling Date**	26/07/2015
Depth (m)	9.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	98
3.35	97
2	95
1.18	93
0.600	90
0.425	85
0.300	75
0.212	64
0.15	39
0.075	30
0.063	25
0.028	15
0.018	10
0.010	8
0.007	7
0.005	6
0.002	4
0.001	0

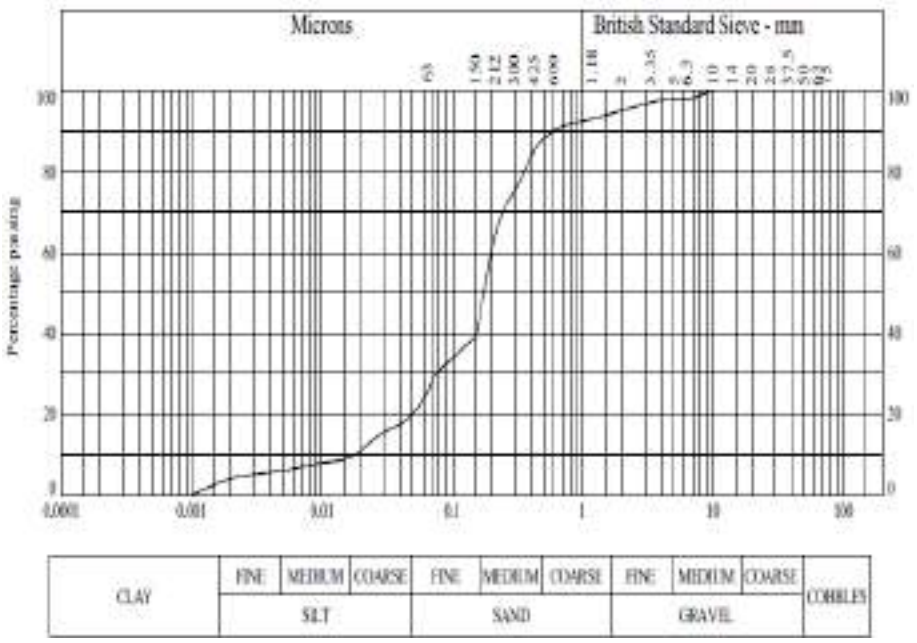


Table C-1 (17)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	7PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C23	**Sampling Date**	26/07/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	96
0.600	86
0.425	78
0.300	65
0.212	52
0.15	31
0.075	25
0.063	20
0.028	15
0.018	10
0.010	9
0.007	8
0.005	5
0.002	4
0.001	0

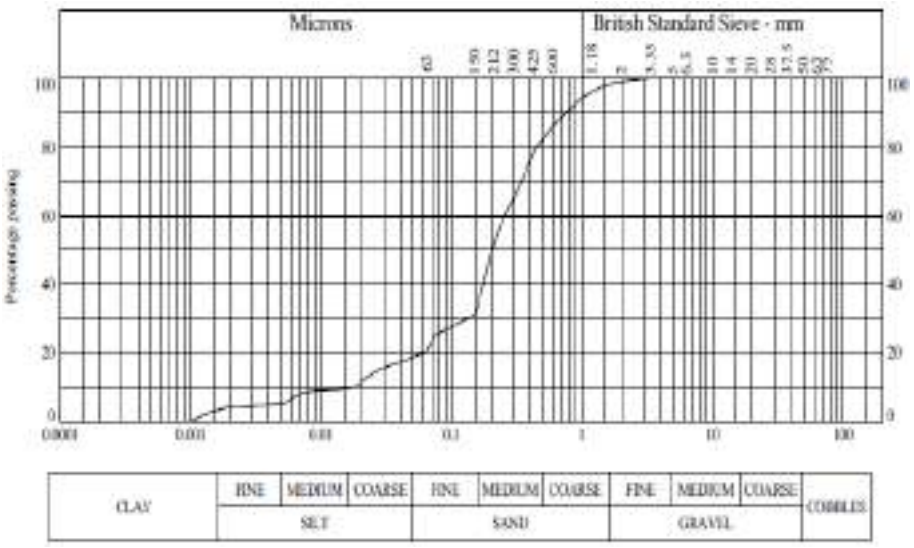


Table C-1 (18)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C24	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	99
1.18	98
0.600	98
0.425	96
0.300	91
0.212	82
0.15	50
0.075	35
0.063	30
0.028	15
0.018	10
0.010	9
0.007	8
0.005	5
0.002	4
0.001	0

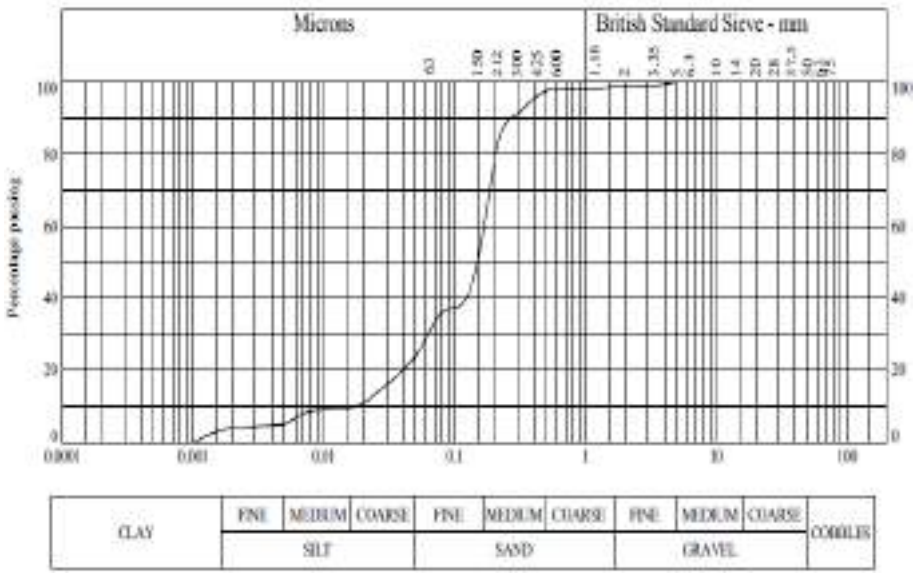


Table C-1 (19)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C24	**Sampling Date**	26/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	97
5	96
3.35	95
2	93
1.18	92
0.600	90
0.425	88
0.300	80
0.212	69
0.15	41
0.075	30
0.063	20
0.028	15
0.018	10
0.010	9
0.007	8
0.005	5
0.002	4
0.001	0

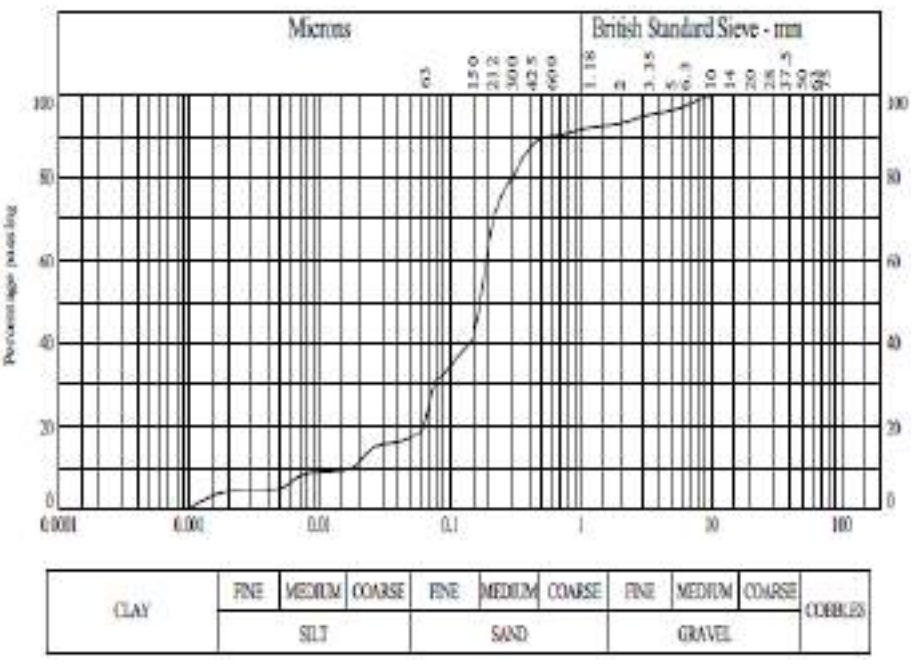


Table C-1 (20)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C24	**Sampling Date**	26/07/2015
Depth (m)	9.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	89
10	83
6.3	77
5	75
3.35	73
2	72
1.18	71
0.600	69
0.425	67
0.300	59
0.212	50
0.15	32
0.075	25
0.063	20
0.028	15
0.018	10
0.010	9
0.007	8
0.005	5
0.002	4
0.001	0

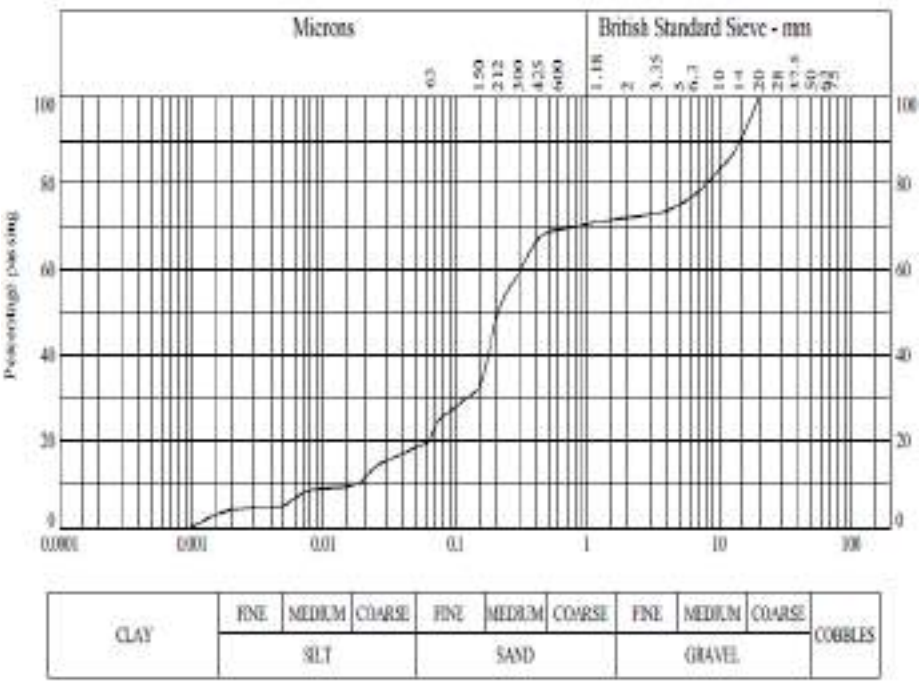


Table C-1 (21)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-C25	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	96
3.35	95
2	93
1.18	92
0.600	90
0.425	88
0.300	83
0.212	71
0.15	30
0.075	25
0.063	20
0.028	15
0.018	10
0.010	9
0.007	8
0.005	5
0.002	4
0.001	0

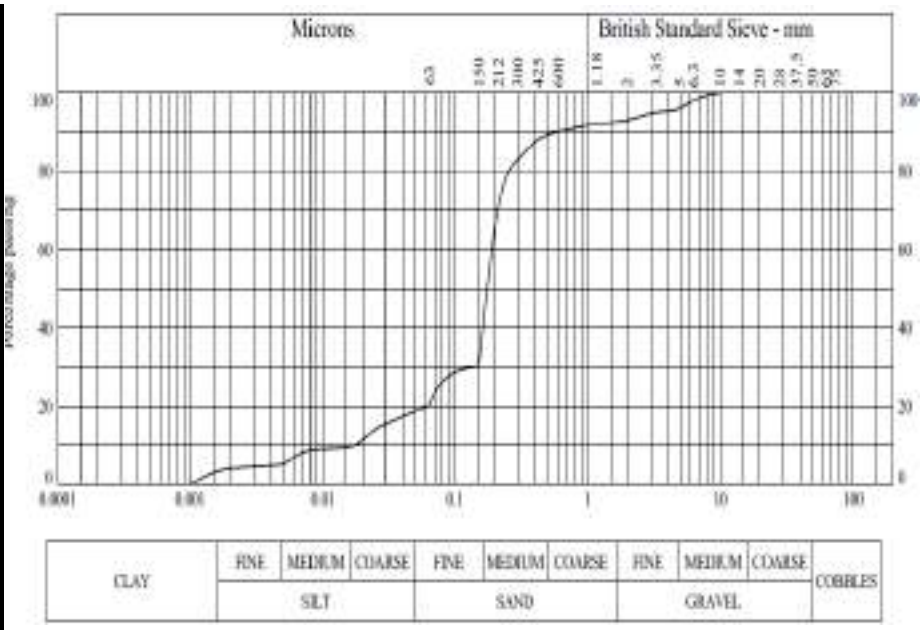


Table C-1 (22)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C25	**Sampling Date**	26/07/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	96
5	96
3.35	93
2	91
1.18	89
0.600	86
0.425	84
0.300	78
0.212	64
0.15	27
0.075	20
0.063	18
0.028	15
0.018	10
0.010	9
0.007	8
0.005	5
0.002	4
0.001	0

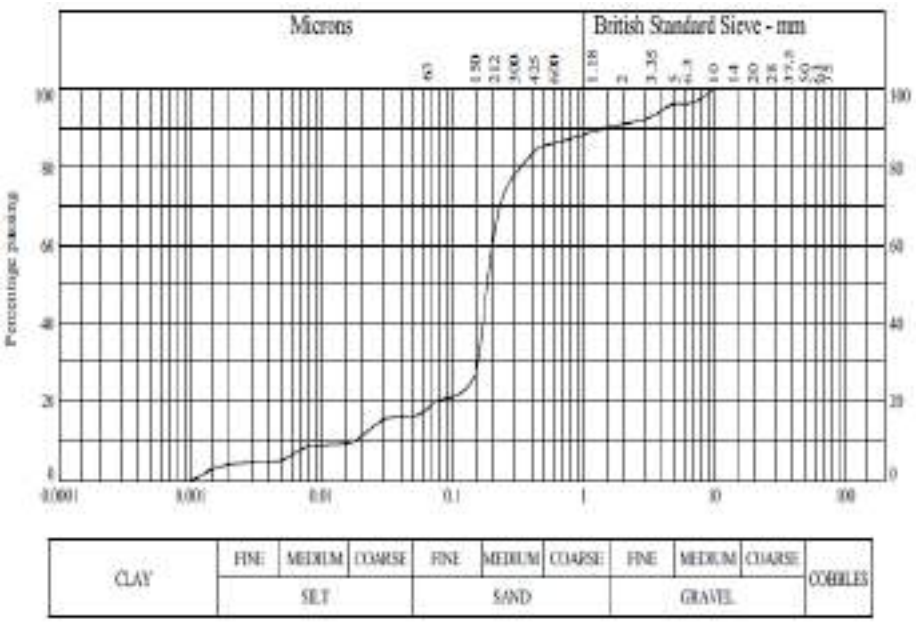


Table C-1 (23)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHC26	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	98
0.425	94
0.300	80
0.212	66
0.15	29
0.075	25
0.063	20
0.028	15
0.018	13
0.010	10
0.007	8
0.005	6
0.002	4
0.001	0

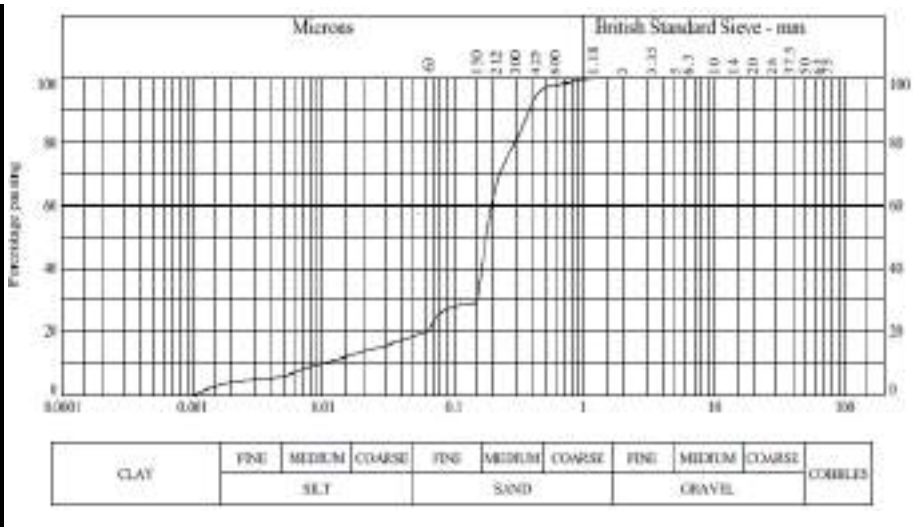


Table C-1 (24)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHC26	**Sampling Date**	26/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	93
6.3	100
5	98
3.35	96
2	94
1.18	92
0.600	91
0.425	89
0.300	84
0.212	74
0.15	59
0.075	29
0.063	19
0.028	15
0.018	13
0.010	10
0.007	8
0.005	6
0.002	4
0.001	0

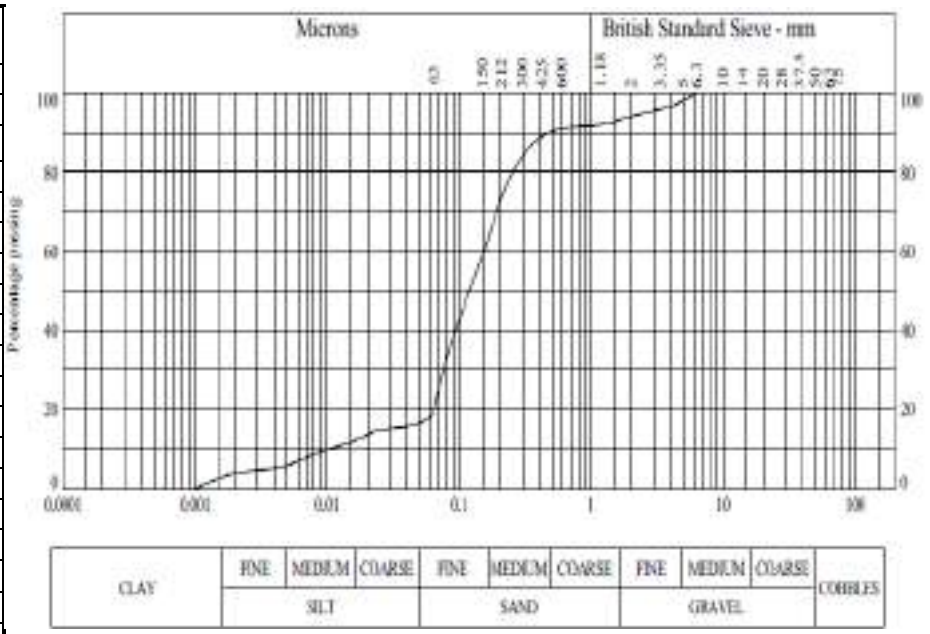


Table C-1 (25)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT10
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BHC26	**Sampling Date**	26/07/2015
Depth (m)	9.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	88
6.3	75
5	71
3.35	65
2	62
1.18	59
0.600	56
0.425	54
0.300	47
0.212	36
0.15	23
0.075	20
0.063	18
0.028	15
0.018	13
0.010	10
0.007	8
0.005	6
0.002	4
0.001	0

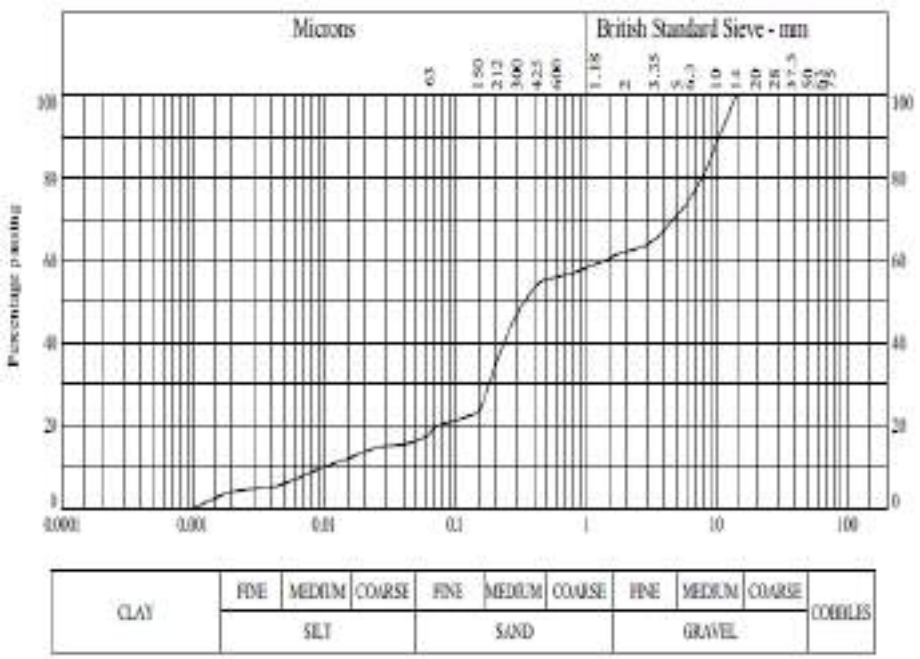


Table C-1 (26)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C28	**Sampling Date**	26/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	95
3.35	92
2	89
1.18	86
0.600	82
0.425	76
0.300	68
0.212	61
0.15	43
0.075	35
0.063	30
0.028	20
0.018	18
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

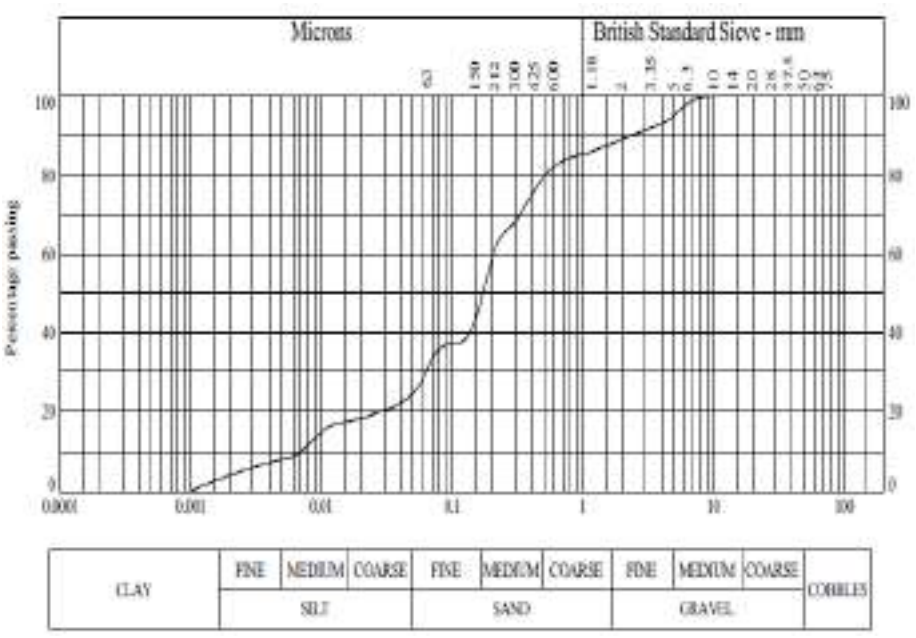


Table C-1 (27)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-7
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-C28	**Sampling Date**	26/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	97
10	95
6.3	92
5	90
3.35	86
2	82
1.18	78
0.600	74
0.425	68
0.300	59
0.212	52
0.15	37
0.075	30
0.063	25
0.028	20
0.018	18
0.010	15
0.007	10
0.005	8
0.002	4
0.001	0

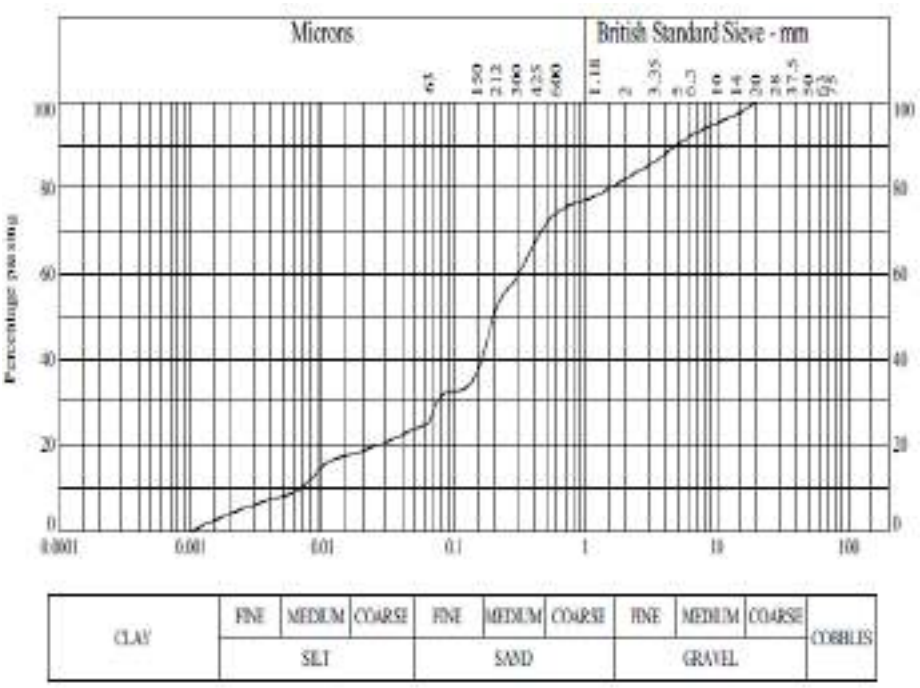


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	29/07-12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	30/07-13/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	26-30/07/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A59	1.00	6.5
BH-A59	3.00	11.0
BH-A59	4.00	9.8
BH-A59	6.00	10.0
BH-B18	2.00	5.5
BH-B18	3.00	9.6
BH-B18	5.00	11.0
BH-B19	1.00	8.3
BH-B19	3.00	10.0
BH-B19	4.00	9.8
BH-B19	6.50	8.8
BH-B20	2.00	12.0
BH-B20	3.00	13.0
BH-B20	5.00	15.0
BH-B44	1.00	15.0

Borehole No.	Depth	Moisture Content (%)
BH-B44	2.00	14.0
BH-B44	4.00	8.5
BH-B44	5.00	8.0
BH-B45	1.00	4.2
BH-B45	3.00	14.0
BH-B45	5.00	11.0
BH-B46	1.00	7.2
BH-B46	3.00	9.3
BH-B46	4.00	10.0
BH-B46	6.50	18.0
BH-B47	1.00	4.2
BH-B47	3.00	7.9
BH-B47	5.00	9.1
BH-C22	1.00	9.7
BH-C22	4.00	23.0
BH-C22	6.50	15.0
BH-C22	9.00	15.0
BH- C23	1.00	24.0
BH-C23	5.00	25.0
BH-C23	8.00	20.0
BH-C24	1.00	18.0
BH-C24	6.00	7.0
BH-C24	9.50	11.0
BH-C25	1.00	13.0
BH-C25	4.00	12.0
BH-C25	6.00	7.3
BH-C26	1.00	12.0
BH-C26	3.00	2.5

Borehole No.	Depth	Moisture Content (%)
BH-C26	6.50	11.0
BH-C26	9.50	16.0
BH-C27	1.00	5.1
BH-C27	3.00	10.0
BH-C28	2.00	10.0
BH-C28	4.00	7.6
BH-C28	6.50	12.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	29/07/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	30/07/2015
Sample Description	Soil	**Sampling Date**	27/07/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-C25	2.00	2.65

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	29/07-05/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	30/07-11/08/2015
Sample Description	SAND	**Sampling Date**	26-30/07/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-B44	3.00	100	0.2
BH-C23	2.00	100	0.1
BH-C27	1.00	100	0.1

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	30/07-04/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	26-30/07/2015
Sample Description	ROCK CORE	**Date Tested**	02-06/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-B18	5.35	28.79	65.56
BH-B46	6.80	16.40	37.36
BH-C25	6.18	26.84	61.13

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-7
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	28/07-07/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	28/07-08/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	26/07-05/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A59	7.50	1	0.84	Vertical
BH-A59	10.50	2	0.54	Vertical
BH-B18	6.50	3	0.24	Vertical
BH-B18	14.30	4	0.24	Vertical
BH-B18	14.30	5	0.38	Vertical
BH-B19	15.80	6	0.68	Vertical
BH-B19	20.30	7	0.23	Vertical
BH-B20	14.30	8	0.28	Vertical
BH-B20	20.30	9	0.65	Vertical
BH-B44	12.00	10	0.22	Vertical
BH-B44	13.50	11	0.69	Vertical
BH-B44	28.00	12	0.91	Vertical
BH-B45	7.25	13	0.58	Vertical
BH-B45	30.00	14	0.34	Vertical
BH-B45	39.00	15	0.27	Vertical
BH-B46	6.80	16	0.75	Vertical
BH-B46	9.80	17	0.59	Vertical
BH-B47	13.50	18	0.95	Vertical
BH-B47	24.00	19	0.78	Vertical
BH-C22	14.10	20	0.20	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-C22	21.21	21	0.86	Vertical
BH-C23	11.15	22	0.68	Vertical
BH-C24	9.70	23	0.31	Vertical
BH-C24	46.00	24	0.37	Vertical
BH-C25	14.10	25	0.72	Vertical
BH-C25	7.50	26	0.32	Vertical
BH-C25	25.78	27	1.39	Vertical
BH-C25	53.50	28	0.44	Vertical
BH-C26	12.50	29	0.33	Vertical
BH-C26	35.00	30	0.69	Vertical
BH-C27	6.20	31	0.27	Vertical
BH-C28	10.70	32	0.40	Vertical
BH-C28	46.00	33	0.94	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-7
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	28/07-07/08/2015
Sample Source	Site	**Date Tested**	28/07-08/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin / Rojan

Sample Details:			Dimensions:		Results:						
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density	Sketch	Rock Description
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-B18	5.50	1	7.50	15.00	4.4	1.27	345.8	12.10	2.16	Figure C-01	CAL. SANDSTONE
BH-B19	27.80	2	7.50	15.20	6.7	1.84	364.2	19.30	2.27	Figure C-02	CAL. SILTSTONE
BH-B19	29.30	3	7.50	15.00	7.9	2.67	294.3	20.30	1.91	Figure C-03	CAL. SILTSTONE
BH-B19	36.00	4	7.40	15.00	5.2	1.47	356.9	14.60	2.08	Figure C-04	CAL. SILTSTONE
BH-B20	16.00	5	7.50	15.20	3.8	2.30	163.8	21.30	2.24	Figure C-05	CAL. SANDSTONE
BH-B42	15.00	6	7.50	15.00	4.6	1.27	363.9	17.40	1.87	Figure C-06	CAL. SANDSTONE
BH-B44	13.50	7	7.50	15.10	8.4	2.78	302.3	19.50	1.90	Figure C-07	CAL. SANDSTONE
BH-B44	15.10	8	7.50	15.10	1.2	0.73	167.8	11.90	1.78	Figure C-08	CAL. SANDSTONE
BH-B45	29.00	9	7.40	15.00	4.5	1.40	320.5	18.90	1.96	Figure C-09	CAL. SILTSTONE
BH-B46	8.30	10	7.50	15.00	5.9	1.67	350.7	15.60	1.95	Figure C-10	CAL. SANDSTONE
BH-B47	25.50	11	7.50	15.00	5.8	1.47	393.0	8.90	2.48	Figure C-11	CAL. SILTSTONE
BH-B47	39.00	12	7.40	15.00	9.2	2.33	392.9	11.20	2.07	Figure C-12	CAL. SILTSTONE
BH-C22	27.59	13	7.50	15.20	13.6	4.21	323.9	11.70	2.14	Figure C-13	CAL. CONGLOM
BH-C22	37.59	14	7.50	15.00	2.5	1.60	156.0	31.30	1.84	Figure C-14	CONG. SILTSTONE
BH-C22	57.00	15	7.40	15.00	8.4	2.93	285.7	22.90	2.13	Figure C-15	CAL. SILTSTONE
BH-C23	11.21	16	7.50	15.10	8.7	2.72	318.3	9.90	2.23	Figure C-16	CAL. SANDSTONE
BH-C23	14.21	17	6.20	13.00	1.6	0.92	176.4	5.00	1.80	Figure C-17	CAL. SANDSTONE
BH-C23	16.00	18	7.40	14.80	7.3	2.84	257.9	8.20	2.06	Figure C-18	CAL. SANDSTONE
BH-C23	29.00	19	7.50	15.00	9.7	3.00	322.6	12.50	2.02	Figure C-19	CAL. SANDSTONE
BH-C24	14.20	20	7.40	15.00	4.7	1.60	294.3	18.60	2.07	Figure C-20	CAL. SANDSTONE
BH-C24	26.50	21	7.50	15.10	4.2	1.85	224.9	17.00	1.92	Figure C-21	CAL. SANDSTONE
BH-C24	29.00	22	7.50	15.10	6.2	1.59	391.0	11.90	1.88	Figure C-22	CAL. SILTSTONE
BH-C24	30.00	23	7.50	15.00	7.4	3.13	235.9	18.30	2.36	Figure C-23	CAL. SILTSTONE
BH-C25	12.00	24	7.40	15.00	4.5	1.80	250.6	15.50	2.13	Figure C-24	CAL. SANDSTONE

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-C25	20.00	25	7.50	15.00	8.4	2.87	292.8	18.80	2.10	Figure C-25	CAL. SANDSTONE
BH-C25	28.50	26	7.10	15.10	1.8	1.46	120.1	21.30	1.93	Figure C-26	CAL. SILTSTONE
BH-C25	34.00	27	7.40	15.00	4.7	1.73	272.2	20.70	2.08	Figure C-27	CAL. SILTSTONE
BH-C26	33.00	28	7.50	15.00	8.4	3.20	262.6	16.00	1.69	Figure C-28	CONG. SILTSTONE
BH-C26	36.58	29	7.50	15.00	2.6	1.07	246.2	22.00	1.82	Figure C-29	CONG. SILTSTONE
BH-C26	47.80	30	7.50	15.00	5.3	1.47	361.6	18.60	1.91	Figure C-30	CONG. SILTSTONE
BH-C26	57.40	31	7.50	15.00	8.6	3.17	269.7	13.20	2.21	Figure C-31	CAL. SILTSTONE
BH-C27	21.10	32	7.50	15.10	2.3	1.26	185.9	10.10	1.94	Figure C-32	CAL. CONGLOM
BH-C27	29.00	33	7.50	15.00	5.7	2.13	267.8	15.90	1.88	Figure C-33	CAL. SILTSTONE
BH-C28	9.60	34	6.20	15.10	5.9	1.85	319.9	1.20	1.90	Figure C-34	CAL. SANDSTONE

Engr. Rabih Dakwar

Technical Manager

MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

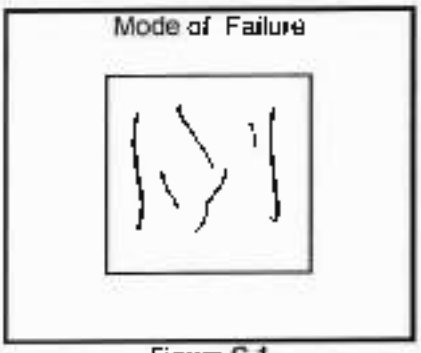


Figure C-1

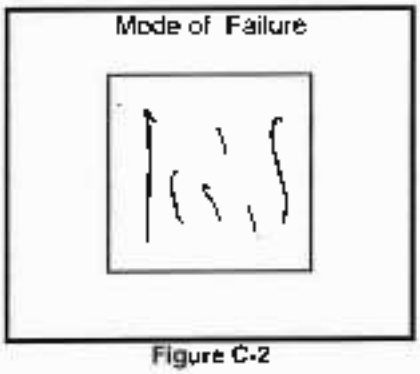


Figure C-2

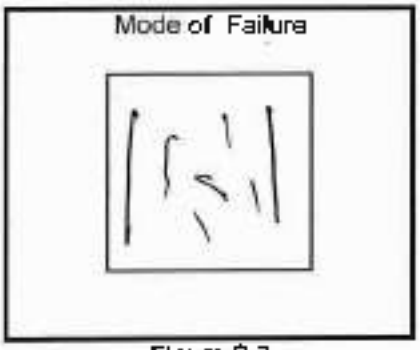


Figure C-3

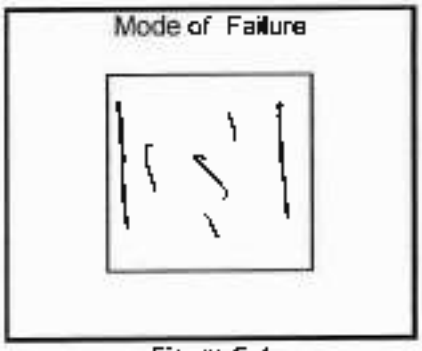


Figure C-4

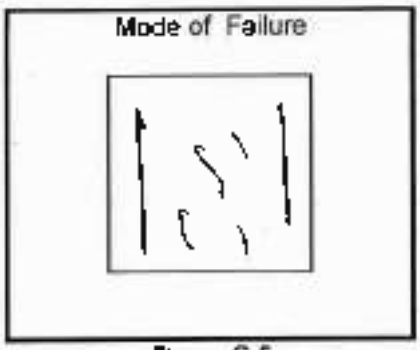


Figure C-5

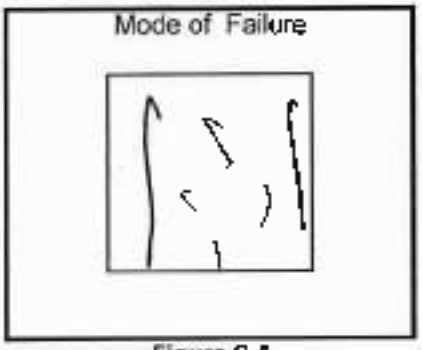


Figure C-6

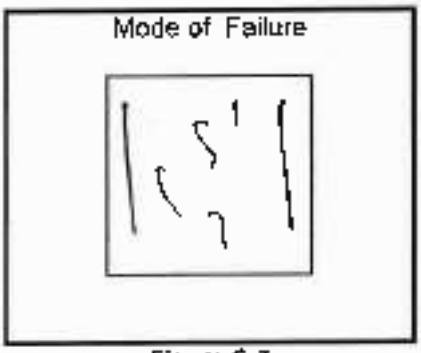


Figure C-7

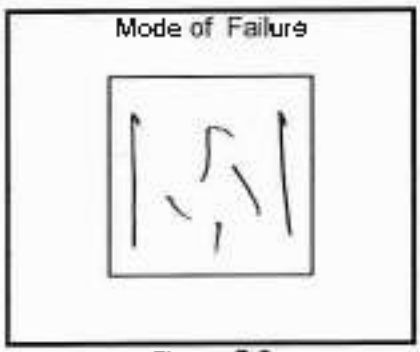


Figure C-8

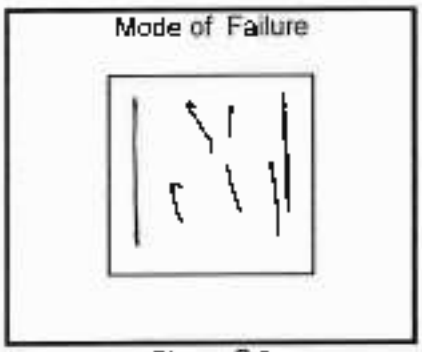


Figure C-9

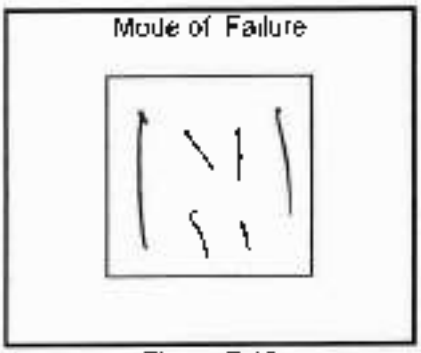


Figure C-10

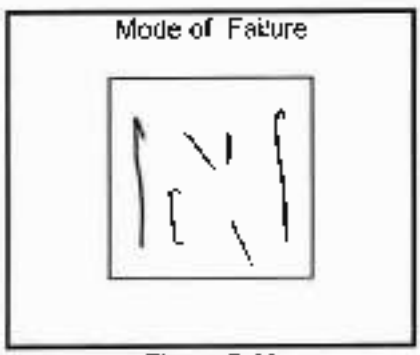


Figure C-11

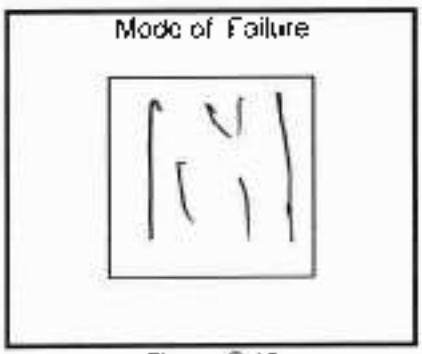


Figure C-12

TYPE OF FRACTURES FOR CORES

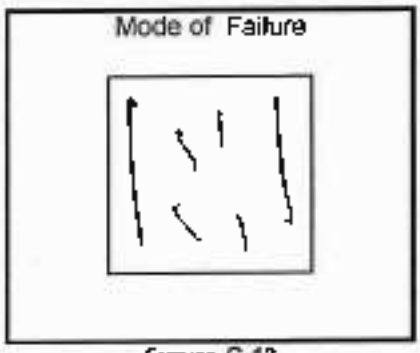


Figure C-13

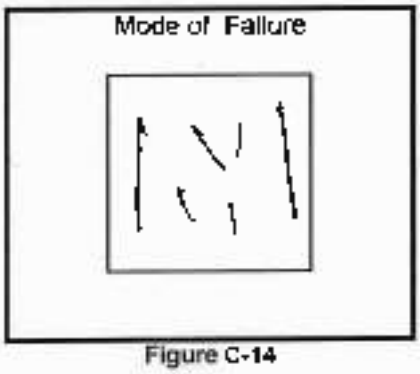


Figure C-14

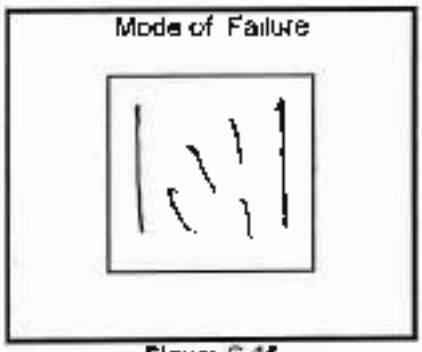


Figure C-15

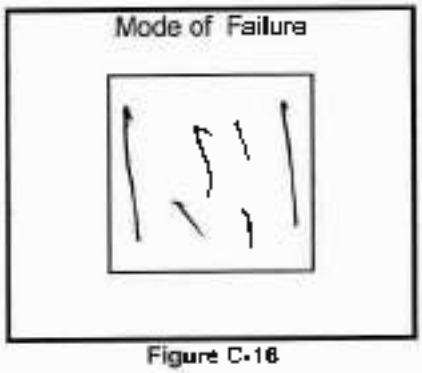


Figure C-16

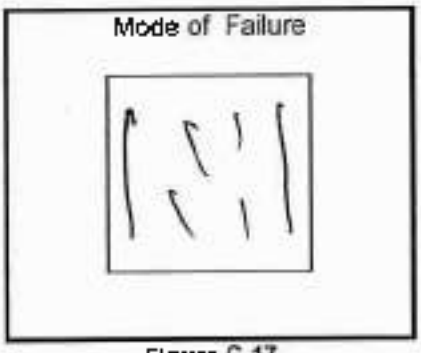


Figure C-17

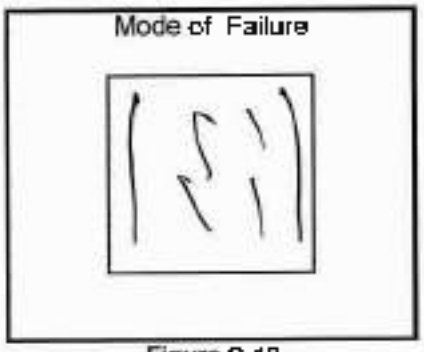


Figure C-18

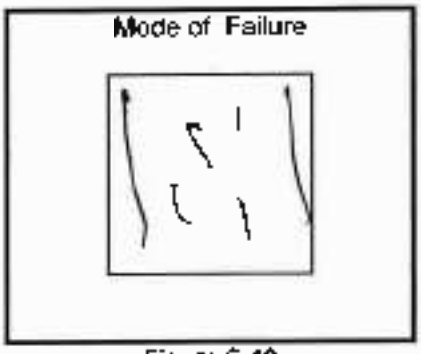


Figure C-19

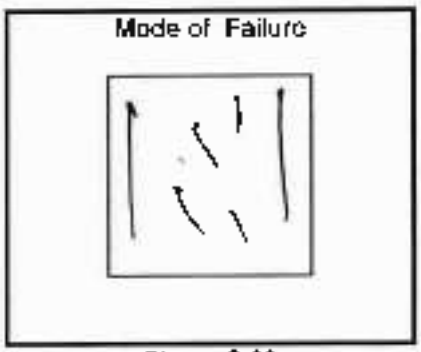


Figure C-20

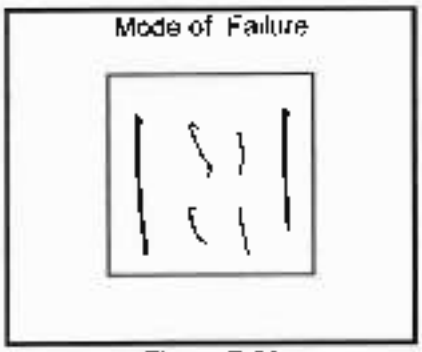


Figure C-21

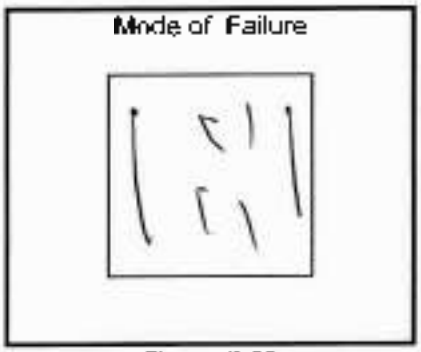


Figure C-22



Figure C-23

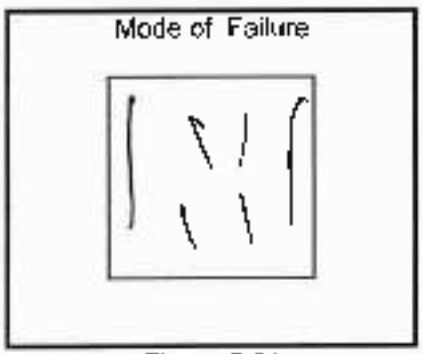
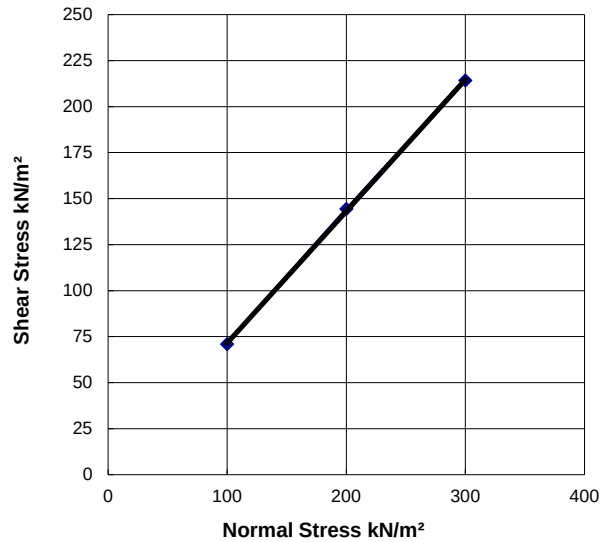


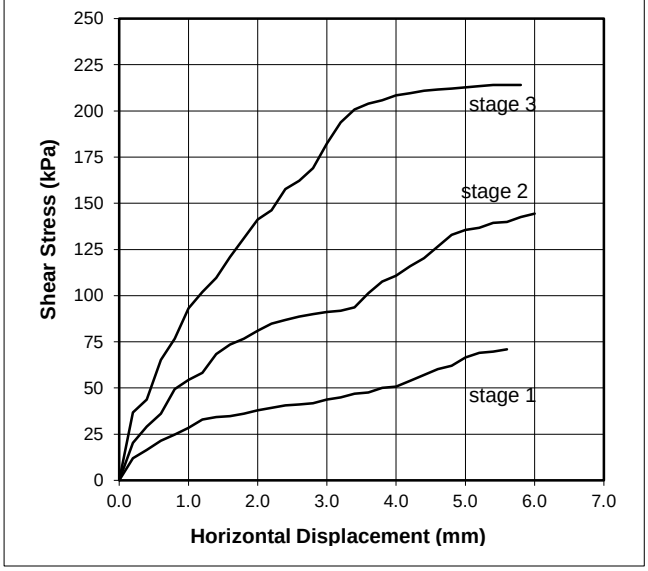
Figure C-24

MATRIX LABORATORY L.L.C.

TABLE C8- (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	Silty, SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B19	**Date Tested**	29-30/07/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

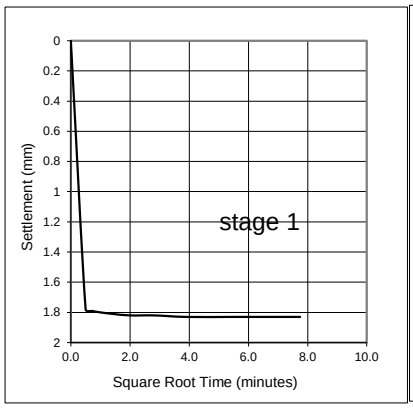
Apparent Cohesion = 0.00 kN/m²

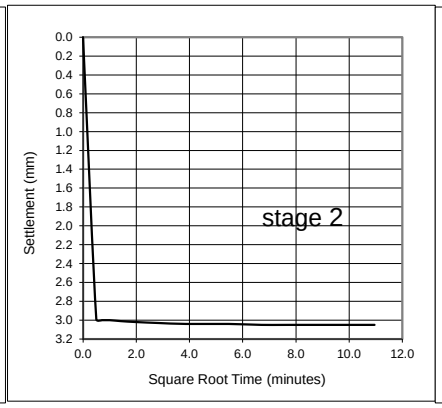
Angle of Shearing Resistance = 35.59º

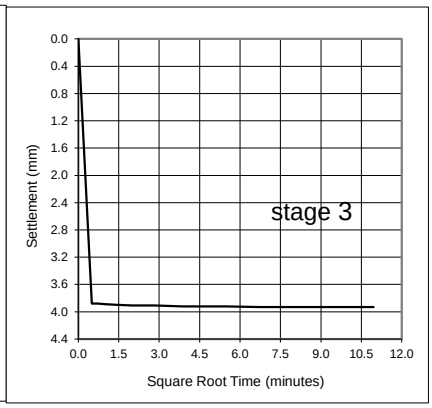
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	Silty, SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B19	**Date Tested**	29-30/07/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	JOMESH

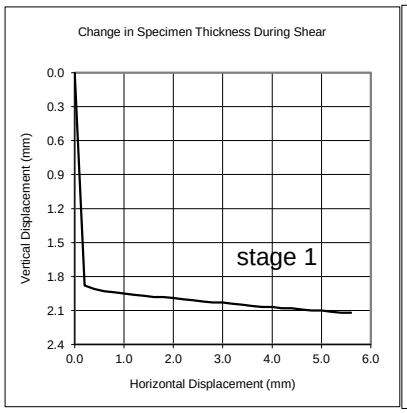
Consolidation Stage

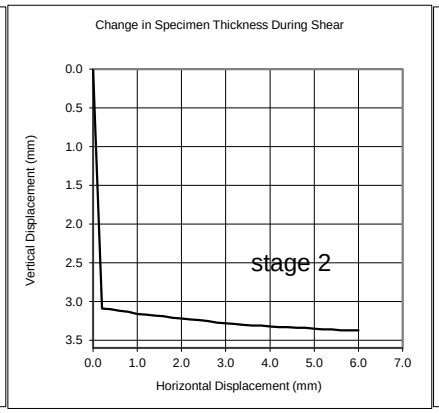


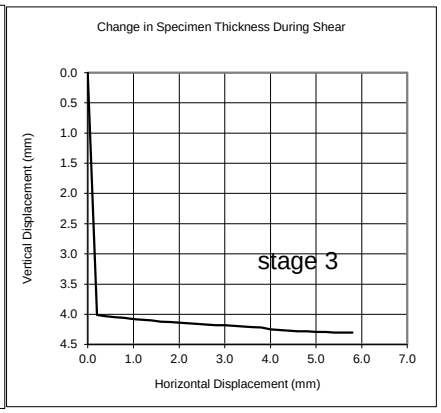




Shearing Stage



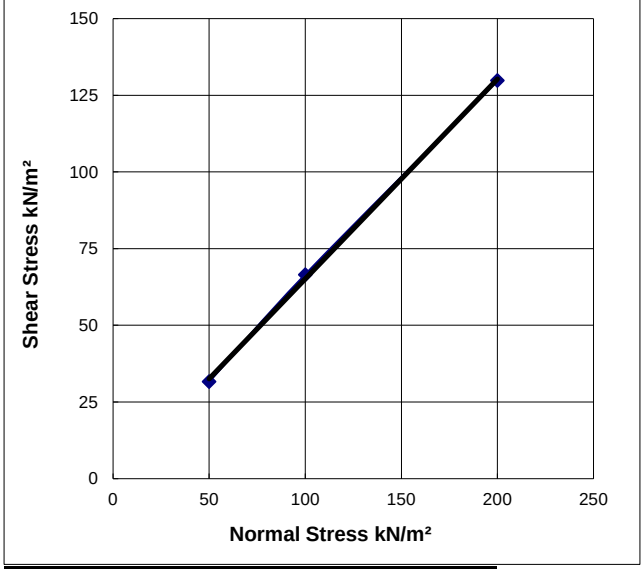


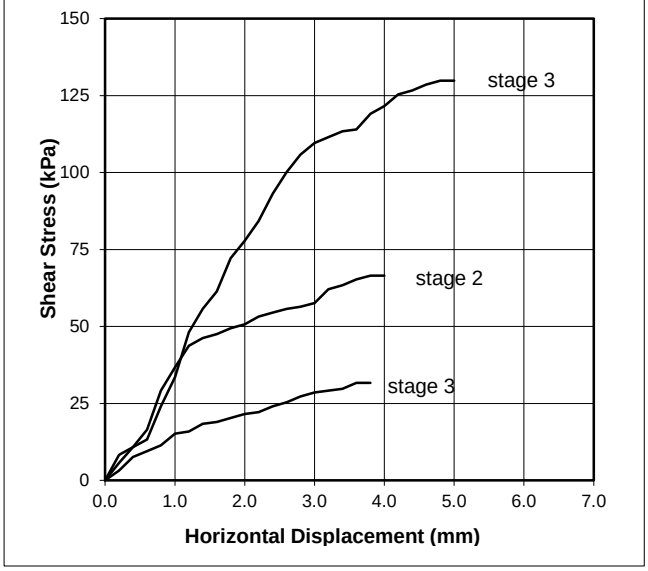


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B45	**Date Tested**	03-08/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

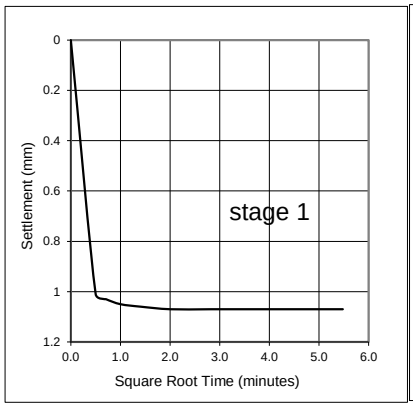
Apparent Cohesion = 0.0 kN/m²

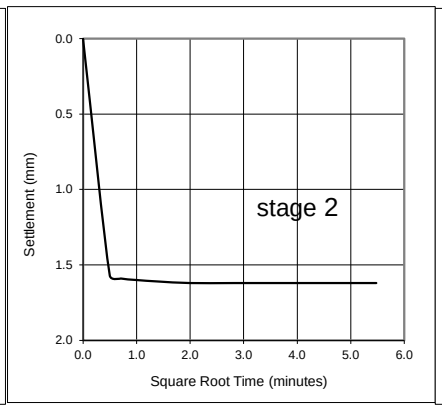
Angle of Shearing Resistance = 33.1°

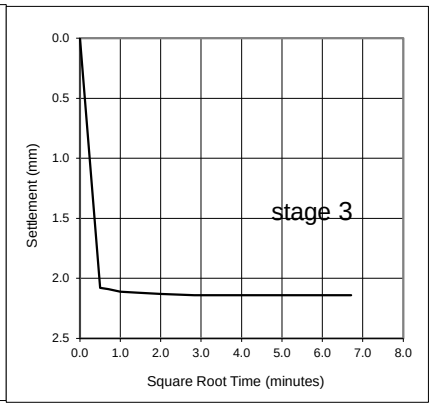
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B45	**Date Tested**	03-08/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	12.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

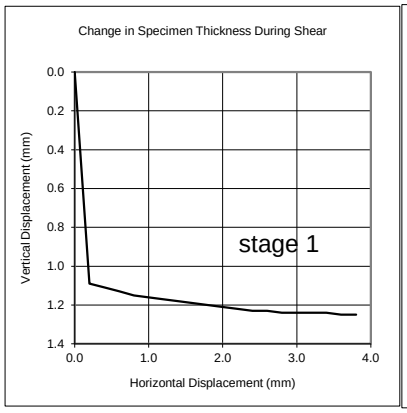
Consolidation Stage

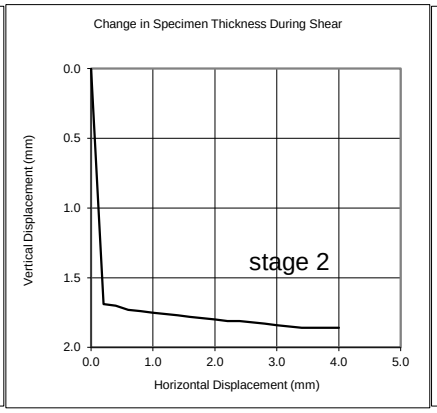


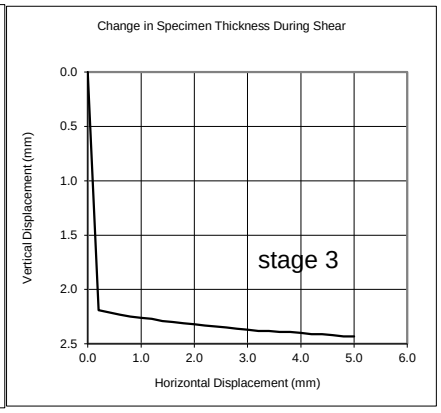




Shearing Stage



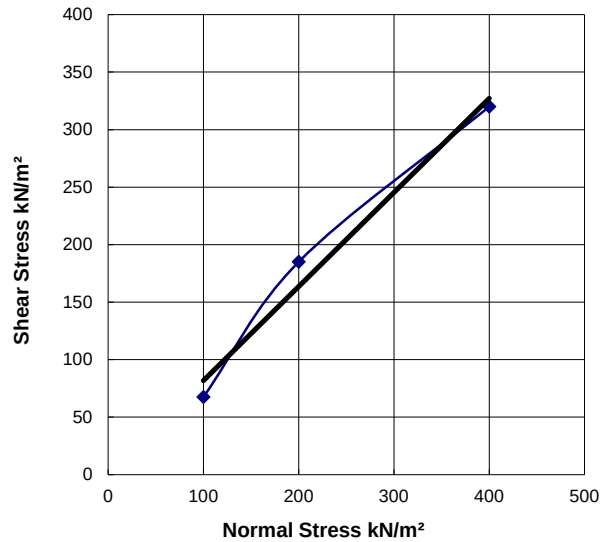


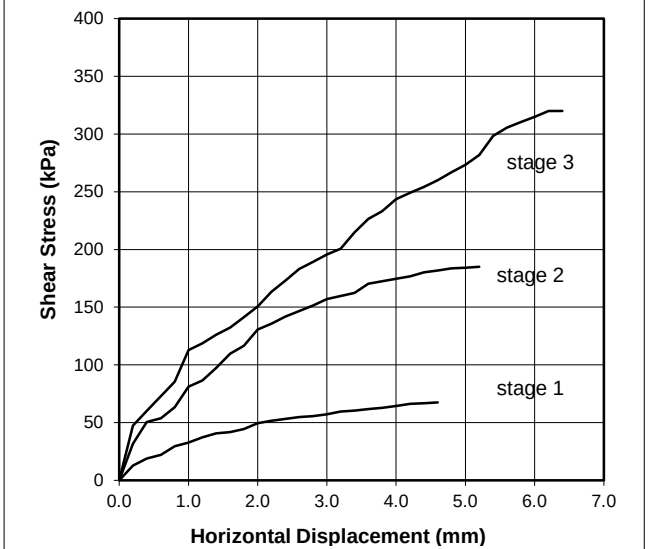


MATRIX LABORATORY L.L.C.

TABLE C8 – (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C24	**Date Tested**	01-02/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

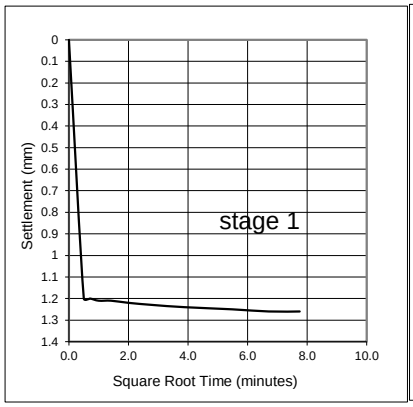
Apparent Cohesion = 0 kN/m²

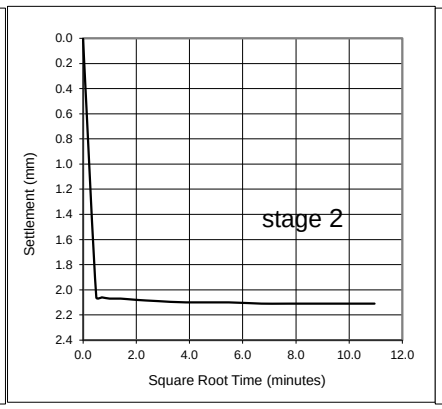
Angle of Shearing Resistance = 39.27º

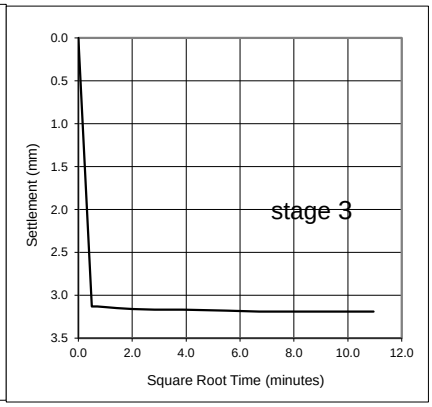
TABLE C8 – (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C24	**Date Tested**	01-02/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.55
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

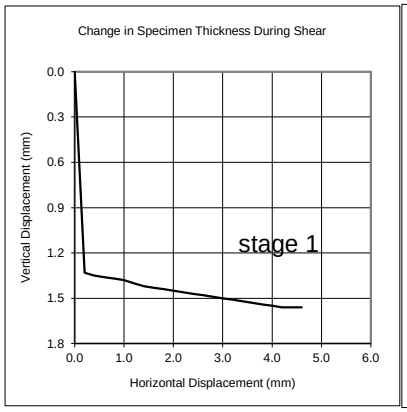
Consolidation Stage

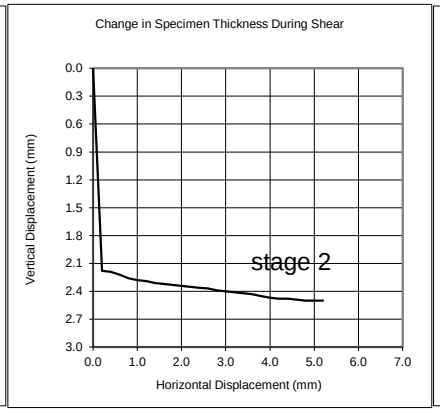


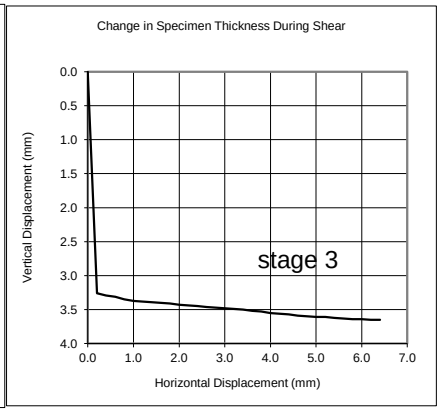




Shearing Stage



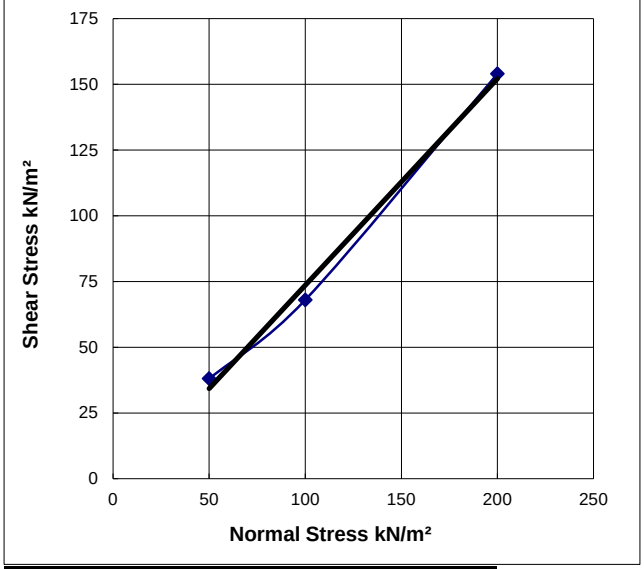


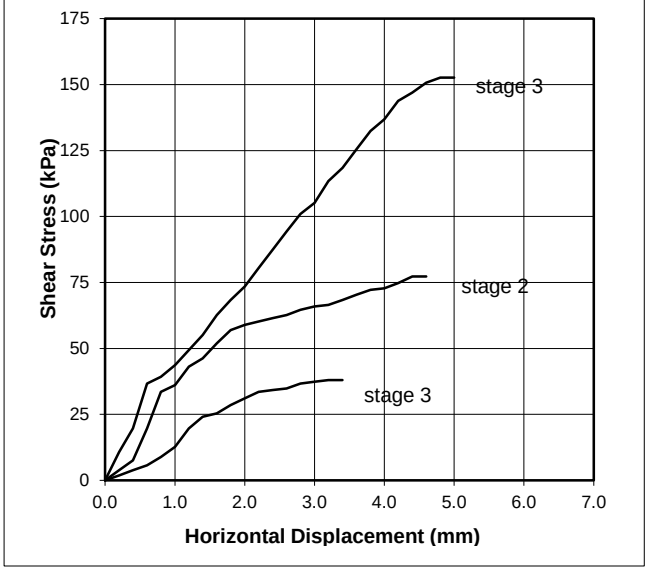


MATRIX LABORATORY L.L.C.

TABLE C8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C28	**Date Tested**	02-03/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

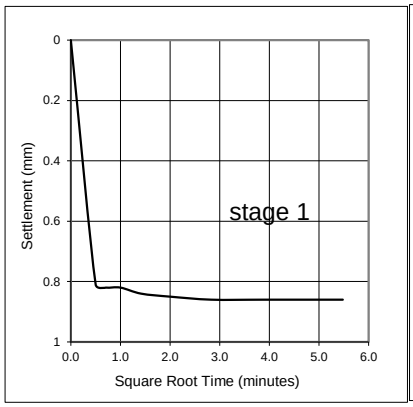
Apparent Cohesion = 0.0 kN/m²

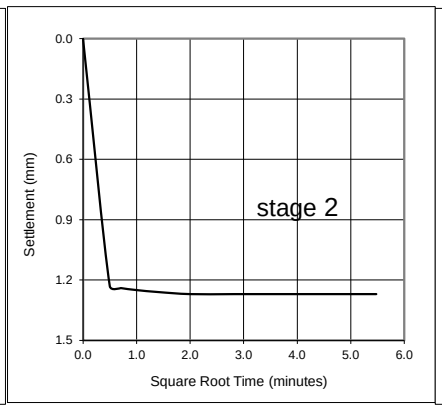
Angle of Shearing Resistance = 37.95º

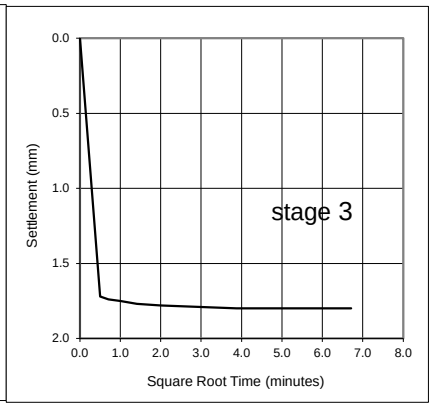
TABLE C8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-7
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-7
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-C28	**Date Tested**	02-03/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.70
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

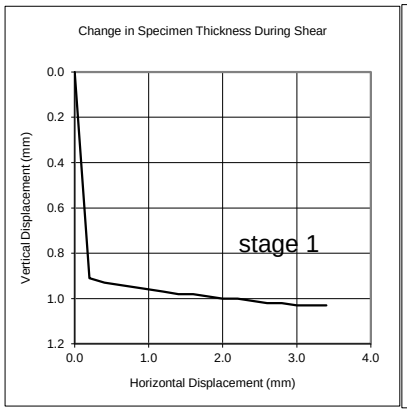
Consolidation Stage

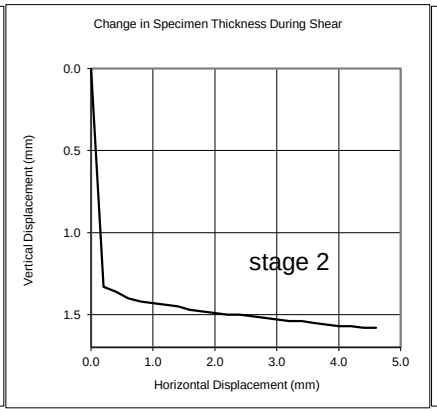


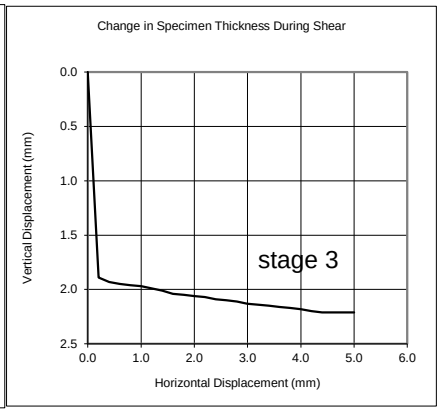




Shearing Stage







APPENDIX C8

LABORATORY TEST RESULTS (ZONE 8)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	01-03/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	05-12/08/2015
Test Method	See below	**Date Tested**	06-16/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A52	SPT4	3.00	0.1	0.01	8.2 @ 28°C	DS-1
BH-B22	SPT3	2.00	0.2	0.01	7.9 @ 27°C	DS-1
BH-B27	SPT2	1.00	0.2	0.03	7.9 @ 21°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)	**Sampling Date**	02-05/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	02-05/08/2015
Test Method	See below	**Date Tested**	02-06/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A54	17.00	0.21	0.19	7.9 @ 27°C	DS-1
BH-B24	18.30	0.41	0.09	7.8 @ 28°C	DS-2

Test Method
Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation
Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

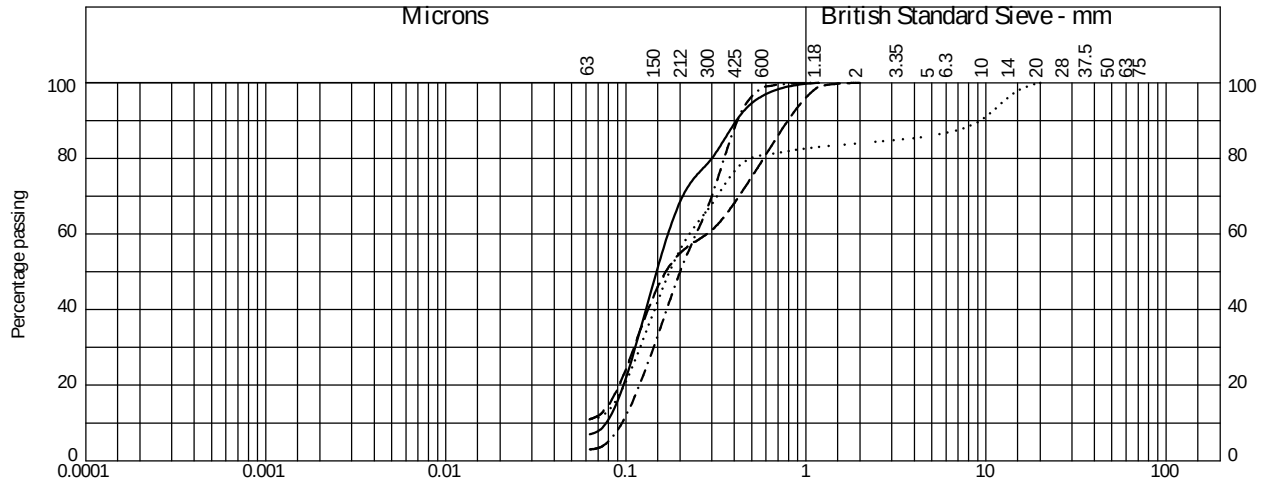
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A52	SPT2	122.1	———	SILTY, M-F SAND (S-M)	1.00
BH-A52	SPT3	125.8	– – –	SILTY, M-F SAND (S-M)	3.00
BH-A52	SPT6	123.1	.....	GRAVELLY, SILTY, M-F SAND (S-M)	5.00
BH-A53	SPT2	123.3	–.–.–	SL. SILTY, M-F SAND (SP)	1.00

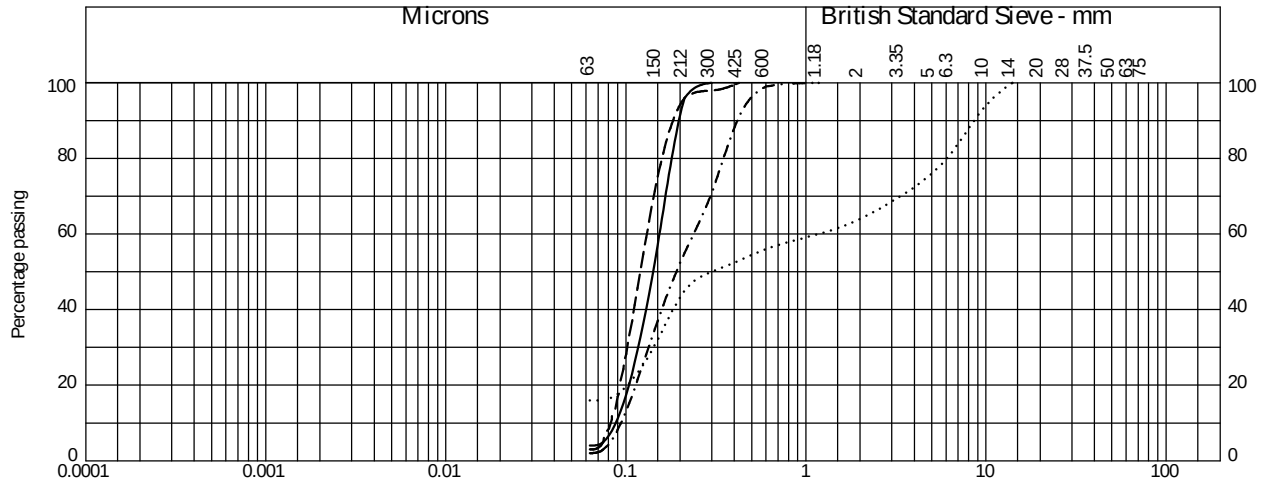
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A53	SPT4	134.3	———	SL. SILTY, FINE SAND (SP)	3.00
BH-A53	SPT6	123.4	– – –	SL. SILTY, FINE SAND (SP)	5.00
BH-A53	SPT9	136.0	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-A54	SPT3	133.7	– . – . –	SL. SILTY, M-F SAND (SP)	2.00

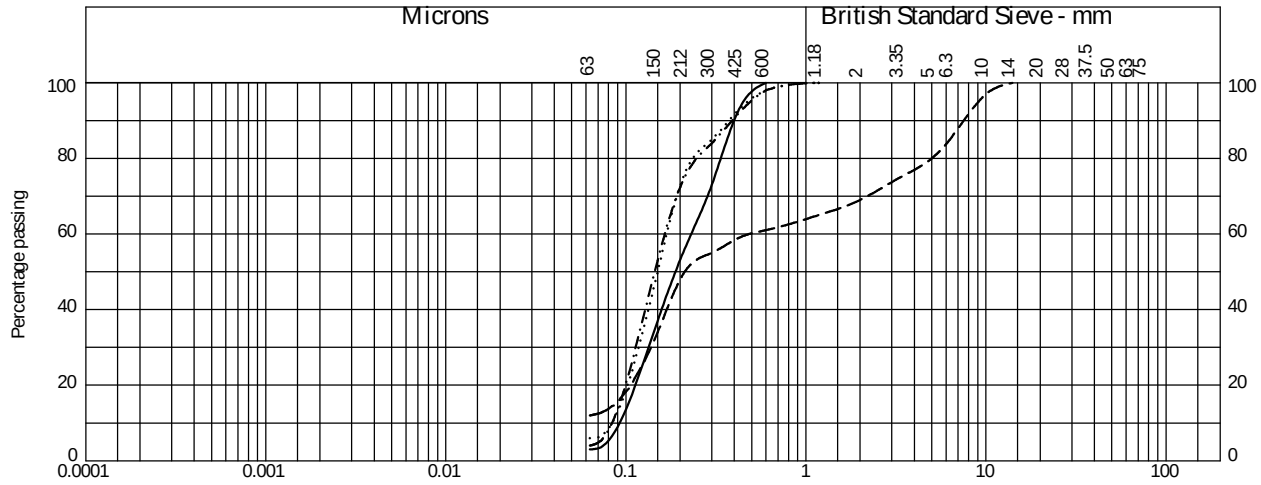
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A54	SPT6	136.1	———	SL. SILTY, M-F SAND (SP)	5.00
BH-A54	SPT9	135.1	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-A58	SPT2	129.3	.....	SILTY, M-F SAND (S-M)	1.00
BH-A58	SPT4	122.7	– . – . –	SL. SILTY, M-F SAND (SP)	3.00

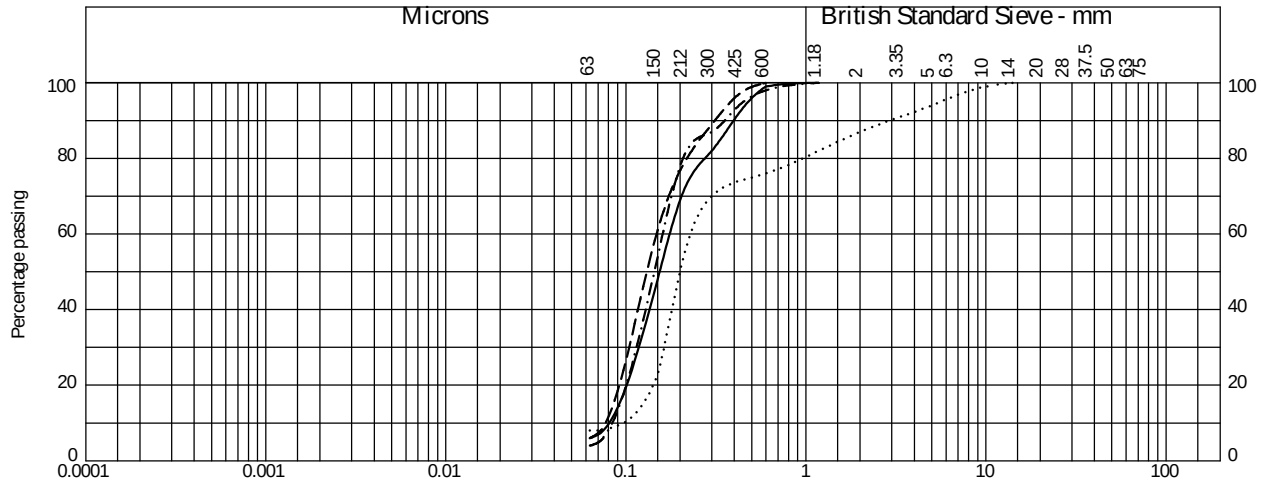
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A58	SPT7	120.9	———	SILTY, M-F SAND (S-M)	6.50
BH-A60	SPT3	125.1	– – –	SILTY, M-F SAND (S-M)	2.00
BH-A60	SPT7	129.7	.....	GRAVELLY, SILTY, M-F SAND (S-M)	6.50
BH-B21	SPT2	135.5	– · – · –	SL. SILTY, FINE SAND (SP)	1.00

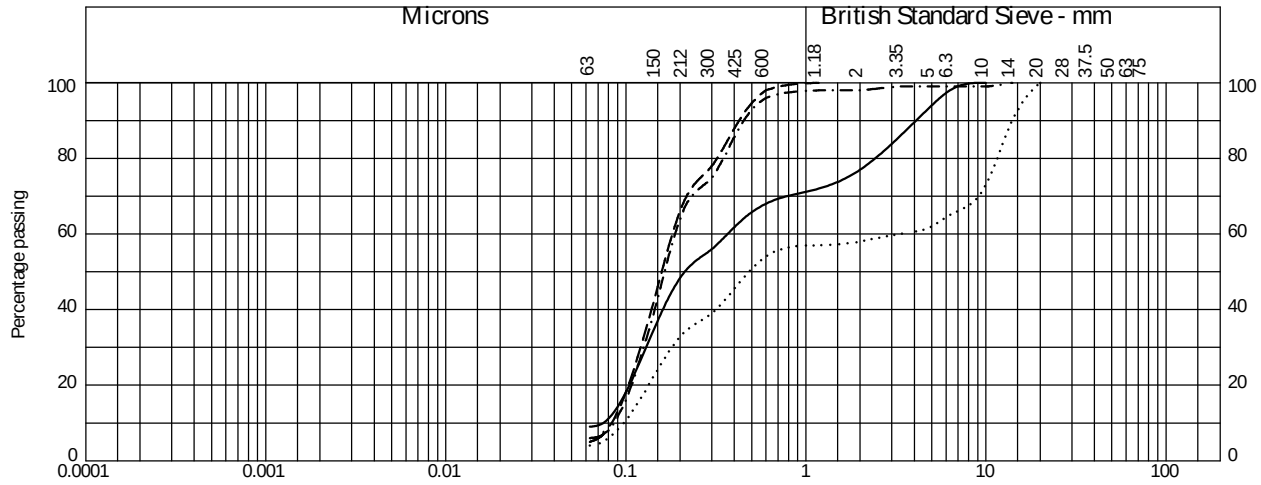
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B21	SPT4	131.1	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B22	SPT2	118.2	– – –	SILTY, M-F SAND (S-M)	1.00
BH-B22	SPT5	131.9	.....	V. GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00
BH-B23	SPT2	138.3	– . – . –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

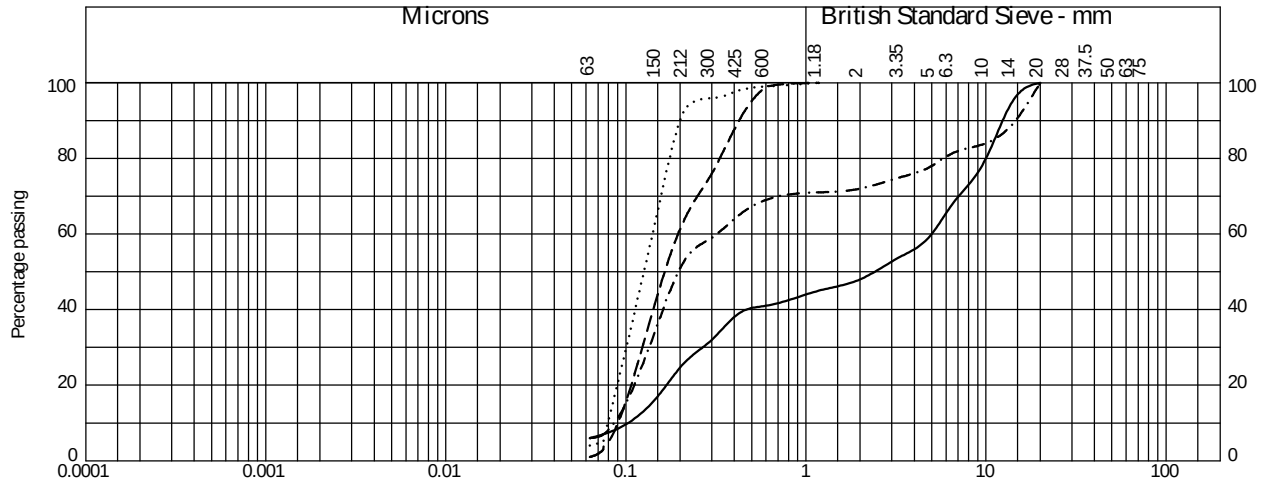
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B23	SPT5	133.4	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B24	SPT2	129.7	– – –	SL. SILTY, M-F SAND (SP)	1.00
BH-B24	SPT4	135.3	.....	SL. SILTY, FINE SAND (SP)	3.00
BH-B24	SPT7	129.7	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50

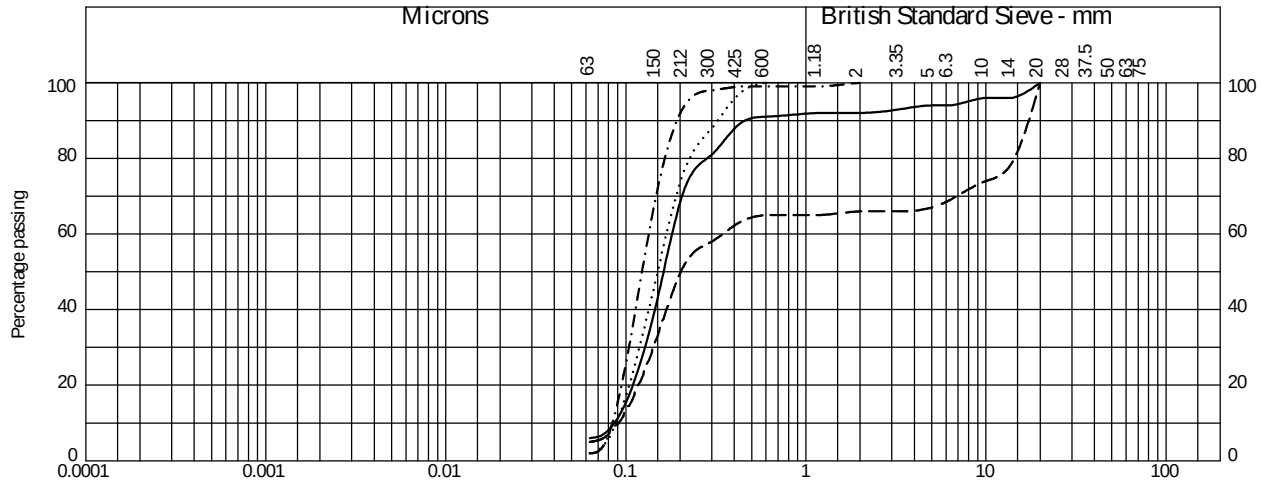
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B25	SPT2	136.0	———	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B25	SPT3	135.4	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-B26	SPT2	124.8	.....	SL. SILTY, M-F SAND (SP)	1.00
BH-B26	SPT4	123.9	– . – . –	SL. SILTY, FINE SAND (SP)	3.00

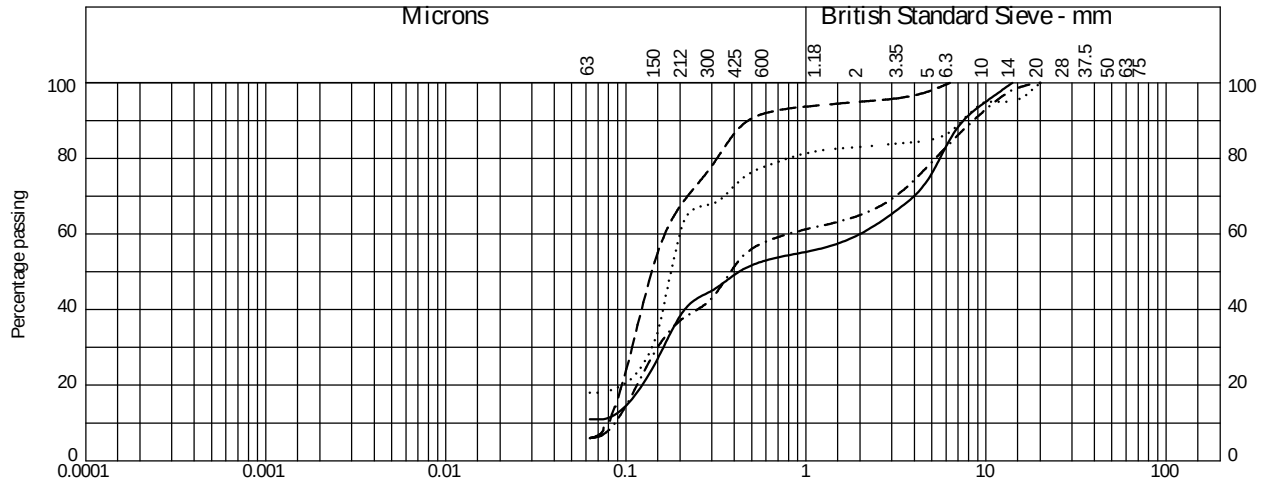
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-8
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-8
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	02-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	04-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B26	SPT7	142.9	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-B27	SPT3	133.1	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	2.00
BH-B27	SPT5	131.0	.....	GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-B27	SPT6	134.9	–.–.–	V. GRAVELLY, SILTY, M-F SAND (S-M)	5.00

The results relate only to the samples tested.

Table C-1 (1)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A52	**Sampling Date**	03/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	97
0.425	91
0.300	80
0.212	71
0.15	51
0.075	30
0.063	25
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

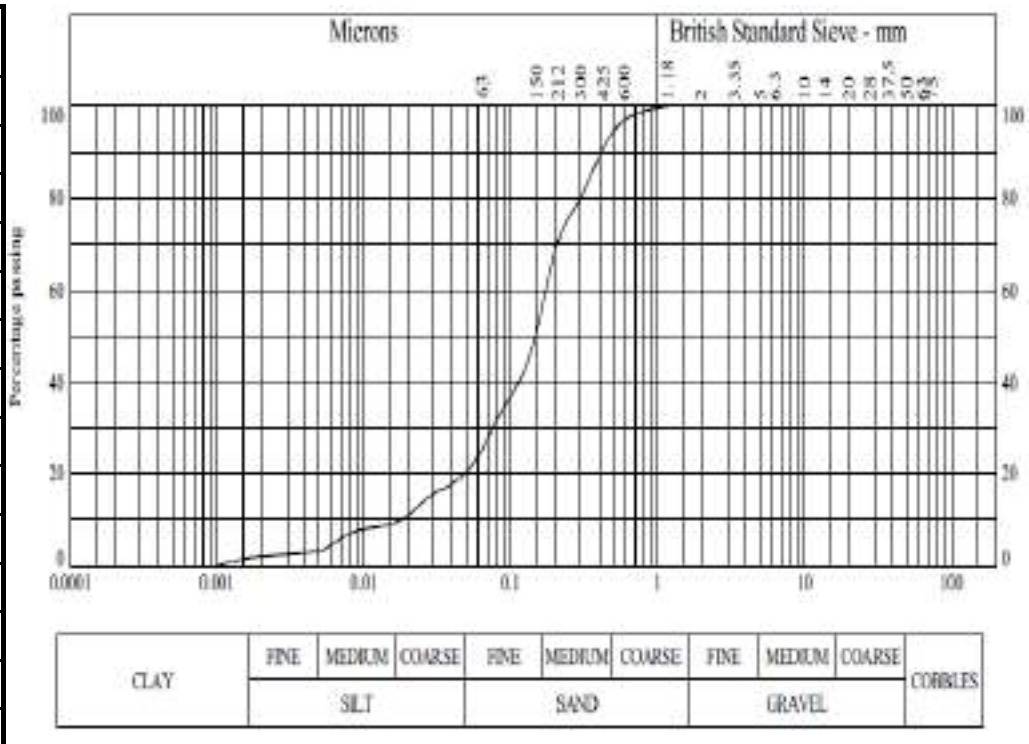


Table C-1 (2)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A52	**Sampling Date**	03/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
2	100
1.18	99
0.600	81
0.425	70
0.300	61
0.212	56
0.15	46
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

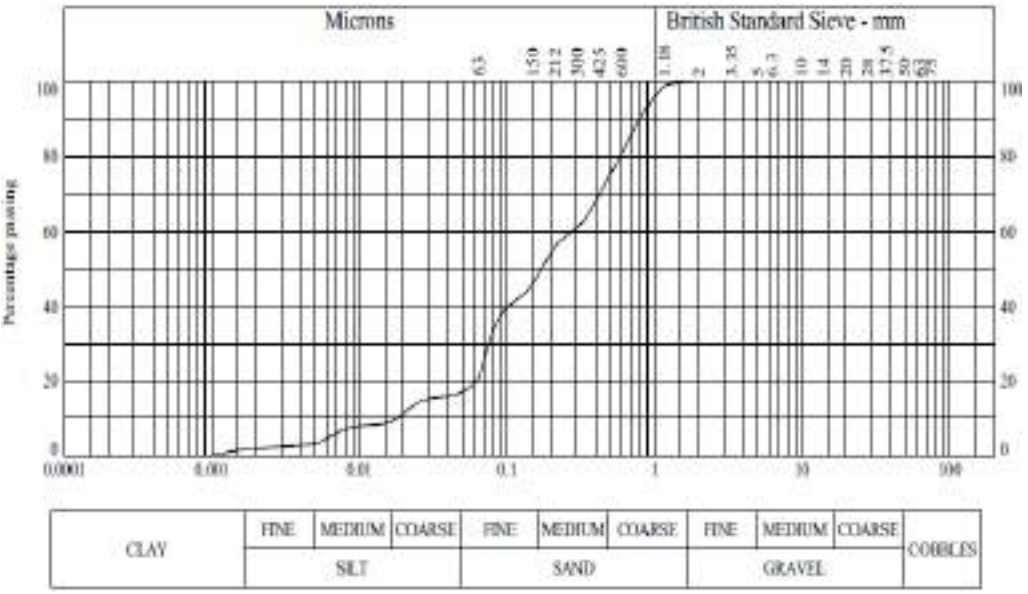


Table C-1 (3)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A52	**Sampling Date**	03/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	97
10	91
6.3	87
5	86
3.35	85
2	84
1.18	83
0.600	81
0.425	78
0.300	68
0.212	58
0.15	42
0.075	30
0.063	25
0.028	20
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

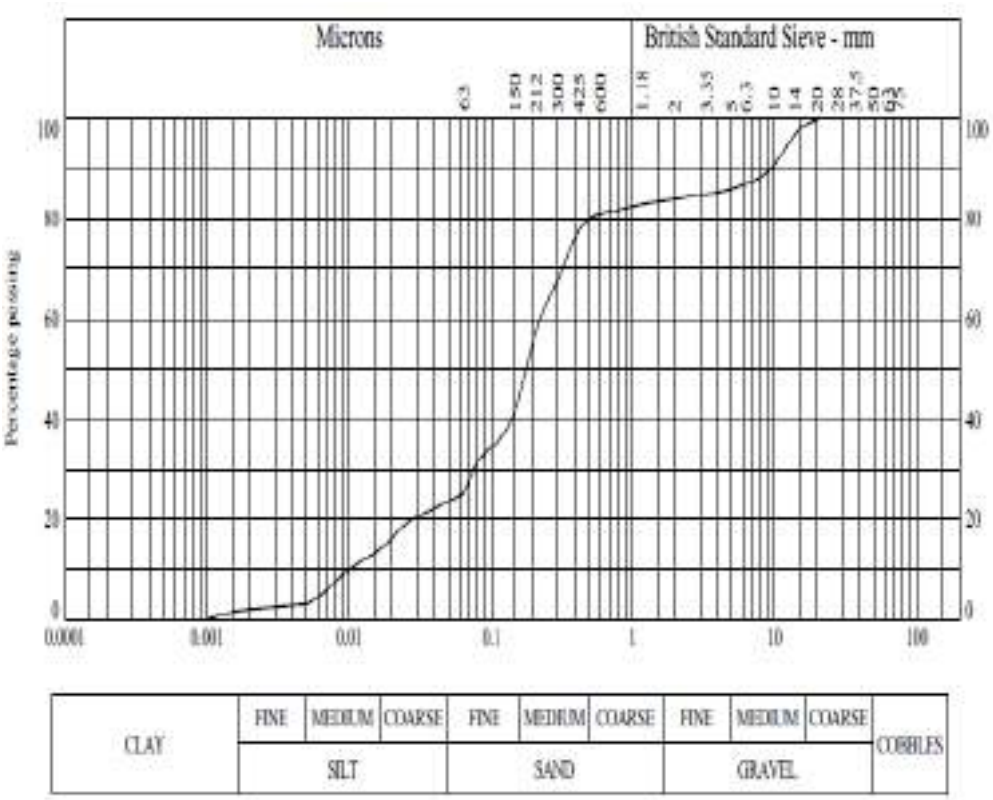


Table C-1 (4)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A53	**Sampling Date**	05/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	94
6.3	81
5	76
3.35	70
2	64
1.18	60
0.600	56
0.425	53
0.300	50
0.212	45
0.15	32
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

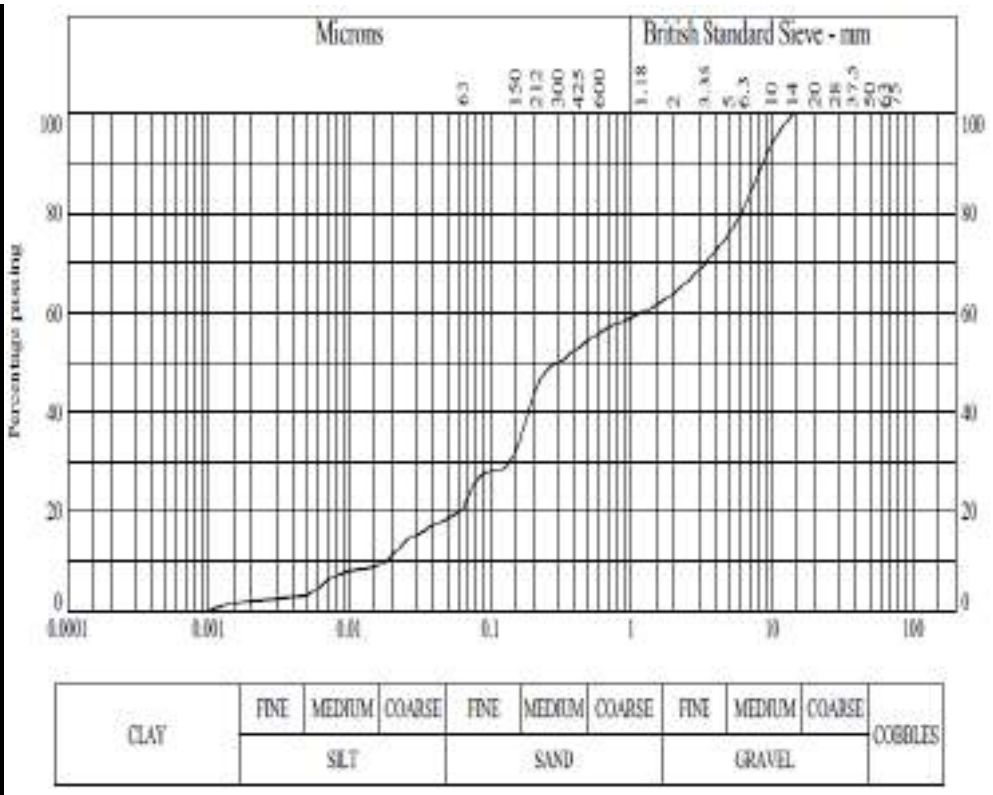


Table C-1 (5)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A54	**Sampling Date**	04/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	97
6.3	85
5	80
3.35	75
2	69
1.18	65
0.600	61
0.425	59
0.300	55
0.212	50
0.15	34
0.075	20
0.063	15
0.028	10
0.018	9
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

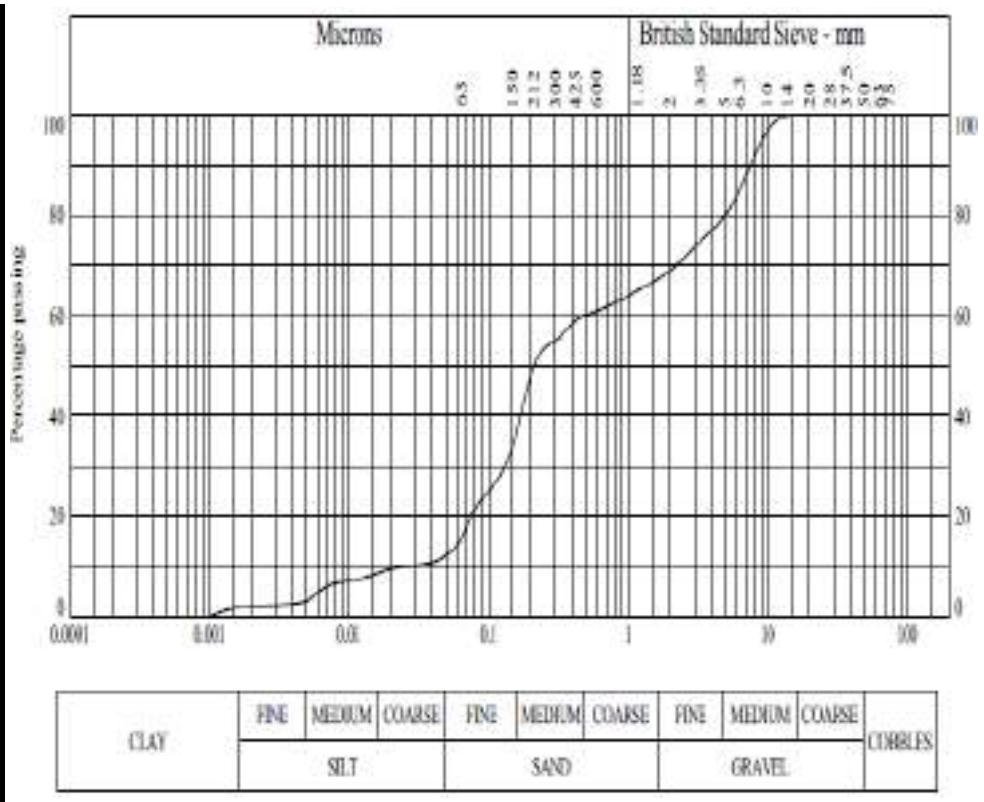


Table C-1 (6)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A58	**Sampling Date**	04/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	98
0.425	93
0.300	85
0.212	76
0.15	50
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

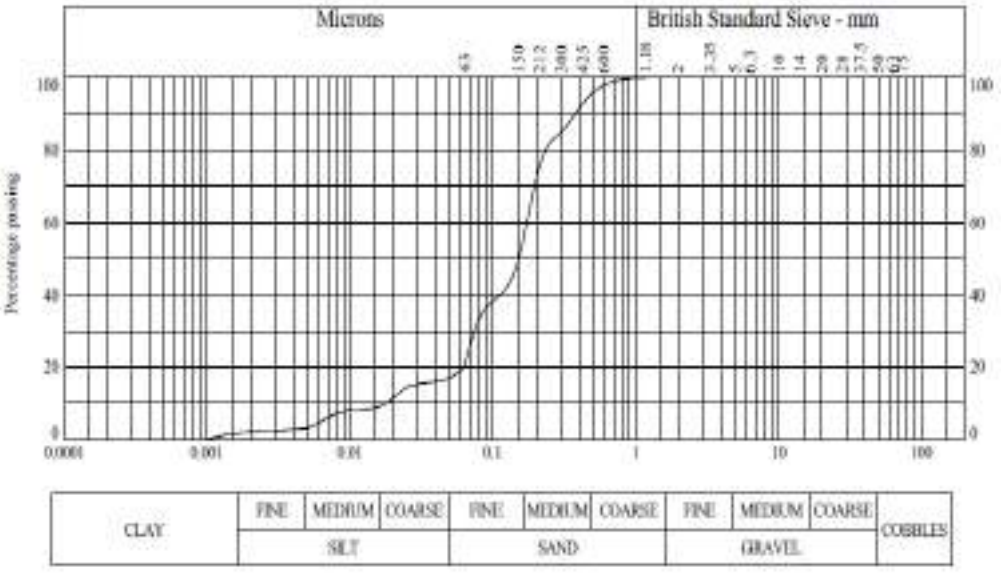


Table C-1 (7)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A60	**Sampling Date**	10/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	96
5	94
3.35	94
2	93
1.18	92
0.600	92
0.425	91
0.300	89
0.212	81
0.15	72
0.075	43
0.063	25
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

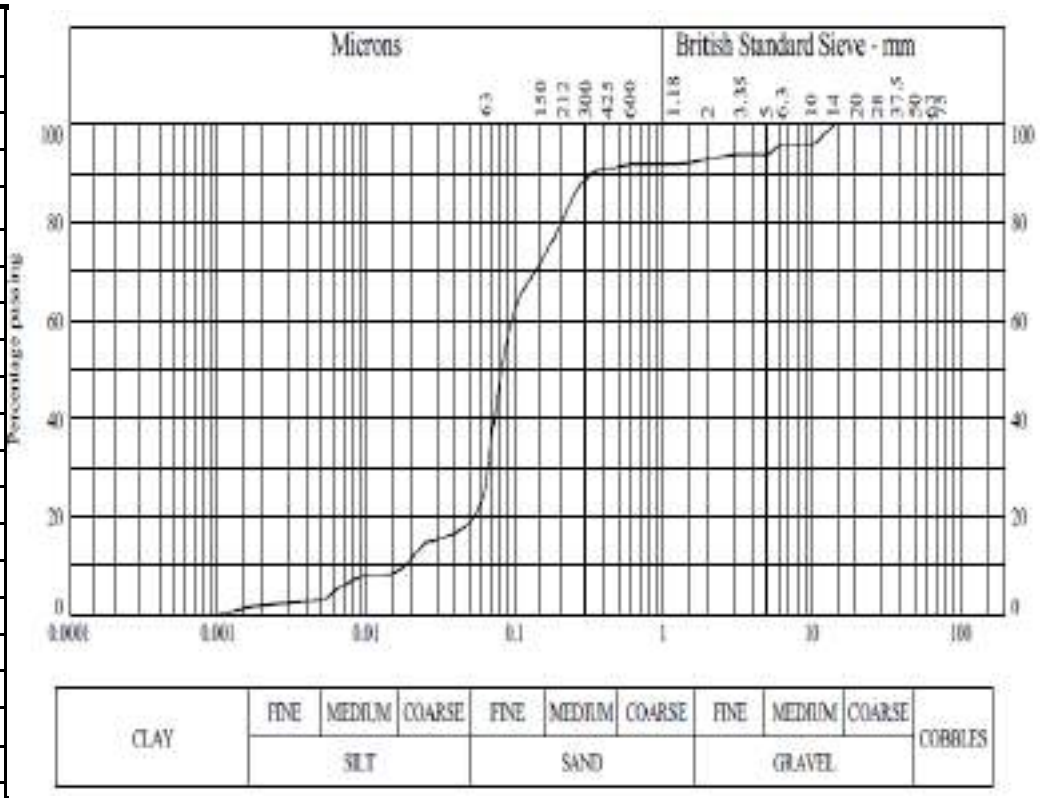


Table C-1 (8)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B21	**Sampling Date**	08/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	94
3.35	86
2	77
1.18	72
0.600	68
0.425	63
0.300	56
0.212	50
0.15	37
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

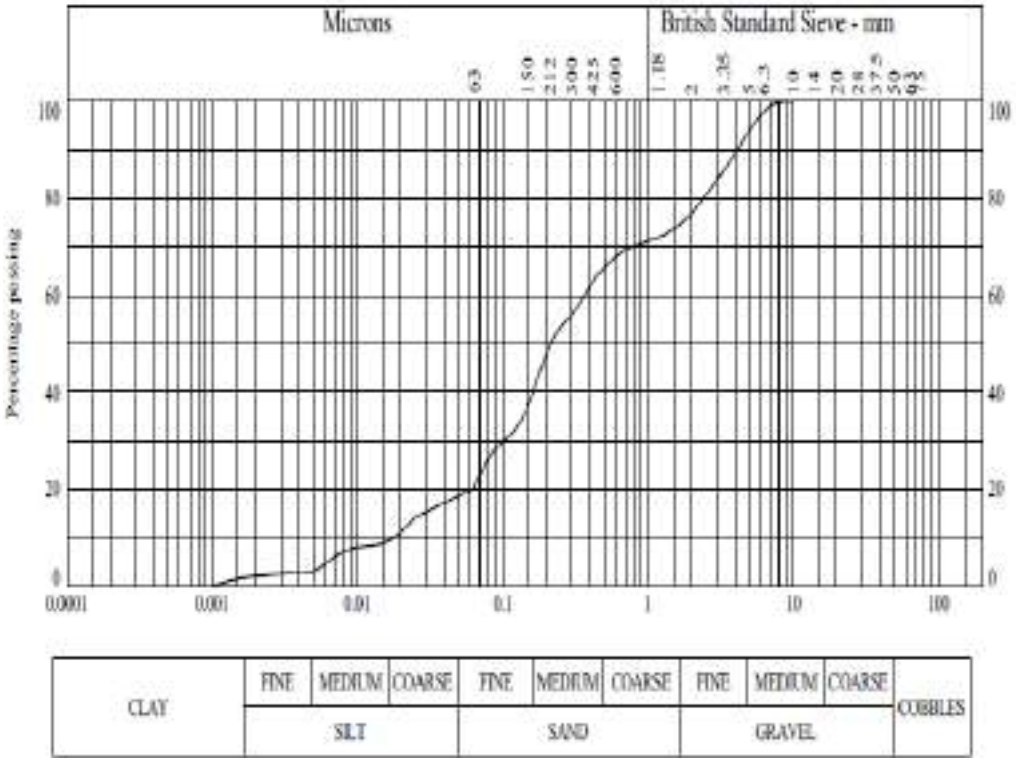


Table C-1 (9)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B22	**Sampling Date**	01/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	08/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	10/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	98
0.425	90
0.300	78
0.212	69
0.15	46
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

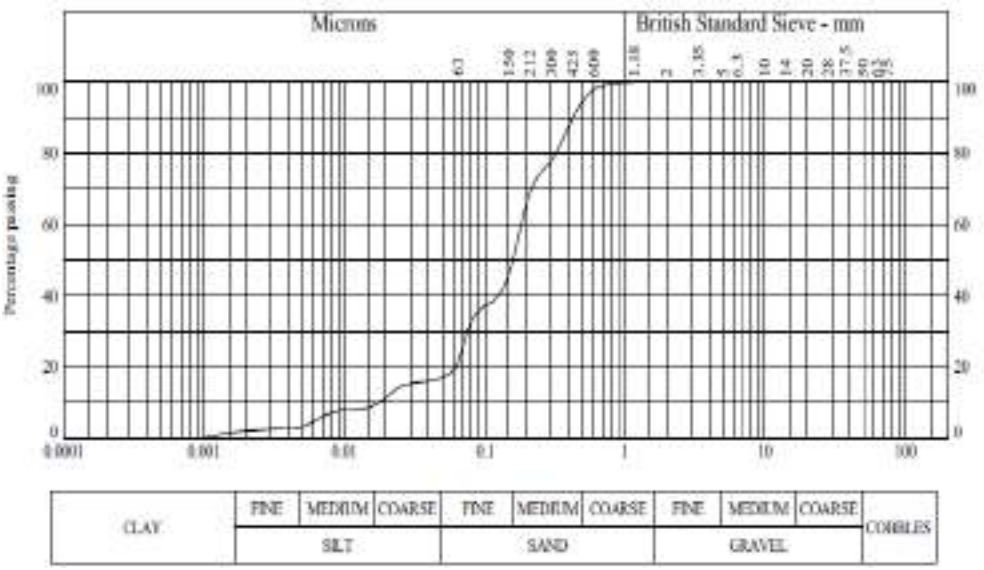


Table C-1 (10)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B23	**Sampling Date**	30/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	99
5	99
3.35	99
2	98
1.18	98
0.600	96
0.425	88
0.300	75
0.212	67
0.15	43
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

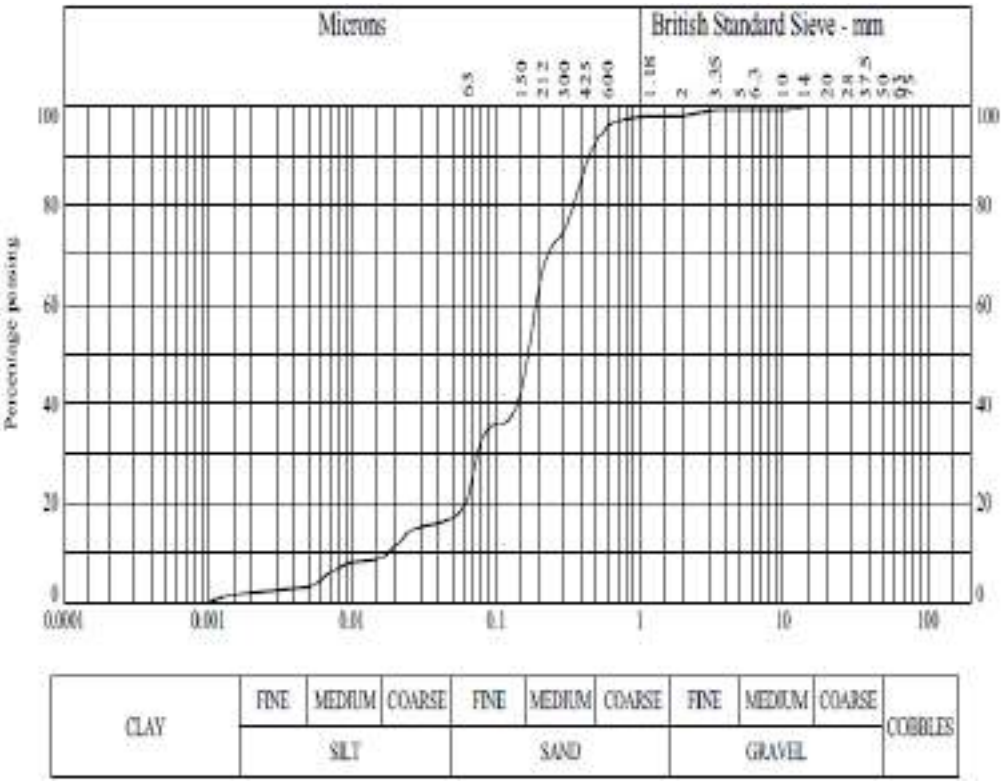


Table C-1 (11)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B23	**Sampling Date**	30/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	95
10	80
6.3	67
5	60
3.35	54
2	48
1.18	45
0.600	41
0.425	39
0.300	32
0.212	26
0.15	20
0.075	18
0.063	15
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

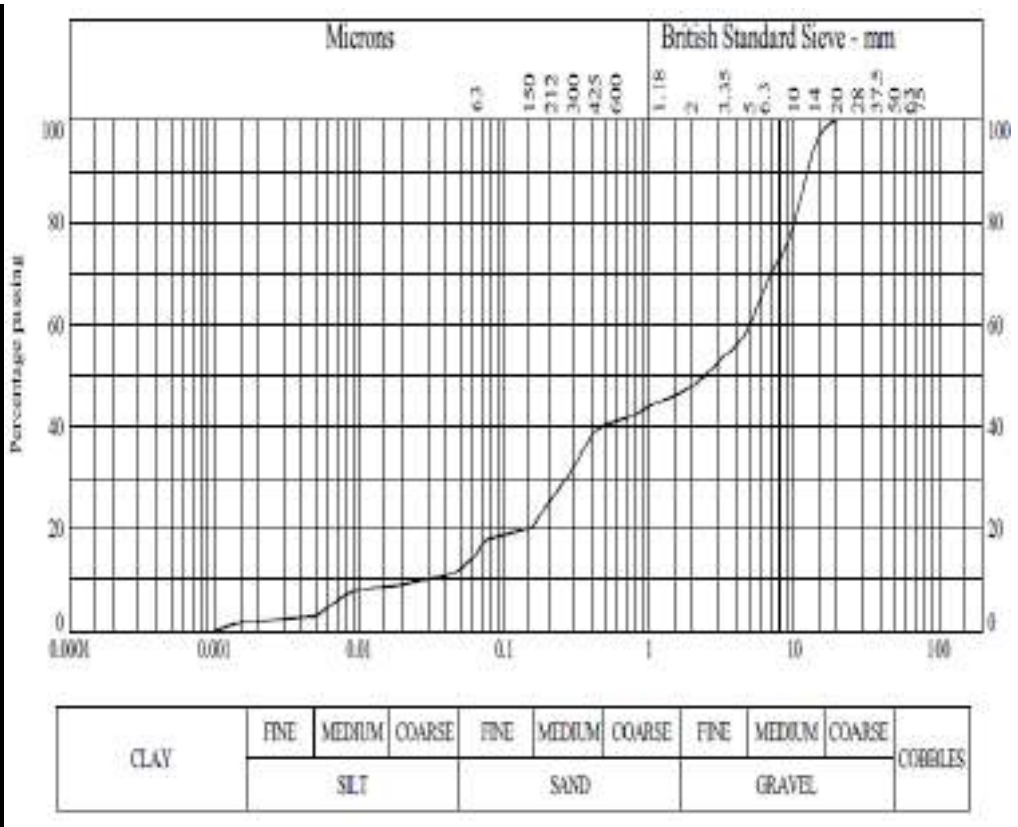


Table C-1 (12)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B24	**Sampling Date**	30/07/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	89
10	84
6.3	81
5	78
3.35	75
2	72
1.18	71
0.600	69
0.425	65
0.300	59
0.212	53
0.15	36
0.075	30
0.063	25
0.028	20
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

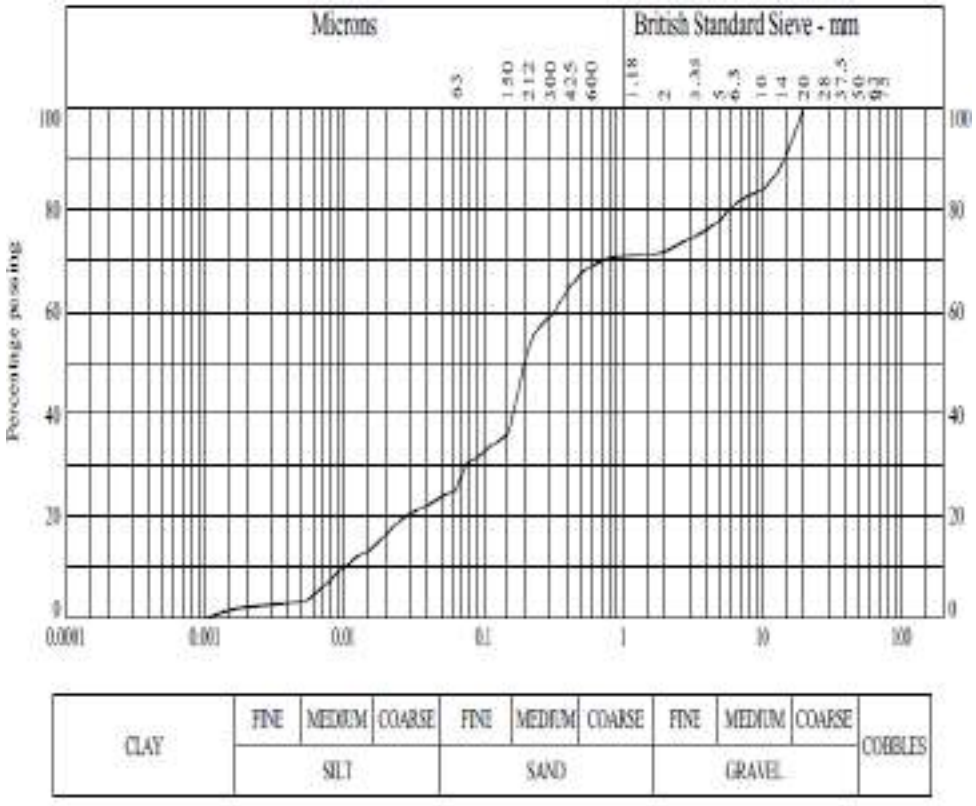


Table C-1 (13)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B25	**Sampling Date**	01/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	96
5	94
3.35	94
2	93
1.18	92
0.600	92
0.425	91
0.300	89
0.212	81
0.15	72
0.075	43
0.063	25
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

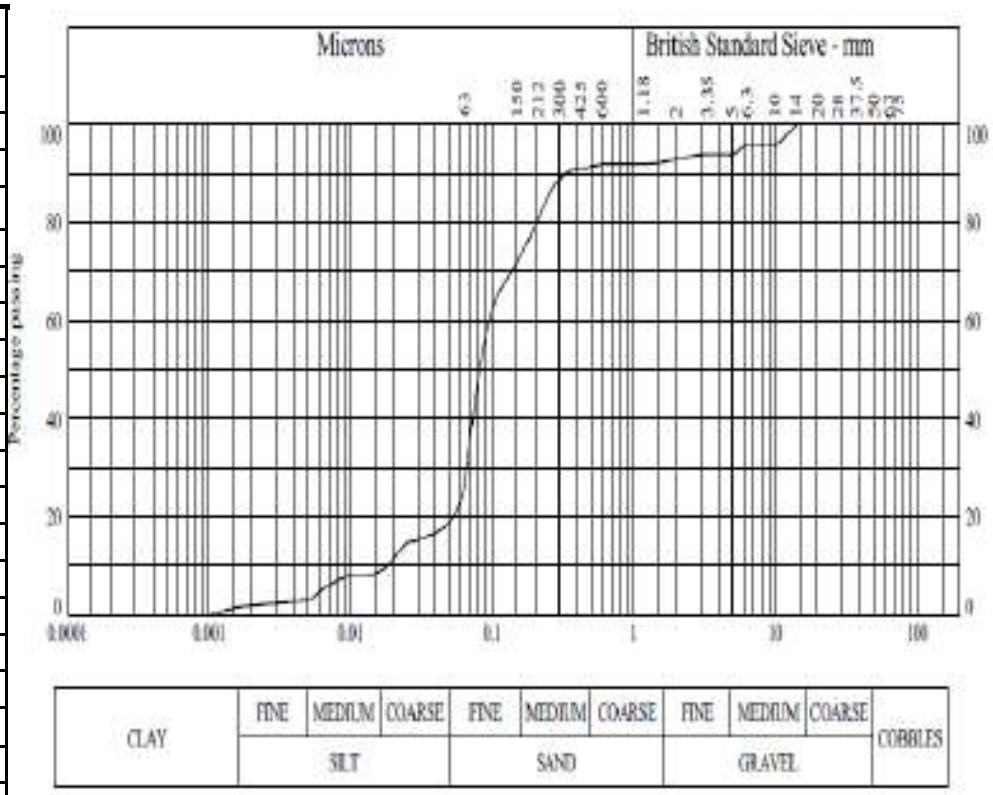


Table C-1 (14)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B25	**Sampling Date**	01/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	79
10	74
6.3	69
5	67
3.35	66
2	66
1.18	65
0.600	65
0.425	63
0.300	58
0.212	52
0.15	33
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

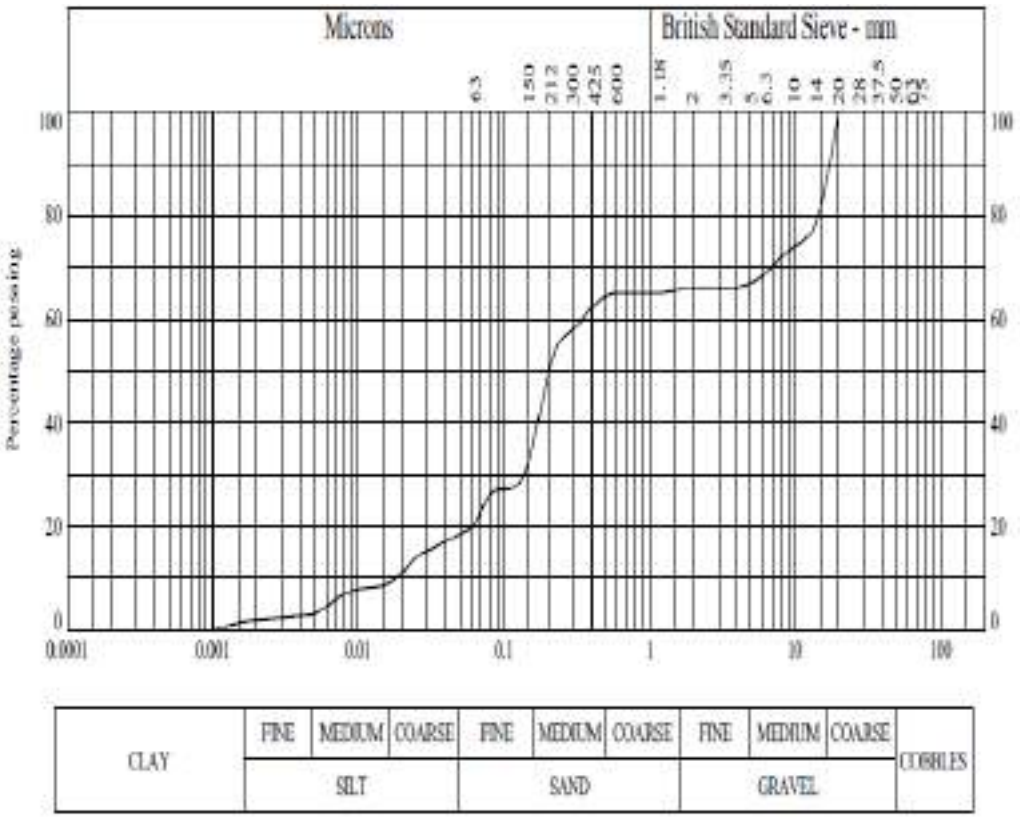


Table C-1 (15)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B26	**Sampling Date**	01/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	95
6.3	85
5	76
3.35	67
2	60
1.18	56
0.600	53
0.425	50
0.300	45
0.212	40
0.15	27
0.075	20
0.063	18
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

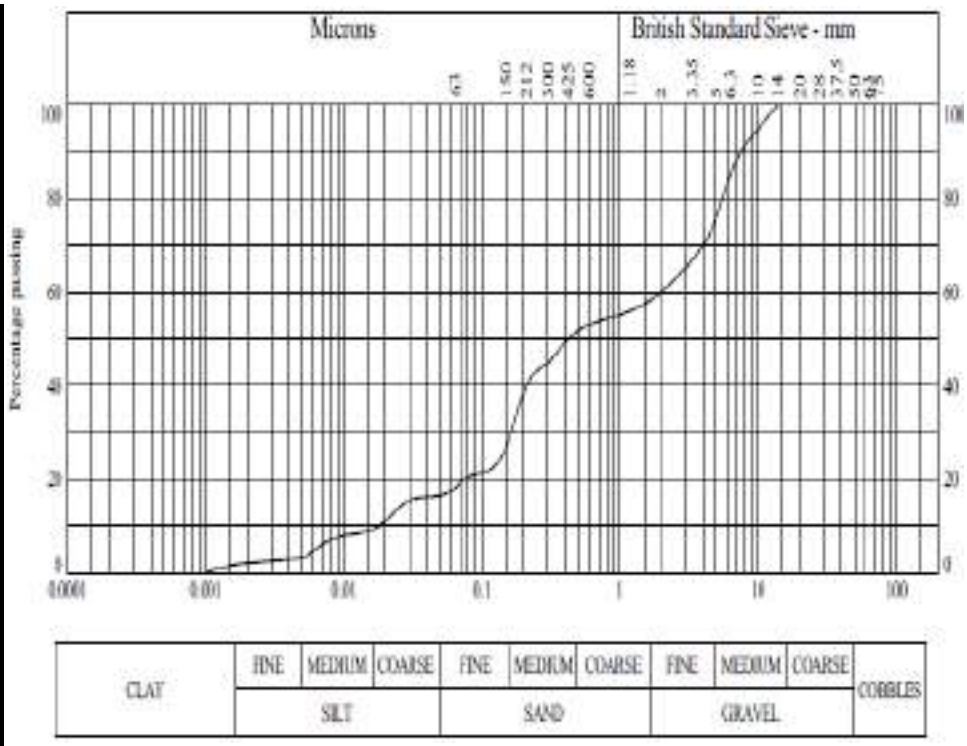


Table C-1 (16)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT-3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B27	**Sampling Date**	01/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	96
2	95
1.18	94
0.600	92
0.425	88
0.300	78
0.212	69
0.15	55
0.075	8
0.063	6
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

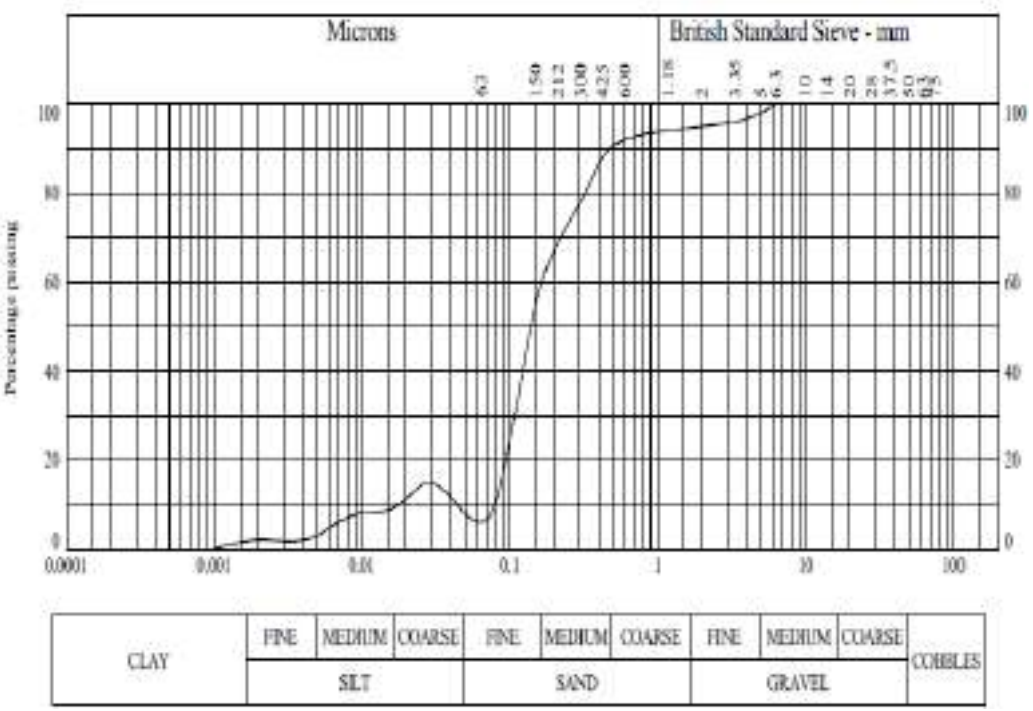


Table C-1 (17)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-B27	**Sampling Date**	01/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	95
10	95
6.3	87
5	85
3.35	84
2	83
1.18	82
0.600	78
0.425	74
0.300	68
0.212	64
0.15	34
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

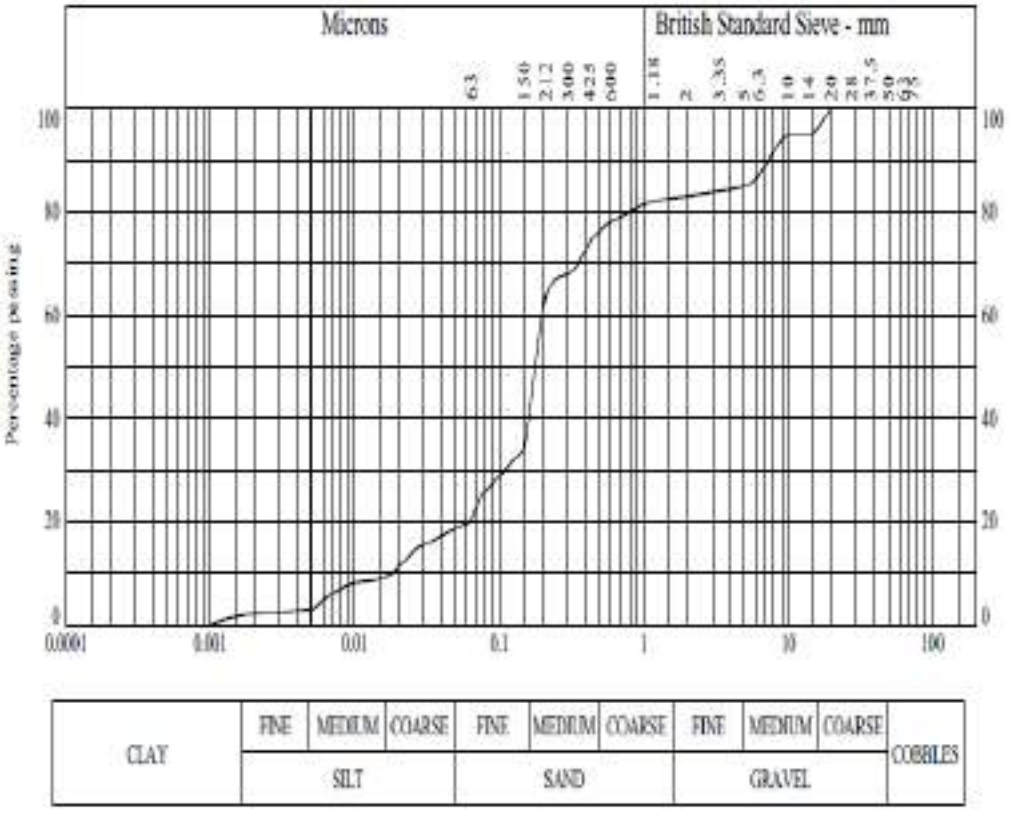


Table C-1 (18)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-8
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-B27	**Sampling Date**	01/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	05/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	08/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	93
6.3	84
5	79
3.35	71
2	65
1.18	62
0.600	58
0.425	53
0.300	43
0.212	38
0.15	30
0.075	25
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

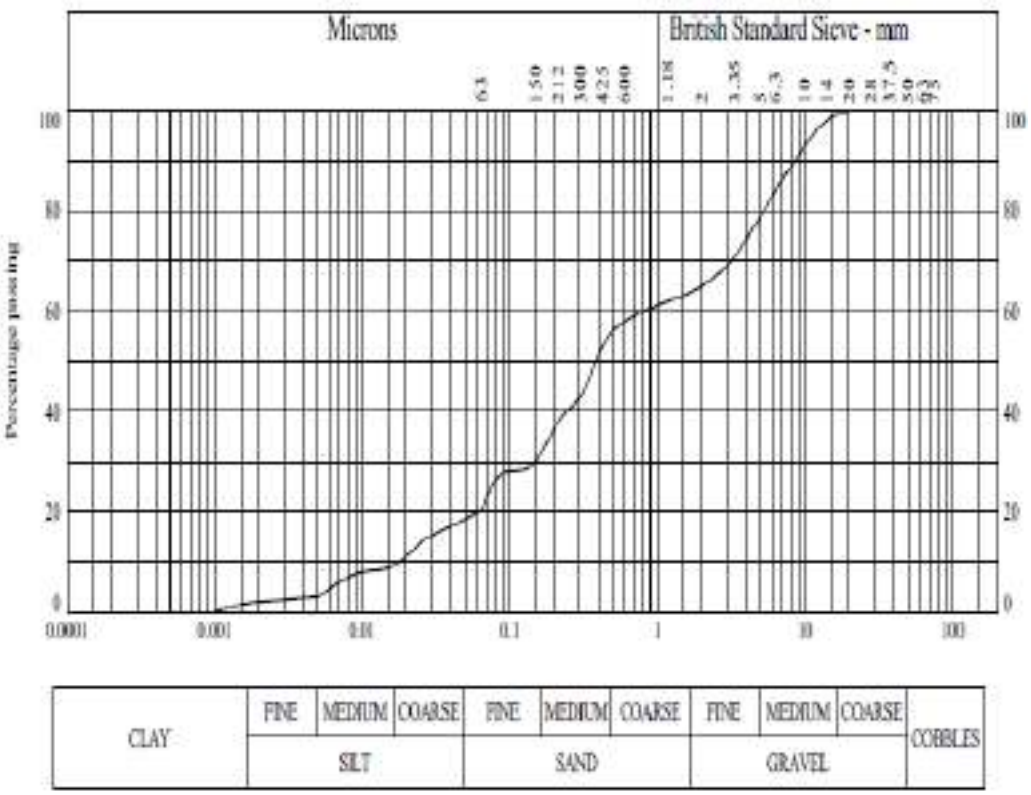


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	04-12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	05-13/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	30/07-08/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A52	1.00	12.0
BH-A52	2.00	9.6
BH-A52	4.00	8.5
BH-A52	5.00	14.0
BH-A53	1.00	6.9
BH-A53	2.00	11.0
BH-A53	4.00	6.2
BH-A53	5.00	10.0
BH-A53	6.50	8.6
BH-A53	8.00	15.0
BH-A54	2.00	1.4
BH-A54	3.00	2.8
BH-A54	5.00	1.8
BH-A54	6.50	2.5
BH-A54	8.00	13.0
BH-A58	1.00	14.0
BH-A58	2.00	6.3

Borehole No.	Depth	Moisture Content (%)
BH-A58	3.00	13.0
BH-A58	5.00	9.4
BH-A58	6.50	1.7
BH-B21	1.00	5.4
BH-B21	3.00	10.0
BH-B22	2.00	9.3
BH-B22	3.00	8.7
BH-B23	1.00	7.5
BH-B23	2.00	11.0
BH-B23	4.00	12.0
BH-B24	1.00	9.8
BH-B24	3.00	15.0
BH-B24	4.00	7.5
BH-B24	6.50	10.0
BH-B25	1.00	8.5
BH-B25	2.00	9.5
BH-B26	1.00	15.0
BH-B26	2.00	11.0
BH-B26	4.00	14.0
BH-B26	5.00	9.9
BH-B26	6.50	15.0
BH-B27	2.00	9.6
BH-B27	3.00	9.5
BH-B27	5.00	15.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	10/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	11/08/2015
Sample Description	Soil	**Sampling Date**	08/08/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-B21	1.00	2.60

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	10-13/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	12-17/08/2015
Sample Description	SAND	**Sampling Date**	01-08/08/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-B21	2.00	100	0.2
BH-B26	3.00	100	0.1

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Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	04-06/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	30/07-04/08/2015
Sample Description	ROCK CORE	**Date Tested**	06-08/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-A54	9.75	22.95	52.26
BH-B23	4.18	9.15	20.84

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	06-16/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	06-17/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	30/07-10/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A52	10.00	1	0.53	Vertical
BH-A52	15.75	2	0.61	Vertical
BH-A53	10.10	3	0.35	Vertical
BH-A54	11.25	4	0.26	Vertical
BH-A54	13.00	5	0.39	Vertical
BH-A58	8.25	6	0.19	Vertical
BH-A58	11.50	7	0.23	Vertical
BH-A60	10.00	8	0.30	Vertical
BH-A60	19.00	9	0.28	Vertical
BH-B21	3.50	10	0.17	Vertical
BH-B22	4.50	11	0.51	Vertical
BH-B22	7.00	12	0.39	Vertical
BH-B22	10.50	13	0.29	Vertical
BH-B22	11.00	14	0.26	Vertical
BH-B23	8.00	15	0.28	Vertical
BH-B23	7.00	16	0.41	Vertical
BH-B23	10.00	17	0.09	Vertical
BH-B23	12.00	18	0.35	Vertical
BH-B23	20.50	19	0.45	Vertical
BH-B24	8.00	20	0.94	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-B24	9.50	21	0.37	Vertical
BH-B24	10.00	22	0.85	Vertical
BH-B24	18.50	23	0.14	Vertical
BH-B25	2.20	24	0.19	Vertical
BH-B25	12.20	25	0.16	Vertical
BH-B25	12.20	26	0.36	Vertical
BH-B25	28.00	27	0.27	Vertical
BH-B26	15.75	28	0.48	Vertical
BH-B26	28.50	29	0.84	Vertical
BH-B27	6.25	30	0.35	Vertical
BH-B27	9.50	31	0.95	Vertical
BH-B27	13.80	32	0.35	Vertical
BH-B27	29.20	33	0.42	Vertical
BH-53A	9.80	34	0.09	Vertical
BH-54A	13.20	35	0.52	Vertical

Engr. Rabih Dakwar
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Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-8
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	06-16/08/2015
Sample Source	Site	**Date Tested**	06-17/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin

Sample Details:			Dimensions:		Results:					Sketch	Rock Description
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density		
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-A60	14.25	1	7.50	15.00	3.7	1.47	253.1	15.70	1.88	Figure C-01	CAL. SILTSTONE
BH-B21	38.90	2	7.50	15.10	6.9	1.72	399.7	19.30	2.03	Figure C-02	CONG. SILTSTONE
BH-B22	3.40	3	7.50	15.10	1.1	0.73	148.8	5.50	1.57	Figure C-03	CAL. SILTSTONE
BH-B22	5.50	4	7.40	15.00	3.3	1.60	209.2	15.30	2.09	Figure C-04	CAL. SANDSTONE
BH-B22	9.00	5	7.50	15.00	3.8	1.60	238.7	14.50	1.91	Figure C-05	CAL. SANDSTONE
BH-B22	13.00	6	7.50	15.10	8.4	2.12	396.4	19.40	1.79	Figure C-06	CAL. SANDSTONE
BH-B23	4.20	7	7.50	15.00	5.6	1.40	400.2	9.60	2.05	Figure C-07	CAL. SANDSTONE
BH-B23	10.00	8	7.50	15.10	7.4	2.25	328.2	7.50	1.97	Figure C-08	CAL. SILTSTONE
BH-B23	22.00	9	7.50	15.00	4.6	1.93	240.7	15.00	2.05	Figure C-09	CAL. SILTSTONE
BH-B23	23.30	10	7.40	15.00	14.1	4.40	321.0	23.00	1.95	Figure C-10	CAL. SILTSTONE
BH-B24	39.50	11	7.40	14.80	10.5	3.11	336.4	18.10	1.98	Figure C-11	CONG. SILTSTONE
BH-B25	3.00	12	7.50	15.00	4.9	1.80	269.6	16.00	2.05	Figure C-12	CAL. SANDSTONE
BH-B25	17.90	13	7.50	15.00	11.5	3.33	344.1	19.70	1.75	Figure C-13	CONG. SILTSTONE
BH-B25	25.00	14	7.50	15.00	9.7	3.27	295.9	14.00	2.08	Figure C-14	CAL. SILTSTONE
BH-B25	34.50	15	7.40	15.00	8.4	3.00	279.0	9.40	2.09	Figure C-15	CAL. SILTSTONE
BH-B26	28.00	16	7.50	15.10	7.6	2.85	268.1	13.90	2.29	Figure C-16	CAL. SILTSTONE
BH-B27	23.00	17	7.40	14.80	5.0	1.89	263.8	13.90	2.40	Figure C-17	CAL. SILTSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

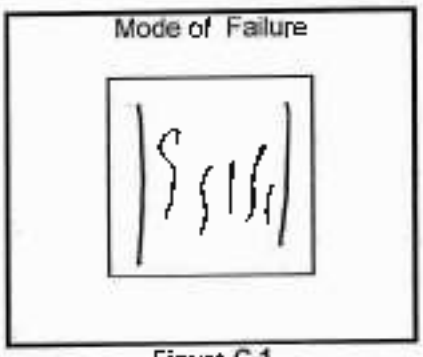


Figure C-1

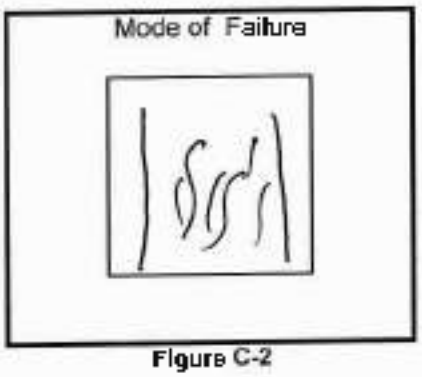


Figure C-2

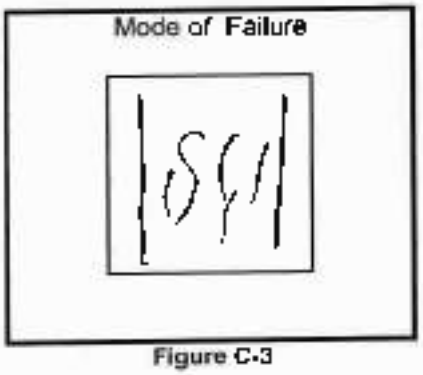


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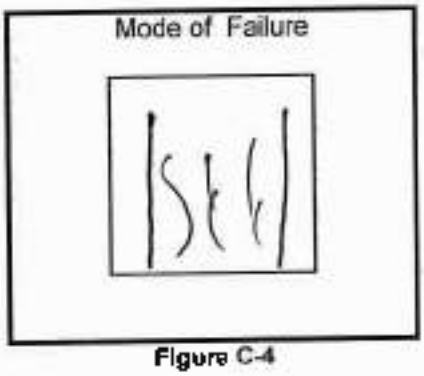


Figure C-4

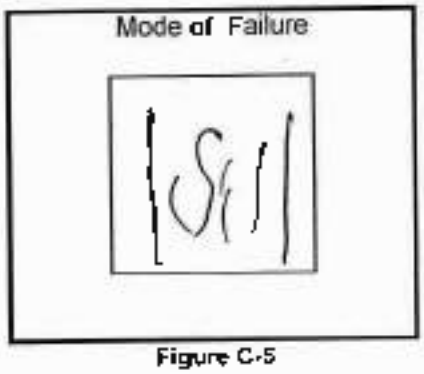


Figure C-5

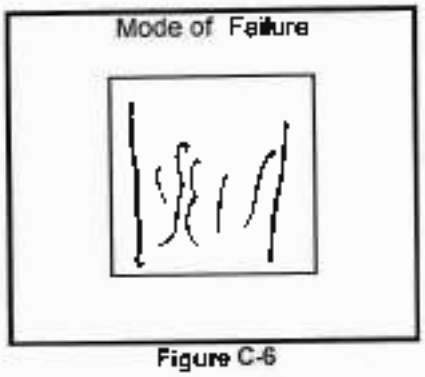


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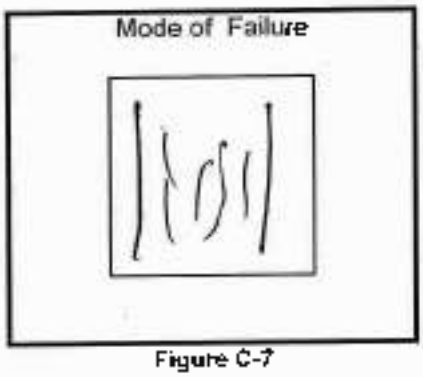


Figure C-7

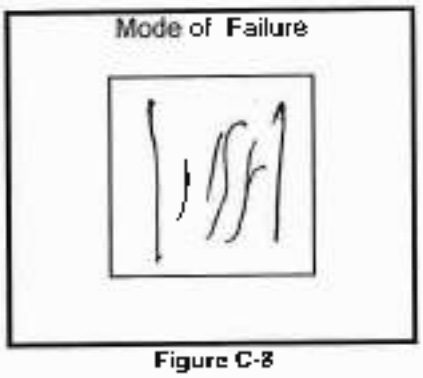


Figure C-8

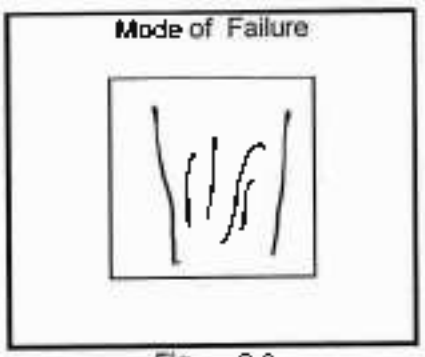


Figure C-9

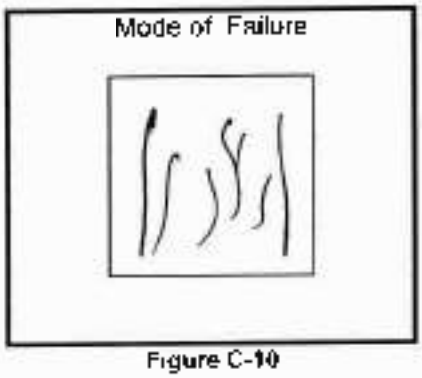


Figure C-10

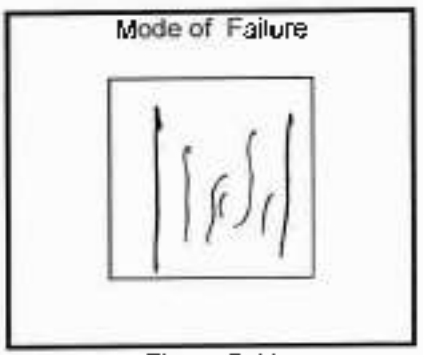


Figure C-11

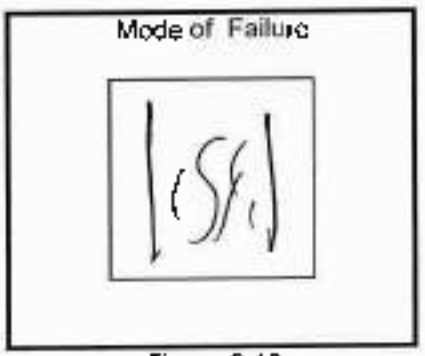


Figure C-12

TYPE OF FRACTURES FOR CORES

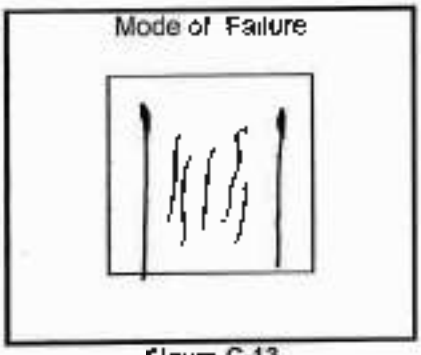


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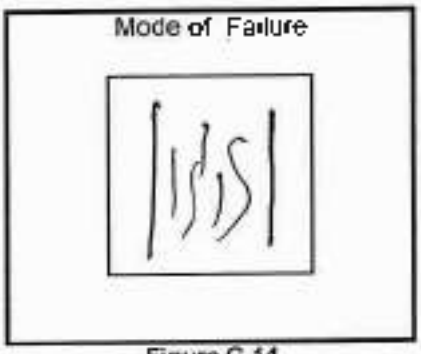


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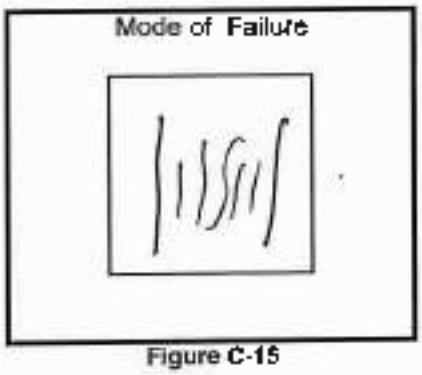


Figure C-15

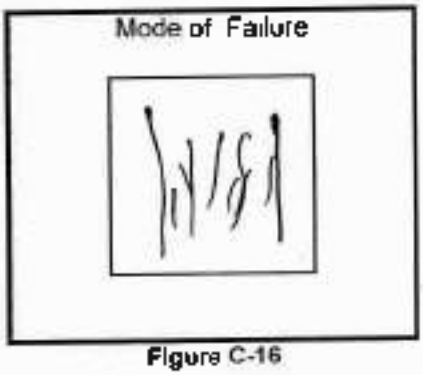


Figure C-16

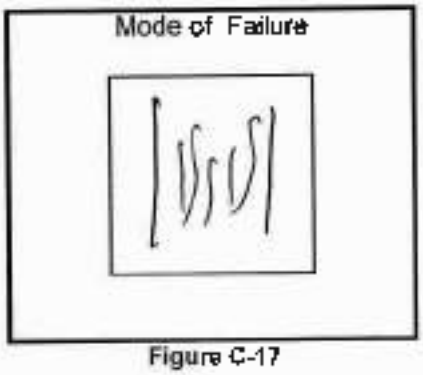
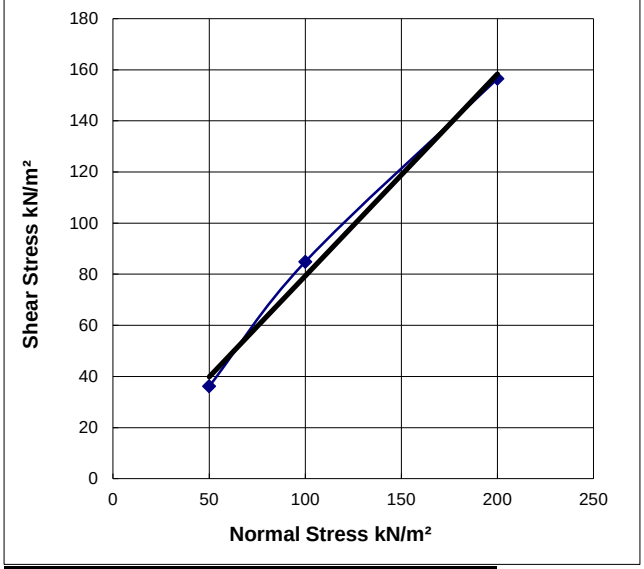


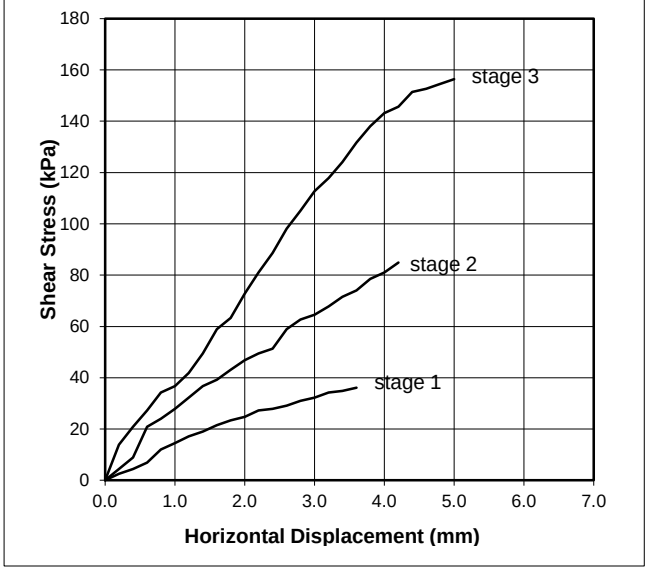
Figure C-17

MATRIX LABORATORY L.L.C.

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A54	**Date Tested**	08-09/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

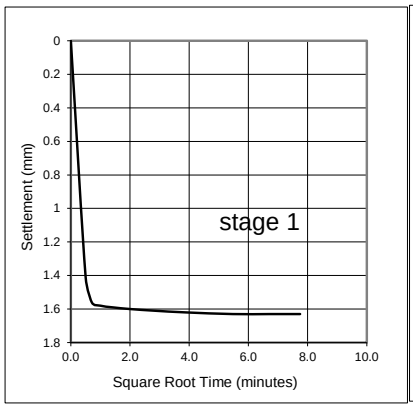
Apparent Cohesion = 0.00 kN/m²

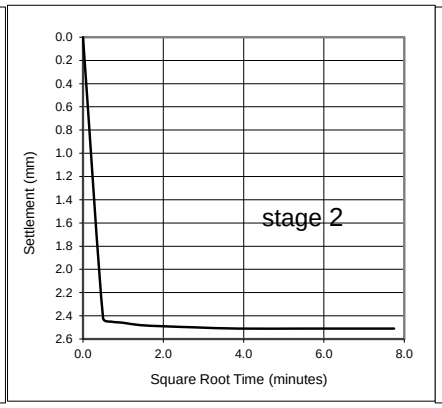
Angle of Shearing Resistance = 38.31°

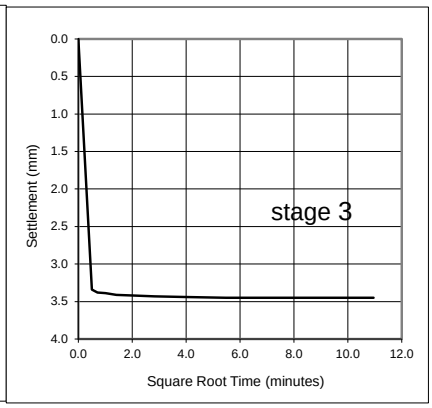
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A54	**Date Tested**	08-09/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

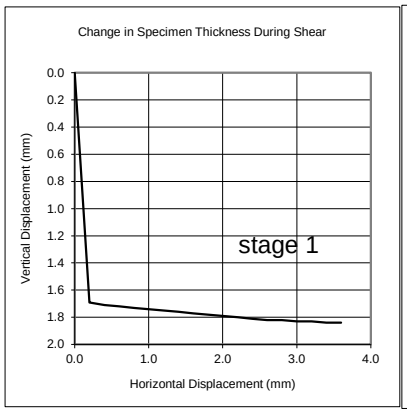
Consolidation Stage

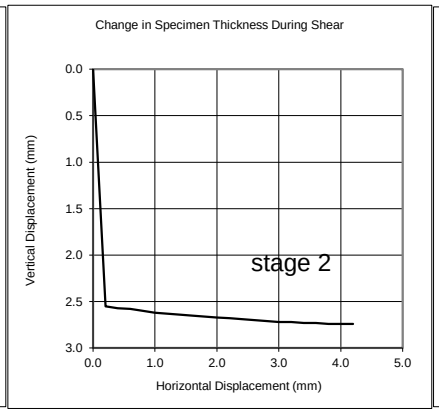


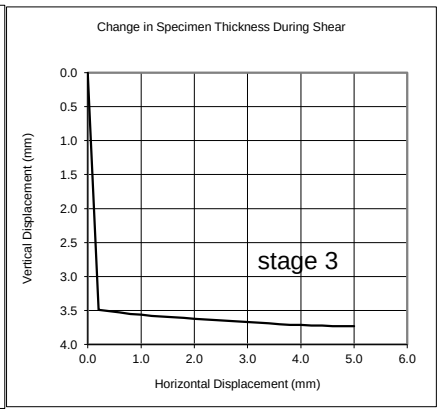




Shearing Stage





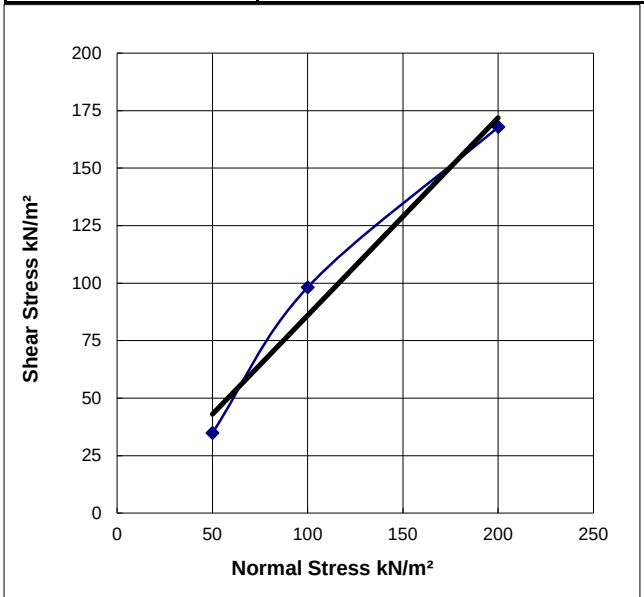


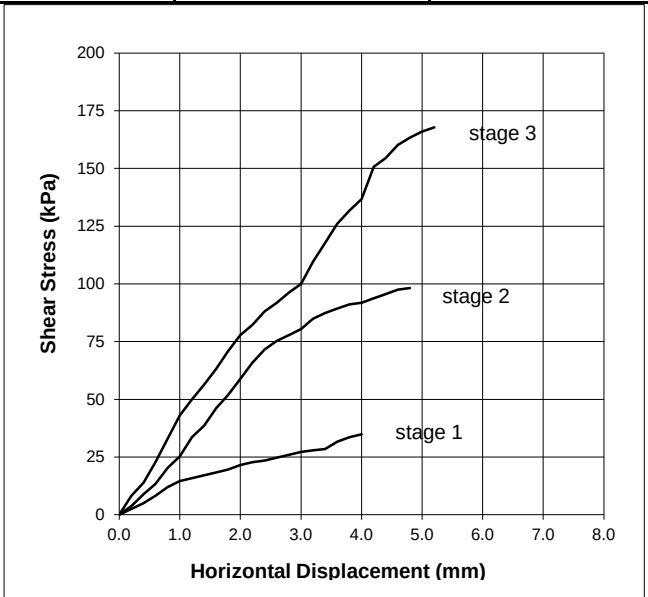
MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B21	**Date Tested**	12-13/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4.5.4	**Tested By**	ERWIN





Shear Strength Parameters

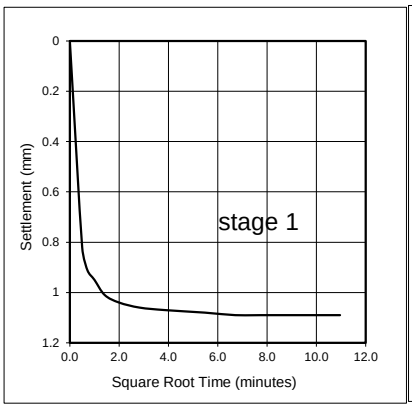
Apparent Cohesion = 0.0 kN/m²

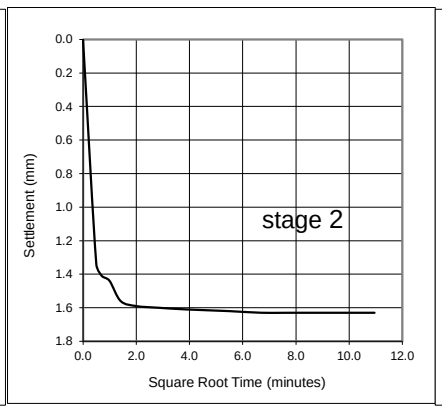
Angle of Shearing Resistance = 40.7º

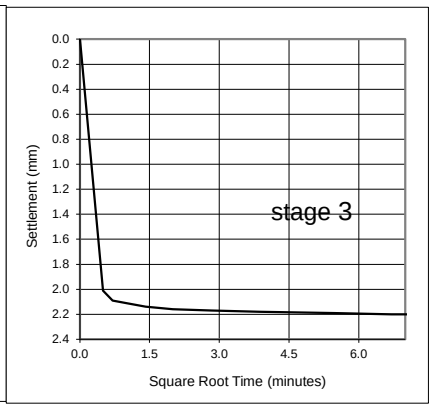
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B21	**Date Tested**	12-13/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.59
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.0
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

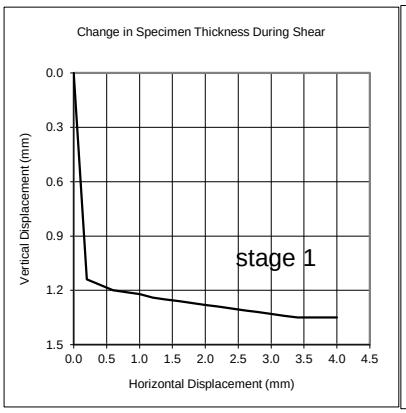
Consolidation Stage

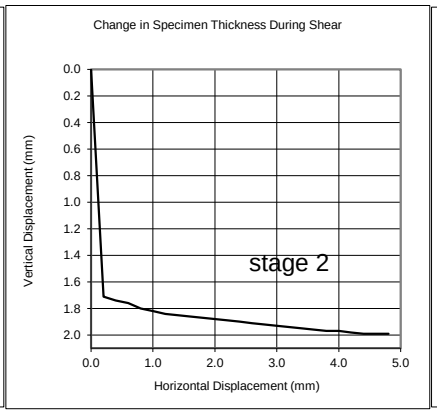


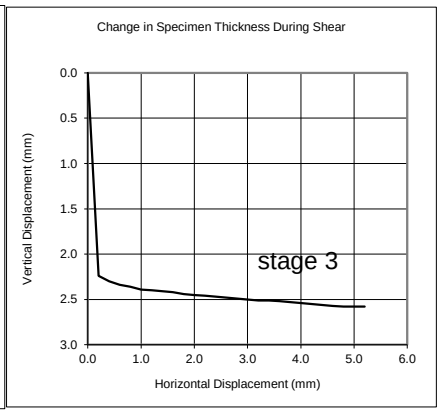




Shearing Stage



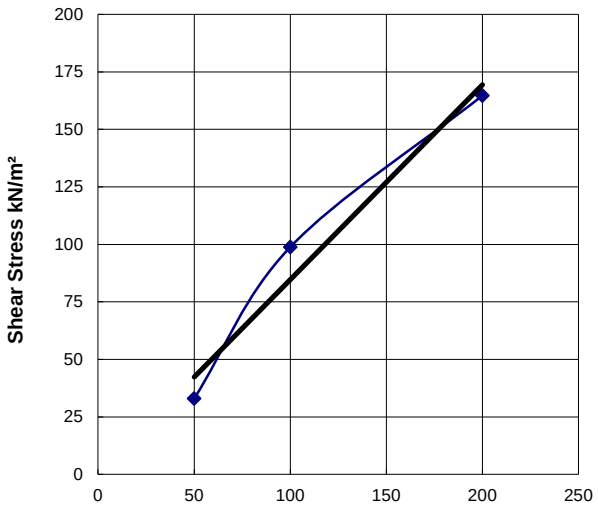


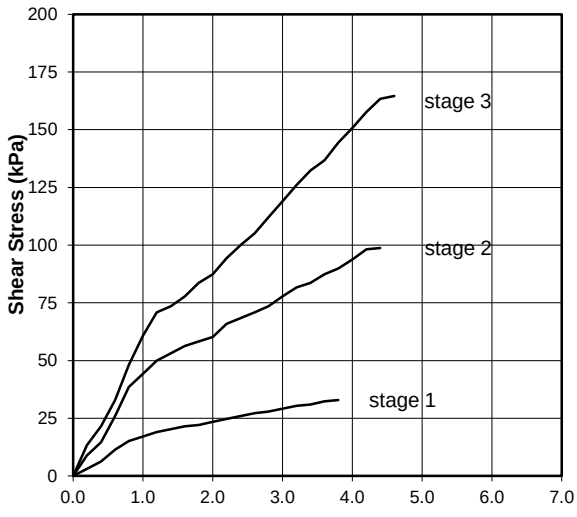


MATRIX LABORATORY L.L.C.

TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B24	**Date Tested**	5-06/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

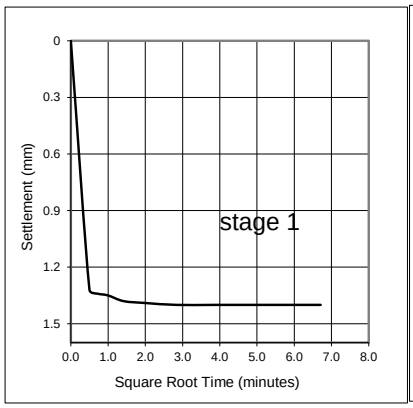
Apparent Cohesion = 0.0 kN/m²

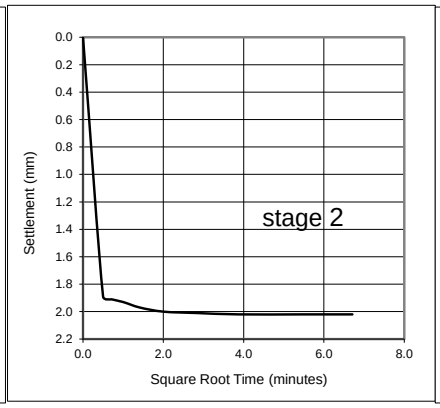
Angle of Shearing Resistance = 40.3º

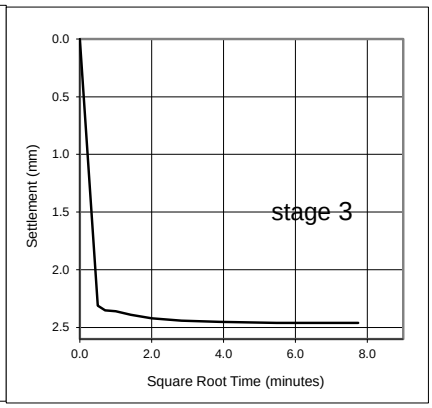
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B24	**Date Tested**	5-06/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.63
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

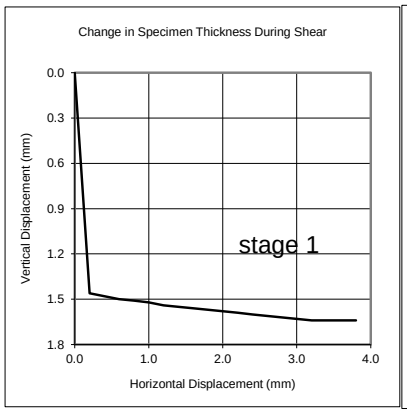
Consolidation Stage

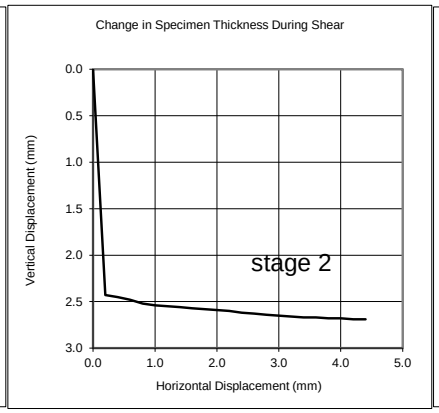


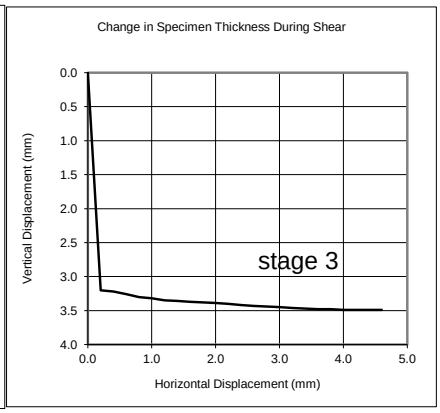




Shearing Stage



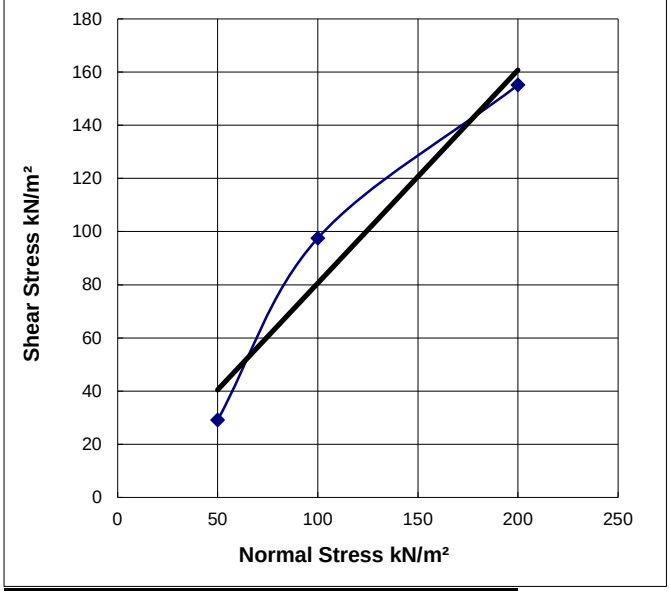


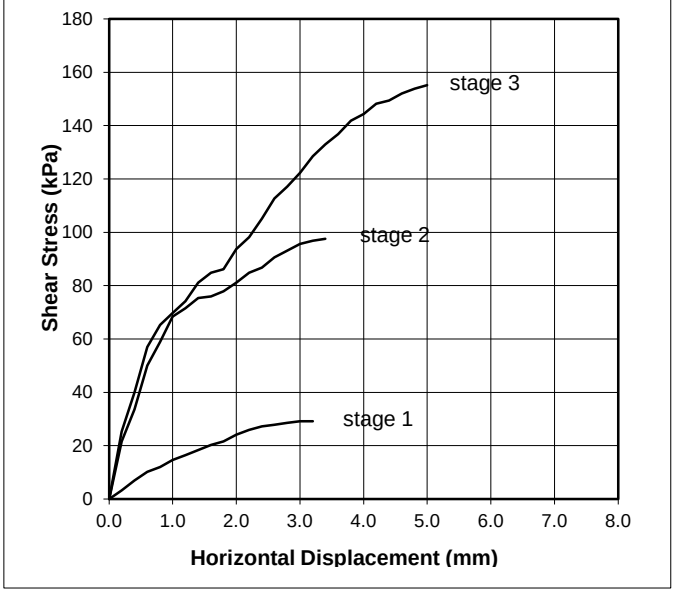


MATRIX LABORATORY L.L.C.

TABLE C8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B27	**Date Tested**	05-06/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

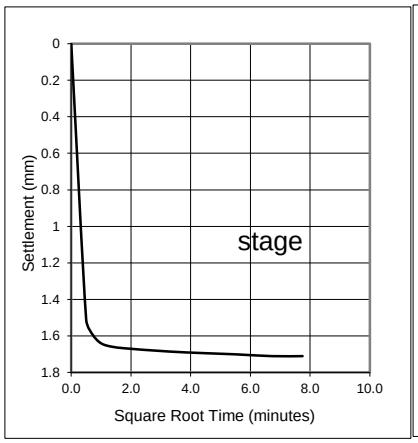
Apparent Cohesion = 0.0 kN/m²

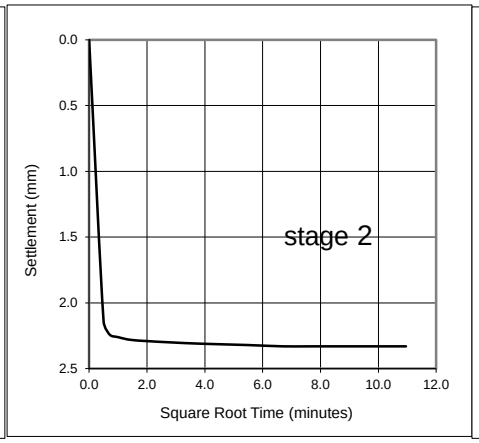
Angle of Shearing Resistance = 38.75º

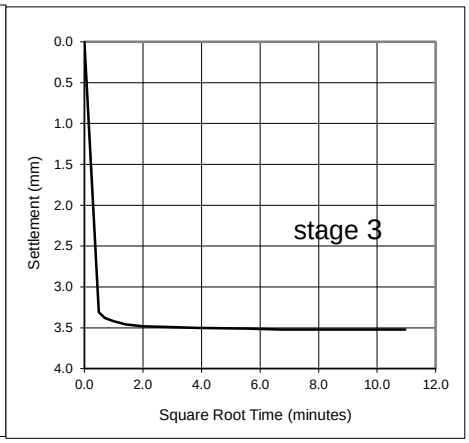
TABLE C8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-8
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-8
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B27	**Date Tested**	05-06/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

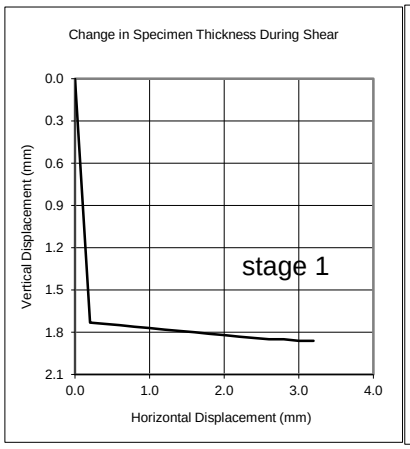
Consolidation Stage

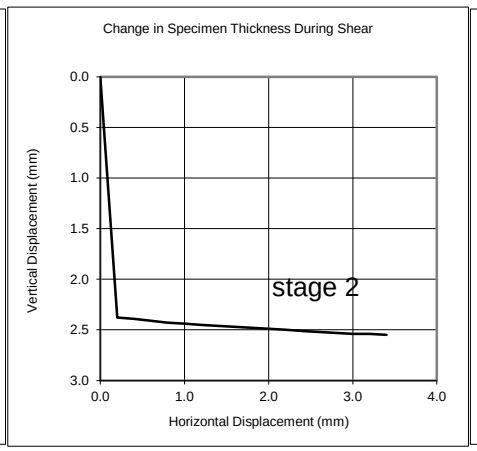


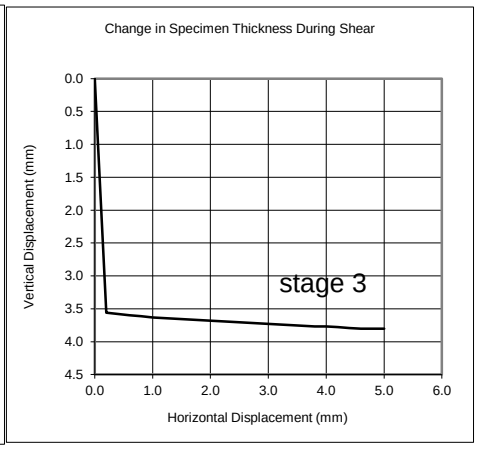




Shearing Stage







APPENDIX C9

LABORATORY TEST RESULTS (ZONE 9)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	06-11/07/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	09-13/08/2015
Test Method	See below	**Date Tested**	10-17/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A48	SPT2	1.00	0.1	0.01	8.1 @ 28°C	DS-1
BH-A51	SPT2	1.00	0.1	0.01	8.5 @ 28°C	DS-1
BH-B49	SPT2	1.00	0.1	0.01	8.7 @ 28°C	DS-1
BH-B51	SPT2	1.00	0.1	0.01	8.4 @ 28°C	DS-1
BH-B54	SPT3	2.00	0.1	0.01	8.4 @ 28°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Sampling Date**	06-07/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	06-07/08/2015
Test Method	See below	**Date Tested**	06-08/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A50	12.50	0.54	0.09	7.9 @ 28°C	DS-2
BH-B51	12.80	0.44	0.21	7.7 @ 28°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

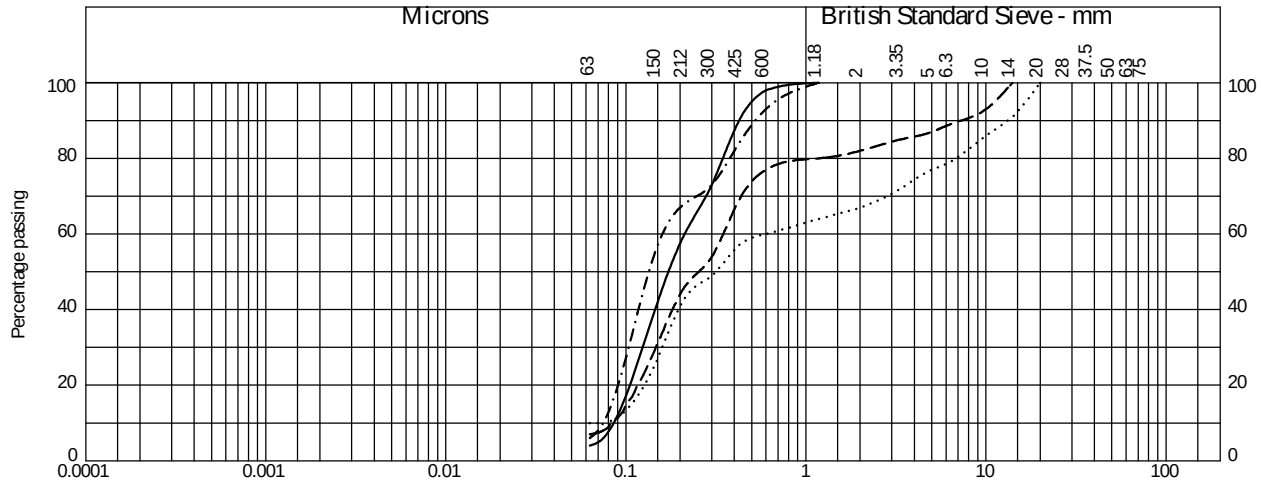
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A48	SPT3	123.8	———	SL. SILTY, M-F SAND (SP)	2.00
BH-A48	SPT7	128.3	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	6.50
BH-A48	SPT9	121.2	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-A49	SPT2	135.4	–·–·–	SILTY, M-F SAND (S-M)	1.00

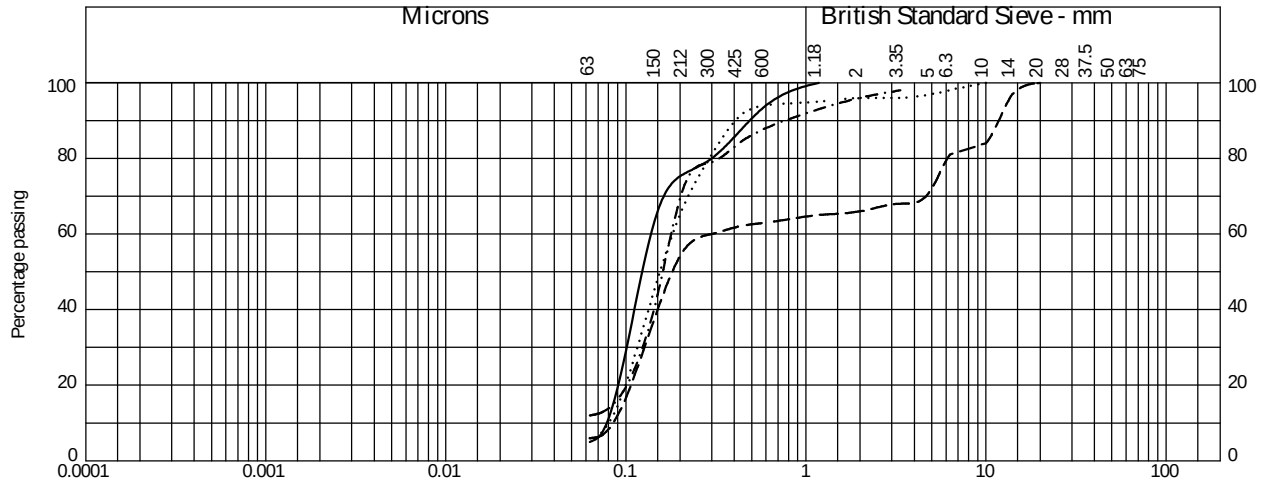
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A49	SPT4	136.1	———	SILTY, FINE SAND (S-M)	3.00
BH-A49	SPT6	132.8	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-A50	SPT2	129.6	.....	SL. GRAVELLY, SILTY, M-F SAND (SP)	1.00
BH-A50	SPT5	134.4	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (SP)	4.00

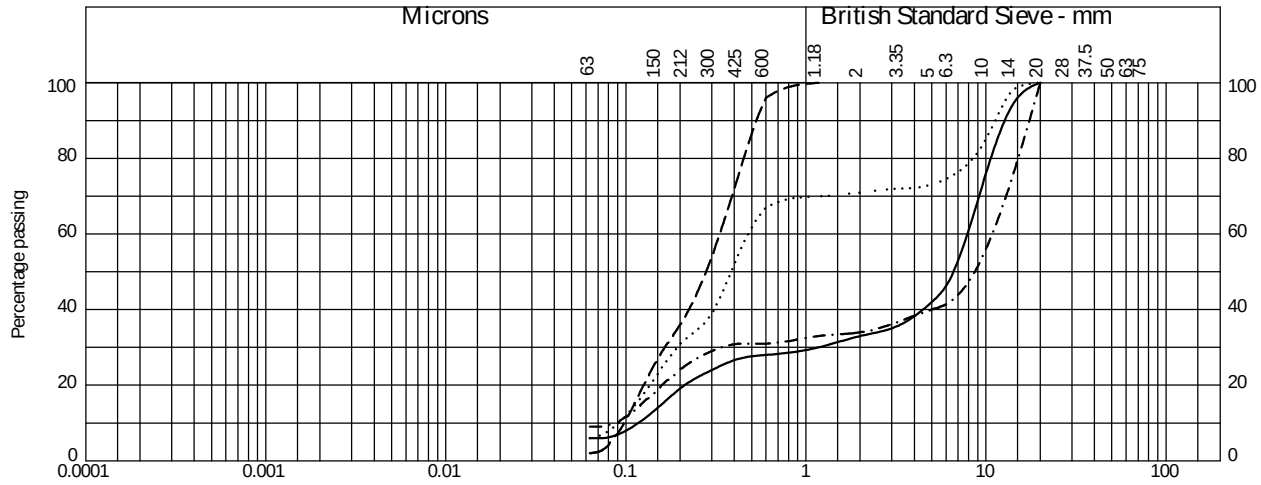
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A50	SPT7	117.0	———	V. GRAVELLY, SILTY, SAND (S-M)	6.50
BH-A51	SPT3	123.6	– – –	SL. SILTY, F-M SAND (SP)	2.00
BH-A51	SPT9	135.1	.....	V. GRAVELLY, SILTY, F-M SAND (S-M)	8.00
BH-A51	SPT10	129.3	– · – · –	V. GRAVELLY, SILTY, SAND (S-M)	9.50

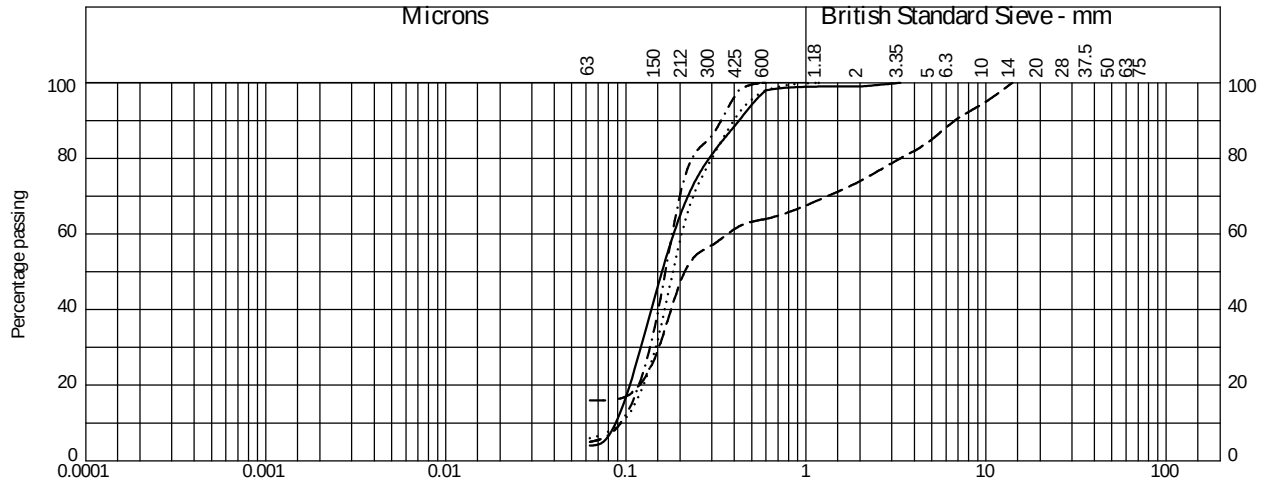
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B48	SPT2	132.0	———	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00
BH-B48	SPT6	125.7	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B49	SPT3	135.2	.....	SILTY, M-F SAND (S-M)	2.00
BH-B49	SPT4	139.0	– · – · –	SILTY, M-F SAND (S-M)	3.00

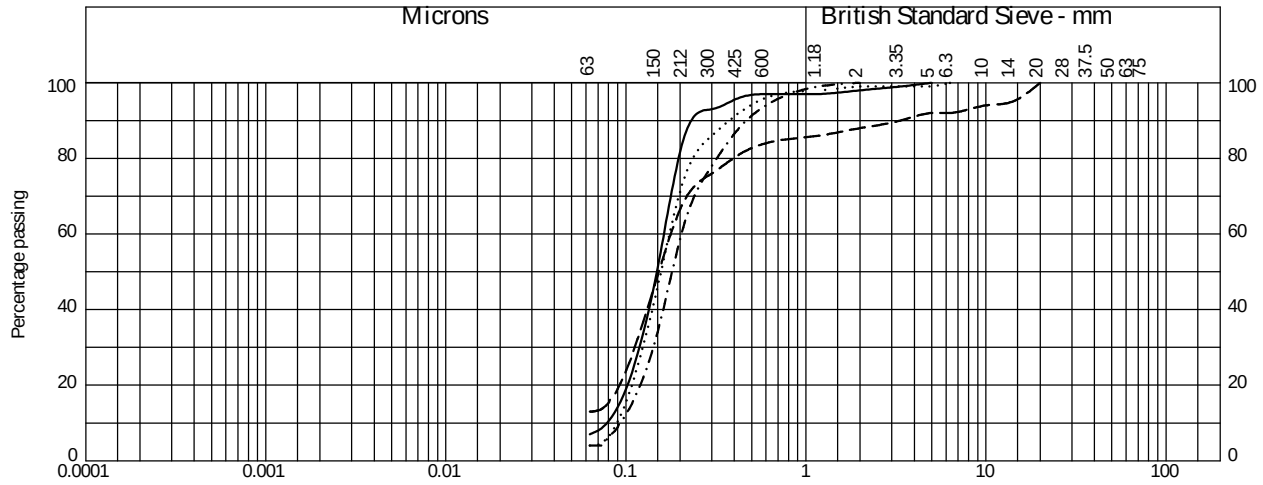
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B49	SPT6	138.5	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B50	SPT2	135.1	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
BH-B50	SPT4	134.2	.....	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00
BH-B50	SPT7	136.5	– · – · –	SL. SILTY, M-F SAND (SP)	6.50

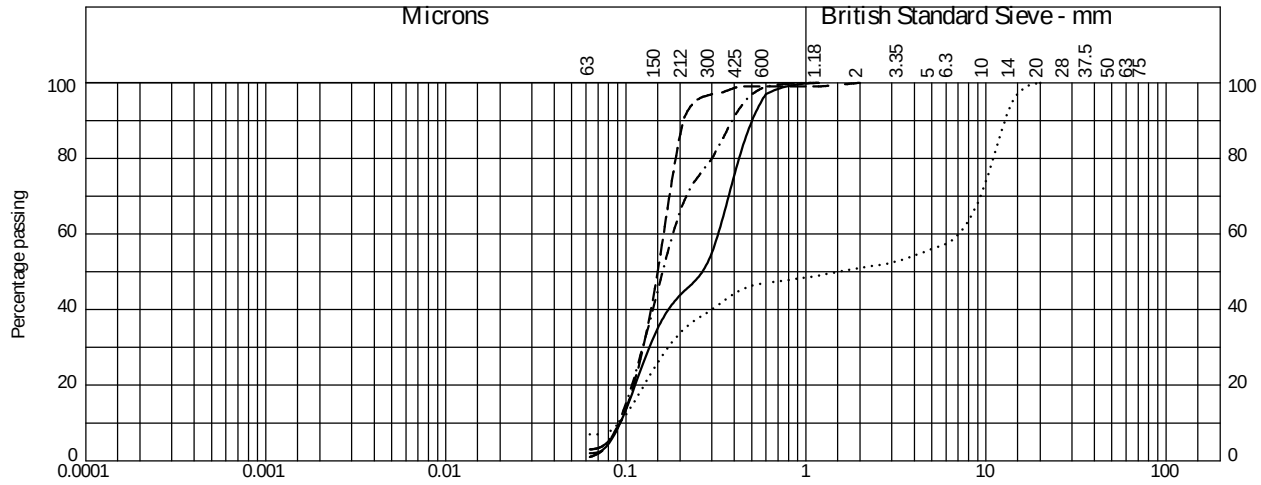
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B51	SPT3	144.3	———	SL. SILTY, F-M SAND (SP)	2.00
BH-B51	SPT6	132.0	– – –	SL. SILTY, FINE SAND (SP)	5.00
BH-B51	SPT9	109.5	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-B52	SPT2	138.8	–.–.–	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

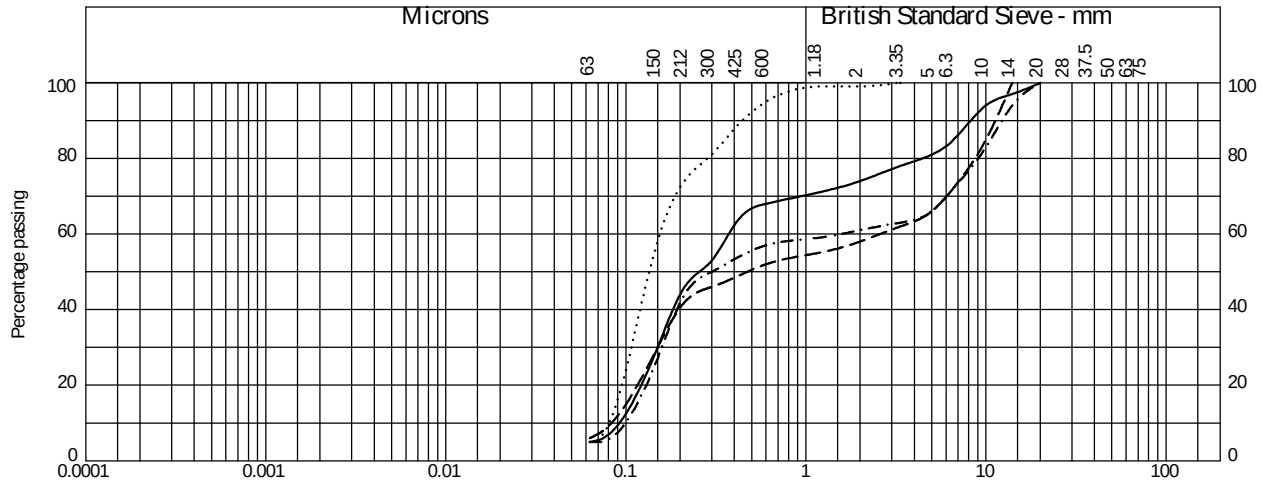
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B52	SPT4	138.6	———	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-B52	SPT6	133.2	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B53	SPT2	138.4	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B53	SPT5	127.5	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00

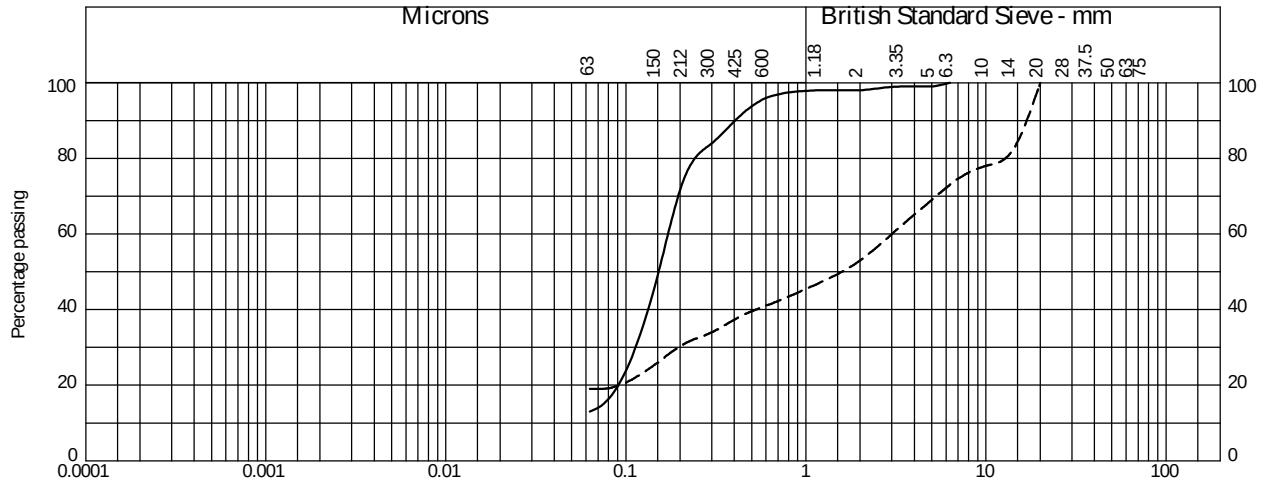
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-9
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-9
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 9)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-11/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-13/08/2015
Test Method Var	NIL	Tested By	ERWIN/ ROJAN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B54	SPT2	134.2	———	SL. SILTY, M-F SAND (SP)	1.00
BH-B54	SPT5	135.5	– – –	V. GRAVELLY, SILTY, M-F SAND (S-M)	4.00
			.....		
			–·–·–		

The results relate only to the samples tested.

Table C-1 (1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A48	**Sampling Date**	06/08/25015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	09/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	11/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	93
6.3	89
5	87
3.35	85
2	82
1.18	80
0.600	77
0.425	69
0.300	54
0.212	46
0.15	31
0.075	20
0.063	15
0.028	10
0.018	8
0.010	6
0.007	4
0.005	2
0.002	1
0.001	0

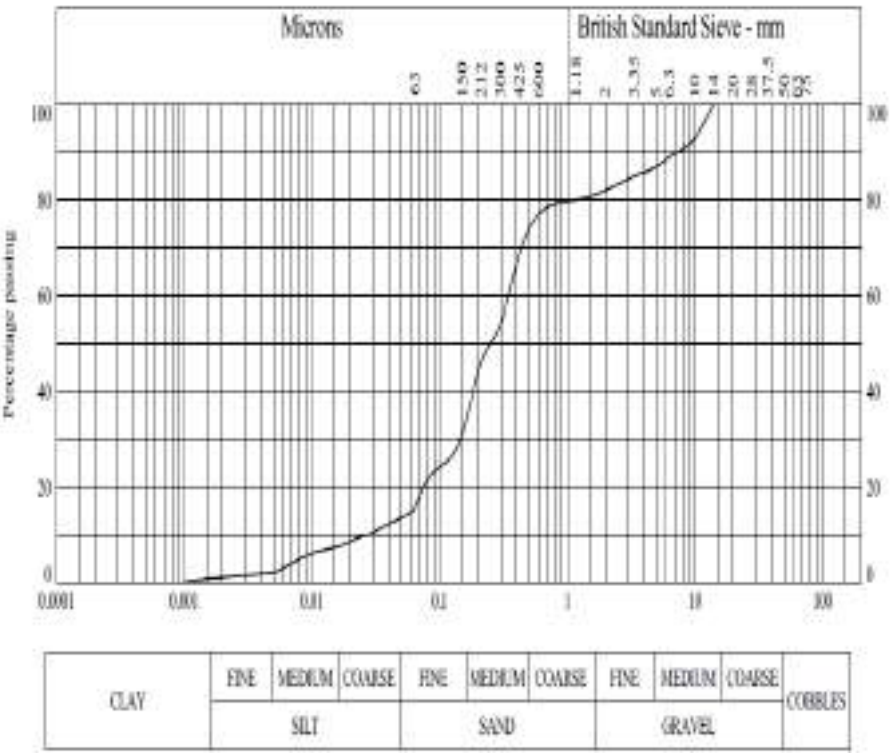
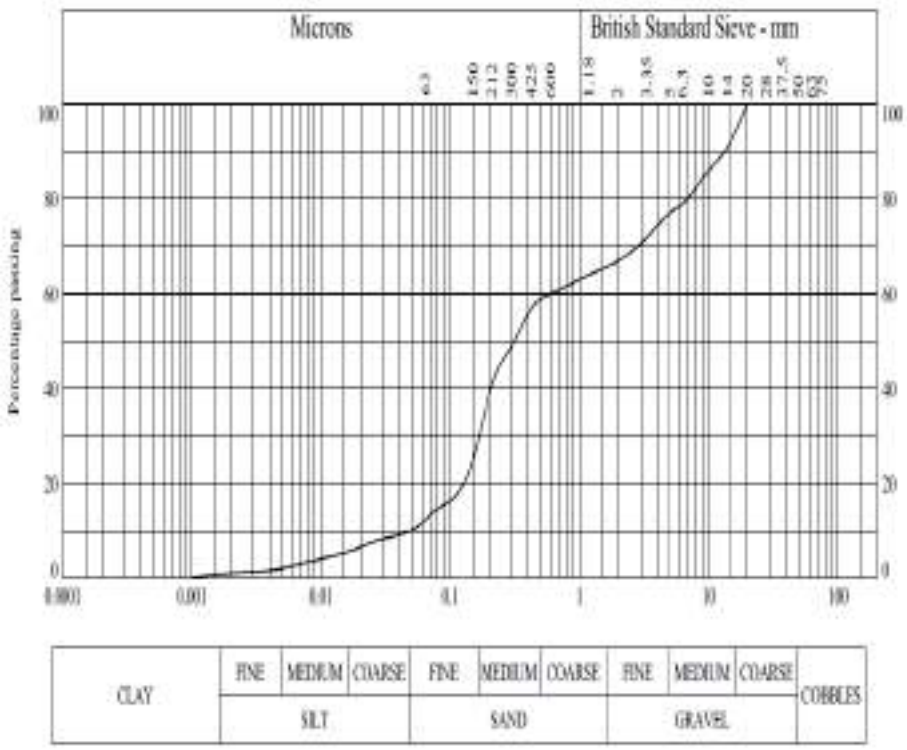


Table C-1 (2)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A48	**Sampling Date**	06/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	09/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	11/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	91
10	86
6.3	79
5	77
3.35	72
2	67
1.18	64
0.600	60
0.425	57
0.300	49
0.212	41
0.15	25
0.075	14
0.063	12
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

Table C-1 (3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A49	**Sampling Date**	05/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	93
0.425	84
0.300	73
0.212	68
0.15	57
0.075	26
0.063	14
0.028	10
0.018	8
0.010	6
0.007	5
0.005	4
0.002	2
0.001	0

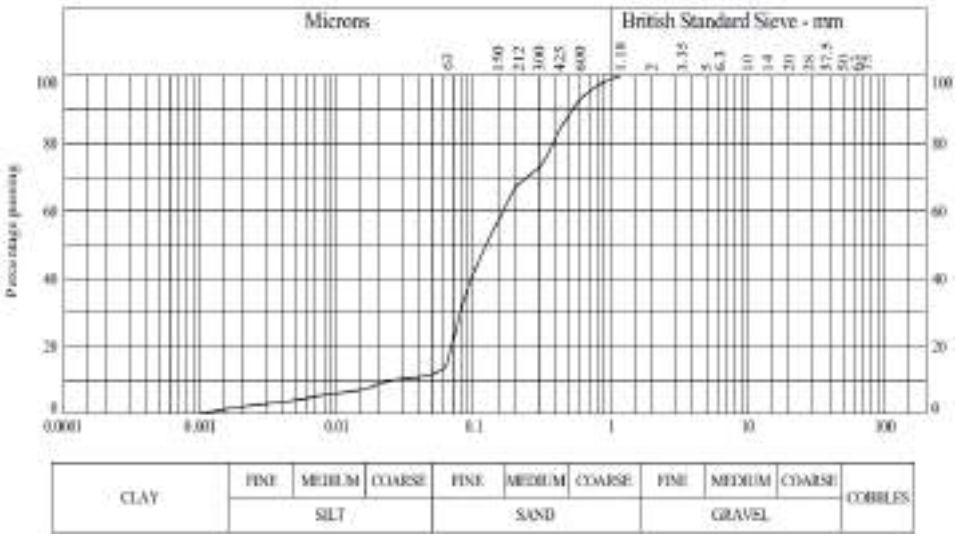


Table C-1 (4)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A49	**Sampling Date**	05/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	94
0.425	87
0.300	80
0.212	76
0.15	66
0.075	15
0.063	10
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

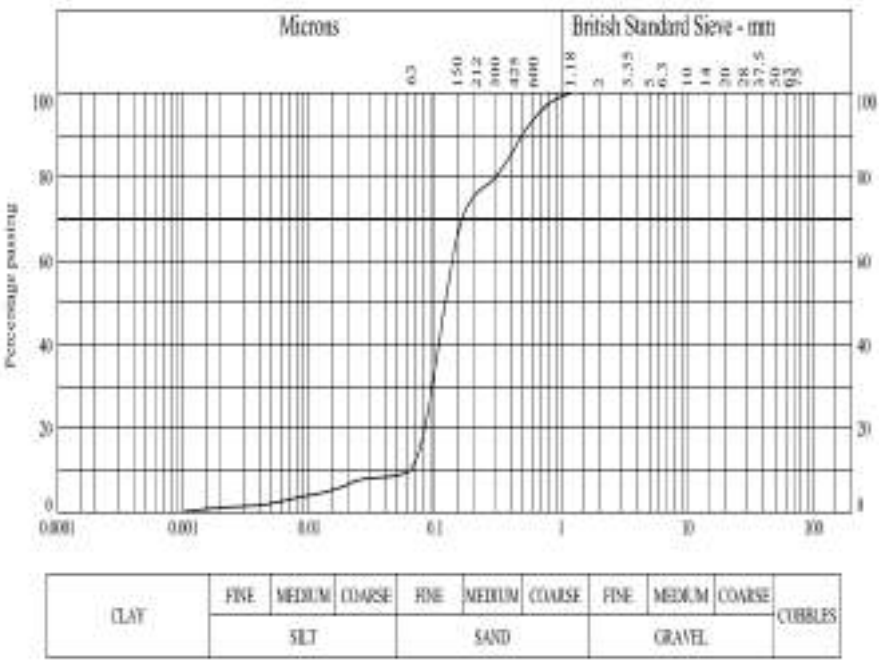


Table C-1 (5)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A49	**Sampling Date**	05/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	97
10	84
6.3	81
5	72
3.35	68
2	66
1.18	65
0.600	63
0.425	62
0.300	60
0.212	56
0.15	40
0.075	20
0.063	15
0.028	9
0.018	7
0.010	5
0.007	4
0.005	2
0.002	1
0.001	0

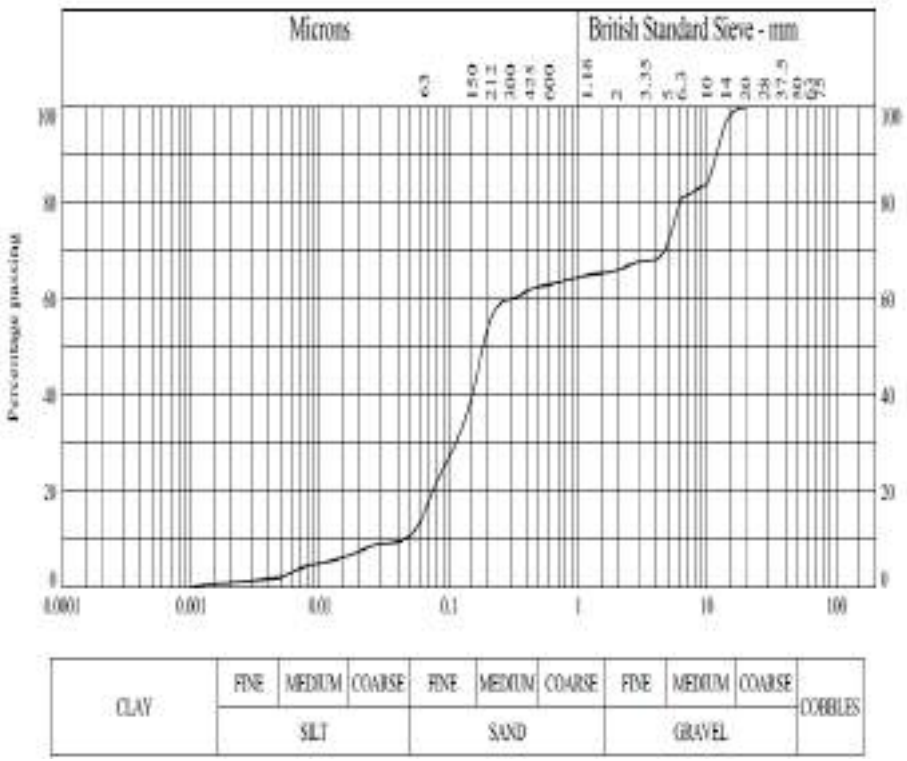


Table C-1 (6)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A50	**Sampling Date**	05/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	97
3.35	96
2	96
1.18	95
0.600	94
0.425	91
0.300	81
0.212	68
0.15	48
0.075	15
0.063	12
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

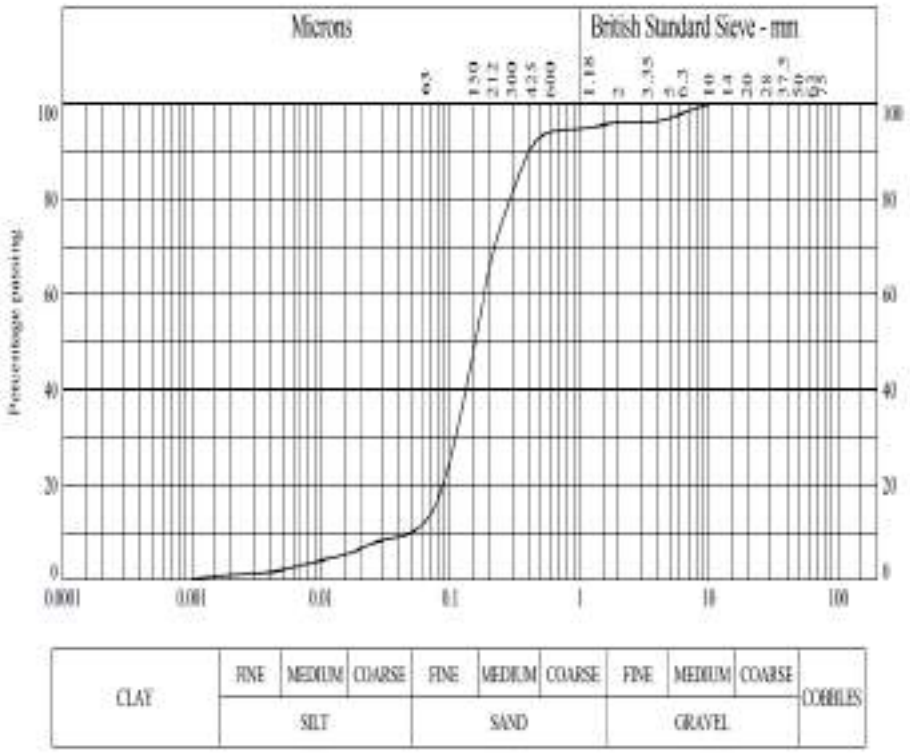


Table C-1 (7)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A50	**Sampling Date**	05/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	98
2	96
1.18	93
0.600	88
0.425	84
0.300	79
0.212	73
0.15	44
0.075	15
0.063	12
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

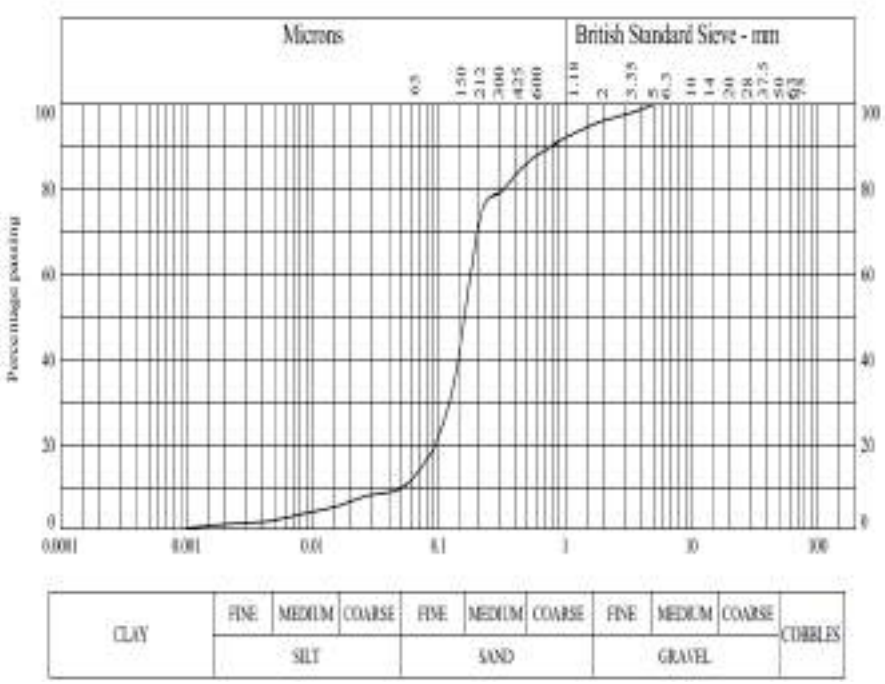


Table C-1 (8)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A50	**Sampling Date**	05/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	76
6.3	48
5	42
3.35	36
2	33
1.18	30
0.600	28
0.425	27
0.300	24
0.212	20
0.15	14
0.075	10
0.063	10
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

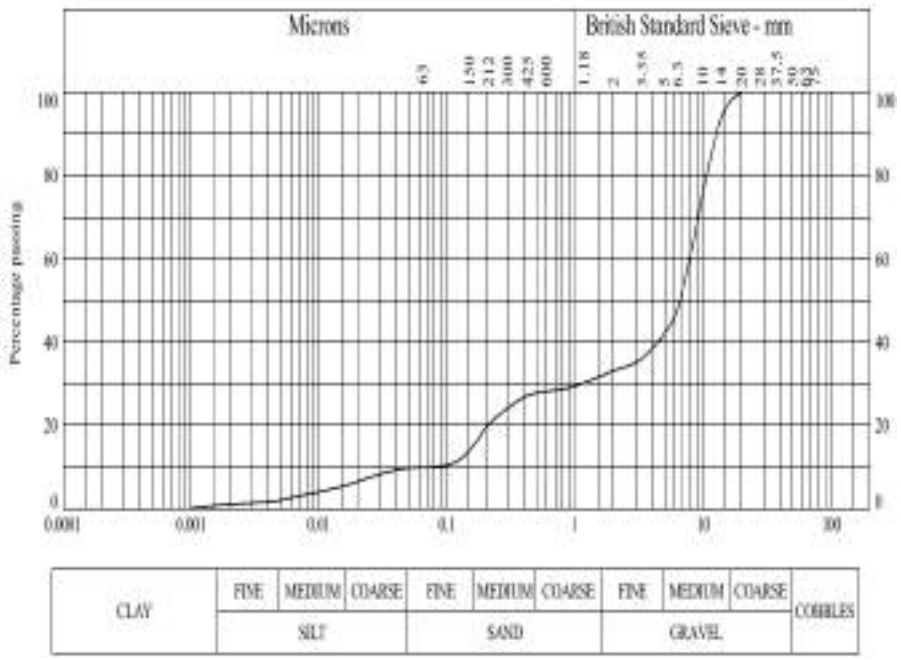


Table C-1 (9)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, F-M SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A51	**Sampling Date**	05/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/012/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	11-13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	85
6.3	75
5	73
3.35	72
2	71
1.18	70
0.600	67
0.425	55
0.300	39
0.212	32
0.15	23
0.075	12
0.063	10
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

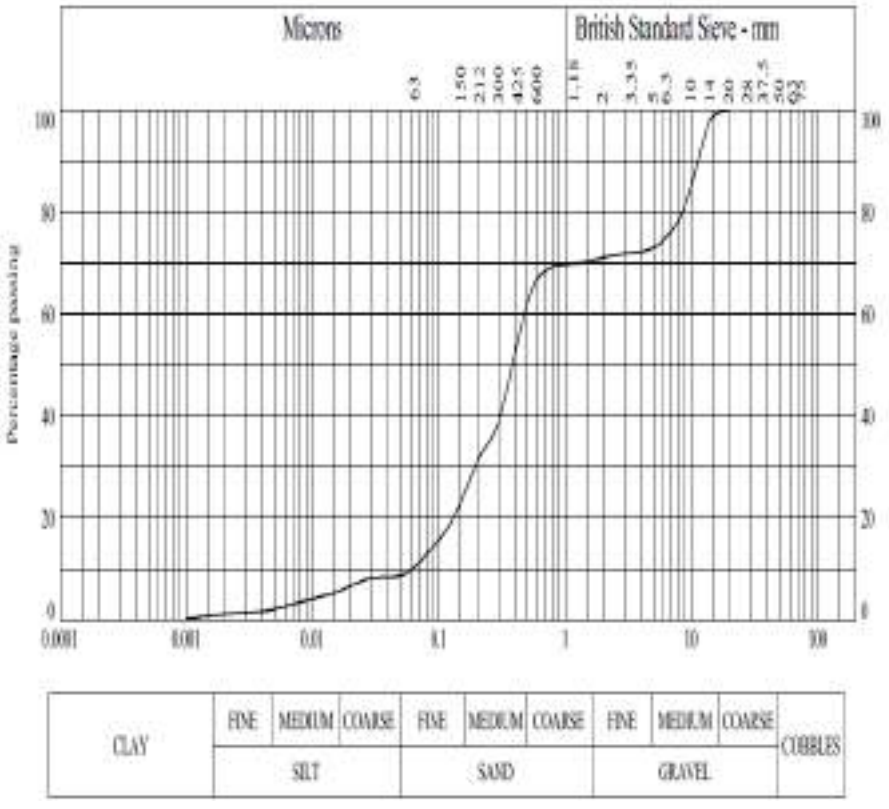
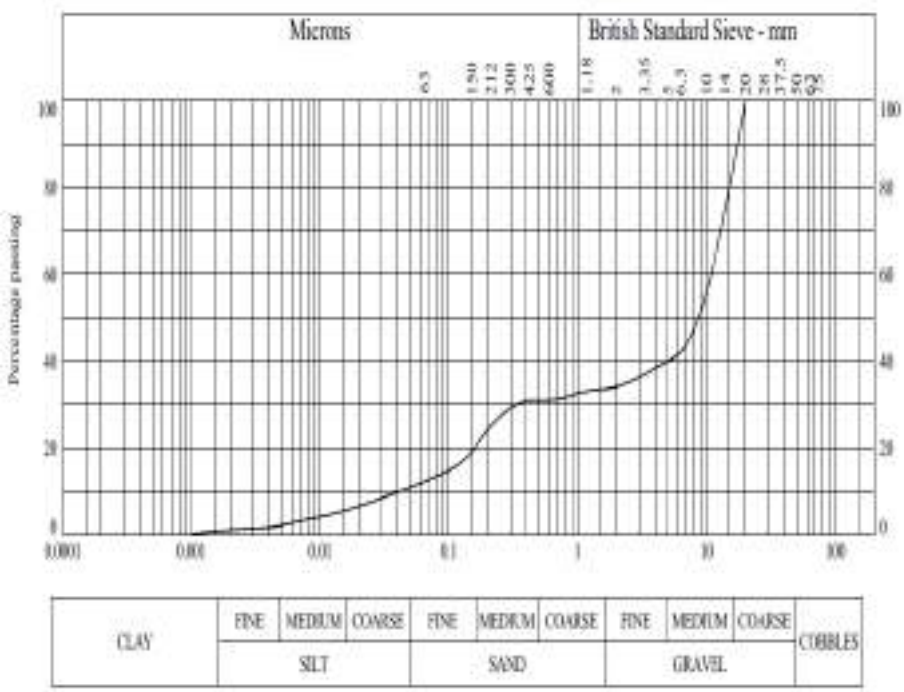


Table C-1 (10)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT10
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A51	**Sampling Date**	05/08/2015
Depth (m)	9.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	75
10	56
6.3	42
5	40
3.35	37
2	34
1.18	33
0.600	31
0.425	31
0.300	29
0.212	25
0.15	19
0.075	13
0.063	12
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



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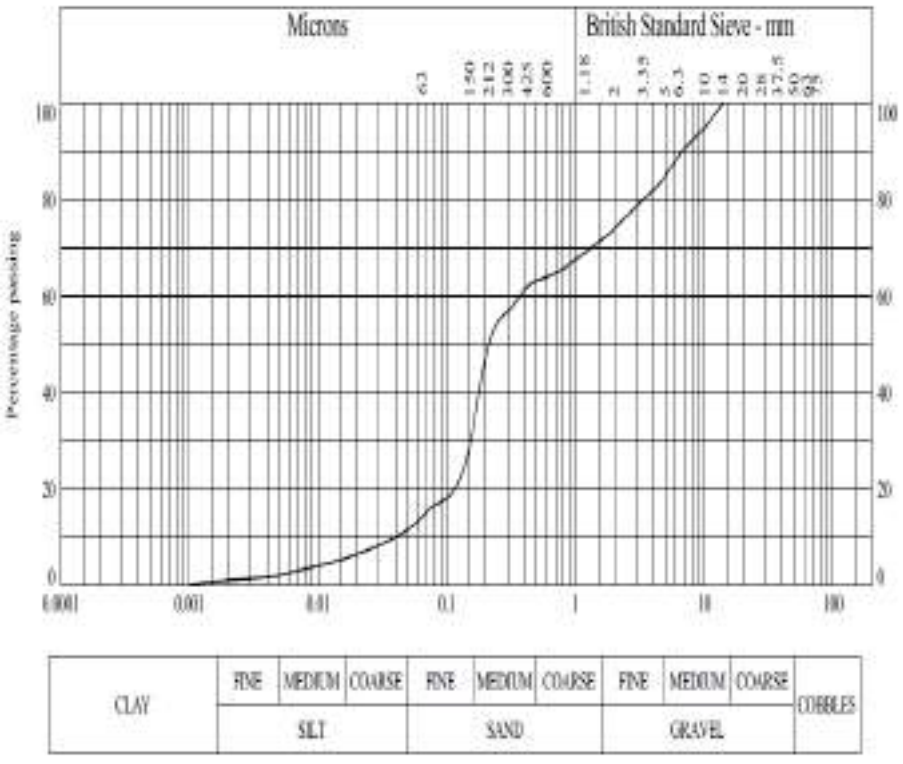
Table C-1 (11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B48	**Sampling Date**	02/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/12/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	95
6.3	89
5	85
3.35	80
2	74
1.18	69
0.600	64
0.425	62
0.300	57
0.212	50
0.15	29
0.075	16
0.063	14
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



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Table C-1 (12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B49	**Sampling Date**	02/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	98
0.425	92
0.300	80
0.212	63
0.15	32
0.075	21
0.063	18
0.028	10
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

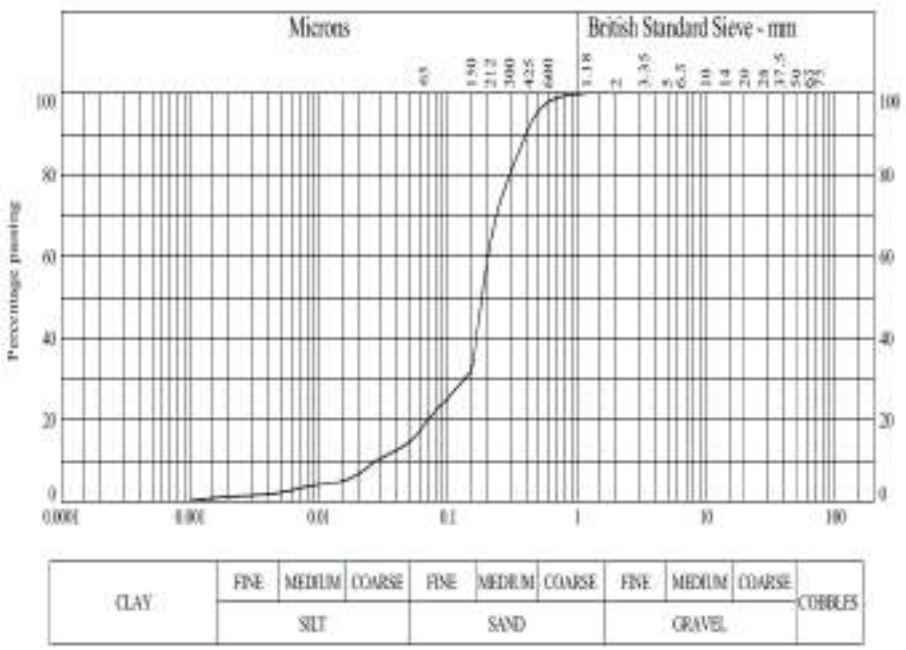
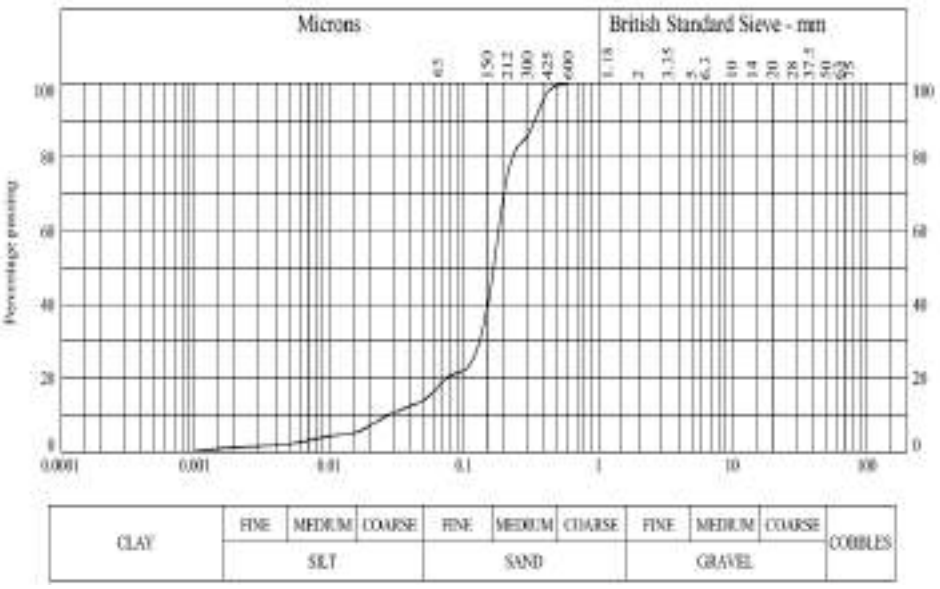


Table C-1 (13)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B49	**Sampling Date**	02/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.600	100
0.425	98
0.300	86
0.212	75
0.15	39
0.075	20
0.063	17
0.028	10
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



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Table C-1 (14)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B49	**Sampling Date**	02/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	98
1.18	97
0.600	97
0.425	96
0.300	93
0.212	86
0.15	51
0.075	35
0.063	20
0.028	10
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

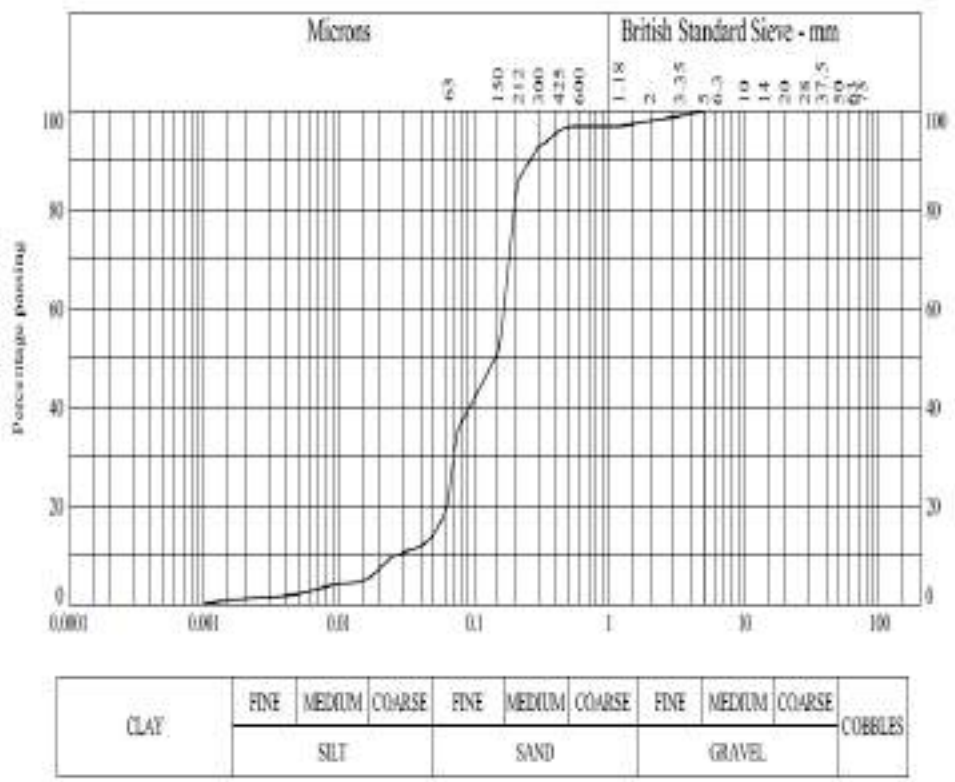


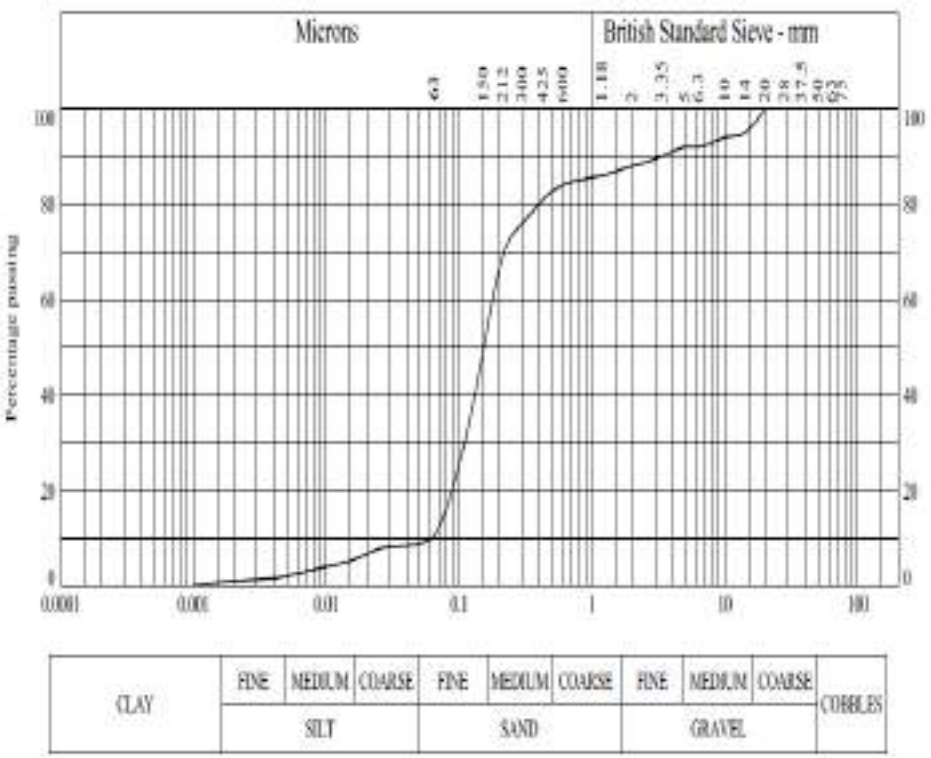
Table C-1 (15)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B50	**Sampling Date**	03/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/013/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	95
10	94
6.3	92
5	92
3.35	90
2	88
1.18	86
0.600	84
0.425	81
0.300	76
0.212	69
0.15	49
0.075	14
0.063	10
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

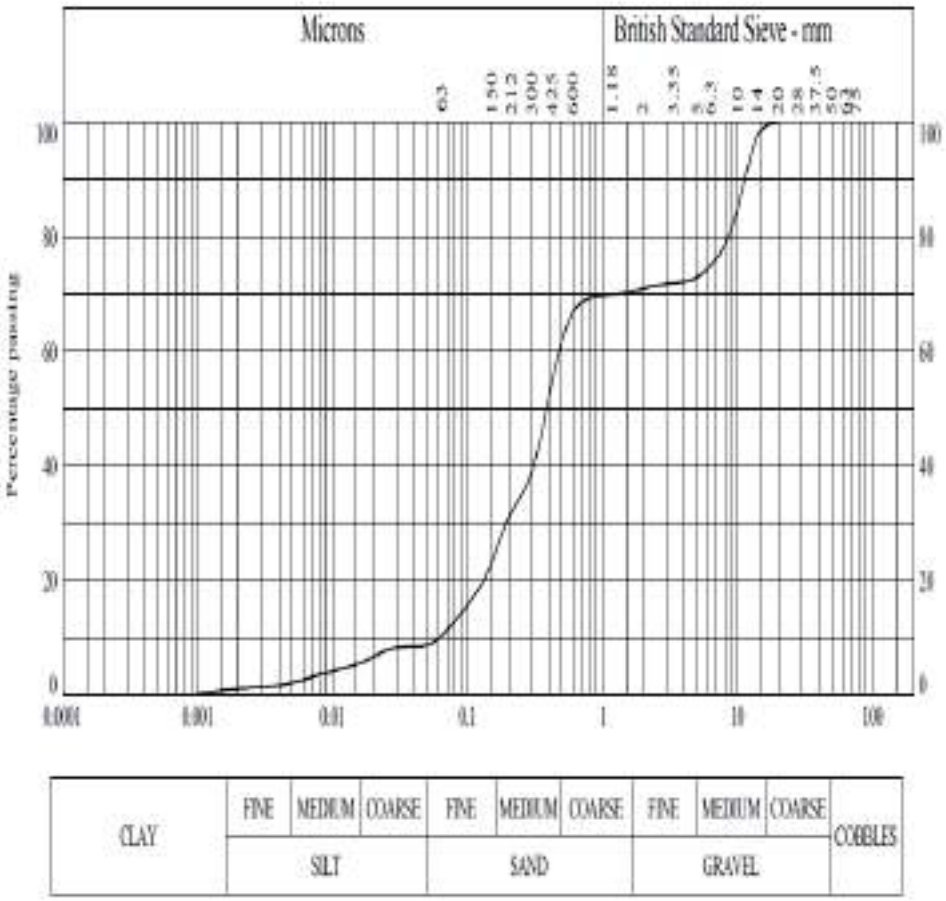
Table C-1 (16)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B51	**Sampling Date**	03/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/12/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	74
10	95
6.3	58
5	56
3.35	53
2	51
1.18	49
0.600	47
0.425	45
0.300	40
0.212	35
0.15	26
0.075	17
0.063	12
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

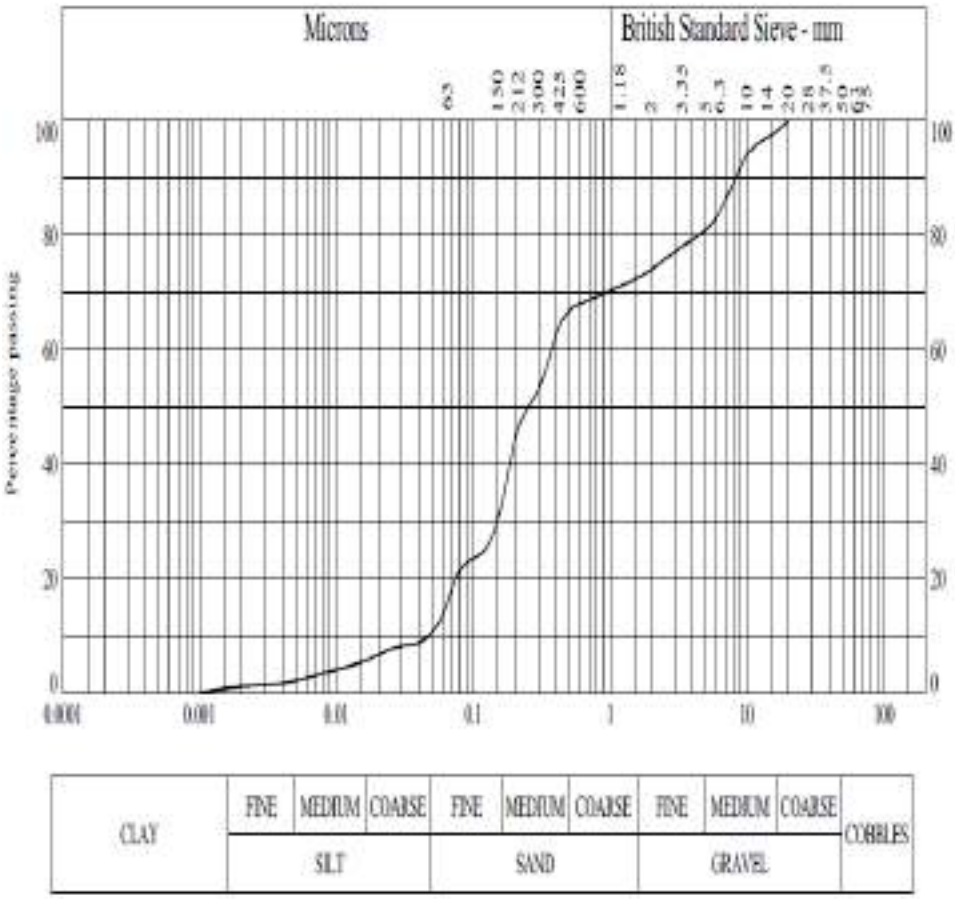
Table C-1 (17)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B52	**Sampling Date**	03/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	97
10	94
6.3	84
5	81
3.35	78
2	74
1.18	71
0.600	68
0.425	64
0.300	53
0.212	46
0.15	30
0.075	20
0.063	15
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

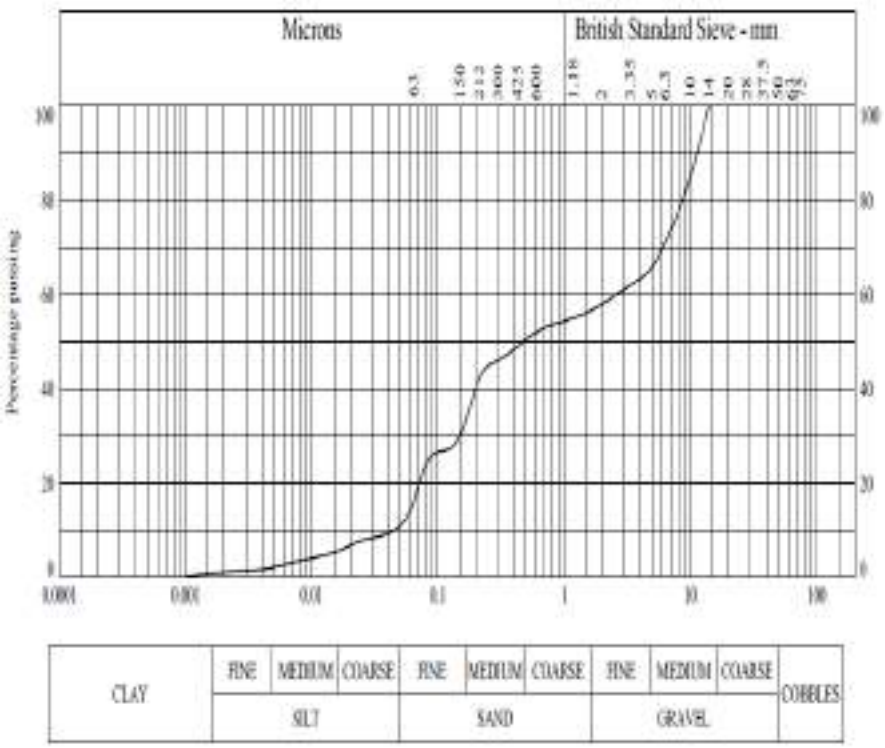
Table C-1 (17)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B52	**Sampling Date**	03/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	85
6.3	71
5	66
3.35	62
2	58
1.18	55
0.600	52
0.425	49
0.300	46
0.212	42
0.15	30
0.075	22
0.063	15
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

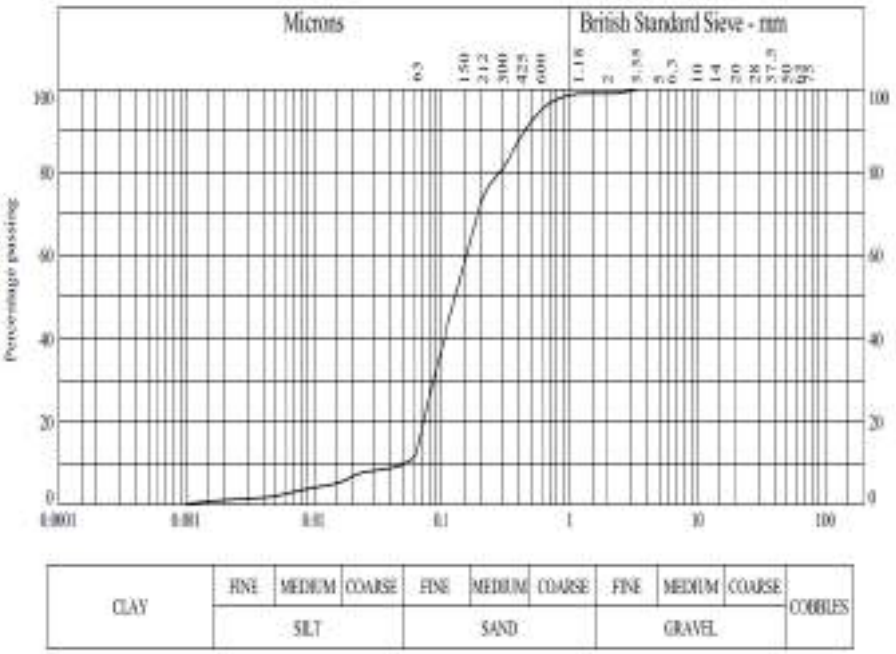
Table C-1 (19)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B53	**Sampling Date**	04/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.600	95
0.425	89
0.300	81
0.212	74
0.15	58
0.075	22
0.063	12
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

Table C-1 (20)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B53	**Sampling Date**	04/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	94
10	83
6.3	71
5	66
3.35	63
2	61
1.18	59
0.600	57
0.425	54
0.300	50
0.212	44
0.15	27
0.075	17
0.063	14
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

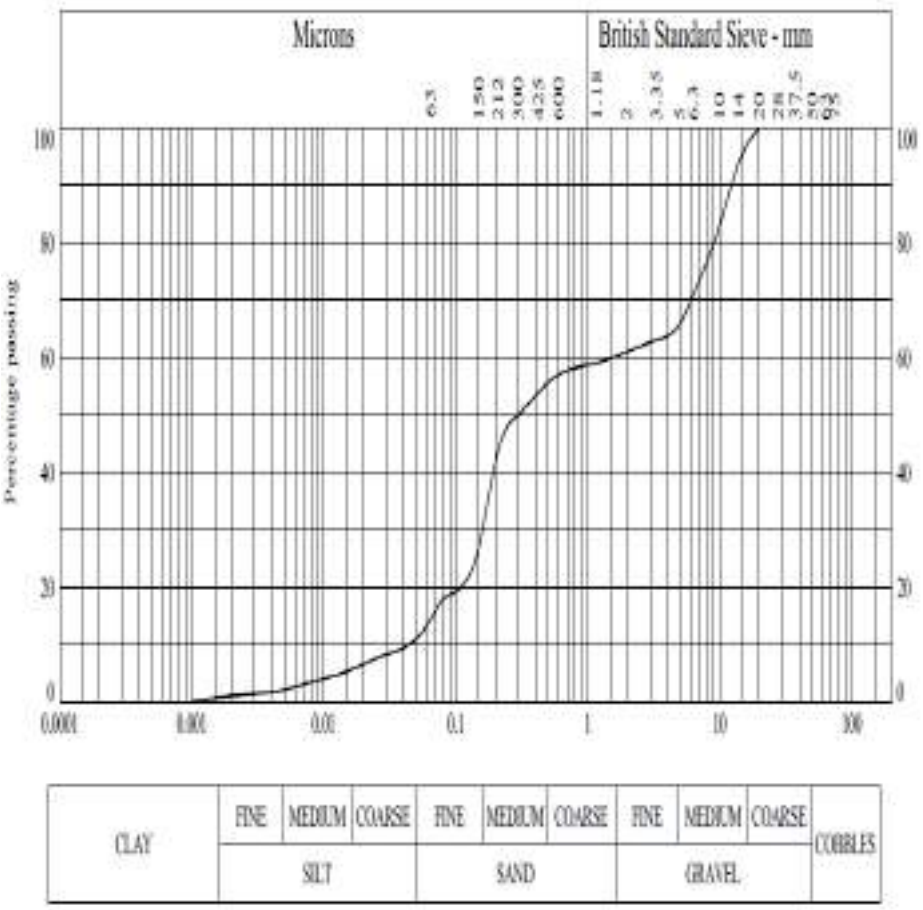
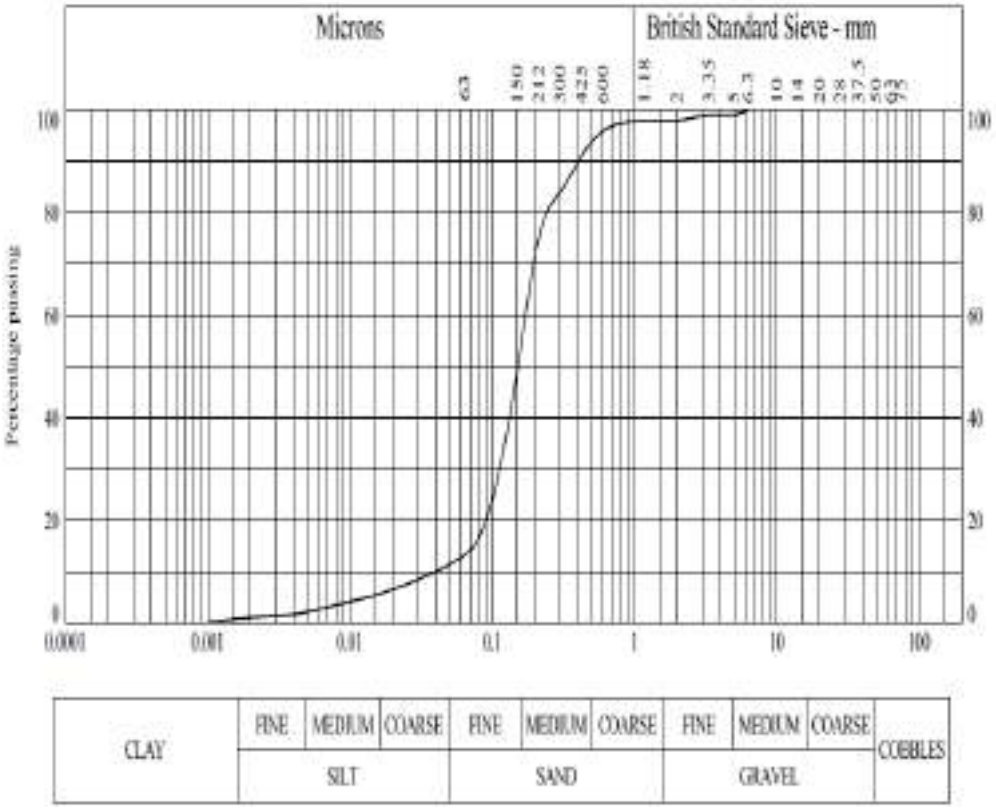


Table C-1 (21)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. SILTY, M-F SAND (SP)	**Sampled By**	Matrix
Borehole No.	BH-B54	**Sampling Date**	03/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	98
1.18	98
0.600	96
0.425	91
0.300	84
0.212	75
0.15	49
0.075	15
0.063	13
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

Table C-1 (22)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-9
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B54	**Sampling Date**	03/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	82
10	78
6.3	73
5	69
3.35	62
2	53
1.18	47
0.600	41
0.425	38
0.300	34
0.212	31
0.15	26
0.075	19
0.063	15
0.028	8
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

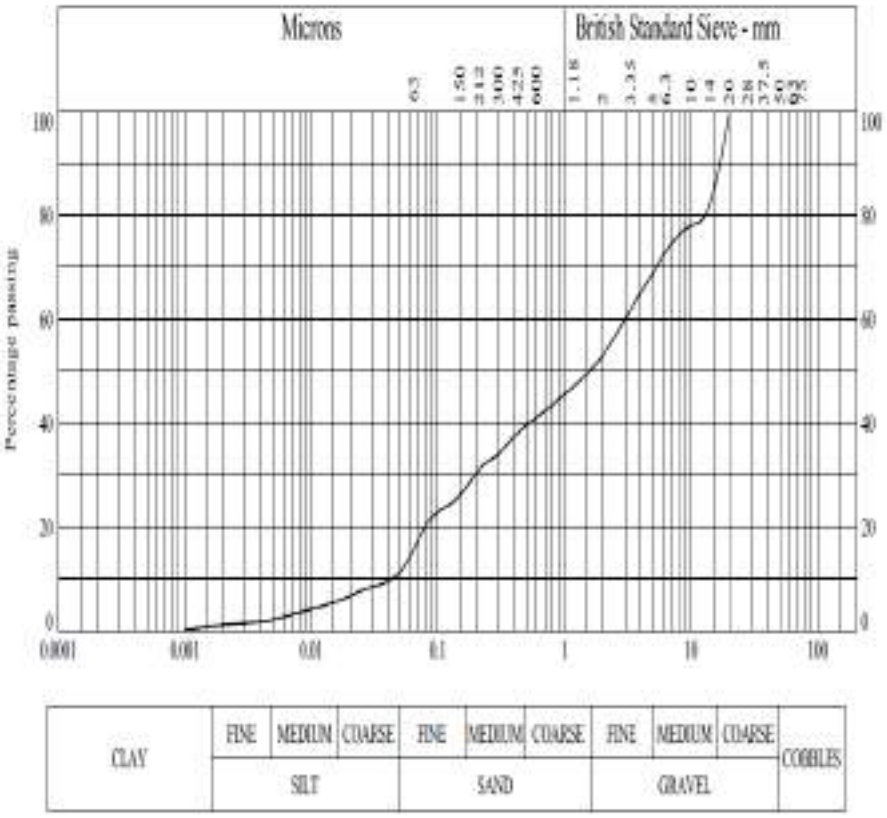


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	10-11/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	11-12/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	02-06/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A48	1.00	9.6
BH-A48	3.00	11.0
BH-A48	4.00	7.5
BH-A48	6.50	12.0
BH-A48	8.00	5.5
BH-A49	1.00	4.1
BH-A49	3.00	9.9
BH-A49	5.00	11.0
BH-A50	1.00	12.0
BH-A50	3.00	10.0
BH-A50	4.00	8.9
BH-A50	6.50	16.0
BH-A51	2.00	8.6
BH-A51	4.00	6.0
BH-A51	5.00	12.0
BH-A51	8.00	9.4
BH-A51	9.50	11.0

Borehole No.	Depth	Moisture Content (%)
BH-B48	1.00	5.9
BH-B48	3.00	4.7
BH-B48	5.00	15.0
BH-B49	2.00	23.0
BH-B49	4.00	23.0
BH-B49	5.00	18.0
BH-B50	1.00	6.7
BH-B50	3.00	14.0
BH-B50	5.00	8.9
BH-B50	6.50	15.0
BH-B51	2.00	7.5
BH-B51	4.00	16.0
BH-B51	5.00	6.6
BH-B51	8.00	18.0
BH-B52	1.00	6.5
BH-B52	3.00	8.8
BH-B52	5.00	17.0
BH-B53	1.00	7.4
BH-B53	3.00	6.7
BH-B53	4.00	15.0
BH-B54	1.00	9.6
BH-B54	2.00	10.0
BH-B54	4.00	12.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	05/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	06/08/2015
Sample Description	Soil	**Sampling Date**	03/08/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-B48	2.00	2.65

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	02-04/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	12-13/08/2015
Sample Description	SAND	**Sampling Date**	26-30/07/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-B48	2.00	100	0.2
BH-B53	2.00	100	0.2

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	05-08/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	02-03/08/2015
Sample Description	ROCK CORE	**Date Tested**	08-10/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-B48	6.69	16.58	37.76
BH-B51	8.30	32.68	74.42

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	04-17/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	02-06/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A48	8.50	1	0.35	Vertical
BH-A49	7.00	2	0.24	Vertical
BH-A50	9.00	3	0.46	Vertical
BH-A51	11.60	4	0.72	Vertical
BH-B48	10.00	5	0.28	Vertical
BH-B48	19.00	6	0.79	Vertical
BH-B49	15.22	7	0.19	Vertical
BH-B50	11.26	8	0.26	Vertical
BH-B52	5.18	9	0.47	Vertical
BH-B52	10.00	10	0.56	Vertical
BH-B52	10.50	11	0.34	Vertical
BH-B52	14.70	12	0.63	Vertical
BH-B52	20.50	13	0.09	Vertical
BH-B52	36.20	14	0.48	Vertical
BH-B53	7.20	15	0.25	Vertical
BH-B53	16.40	16	0.57	Vertical
BH-B53	20.00	17	0.19	Vertical
BH-B53	31.00	18	0.32	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-B54	5.30	19	0.56	Vertical
BH-B54	14.00	20	0.21	Vertical
BH-B54	15.40	21	0.74	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-9
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	04-16/08/2015
Sample Source	Site	**Date Tested**	04-17/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin/ Rojan

Sample Details:			Dimensions:		Results:						
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density	Sketch	Rock Description
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-A49	5.50	1	7.50	15.00	4.8	1.87	258.7	12.70	1.77	Figure C-01	CAL. SANDSTONE
BH-A50	6.75	2	7.50	15.10	5.9	1.92	305.0	9.60	2.15	Figure C-02	CAL. SANDSTONE
BH-A51	16.00	3	7.40	14.80	7.3	2.30	318.4	14.20	2.08	Figure C-03	CAL. SANDSTONE
BH-B48	18.50	4	7.50	15.00	6.6	2.40	275.9	8.60	1.74	Figure C-04	CONG. SILTSTONE
BH-B49	14.00	5	7.50	15.10	8.9	2.78	320.6	16.20	1.93	Figure C-05	CAL. SILTSTONE
BH-B50	7.00	6	7.40	15.00	9.9	3.27	304.0	5.50	2.20	Figure C-06	CONG. SILTSTONE
BH-B52	28.00	7	7.50	15.00	1.9	1.47	128.2	21.30	1.86	Figure C-07	CONG. SILTSTONE
BH-B53	9.00	8	7.50	15.00	5.6	1.80	311.2	12.60	2.34	Figure C-08	CAL. SANDSTONE
BH-B53	20.80	9	7.50	15.10	6.9	2.45	282.7	5.40	1.91	Figure C-09	CAL. SANDSTONE
BH-B54	16.00	10	7.50	15.00	3.5	1.60	216.7	15.00	1.91	Figure C-10	CAL. SILTSTONE
BH-B54	38.00	11	7.40	14.80	8.4	2.77	302.2	14.10	1.79	Figure C-11	CAL. SILTSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY LLC.

TYPE OF FRACTURES FOR CORES

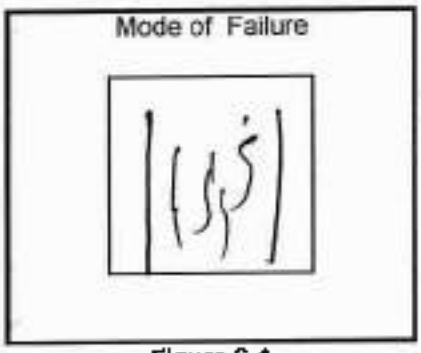


Figure C-1

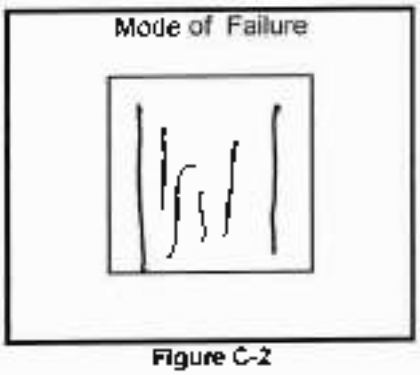


Figure C-2

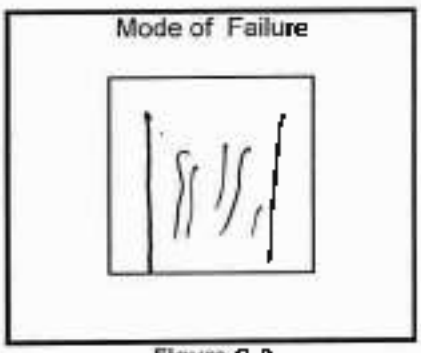


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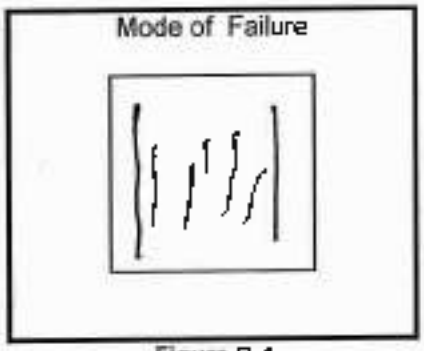


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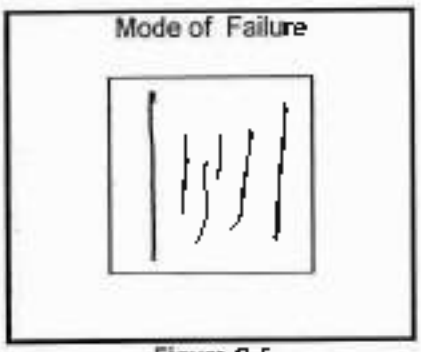


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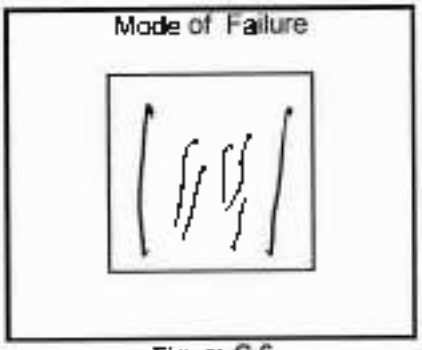


Figure C-6

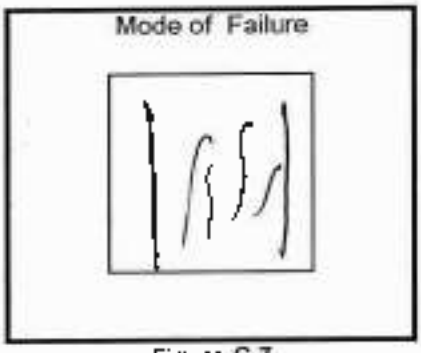


Figure C-7

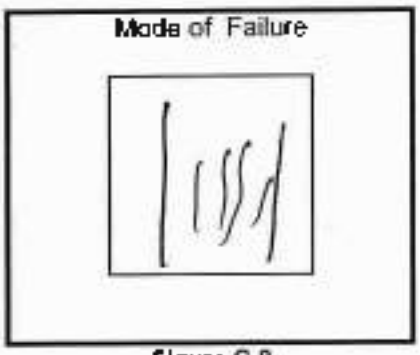


Figure C-8

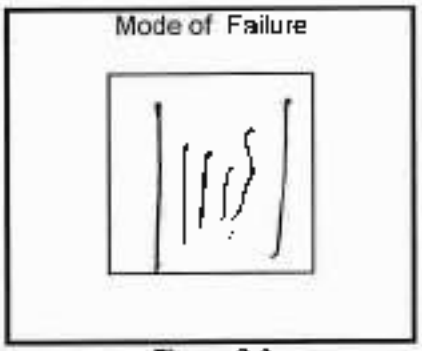


Figure C-9

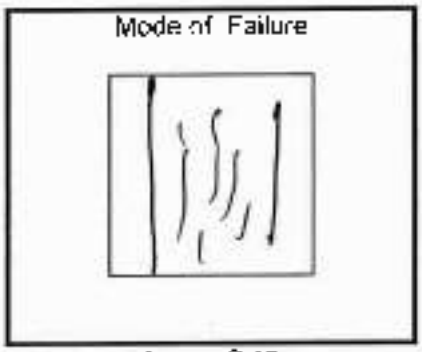


Figure C-10

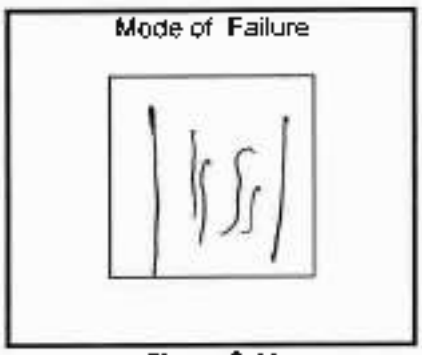
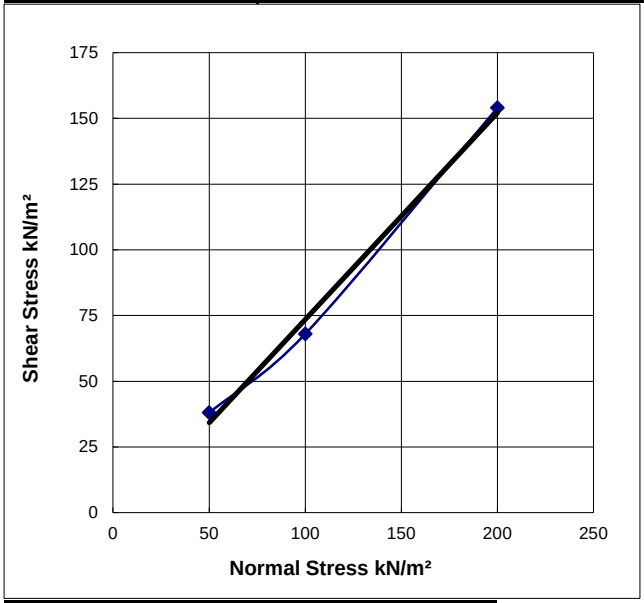
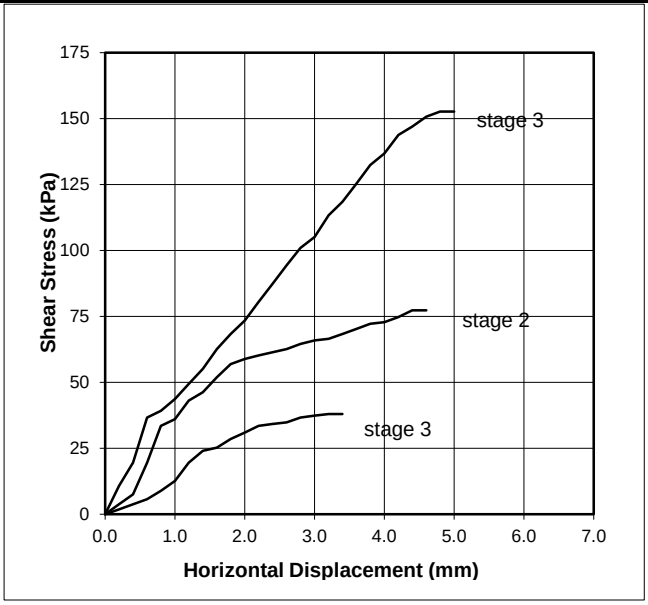


Figure C-11

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A48	**Date Tested**	10-11/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion = 0.0 kN/m²

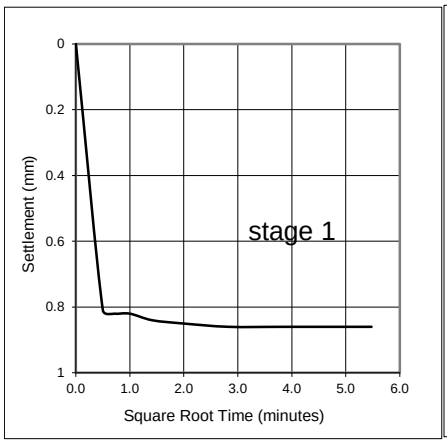
Angle of Shearing Resistance = 37.95º

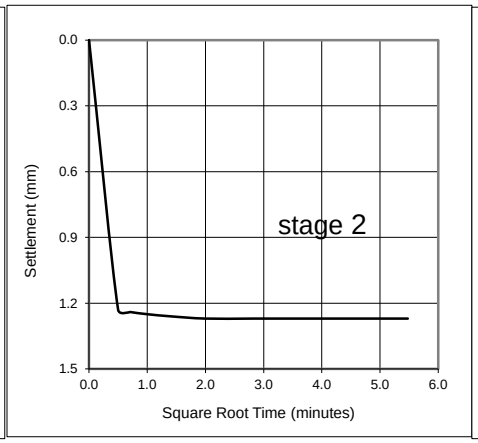
MATRIX LABORATORY L.L.C.

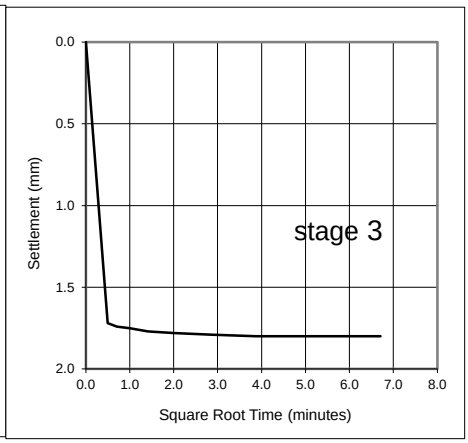
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A48	**Date Tested**	10-11/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.70
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

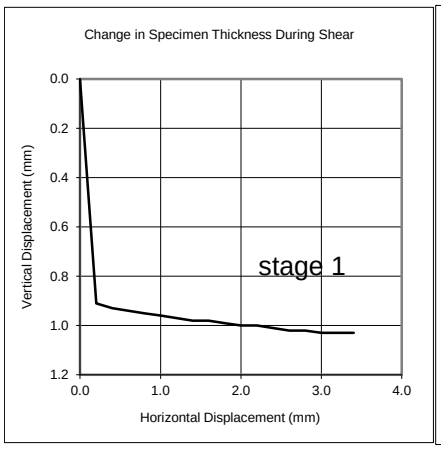
Consolidation Stage

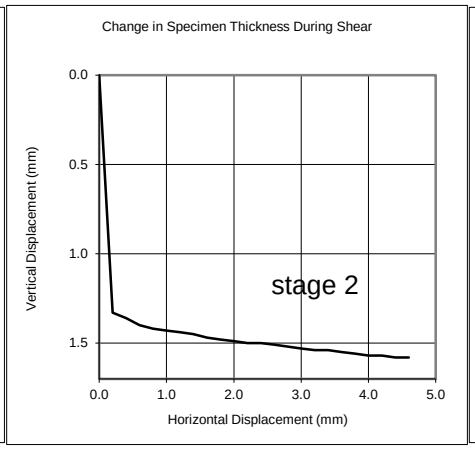


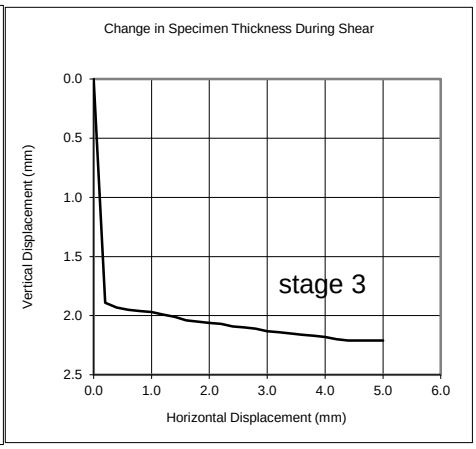




Shearing Stage



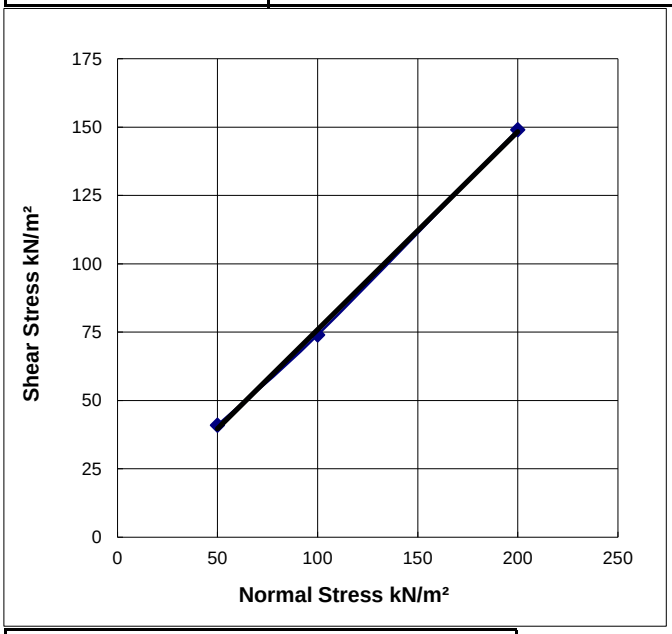


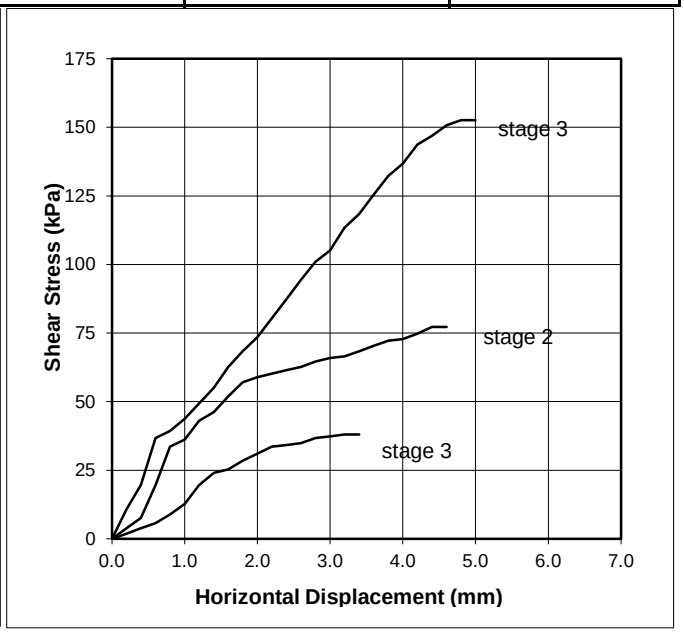


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A51	**Date Tested**	09-10/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion = 0.0 kN/m²

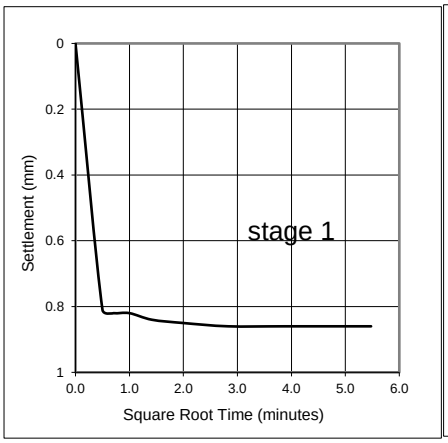
Angle of Shearing Resistance = 36.0º

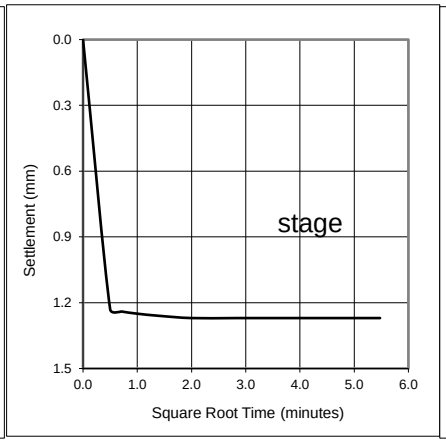
MATRIX LABORATORY L.L.C.

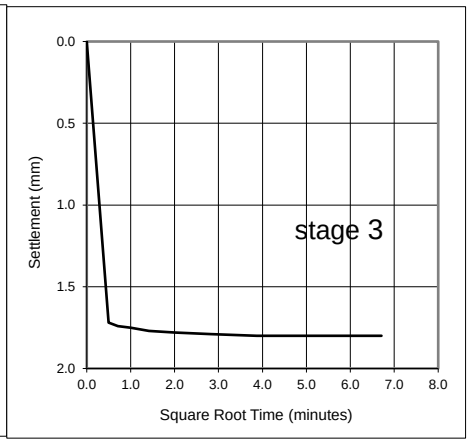
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A51	**Date Tested**	09-10/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.70
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

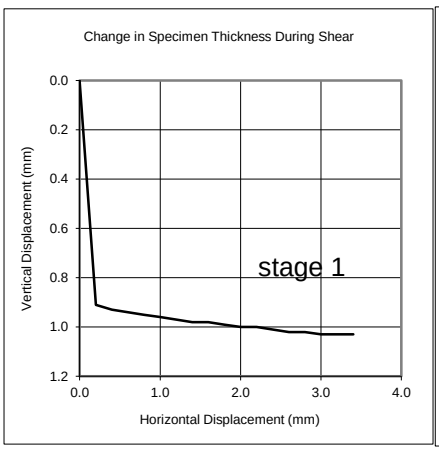
Consolidation Stage

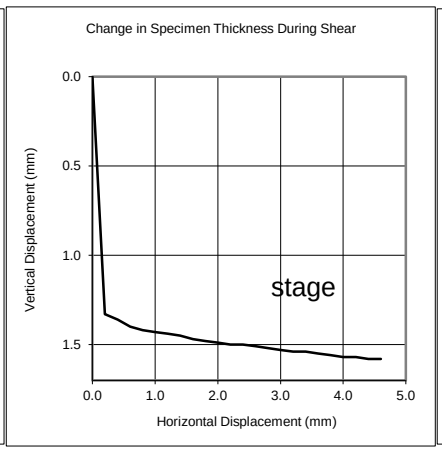


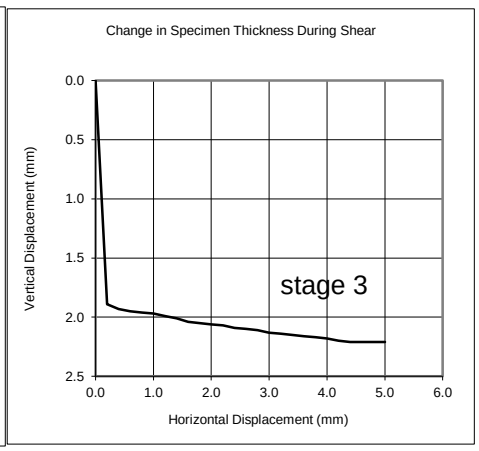




Shearing Stage



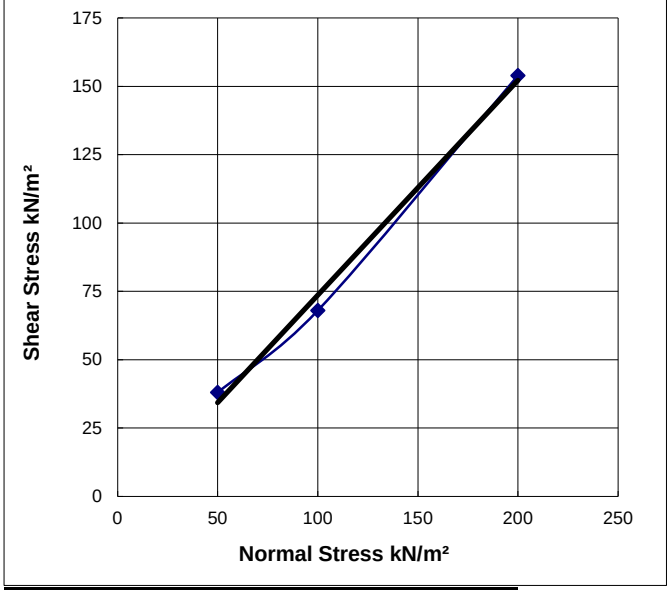


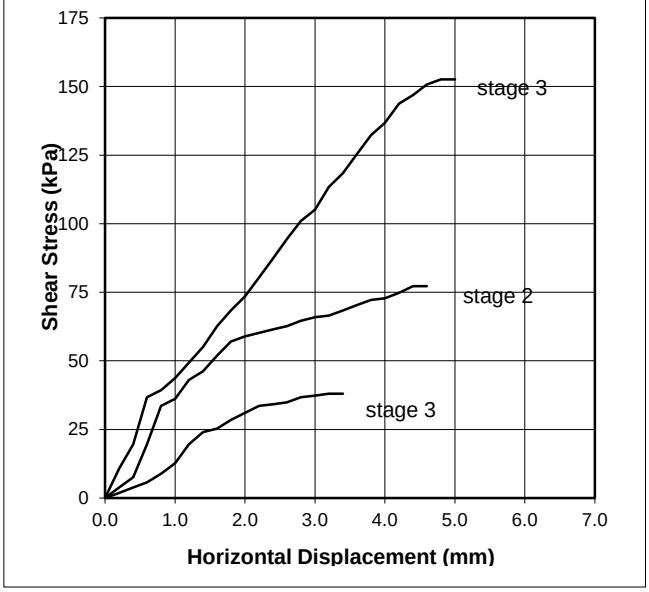


MATRIX LABORATORY L.L.C.

TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B49	**Date Tested**	08-09/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion = 0.0 kN/m²

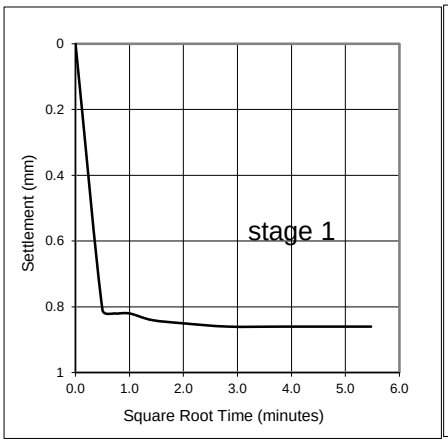
Angle of Shearing Resistance = 37.95º

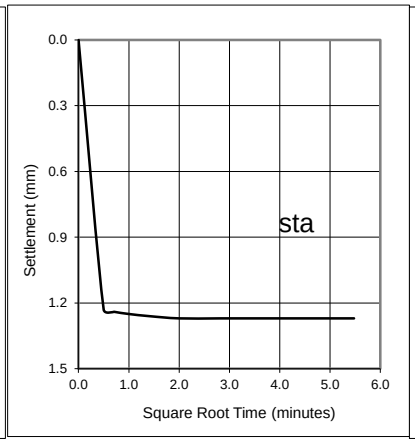
MATRIX LABORATORY L.L.C.

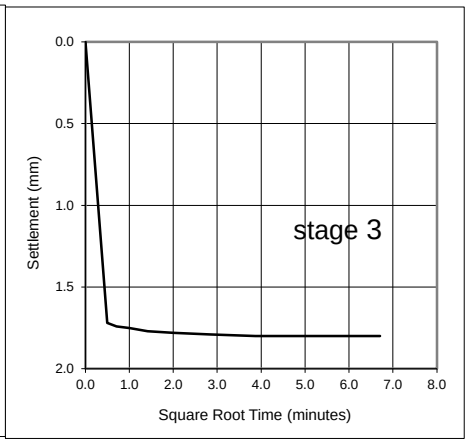
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B49	**Date Tested**	08-09/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.70
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	11.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

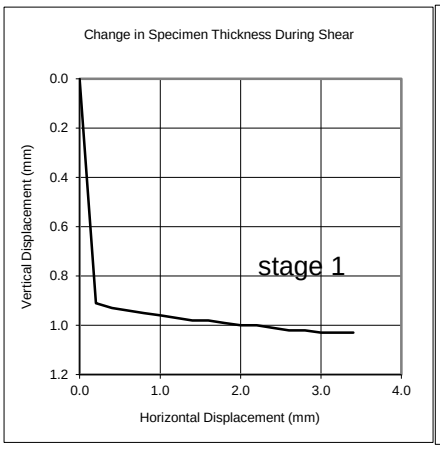
Consolidation Stage

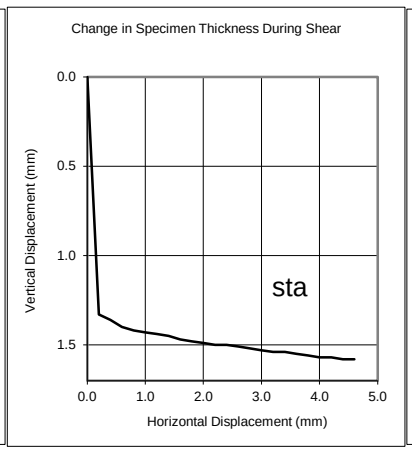


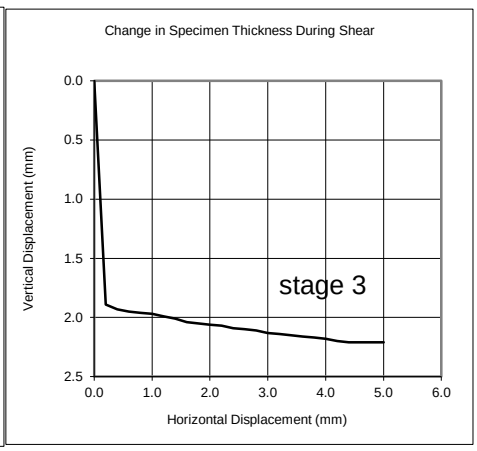




Shearing Stage



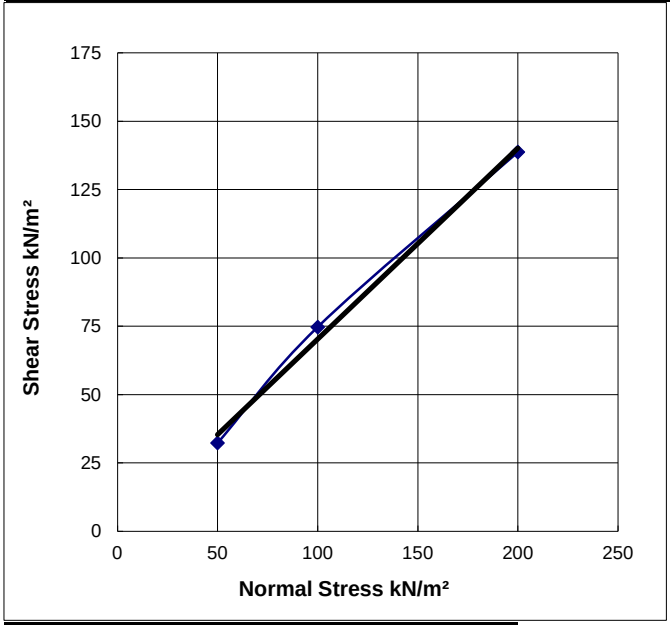


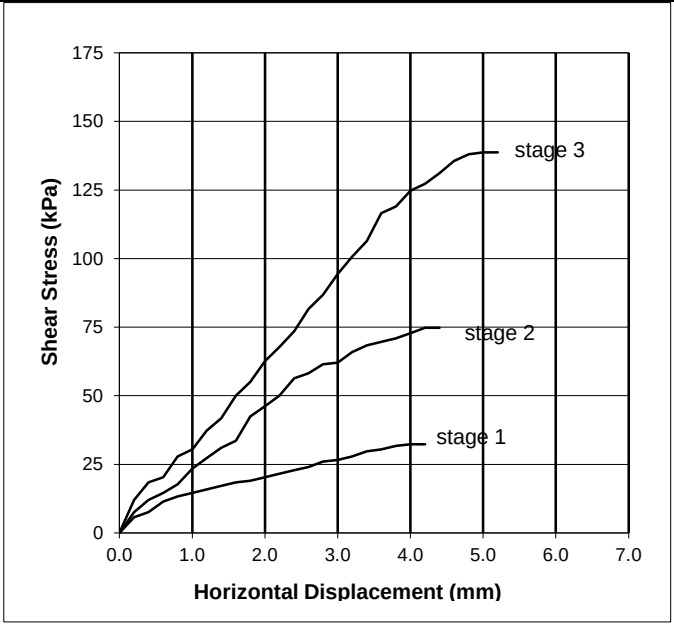


MATRIX LABORATORY L.L.C.

TABLE C8 – (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B54	**Date Tested**	08-09/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

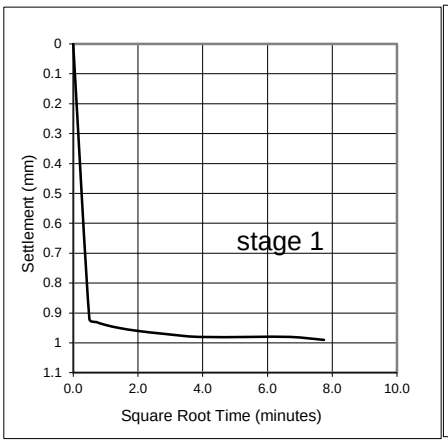
Apparent Cohesion = 0.0 kN/m²

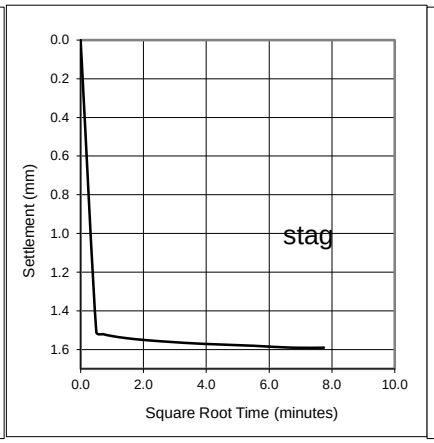
Angle of Shearing Resistance = 35.0º

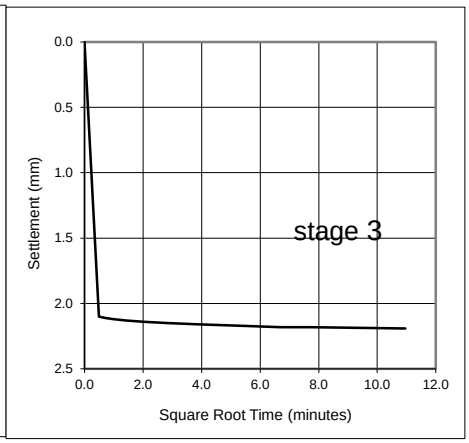
TABLE C8 – (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-9
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-9
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B54	**Date Tested**	08-09/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.55
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

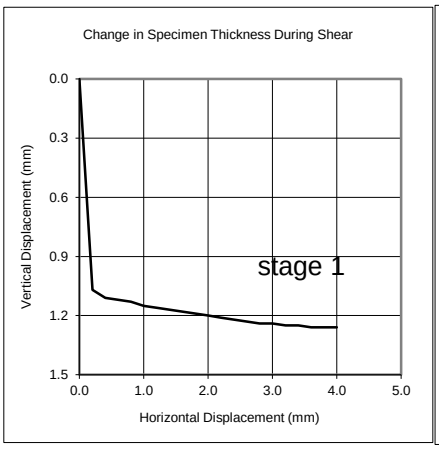
Consolidation Stage

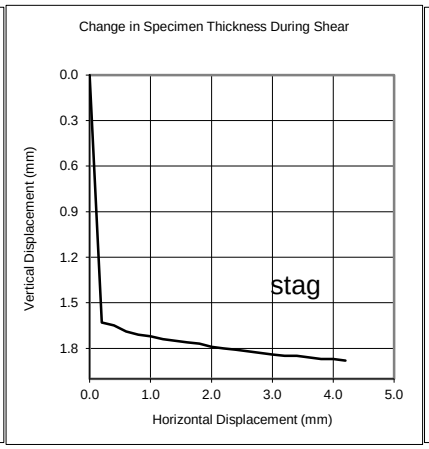


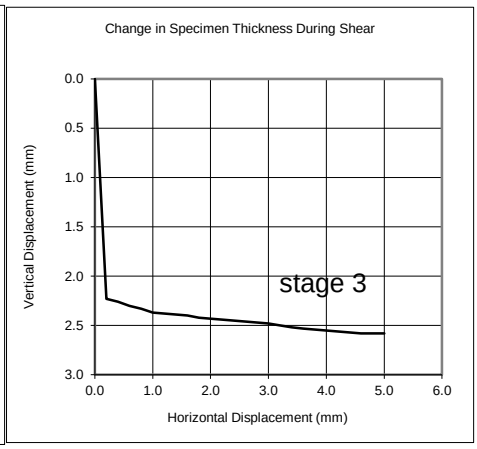




Shearing Stage







APPENDIX C10

LABORATORY TEST RESULTS (ZONE 10)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	06/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	10-13/08/2015
Test Method	See below	**Date Tested**	11-17/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-B30	SPT3	2.00	0.2	0.01	8.6 @ 28°C	DS-1
BH-B55	SPT3	2.00	0.2	0.04	8.3 @ 28°C	DS-1
BH-A46	SPT3	2.00	0.2	0.01	8.5 @ 28°C	DS-1
BH-A47	SPT2	1.00	0.4	0.01	8.4 @ 28°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 8)	**Sampling Date**	08/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	08/08/2015
Test Method	See below	**Date Tested**	08-09/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A45	11.50	0.54	0.20	7.8 @ 28°C	DS-2
BH-B30	11.80	0.41	0.16	7.8 @ 28°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

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Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

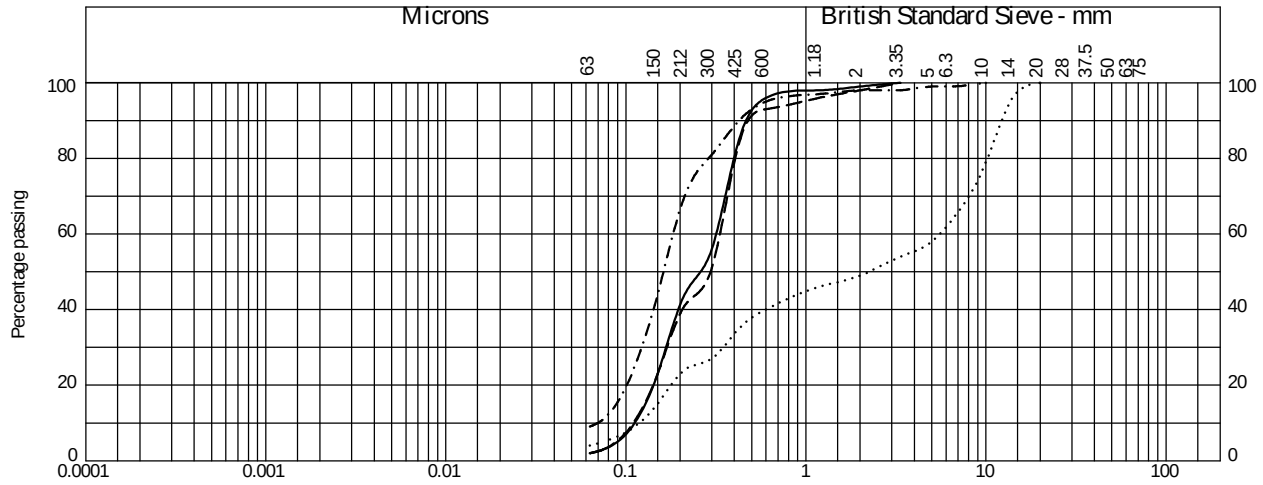
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-10
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-10
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	10-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	12-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A43	SPT2	139.3	———	SL. GRAVELLY, SL. SILTY, F-M SAND (SP)	1.00
BH-A43	SPT5	136.2	— — —	SL. GRAVELLY, SL. SILTY, F-M SAND (SP)	4.00
BH-A43	SPT7	139.2	.....	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	6.00
BH-A45	SPT2	136.8	—·—·—	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

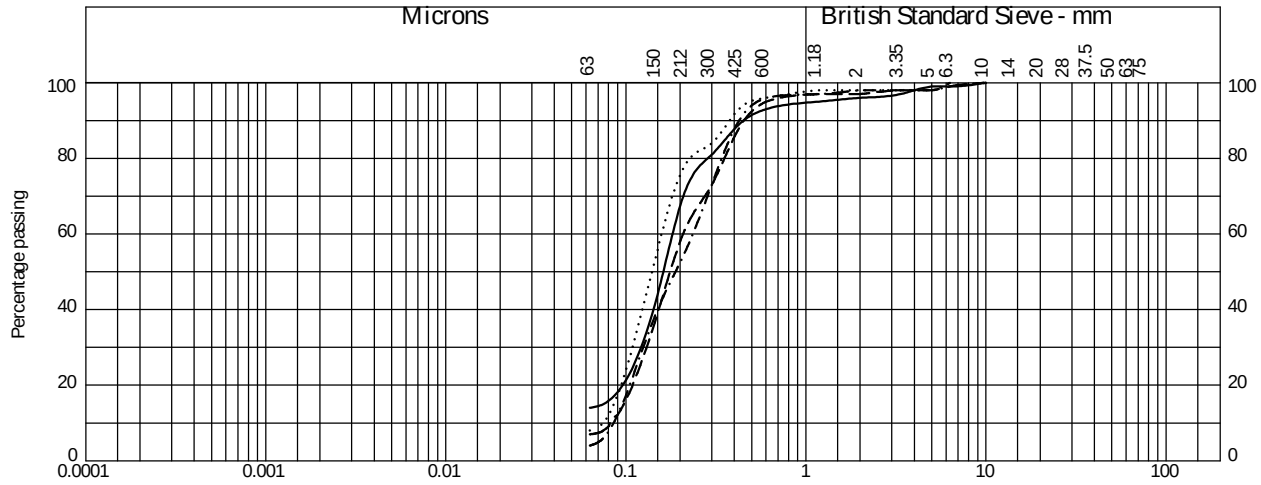
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-10
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-10
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	10-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	12-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A45	SPT5	134.1	———	SL. GRAVELLY, SILTY, M-F SAND (S-M)	4.00
BH-A45	SPT7	139.0	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	6.00
BH-A45	SPT8	134.9	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-A46	SPT2	134.7	– . – . –	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00

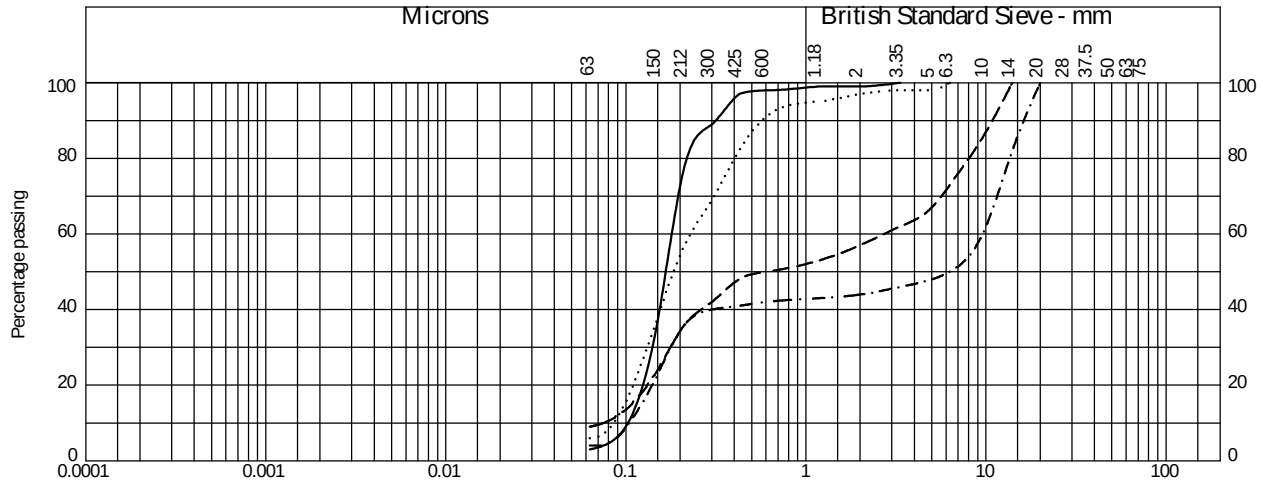
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-10
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-10
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	10-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	12-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A46	SPT3	131.3	———	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	4.00
BH-A46	SPT7	139.3	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-A47	SPT4	138.6	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A47	SPT7	131.8	– · – · –	V. GRAVELLY, SL. SILTY, FINE SAND (S-M)	6.50

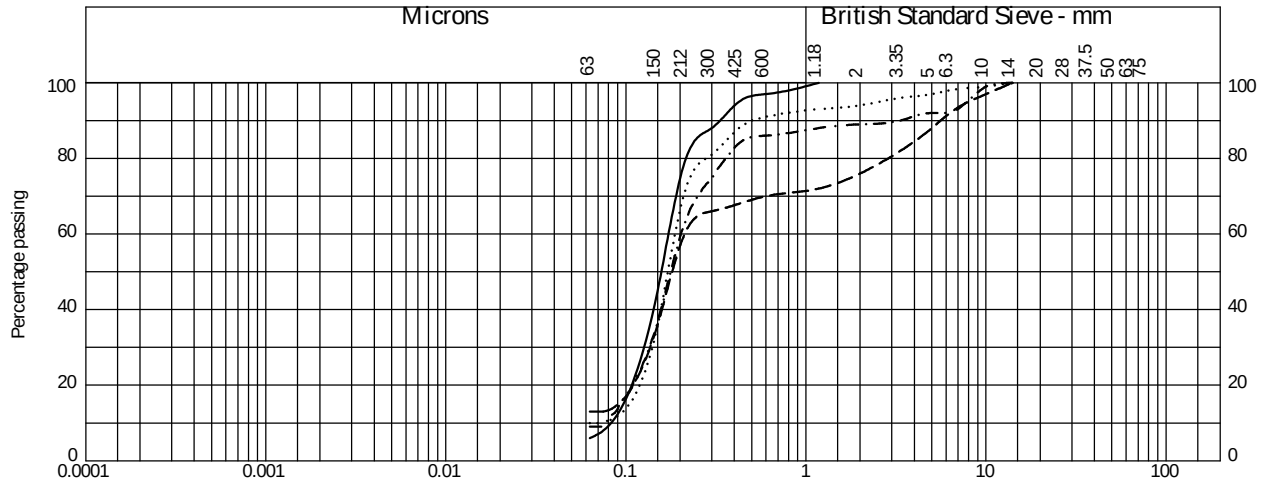
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-10
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-10
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	10-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	12-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B28	SPT2	126.6	———	SILTY, FINE SAND (S-M)	1.00
BH-B28	SPT7	130.5	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-B29	SPT2	136.4	.....	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B29	SPT3	139.5	– . – . –	GRAVELLY, SILTY, M-F SAND (S-M)	2.00

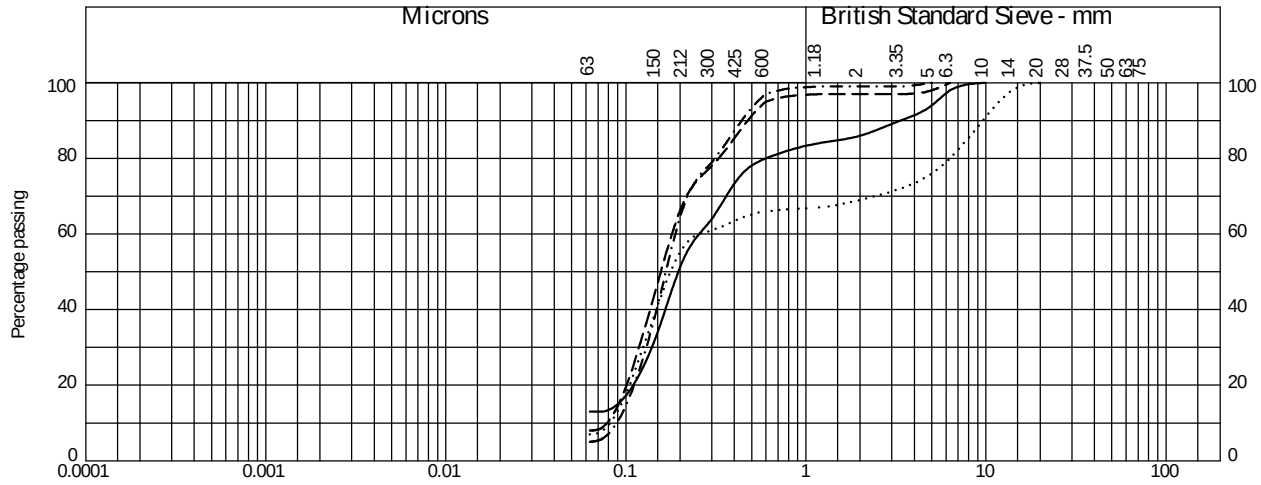
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-10
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-10
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 10)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	10-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	12-16/08/2015
Test Method Var	NIL	Tested By	ROJAN/ BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-B29	SPT7	135.8	———	GRAVELLY, SILTY, M-F SAND (S-M)	6.00
BH-B30	SPT2	136.0	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-B30	SPT6	130.7	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-B55	SPT2	137.8	– · – · –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00

The results relate only to the samples tested.

Table C-1 (1)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA45	**Sampling Date**	06/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	99
3.35	98
2	98
1.18	97
0.600	95
0.425	90
0.300	81
0.212	70
0.15	44
0.075	11
0.063	10
0.028	9
0.018	6
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

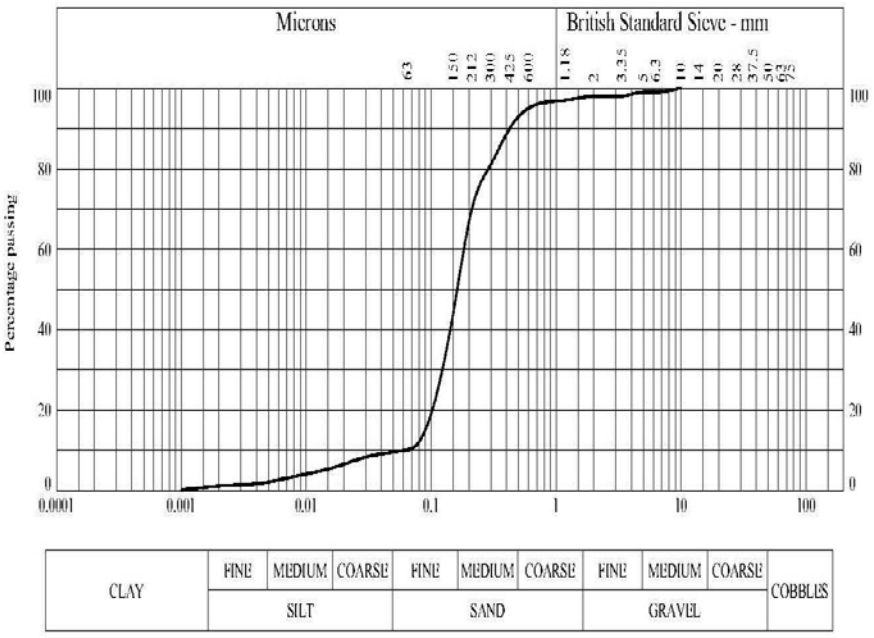


Table C1 (2)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA45	**Sampling Date**	06/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	99
3.35	97
2	96
1.18	95
0.600	93
0.425	89
0.300	81
0.212	71
0.15	44
0.075	15
0.063	14
0.028	13
0.018	12
0.010	10
0.007	8
0.005	6
0.002	2
0.001	0

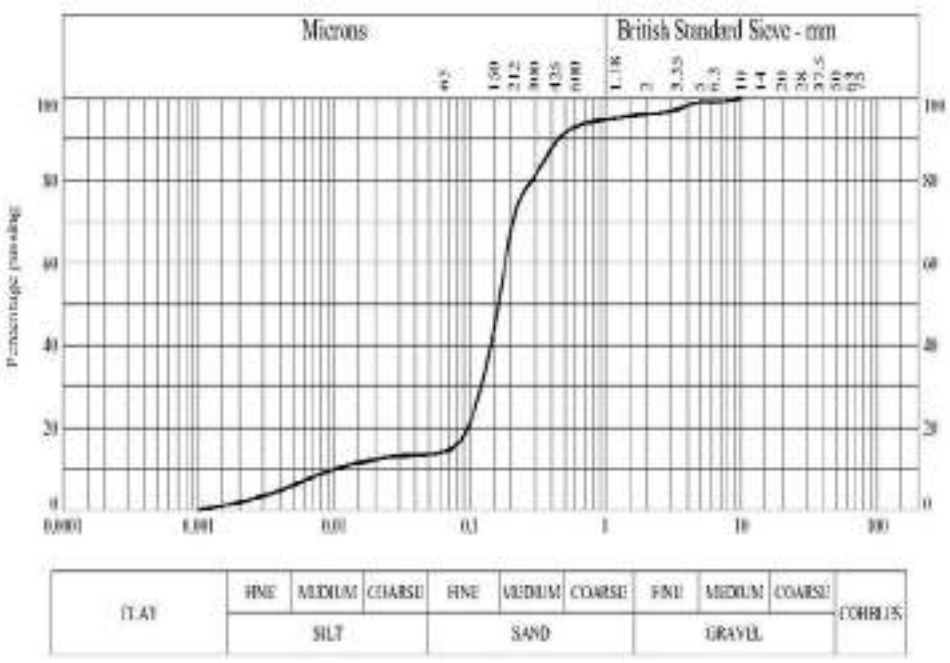


Table C1 (3)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA45	**Sampling Date**	06/08/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	98
3.35	98
2	97
1.18	97
0.600	95
0.425	88
0.300	73
0.212	61
0.15	39
0.075	8
0.063	7
0.028	6
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

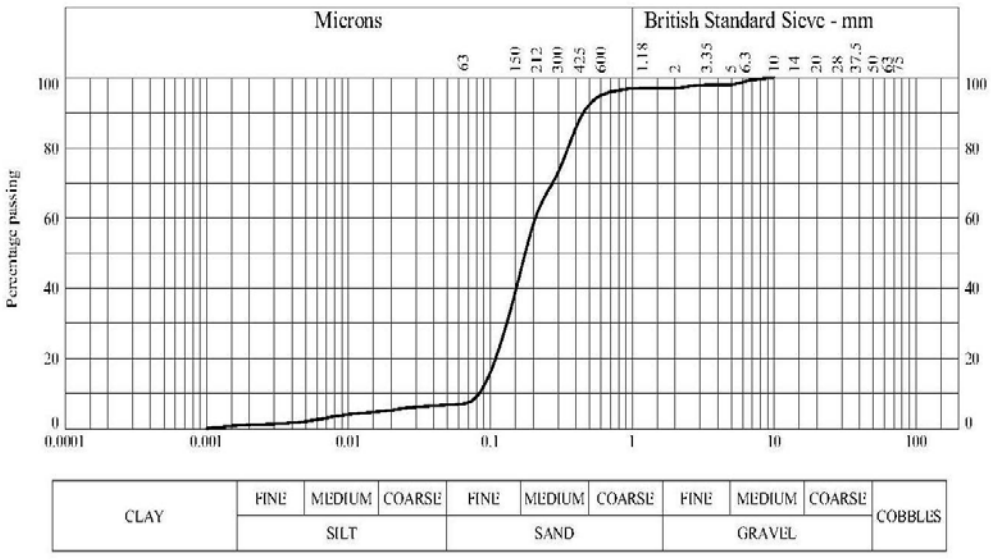


Table C1 (4)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA45	**Sampling Date**	06/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	98
3.35	98
2	98
1.18	98
0.600	96
0.425	93
0.300	84
0.212	78
0.15	56
0.075	10
0.063	9
0.028	8
0.018	7
0.010	6
0.007	5
0.005	4
0.002	2
0.001	0

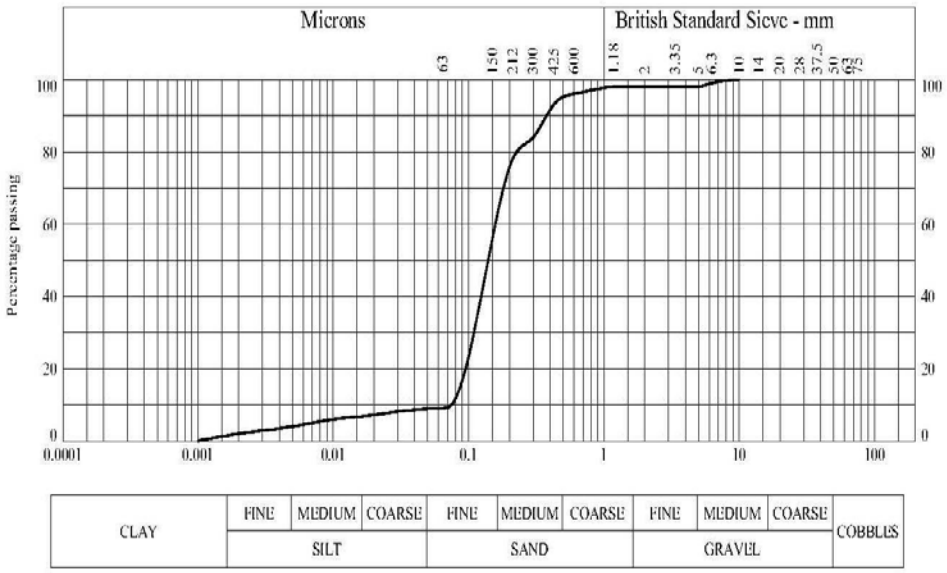
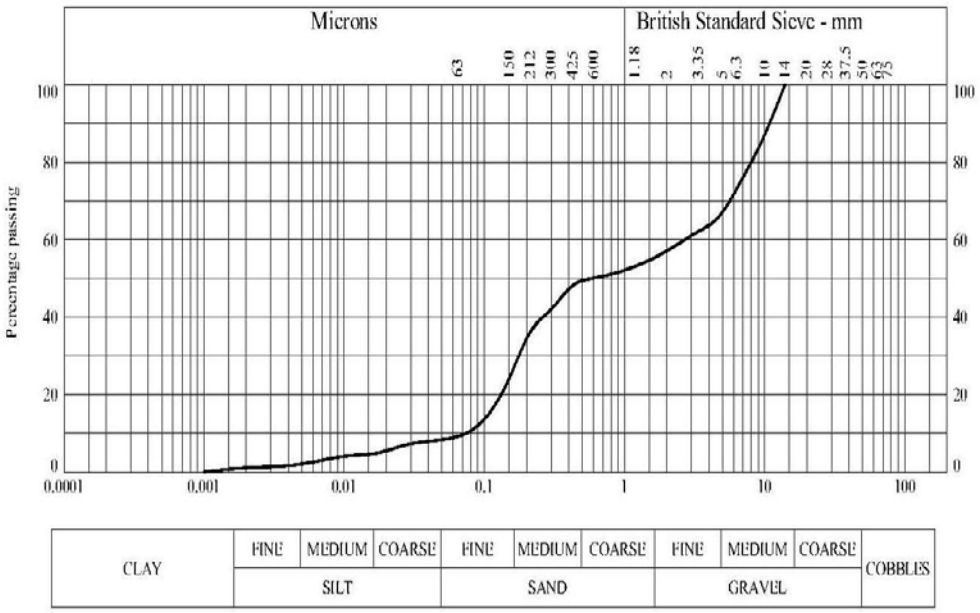


Table C1 (5)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA46	**Sampling Date**	06/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	87
6.3	73
5	67
3.35	62
2	57
1.18	53
0.600	50
0.425	48
0.300	42
0.212	36
0.15	24
0.075	10
0.063	9
0.028	7
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0



MATRIX LABORATORY L.L.C.

Table C1 (6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BHA47	**Sampling Date**	06/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	98
2	97
1.18	95
0.600	91
0.425	82
0.300	69
0.212	57
0.15	38
0.075	7
0.063	6
0.028	5
0.018	4
0.010	3
0.007	3
0.005	2
0.002	1
0.001	0

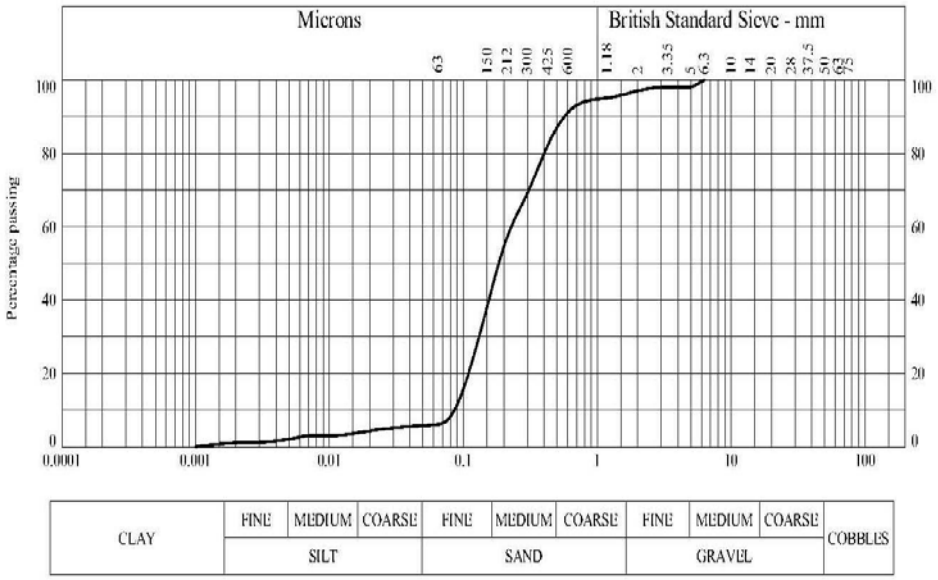


Table C1 (7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B28	**Sampling Date**	04/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	97
0.425	95
0.300	88
0.212	79
0.15	45
0.075	40
0.063	30
0.028	20
0.018	15
0.010	10
0.007	9
0.005	8
0.002	5
0.001	0

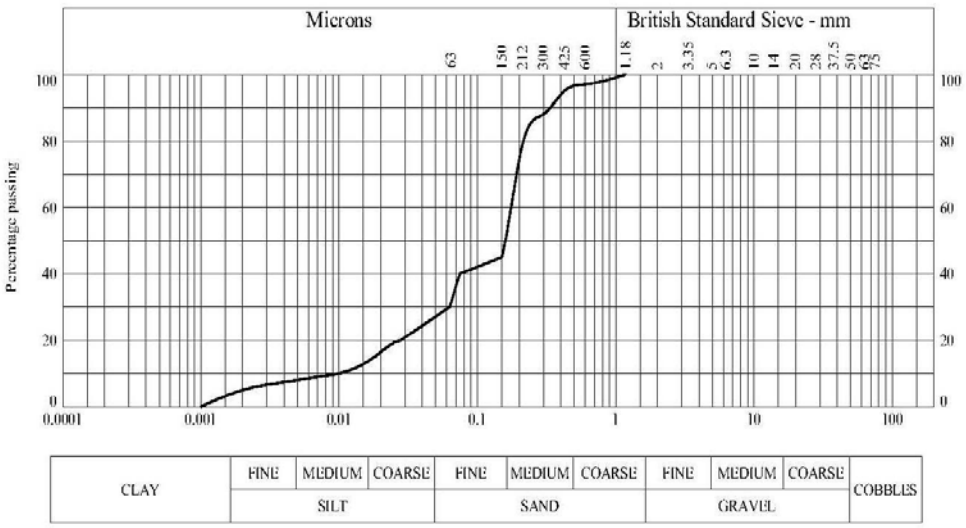


Table C1 (8)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B28	**Sampling Date**	04/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	97
6.3	92
5	88
3.35	82
2	76
1.18	72
0.600	70
0.425	68
0.300	66
0.212	60
0.15	36
0.075	13
0.063	11
0.028	9
0.018	8
0.010	7
0.007	6
0.005	5
0.002	2
0.001	0

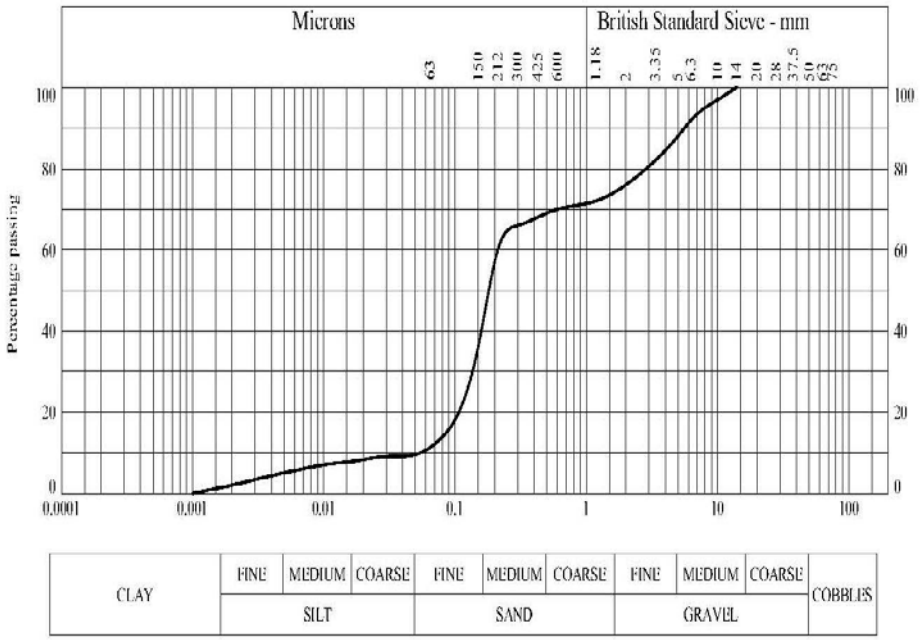


Table C1 (9)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B29	**Sampling Date**	05/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	98
5	97
3.35	96
2	94
1.18	93
0.600	91
0.425	88
0.300	81
0.212	71
0.15	36
0.075	10
0.063	9
0.028	7
0.018	6
0.010	5
0.007	4
0.005	3
0.002	1
0.001	0

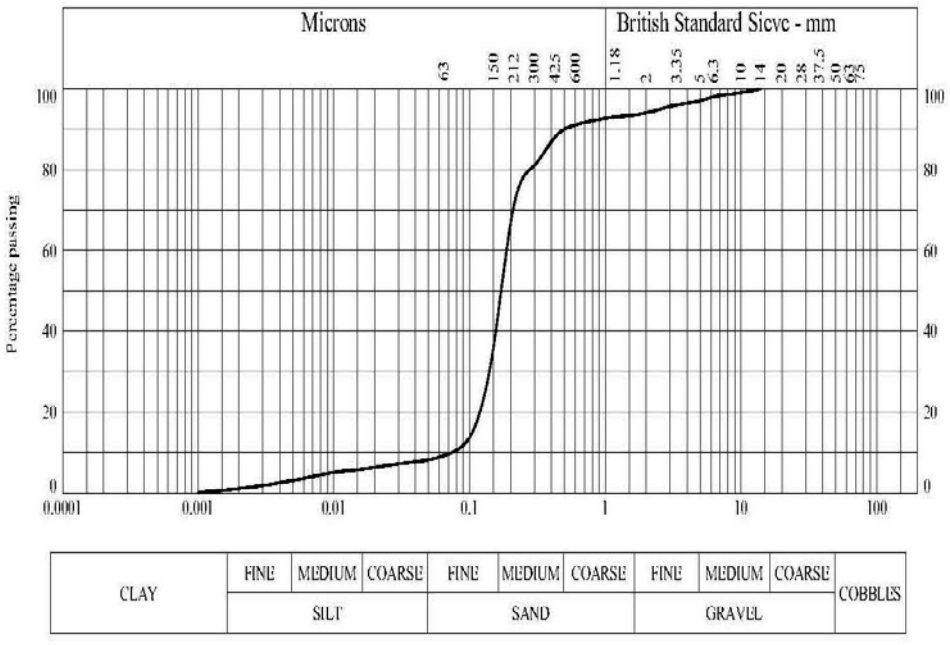


Table C1 (10)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B29	**Sampling Date**	05/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	92
5	92
3.35	90
2	89
1.18	88
0.600	86
0.425	84
0.300	75
0.212	63
0.15	37
0.075	9
0.063	9
0.028	8
0.018	7
0.010	6
0.007	4
0.005	3
0.002	1
0.001	0

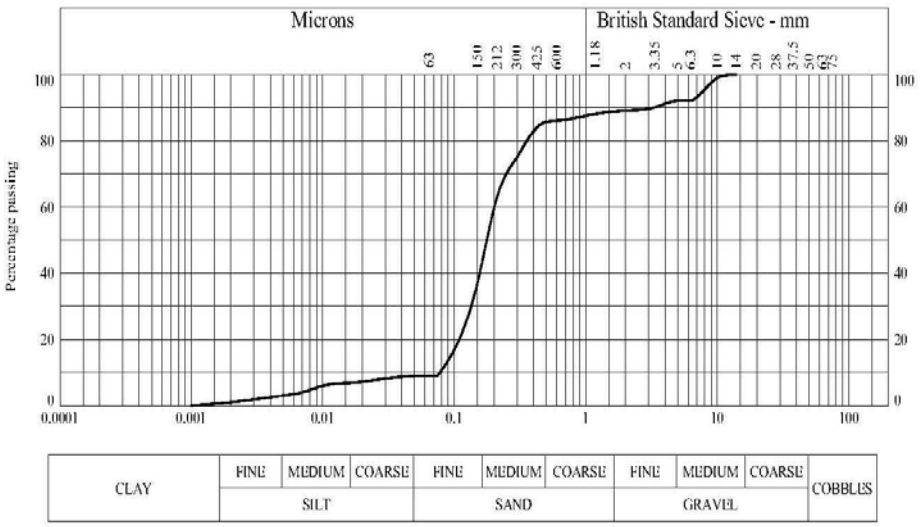


Table C1 (11)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B29	**Sampling Date**	05/08/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	94
3.35	90
2	86
1.18	84
0.600	80
0.425	75
0.300	64
0.212	54
0.15	34
0.075	13
0.063	12
0.028	8
0.018	7
0.010	5
0.007	4
0.005	3
0.002	1
0.001	0

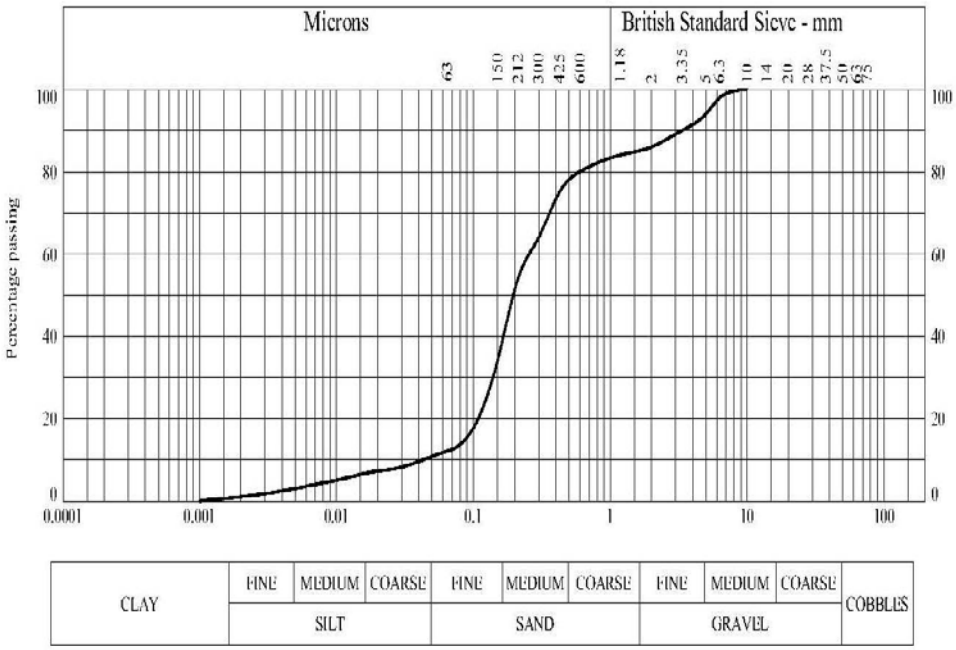


Table C1 (12)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B30	**Sampling Date**	06/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	98
3.35	97
2	97
1.18	97
0.600	95
0.425	87
0.300	78
0.212	69
0.15	47
0.075	9
0.063	8
0.028	7
0.018	6
0.010	5
0.007	4
0.005	3
0.002	1
0.001	0

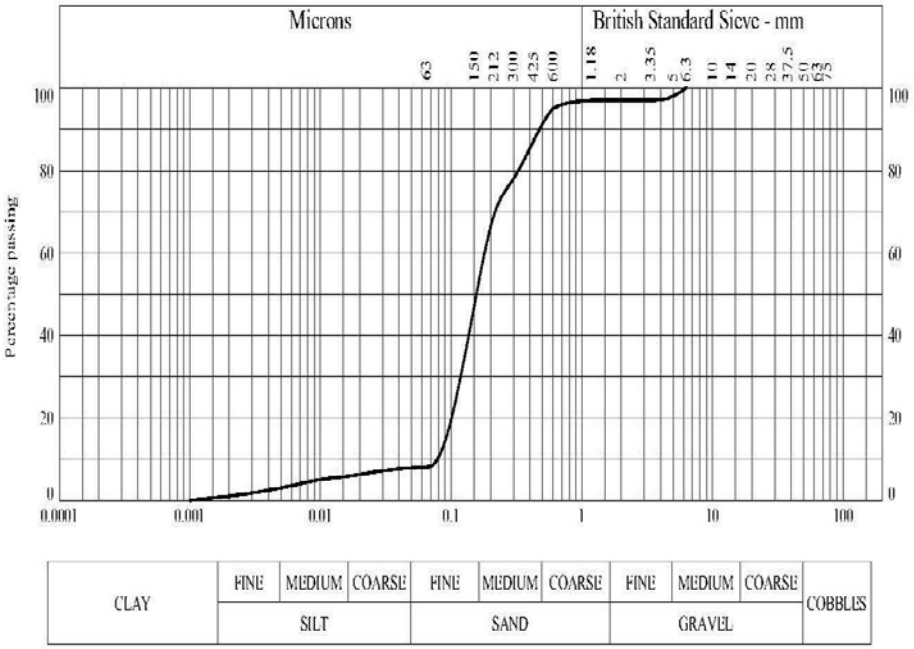


Table C1 (13)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B30	**Sampling Date**	06/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	91
6.3	80
5	76
3.35	72
2	69
1.18	67
0.600	66
0.425	64
0.300	61
0.212	57
0.15	41
0.075	8
0.063	7
0.028	6
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

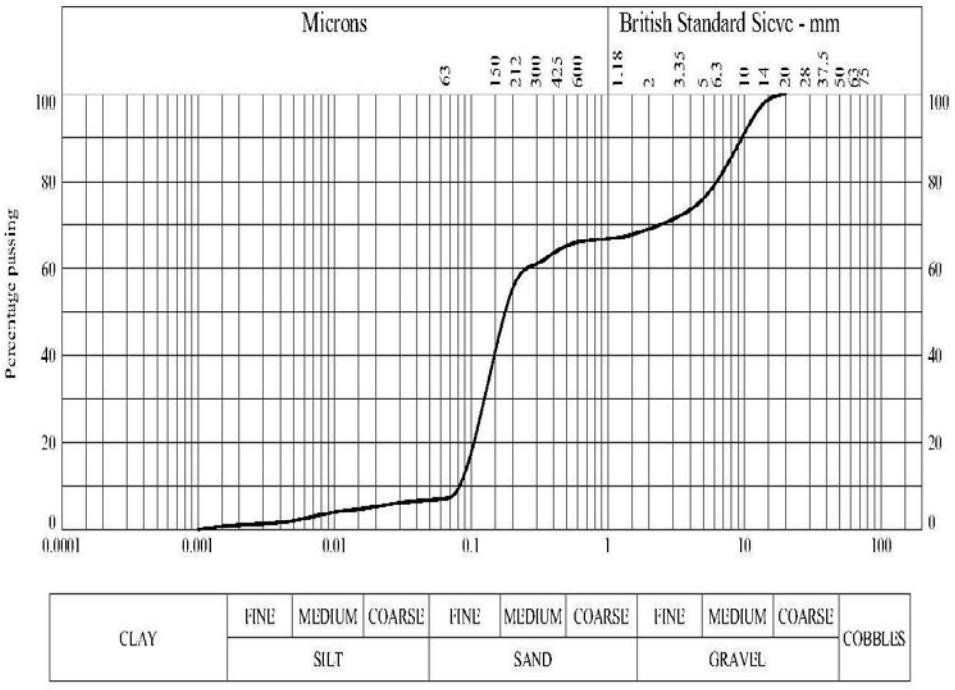


Table C1 (14)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-10
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-B55	**Sampling Date**	06/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	99
1.18	99
0.600	97
0.425	89
0.300	79
0.212	68
0.15	41
0.075	6
0.063	5
0.028	5
0.018	4
0.010	3
0.007	3
0.005	2
0.002	1
0.001	0

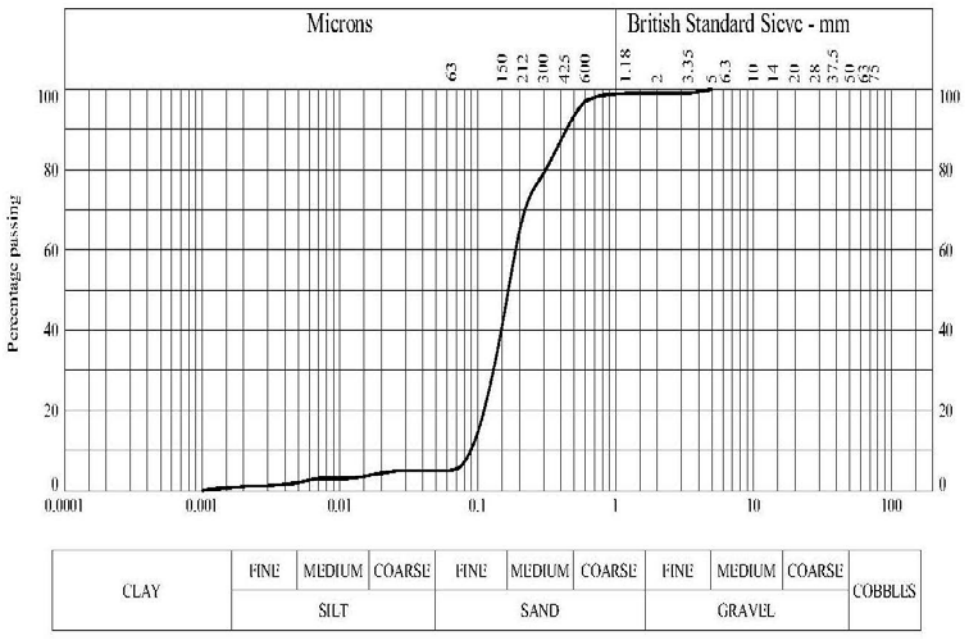


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	02-12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	02-13/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	04-06/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A43	1.00	12.0
BH-A43	3.00	8.5
BH-A43	4.00	9.3
BH-A43	6.0	14.0
BH-A45	2.00	7.4
BH-A45	3.00	12.0
BH-A45	5.00	11.0
BH-A45	6.50	8.7
BH-A45	9.00	6.8
BH-A46	1.00	6.1
BH-A46	3.00	7.4
BH-A46	5.00	10.0
BH-A46	6.50	9.9
BH-A47	2.00	12.0
BH-A47	3.00	15.0

Borehole No.	Depth	Moisture Content (%)
BH-A47	5.00	14.0
BH-A47	6.50	22.0
BH-B28	1.00	8.8
BH-B28	3.00	7.9
BH-B28	4.00	11.0
BH-B28	6.50	18.0
BH-B29	1.00	14.0
BH-B29	3.00	9.7
BH-B29	4.00	10.0
BH-B29	5.00	9.6
BH-B29	6.50	14.0
BH-B30	1.00	8.0
BH-B30	3.00	7.3
BH-B30	5.00	17.0
BH-B30	6.50	14.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	09/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	10/08/2015
Sample Description	Soil	**Sampling Date**	06/08/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-A47	1.00	2.59

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	16-17/08/2015
Sample Description	SAND	**Sampling Date**	04-06/08/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-A43	2.00	100	0.2
BH-B28	2.00	100	0.1

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	06/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	08-09/08/2015
Sample Description	ROCK CORE	**Date Tested**	10-11/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	**Sample Depth (m)**	**Carbonate Content (% by wt.)**	
		as CO_2	**as $CaCO_3$**
BH-A46	6.50	28.61	65.15
BH-B30	6.70	30.29	68.98

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	14-16/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	14-17/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	04-08/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A43	7.25	1	0.55	Vertical
BH-A43	16.00	2	0.25	Vertical
BH-A43	17.40	3	0.71	Vertical
BH-A45	14.69	4	0.19	Vertical
BH-A46	8.60	5	0.34	Vertical
BH-A46	11.50	6	0.28	Vertical
BH-A47	9.75	7	0.12	Vertical
BH-A47	11.25	8	0.82	Vertical
BH-B28	7.70	9	0.41	Vertical
BH-B28	10.70	10	0.36	Vertical
BH-B28	28.62	11	0.63	Vertical
BH-B29	6.25	12	0.18	Vertical
BH-B29	13.50	13	0.66	Vertical
BH-B29	27.00	14	0.21	Vertical
BH-B30	10.60	15	0.38	Vertical
BH-B30	14.00	16	0.44	Vertical
BH-B30	21.50	17	0.72	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-B55	7.70	18	0.29	Vertical
BH-B55	10.70	19	0.68	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-10
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	14-16/08/2015
Sample Source	Site	**Date Tested**	14-17/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin/ Rojan

Sample Details:			Dimensions:		Results:						
BH	**Depth**	**Sample**	**Diameter**	**Height**	**Compresive Strength**	**Strain at Failure**	**Modulus of Elasticity**	**Moisture Content**	**Wet Density**	**Sketch**	**Rock Description**
NO.	**(m)**	**No.**	**(cm)**	**(cm)**	**(N/mm^2)**	**(%)**	**(Mpa)**	**(%)**	**(Mg/m^3)**		
BH-B30	34.72	1	7.50	15.10	3.7	1.59	230.6	13.70	1.73	Figure C-01	CONG. SILTSTONE
BH-A43	12.80	2	7.50	15.10	4.0	1.72	231.0	8.00	1.69	Figure C-02	CAL. SANDSTONE
BH-A43	14.00	3	7.50	15.00	4.6	1.53	299.6	11.40	1.81	Figure C-03	CAL. SANDSTONE
BH-A45	16.00	4	7.40	14.80	6.8	2.30	295.7	14.50	1.94	Figure C-04	CAL. SANDSTONE
BH-A46	8.30	5	7.50	15.10	1.2	1.59	73.7	10.60	1.43	Figure C-05	CAL. SANDSTONE
BH-A46	11.00	6	7.50	15.10	4.3	1.39	311.4	18.80	2.01	Figure C-06	CAL. SANDSTONE
BH-A47	14.50	7	7.50	15.00	4.8	1.67	289.7	13.60	1.98	Figure C-07	CAL. SANDSTONE
BH-B28	6.70	8	7.50	15.00	6.4	2.13	298.9	11.90	2.07	Figure C-08	CAL. SANDSTONE
BH-B28	38.30	9	7.50	15.00	8.4	2.73	307.8	9.30	2.23	Figure C-09	CONG. SANDSTONE
BH-B30	13.50	10	7.50	15.00	3.3	1.27	262.0	18.40	2.07	Figure C-10	CAL. SANDSTONE
BH-B55	6.70	11	7.50	15.10	2.6	0.73	354.6	17.50	2.28	Figure C-11	CAL. SANDSTONE
BH-B55	12.20	12	7.40	14.80	4.7	1.55	303.8	18.20	1.88	Figure C-12	CAL. SANDSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

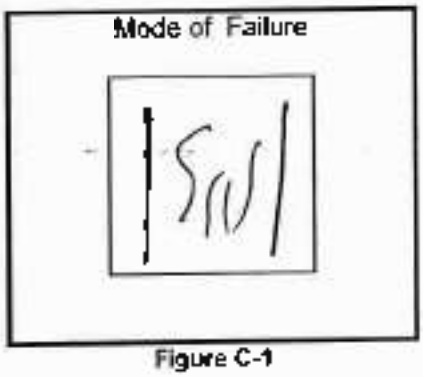


Figure C-1

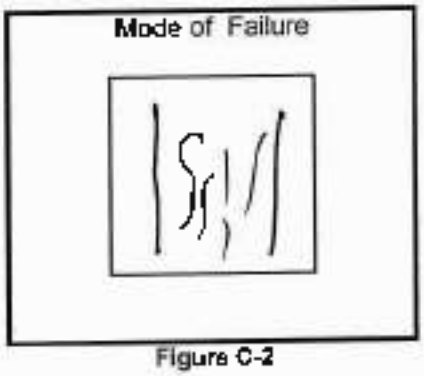


Figure C-2

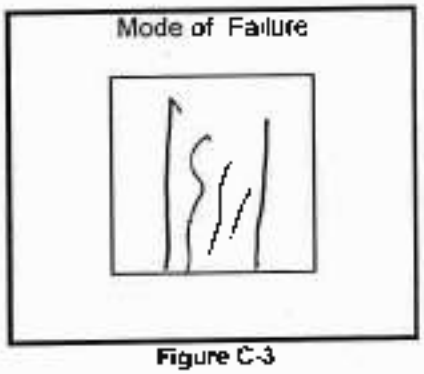


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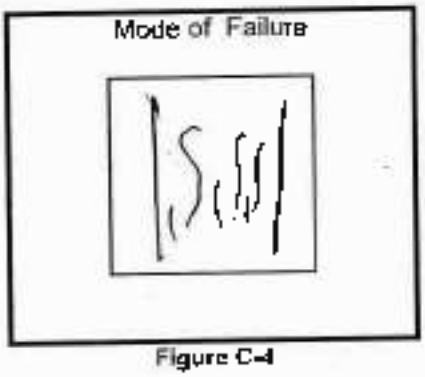


Figure C-4

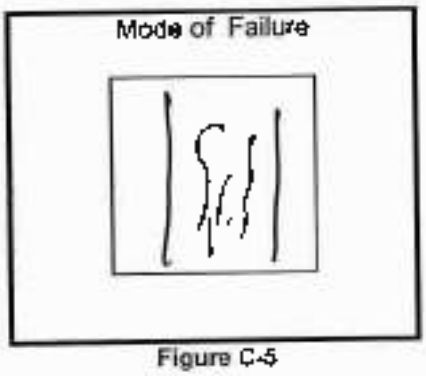


Figure C-5

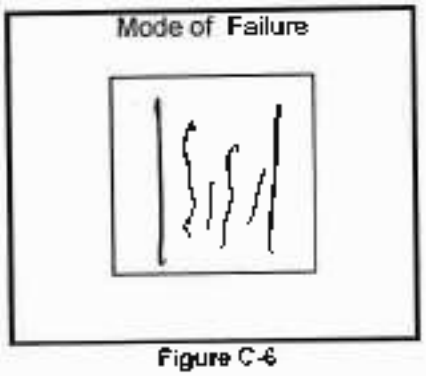


Figure C-6

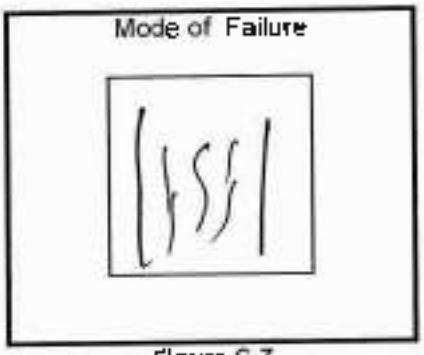


Figure C-7

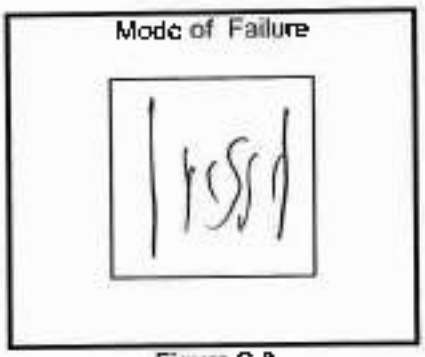


Figure C-8

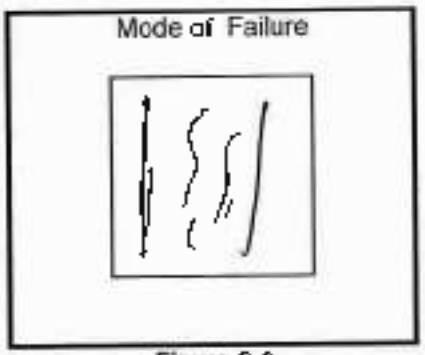


Figure C-9



Figure C-10

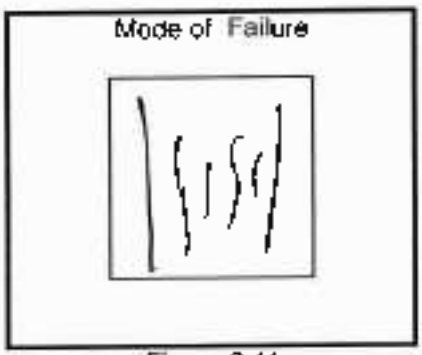


Figure C-11

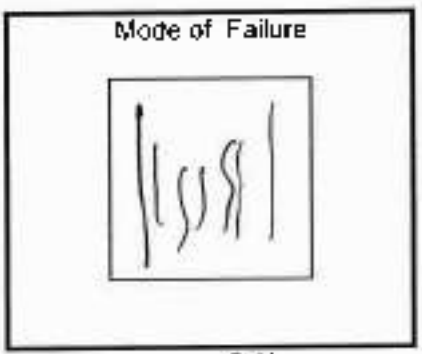
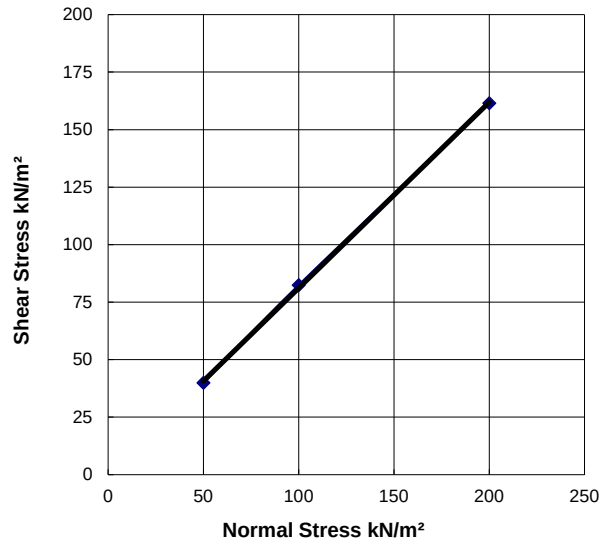


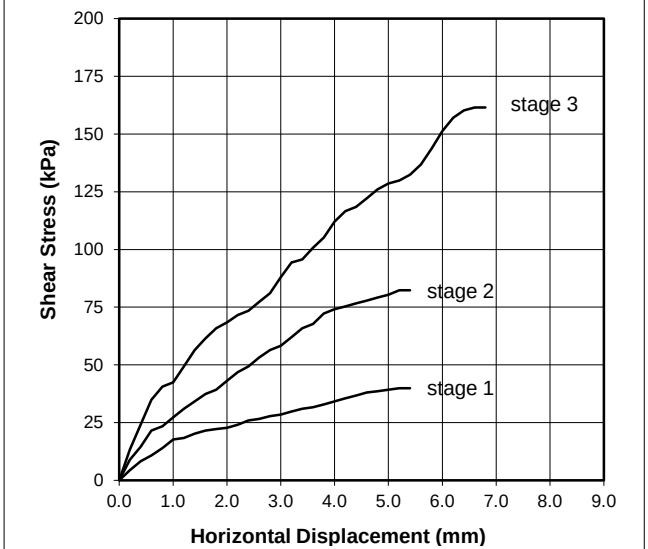
Figure C-12

MATRIX LABORATORY L.L.C.

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A43	**Date Tested**	11-12/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN



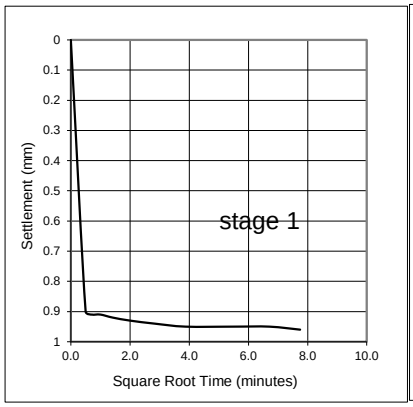


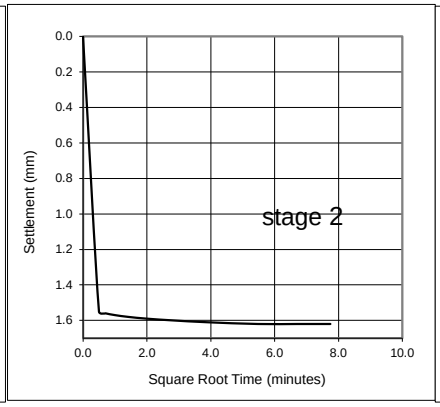
Shear Strength Parameters
Apparent Cohesion = 0.0 kN/m²
Angle of Shearing Resistance = 39.00º

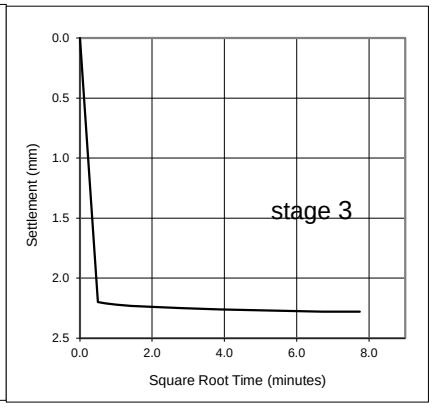
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A43	**Date Tested**	11-12/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

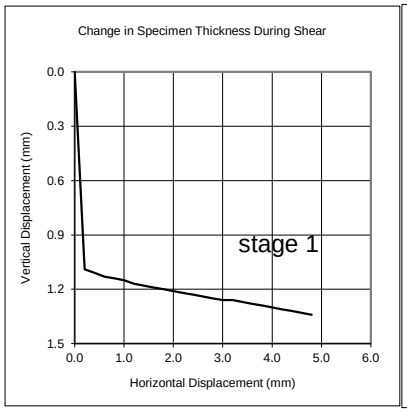
Consolidation Stage

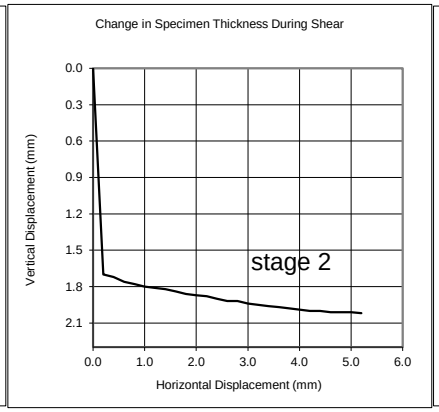


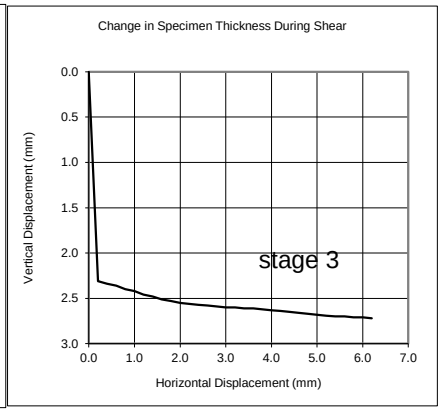




Shearing Stage



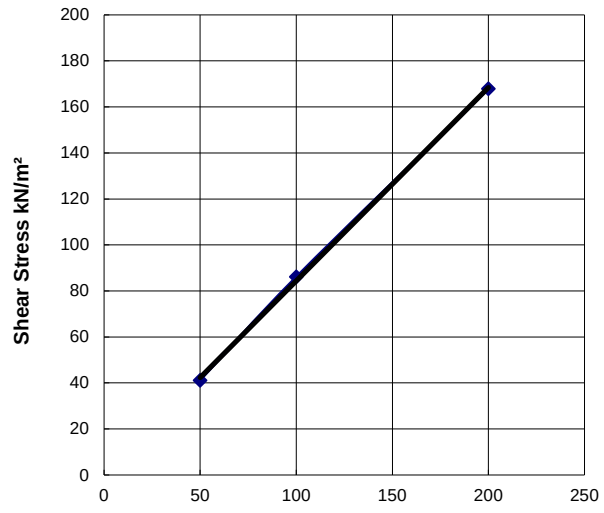


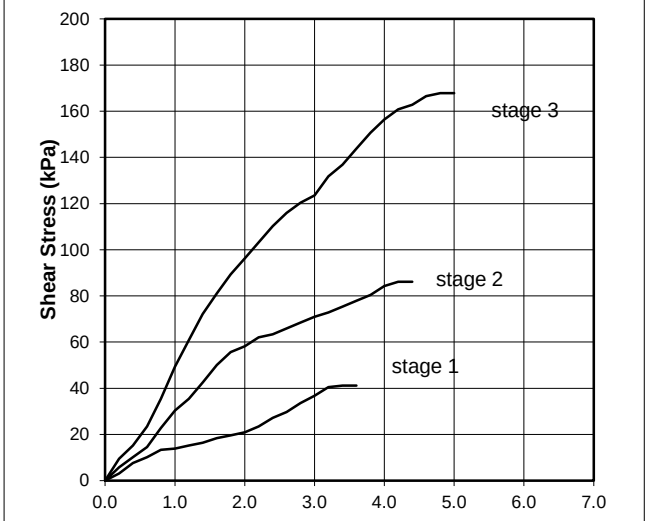


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A47	**Date Tested**	11-12/08/2015
Depth (m)	2.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

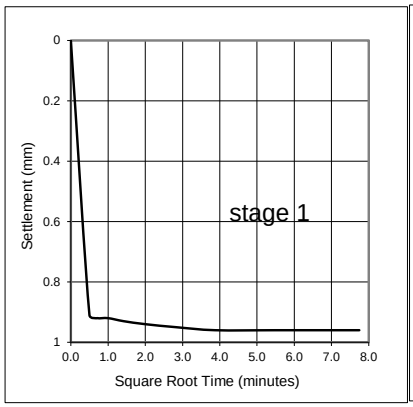
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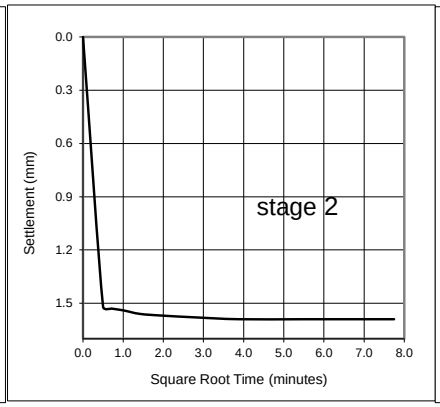
Angle of Shearing Resistance = 40.0º

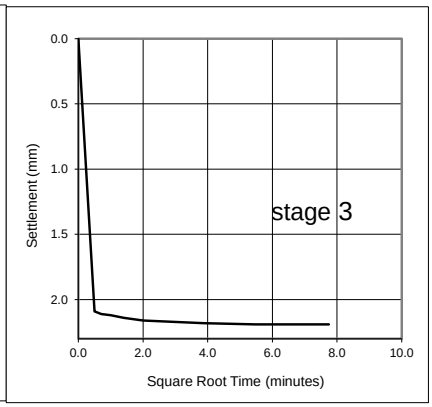
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A47	**Date Tested**	11-12/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.73
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

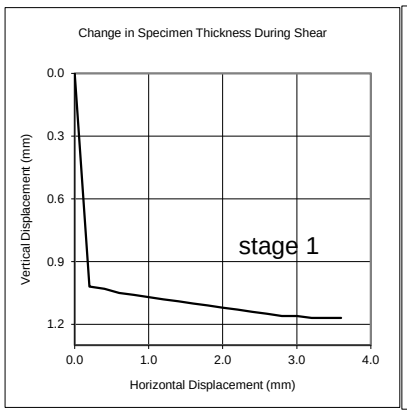
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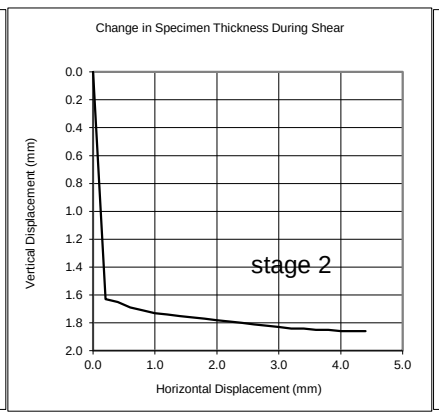






Shearing Stage





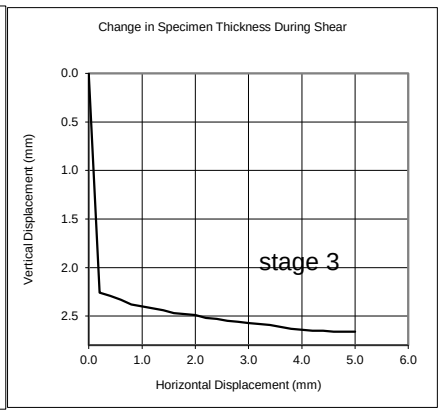
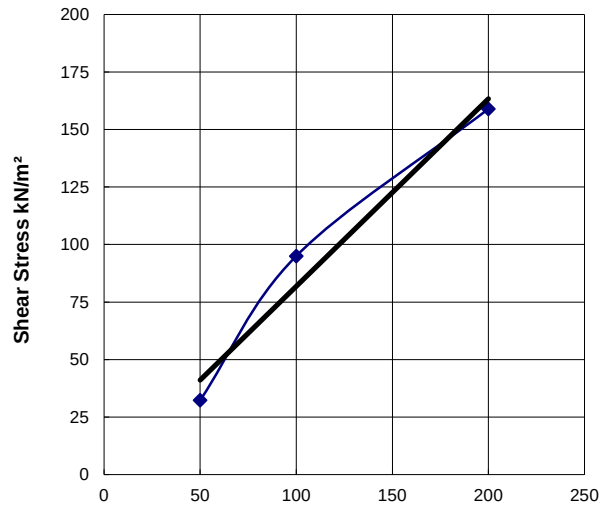
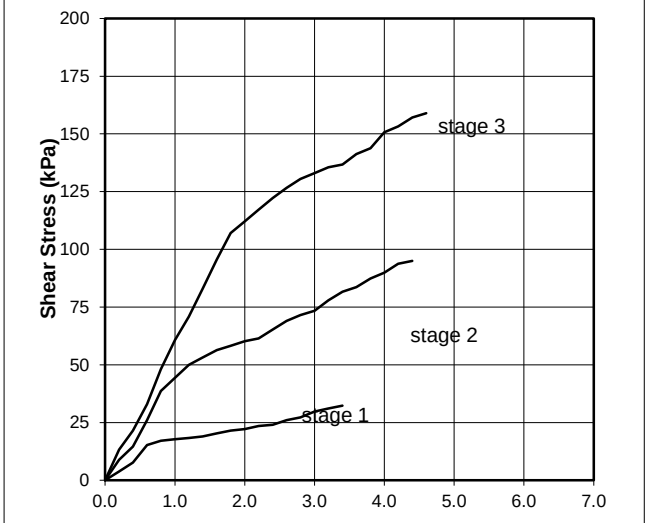


TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10

Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B29	**Date Tested**	10-11/08/2015
Depth (m)	2.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion =0.0 kN/m²

Angle of Shearing Resistance = 39.2º

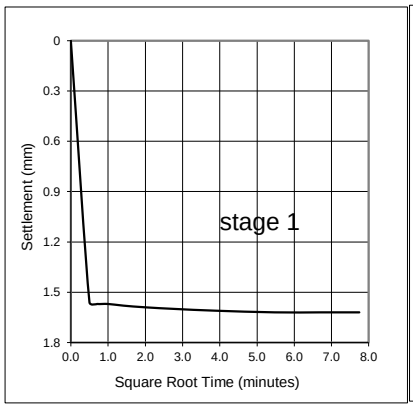
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

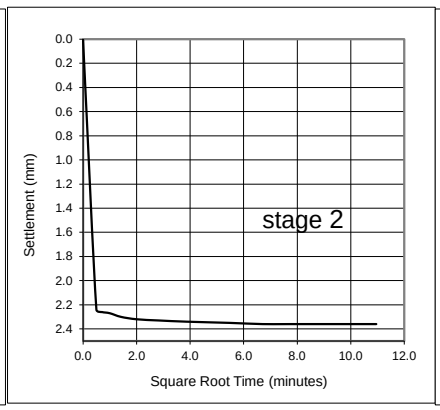
Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10

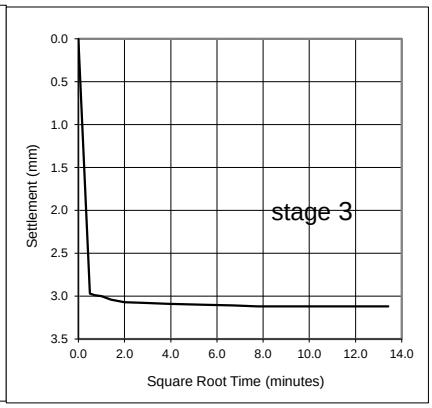
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B29	**Date Tested**	10-11/08/2015
Depth (m)	2.00		

Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

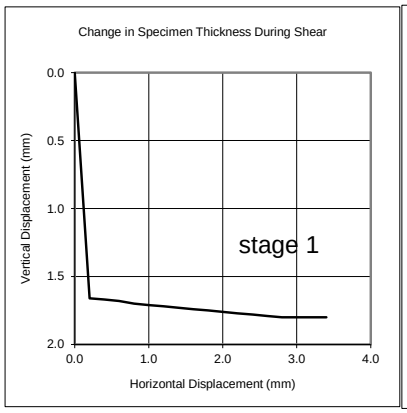
Consolidation Stage

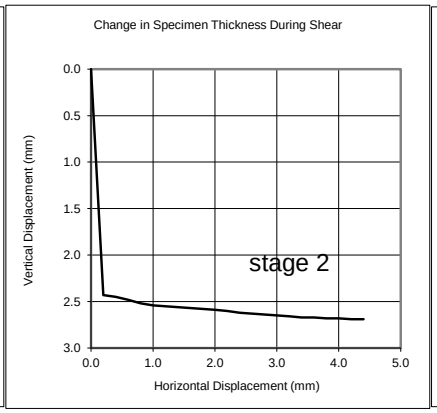






Shearing Stage





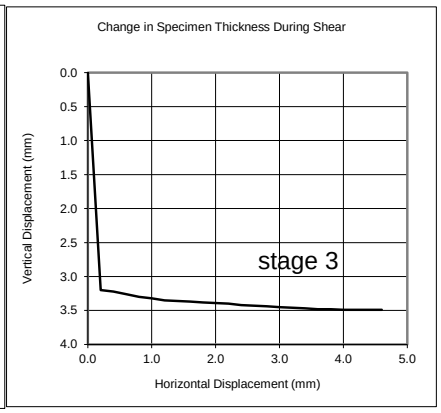
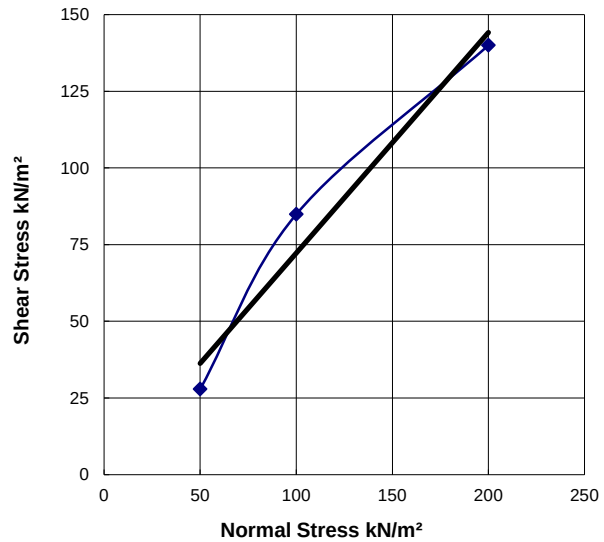
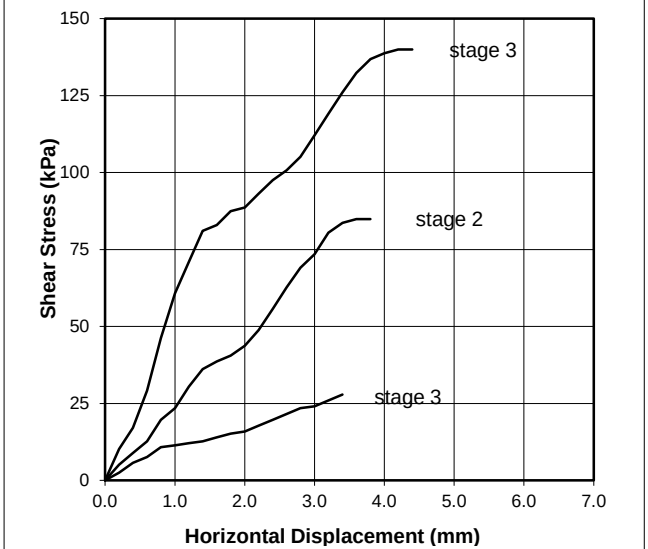


TABLE C8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B55	**Date Tested**	13-15/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

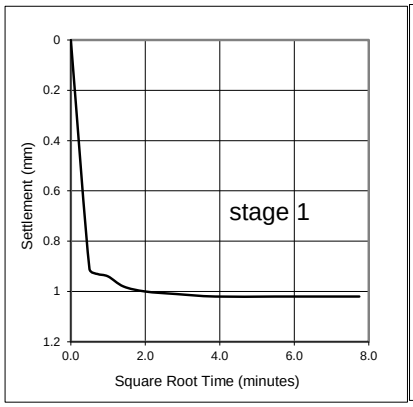
Apparent Cohesion = 0.0 kN/m²

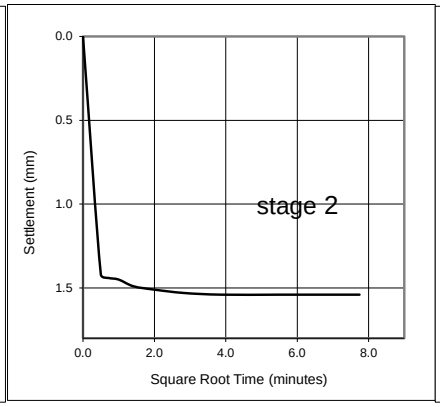
Angle of Shearing Resistance = 35.8º

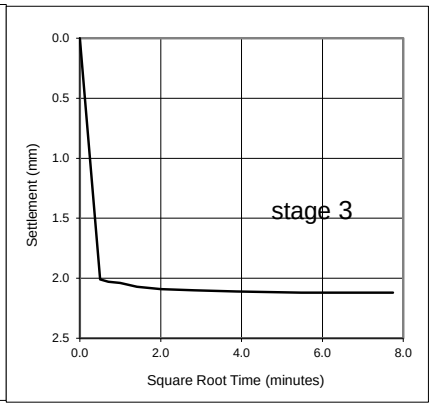
TABLE C8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-10
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219784, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-10
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-B55	**Date Tested**	13-15/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.69
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

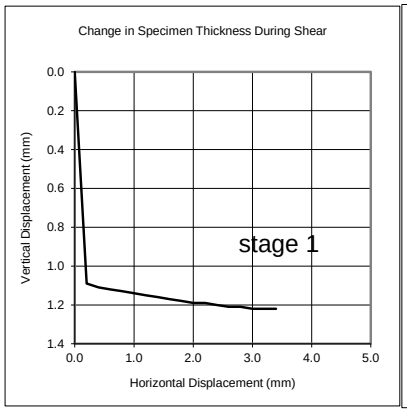
Consolidation Stage

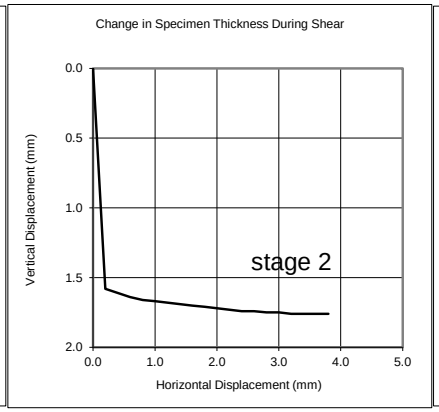


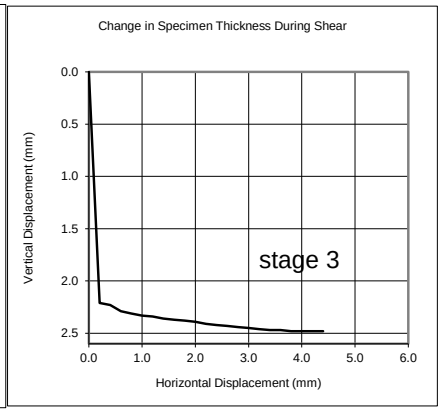




Shearing Stage







APPENDIX C11

LABORATORY TEST RESULTS (ZONE 11)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	07-08/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	10-13/08/2015
Test Method	See below	**Date Tested**	11-17/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A19	SPT4	3.00	0.1	0.01	8.3 @ 28°C	DS-1
BH-A20	SPT3	2.00	0.2	0.02	8.4 @ 28°C	DS-1
BH-A22	SPT5	4.00	1.3	0.01	8.4 @ 28°C	DS-2
BH-A24	SPT3	2.00	0.1	0.01	8.5 @ 28°C	DS-1
BH-A27	SPT3	2.00	0.1	0.02	8.3 @ 28°C	DS-1
BH-A28	SPT2	1.00	0.1	0.01	8.4 @ 28°C	DS-1
BH-A30	SPT2	1.00	0.2	0.04	8.6 @ 28°C	DS-1

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	07-08/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	09-12/08/2015
Test Method	See below	**Date Tested**	08-15/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A18	12.30	0.42	0.19	7.7 @ 27°C	DS-2
BH-A24	13.00	0.21	0.09	7.9 @ 28°C	DS-1
BH-A28	13.50	0.36	0.22	7.8 @ 28°C	DS-1

Test Method
Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation
Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

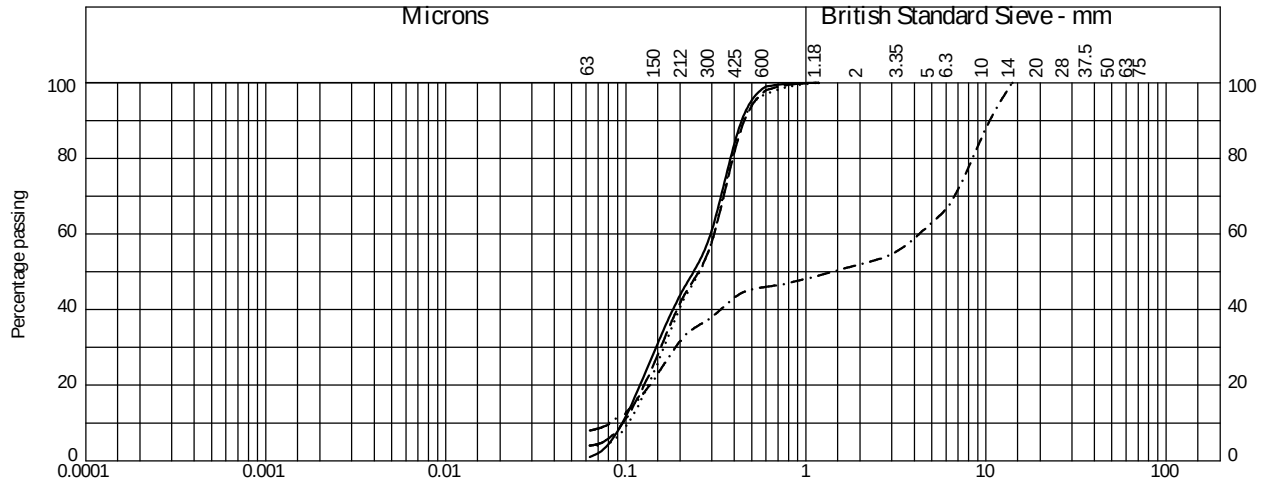
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A17	SPT2	133.4	———	SL. SILTY, F-M SAND (SP)	1.00
BH-A17	SPT4	133.9	– – –	SL. SILTY, F-M SAND (SP)	3.00
BH-A17	SPT7	135.5	.....	SL. SILTY, F-M SAND (SP)	8.00
BH-A17	SPT11	135.9	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	10.00

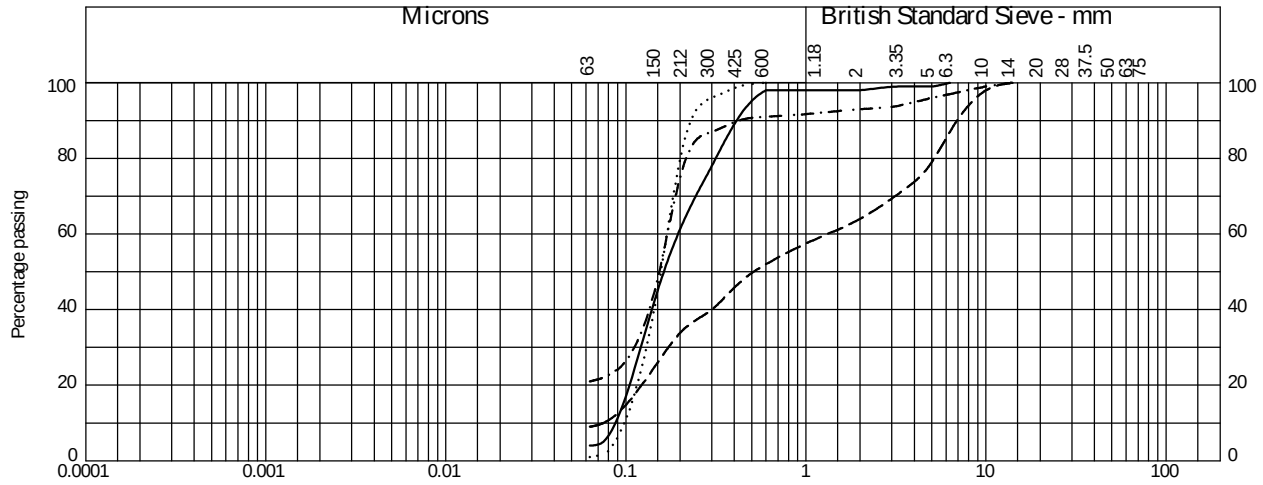
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A18	SPT2	128.2	———	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00
BH-A18	SPT5	130.4	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-A19	SPT2	136.8	.....	SL. SILTY, FINE SAND (SP)	1.00
BH-A19	SPT5	132.8	– · – · –	GRAVELLY, V. SILTY, FINE SAND (SM)	4.00

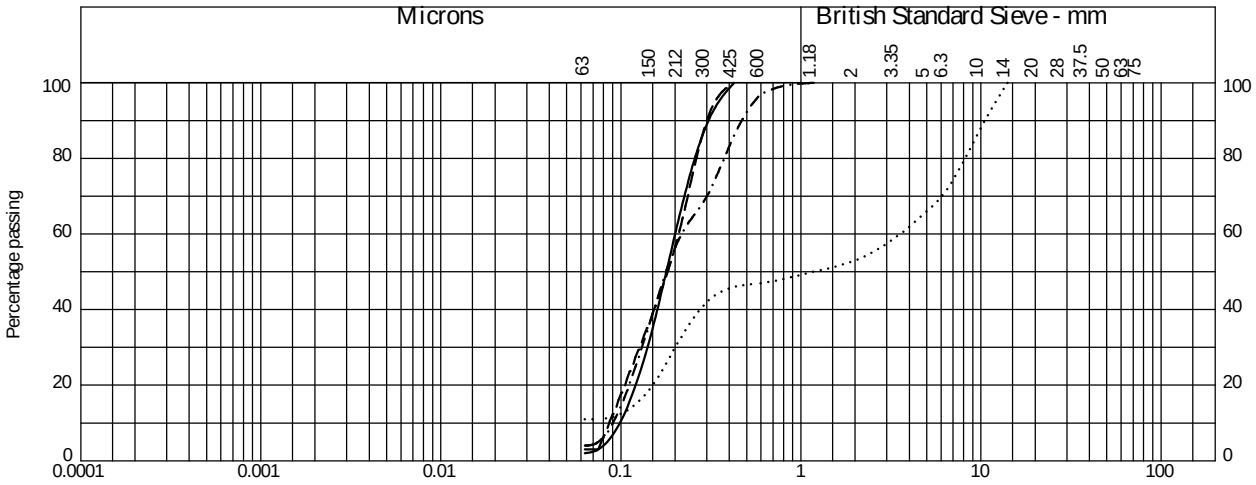
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A20	SPT2	120.2	———	SL. SILTY, M-F SAND (SP)	1.00
BH-A20	SPT6	130.5	– – –	SL. SILTY, M-F SAND (SP)	5.00
BH-A20	SPT9	140.9	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-A21	SPT2	131.6	– . – . –	SL. SILTY, M-F SAND (SP)	1.00

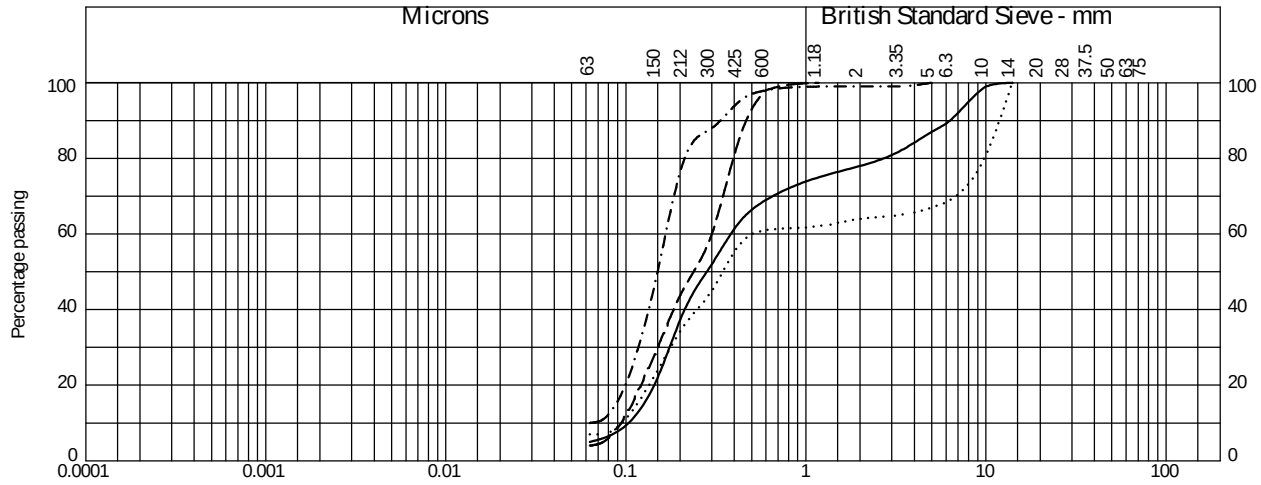
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A21	SPT6	138.9	———	V. GRAVELLY, SILTY, M-F SAND (S-M)	5.00
BH-A22	SPT2	133.5	– – –	SL. SILTY, F-M SAND (SP)	1.00
BH-A22	SPT4	132.3	.....	V. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A23	SPT2	122.3	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00

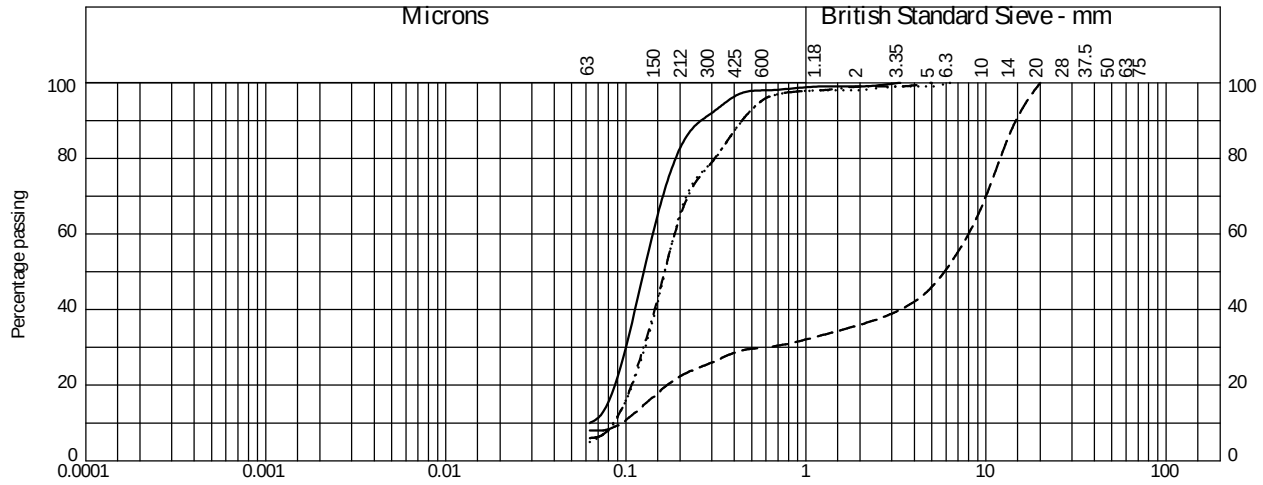
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A23	SPT4	123.9	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-A23	SPT6	136.5	– – –	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A24	SPT2	133.6	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A24	SPT9	135.5	– . – . –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	8.00

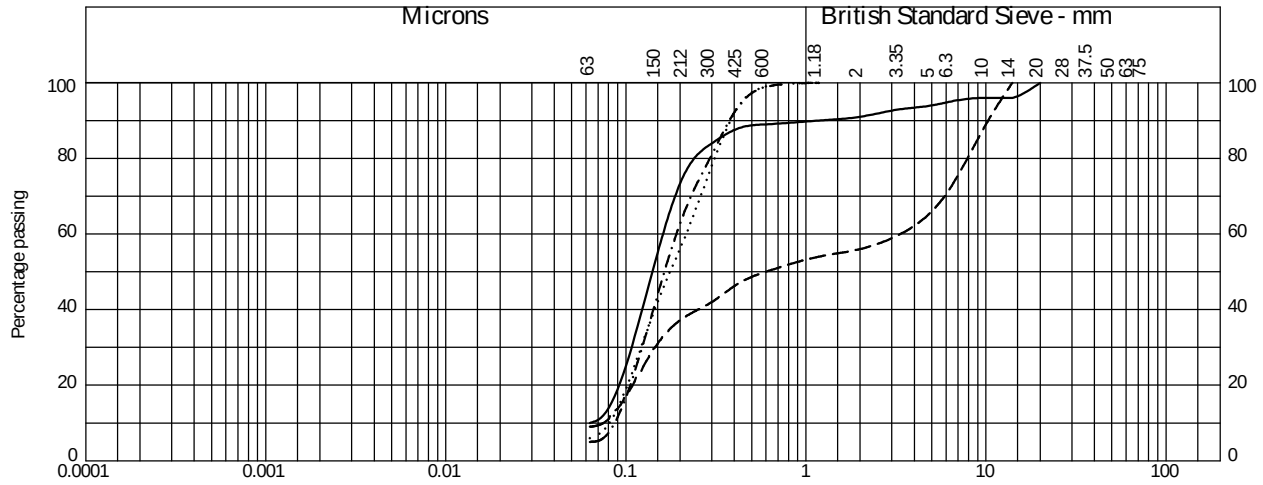
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A25	SPT3	135.5	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-A25	SPT6	134.0	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-A26	SPT3	138.8	.....	SILTY, M-F SAND (S-M)	2.00
BH-A26	SPT4	131.5	– . – . –	SILTY, M-F SAND (S-M)	3.00

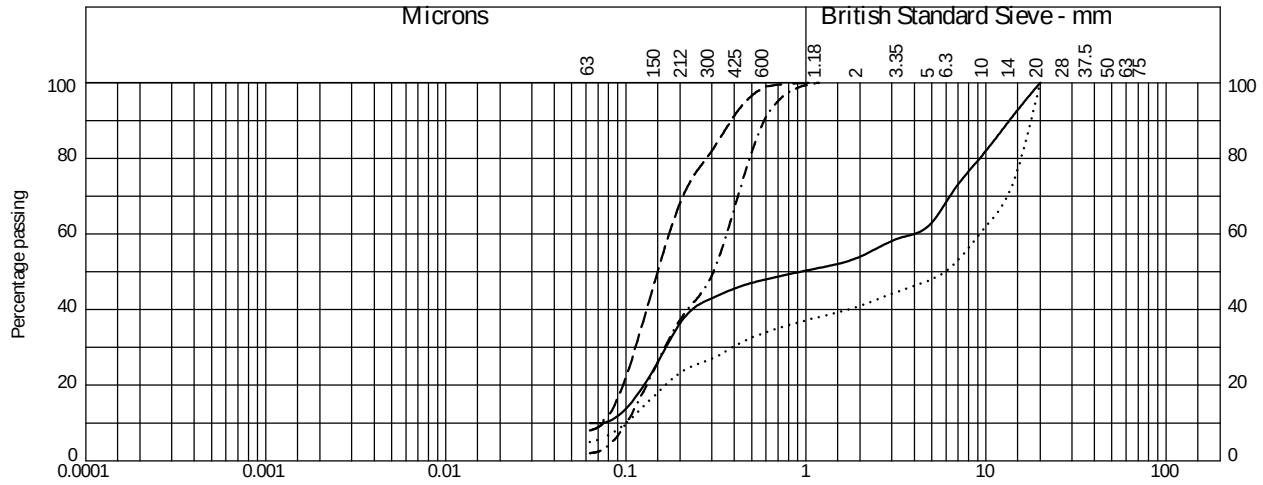
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A26	SPT6	137.9	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-A27	SPT2	135.1	– – –	SILTY, M-F SAND (S-M)	1.00
BH-A27	SPT6	135.6	.....	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A28	SPT3	136.2	– . – . –	SL. SILTY, F-M SAND (SP)	2.00

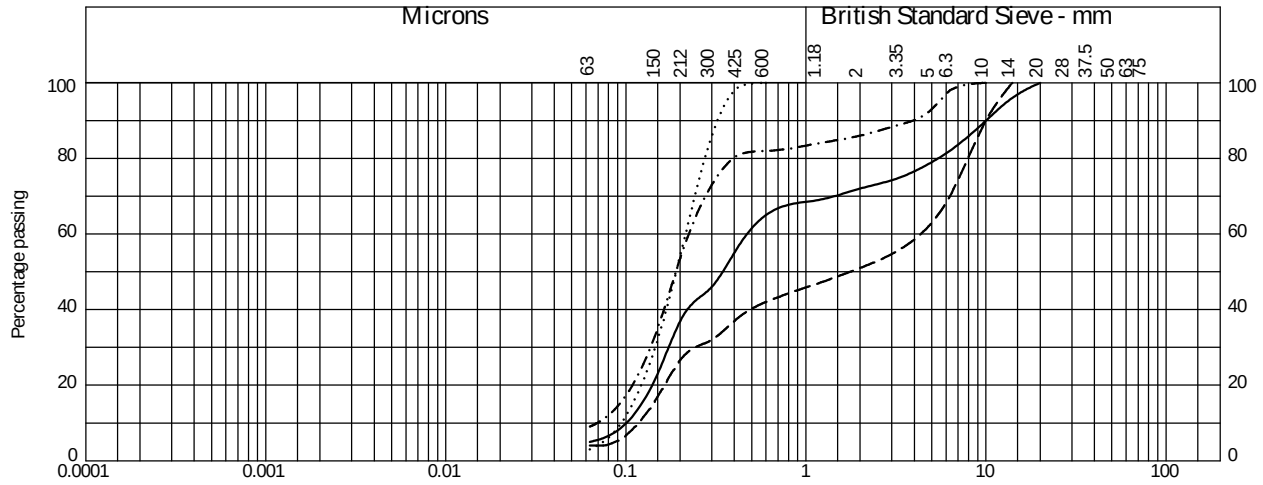
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A28	SPT8	139.3	———	V. GRAVELLY, SILTY, M-F SAND (S-M)	7.00
BH-A28	SPT9	133.1	– – –	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	8.00
BH-A29	SPT3	132.6	.....	SL. SILTY, M-F SAND (SP)	2.00
BH-A29	SPT6	138.3	– · – · –	GRAVELLY, SILTY, M-F SAND (S-M)	5.00

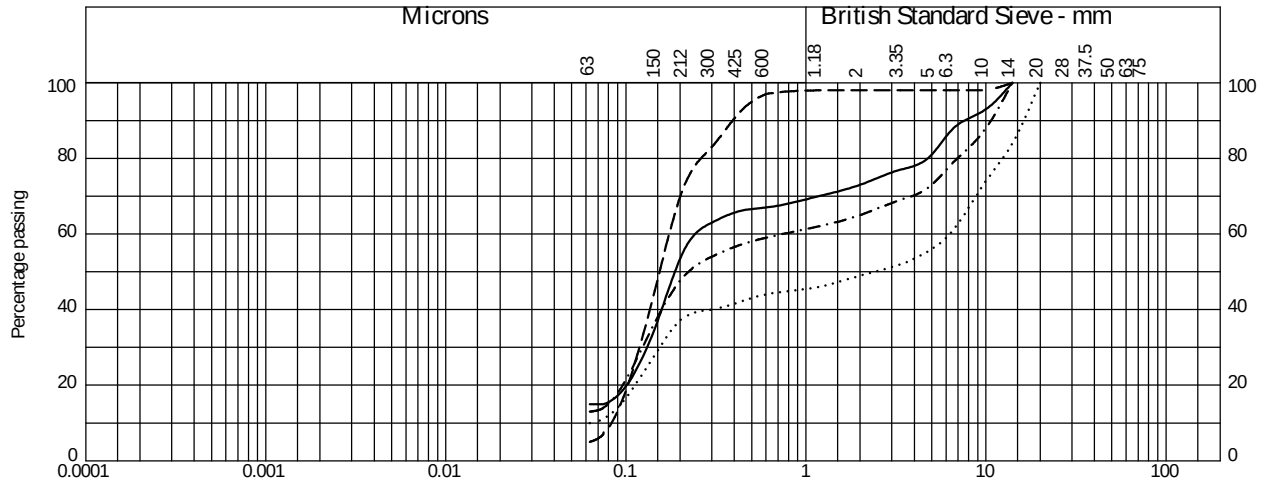
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A29	SPT7	137.3	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-A30	SPT4	139.5	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A30	SPT7	134.8	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-A30	SPT9	134.0	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00

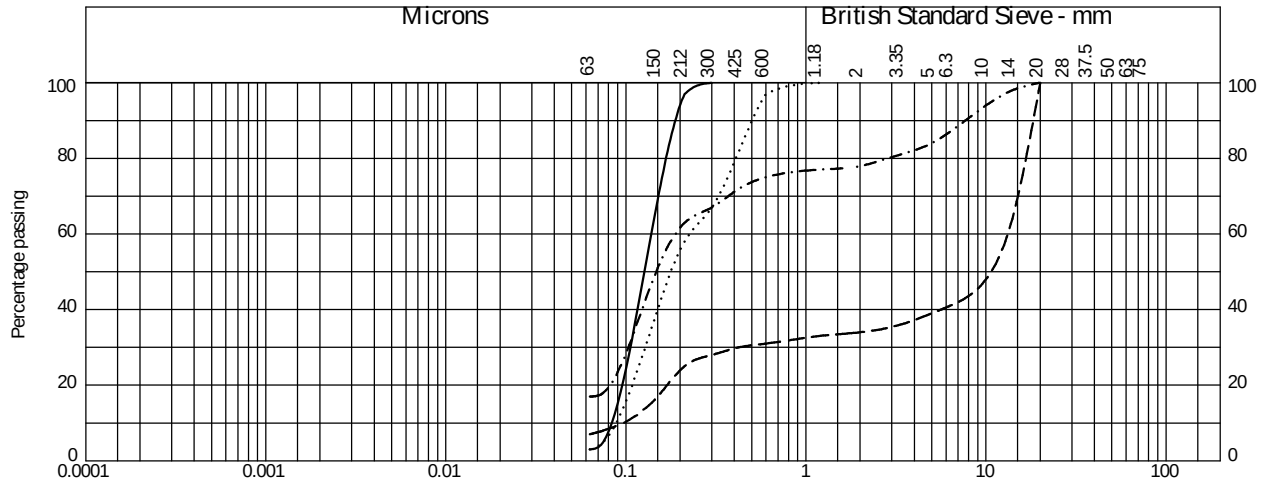
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A31	SPT4	132.6	———	SL. SILTY, FINE SAND (SP)	3.00
BH-A31	SPT6	120.2	– – –	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A32	SPT2	134.8	.....	SL. SILTY, M-F SAND (SP)	1.00
BH-A32	SPT5	124.1	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00

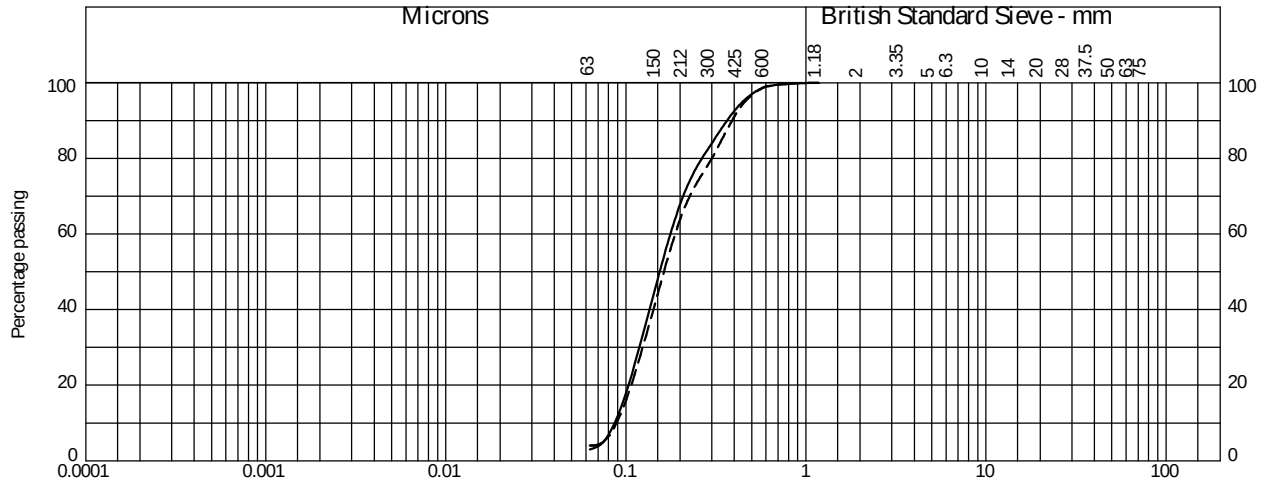
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A33	SPT2	132.3	———	SL. SILTY, M-F SAND (SP)	1.00
BH-A33	SPT4	135.4	– – –	SL. SILTY, M-F SAND (SP)	3.00
			.....		
			–·–·–		

The results relate only to the samples tested.

Table C-11 (1)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT11
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A17	**Sampling Date**	07/08/2015
Depth (m)	10.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	88
6.3	68
5	63
3.35	56
2	52
1.18	49
0.600	46
0.425	44
0.300	38
0.212	33
0.15	23
0.075	9
0.063	8
0.028	5
0.018	4
0.010	3
0.007	3
0.005	2
0.002	1
0.001	0

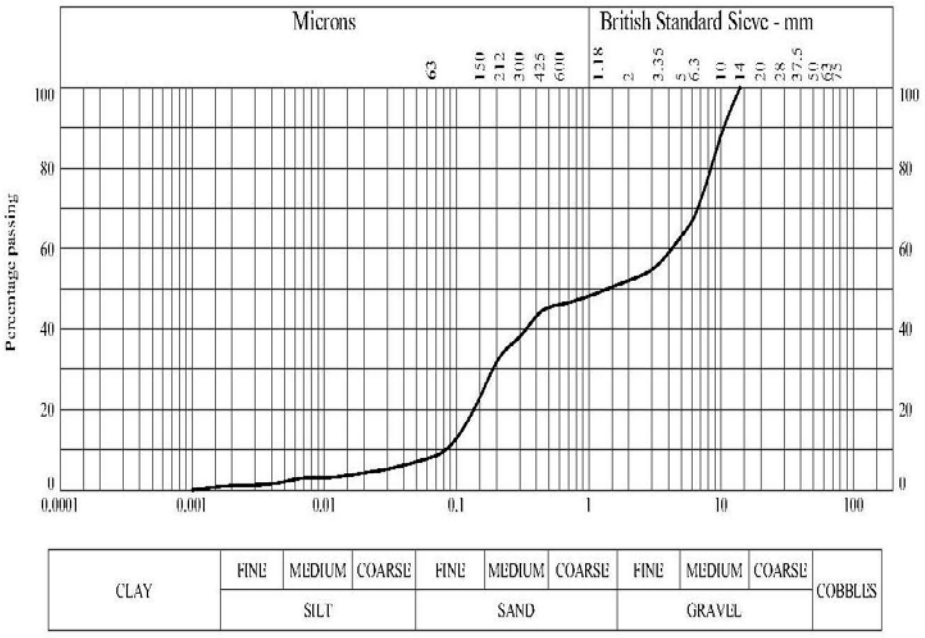


Table C-11 (2)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A18	**Sampling Date**	07/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	87
5	79
3.35	71
2	64
1.18	59
0.600	52
0.425	47
0.300	40
0.212	35
0.15	26
0.075	10
0.063	9
0.028	7
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

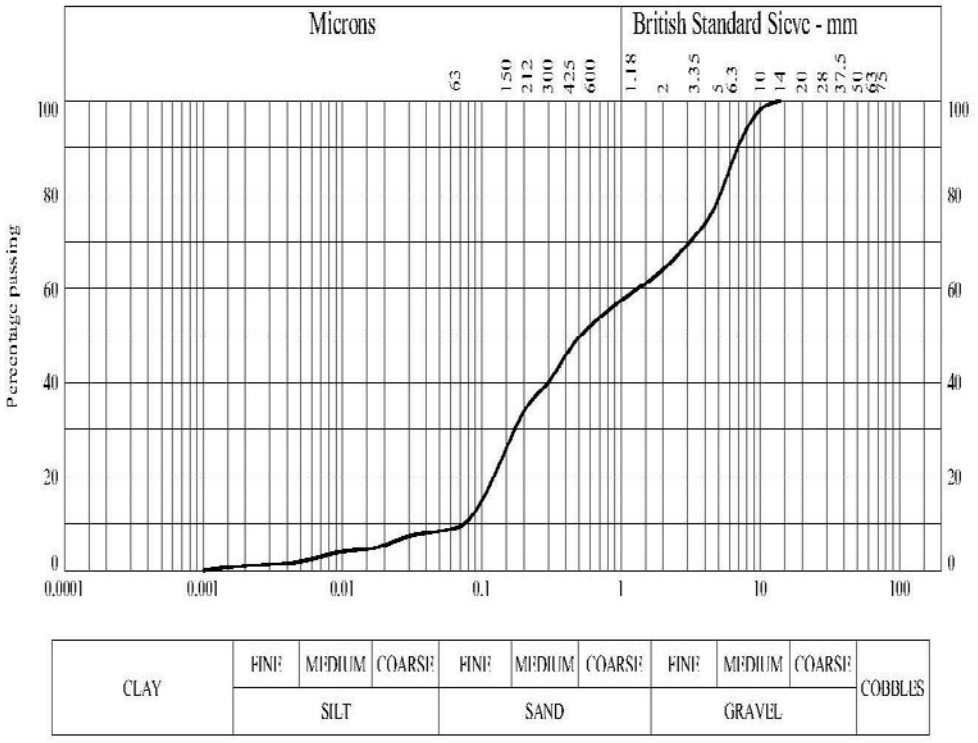


Table C-11 (3)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A19	**Sampling Date**	07/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	97
5	96
3.35	94
2	93
1.18	92
0.600	91
0.425	90
0.300	87
0.212	79
0.15	48
0.075	22
0.063	21
0.028	13
0.018	10
0.010	6
0.007	4
0.005	3
0.002	1
0.001	0

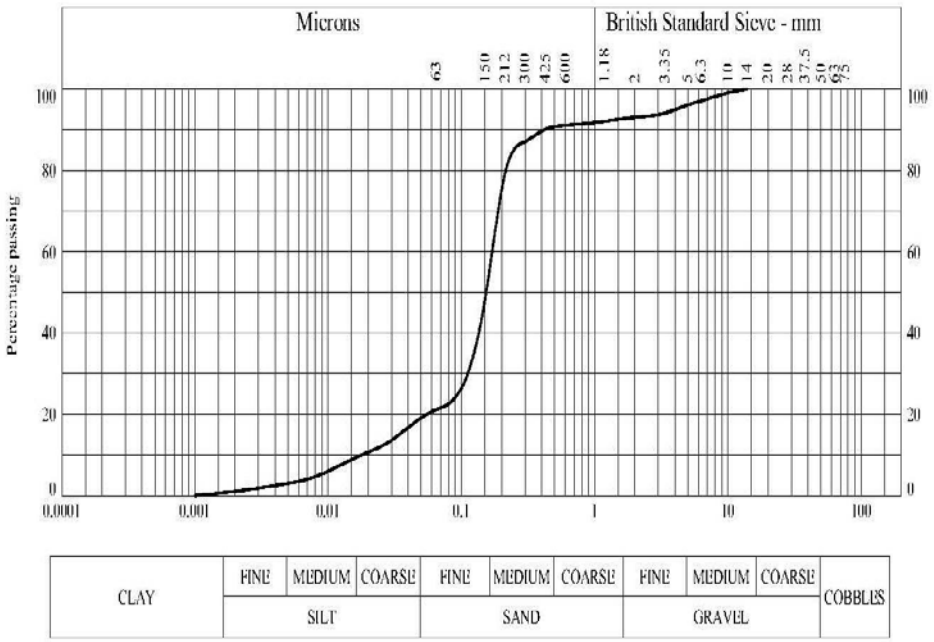


Table C-11 (4)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A20	**Sampling Date**	07/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	88
6.3	71
5	66
3.35	59
2	53
1.18	50
0.600	47
0.425	46
0.300	42
0.212	32
0.15	20
0.075	11
0.063	10
0.028	8
0.018	7
0.010	5
0.007	4
0.005	3
0.002	1
0.001	0

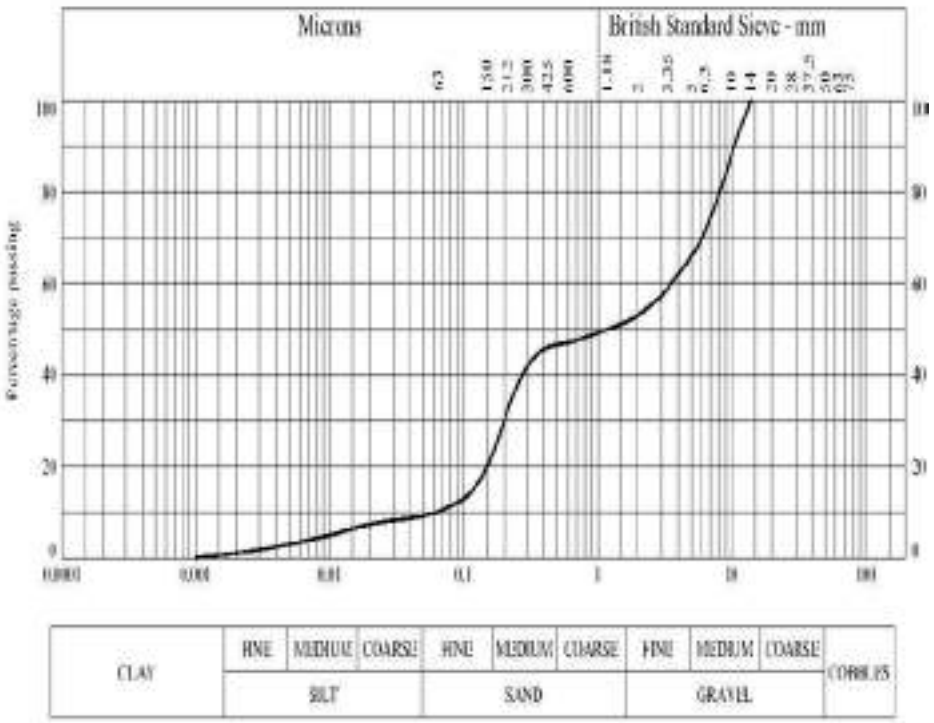


Table C-11 (5)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A21	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	90
5	87
3.35	82
2	78
1.18	75
0.600	69
0.425	63
0.300	52
0.212	40
0.15	22
0.075	6
0.063	5
0.028	4
0.018	3
0.010	3
0.007	2
0.005	1
0.002	1
0.001	0

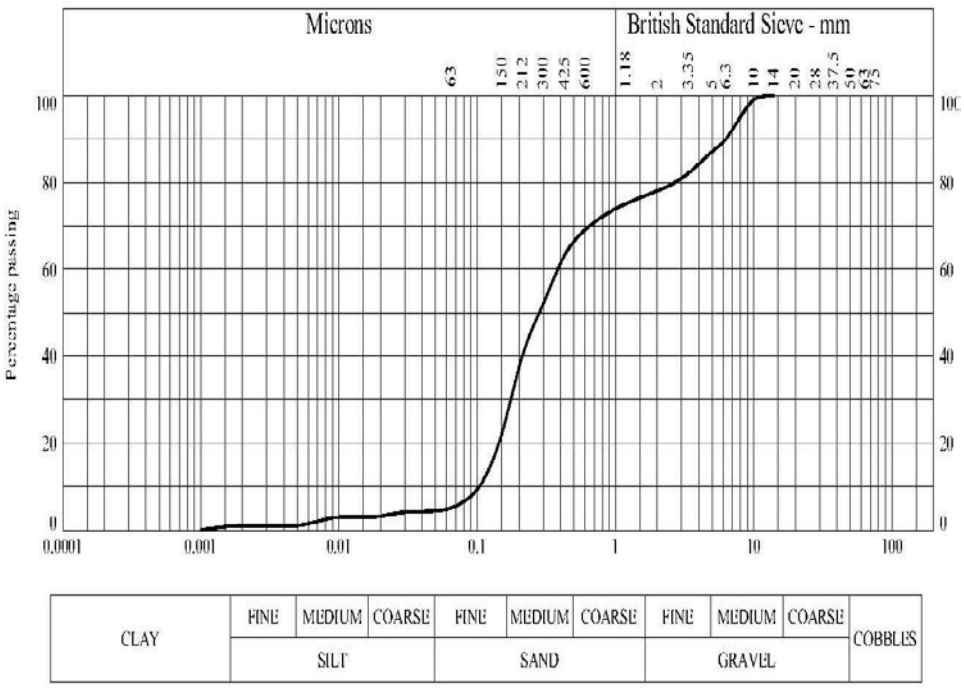


Table C-11 (6)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A22	**Sampling Date**	07/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	81
6.3	69
5	67
3.35	65
2	64
1.18	62
0.600	61
0.425	57
0.300	45
0.212	36
0.15	24
0.075	7
0.063	7
0.028	5
0.018	4
0.010	3
0.007	2
0.005	1
0.002	1
0.001	0

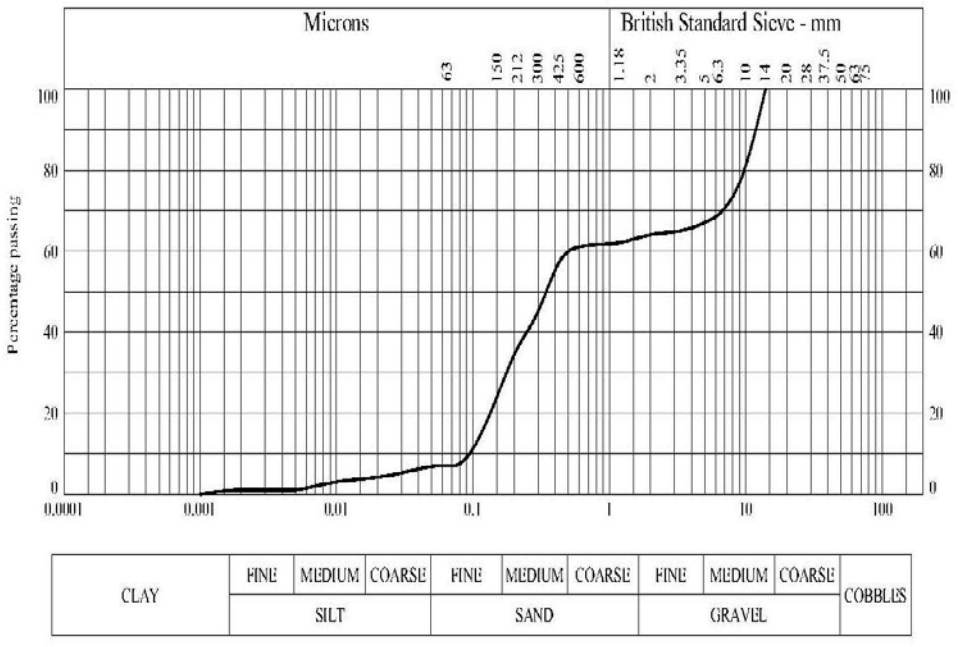


Table C-11 (7)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A22	**Sampling Date**	07/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	09/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	11/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.600	98
0.425	97
0.300	92
0.212	85
0.15	65
0.075	13
0.063	10
0.028	8
0.018	7
0.010	6
0.007	5
0.005	4
0.002	1
0.001	0

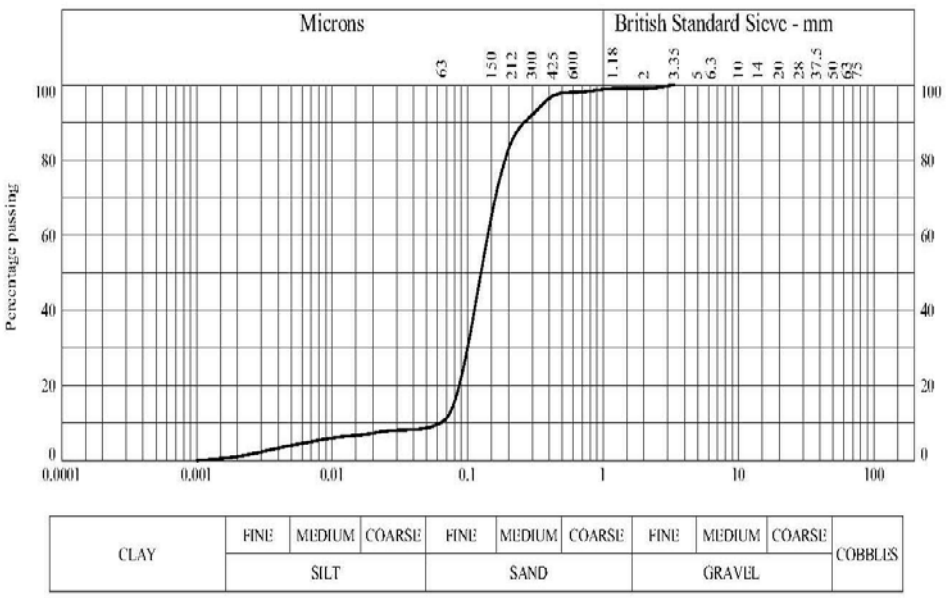


Table C-11 (8)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A23	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	09/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	11/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	88
10	70
6.3	52
5	46
3.35	40
2	36
1.18	33
0.600	30
0.425	29
0.300	26
0.212	23
0.15	18
0.075	8
0.063	7
0.028	6
0.018	5
0.010	5
0.007	4
0.005	3
0.002	1
0.001	0

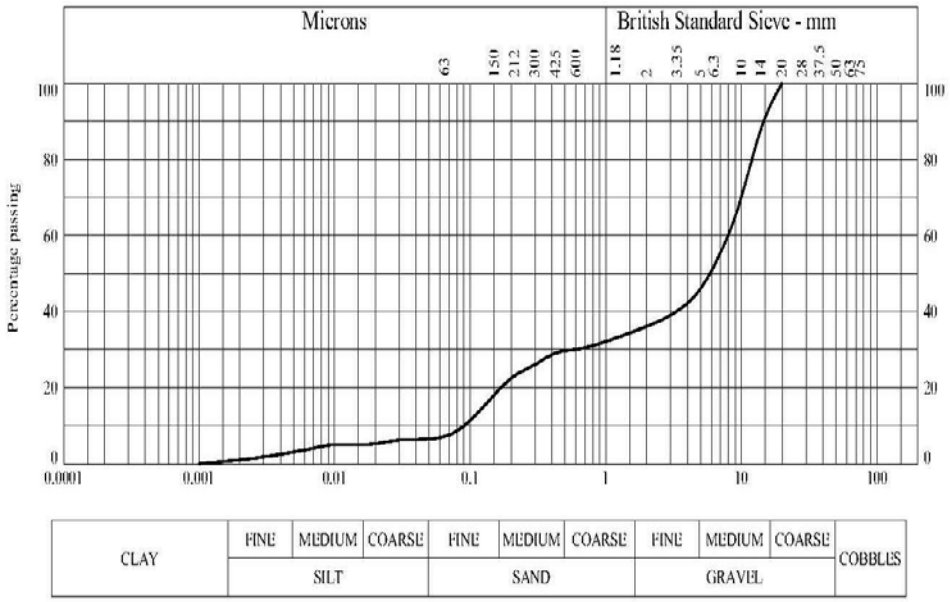


Table C-11 (9)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A24	**Sampling Date**	07/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	98
1.18	98
0.600	96
0.425	89
0.300	79
0.212	69
0.15	42
0.075	7
0.063	6
0.028	5
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

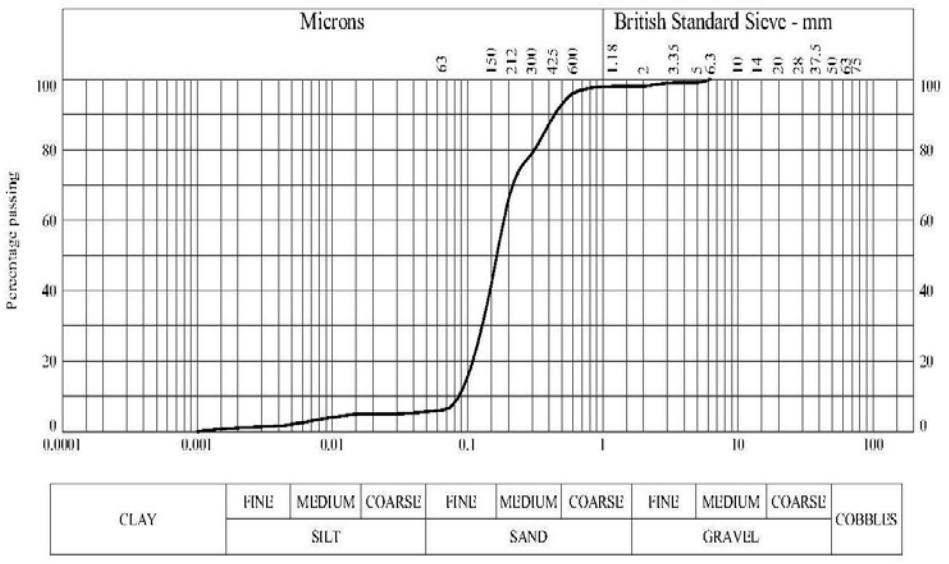


Table C-11 (10)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A24	**Sampling Date**	07/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	99
1.18	98
0.600	96
0.425	89
0.300	79
0.212	68
0.15	43
0.075	7
0.063	6
0.028	5
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

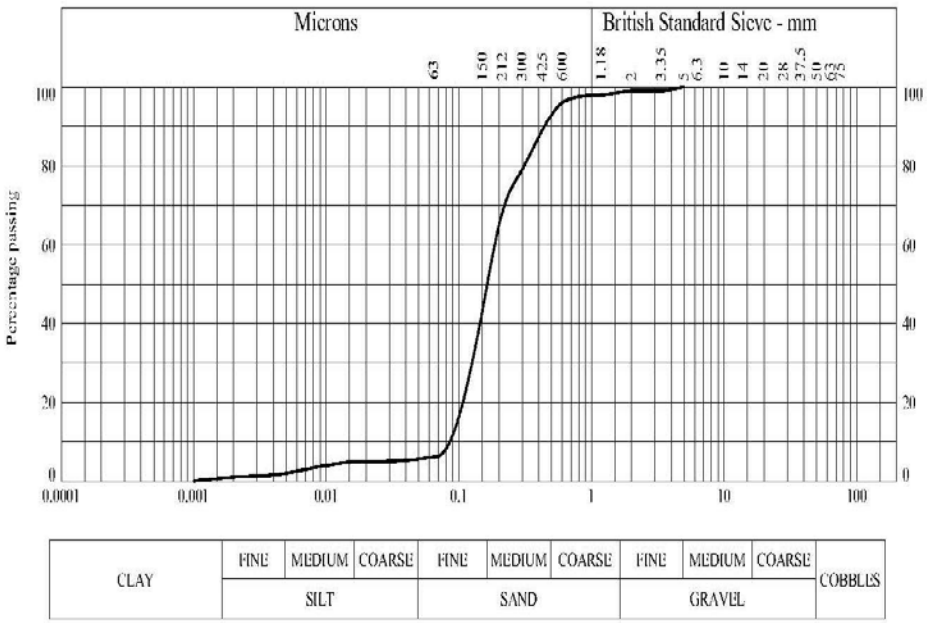


Table C-11 (11)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A25	**Sampling Date**	07/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	96
10	96
6.3	95
5	94
3.35	93
2	91
1.18	90
0.600	89
0.425	88
0.300	84
0.212	76
0.15	55
0.075	12
0.063	10
0.028	8
0.018	7
0.010	6
0.007	5
0.005	3
0.002	1
0.001	0

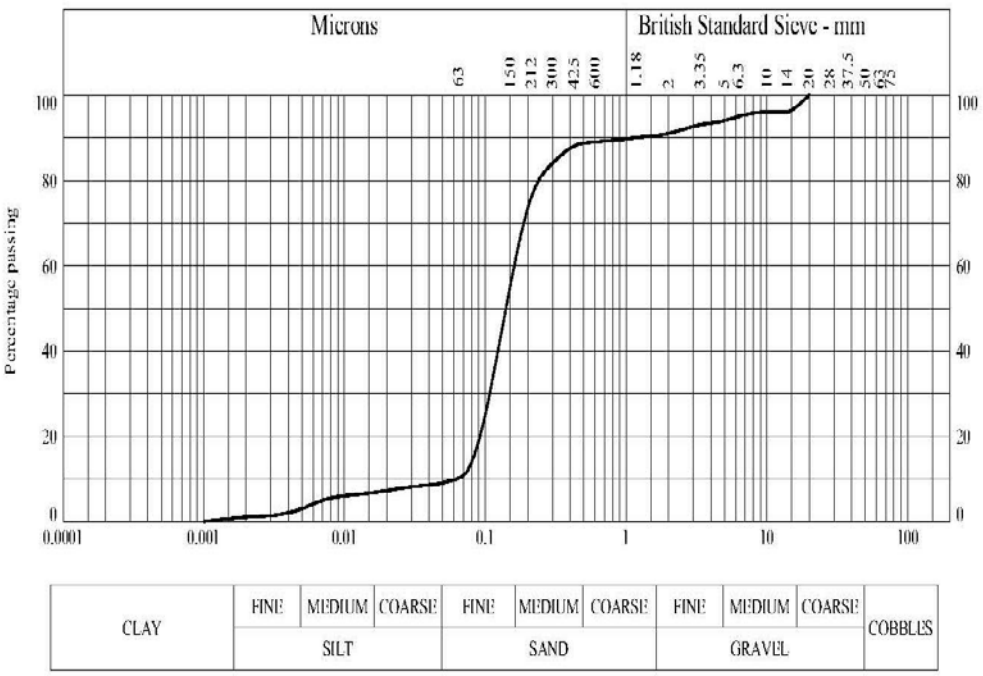


Table C-11 (12)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A25	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	10/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	89
6.3	72
5	66
3.35	60
2	56
1.18	54
0.600	50
0.425	47
0.300	42
0.212	38
0.15	31
0.075	10
0.063	9
0.028	8
0.018	7
0.010	6
0.007	5
0.005	4
0.002	1
0.001	0

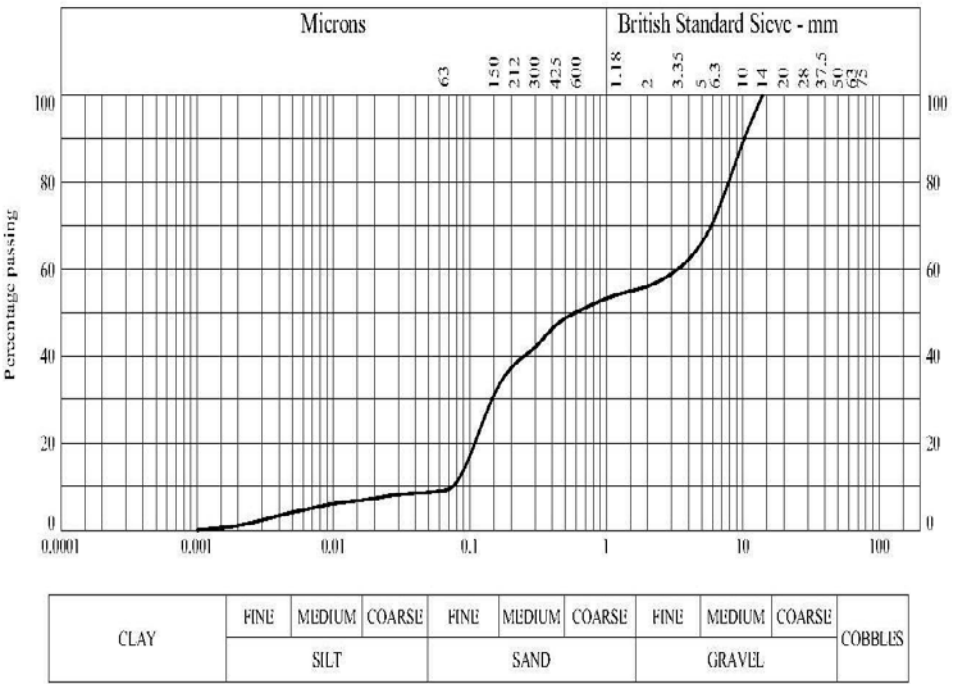


Table C-11 (13)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A26	**Sampling Date**	07/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	99
0.425	94
0.300	78
0.212	59
0.15	42
0.075	8
0.063	6
0.028	5
0.018	4
0.010	3
0.007	2
0.005	1
0.002	1
0.001	0

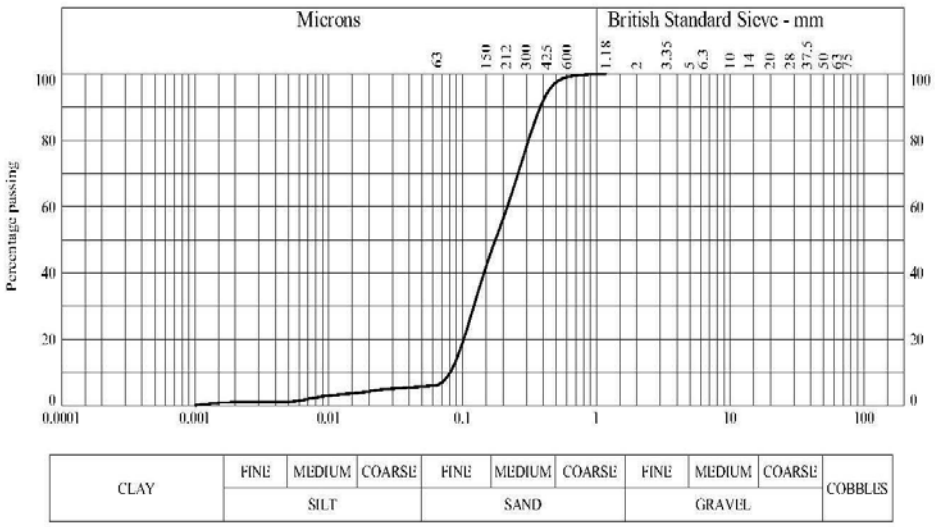


Table C-11 (14)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A26	**Sampling Date**	07/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	99
0.425	94
0.300	81
0.212	66
0.15	44
0.075	6
0.063	5
0.028	4
0.018	3
0.010	3
0.007	2
0.005	1
0.002	1
0.001	0

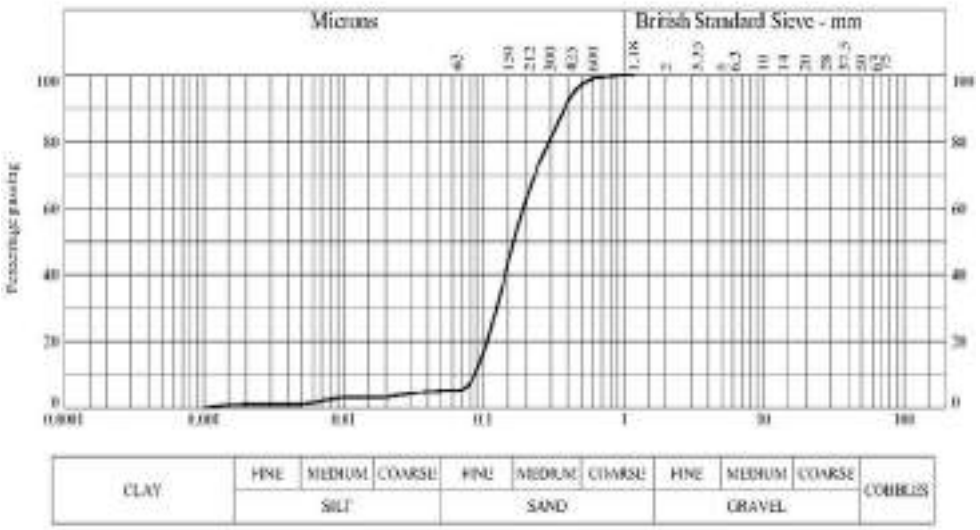


Table C-11 (15)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A26	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	91
10	82
6.3	70
5	63
3.35	59
2	54
1.18	51
0.600	48
0.425	46
0.300	43
0.212	38
0.15	26
0.075	10
0.063	10
0.028	9
0.018	8
0.010	6
0.007	5
0.005	4
0.002	1
0.001	0

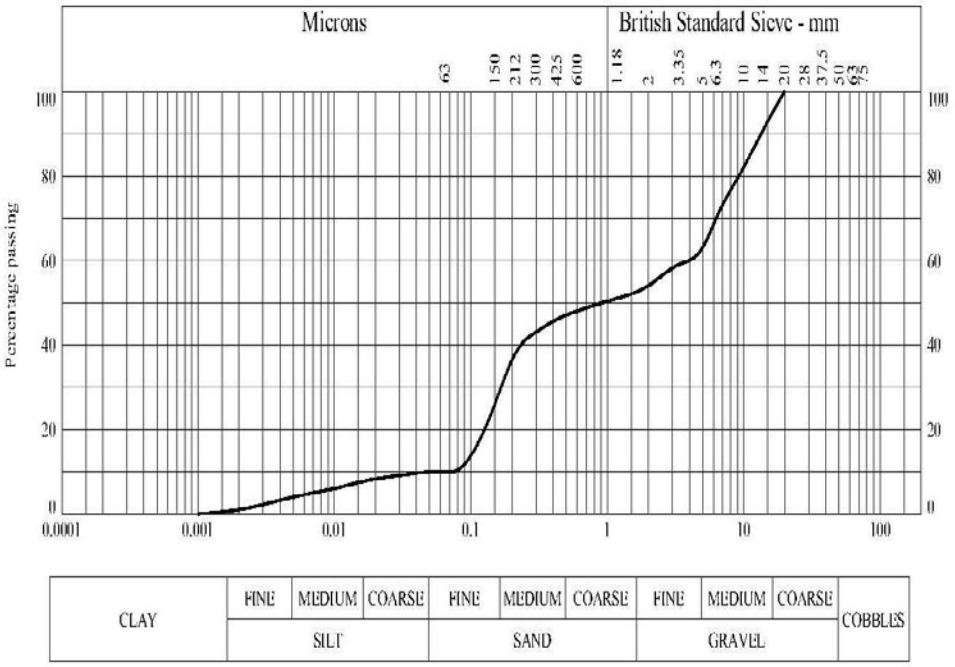


Table C-11 (16)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A27	**Sampling Date**	07/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
1.18	100
0.600	99
0.425	93
0.300	82
0.212	71
0.15	50
0.075	10
0.063	8
0.028	7
0.018	7
0.010	6
0.007	5
0.005	3
0.002	1
0.001	0

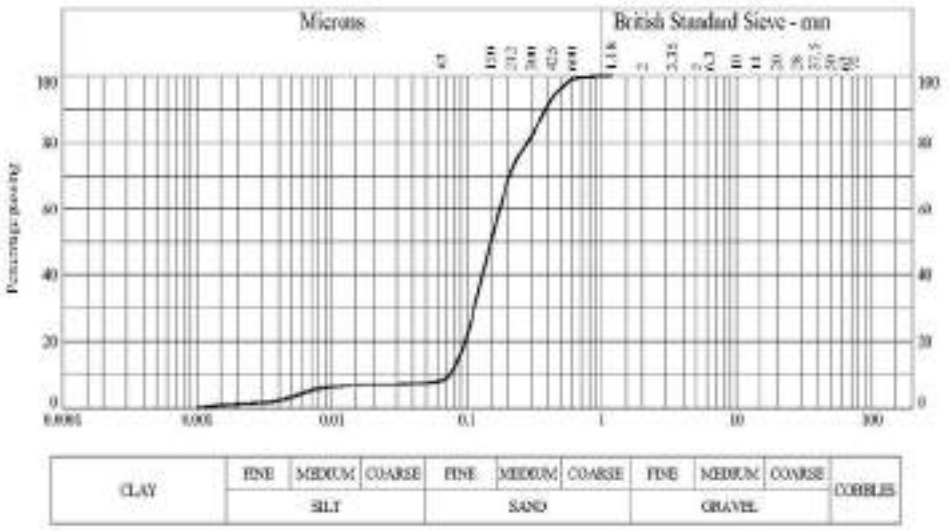


Table C-11 (17)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A27	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	73
10	62
6.3	51
5	48
3.35	45
2	41
1.18	38
0.600	34
0.425	31
0.300	27
0.212	24
0.15	18
0.075	6
0.063	5
0.028	4
0.018	3
0.010	2
0.007	1
0.005	1
0.002	1
0.001	0

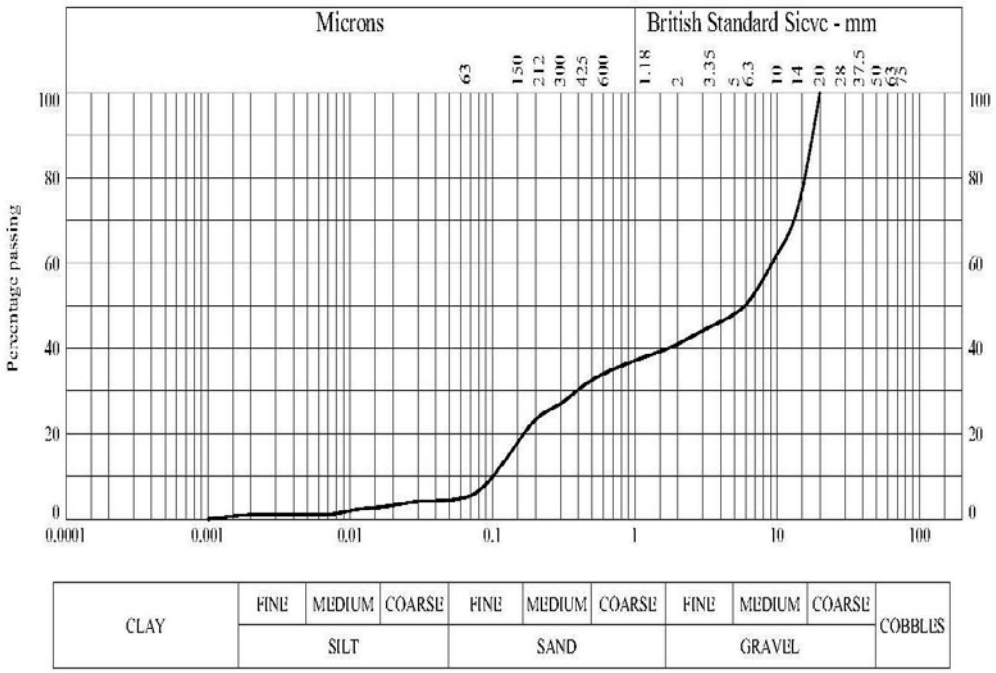


Table C-11 (18)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT8
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A28	**Sampling Date**	07/08/2015
Depth (m)	7.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	96
10	90
6.3	82
5	79
3.35	75
2	72
1.18	69
0.600	65
0.425	57
0.300	46
0.212	39
0.15	23
0.075	6
0.063	5
0.028	4
0.018	3
0.010	2
0.007	1
0.005	1
0.002	1
0.001	0

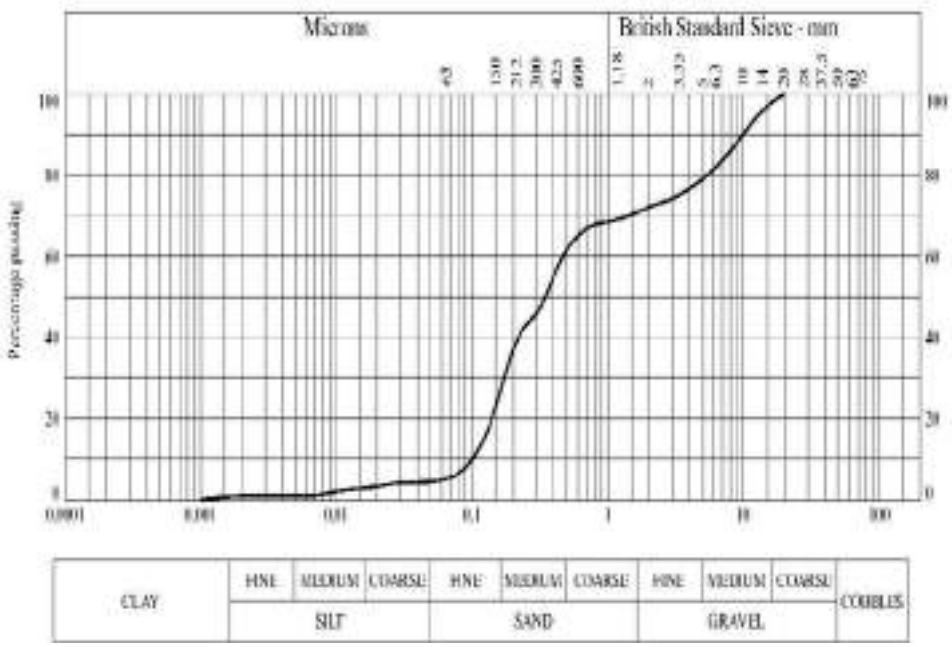


Table C-11 (19)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A29	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	93
3.35	89
2	86
1.18	84
0.600	82
0.425	81
0.300	73
0.212	57
0.15	35
0.075	11
0.063	9
0.028	8
0.018	7
0.010	6
0.007	5
0.005	4
0.002	2
0.001	0

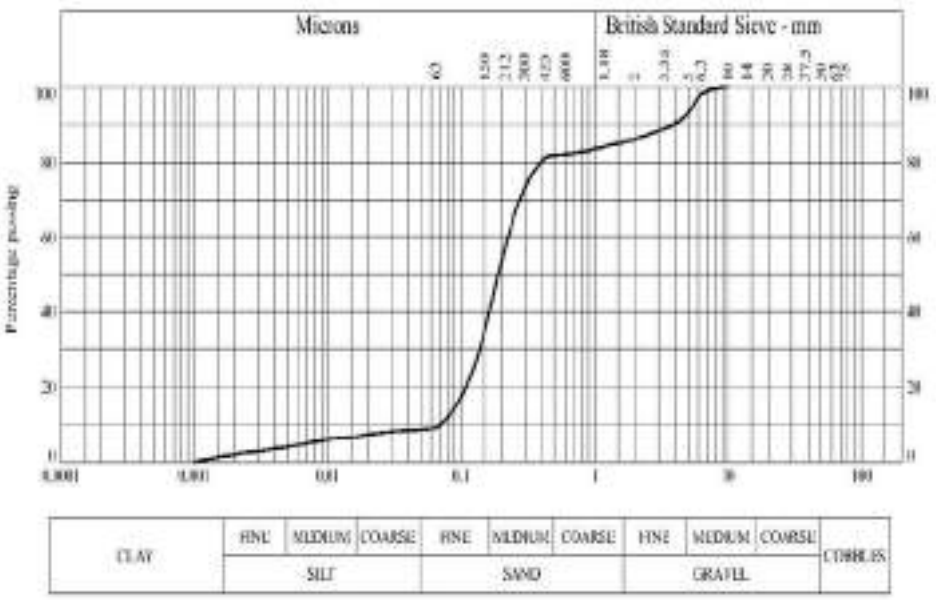


Table C-11 (20)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A29	**Sampling Date**	07/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	93
6.3	87
5	81
3.35	77
2	73
1.18	70
0.600	67
0.425	66
0.300	63
0.212	56
0.15	37
0.075	15
0.063	14
0.028	10
0.018	9
0.010	6
0.007	5
0.005	3
0.002	1
0.001	0

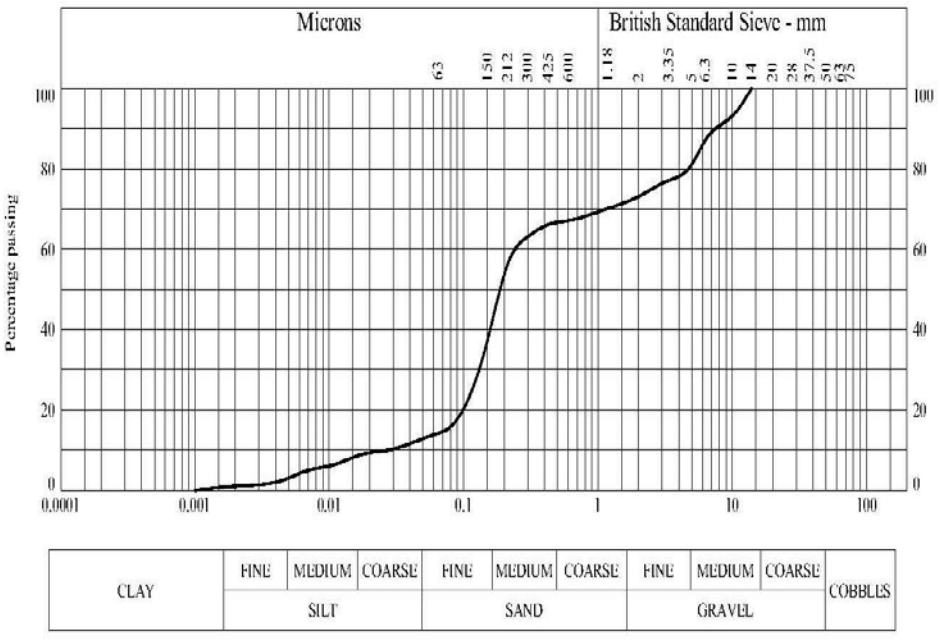


Table C-11 (21)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, M-F SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A30	**Sampling Date**	07/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	98
6.3	98
5	98
3.35	98
2	98
1.18	98
0.600	97
0.425	92
0.300	83
0.212	73
0.15	48
0.075	7
0.063	5
0.028	5
0.018	4
0.010	3
0.007	3
0.005	2
0.002	1
0.001	0

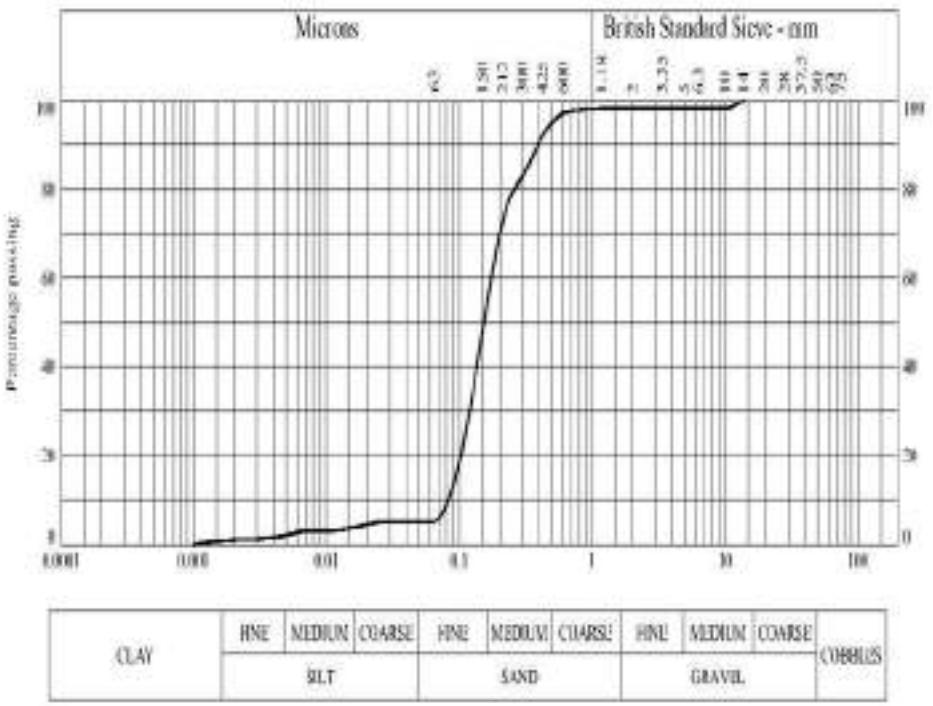


Table C-11 (22)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A30	**Sampling Date**	07/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Erwin/ Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	84
10	74
6.3	60
5	56
3.35	52
2	49
1.18	46
0.600	44
0.425	42
0.300	40
0.212	38
0.15	29
0.075	11
0.063	10
0.028	9
0.018	8
0.010	7
0.007	5
0.005	2
0.002	1
0.001	0

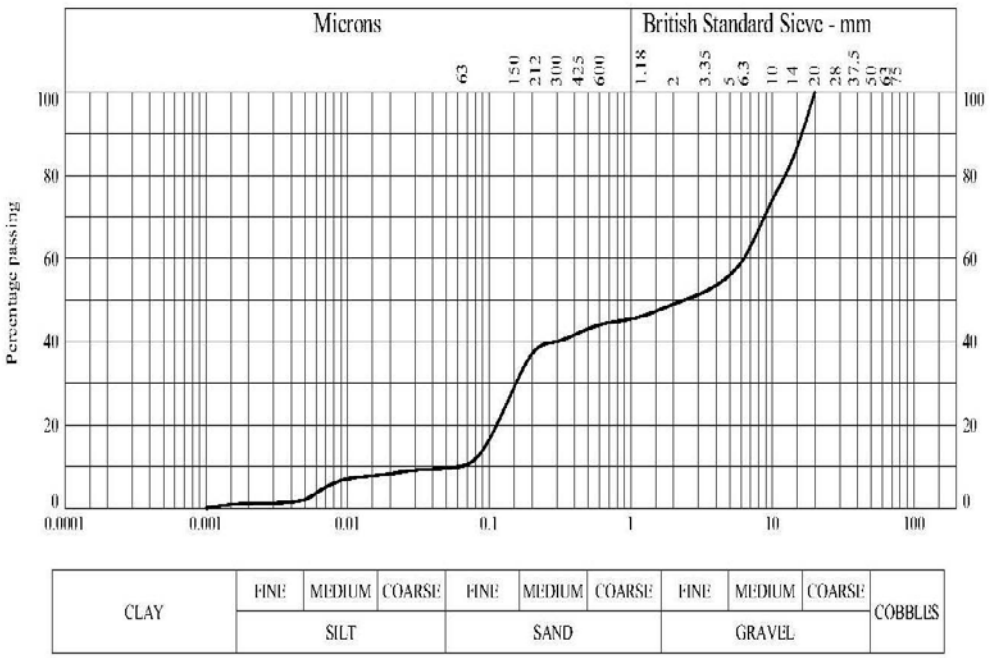


Table C-11 (23)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A30	**Sampling Date**	07/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	88
6.3	78
5	73
3.35	69
2	65
1.18	62
0.600	59
0.425	57
0.300	54
0.212	49
0.15	38
0.075	14
0.063	13
0.028	11
0.018	9
0.010	8
0.007	5
0.005	4
0.002	1
0.001	0

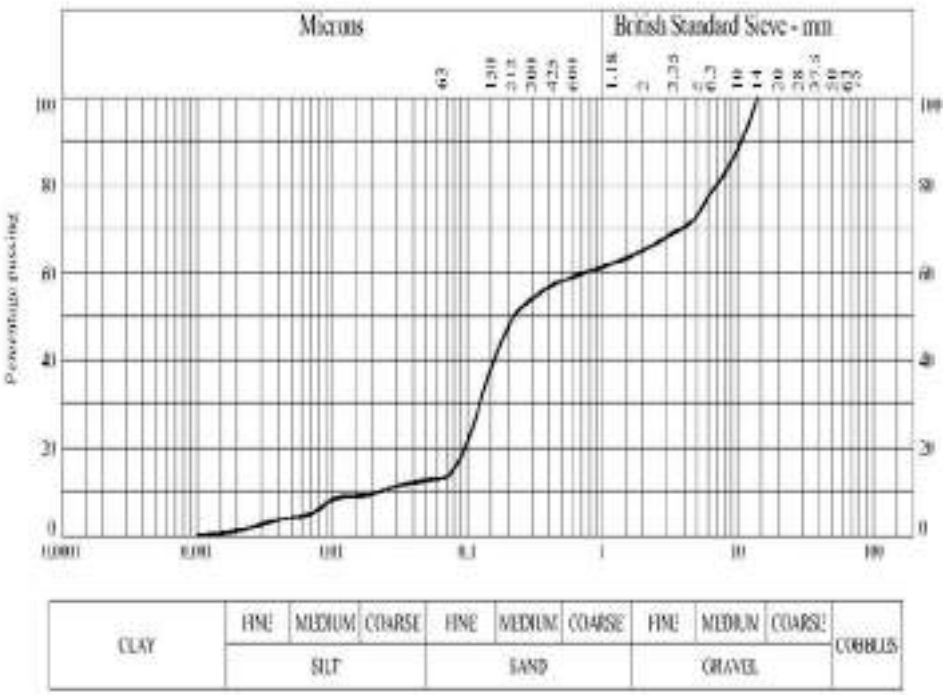


Table C-11(24)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A31	**Sampling Date**	07/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	64
10	48
6.3	41
5	39
3.35	36
2	34
1.18	33
0.600	31
0.425	30
0.300	28
0.212	25
0.15	17
0.075	8
0.063	7
0.028	6
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

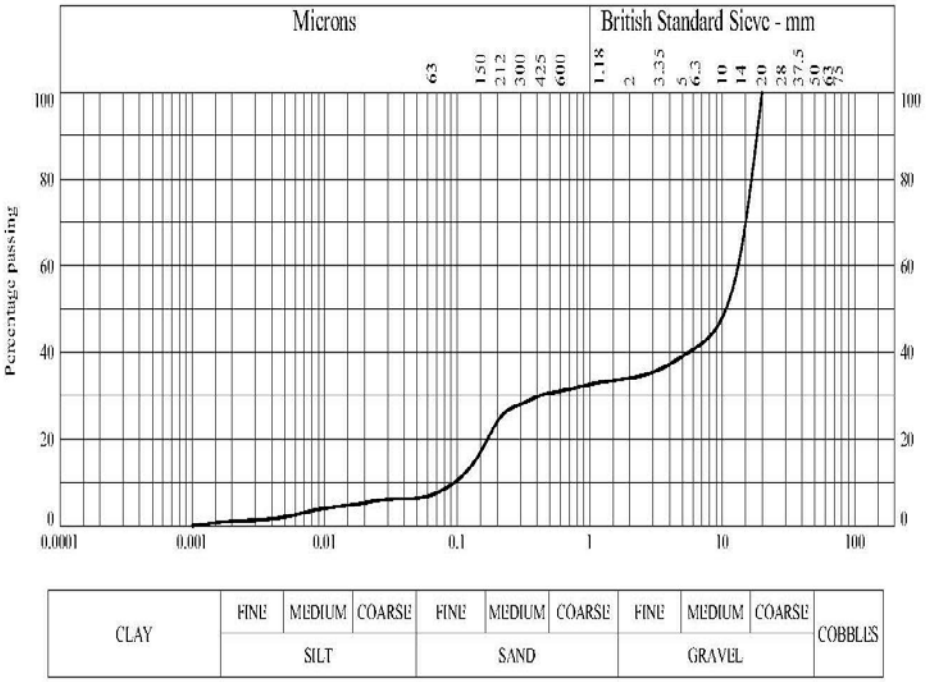


Table C-11 (25)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-11
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND (S-M)	**Sampled By**	Matrix
Borehole No.	BH-A32	**Sampling Date**	07/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	ROJAN

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	94
6.3	87
5	84
3.35	81
2	78
1.18	77
0.600	75
0.425	72
0.300	67
0.212	63
0.15	51
0.075	18
0.063	17
0.028	10
0.018	9
0.010	8
0.007	7
0.005	5
0.002	1
0.001	0

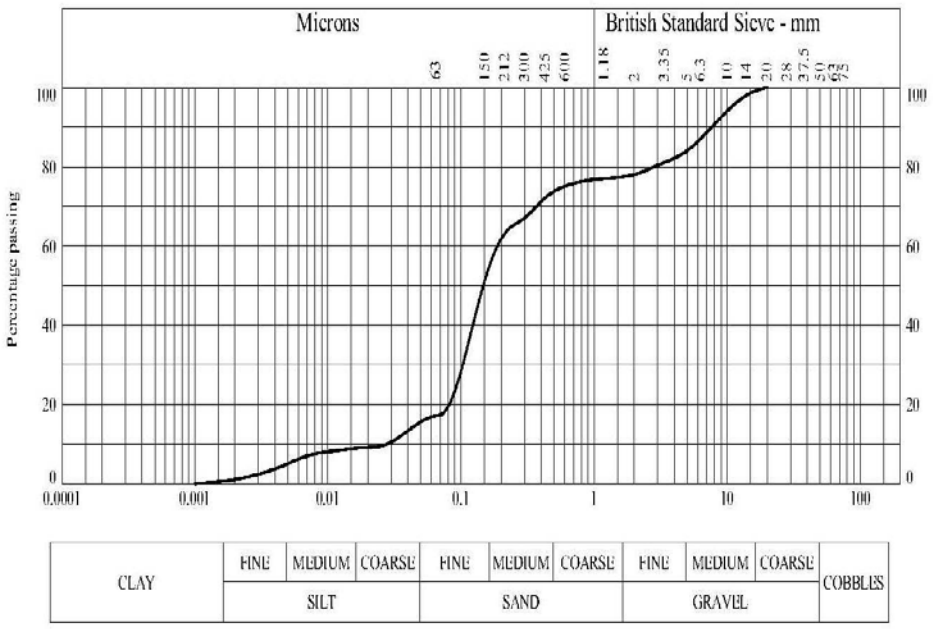


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	10-12/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	10-13/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	07-08/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A17	2.00	10.0
BH-A17	4.00	9.6
BH-A18	1.00	6.2
BH-A18	3.00	8.8
BH-A18	4.00	21.0
BH-A19	2.00	15.0
BH-A19	3.00	9.6
BH-A20	1.00	6.9
BH-A20	3.00	11.0
BH-A20	5.00	7.1
BH-A20	8.00	7.2
BH-A21	2.00	9.3
BH-A21	3.00	12.0
BH-A21	5.00	14.0
BH-A22	2.00	9.6

Borehole No.	Depth	Moisture Content (%)
BH-A22	4.00	8.6
BH-A23	1.00	11.0
BH-A23	3.00	9.5
BH-A23	5.00	12.0
BH-A24	2.00	8.7
BH-A24	4.00	6.9
BH-A25	2.00	8.2
BH-A25	3.00	18.0
BH-A25	5.00	15.0
BH-A26	2.00	6.1
BH-A26	3.00	5.8
BH-A26	5.00	10.0
BH-A26	6.50	9.9
BH-A27	1.00	9.7
BH-A27	2.00	11.0
BH-A27	4.00	7.4
BH-A27	5.00	9.4
BH-A28	2.00	8.5
BH-A28	4.00	10.0
BH-A29	2.00	5.0
BH-A29	2.00	8.8
BH-A29	5.00	11.0
BH-A29	6.50	18.0
BH-A29	8.00	15.0
BH-A30	1.00	9.6
BH-A30	3.00	6.6
BH-A30	5.00	14.0
BH-A30	6.50	15.0

Borehole No.	Depth	Moisture Content (%)
BH-A30	8.00	17.0
BH-A31	1.00	10.0
BH-A31	3.00	8.8
BH-A31	5.00	18.0
BH-A32	1.00	5.0
BH-A32	3.00	13.0
BH-A32	4.00	13.0
BH-A33	1.00	13.0
BH-A33	3.00	11.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	1108/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	10/08/2015
Sample Description	Soil	**Sampling Date**	08/08/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Erwin
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-A22	2.00	2.59

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	09-13/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	10-17/08/2015
Sample Description	SAND	**Sampling Date**	07/08/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-A23	2.00	100	0.1
BH-A19	2.00	100	0.1

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	12-16/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)	**Sampling Date**	07-08/2015
Sample Description	ROCK CORE	**Date Tested**	13-17/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	Sample Depth (m)	Carbonate Content (% by wt.)	
		as CO_2	as $CaCO_3$
BH-A20	8.24	38.07	86.71
BH-A23	5.20	32.24	73.41
BH-A31	16.00	34.01	77.44

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-11
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	12-10/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	12-17/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	07-09/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s\,(50)}$ (MPa)	Direction of Loading
BH-A17	15.40	1	0.09	Vertical
BH-A17	18.00	2	0.08	Vertical
BH-A18	6.50	3	0.40	Vertical
BH-A18	12.50	4	0.31	Vertical
BH-A18	17.00	5	0.39	Vertical
BH-A19	12.50	6	0.26	Vertical
BH-A19	17.00	7	0.41	Vertical
BH-A20	8.50	8	0.85	Vertical
BH-A20	12.50	9	0.73	Vertical
BH-A20	14.00	10	0.41	Vertical
BH-A21	5.21	11	0.56	Vertical
BH-A21	8.00	12	0.02	Vertical
BH-A21	15.50	13	1.03	Vertical
BH-A21	17.00	14	0.62	Vertical
BH-A22	5.20	15	0.42	Vertical
BH-A22	8.20	16	0.27	Vertical
BH-A22	17.20	17	0.19	Vertical
BH-A22	18.70	18	0.16	Vertical
BH-A23	5.20	19	0.24	Vertical
BH-A23	11.20	20	0.16	Vertical

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-A23	17.20	21	0.40	Vertical
BH-A24	14.50	22	0.22	Vertical
BH-A24	17.80	23	0.36	Vertical
BH-A25	5.25	24	0.27	Vertical
BH-A25	10.90	25	0.46	Vertical
BH-A25	14.00	26	0.63	Vertical
BH-A26	12.80	27	0.19	Vertical
BH-A27	17.20	28	0.66	Vertical
BH-A28	11.00	29	0.35	Vertical
BH-A28	15.40	30	0.26	Vertical
BH-A29	12.60	31	0.47	Vertical
BH-A30	13.40	32	0.30	Vertical
BH-A31	14.30	33	0.22	Vertical
BH-A32	6.50	34	0.17	Vertical
BH-A33	12.75	35	0.68	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-11
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	12-10/08/2015
Sample Source	Site	**Date Tested**	12-17/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin/ Rojan

Sample Details:			Dimensions:		Results:						
BH	Depth	Sample	Diameter	Height	Compresive Strength	Strain at Failure	Modulus of Elasticity	Moisture Content	Wet Density	Sketch	Rock Description
NO.	(m)	No.	(cm)	(cm)	(N/mm^2)	(%)	(Mpa)	(%)	(Mg/m^3)		
BH-A17	15.50	1	7.50	15.00	5.3	1.40	382.0	12.70	1.84	Figure C-01	CAL. SANDSTONE
BH-A19	8.30	2	7.50	15.10	3.5	1.26	275.1	11.20	2.06	Figure C-02	CAL. SANDSTONE
BH-A20	14.50	3	7.50	15.00	6.4	1.60	397.9	9.60	1.98	Figure C-03	SIL. CALCARENITE
BH-A21	16.00	4	7.50	15.30	3.9	1.50	257.3	12.60	1.93	Figure C-04	CAL. SANDSTONE
BH-A23	18.70	5	7.50	15.00	9.9	3.07	323.5	6.00	2.07	Figure C-05	CONG. SILTSTONE
BH-A24	19.00	6	7.50	15.10	4.6	2.52	180.7	12.10	2.16	Figure C-06	CAL. SANDSTONE
BH-A25	11.00	7	7.50	15.00	5.9	1.67	350.7	11.60	2.26	Figure C-07	CAL. SANDSTONE
BH-A25	13.10	8	7.50	15.10	4.1	1.72	236.9	3.10	1.84	Figure C-08	CAL. SANDSTONE
BH-A27	15.70	9	7.50	15.10	8.9	2.52	353.7	11.10	2.25	Figure C-09	CONG. SANDSTONE
BH-A28	14.00	10	7.50	15.00	3.8	1.07	352.1	12.60	1.83	Figure C-10	CAL. SANDSTONE
BH-A29	15.50	11	7.50	15.00	9.4	2.33	404.4	15.30	2.05	Figure C-11	CAL. SANDSTONE
BH-A30	12.30	12	7.50	15.10	7.6	2.78	274.8	11.70	1.79	Figure C-12	CAL. SANDSTONE
BH-A31	10.20	13	7.40	15.00	6.8	2.13	319.3	18.90	2.17	Figure C-13	SIL. CALCARENITE
BH-A33	19.00	14	7.50	15.00	9.9	3.27	303.7	5.70	2.10	Figure C-14	CAL. SANDSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

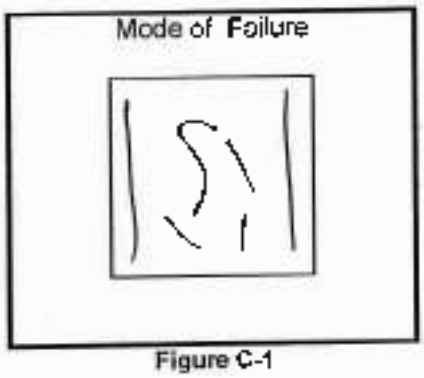


Figure C-1

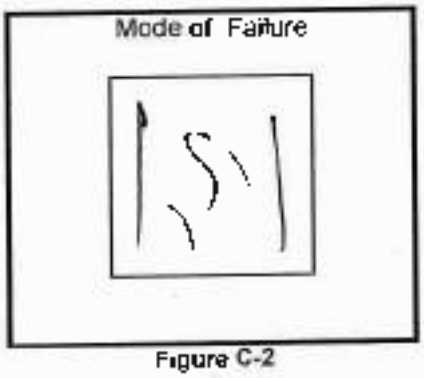


Figure C-2

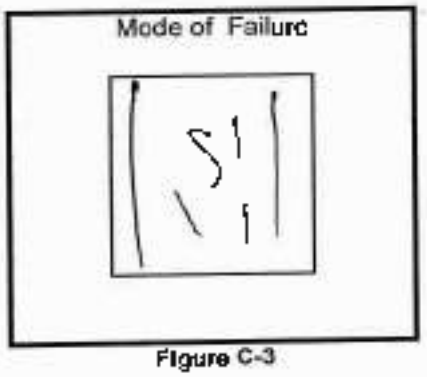


Figure C-3

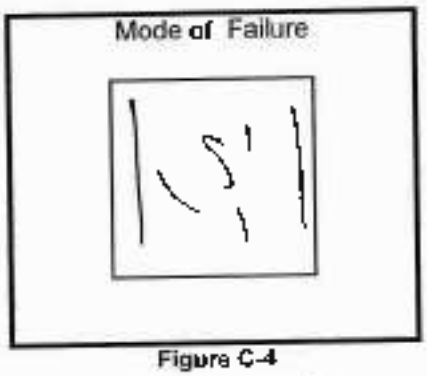


Figure C-4

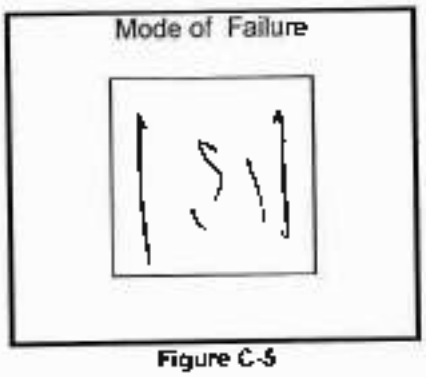


Figure C-5

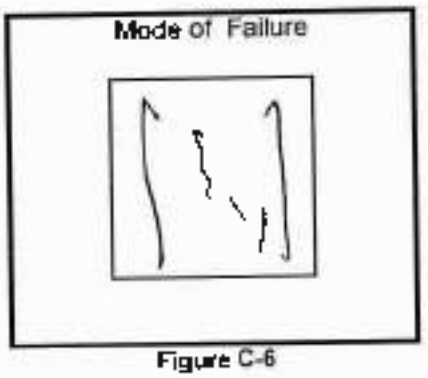


Figure C-6

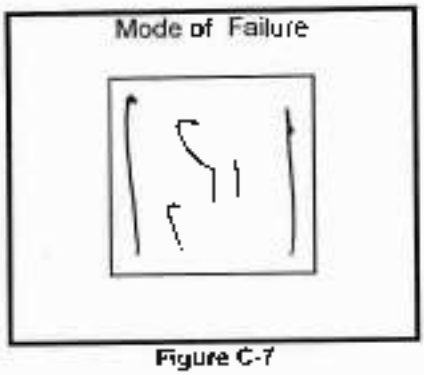


Figure C-7

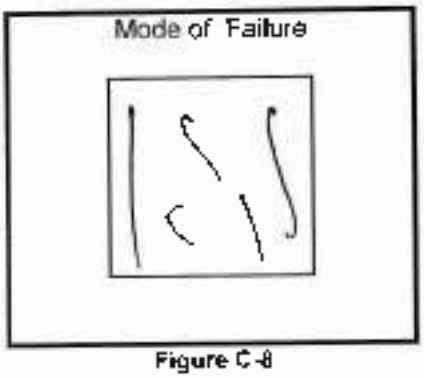


Figure C-8

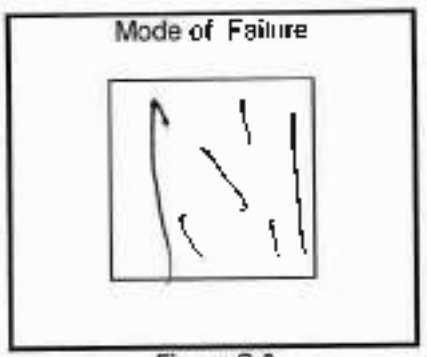


Figure C-9

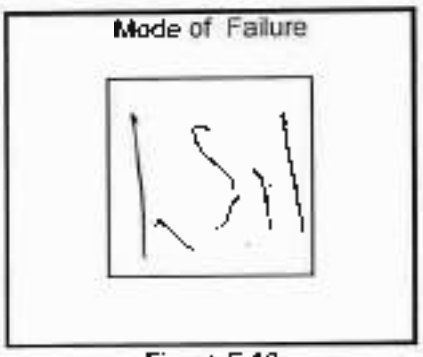


Figure C-10

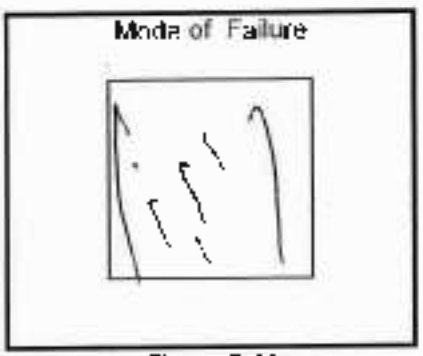


Figure C-11

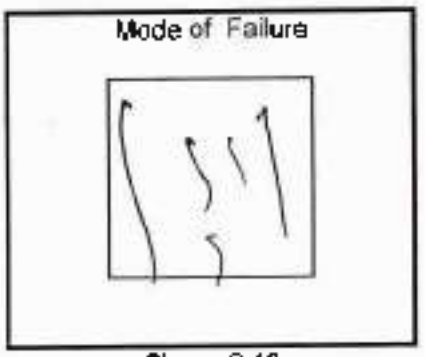


Figure C-12

TYPE OF FRACTURES FOR CORES

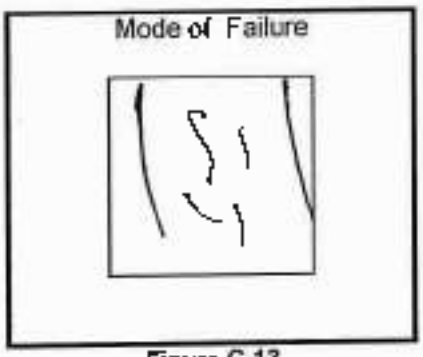


Figure C-13

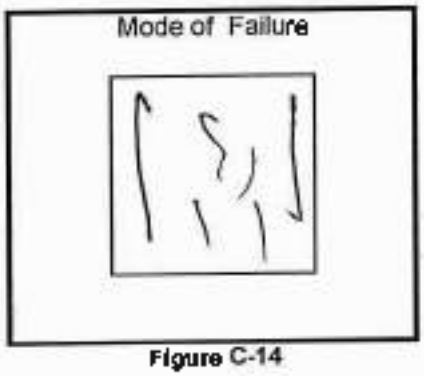
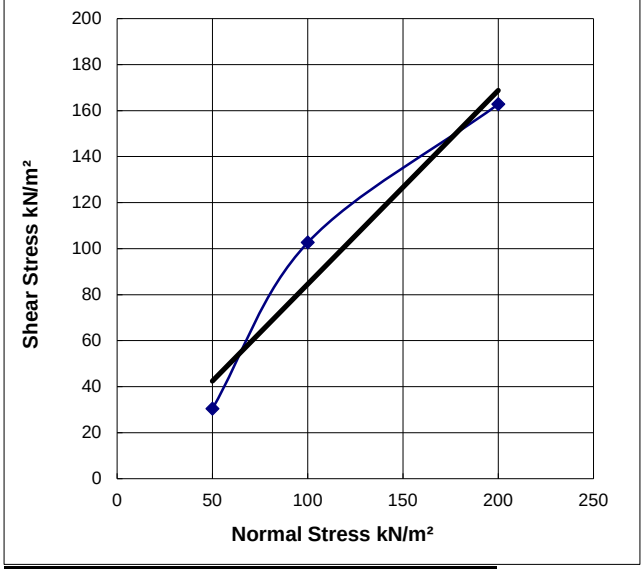


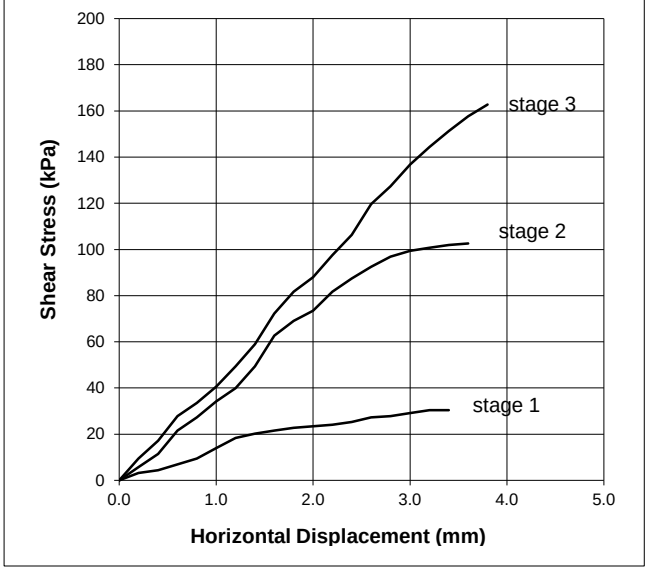
Figure C-14

MATRIX LABORATORY L.L.C.

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A18	**Date Tested**	13-15/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4.5.4	**Tested By**	ERWIN





Shear Strength Parameters

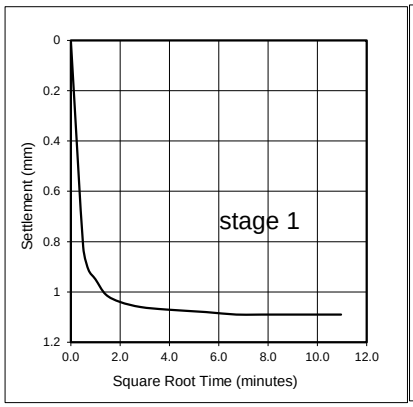
Apparent Cohesion = 0.0 kN/m²

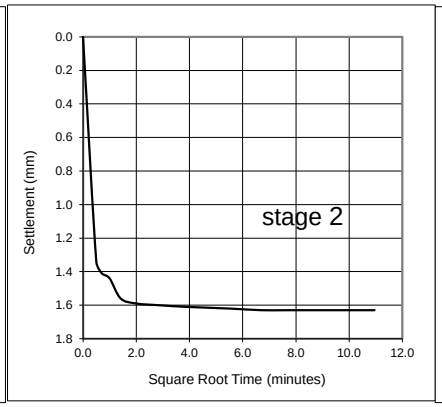
Angle of Shearing Resistance = 40.1°

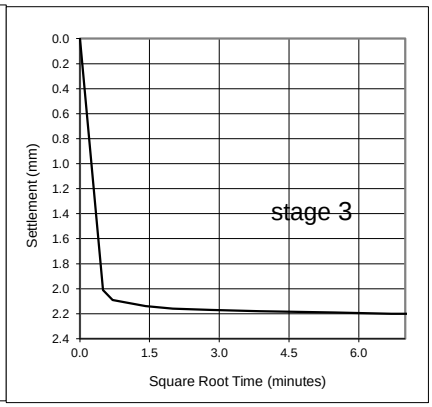
TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A18	**Date Tested**	13-15/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.64
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

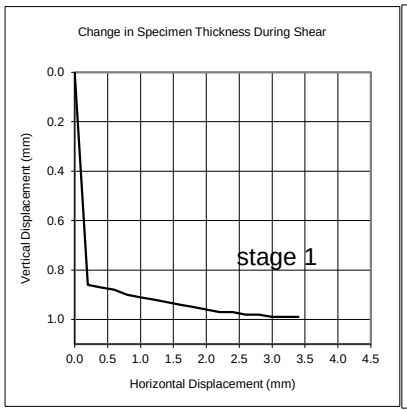
Consolidation Stage

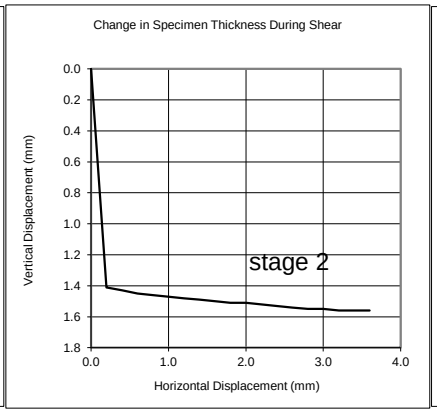


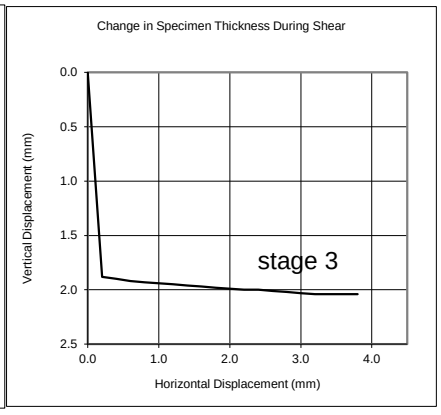




Shearing Stage



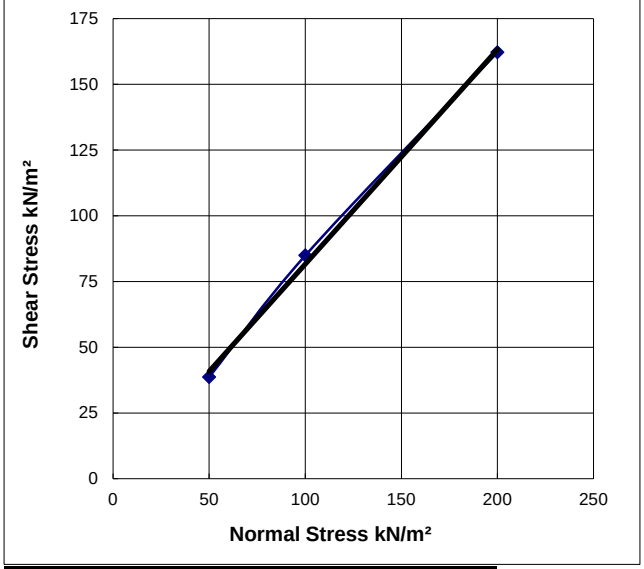


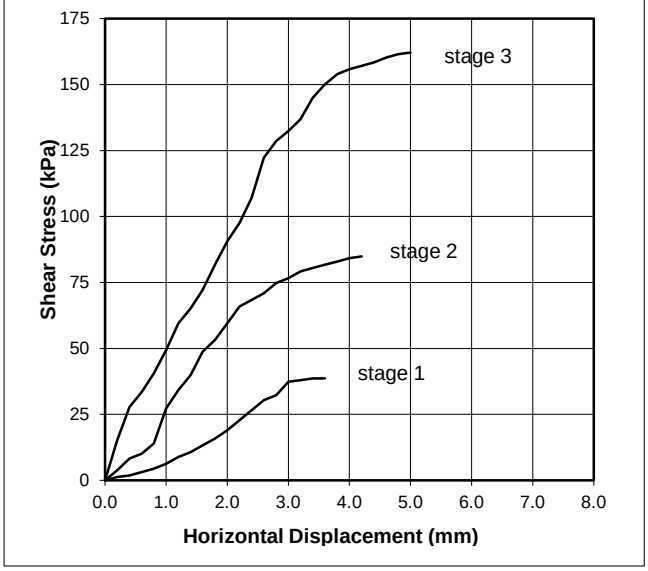


MATRIX LABORATORY L.L.C.

TABLE C8 - (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A21	**Date Tested**	16-17/08/2015
Depth (m)	1.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	Erwin





Shear Strength Parameters

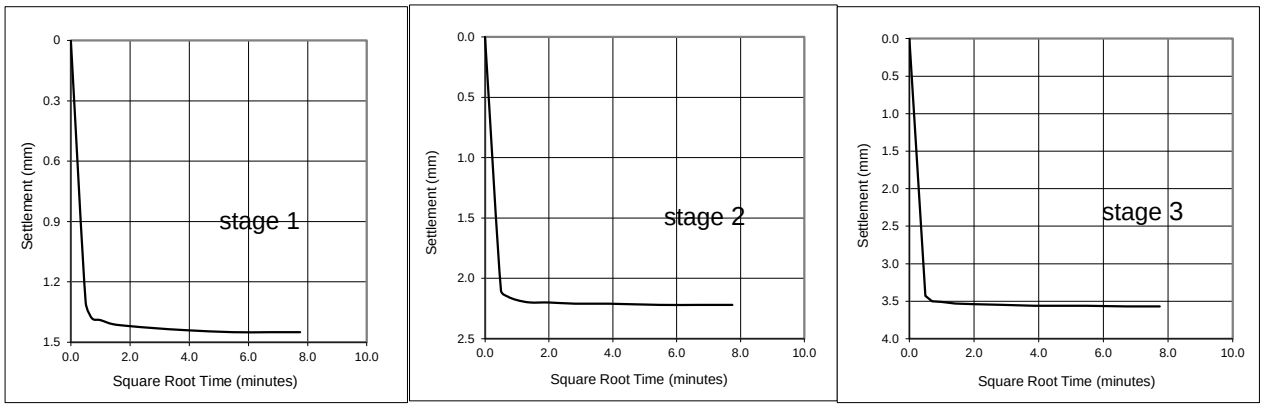
Apparent Cohesion = 0.00 kN/m²

Angle of Shearing Resistance = 39.22º

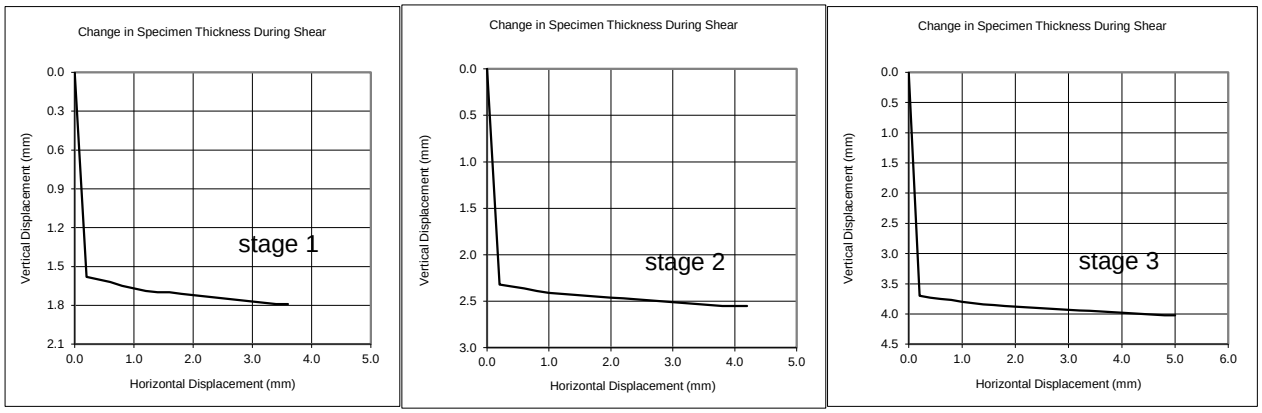
TABLE C8 - (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT2
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A21	**Date Tested**	16-17/08/2015
Depth (m)	1.00		
Rate of Displacement	1.25 mm/min	**Dry Density (Mg/m³)**	1.66
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	9.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	Erwin

Consolidation Stage



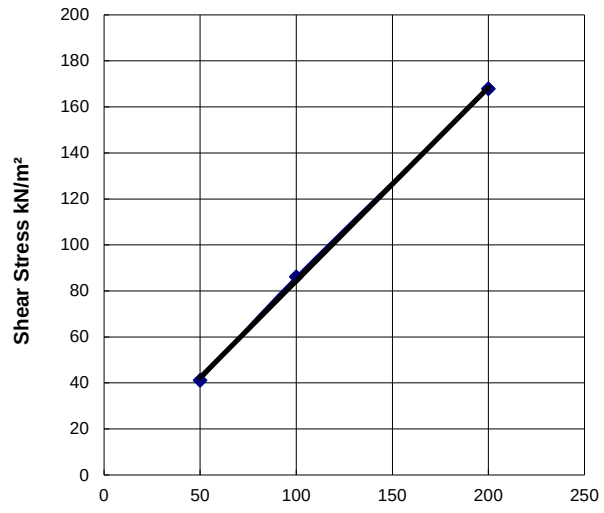
Shearing Stage

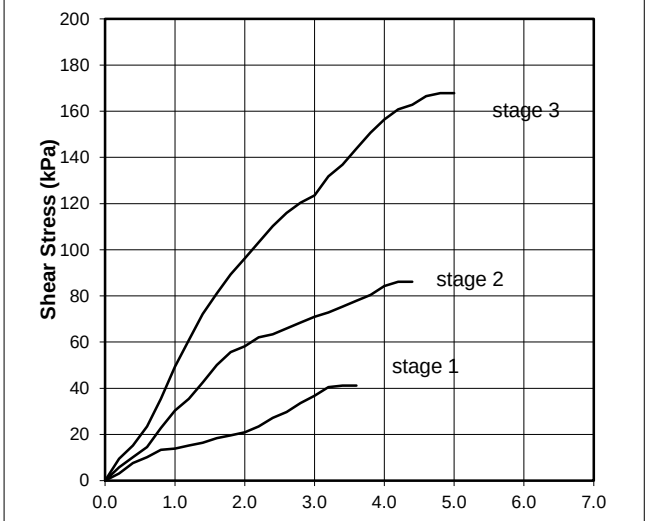


MATRIX LABORATORY L.L.C.

TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A25	**Date Tested**	16-17/08/2015
Depth (m)	2.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

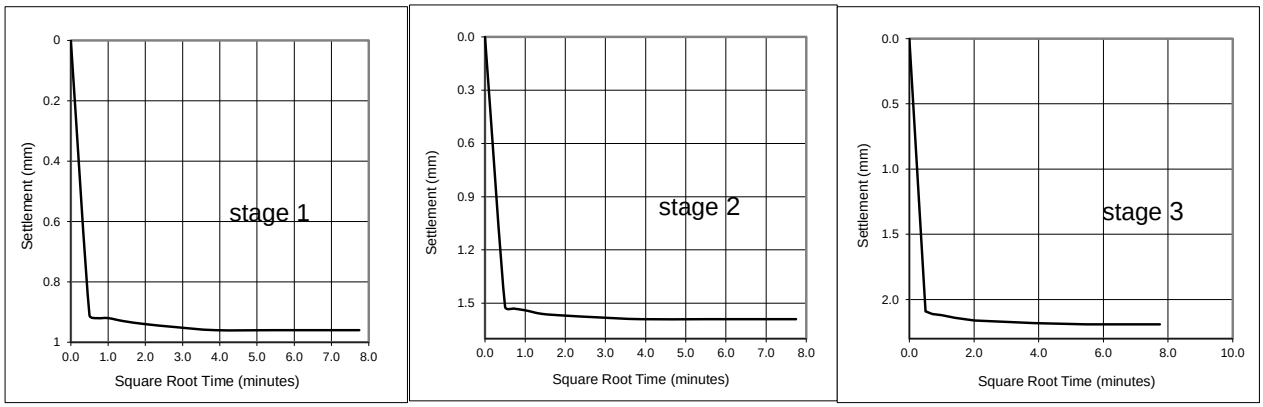
Apparent Cohesion = 0.0 kN/m²

Angle of Shearing Resistance = 40.0º

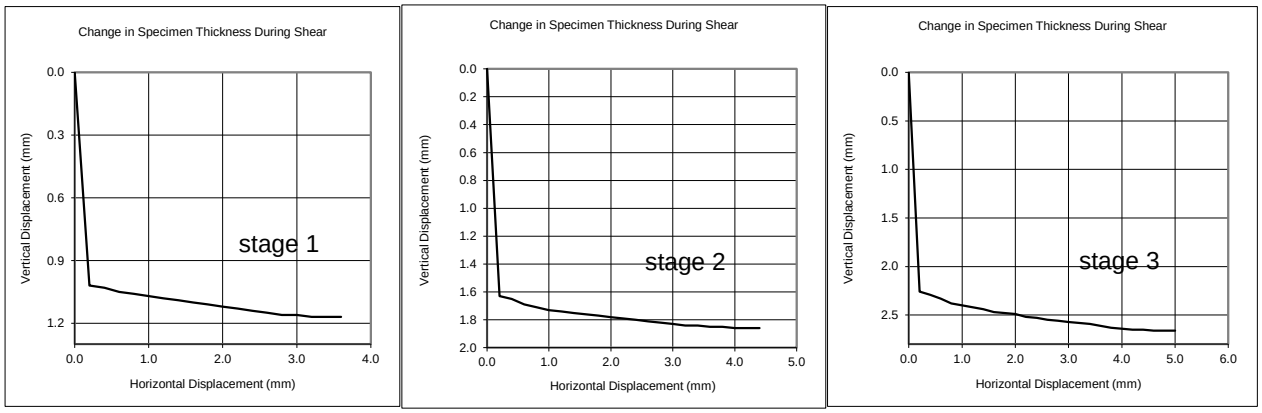
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A25	**Date Tested**	16-17/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.73
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

Consolidation Stage



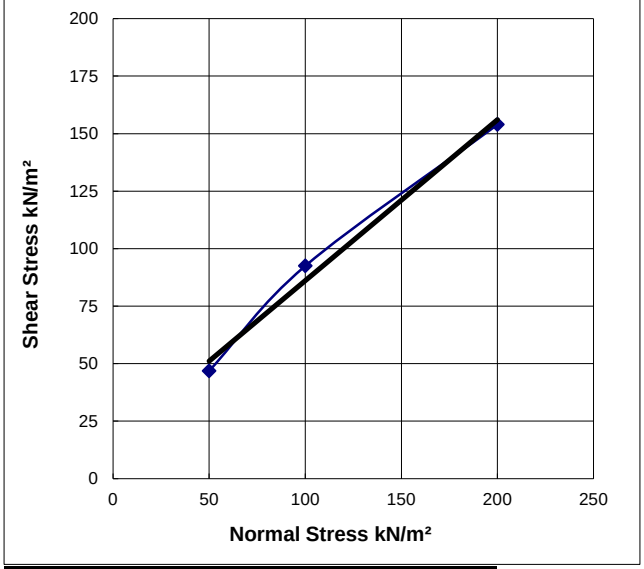
Shearing Stage

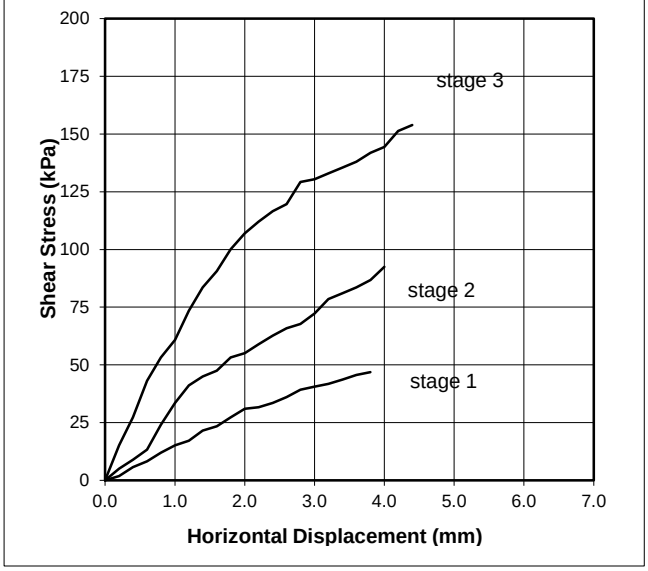


MATRIX LABORATORY L.L.C.

TABLE C8 - (7)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A28	**Date Tested**	18-19/08/2015
Depth (m)	2.0		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

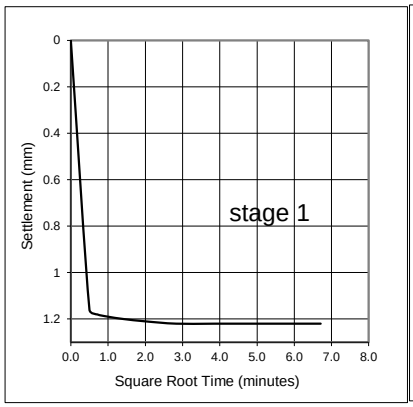
Apparent Cohesion = 0.0 kN/m²

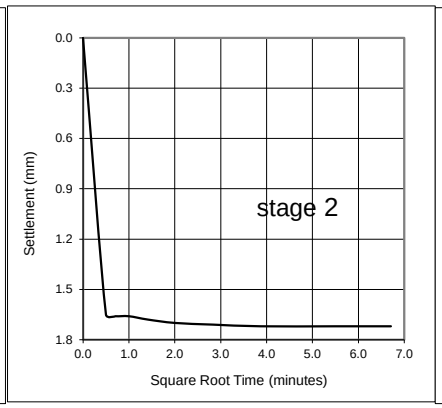
Angle of Shearing Resistance = 34.9º

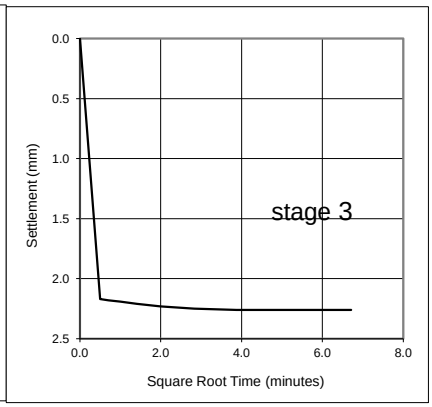
TABLE C8 - (8)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A28	**Date Tested**	18-19/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.69
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	10.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

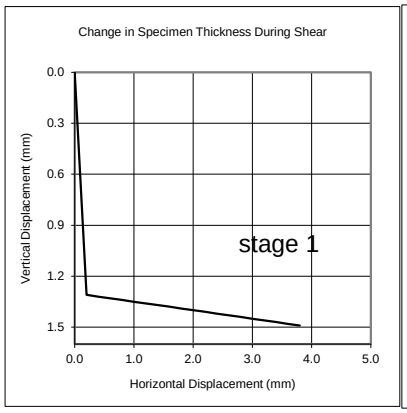
Consolidation Stage

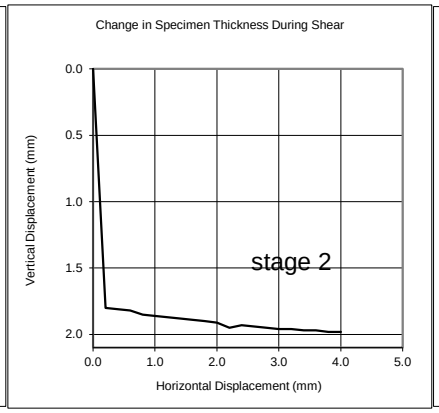


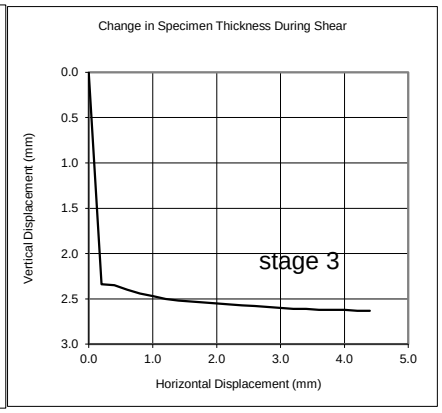




Shearing Stage



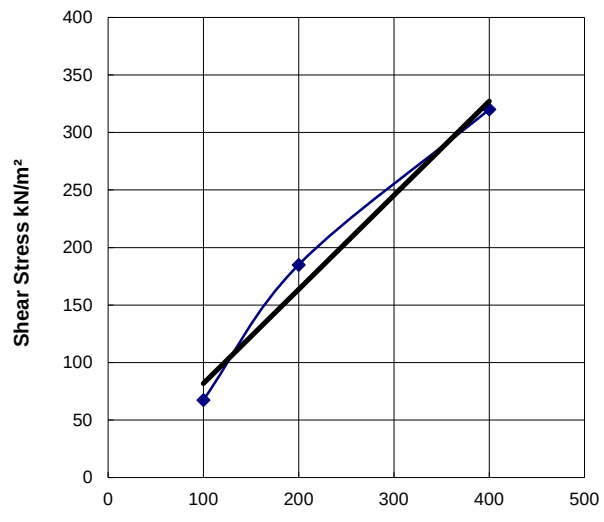


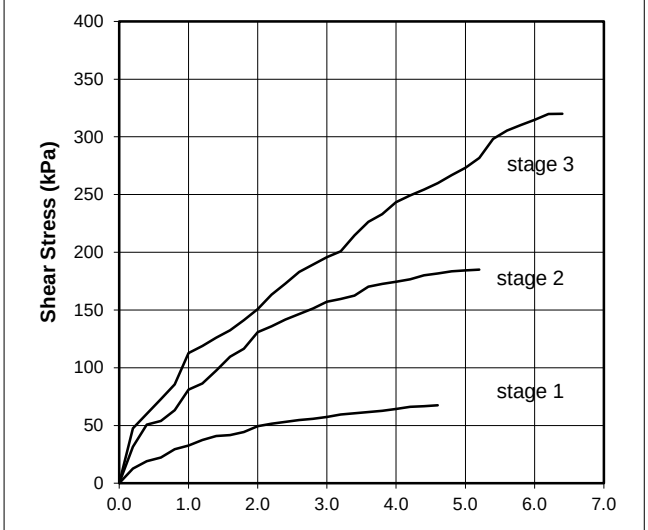


MATRIX LABORATORY L.L.C.

TABLE C8 - (9)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A33	**Date Tested**	18-19/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

Apparent Cohesion = 0 kN/m²

Angle of Shearing Resistance = 39.27º

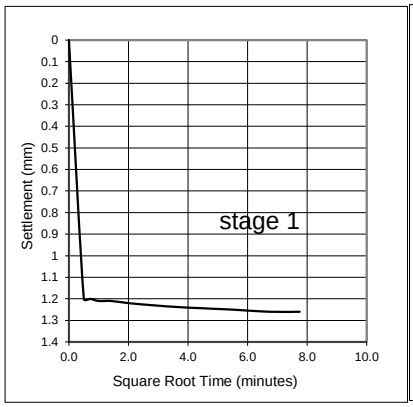
TABLE C8 - (10)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

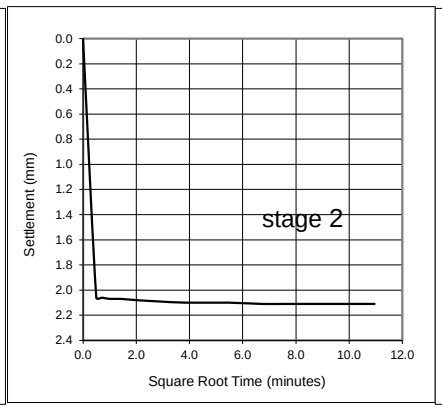
Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-11
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219785, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-11

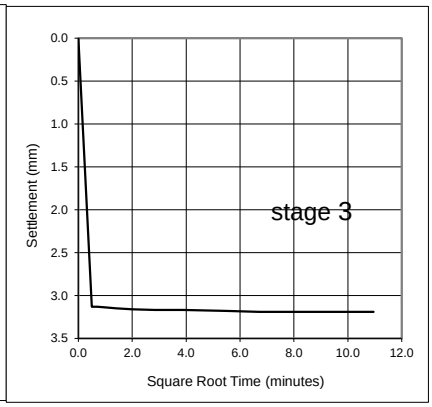
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A33	**Date Tested**	18-19/08/2015
Depth (m)	2.00		

Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.55
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

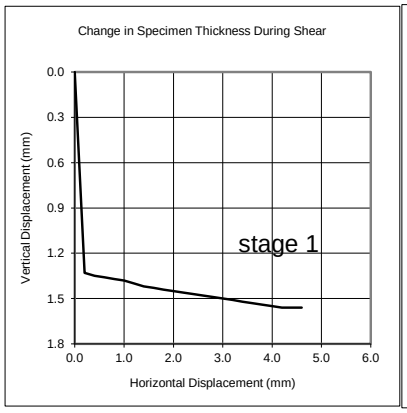
Consolidation Stage

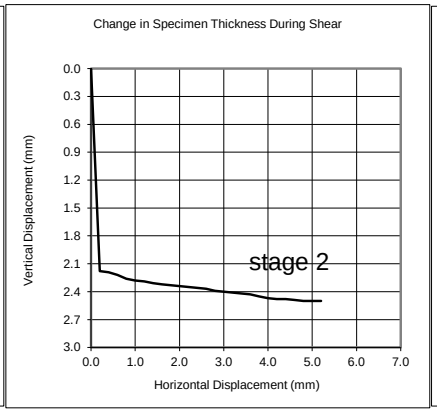


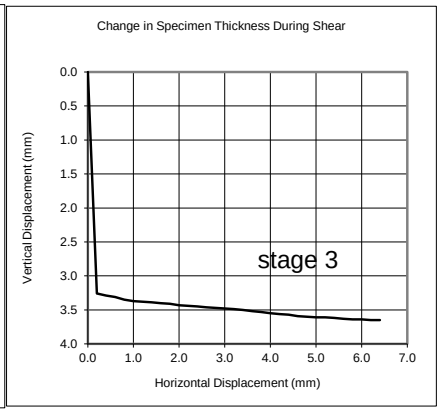




Shearing Stage







APPENDIX C12

LABORATORY TEST RESULTS (ZONE 12)

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	08-10/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	11-17/08/2015
Test Method	See below	**Date Tested**	12-20/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A34	SPT3	2.00	0.1	0.01	8.6 @ 28°C	DS-1
BH-A35	SPT3	2.00	0.2	0.01	8.0 @ 28°C	DS-1
BH-A37	SPT3	2.00	0.1	0.01	8.8 @ 28°C	DS-1
BH-A39	SPT3	2.00	0.1	0.01	8.5 @ 28°C	DS-1
BH-A41	SPT3	2.00	0.1	0.01	8.6 @ 28°C	DS-1

Test Method
Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation
Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF WATER

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 7)	**Sampling Date**	11/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	Ground Water	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	1 Liter
Sample Preparations	See below	**Date Received**	11/08/2015
Test Method	See below	**Date Tested**	11-12/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

BH No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
BH-A36	10.15	0.45	0.19	7.9 @ 28°C	DS-2
BH-A40	13.00	0.51	0.22	7.8 @ 28°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

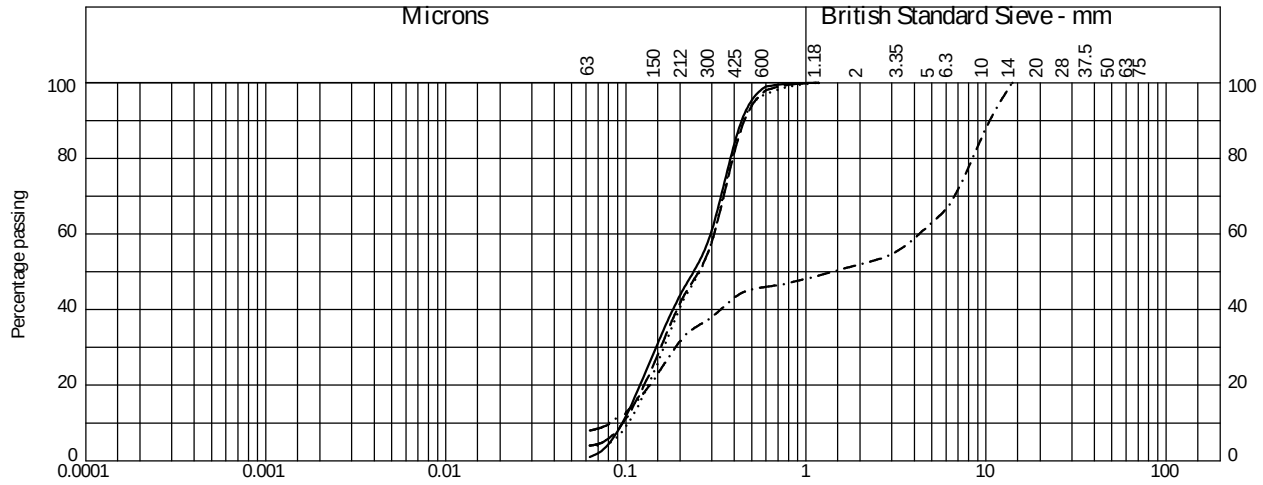
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A17	SPT2	133.4	———	SL. SILTY, F-M SAND (SP)	1.00
BH-A17	SPT4	133.9	– – –	SL. SILTY, F-M SAND (SP)	3.00
BH-A17	SPT7	135.5	.....	SL. SILTY, F-M SAND (SP)	8.00
BH-A17	SPT11	135.9	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	10.00

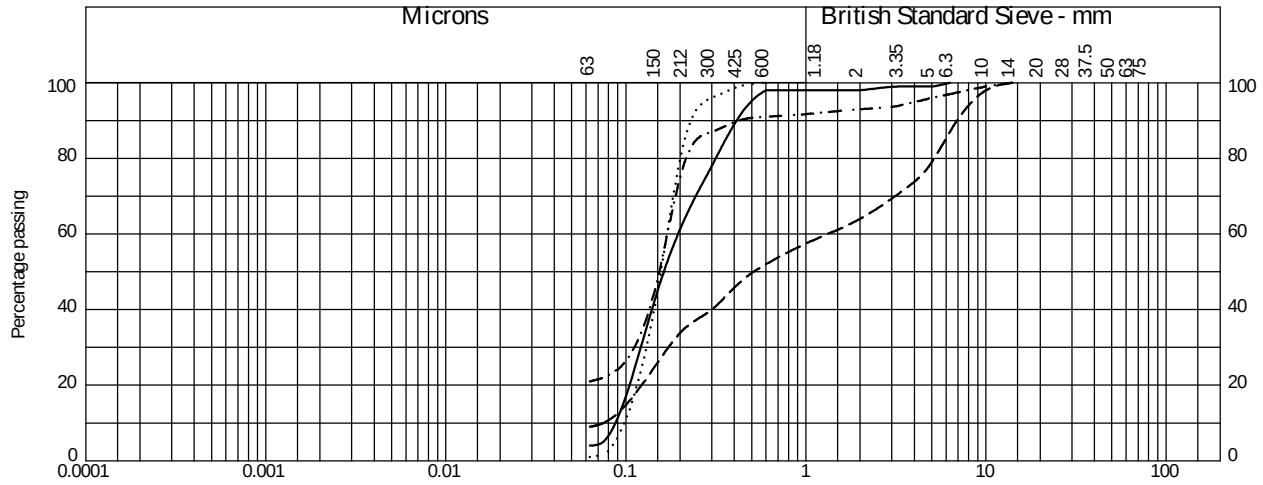
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A18	SPT2	128.2	———	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	1.00
BH-A18	SPT5	130.4	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	4.00
BH-A19	SPT2	136.8	.....	SL. SILTY, FINE SAND (SP)	1.00
BH-A19	SPT5	132.8	– · – · –	GRAVELLY, V. SILTY, FINE SAND (SM)	4.00

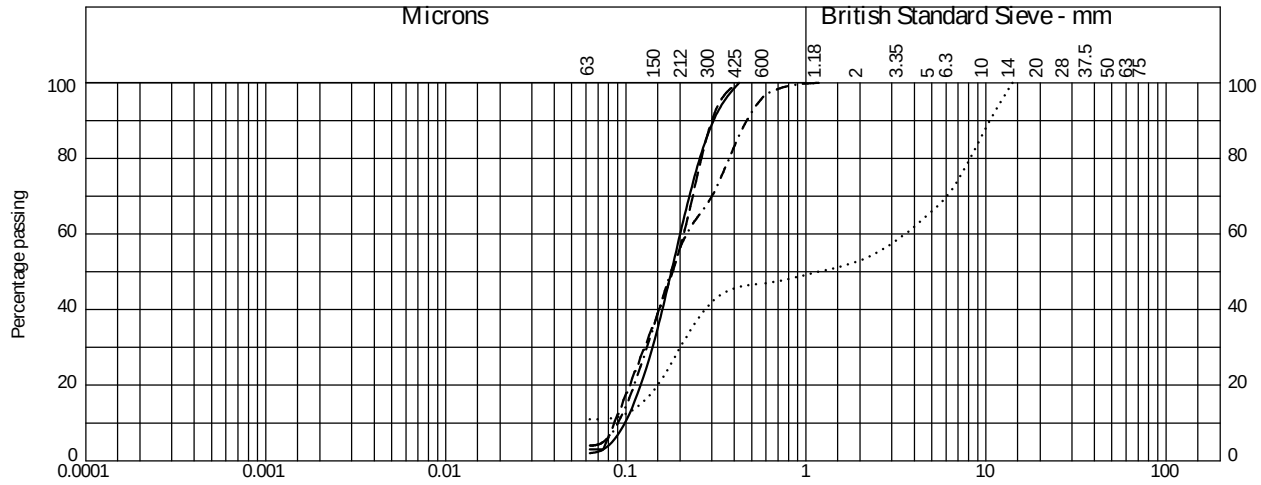
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A20	SPT2	120.2	———	SL. SILTY, M-F SAND (SP)	1.00
BH-A20	SPT6	130.5	— — —	SL. SILTY, M-F SAND (SP)	5.00
BH-A20	SPT9	140.9	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00
BH-A21	SPT2	131.6	— . — . —	SL. SILTY, M-F SAND (SP)	1.00

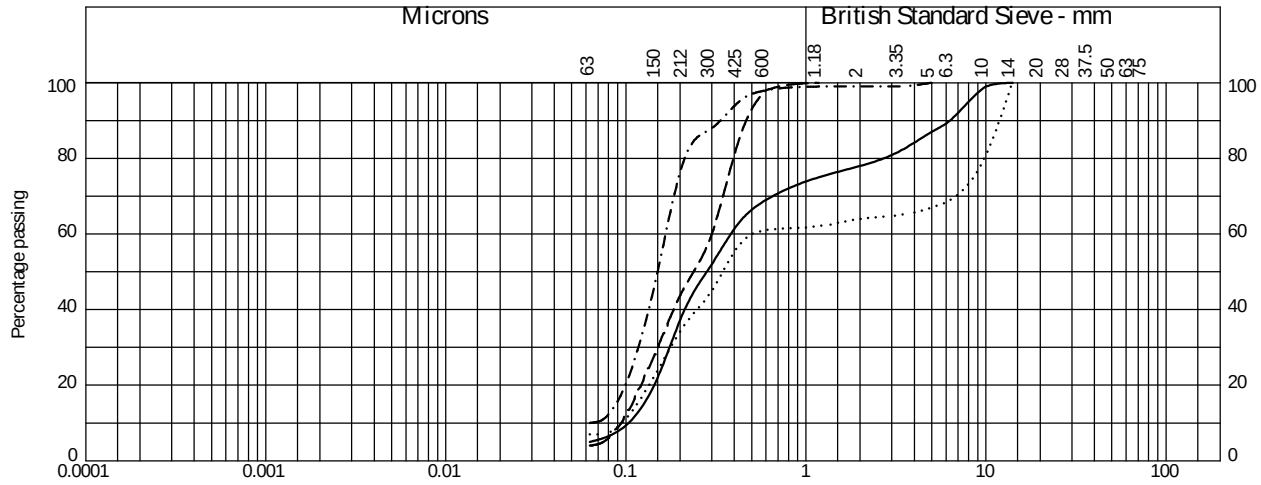
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A21	SPT6	138.9	———	V. GRAVELLY, SILTY, M-F SAND (S-M)	5.00
BH-A22	SPT2	133.5	– – –	SL. SILTY, F-M SAND (SP)	1.00
BH-A22	SPT4	132.3	.....	V. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A23	SPT2	122.3	– . – . –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00

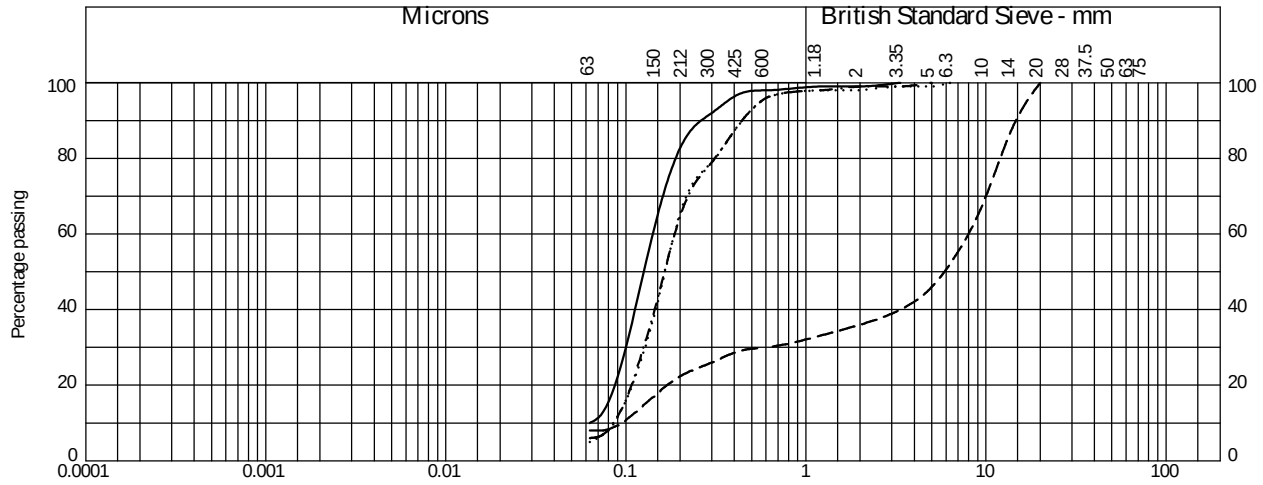
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A23	SPT4	123.9	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
BH-A23	SPT6	136.5	– – –	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A24	SPT2	133.6	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
BH-A24	SPT9	135.5	– . – . –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	8.00

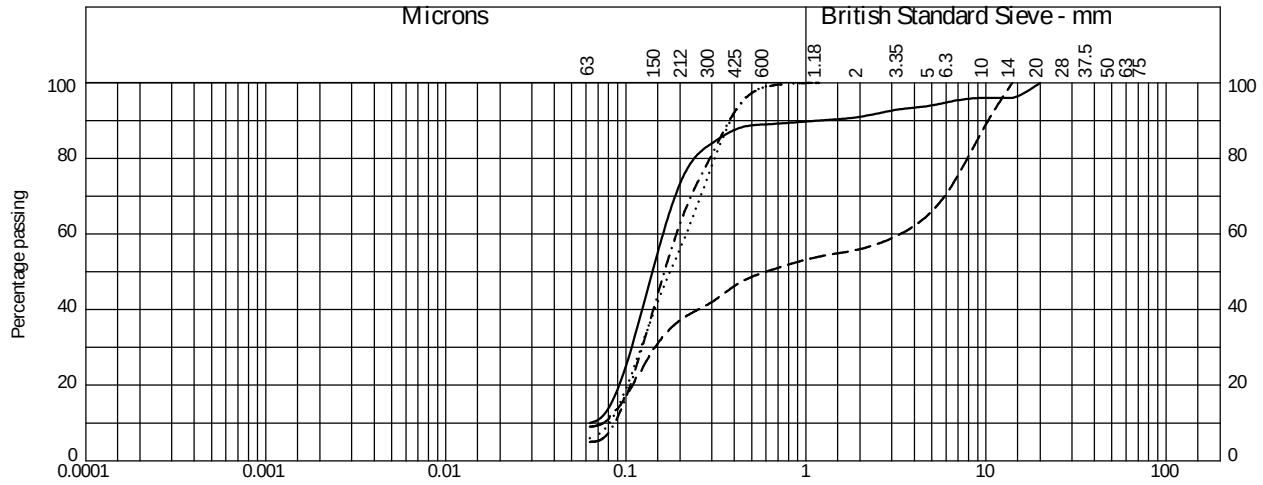
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A25	SPT3	135.5	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
BH-A25	SPT6	134.0	— — —	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-A26	SPT3	138.8	.....	SILTY, M-F SAND (S-M)	2.00
BH-A26	SPT4	131.5	— · — · —	SILTY, M-F SAND (S-M)	3.00

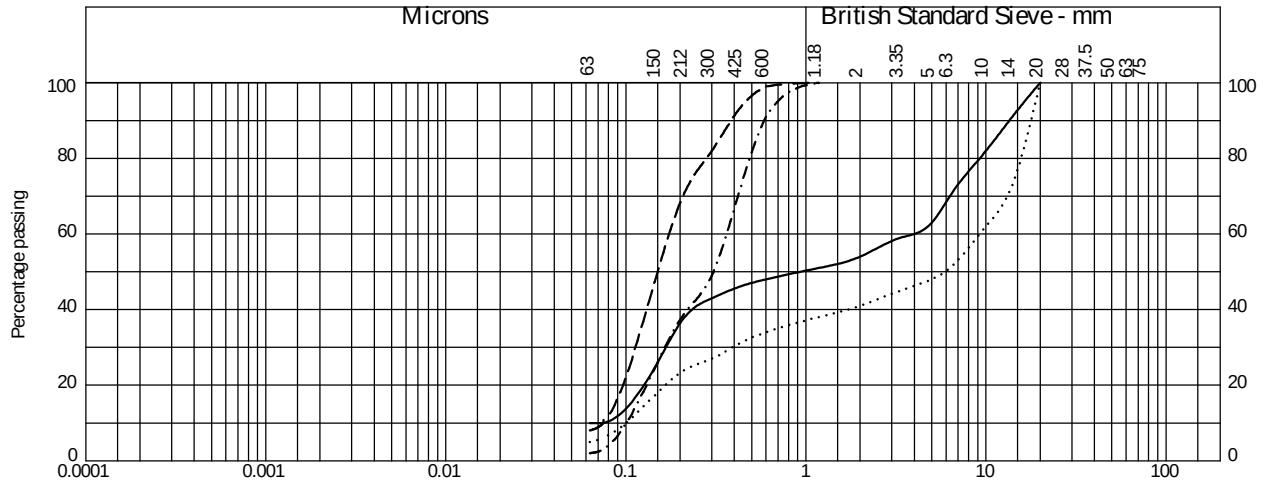
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A26	SPT6	137.9	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	5.00
BH-A27	SPT2	135.1	– – –	SILTY, M-F SAND (S-M)	1.00
BH-A27	SPT6	135.6	.....	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A28	SPT3	136.2	– . – . –	SL. SILTY, F-M SAND (SP)	2.00

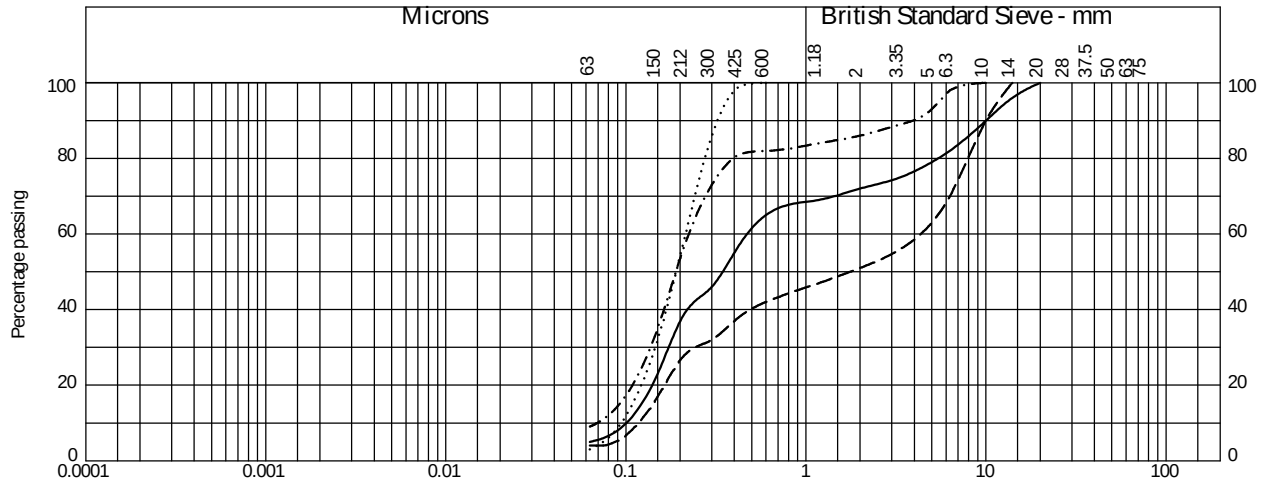
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A28	SPT8	139.3	———	V. GRAVELLY, SILTY, M-F SAND (S-M)	7.00
BH-A28	SPT9	133.1	– – –	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	8.00
BH-A29	SPT3	132.6	.....	SL. SILTY, M-F SAND (SP)	2.00
BH-A29	SPT6	138.3	– · – · –	GRAVELLY, SILTY, M-F SAND (S-M)	5.00

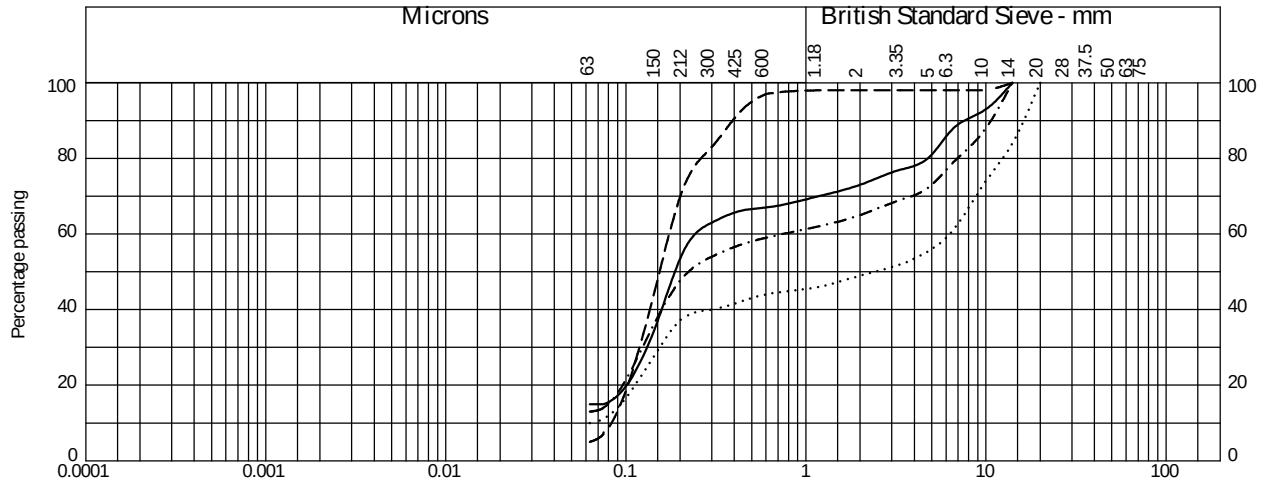
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A29	SPT7	137.3	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-A30	SPT4	139.5	– – –	SL. GRAVELLY, SILTY, M-F SAND (S-M)	3.00
BH-A30	SPT7	134.8	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	6.50
BH-A30	SPT9	134.0	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	8.00

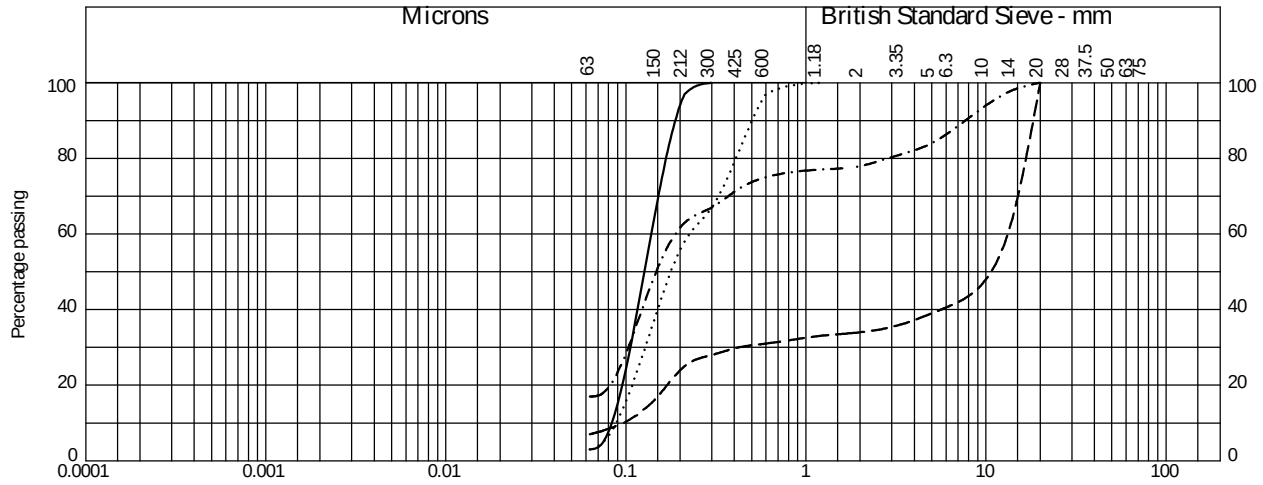
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A31	SPT4	132.6	———	SL. SILTY, FINE SAND (SP)	3.00
BH-A31	SPT6	120.2	– – –	V. GRAVELLY, SILTY, SAND (S-M)	5.00
BH-A32	SPT2	134.8	.....	SL. SILTY, M-F SAND (SP)	1.00
BH-A32	SPT5	124.1	– . – . –	V. GRAVELLY, SILTY, FINE SAND (S-M)	4.00

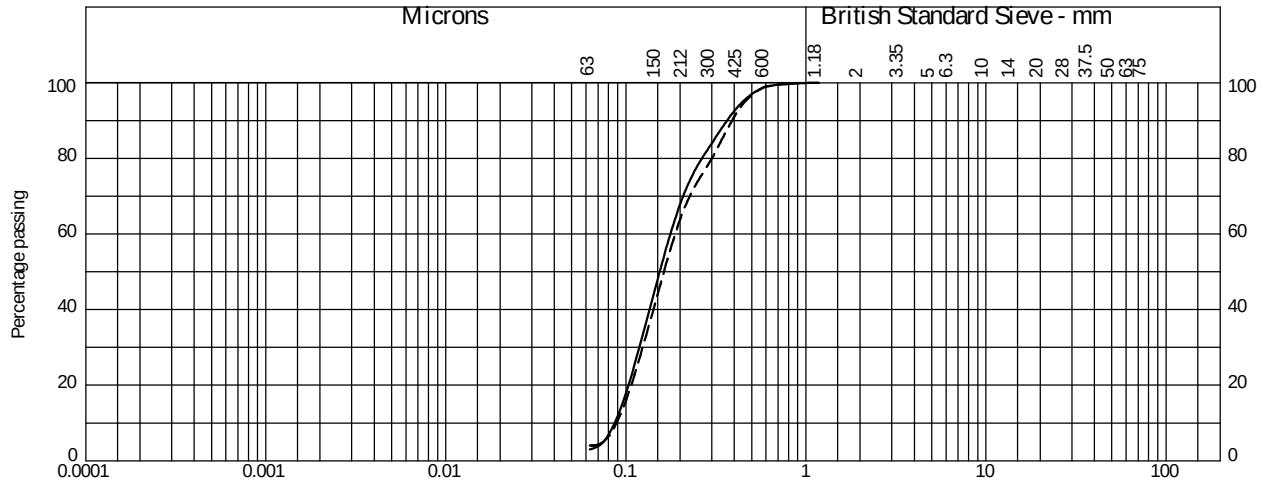
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143-11
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143-11
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT (ZONE 11)		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	09-13/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	11-16/08/2015
Test Method Var	NIL	Tested By	ERWIN / ROJAN / BIKI



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
BH-A33	SPT2	132.3	———	SL. SILTY, M-F SAND (SP)	1.00
BH-A33	SPT4	135.4	– – –	SL. SILTY, M-F SAND (SP)	3.00
			.....		
			–·–·–		

The results relate only to the samples tested.

Table C-1 (1)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, MEDIUM SAND	**Sampled By**	Matrix
Borehole No.	BH-A34	**Sampling Date**	08/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	78
6.3	69
5	64
3.35	61
2	56
1.18	53
0.600	49
0.425	45
0.300	34
0.212	27
0.15	19
0.075	15
0.063	12
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

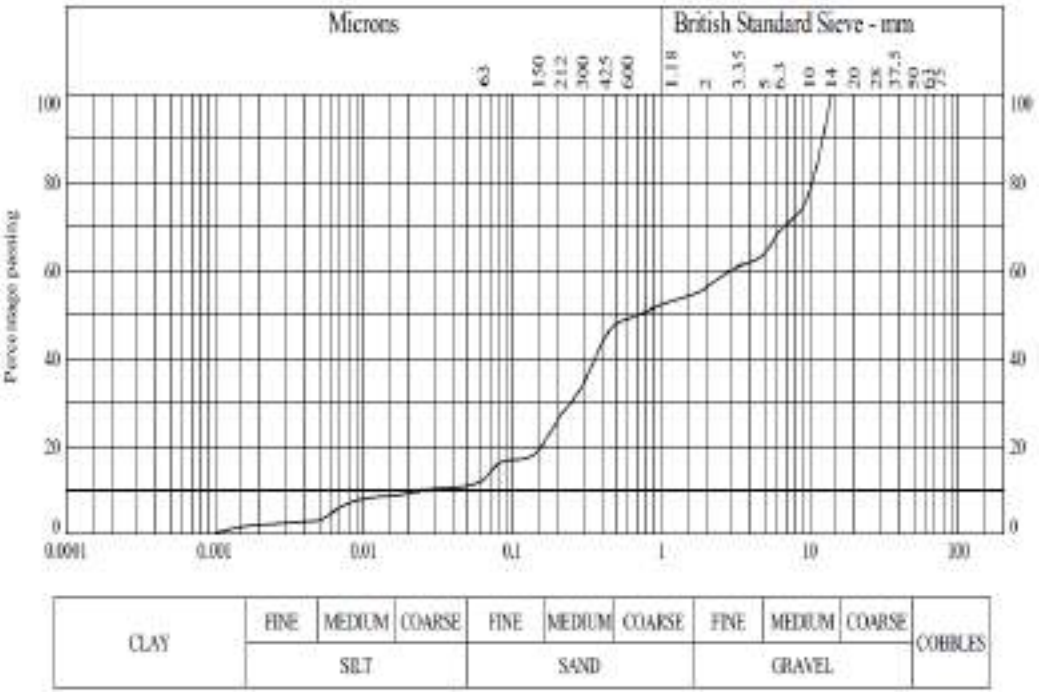


Table C-1 (2)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A35	**Sampling Date**	08/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	97
6.3	89
5	86
3.35	83
2	79
1.18	75
0.600	71
0.425	68
0.300	59
0.212	47
0.15	33
0.075	20
0.063	15
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

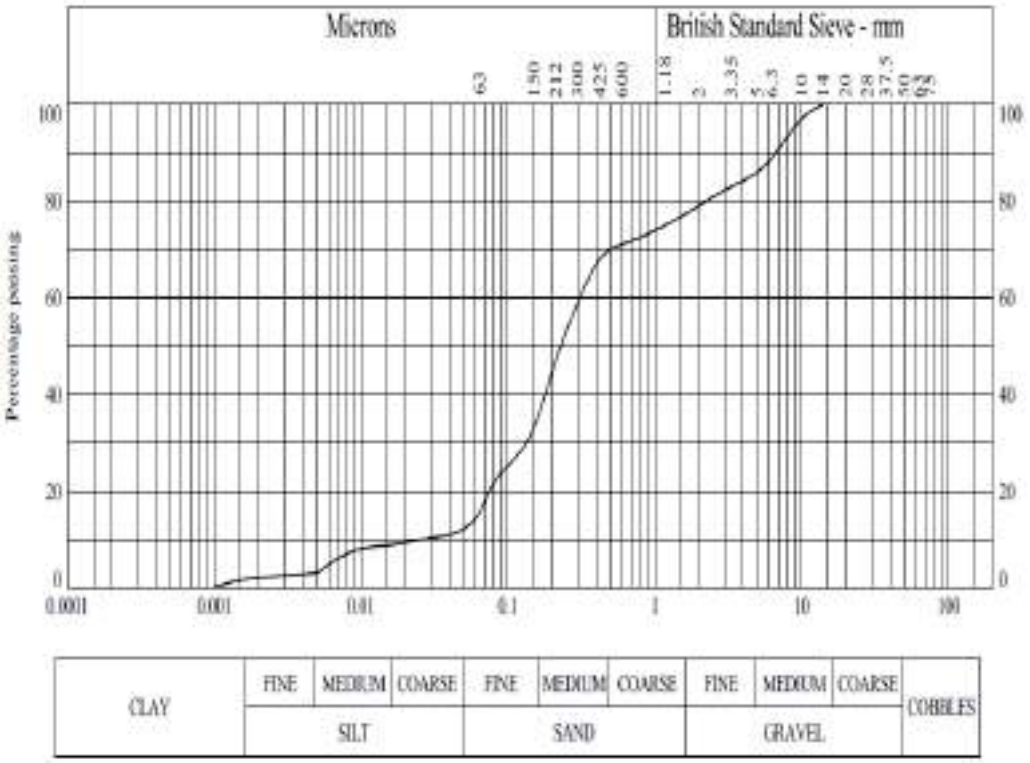


Table C-1 (3)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	BH-A36	**Sampling Date**	08/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	07/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	19/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	94
6.3	92
5	91
3.35	89
2	87
1.18	86
0.600	84
0.425	77
0.300	63
0.212	54
0.15	40
0.075	30
0.063	20
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

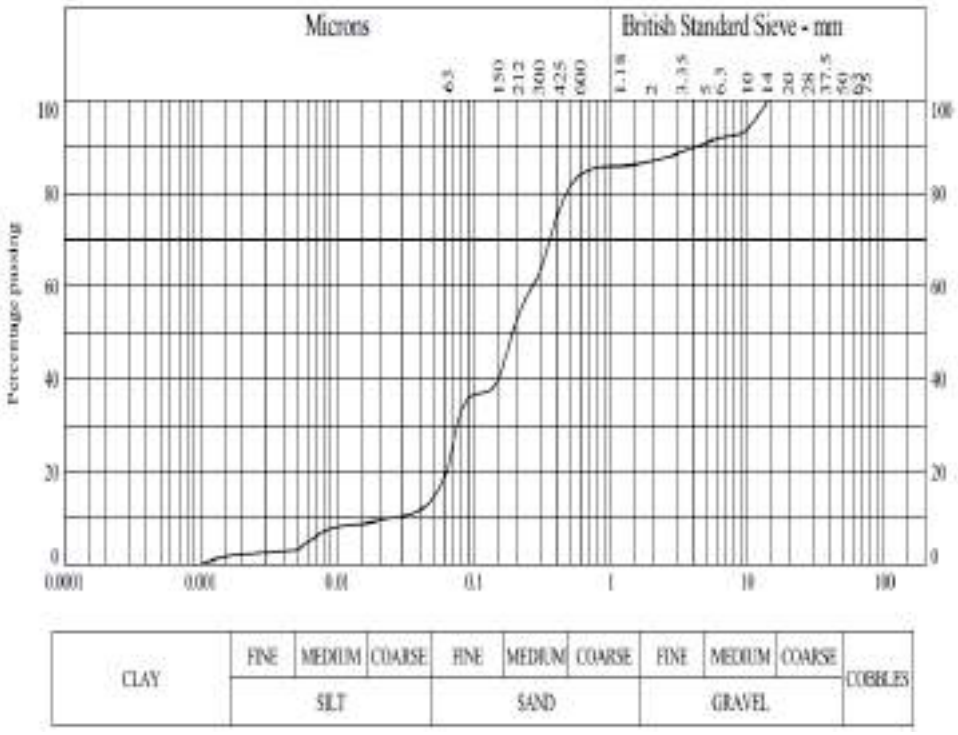


Table C-1 (4)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT6
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A37	**Sampling Date**	08/08/2015
Depth (m)	5.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	86
5	81
3.35	75
2	70
1.18	67
0.600	63
0.425	60
0.300	56
0.212	52
0.15	43
0.075	30
0.063	20
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

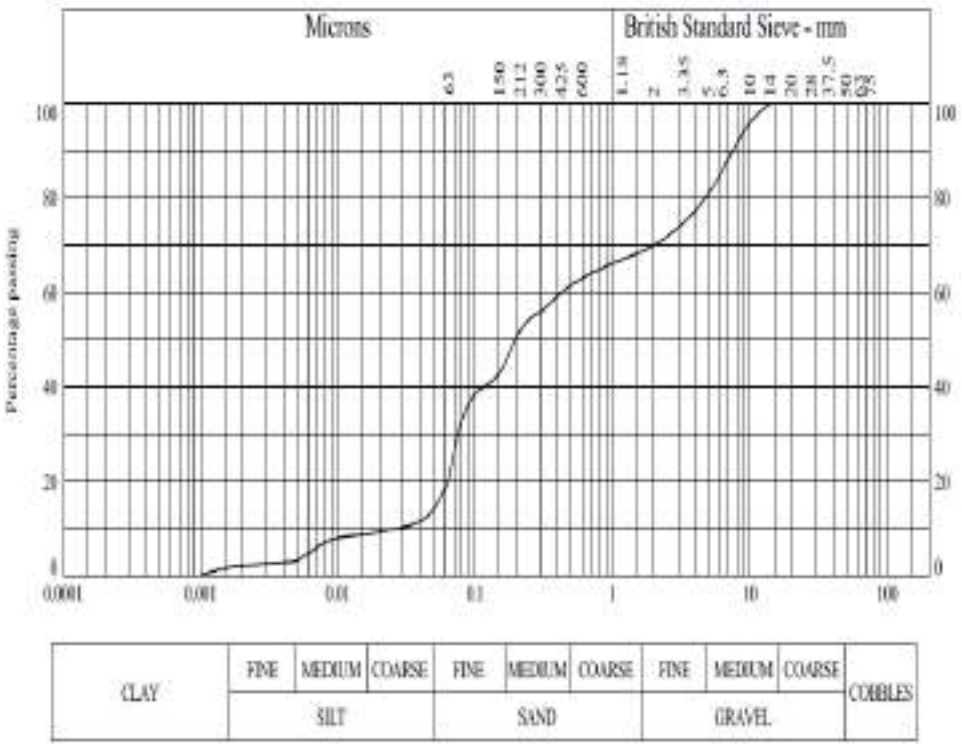


Table C-1 (5)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A38	**Sampling Date**	08/08/2015
Depth (m)	6.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	95
6.3	86
5	78
3.35	69
2	63
1.18	59
0.600	56
0.425	54
0.300	50
0.212	45
0.15	32
0.075	25
0.063	20
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

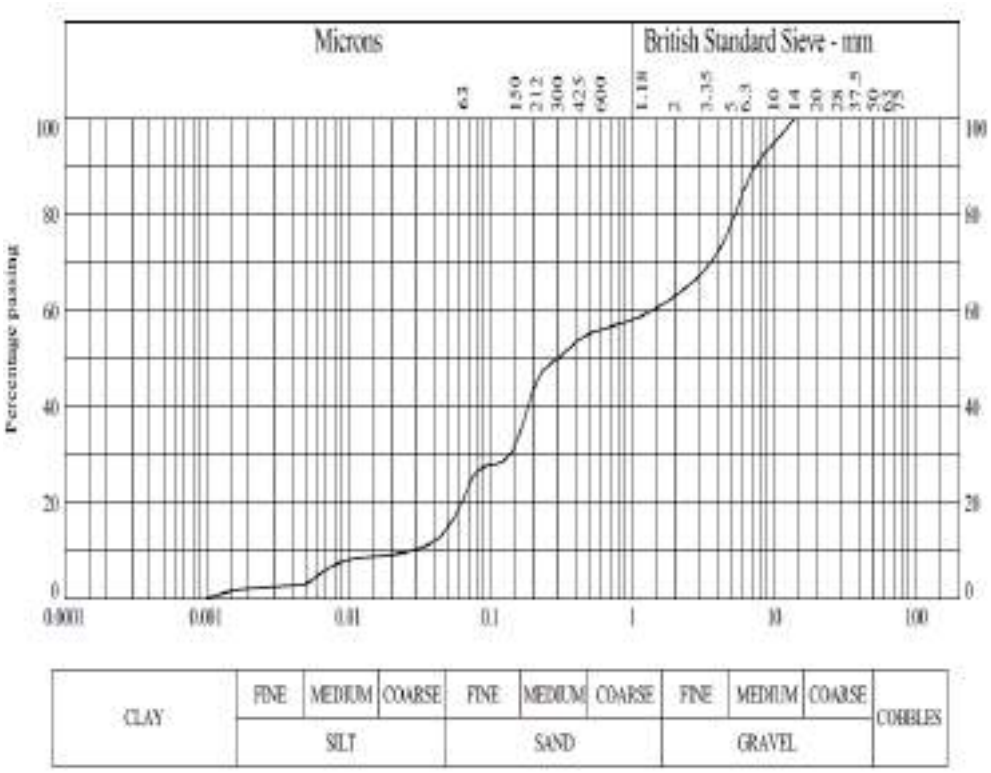


Table C-1 (6)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT9
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A38	**Sampling Date**	08/08/2015
Depth (m)	8.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	11/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	13/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	83
5	74
3.35	66
2	60
1.18	55
0.600	50
0.425	48
0.300	44
0.212	38
0.15	26
0.075	20
0.063	15
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

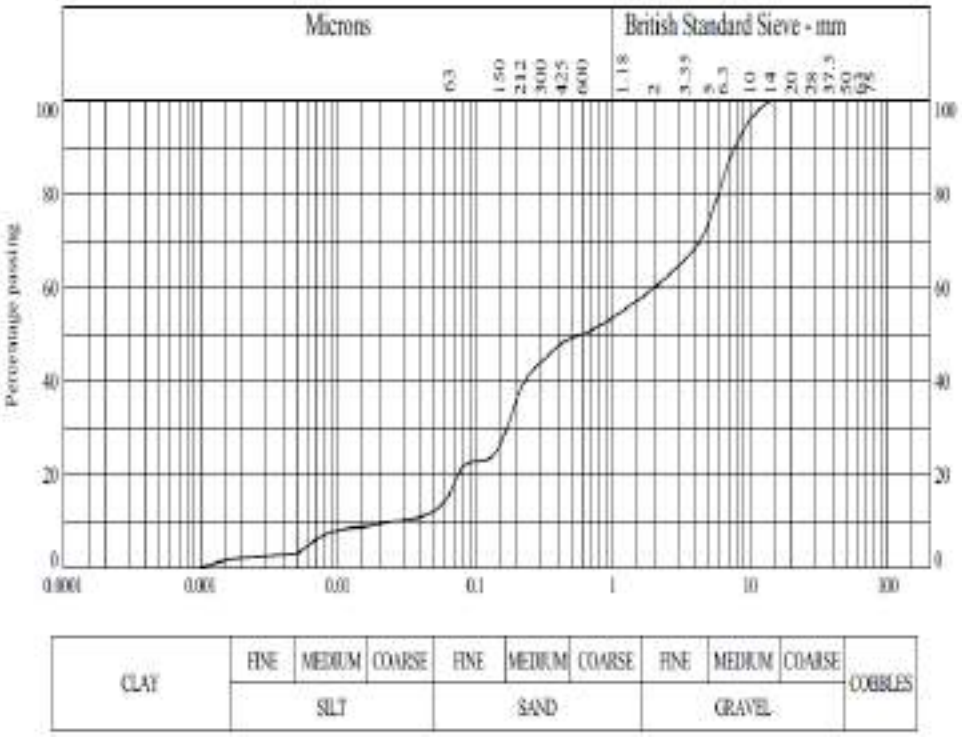


Table C-1 (7)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A39	**Sampling Date**	08/08/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	13/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	16/08/2015
Test Method Var.	Nil	**Tested By**	Biki

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	98
10	77
6.3	54
5	47
3.35	39
2	33
1.18	30
0.600	26
0.425	23
0.300	16
0.212	13
0.15	11
0.075	10
0.063	9
0.028	8
0.018	7
0.010	6
0.007	5
0.005	3
0.002	2
0.001	0

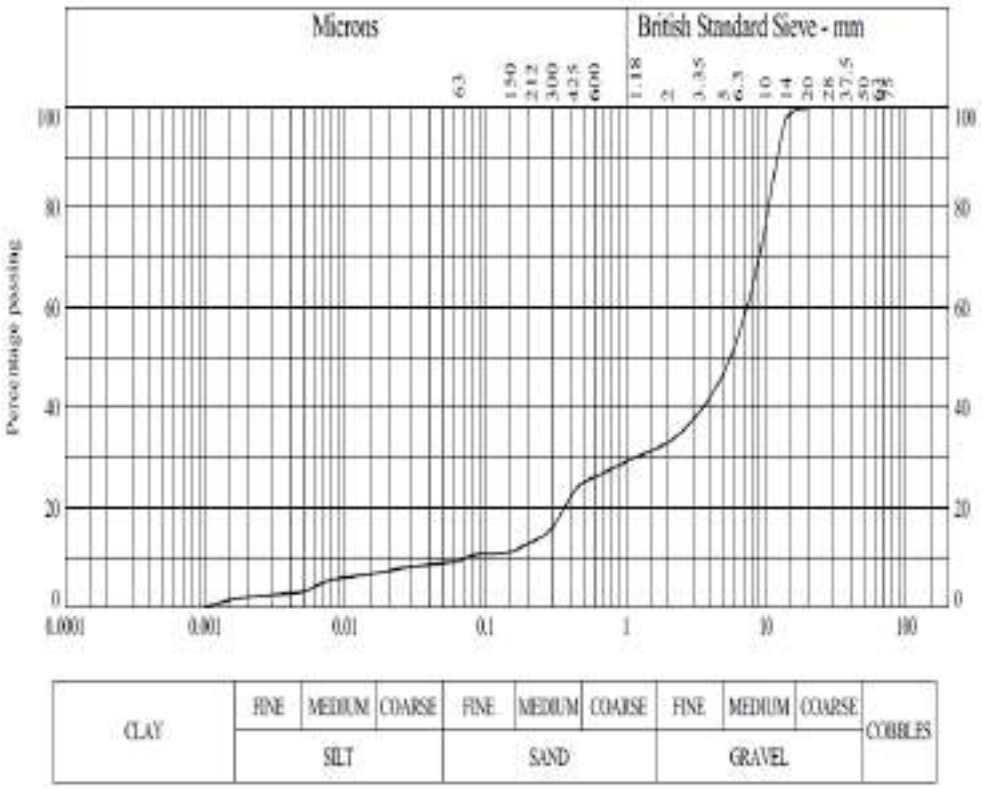


Table C-1 (8)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT5
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A40	**Sampling Date**	08/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	96
10	93
6.3	88
5	85
3.35	83
2	81
1.18	79
0.600	77
0.425	76
0.300	73
0.212	69
0.15	57
0.075	18
0.063	16
0.028	13
0.018	10
0.010	8
0.007	4
0.005	3
0.002	2
0.001	0

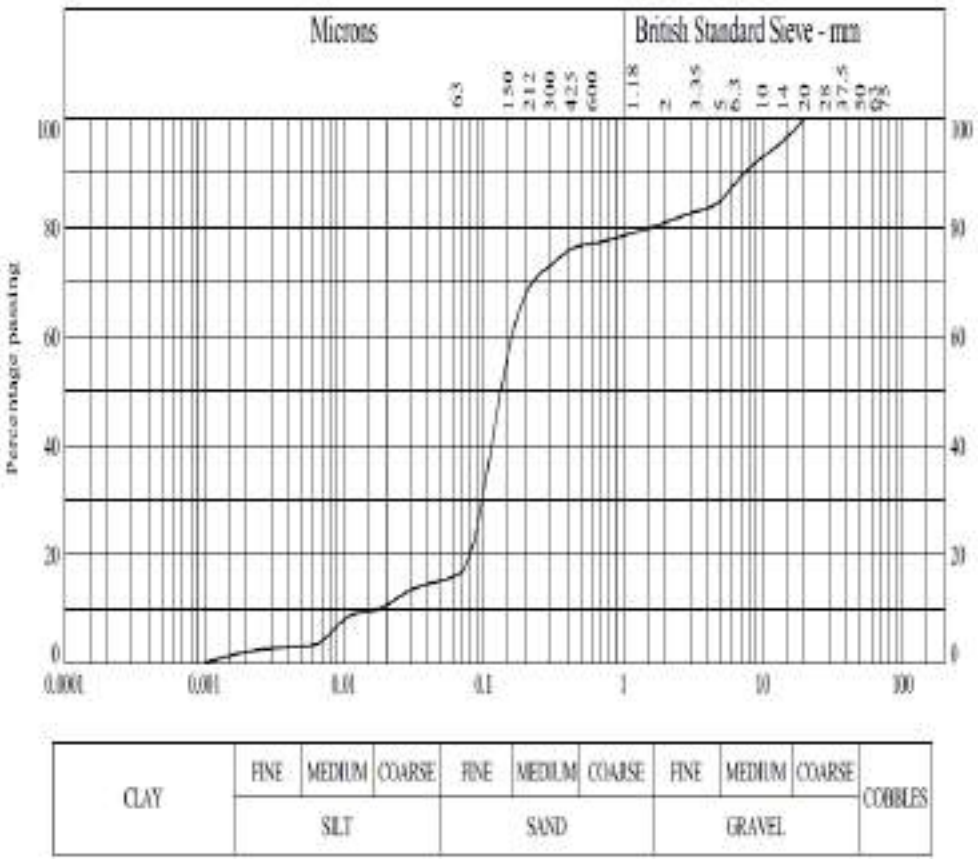


Table C-1 (9)
TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Customer	N.P.	**Sample No.**	SPT7
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143-12
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	BH-A40	**Sampling Date**	08/08/2015
Depth (m)	6.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	12/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	15/08/2015
Test Method Var.	Nil	**Tested By**	Rojan

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	91
5	89
3.35	88
2	86
1.18	84
0.600	83
0.425	79
0.300	71
0.212	66
0.15	55
0.075	40
0.063	30
0.028	15
0.018	10
0.010	8
0.007	4
0.005	3
0.002	2
0.001	0

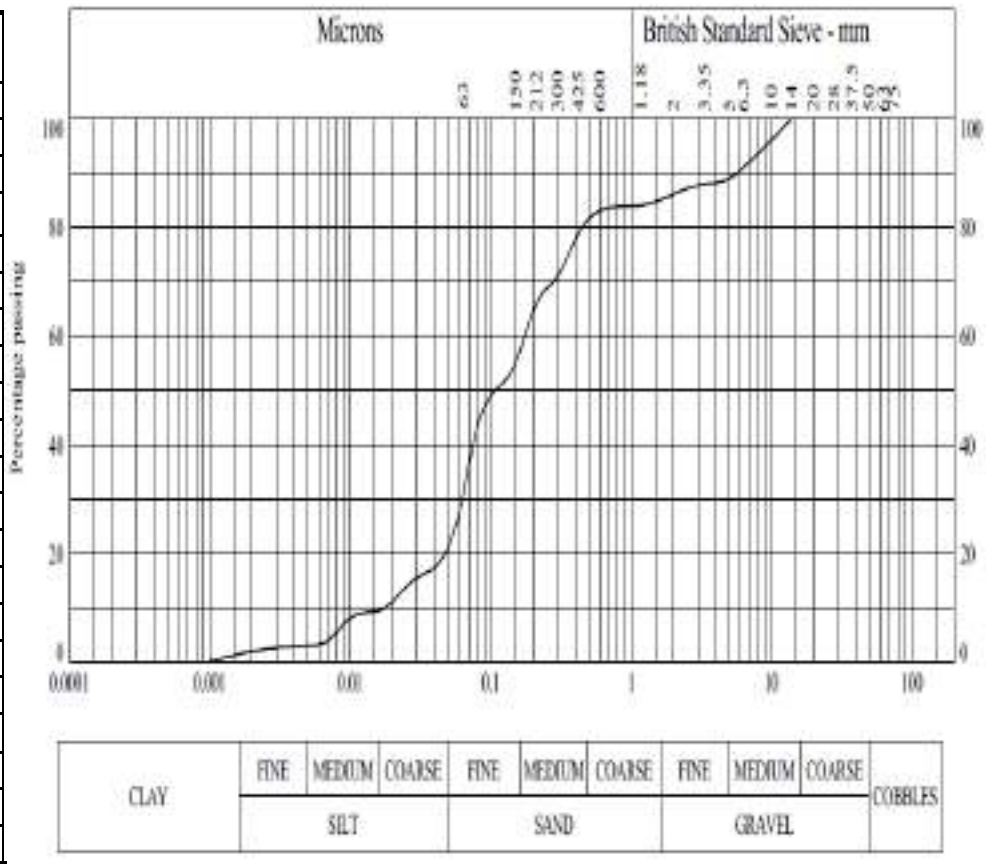


TABLE C – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	11-17/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	11-18/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	08-10/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Borehole No.	Depth	Moisture Content (%)
BH-A34	2.00	8.5
BH-A34	3.00	12.0
BH-A35	1.00	4.0
BH-A35	3.00	15.0
BH-A35	4.00	8.5
BH-A35	6.50	8.1
BH-A35	8.00	13.0
BH-A36	3.00	8.8
BH-A36	5.00	12.0
BH-A37	1.00	10.0
BH-A37	2.00	9.6
BH-A37	5.00	20.0
BH-A38	1.00	7.9
BH-A38	3.00	15.0
BH-A38	4.00	8.8

Borehole No.	Depth	Moisture Content (%)
BH-A38	6.50	9.9
BH-A38	8.00	9.6
BH-A39	2.00	11.0
BH-A39	4.00	8.8
BH-A39	6.00	12.0
BH-A40	1.00	1.9
BH-A40	4.00	13.0
BH-A40	6.00	1.5
BH-A41	1.00	6.9
BH-A41	5.00	3.6
BH-A41	6.00	13.0
BH-A41	8.00	12.0
BH-A41	11.00	32.0

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 3

REPORT FOR SPECIFIC GRAVITY

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	11/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	12/08/2015
Sample Description	Soil	**Sampling Date**	09/08/2015
Method of Preparation	BS 1377 : Part1: 1990 (Amd.8258/95), Cl.7.4.4.	**Tested By**	Rojan
Test Method	BS 1377 : Part 2 : 1990 (Amd.9027/96), Cl.8.3		

Test Results:

Borehole No.	Depth (m)	Specific Gravity
BH-A39	2.00	2.60

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C - 4

REPORT FOR ORGANIC MATTER CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	11/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	12-13/08/2015
Sample Description	SAND	**Sampling Date**	08-09/08/2015
Method of Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.5	**Tested By**	Biki
Test Method	BS 1377 : Part 3 : 1990 (Amd.9028); Cl.3.4		

Test Result:

Borehole No.	Depth (m)	Percentage passing 2mm (%)	Organic Matter Content (%)
BH-A34	3.00	100	0.1
BH-A38	5.00	100	0.1

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TABLE C – 5

TEST REPORT FOR CARBONATE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	12-13/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	09-10/08/2015
Sample Description	ROCK CORE	**Date Tested**	13-15/08/2015
Test Method	BS 1377: Part 3: Clause 6.3:1990 (Amd 96)	**Tested By**	Biki

Test Results:

Borehole No.	Sample Depth (m)	Carbonate Content (% by wt.)	
		as CO_2	as $CaCO_3$
BH-A35	8.24	34.18	77.84
BH-A38	8.34	18.79	42.80
BH-A40	11.75	32.77	74.62

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 6
REPORT ON POINT LOAD STRENGTH INDEX

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Date Received**	16-17/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	16-18/08/2015
Sample Description	Rock	**Moisture condition of the sample**	As Received
Source	Site	**Sampling Date**	08-10/08/2015
Sample Location	N.P.	**Sampling Method**	BS 5930
Sample Preparation	ASTM D 5731 : 2008	**Type of test**	Diametral
Test Method	ASTM D 5731 : 2008 Cl.9.0	**Tested By**	Erwin / Rojan
Test Method Var.	Nil		

Test Results:

Borehole No.	Depth (m)	Sample No.	Point Load Index, $I_{s(50)}$ (MPa)	Direction of Loading
BH-A34	4.17	1	0.23	Vertical
BH-A34	10.00	2	0.16	Vertical
BH-A35	8.25	3	0.29	Vertical
BH-A35	10.80	4	0.43	Vertical
BH-A36	9.00	5	0.71	Vertical
BH-A36	16.40	6	0.28	Vertical
BH-A36	18.87	7	0.33	Vertical
BH-A37	8.00	8	0.54	Vertical
BH-A37	17.20	9	0.08	Vertical
BH-A38	8.30	10	0.15	Vertical
BH-A38	12.85	11	0.46	Vertical
BH-A39	8.50	12	0.5	Vertical
BH-A39	10.26	13	0.12	Vertical
BH-A40	7.25	14	0.23	Vertical
BH-A40	8.75	15	0.14	Vertical
BH-A40	14.75	16	0.41	Vertical
BH-A40	16.25	17	0.09	Vertical

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

TABLE C - 7

REPORT FOR UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143-12
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Reported**	23/08/2015
Sample Description	Rock	**Date Received**	16-17/08/2015
Sample Source	Site	**Date Tested**	16-18/08/2015
Test Method: Unconfined Compressive Strength	ASTM D-2938 (95) 2002	**Condition of the Samples Before Testing**	Moist
Test Method: Moisture Content	ASTM D-2216-10	**Formation Name**	Sedimentary Rocks
Sample Preparation	ASTM D- 4543-08	**Temp.at test (°C)**	23-24
Sampling Method	ASTM D 2938 Cl.7.0	**Moisture Condition**	As Received
Load Direction	VERTICAL	**Method Variation**	End Flatness
Rate of Loading (mm/min)	0.25 - 1.25	**Tested By**	Erwin/ Rojan

Sample Details:			Dimensions:		Results:						
BH	**Depth**	**Sample**	**Diameter**	**Height**	**Compresive Strength**	**Strain at Failure**	**Modulus of Elasticity**	**Moisture Content**	**Wet Density**	**Sketch**	**Rock Description**
NO.	**(m)**	**No.**	**(cm)**	**(cm)**	**(N/mm^2)**	**(%)**	**(Mpa)**	**(%)**	**(Mg/m^3)**		
BH-A34	11.50	1	7.50	15.10	6.9	2.78	247.3	11.10	1.83	Figure C-01	CAL. SANDSTONE
BH-A34	18.50	2	7.50	15.00	9.9	3.47	286.2	7.30	2.17	Figure C-02	CAL. SILTSTONE
BH-A34	19.00	3	7.40	14.80	8.9	3.11	286.0	5.30	2.02	Figure C-03	CAL. SILTSTONE
BH-A36	5.25	4	7.50	15.10	3.7	1.19	310.7	14.50	1.98	Figure C-04	CAL. SANDSTONE
BH-A36	7.00	5	7.40	14.80	2.8	1.28	222.6	18.40	2.23	Figure C-05	CAL. SANDSTONE
BH-A37	6.50	6	7.50	15.00	5.9	2.47	237.1	16.60	2.17	Figure C-06	CAL. SANDSTONE
BH-A37	16.00	7	7.50	15.00	6.9	2.73	251.8	17.40	2.13	Figure C-07	CAL. SANDSTONE
BH-A37	10.00	8	7.50	15.00	4.6	1.93	237.5	19.60	2.14	Figure C-08	CONG. SILTSTONE
BH-A41	19.00	9	7.50	15.00	10.9	3.33	328.8	8.70	2.04	Figure C-09	CONG. SILTSTONE

Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

TYPE OF FRACTURES FOR CORES

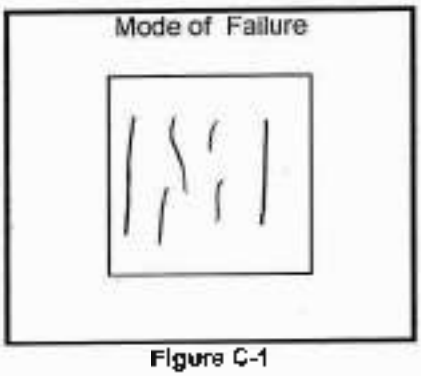


Figure C-1

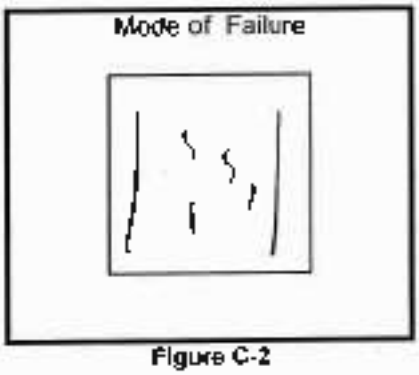


Figure C-2

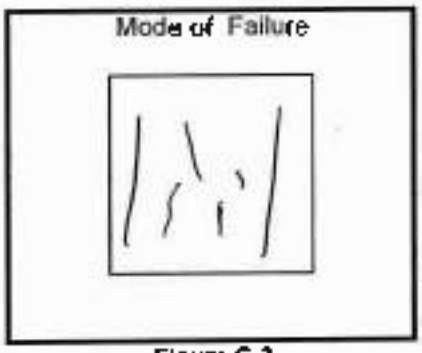


Figure C-3

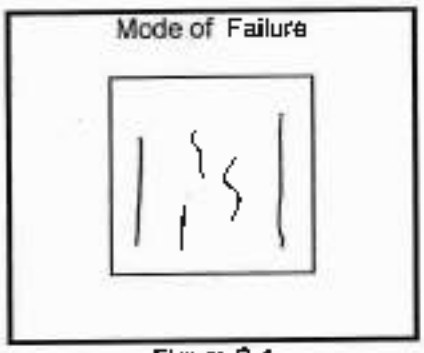


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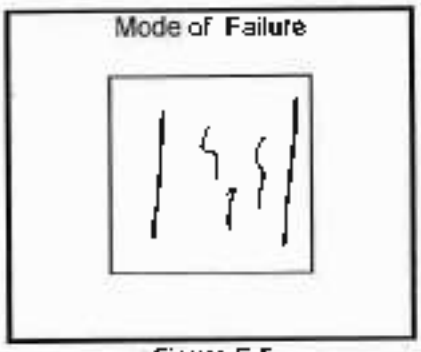


Figure C-5

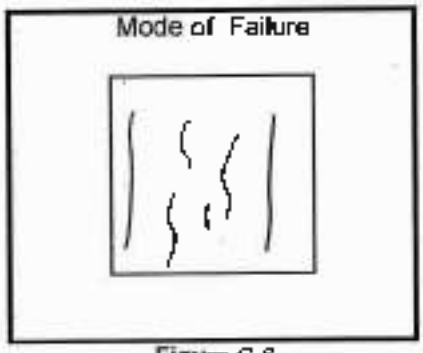


Figure C-6

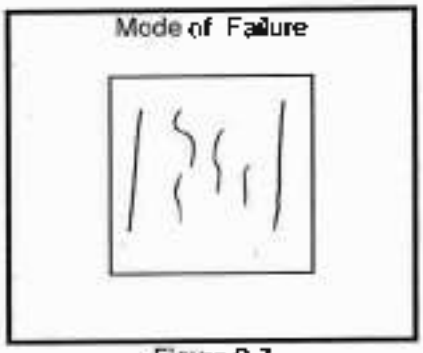


Figure C-7

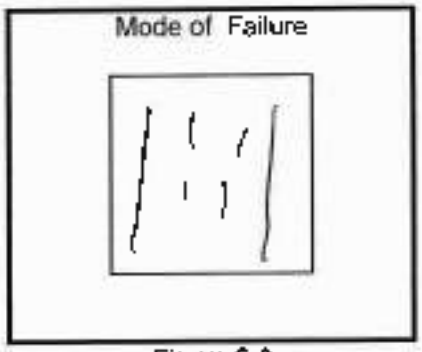


Figure C-8

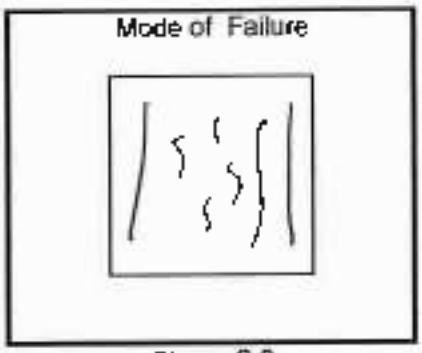
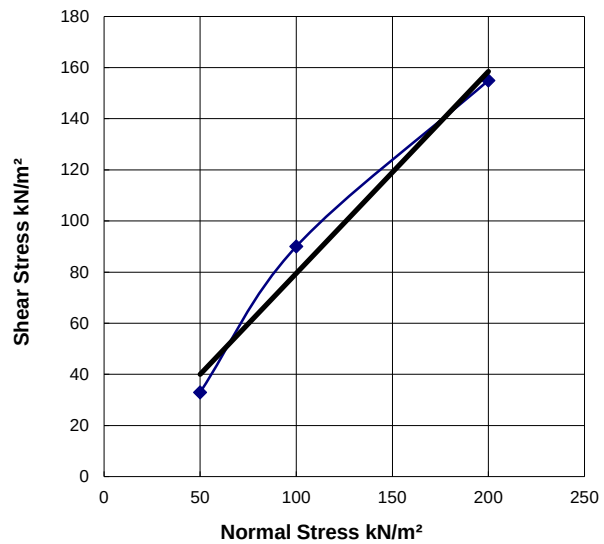


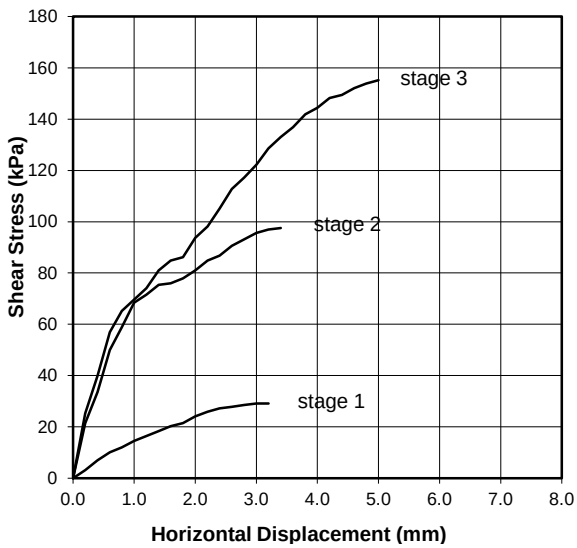
Figure C-9

MATRIX LABORATORY L.L.C.

TABLE C8 - (1)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-12
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A35	**Date Tested**	19-20/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

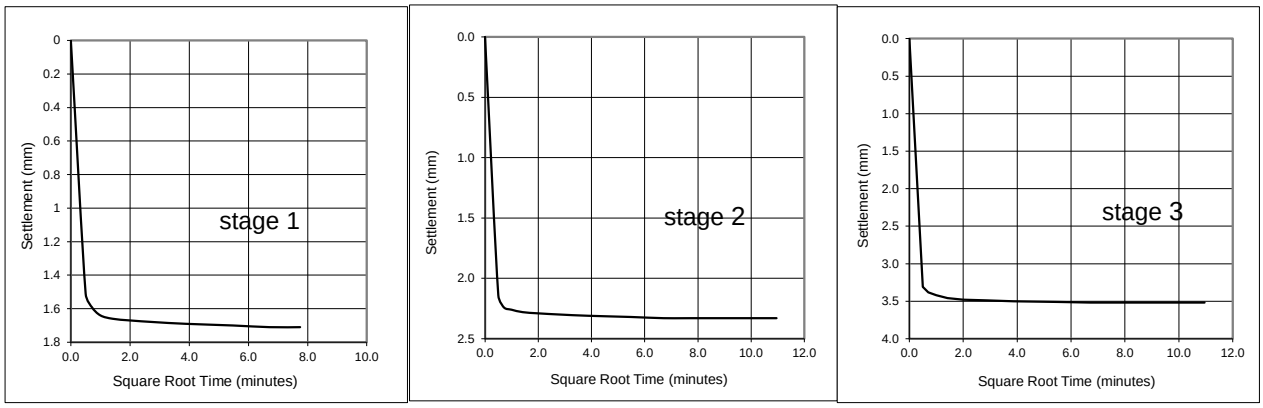
Apparent Cohesion = 0.0 kN/m²

Angle of Shearing Resistance = 38.30º

TABLE C8 - (2)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-12
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A35	**Date Tested**	19-20/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.68
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

Consolidation Stage



Shearing Stage

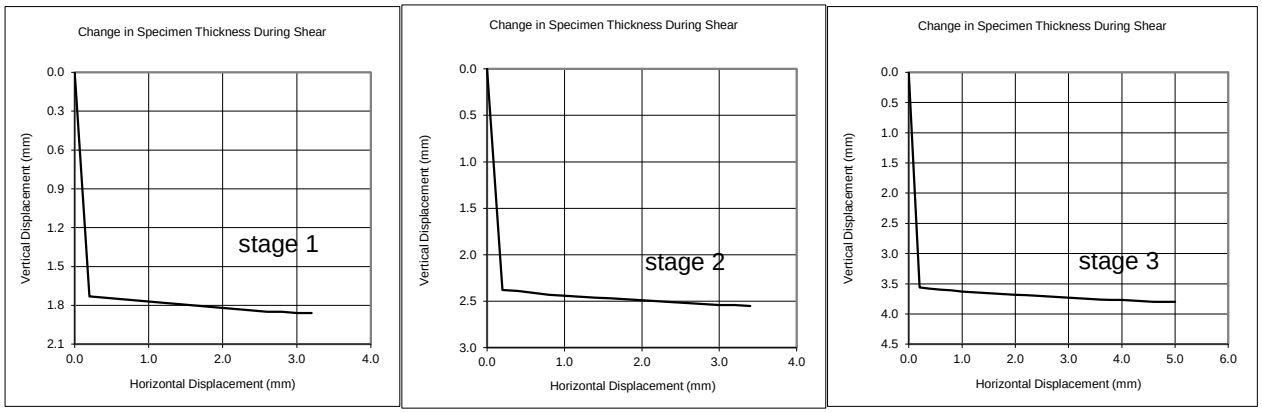
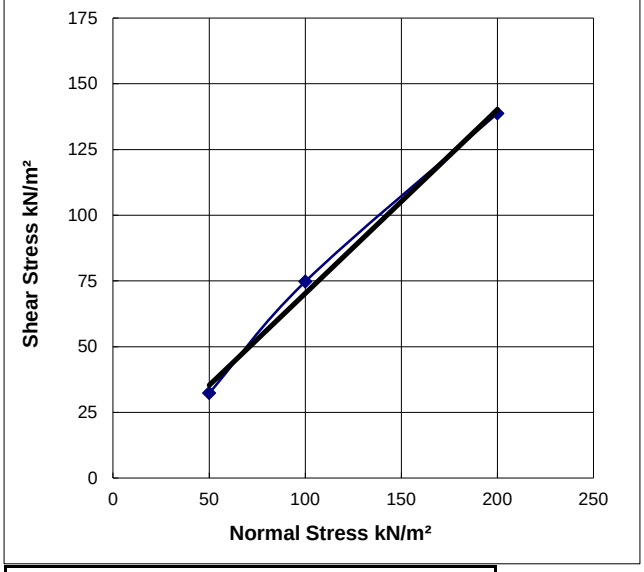
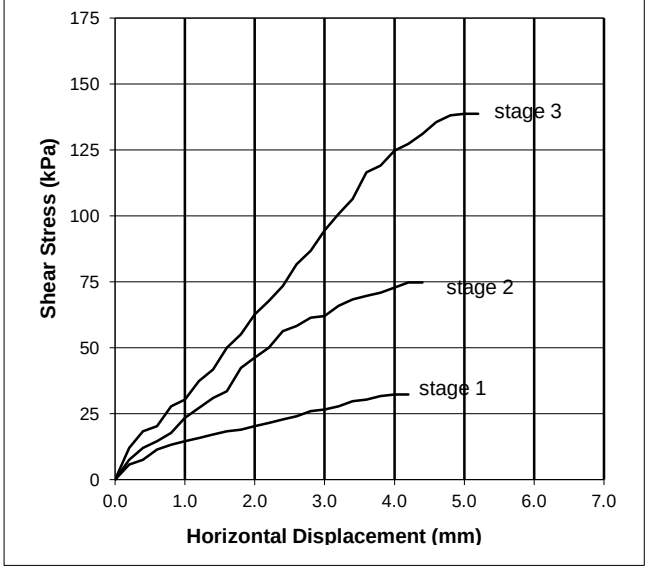


TABLE C8 – (3)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-12
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A37	**Date Tested**	19-20/08/2015
Depth (m)	2.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

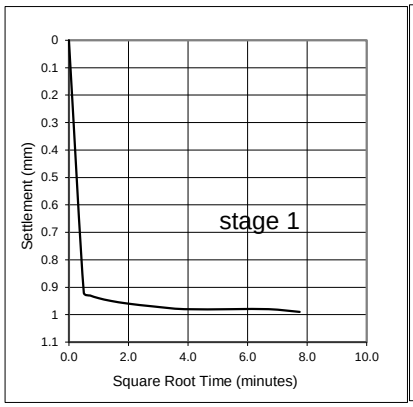
Apparent Cohesion = 0.0 kN/m²

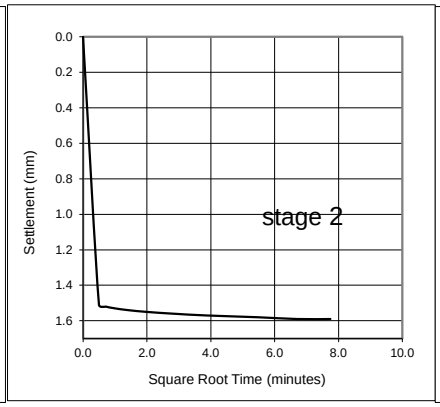
Angle of Shearing Resistance = 35.0º

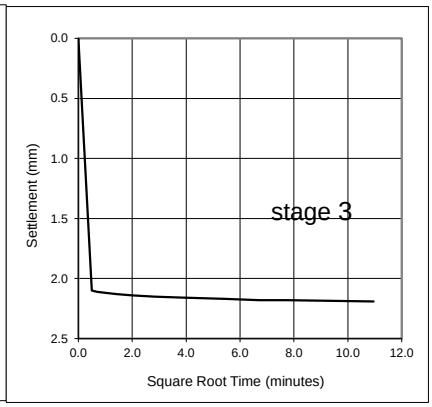
TABLE C8 – (4)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT3
Location	PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-12
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A37	**Date Tested**	19-20/08/2015
Depth (m)	2.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.55
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

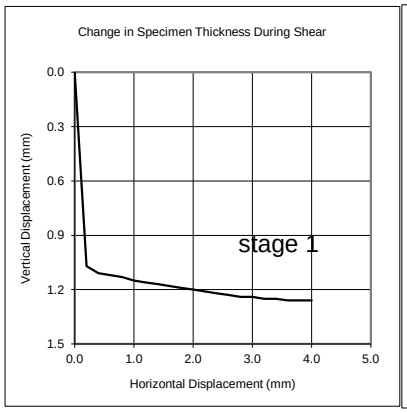
Consolidation Stage

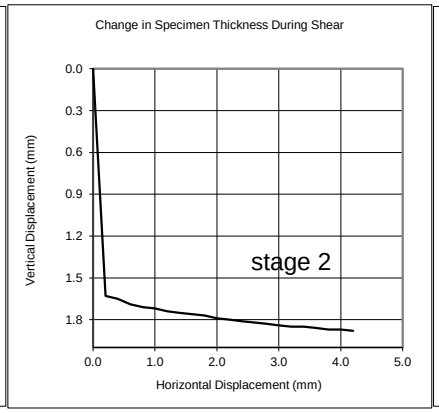


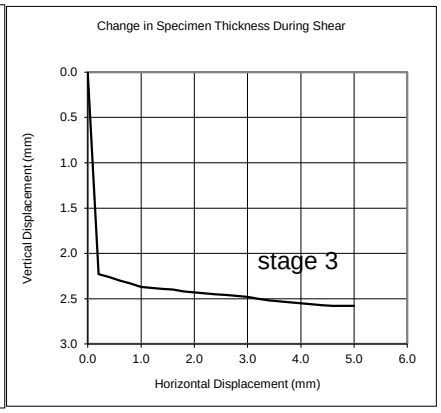




Shearing Stage



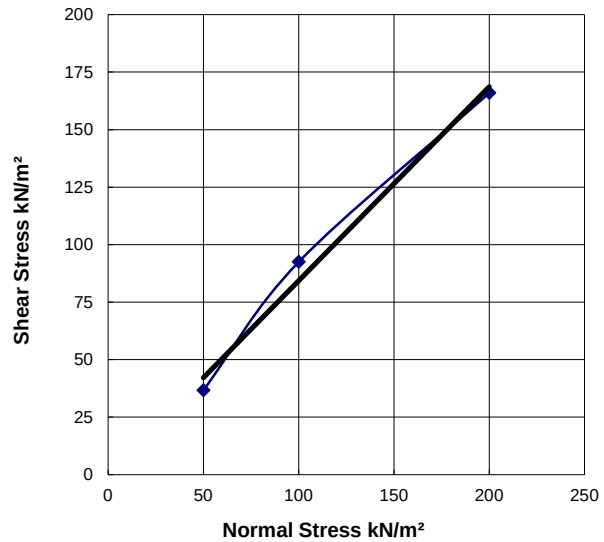


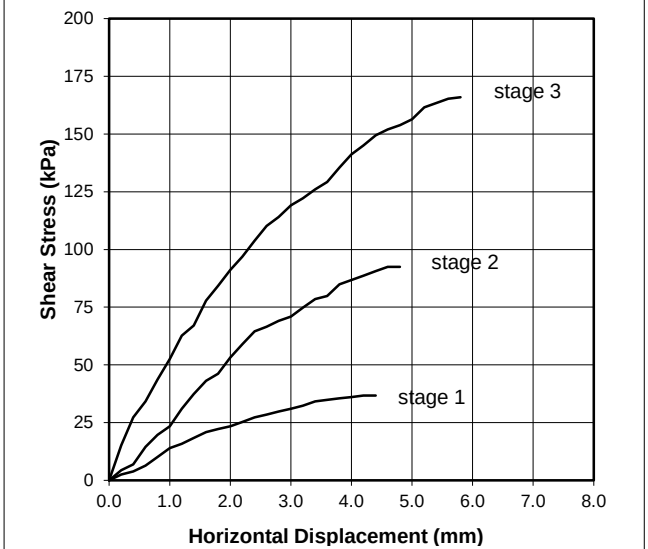


MATRIX LABORATORY L.L.C.

TABLE C8 - (5)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Consultant	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-12
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A40	**Date Tested**	19-20/08/2015
Depth (m)	3.00		
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN





Shear Strength Parameters

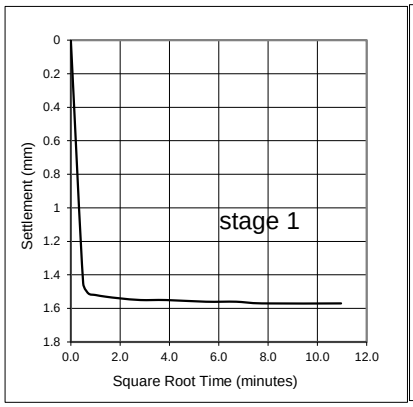
Apparent Cohesion = 0.00 kN/m²

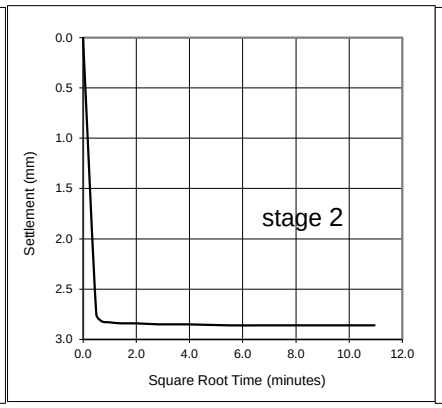
Angle of Shearing Resistance = 40.14º

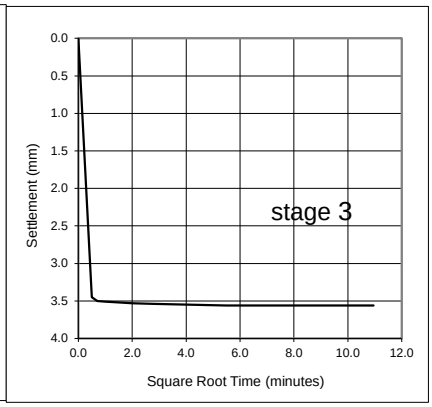
TABLE C8 - (6)
SHEAR STRENGTH DETERMINATION BY DIRECT SHEAR

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143-12
Contractor	CH2M MACE JV	**Date Reported**	23/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sample No.**	SPT4
Location	PLOT NO. 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	**Request No.**	XSD/15-0143-12
Sample Desc.	SAND	**Sample Brt. in by**	MATRIX
Borehole No.	BH-A40	**Date Tested**	19-20/08/2015
Depth (m)	3.00		
Rate of Displacement	0.625 mm/min	**Dry Density (Mg/m³)**	1.65
Specimen Dim. (mm)	60*60*25	**Moist. Content (%)**	8.00
Test Method	BS 1377 : 1990 PART 7 (Amd.8262/94), Cl.4	**Tested By**	ERWIN

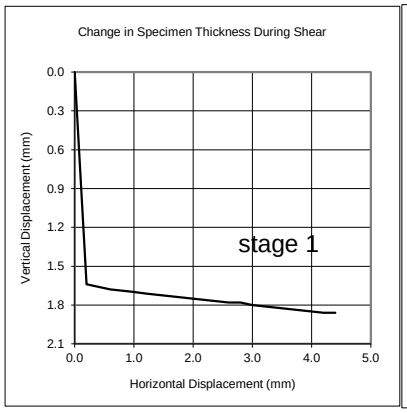
Consolidation Stage

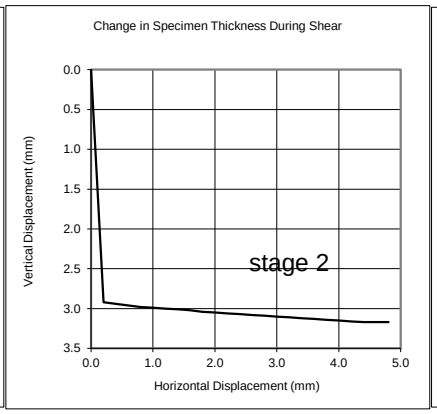


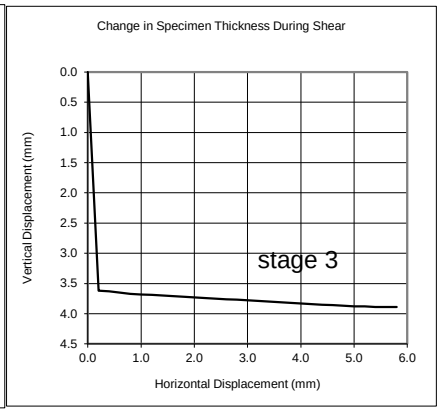




Shearing Stage







APPENDIX C1

TRIAL PIT LABORATORY TEST RESULTS

MATRIX LABORATORY L.L.C.

REPORT ON CHEMICAL TESTING OF SOIL

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.	**Customer's Ref.**	See below
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Sampling Date**	26/07-04/08/2015
		Sampling Method	ASTM D-75/09
Sample Descr.	SAND	**Sampled By**	Matrix
Source	Site	**Sample Brt. in By**	Matrix
Sample Location	N.P.	**Sampling Size**	500 g
Sample Preparations	See below	**Date Received**	04-18/08/2015
Test Method	See below	**Date Tested**	05-22/08/2015
Test Method Var.	Nil	**Tested By**	Biki
Remarks	Nil		

TP No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
TP002	TP2	1.00-1.50	0.4	0.03	8.0 @ 28°C	DS-1
TP004	TP1	0.00-1.00	0.2	0.01	8.0 @ 28°C	DS-1
TP008	TP2	1.00-1.50	1.4	0.01	8.2 @ 28°C	DS-2
TP009	TP3	2.00-3.00	0.1	0.01	8.4 @ 29°C	DS-1
TP011	TP2	1.00-2.00	2.1	0.04	8.3 @ 28°C	DS-3
TP014	TP3	2.00-3.00	0.4	0.01	8.3 @ 28°C	DS-1
TP017	TP2	1.00-1.50	2.5	0.30	8.0 @ 28°C	DS-3
TP020	TP3	2.00-3.00	0.3	0.04	8.3 @ 29°C	DS-1
TP021	TP3	2.00-3.00	0.1	0.01	8.4 @ 29°C	DS-1
TP022	TP1	0.00-1.00	0.1	0.01	8.2 @ 29°C	DS-1
TP034	TP2	1.00-2.00	0.1	0.01	8.1 @ 29°C	DS-1
TP035	TP1	0.00-1.00	0.1	0.01	8.1 @ 28°C	DS-1
TP037	TP2	1.00-2.00	0.1	0.01	8.7 @ 28°C	DS-1
TP038	TP1	0.00-1.00	0.1	0.02	8.4 @ 28°C	DS-1
TP039	TP2	1.00-2.00	0.1	0.01	8.2 @ 28°C	DS-1
TP041	TP3	2.00-3.00	0.1	0.01	8.5 @ 28°C	DS-1
TP043	TP2	1.00-1.50	0.1	0.02	8.4 @ 28°C	DS-1
TP044	TP2	1.00-2.00	0.1	0.01	8.6 @ 28°C	DS-1
TP045	TP2	1.00-2.00	0.1	0.01	8.6 @ 28°C	DS-1

TP No.	Sample No.	Depth (m)	Sulphate Content as SO4 (g/L)	Chloride Content as Cl- (%)	pH Value	Sulphate Class
TP047	TP3	2.00-3.00	0.1	0.01	8.1 @ 28°C	DS-1
TP051	TP1	0.00-1.00	0.1	0.01	8.1 @ 28°C	DS-1
TP057	TP3	2.00-3.00	0.1	0.01	8.1 @ 28°C	DS-1
TP058	TP4	3.00-4.00	0.1	0.01	8.5 @ 28°C	DS-1
TP059	TP1	0.00-1.00	1.1	0.08	8.2 @ 28°C	DS-2
TP060	TP2	0.00-1.00	0.1	0.02	8.6 @ 28°C	DS-1
TP060	TP2	1.00-1.50	1.9	0.01	8.0 @ 27°C	DS-3
TP066	TP1	0.00-1.00	0.1	0.01	8.3 @ 28°C	DS-1
TP071	TP3	2.00-3.00	0.1	0.01	8.4 @ 29°C	DS-1
TP072	TP1	0.00-1.00	0.1	0.01	8.3 @ 28°C	DS-1
TP081	TP3	2.00-3.00	3.0	0.04	8.8 @ 28°C	DS-3
TP092	TP2	1.00-1.50	0.7	0.05	8.3 @ 29°C	DS-2

Test Method

Chloride : BS 1377:1990 P3, Cl.7.2 Amd. 9028-96 (Water Extraction)
Sulphate : BS 1377:1990 P3, Cl. 5.5 Amd. 9028-96 (Water Extraction)
pH : BS 1377:1990 P3, Cl.9 Amd. 9028-96

Sample Preparation

Chloride : BS 1377:1990 P3, Cl.7.2.3 Amd. 9028-96
Sulphate : BS 1377:1990 P3, Cl. 5.3 Amd. 9028-96
pH : BS 1377:1990 P3, Cl.9.4 Amd. 9028-96

Engr. Rabih Dakwar
Technical Manager
MATRIX LABORATORY L.L.C.
Dubai, U.A.E.

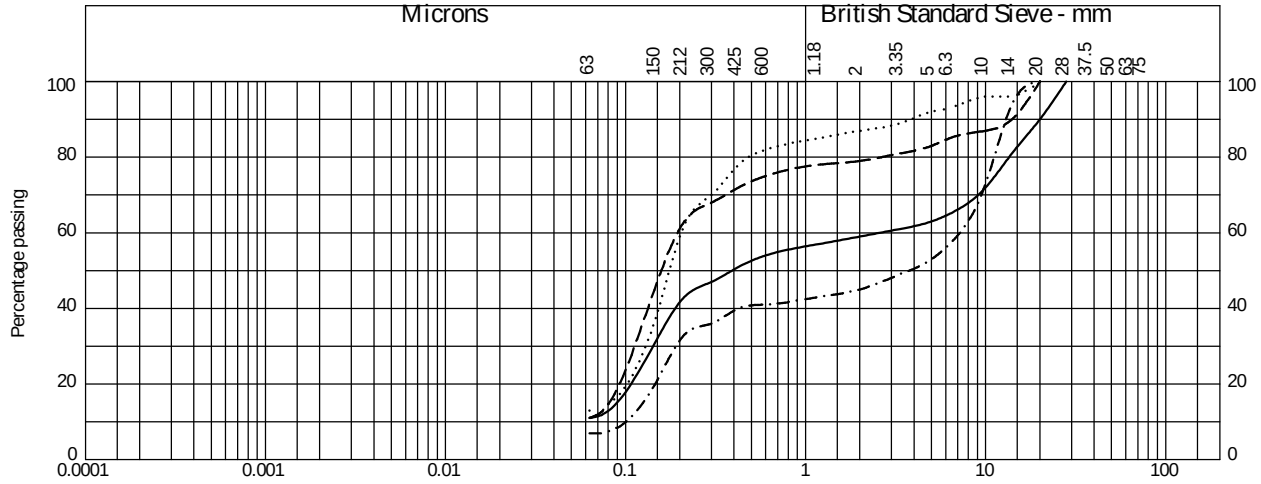
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP001	TP1	148.4	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	0.50
TP002	TP1	138.5	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP002	TP2	136.4	.....	GRAVELLY, SILTY, M-F SAND (S-M)	1.50
TP003	TP2	142.8	–.–.–	V. GRAVELLY, SILTY, FINE SAND (S-M)	1.50

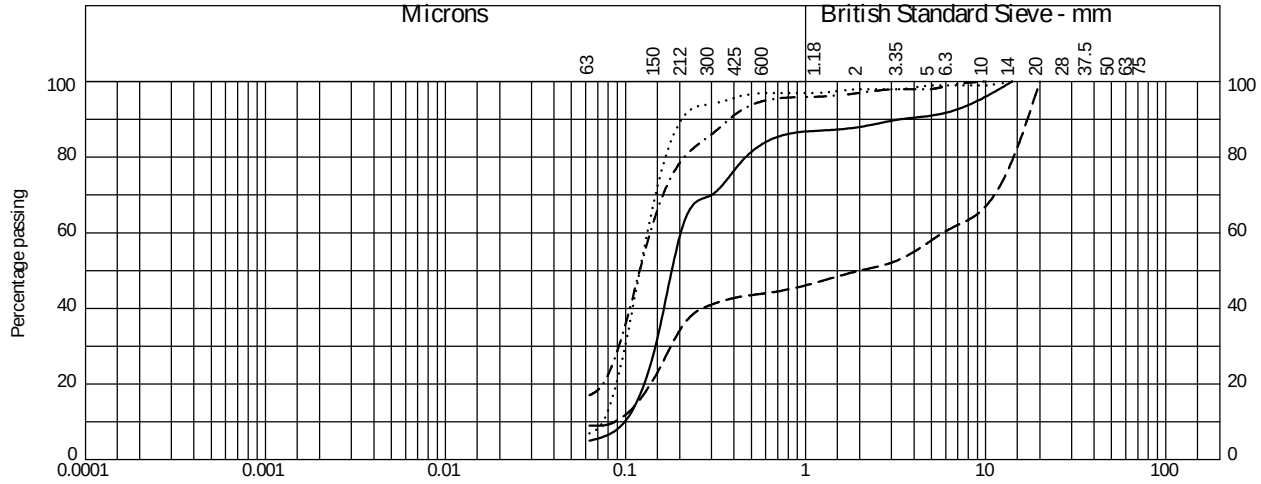
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP004	TP1	138.3	———	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
TP005	TP1	128.8	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP006	TP3	140.4	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP007	TP1	138.7	–.–.–	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00

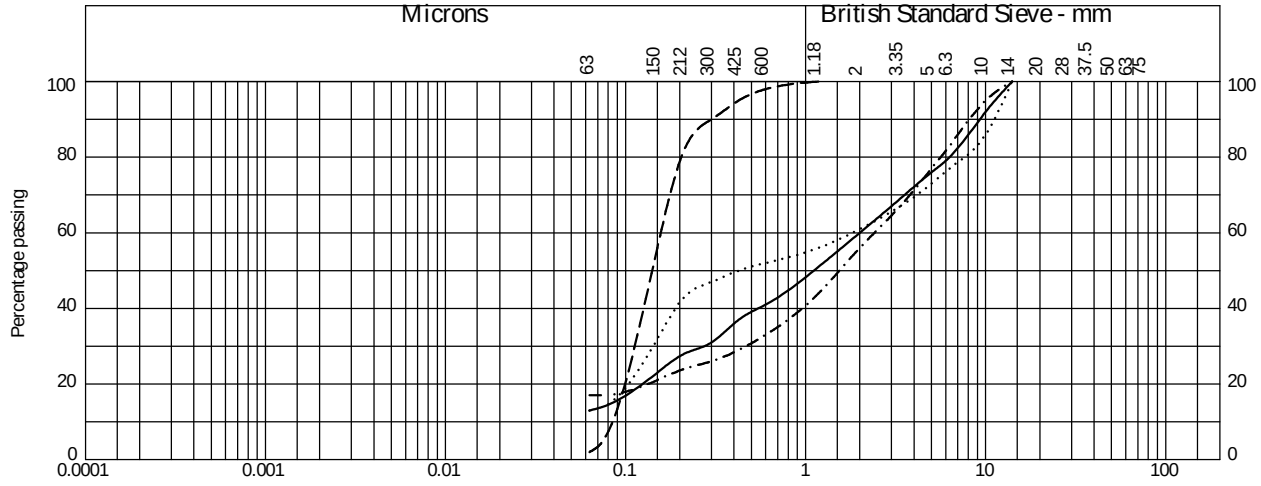
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP008	TP3	137.9	———	V. GRAVELLY, SILTY, SAND (S-M)	3.00
TP009	TP3	143.9	– – –	SL. SILTY, FINE SAND (SP)	3.00
TP010	TP1	123.8	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP011	TP2	140.7	–.–.–	V. GRAVELLY, SILTY, COARSE SAND (S-M)	2.00

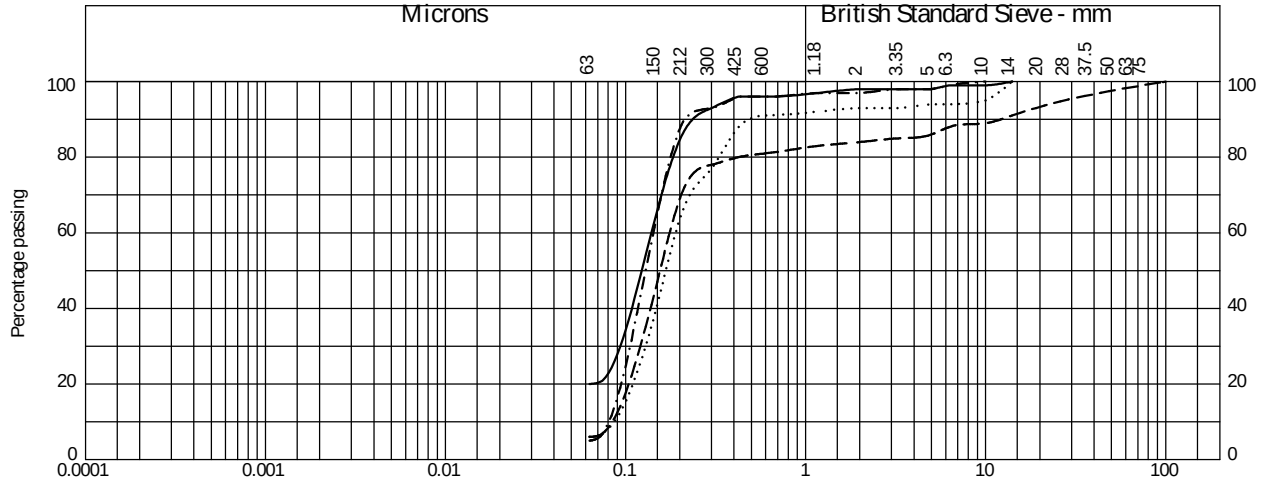
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP012	TP2	133.8	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP013	TP4	134.2	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP014	TP3	137.7	.....	GRAVELLY, SILTY, M-F SAND (S-M)	3.00
TP015	TP2	136.0	–.–.–	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00

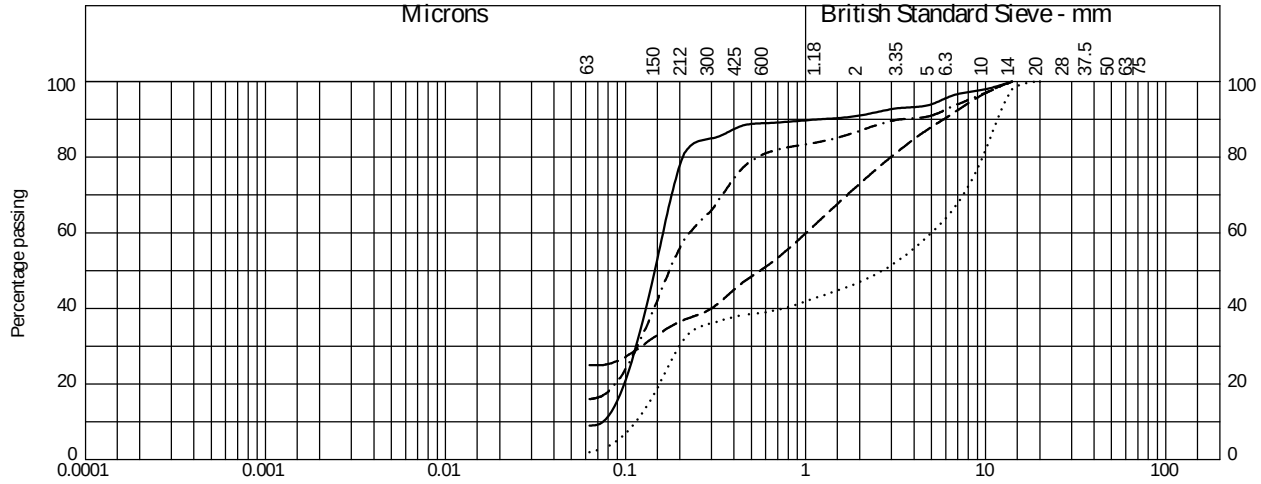
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP016	TP1	125.8	———	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP017	TP2	135.1	– – –	V. GRAVELLY, V. SILTY, COARSE SAND (SM)	1.50
TP018	TP2	146.8	.....	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	2.00
TP019	TP1	120.7	–·–·–	GRAVELLY, SILTY, M-F SAND (S-M)	1.00

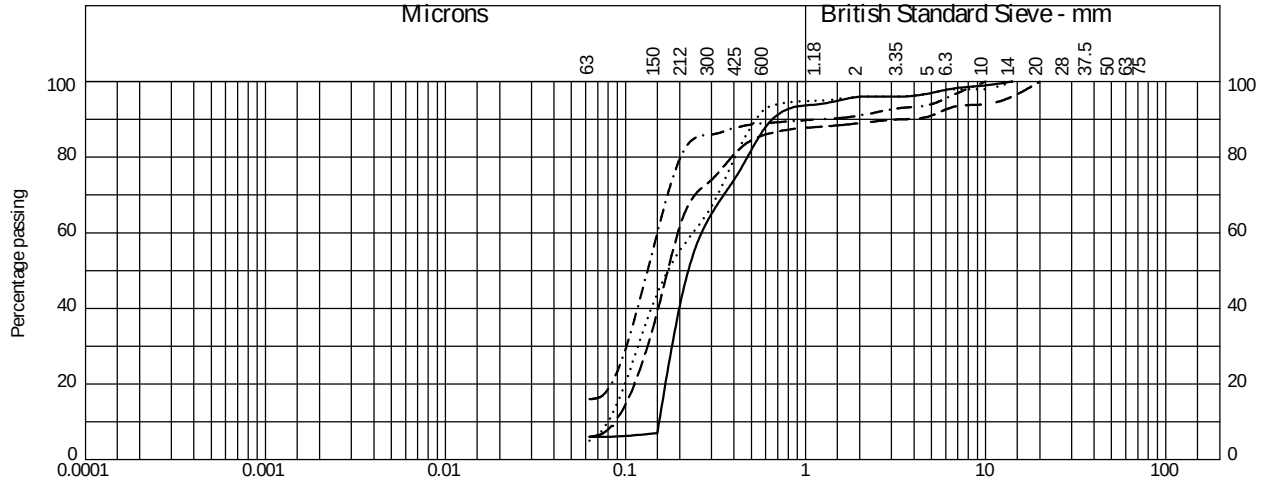
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
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Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP020	TP3	114.5	———	SL. GRAVELLY, SILTY, F-M SAND (S-M)	3.00
TP021	TP4	144.3	– – –	GRAVELLY, SILTY, M-F SAND (S-M)	3.00
TP022	TP1	140.0	.....	SL. GRAVELLY, SILTY, M-F SAND (S-M)	1.00
TP023	TP3	125.3	–·–·–	GRAVELLY, SILTY, FINE SAND (S-M)	3.00

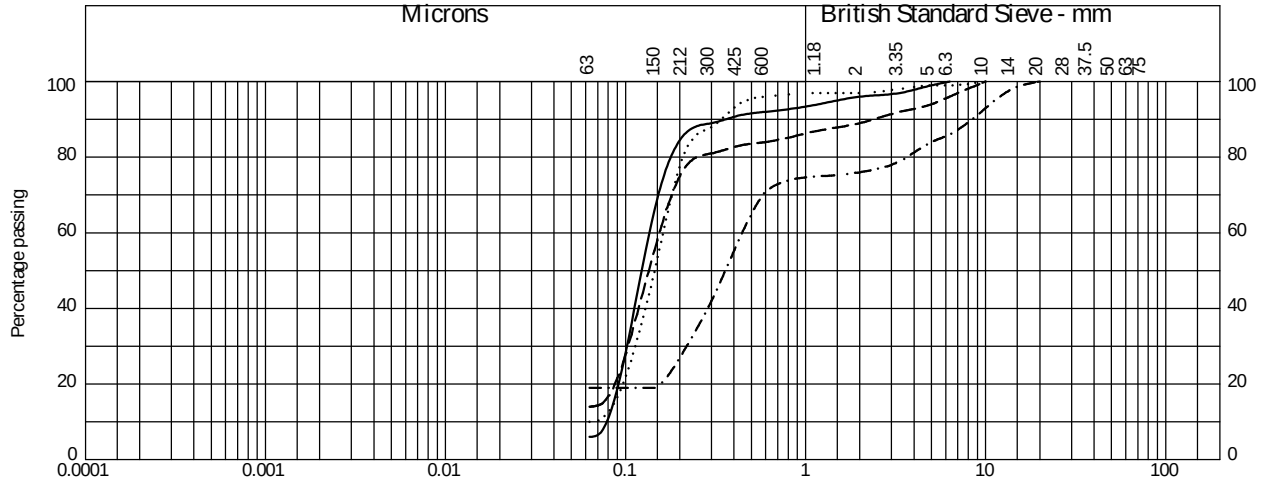
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP024	TP4	136.7	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
TP025	TP3	137.1	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP026	TP4	135.4	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
TP027	TP1	139.1	–.–.–	SILTY, SANDY GRAVEL (SG)	1.00

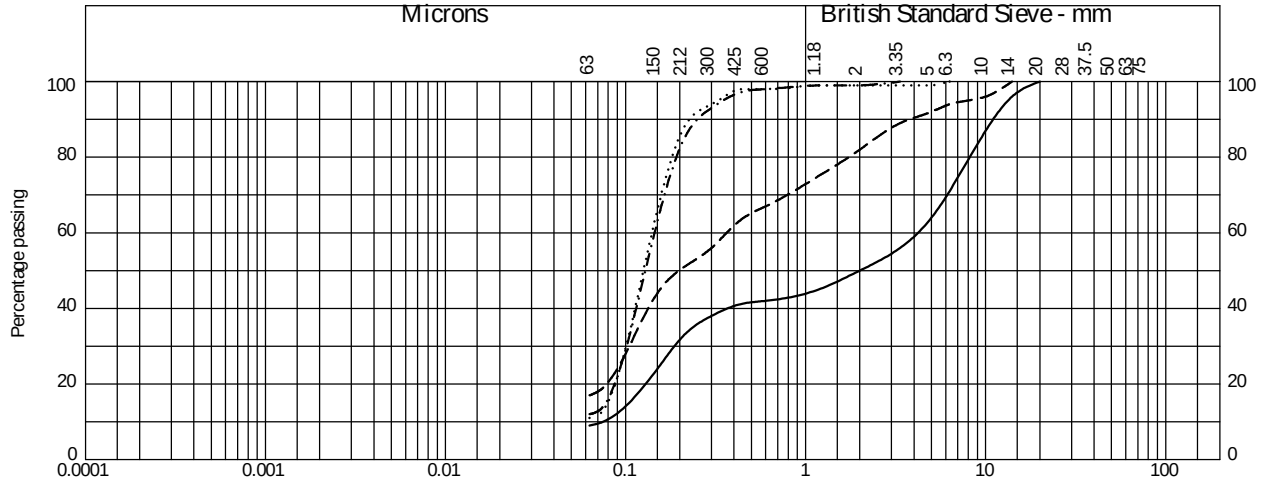
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP028	TP2	141.5	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP029	TP3	123.1	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP030	TP1	134.5	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	0.50
TP031	TP1	130.5	–.–.–	SL. GRAVELLY, SILTY, FINE SAND (S-M)	0.50

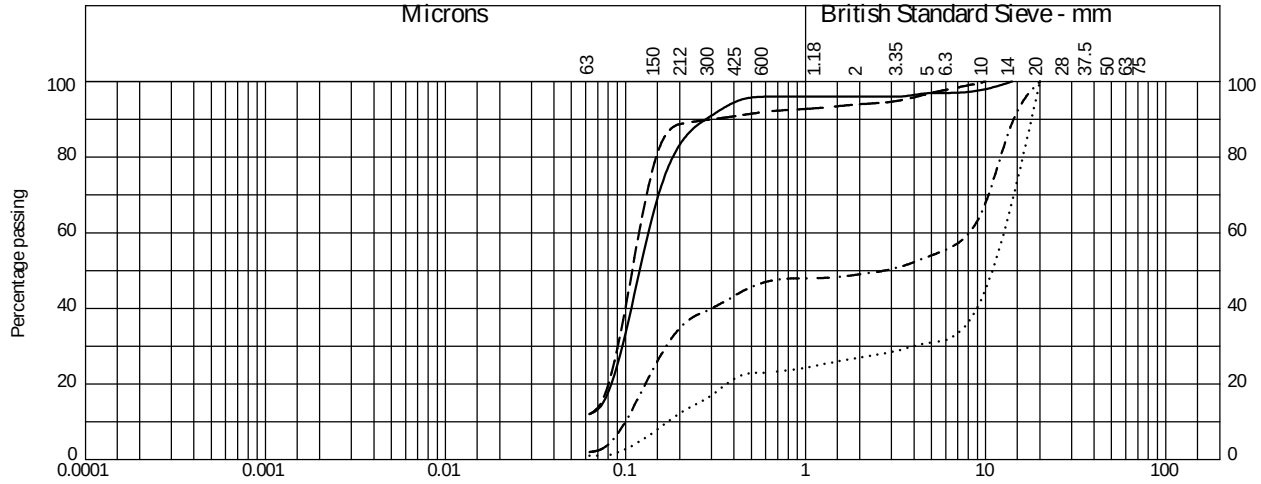
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP032	TP1	121.2	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	0.50
TP033	TP1	134.1	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP034	TP1	133.7	.....	V. GRAVELLY, SL. SILTY, SAND (SP)	1.00
TP035	TP1	140.8	–.–.–	V. GRAVELLY, SL SILTY, FINE SAND (SP)	1.00

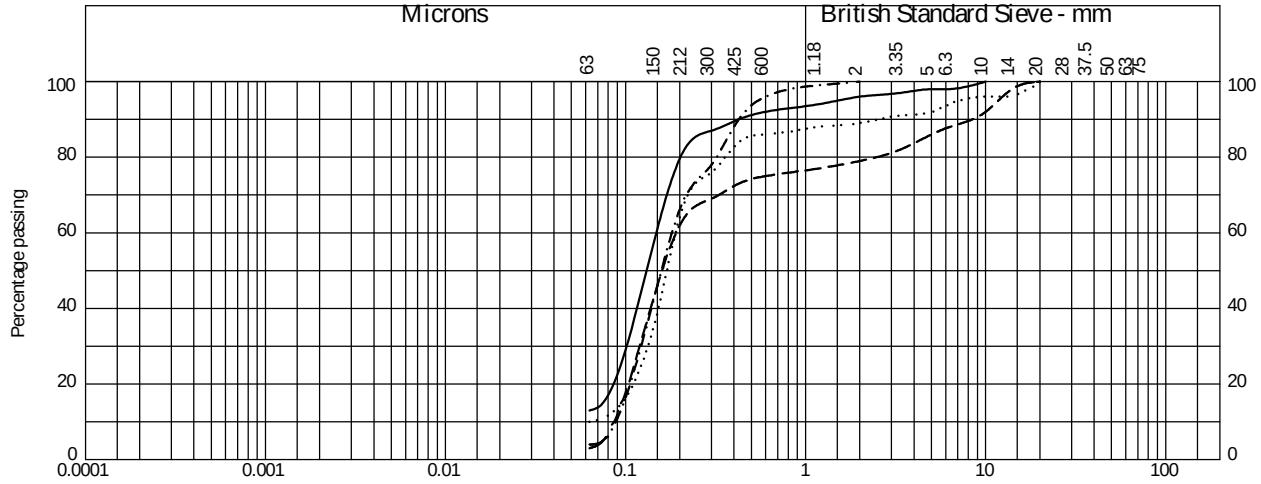
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP036	TP1	126.8	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP037	TP2	128.4	– – –	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	2.00
TP038	TP1	132.6	.....	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP039	TP2	122.2	–.–.–	SL. SILTY, M-F SAND (SP)	2.00

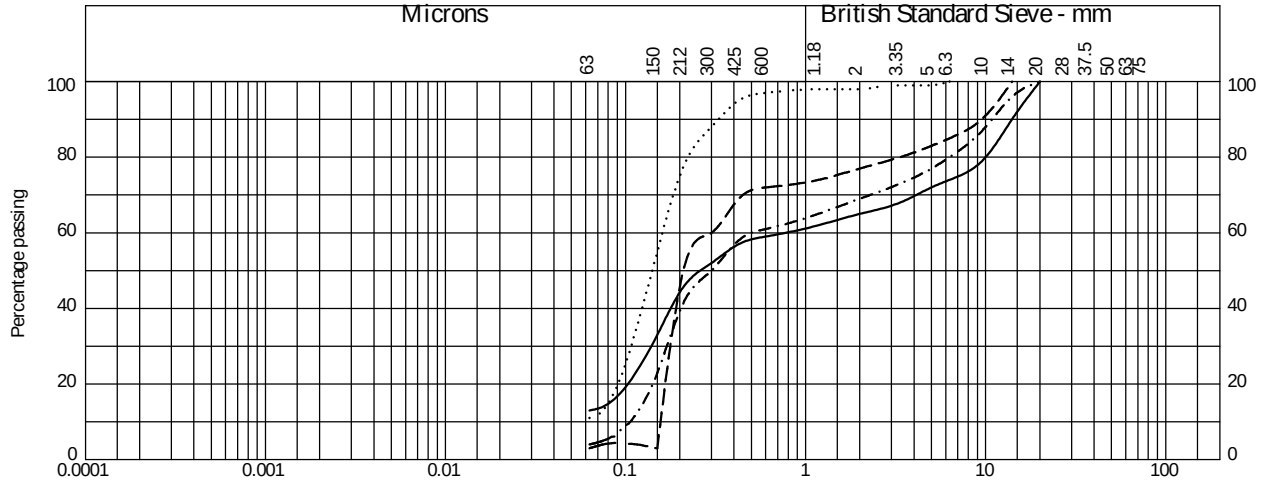
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP040	TP3	126.8	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP041	TP3	130.6	– – –	V. GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00
TP042	TP1	127.3	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP043	TP2	140.7	–.–.–	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	1.50

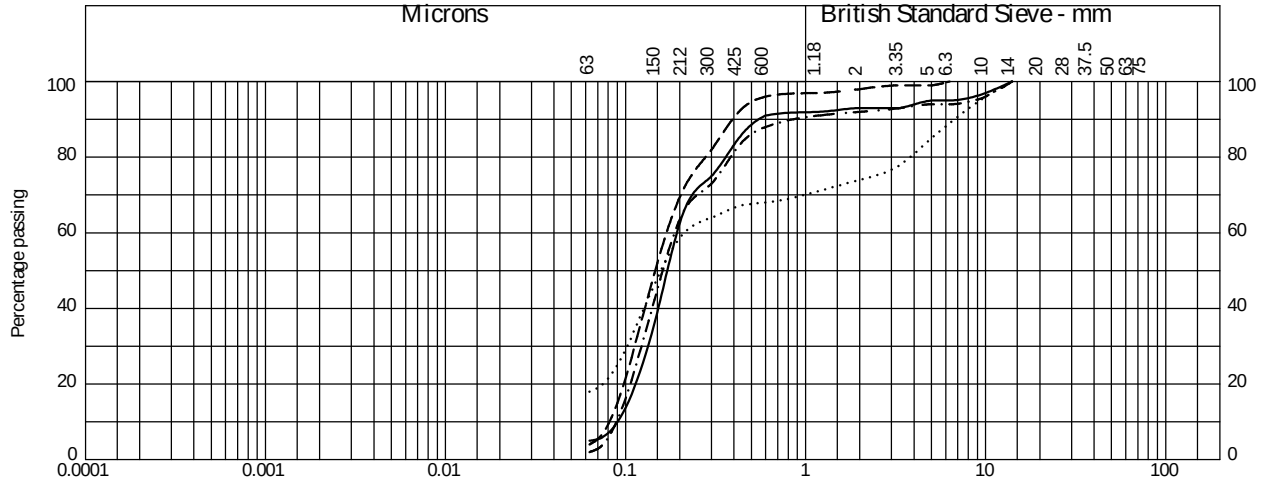
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

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Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
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Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
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Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP044	TP2	138.8	———	GRAVELLY, SILTY, M-F SAND (S-M)	2.00
TP045	TP2	130.1	– – –	SL. GRAVELLY, SL. SILTY, M-F SAND (SP)	2.00
TP046	TP2	137.7	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP047	TP3	142.1	–.–.–	GRAVELLY, SL. SILTY, M-F SAND (SP)	3.00

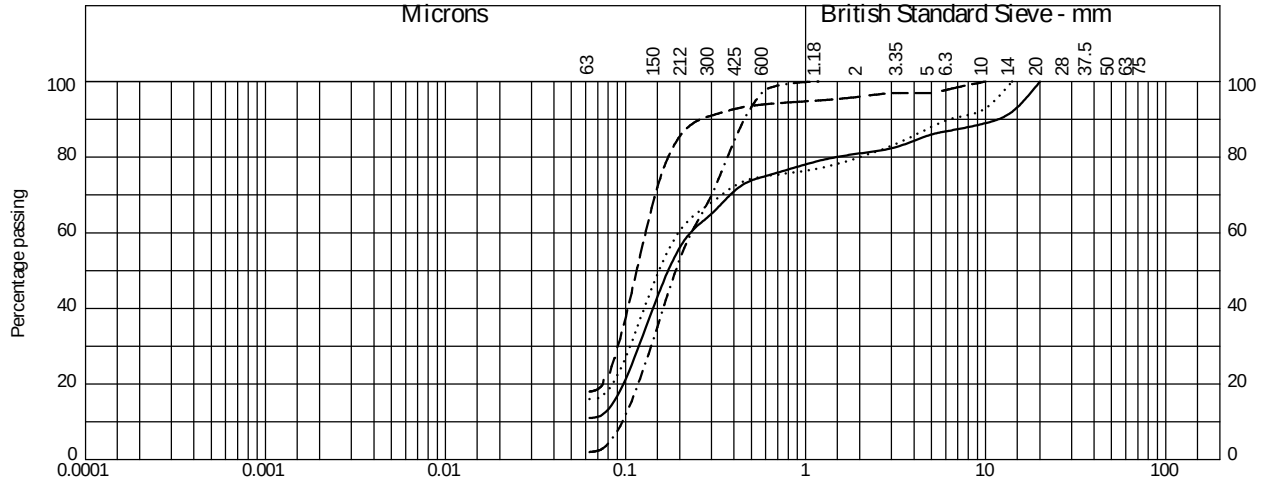
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

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Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP048	TP4	133.1	———	GRAVELLY, SILTY, FINE SAND (S-M)	4.00
TP049	TP3	147.4	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP050	TP1	139.5	.....	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP051	TP1	113.4	–.–.–	SL. SILTY, M-F SAND (SP)	1.00

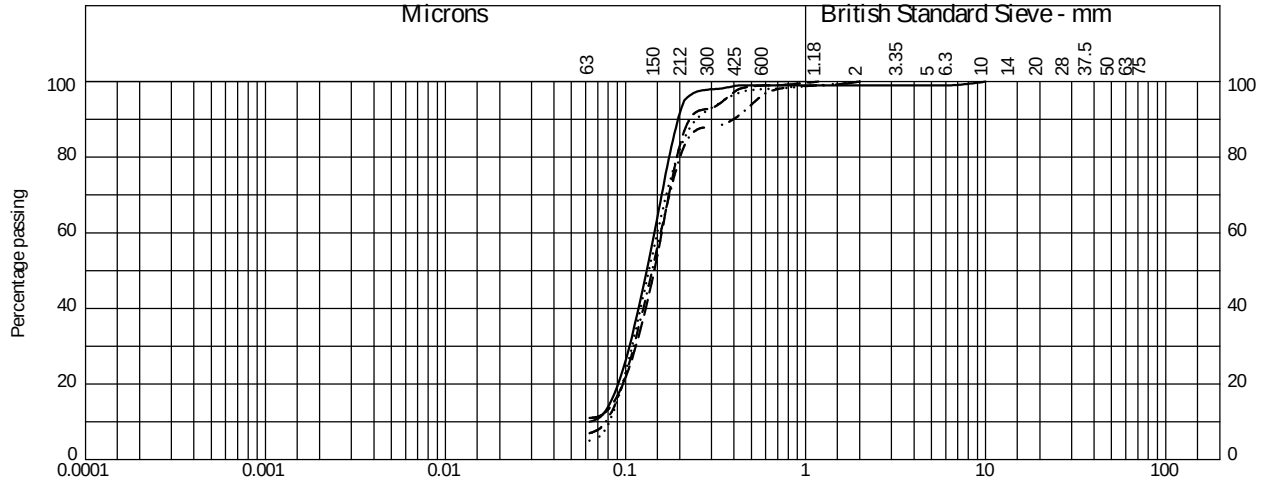
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

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Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP052	TP3	132.2	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP053	TP4	139.6	– – –	SILTY, FINE SAND (S-M)	4.00
TP054	TP3	124.8	.....	SILTY, FINE SAND (S-M)	3.00
TP055	TP4	137.9	– . – . –	SILTY, FINE SAND (S-M)	4.00

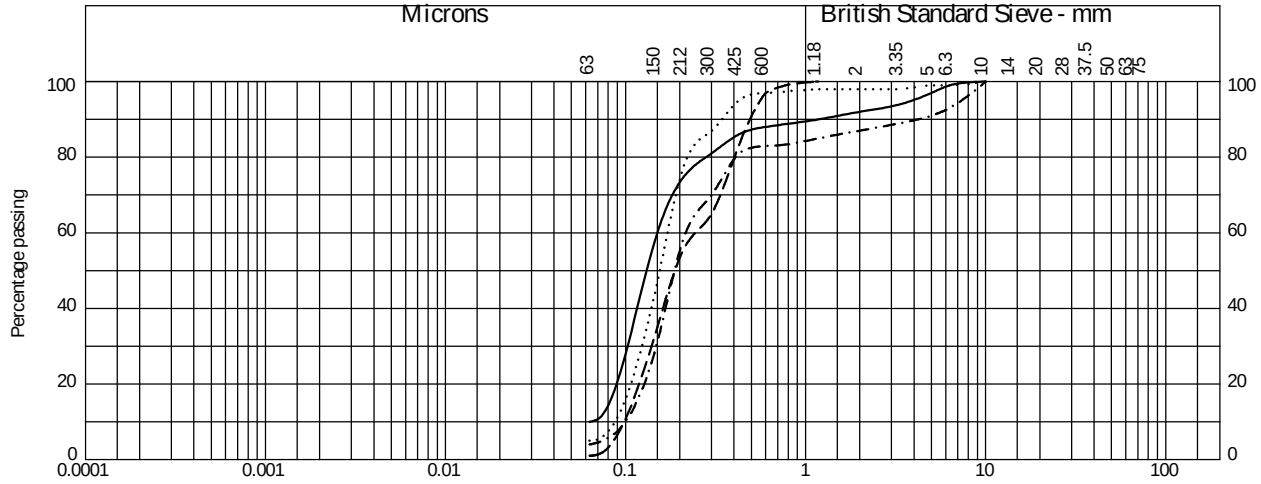
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MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
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Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP056	TP2	124.5	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP057	TP3	137.6	— — —	SL. SILTY, M-F SAND (SP)	3.00
TP058	TP1	132.3	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP058	TP4	136.7	—.—.—	GRAVELLY, SL. SILTY, M-F SAND (SP)	4.00

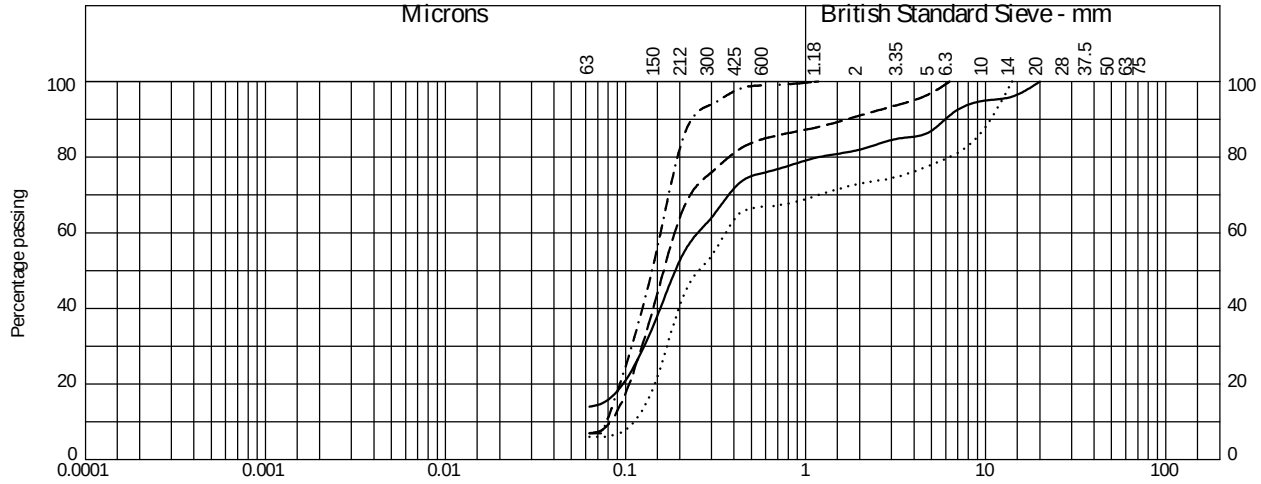
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP059	TP1	134.2	———	GRAVELLY, SILTY, M-F SAND (S-M)	1.00
TP060	TP2	144.5	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP060	TP2	134.7	.....	GRAVELLY, M-F SAND (S-M)	1.50
TP061	TP2	129.3	–.–.–	SILTY, FINE SAND (S-M)	2.00

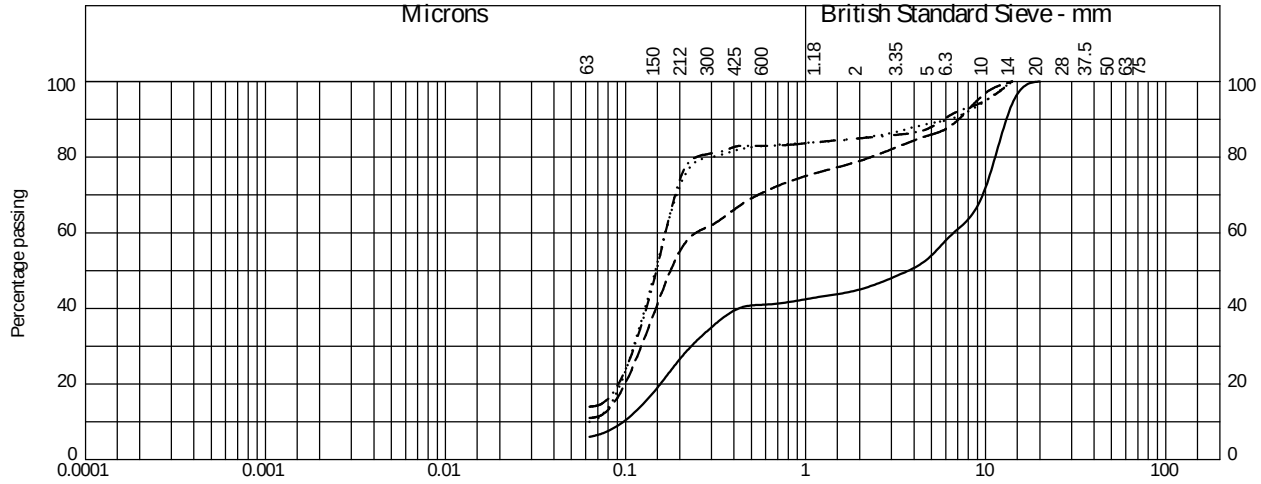
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP062	TP1	123.4	———	V. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP063	TP2	133.0	– – –	V. GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP064	TP1	133.3	.....	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP065	TP1	131.8	–·–·–	GRAVELLY, SILTY, FINE SAND (S-M)	0.50

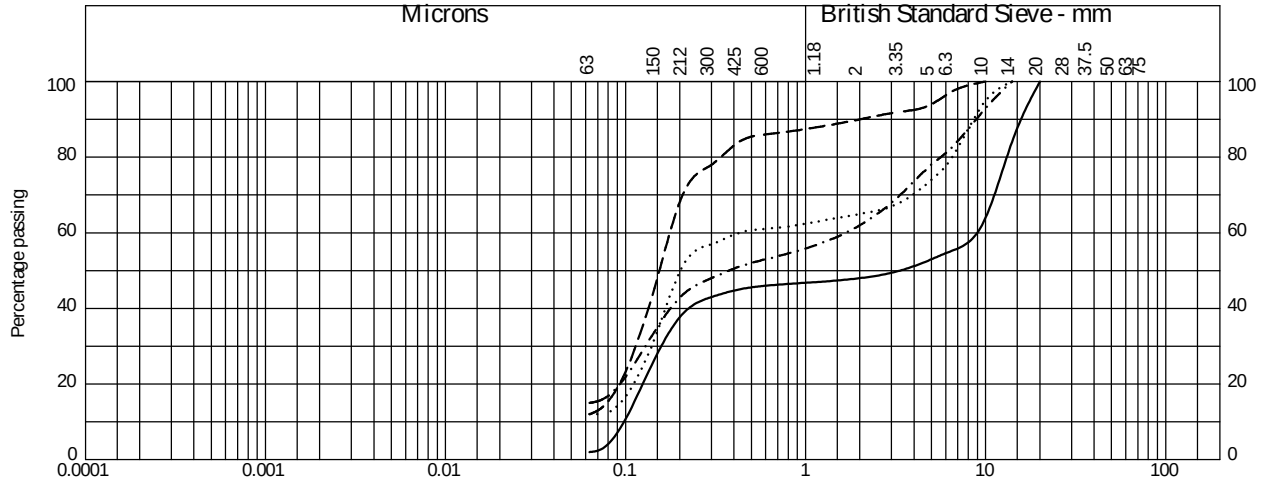
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP066	TP1	132.1	———	V. GRAVELLY, SL. SILTY, FINE SAND (SP)	1.00
TP067	TP1	128.6	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	0.50
TP068	TP2	133.2	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP069	TP1	121.5	–.–.–	V. GRAVELLY, SILTY, FINE SAND (S-M)	0.50

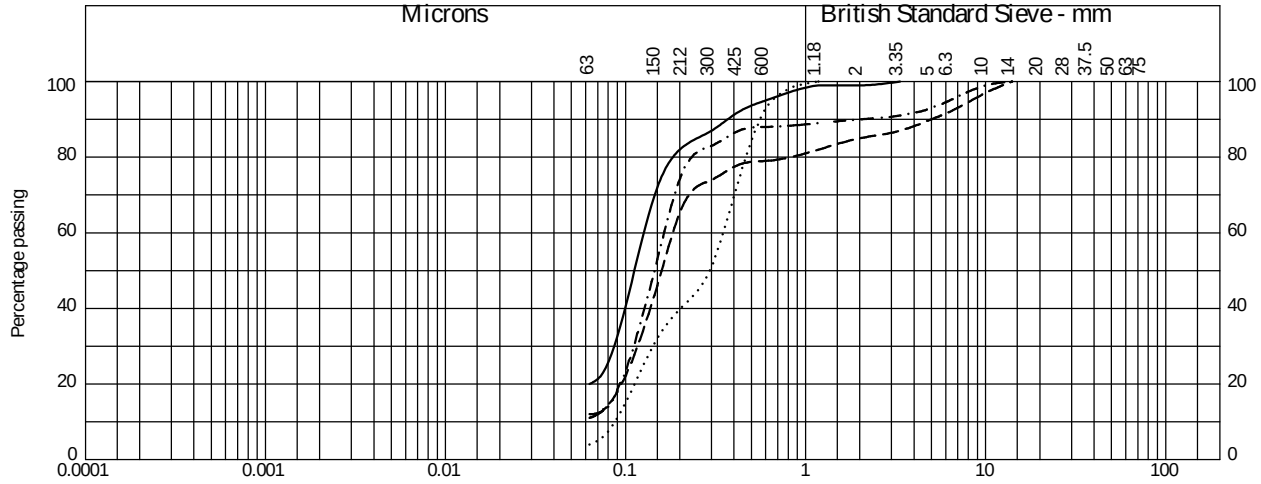
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP070	TP1	136.6	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	0.50
TP071	TP3	139.0	– – –	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP072	TP1	122.4	.....	SL. SILTY, F-M SAND (SP)	1.00
TP073	TP2	136.7	–.–.–	GRAVELLY, SILTY, FINE SAND (S-M)	2.00

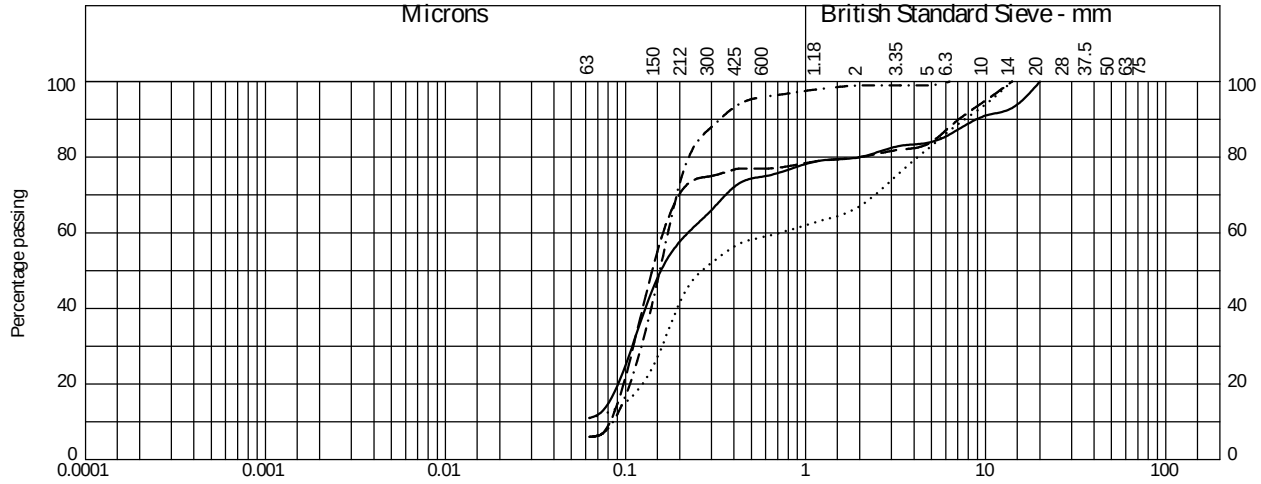
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP074	TP2	138.9	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP075	TP1	139.2	— — —	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP076	TP2	128.5	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP077	TP3	115.9	—·—·—	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00

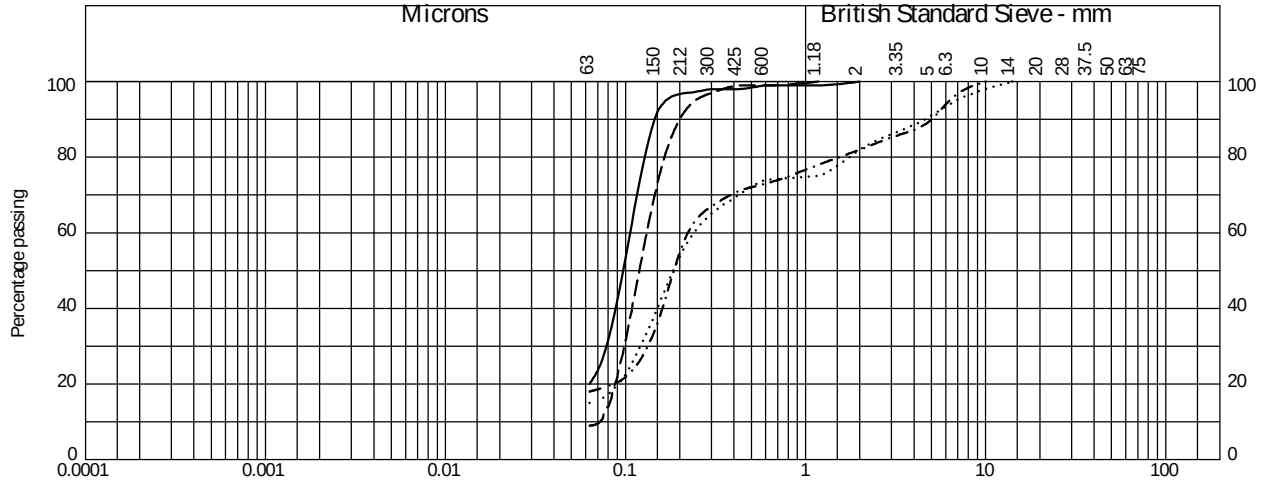
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP078	TP4	113.6	———	SILTY, FINE SAND (S-M)	4.00
TP079	TP4	130.0	– – –	SILTY FINE SAND (S-M)	4.00
TP080	TP1	129.5	.....	GRAVELLY, SILTY, FINE SAND (S-M)	1.00
TP081	TP2	118.4	–.–.–	GRAVELLY, SILTY, FINE SAND (S-M)	2.00

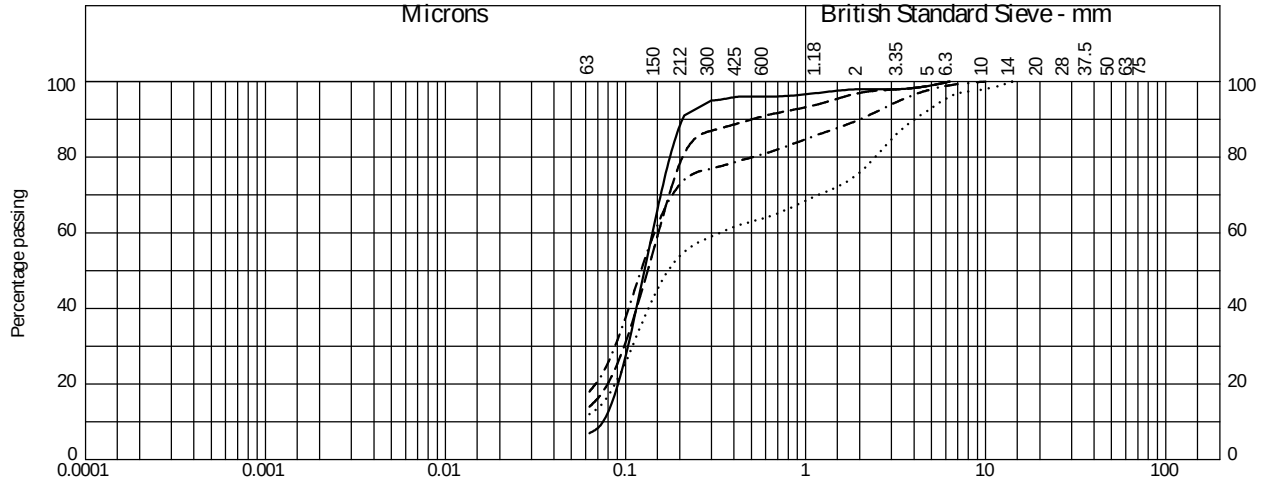
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP082	TP4	130.0	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	4.00
TP083	TP2	127.1	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP084	TP3	116.0	.....	V. GRAVELLY, SILTY, FINE SAND (S-M)	2.50
TP085	TP1	126.3	–.–.–	GRAVELLY, SILTY, FINE SAND (S-M)	1.00

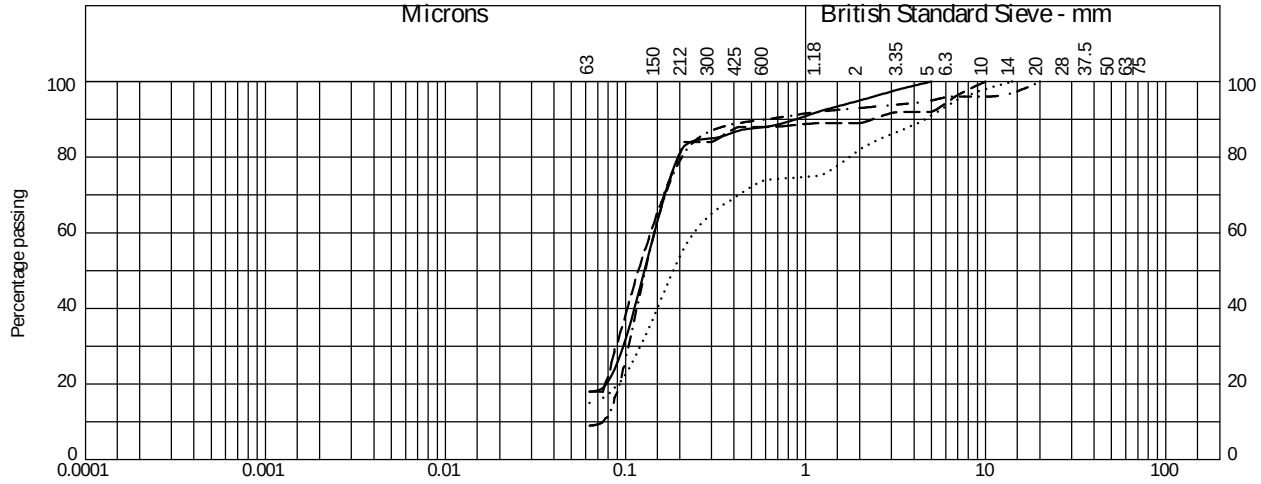
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP086	TP2	124.8	———	GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP087	TP2	116.4	– – –	SILTY, FINE SAND (S-M)	2.00
TP088	TP3	129.5	.....	GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP089	TP2	135.3	–.–.–	GRAVELLY, SILTY, FINE SAND (S-M)	2.00

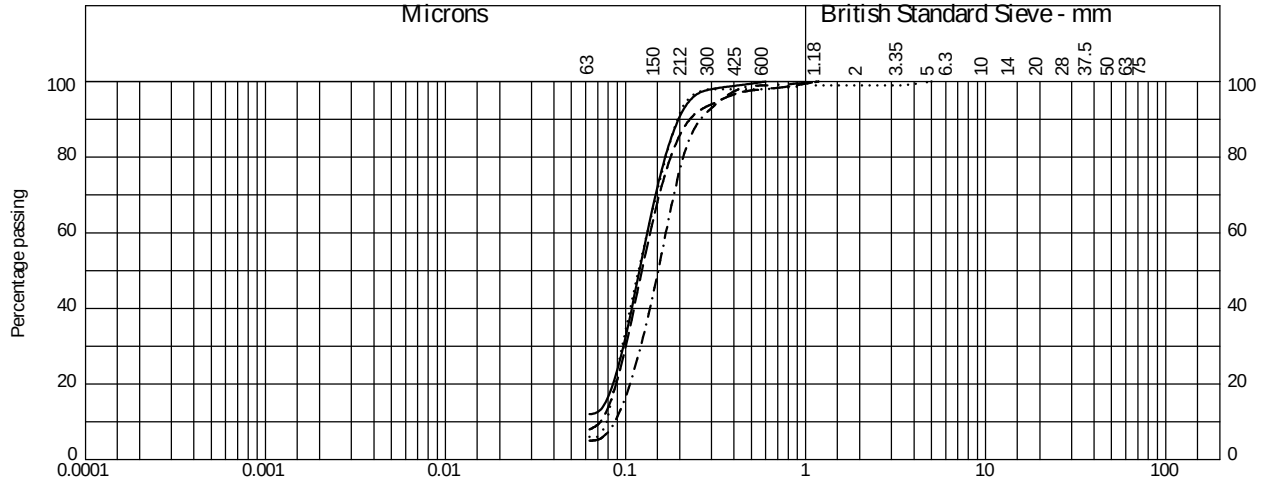
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP090	TP4	137.1	———	SILTY, FINE SAND (S-M)	4.00
TP091	TP2	125.1	– – –	SILTY, FINE SAND (S-M)	2.00
TP092	TP3	117.5	.....	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP093	TP4	126.0	–·–·–	SILTY, FINE SAND (S-M)	4.00

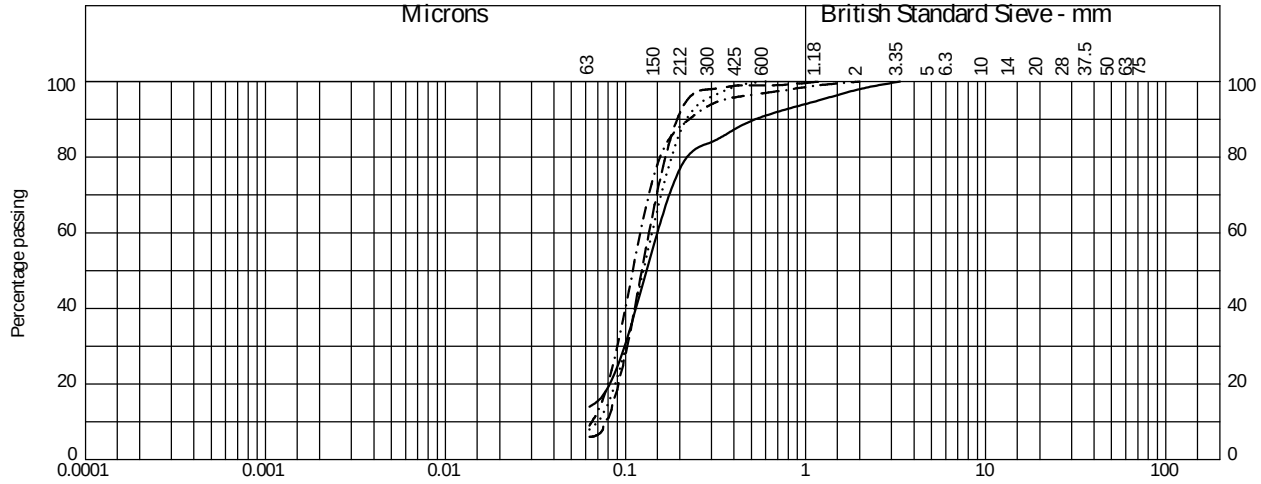
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP094	TP2	133.0	———	SL. GRAVELLY, SILTY, FINE SAND (S-M)	2.00
TP095	TP1	133.6	– – –	SILTY, FINE SAND (S-M)	1.00
TP096	TP2	100.9	.....	SILTY, FINE SAND (S-M)	2.00
TP097	TP3	125.4	–.–.–	SILTY, FINE SAND (S-M)	3.00

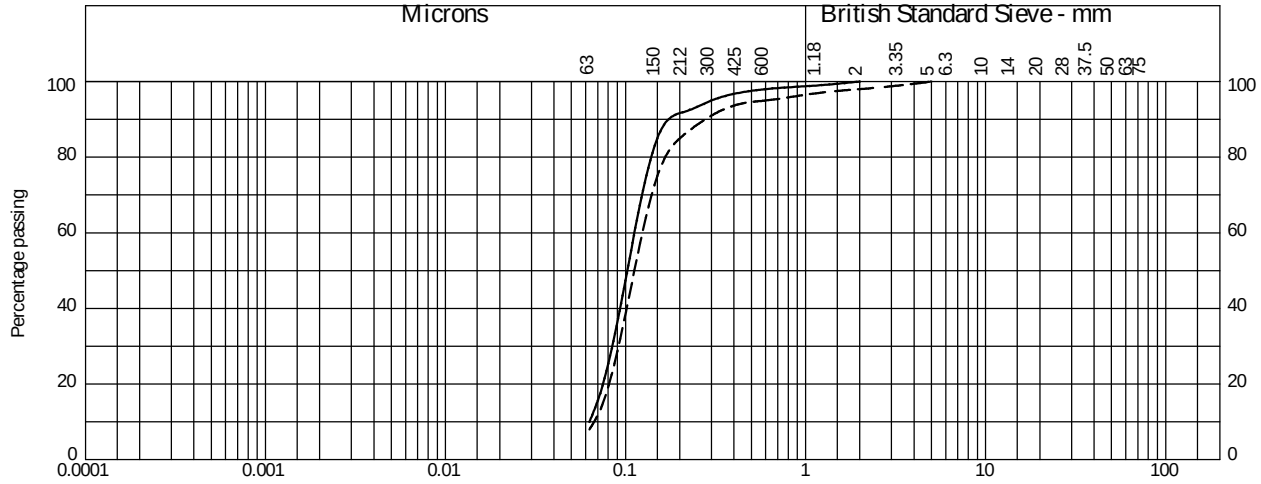
The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

PARTICLE SIZE DISTRIBUTION

Owner	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	27/08/2015
Consultant	CH2M MACE JV	Request No.	XSD/15-0143
Project No.	N.P.	Client Reference	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT		

Sampling Method	BS 5930:1999+A2: 2010	Sampled By	MATRIX
Initial Sample Prep.	BS 1377 : PART 1 : 1990 (Amd.8258/95), Cl.7.4	Sample Brt. In By	MATRIX
Sample Preparation	BS 1377 : 1990 P1 (Amd.8258/95), Cl.7.3 & 7.4.5	Date Received	04-18/08/2015
Test Method	BS 1377 : PART 2 : 1990 : CL.9.2 (Amd.9027/96)	Date Tested	06-20/08/2015
Test Method Var	NIL	Tested By	BIKI/ROJAN/ERWIN



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

BORING	SAMP. NO	SAMP. SIZE (gm)	CURVE	DESCRIPTION OF SOIL TYPE	DEPTH(m)
TP098	TP4	122.5	———	SILTY, FINE SAND (S-M)	4.00
TP099	TP3	137.1	– – –	SL. GRAVELLY, SILTY, FINE SAND (S-M)	3.00
TP100	TP3	122.5	.....	SILTY, FINE SAND (S-M)	3.00
			–·–·–		

The results relate only to the samples tested.

Table C1 - 1(1)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP01	**Sampling Date**	26/07/2015
Depth (m)	0.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	27/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
28	100
20	90
14	81
10	72
6.3	65
5	63
3.35	61
2	59
1.18	57
0.600	54
0.425	51
0.300	47
0.212	43
0.15	32
0.075	12
0.063	11
0.028	8
0.018	6
0.010	5
0.007	4
0.005	3
0.002	2
0.001	0

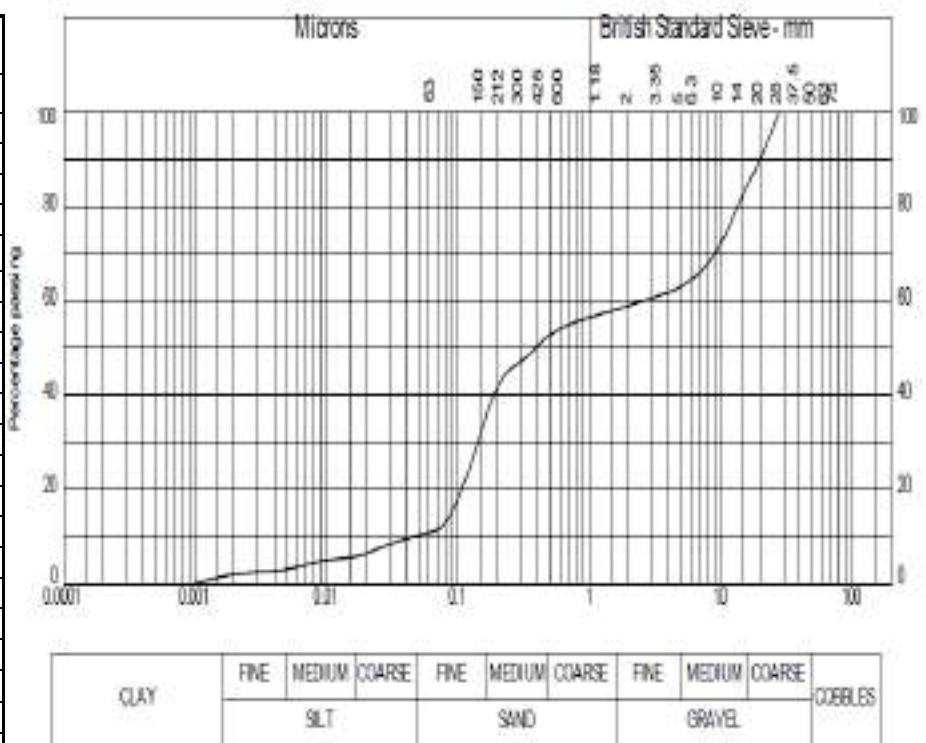


Table C1 - 1(2)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP02	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	27/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	90
10	87
6.3	85
5	83
3.35	81
2	79
1.18	78
0.600	75
0.425	72
0.300	68
0.212	63
0.15	47
0.075	13
0.063	11
0.028	9
0.018	8
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

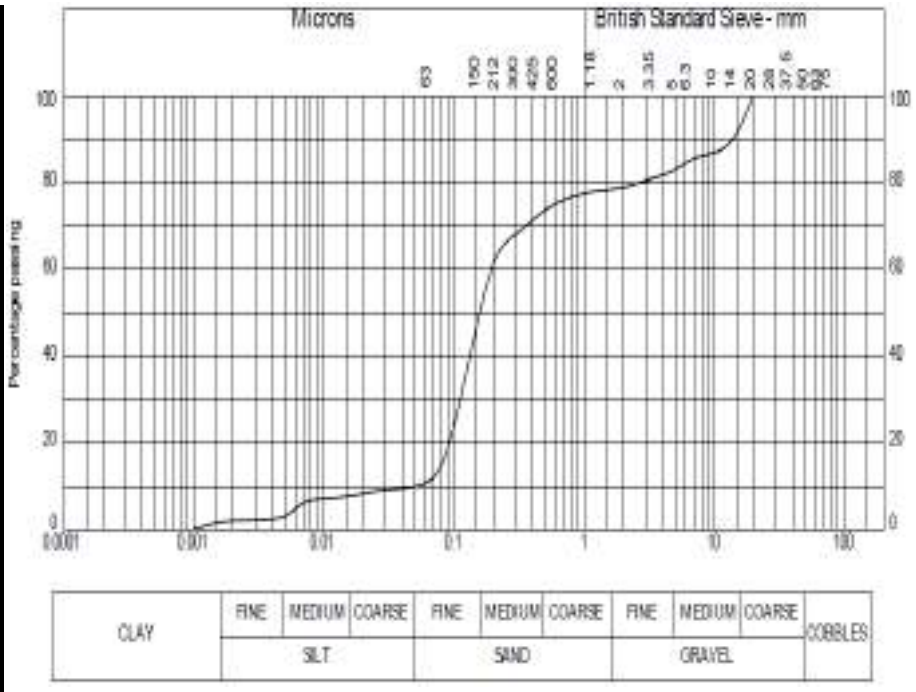


Table C1 - 1(3)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP07	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	27/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	98
3.35	98
2	97
1.18	96
0.600	90
0.425	80
0.300	75
0.212	70
0.15	60
0.075	55
0.063	48
0.028	30
0.018	22
0.010	18
0.007	10
0.005	4
0.002	2
0.001	0



Table C1 - 1(4)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP08	**Sampling Date**	26/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	27/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	92
6.3	80
5	76
3.35	69
2	60
1.18	51
0.600	41
0.425	37
0.300	31
0.212	28
0.15	23
0.075	14
0.063	13
0.028	10
0.018	7
0.010	6
0.007	4
0.005	3
0.002	1
0.001	0

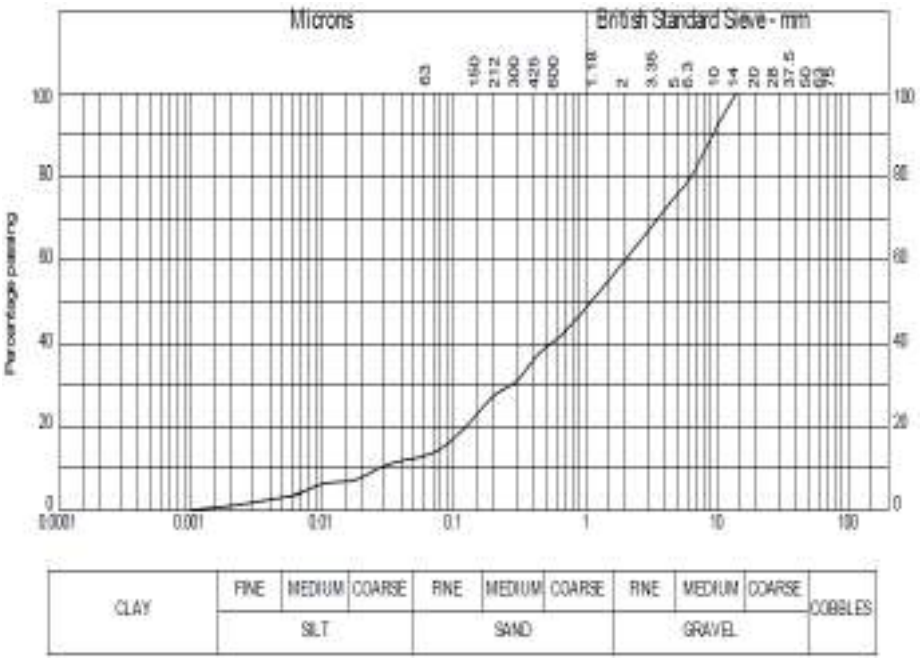


Table C1 - 1(5)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP10	**Sampling Date**	26/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	27/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	86
6.3	77
5	73
3.35	67
2	61
1.18	56
0.600	52
0.425	50
0.300	47
0.212	43
0.15	32
0.075	14
0.063	13
0.028	10
0.018	5
0.010	4
0.007	3
0.005	2
0.002	1
0.001	0

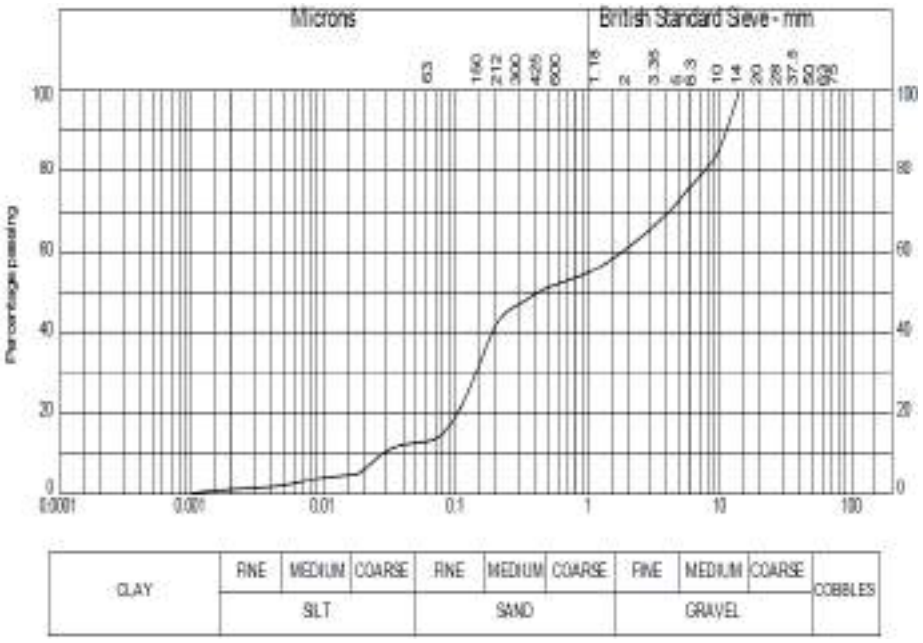


Table C1 - 1(6)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP12	**Sampling Date**	29/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	99
5	98
3.35	98
2	98
1.18	97
0.600	96
0.425	96
0.300	93
0.212	87
0.15	66
0.075	21
0.063	20
0.028	10
0.018	10
0.010	7
0.007	6
0.005	3
0.002	2
0.001	0

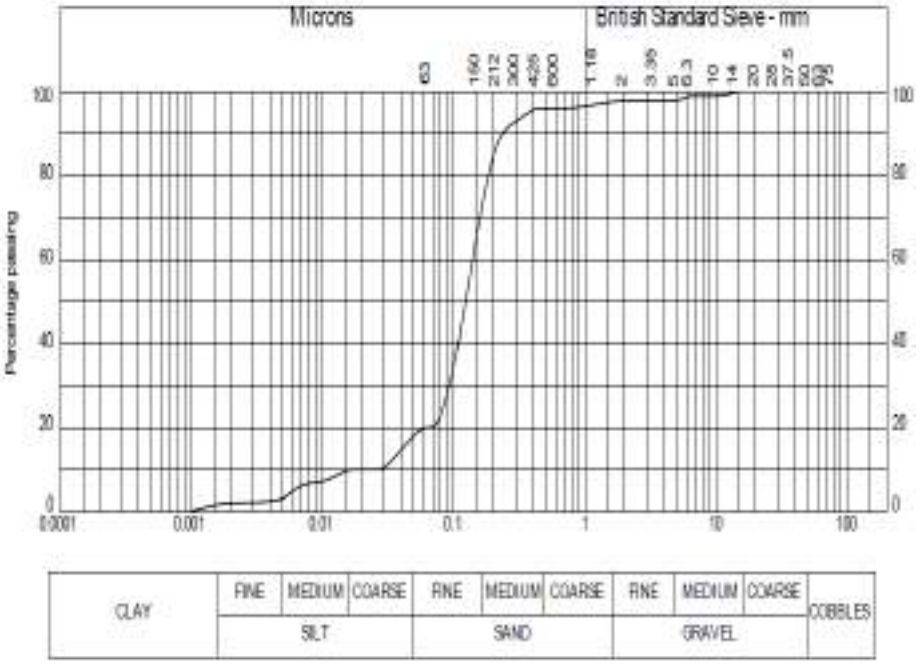


Table C1 - 1(7)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	28/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, COARSE SAND	**Sampled By**	Matrix
Borehole No.	TP17	**Sampling Date**	27/07/2015
Depth (m)	1.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	28/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	100
10	97
6.3	91
5	88
3.35	82
2	73
1.18	63
0.600	51
0.425	46
0.300	40
0.212	37
0.15	33
0.075	25
0.063	20
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

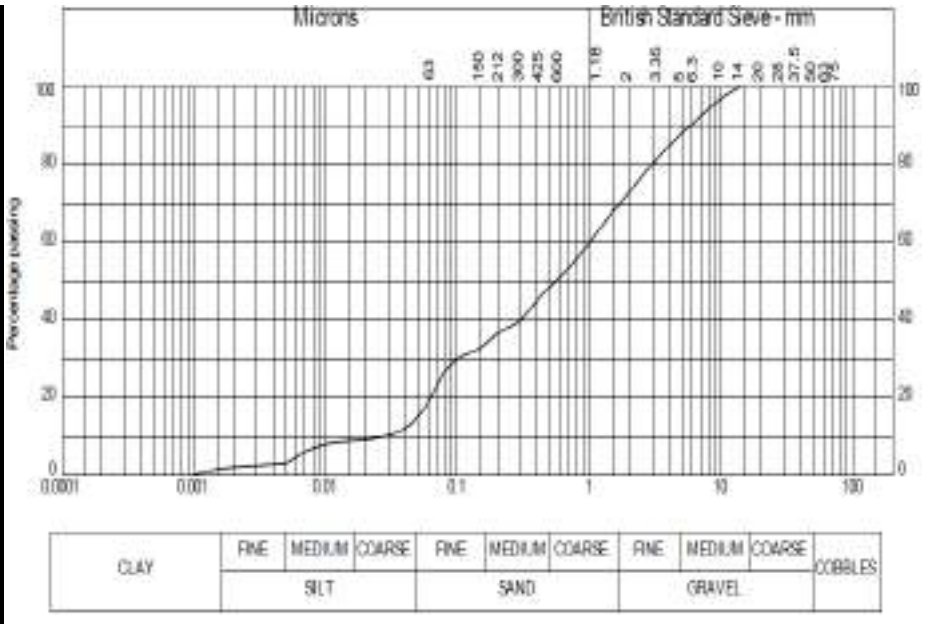


Table C1 - 1(8)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP19	**Sampling Date**	27/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	28/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	100
10	97
6.3	93
5	91
3.35	90
2	87
1.18	84
0.600	81
0.425	76
0.300	66
0.212	58
0.15	42
0.075	17
0.063	16
0.028	12
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

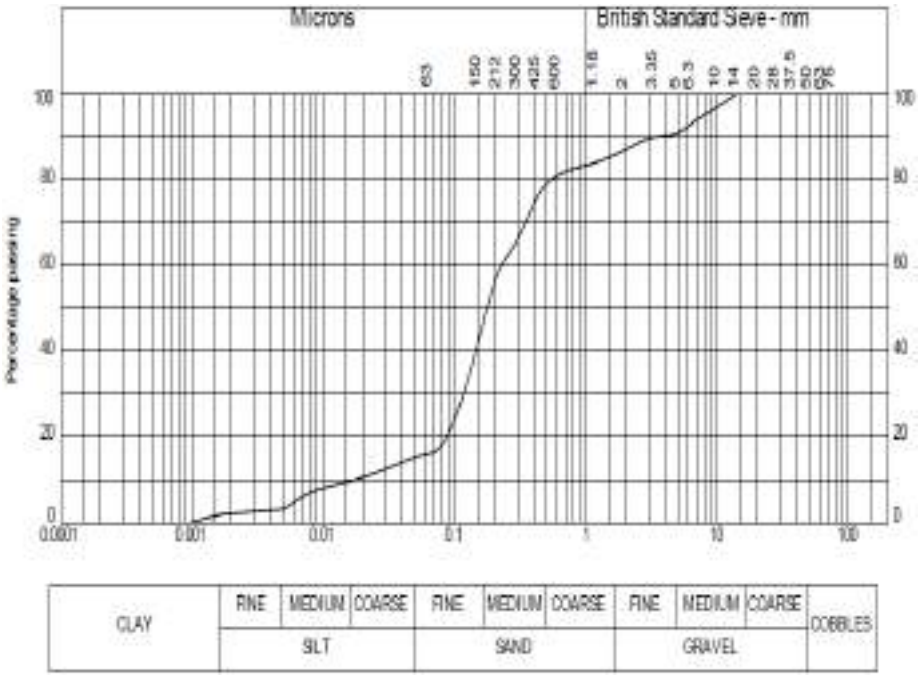


Table C1 - 1(9)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP23	**Sampling Date**	28/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	96
5	94
3.35	93
2	91
1.18	90
0.600	89
0.425	88
0.300	86
0.212	82
0.15	60
0.075	17
0.063	16
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

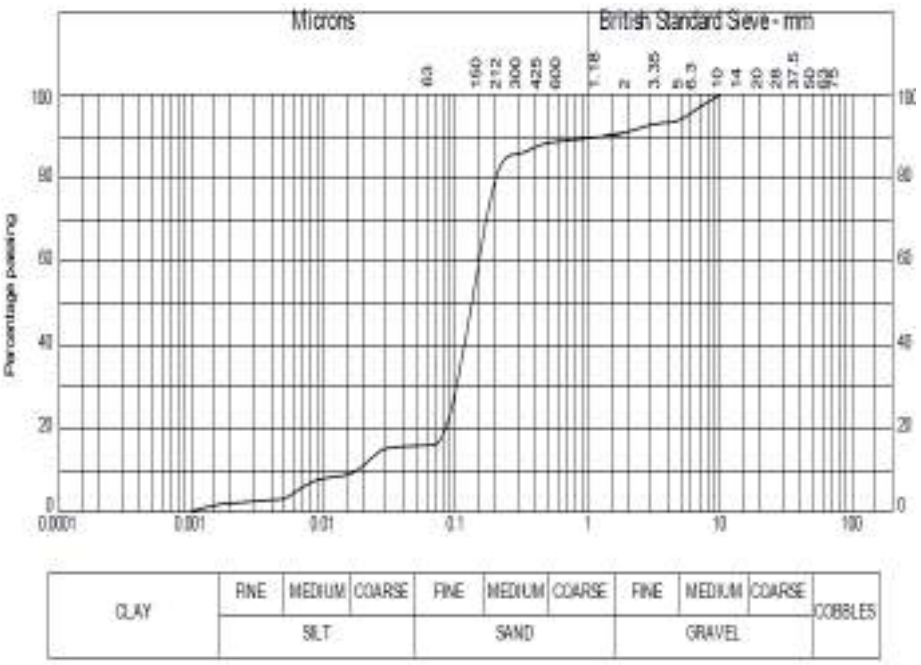


Table C1 - 1(10)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP25	**Sampling Date**	29/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	29/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	100
6.3	96
5	94
3.35	92
2	89
1.18	87
0.600	84
0.425	83
0.300	81
0.212	77
0.15	58
0.075	15
0.063	14
0.028	12
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

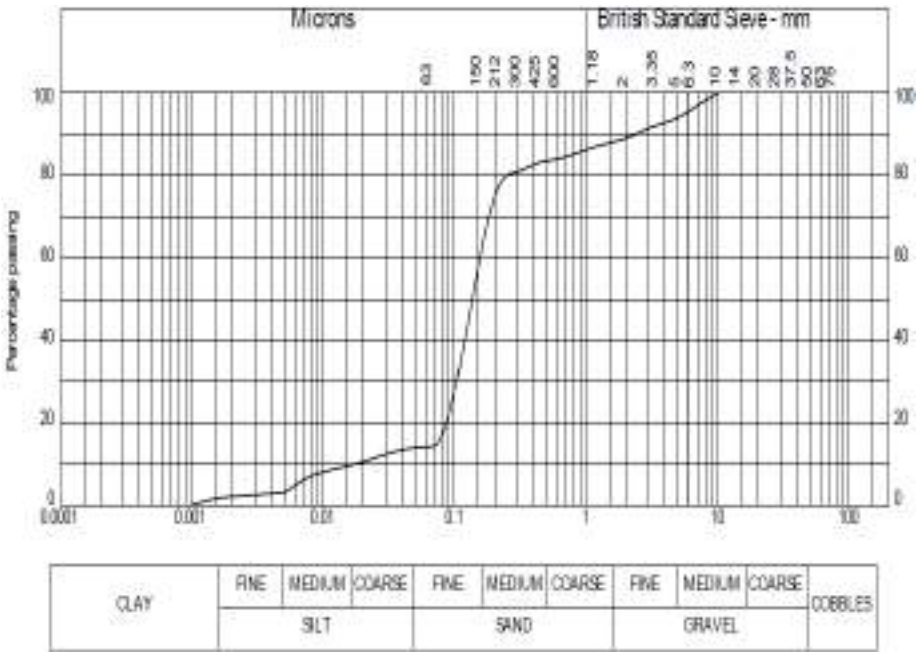


Table C1 - 1(11)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP29	**Sampling Date**	29/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	94
5	92
3.35	89
2	82
1.18	75
0.600	67
0.425	63
0.300	56
0.212	51
0.15	44
0.075	19
0.063	17
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

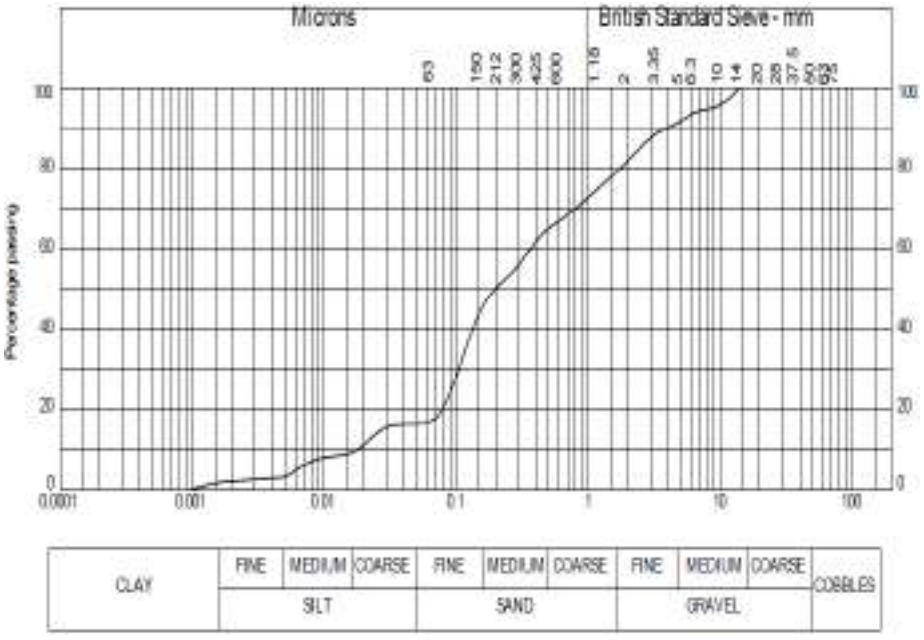


Table C1 - 1(12)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP31	**Sampling Date**	29/07/2015
Depth (m)	0.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	30/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	99
0.600	98
0.425	97
0.300	93
0.212	85
0.15	63
0.075	14
0.063	12
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

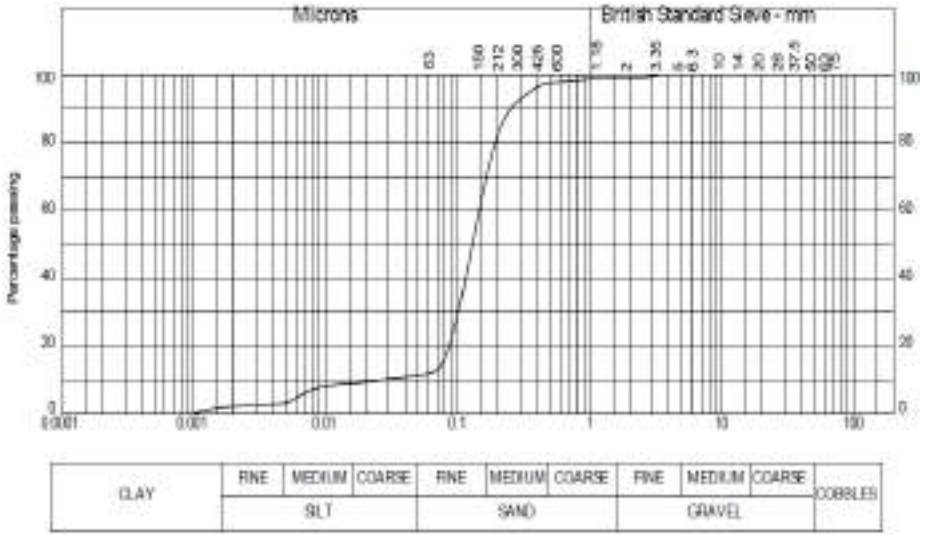


Table C1 - 1(13)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP33	**Sampling Date**	30/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	97
3.35	95
2	94
1.18	93
0.600	92
0.425	91
0.300	90
0.212	89
0.15	81
0.075	50
0.063	40
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

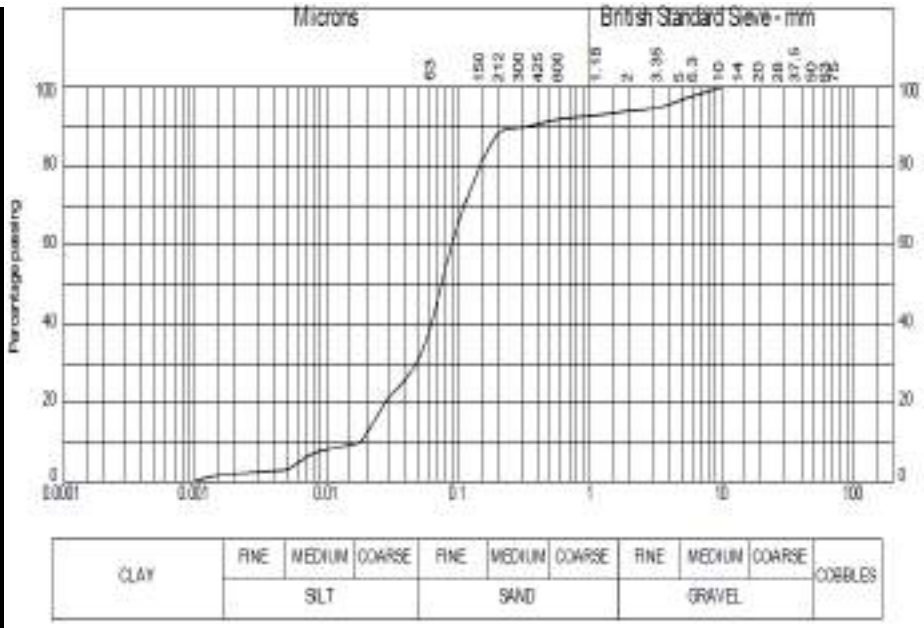


Table C1 - 1(14)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP36	**Sampling Date**	30/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	98
3.35	97
2	96
1.18	94
0.600	92
0.425	90
0.300	87
0.212	82
0.15	61
0.075	15
0.063	13
0.028	10
0.018	8
0.010	6
0.007	4
0.005	3
0.002	2
0.001	0

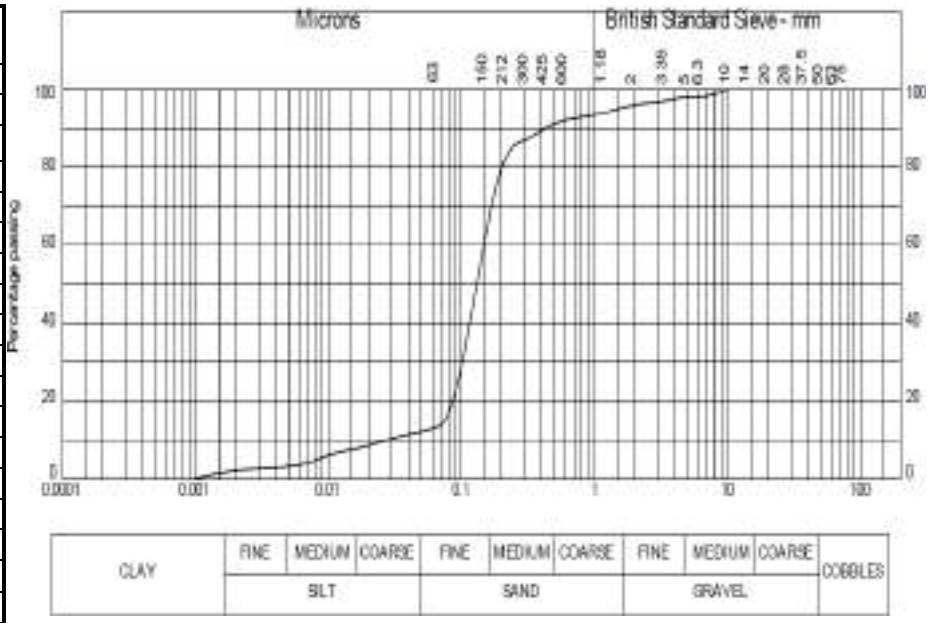


Table C1 - 1(15)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	TP40	**Sampling Date**	31/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	90
10	80
6.3	74
5	72
3.35	68
2	65
1.18	62
0.600	59
0.425	57
0.300	52
0.212	46
0.15	33
0.075	14
0.063	13
0.028	10
0.018	6
0.010	5
0.007	4
0.005	3
0.002	2
0.001	0

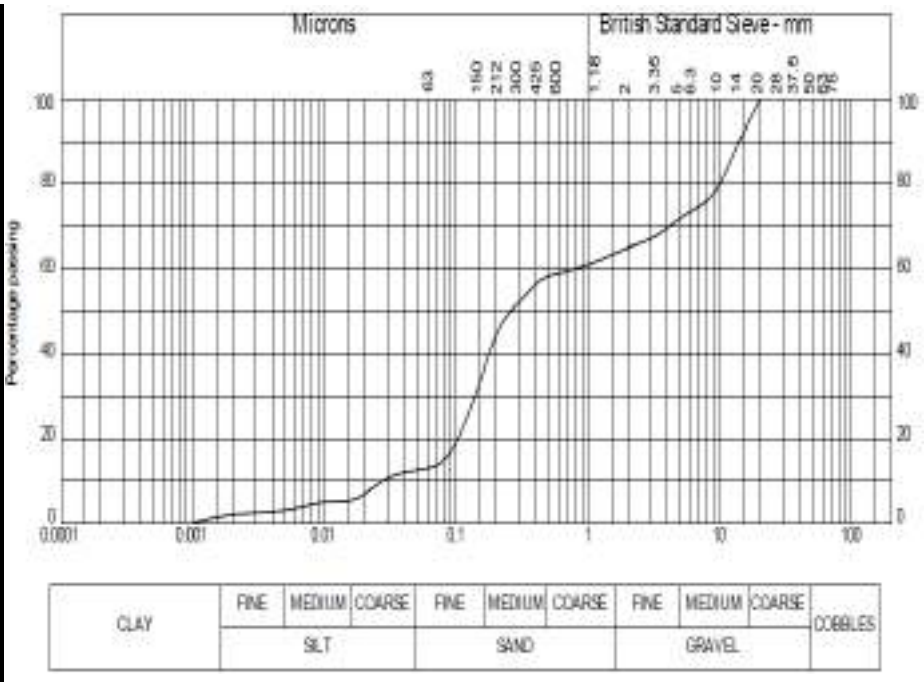


Table C1 - 1(16)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP42	**Sampling Date**	31/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	01/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	99
2	98
1.18	98
0.600	97
0.425	95
0.300	88
0.212	78
0.15	55
0.075	13
0.063	11
0.028	10
0.018	9
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

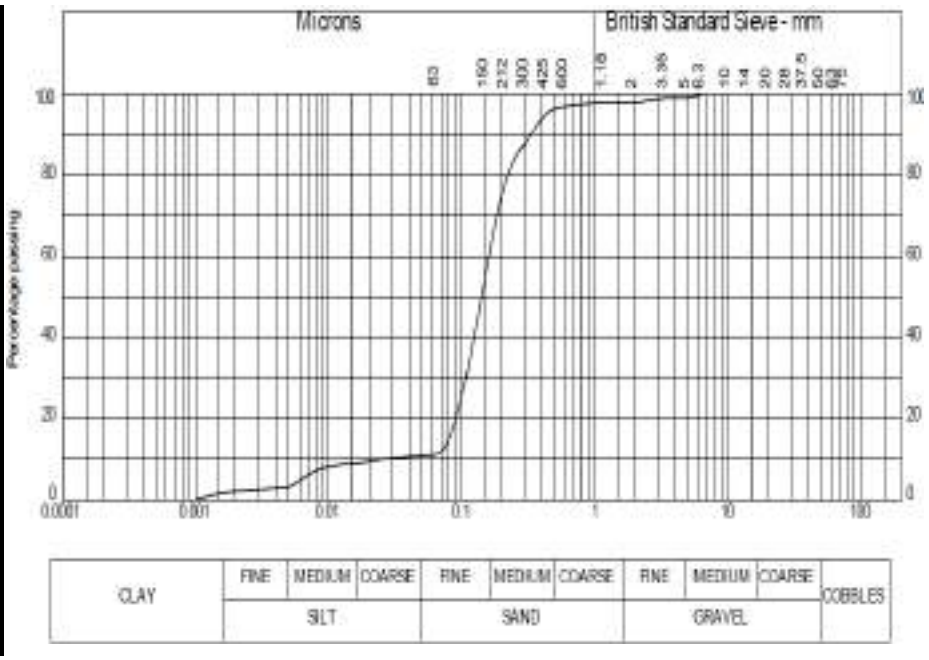


Table C1 - 1(17)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP46	**Sampling Date**	31/07/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	31/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	96
6.3	89
5	85
3.35	78
2	74
1.18	71
0.600	68
0.425	67
0.300	64
0.212	60
0.15	48
0.075	20
0.063	18
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

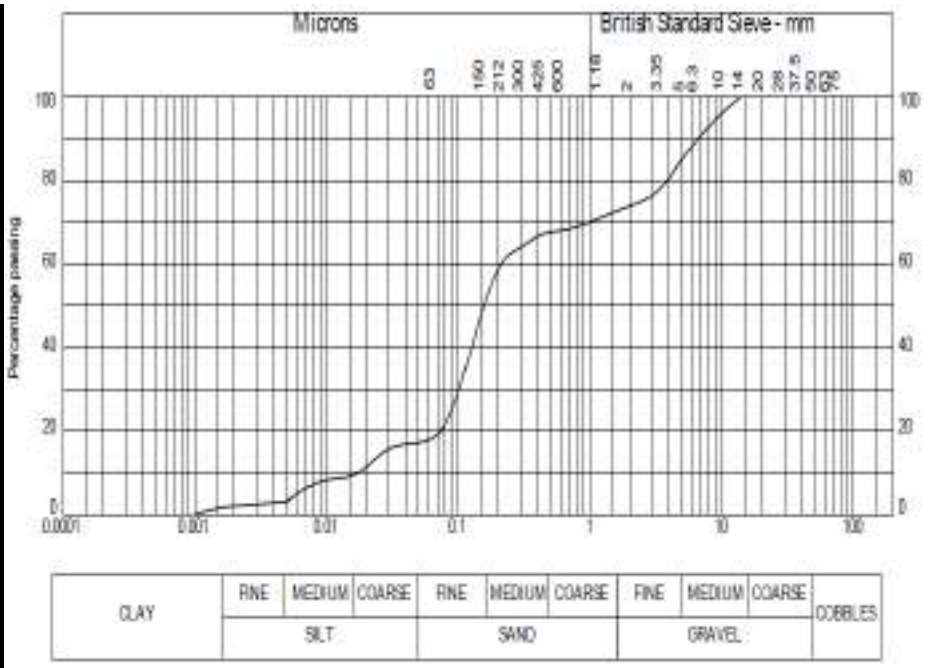


Table C1 - 1(18)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP49	**Sampling Date**	30/07/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	31/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	98
5	97
3.35	97
2	96
1.18	95
0.600	94
0.425	93
0.300	91
0.212	87
0.15	72
0.075	20
0.063	18
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

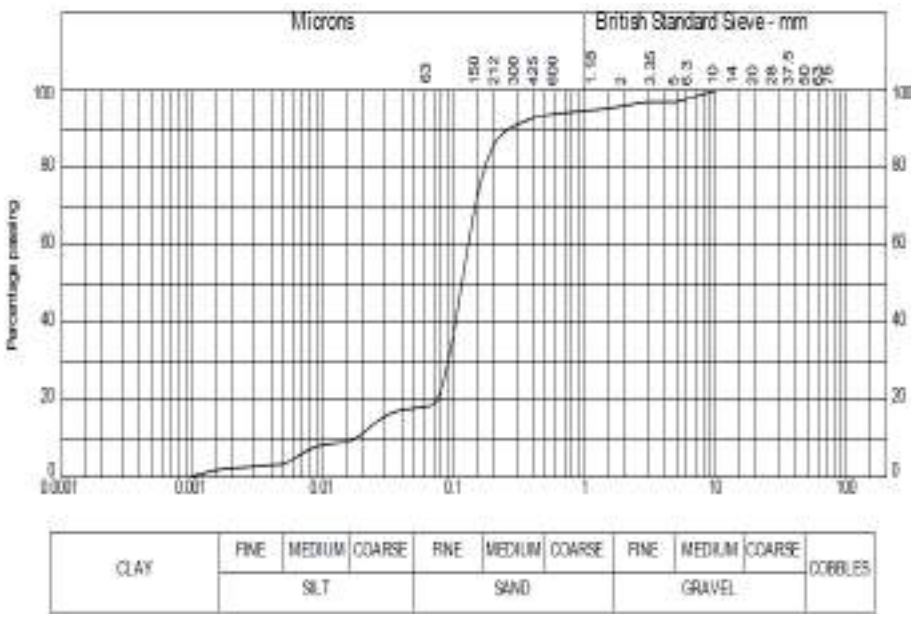


Table C1 - 1(19)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	TP59	**Sampling Date**	31/07/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	31/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	96
10	95
6.3	91
5	87
3.35	85
2	82
1.18	80
0.600	76
0.425	73
0.300	64
0.212	55
0.15	38
0.075	15
0.063	14
0.028	11
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

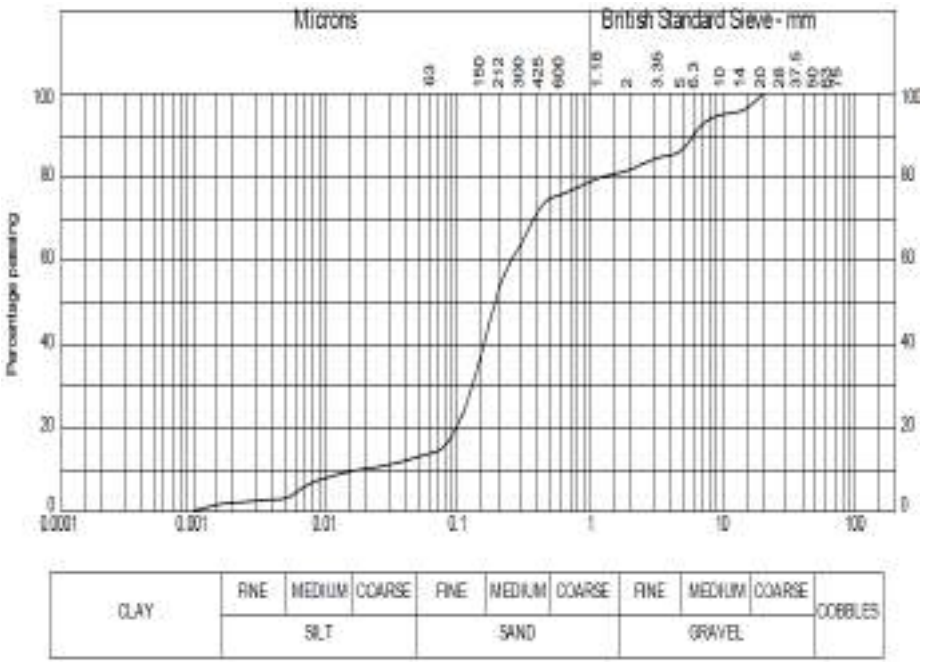


Table C1 - 1(20)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP65	**Sampling Date**	31/07/2015
Depth (m)	0.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	31/07/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	01/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	95
6.3	91
5	88
3.35	86
2	85
1.18	84
0.600	83
0.425	83
0.300	81
0.212	77
0.15	51
0.075	30
0.063	20
0.028	8
0.018	6
0.010	5
0.007	4
0.005	3
0.002	2
0.001	0

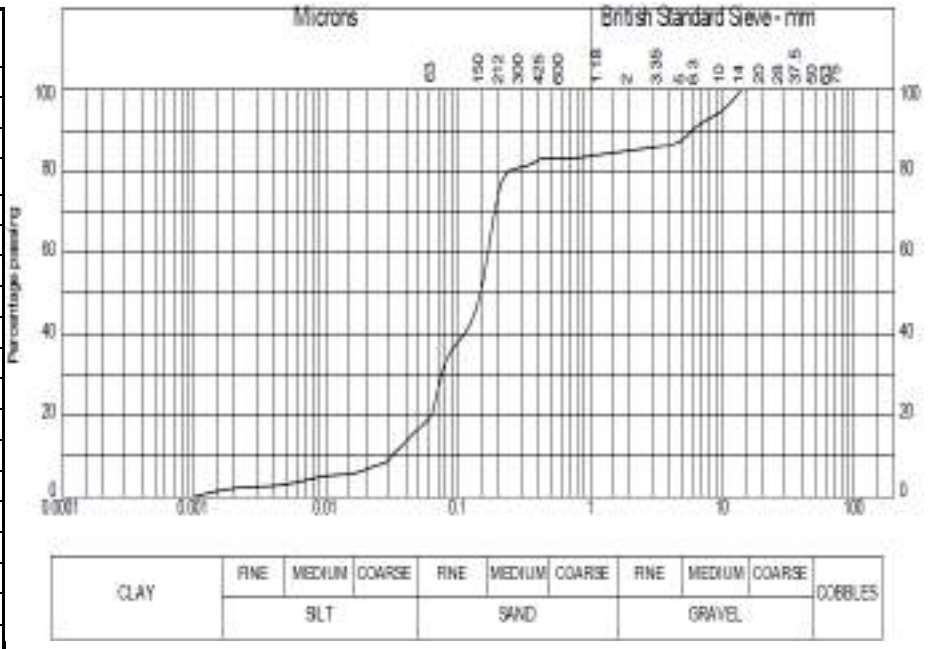


Table C1 - 1(21)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	07/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP67	**Sampling Date**	01/08/2015
Depth (m)	0.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	03/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	97
5	94
3.35	92
2	90
1.18	88
0.600	86
0.425	84
0.300	78
0.212	71
0.15	60
0.075	50
0.063	40
0.028	30
0.018	15
0.010	10
0.007	7
0.005	4
0.002	1
0.001	0

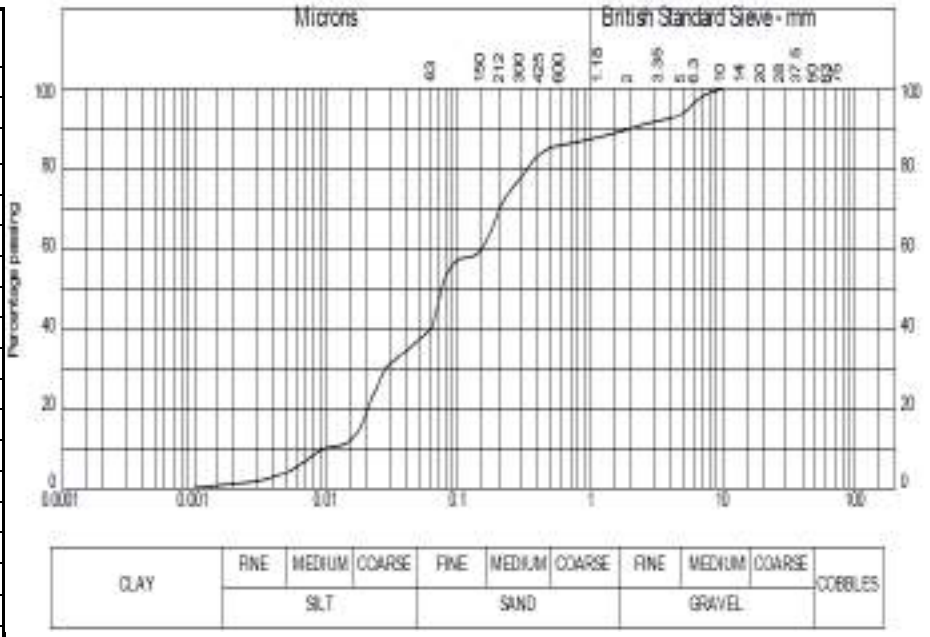


Table C1 - 1(22)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	V. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP69	**Sampling Date**	01/08/2015
Depth (m)	0.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	93
6.3	82
5	78
3.35	70
2	62
1.18	57
0.600	53
0.425	51
0.300	48
0.212	44
0.15	35
0.075	16
0.063	15
0.028	10
0.018	8
0.010	6
0.007	5
0.005	2
0.002	1
0.001	0

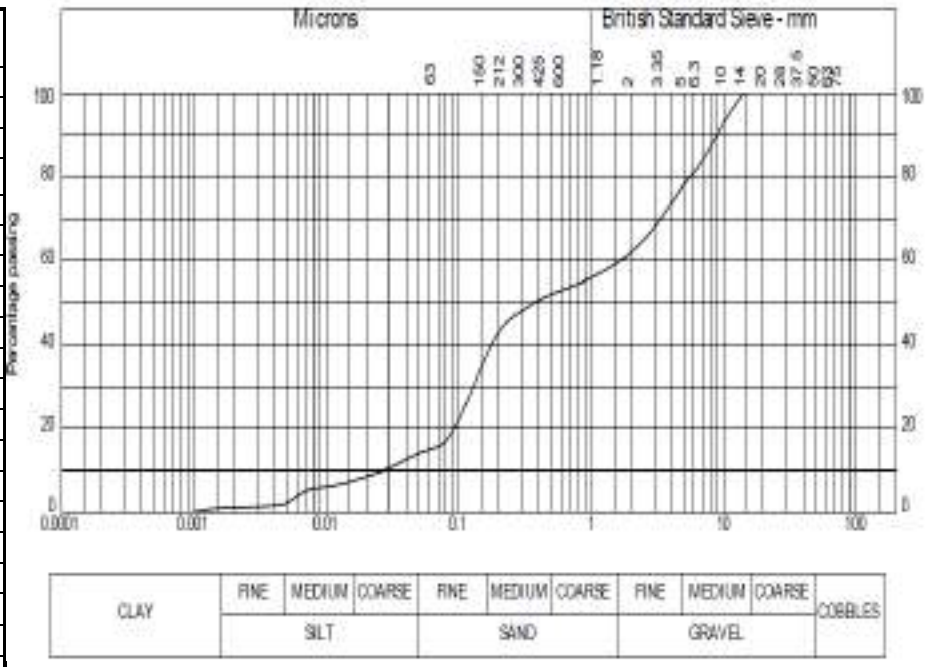


Table C1 - 1(23)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP70	**Sampling Date**	01/08/2015
Depth (m)	0.50	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	99
1.18	98
0.600	95
0.425	92
0.300	87
0.212	83
0.15	72
0.075	23
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	1
0.001	0

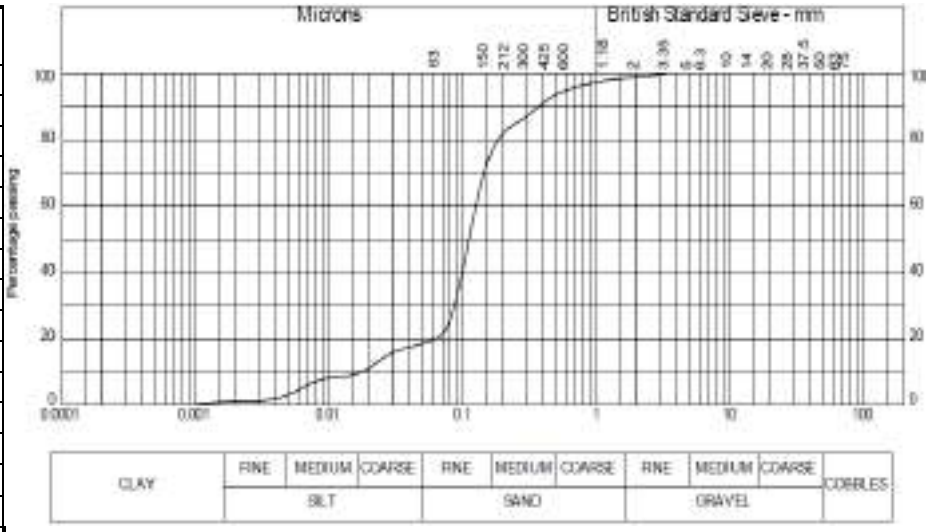


Table C1 - 1(24)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP73	**Sampling Date**	02/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
14	100
10	99
6.3	95
5	93
3.35	91
2	90
1.18	89
0.600	88
0.425	70
0.300	60
0.212	50
0.15	40
0.075	30
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

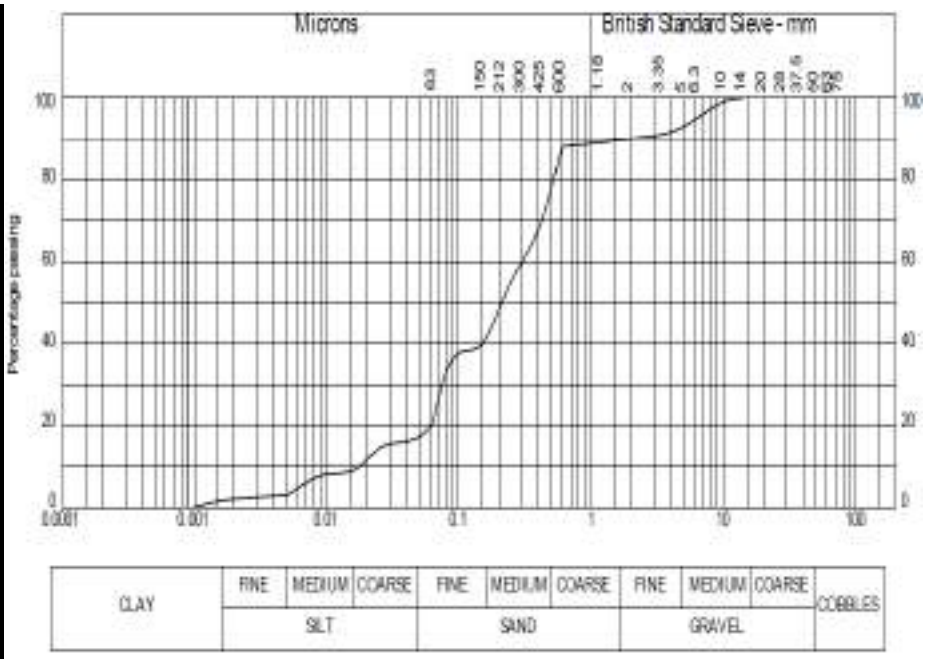


Table C1 - 1(25)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP74	**Sampling Date**	02/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
20	100
14	93
10	91
6.3	86
5	84
3.35	83
2	80
1.18	79
0.600	75
0.425	73
0.300	66
0.212	59
0.15	50
0.075	40
0.063	30
0.028	20
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

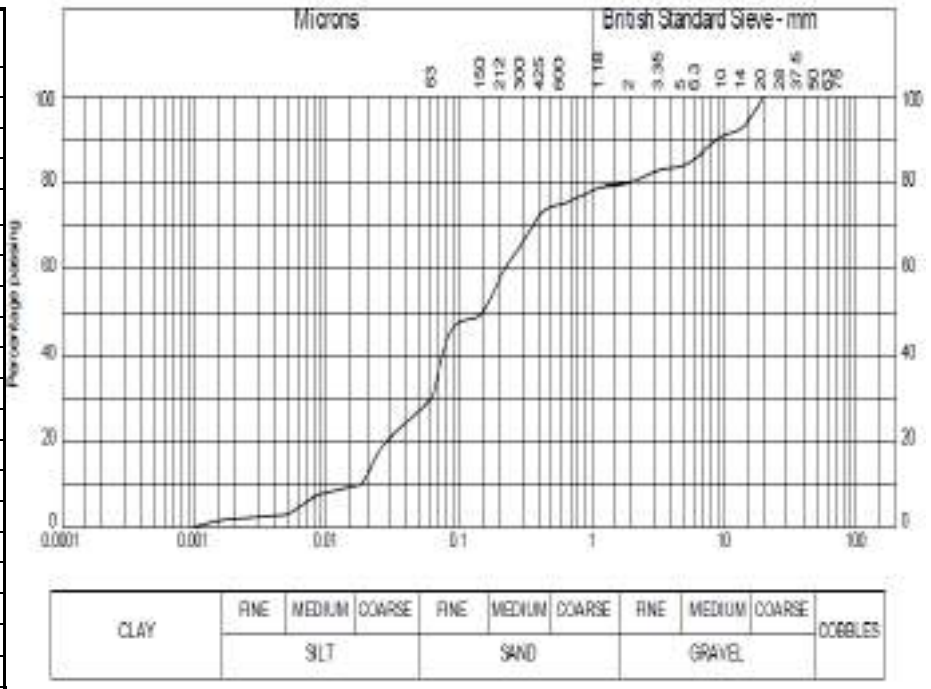


Table C1 - 1(26)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP78	**Sampling Date**	02/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
2	100
1.18	99
0.600	99
0.425	98
0.300	98
0.212	97
0.15	92
0.075	27
0.063	20
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

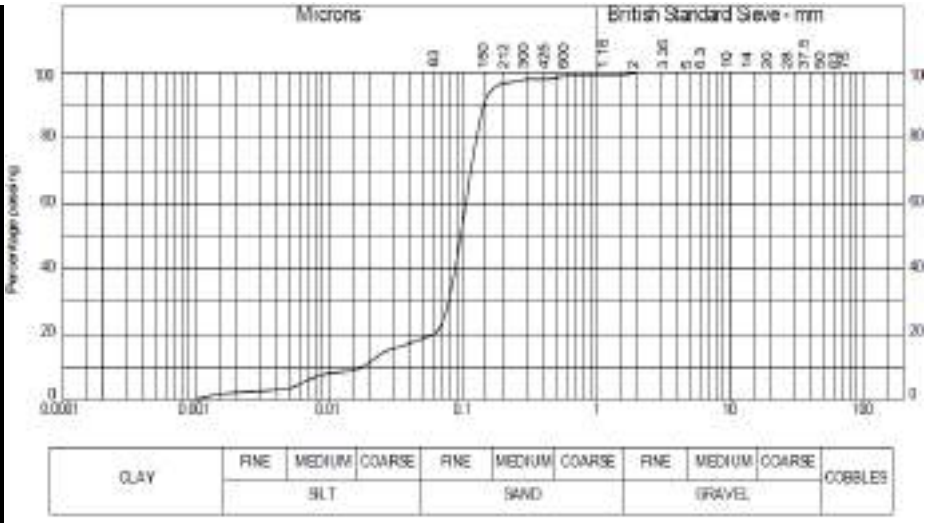


Table C1 - 1(27)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, M-F SAND	**Sampled By**	Matrix
Borehole No.	TP81	**Sampling Date**	02/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	95
5	90
3.35	86
2	82
1.18	78
0.600	73
0.425	71
0.300	67
0.212	58
0.15	36
0.075	19
0.063	18
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

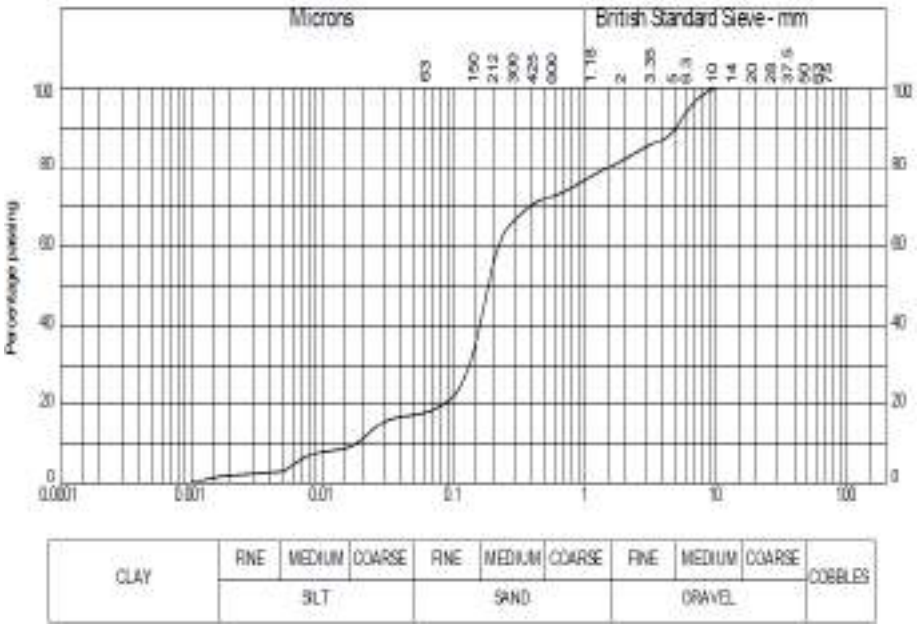


Table C1 - 1(28)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP83	**Sampling Date**	02/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	02/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	04/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
6.3	100
5	99
3.35	98
2	97
1.18	94
0.600	91
0.425	89
0.300	87
0.212	81
0.15	59
0.075	18
0.063	14
0.028	10
0.018	8
0.010	6
0.007	4
0.005	3
0.002	2
0.001	0

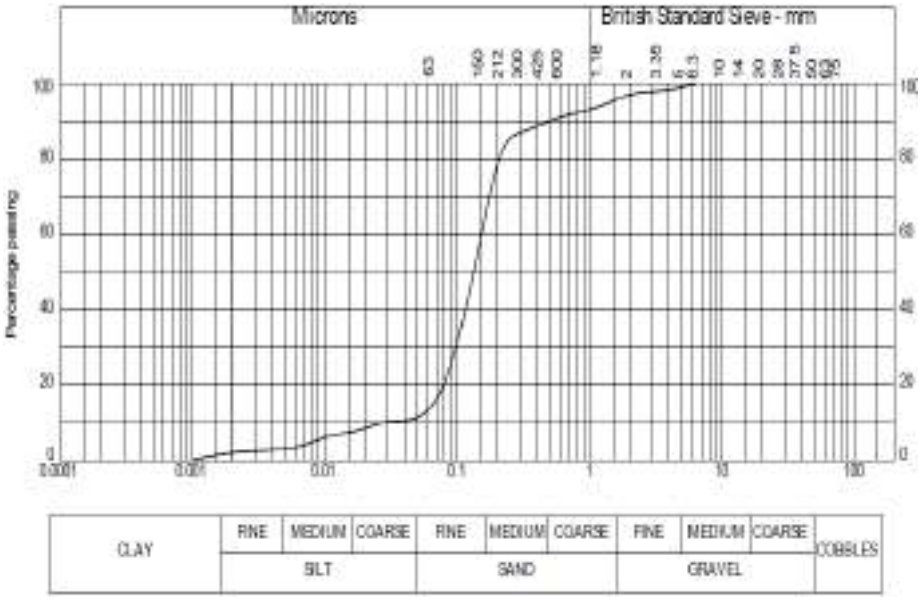


Table C1 - 1(29)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP1
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP85	**Sampling Date**	03/08/2015
Depth (m)	1.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	03/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	05/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	99
5	98
3.35	95
2	90
1.18	86
0.600	81
0.425	79
0.300	77
0.212	74
0.15	62
0.075	23
0.063	18
0.028	15
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

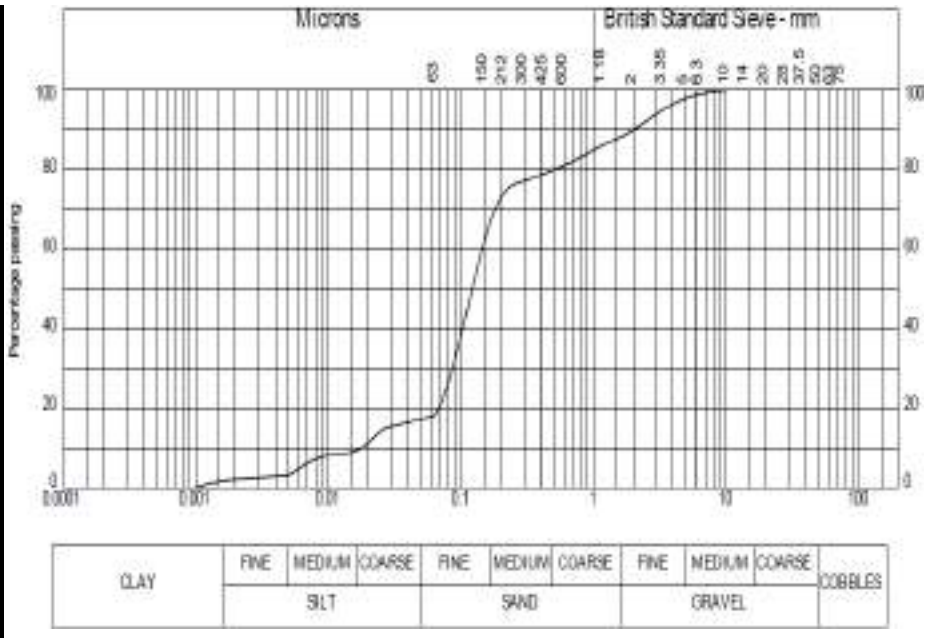


Table C1 - 1(30)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP87	**Sampling Date**	03/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	03/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	05/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
10	100
6.3	95
5	92
3.35	80
2	70
1.18	65
0.600	55
0.425	48
0.300	40
0.212	38
0.15	35
0.075	20
0.063	19
0.028	12
0.018	10
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

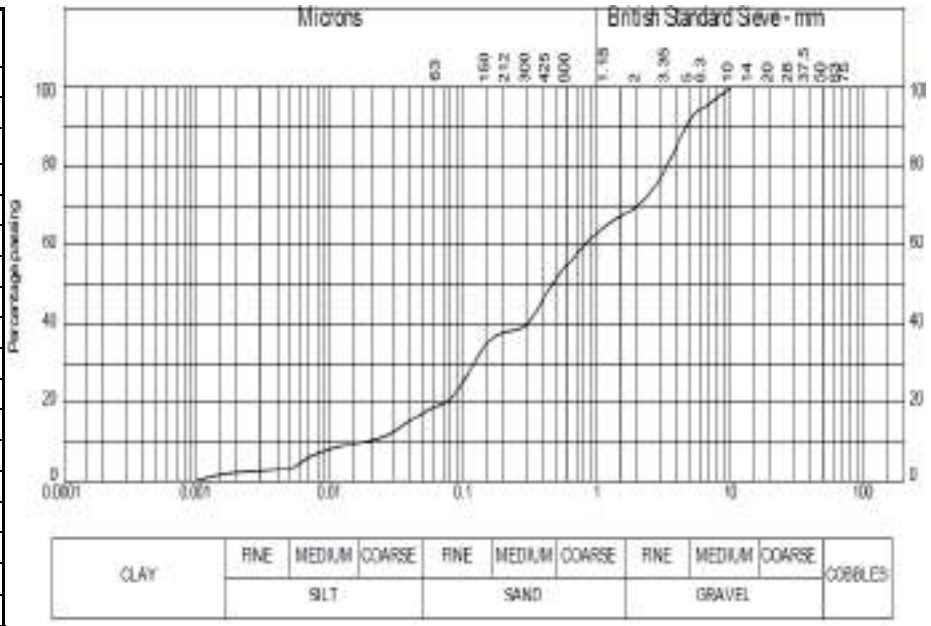


Table C1 - 1(31)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP4
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP90	**Sampling Date**	04/08/2015
Depth (m)	4.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
0.600	100
0.425	90
0.300	82
0.212	74
0.15	68
0.075	57
0.063	40
0.028	30
0.018	20
0.010	15
0.007	9
0.005	8
0.002	1
0.001	0

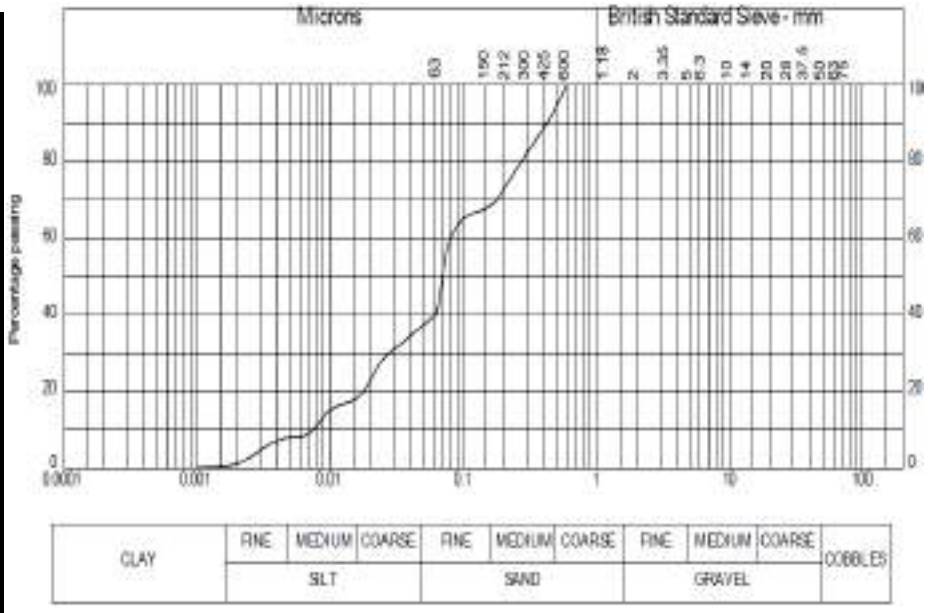


Table C1 - 1(32)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP2
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP94	**Sampling Date**	04/08/2015
Depth (m)	2.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
3.35	100
2	98
1.18	95
0.600	91
0.425	88
0.300	84
0.212	79
0.15	60
0.075	40
0.063	30
0.028	20
0.018	15
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

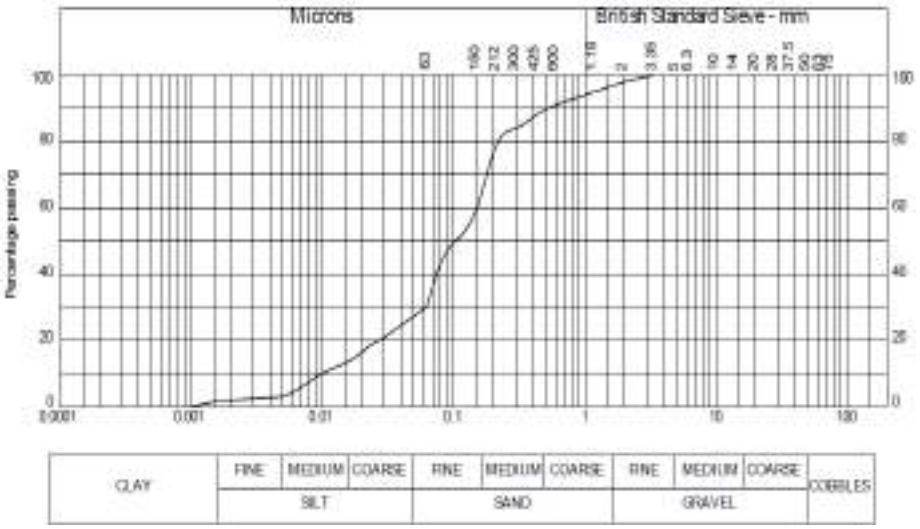


Table C1 - 1(33)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP97	**Sampling Date**	04/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
2	100
1.18	99
0.600	97
0.425	96
0.300	94
0.212	89
0.15	78
0.075	60
0.063	50
0.028	40
0.018	20
0.010	10
0.007	6
0.005	3
0.002	2
0.001	0

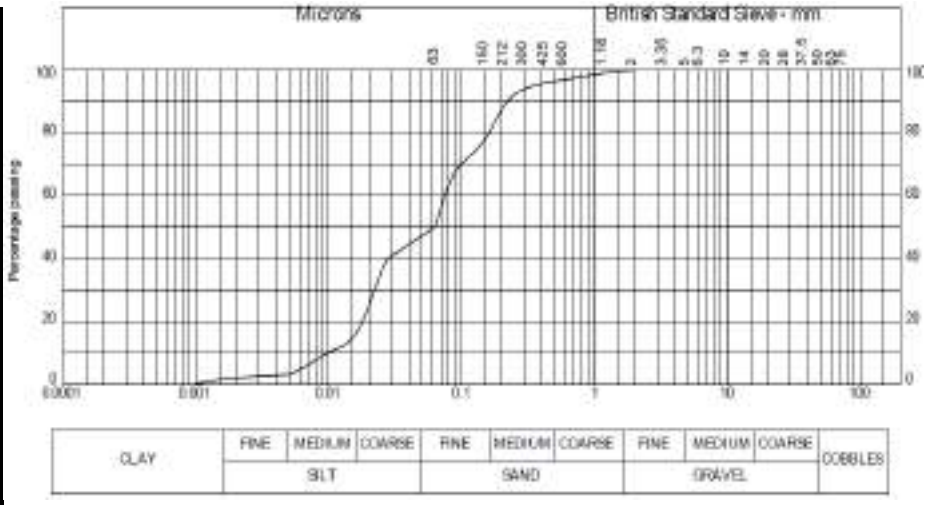


Table C1 - 1(34)

TEST REPORT ON PARTICLE SIZE ANALYSIS (USING HYDROMETER)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Customer	N.P.	**Sample No.**	TP3
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	N.P.		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SL. GRAVELLY, SILTY, FINE SAND	**Sampled By**	Matrix
Borehole No.	TP99	**Sampling Date**	04/08/2015
Depth (m)	3.00	**Sampling Method**	N.P.
Initial Sample Prep.	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.4	**Sample Brt. In By**	N.P.
Sample Preparation	BS 1377 1990 P-1 (Amd. 8258/95) Cl. 7.3 & 7.4.5	**Date Received**	04/08/2015
Test Method	BS 1377 1990 P-2 (Amd. 9027/96) Cl. 9.2 & 9.5	**Date Tested**	06/08/2015
Test Method Var.	Nil	**Tested By**	Erwin

Test Results:

Particle Size (mm)	Passing by Weight (%)
5	100
3.35	99
2	98
1.18	97
0.600	95
0.425	94
0.300	91
0.212	86
0.15	75
0.075	60
0.063	50
0.028	40
0.018	20
0.010	8
0.007	6
0.005	3
0.002	2
0.001	0

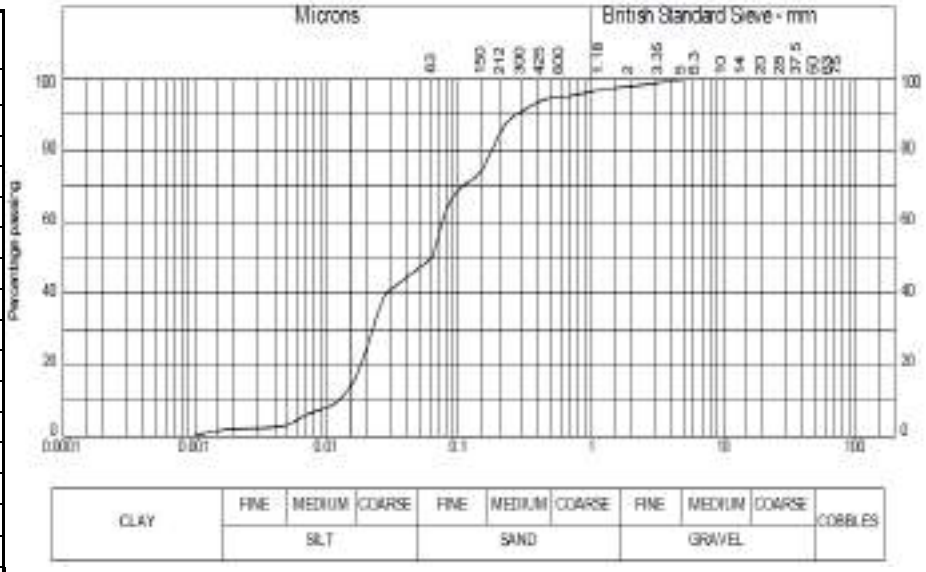


TABLE C1 – 2

REPORT FOR MOISTURE CONTENT

Client	DUBAI WORLD TRADE CENTER LLC	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Date Received**	05-18/08/2015
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	05-19/08/2015
Sample Description	SAND	**Customer Ref.**	N.P.
Source	Site	**Sampling Date**	26/07-04/08/2015
Tested By	Erwin / Rojan		
Test Method	BS 1377: 1990 PART 2 Cl. 3 Amd. 9027-96		

Test Results:

Trial Pit No.	Depth	Moisture Content (%)
TP001	0.00-0.50	0.3
TP002	1.00-1.50	0.7
TP003	1.00-1.50	1.6
TP004	0.00-1.00	0.5
TP005	0.00-1.00	0.6
TP006	1.00-1.50	0.3
TP007	0.00-1.00	0.9
TP008	2.00-3.00	11.0
TP009	2.00-3.00	0.9
TP010	0.00-1.00	0.2
TP011	1.00-2.00	17.0
TP012	1.00-2.00	9.7
TP013	2.00-3.00	7.2
TP014	2.00-3.00	1.1

Trial Pit No.	Depth	Moisture Content (%)
TP015	1.00-2.00	3.2
TP016	0.00-1.00	0.4
TP017	1.00-1.50	5.9
TP018	1.00-2.00	6.2
TP019	0.00-1.00	0.5
TP020	2.00-3.00	2.3
TP021	2.00-3.00	1.3
TP022	0.00-1.00	1.4
TP023	2.00-3.00	5.4
TP024	3.00-4.00	9.5
TP025	2.00-3.00	4.8
TP026	3.00-4.00	6.3
TP027	0.00-1.00	0.9
TP028	1.00-2.00	3.8
TP029	2.00-3.00	6.2
TP030	1.00-2.00	0.4
TP031	0.00-0.50	0.3
TP032	0.00-0.50	0.6
TP033	0.00-1.00	0.9
TP034	0.00-1.00	0.5
TP035	0.00-1.00	0.3
TP036	0.00-1.00	0.5
TP037	1.00-2.00	0.8
TP038	0.00-1.00	0.7
TP039	1.00-2.00	0.8
TP040	2.00-3.00	2.2

Trial Pit No.	Depth	Moisture Content (%)
TP041	2.00-3.00	2.9
TP042	0.00-1.00	0.6
TP043	1.00-1.50	4.1
TP044	1.00-2.00	1.1
TP045	1.00-2.00	1.4
TP046	1.00-2.00	1.9
TP047	2.00-3.00	1.3
TP048	3.00-4.00	6.9
TP049	2.00-3.00	3.2
TP050	0.00-1.00	0.8
TP051	0.00-1.00	0.3
TP052	2.00-3.00	2.9
TP053	3.00-4.00	3.5
TP054	2.00-3.00	2.1
TP055	3.00-4.00	4.2
TP056	1.00-2.00	2.5
TP057	2.00-3.00	0.6
TP058	3.00-4.00	0.6
TP059	0.00-1.00	1.0
TP060	0.00-1.00	0.4
TP061	1.00-2.00	2.2
TP062	0.00-1.00	0.6
TP063	0.00-1.00	0.8
TP064	0.00-1.00	0.4
TP065	0.00-0.50	0.7
TP066	0.00-1.00	0.3

Trial Pit No.	Depth	Moisture Content (%)
TP067	0.00-0.50	0.5
TP068	1.00-2.00	2.5
TP069	0.00-0.50	0.3
TP070	0.00-0.50	0.6
TP071	2.00-3.00	9.0
TP072	0.00-1.00	0.8
TP073	1.00-2.00	1.9
TP074	1.00-2.00	2.3
TP075	0.00-1.00	0.8
TP076	1.00-2.00	3.1
TP077	2.00-3.00	2.8
TP078	3.00-4.00	4.9
TP079	3.00-4.00	5.2
TP080	0.00-1.00	0.5
TP081	1.00-2.00	1.3
TP082	3.00-4.00	8.6
TP083	1.00-2.00	1.6
TP084	2.00-2.50	2.3
TP085	0.00-1.00	0.4
TP086	1.00-2.00	2.3
TP087	1.00-2.00	2.7
TP088	2.00-3.00	7.2
TP089	1.00-2.00	3.2
TP090	3.00-4.00	7.8
TP091	1.00-2.00	1.6
TP092	2.00-3.00	5.7

Trial Pit No.	Depth	Moisture Content (%)
TP093	3.00-4.00	6.3
TP094	1.00-2.00	2.1
TP095	0.00-1.00	0.8
TP096	1.00-2.00	2.7
TP097	2.00-3.00	5.4
TP098	3.00-4.00	6.7
TP099	2.00-3.00	1.6
TP100	2.00-3.00	4.4

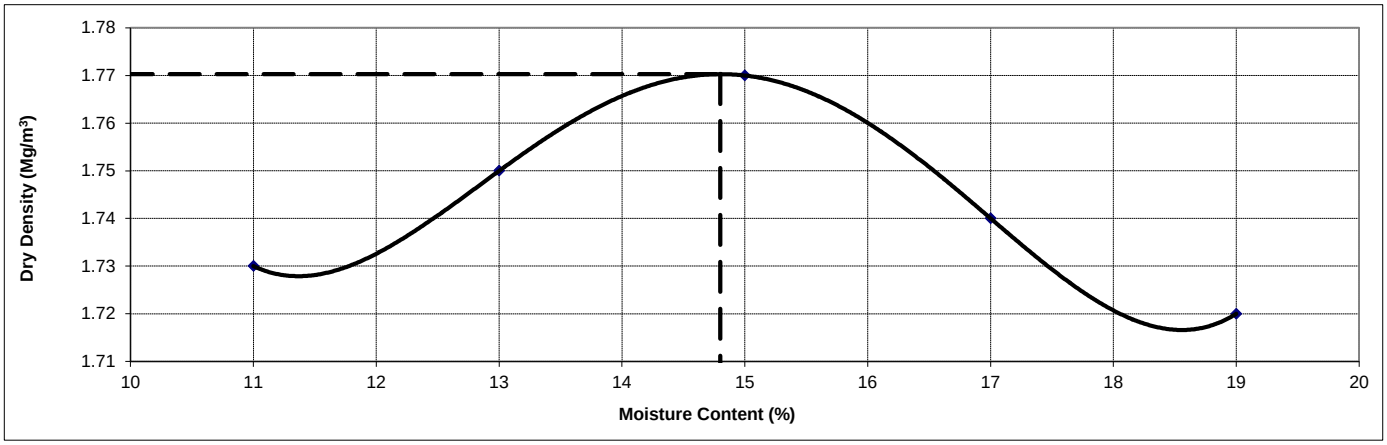
Engr. Rabih Dakwar
Technical Manager
Matrix Laboratory LLC.
Dubai, U.A.E

The results relate only to the samples tested.

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP01 DEPTH 1.00.-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

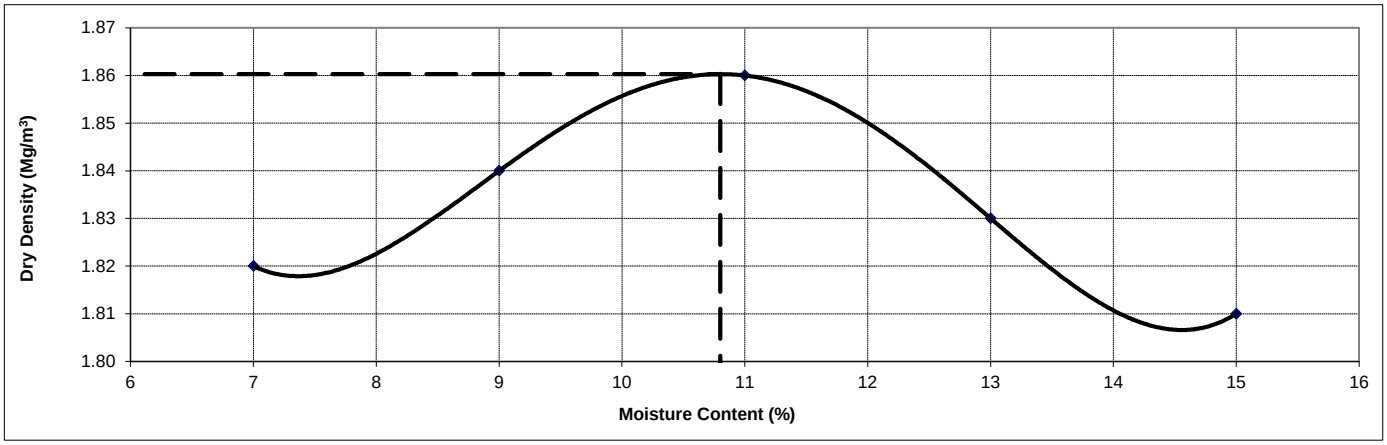


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP02 DEPTH 1.00-1.50m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

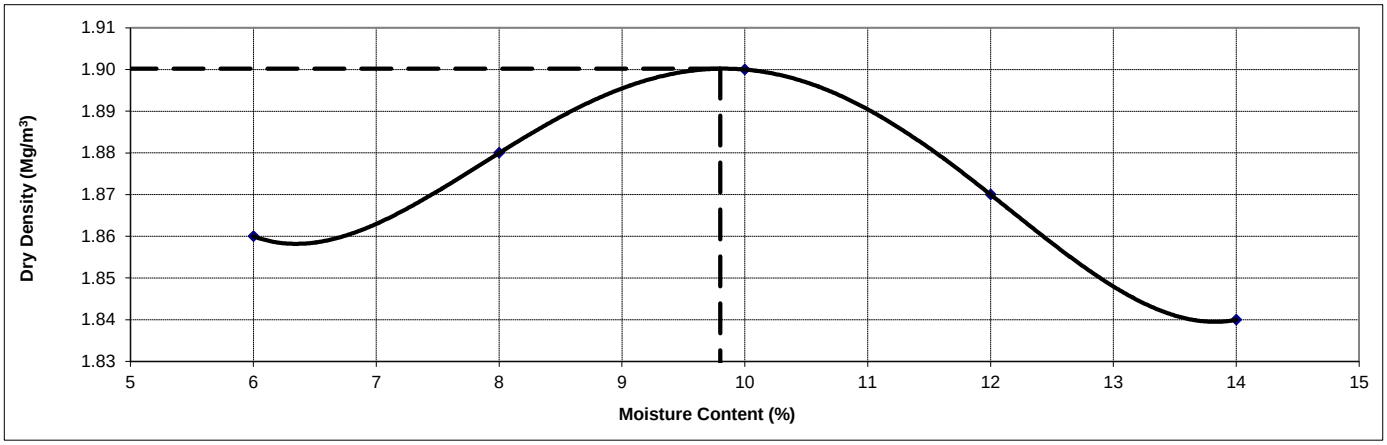


Maximum Dry Density (Mg/m^3)	1.86	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP03 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

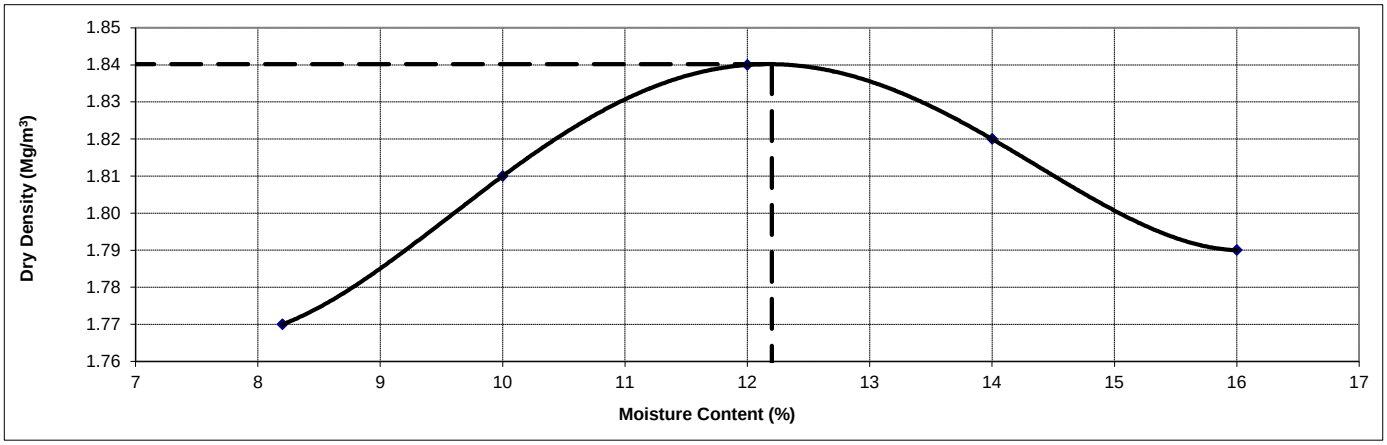


Maximum Dry Density (Mg/m^3)	1.90	**Optimum Moisture Content (%)**	10

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP04 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

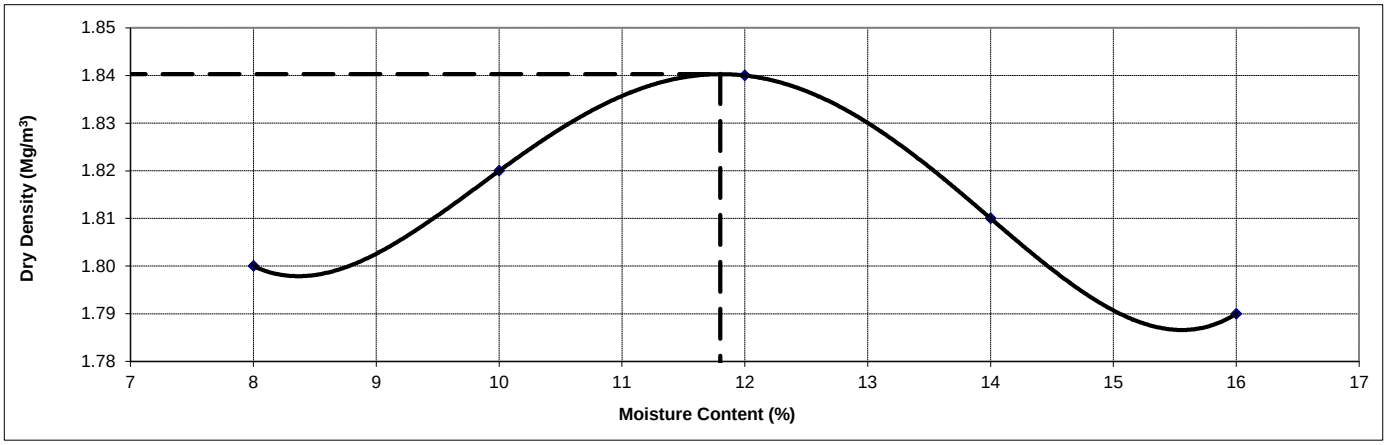


Maximum Dry Density (Mg/m^3)	1.84	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP05 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

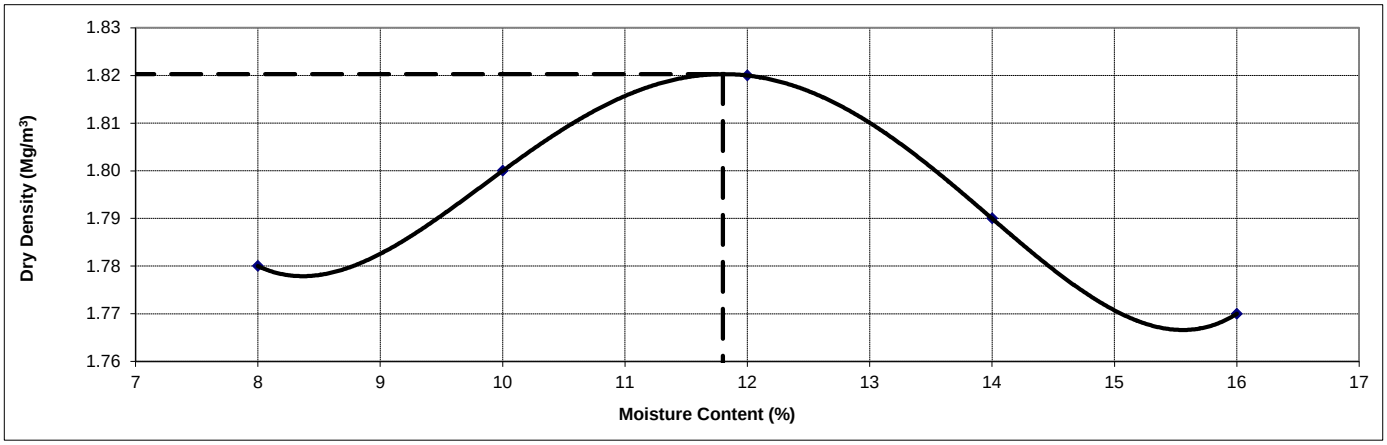


Maximum Dry Density (Mg/m^3)	1.84	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP06 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

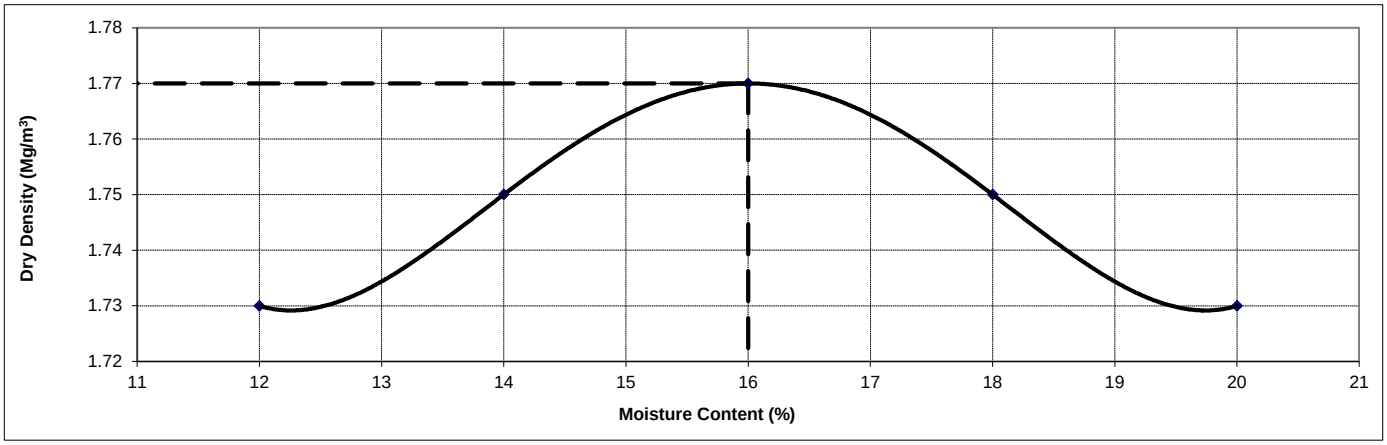


Maximum Dry Density (Mg/m^3)	1.82	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP07 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

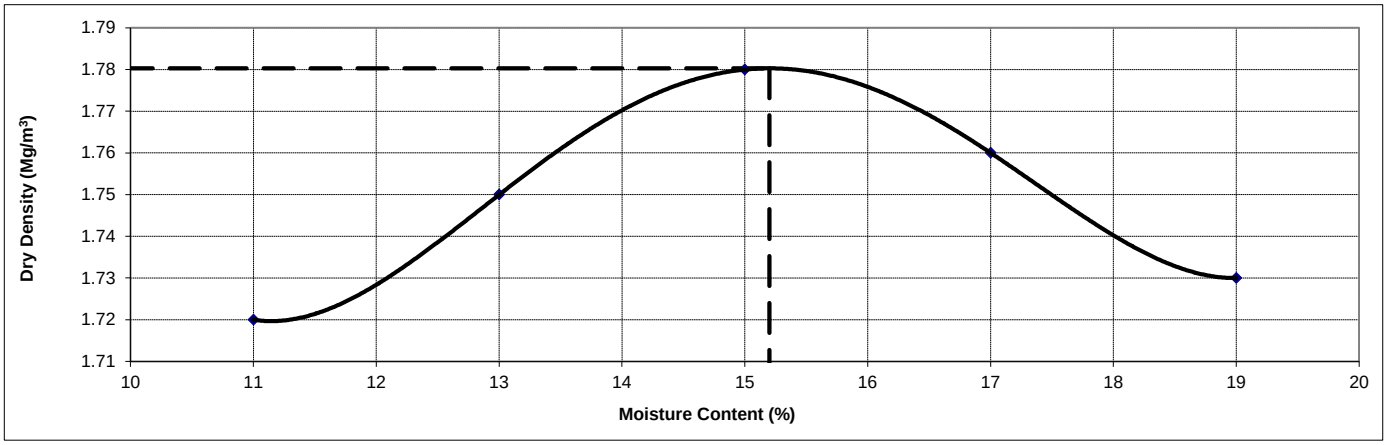


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	16

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP08 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	28/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

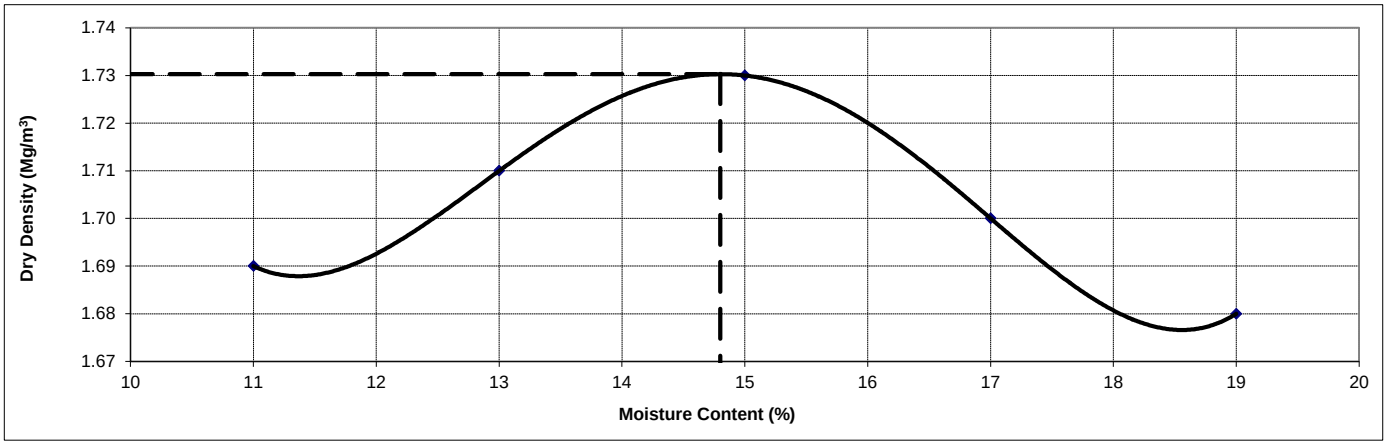


Maximum Dry Density (Mg/m^3)	1.78	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP09 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

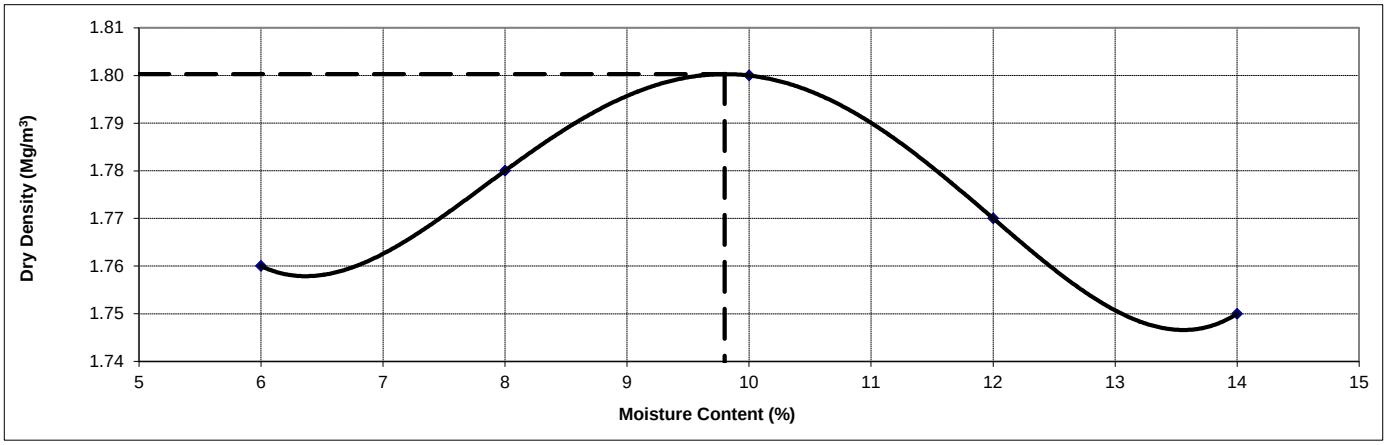


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP10 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

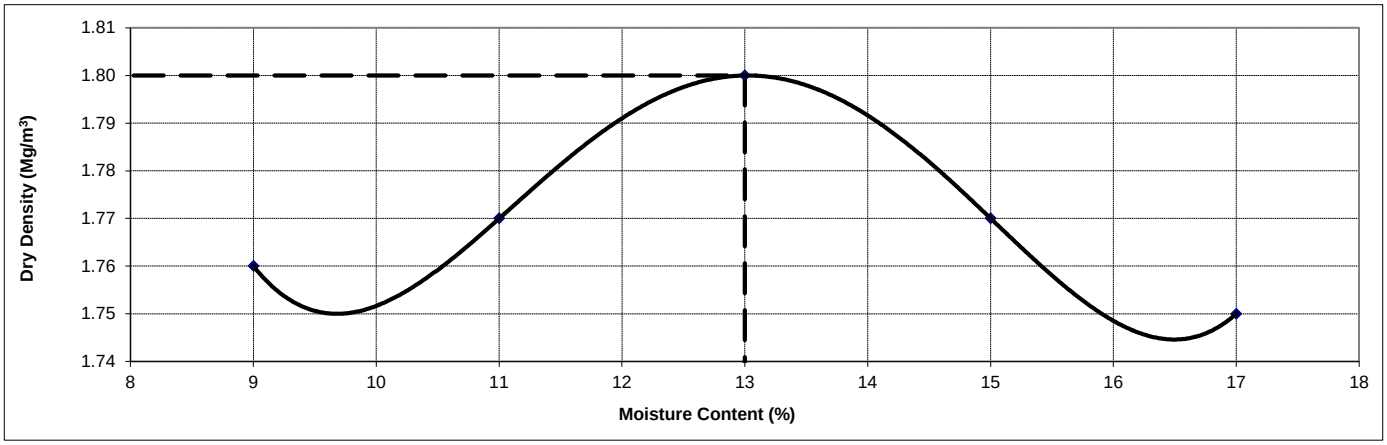


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	10

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	27/07/2015
Sample Location	TP11 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

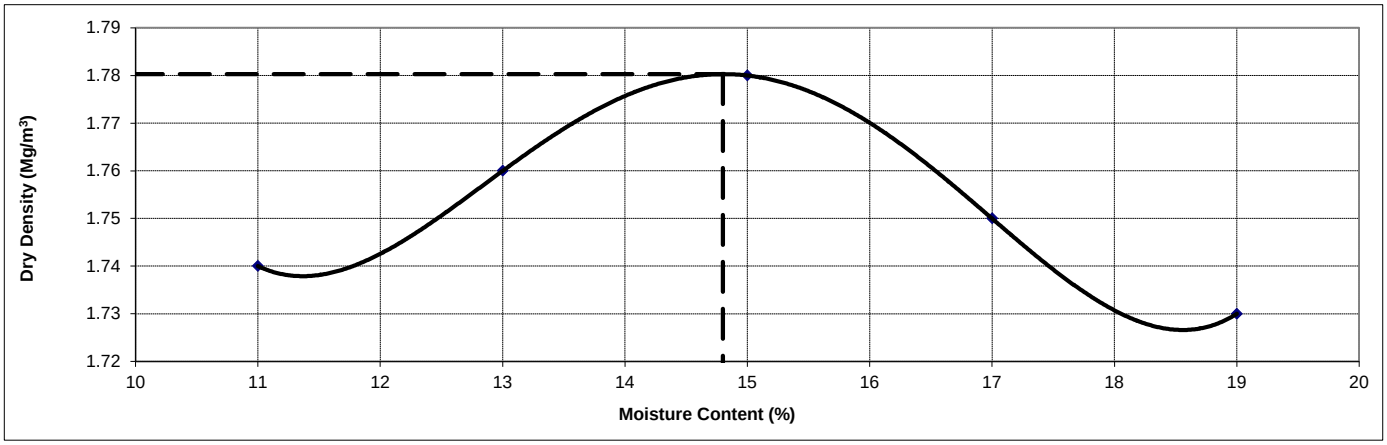


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP12 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

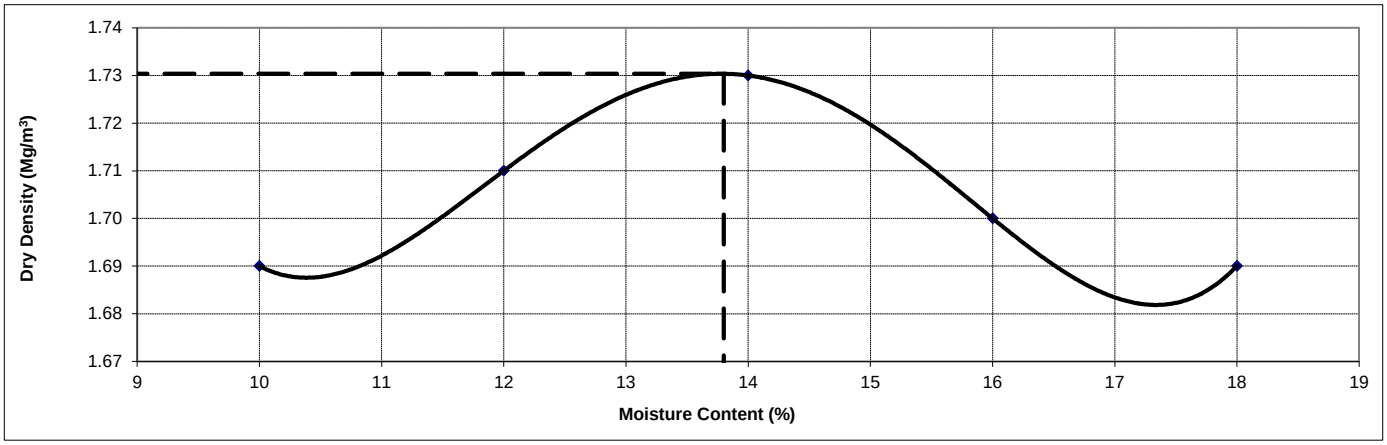


Maximum Dry Density (Mg/m^3)	1.78	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP13 DEPTH 3.00-4.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

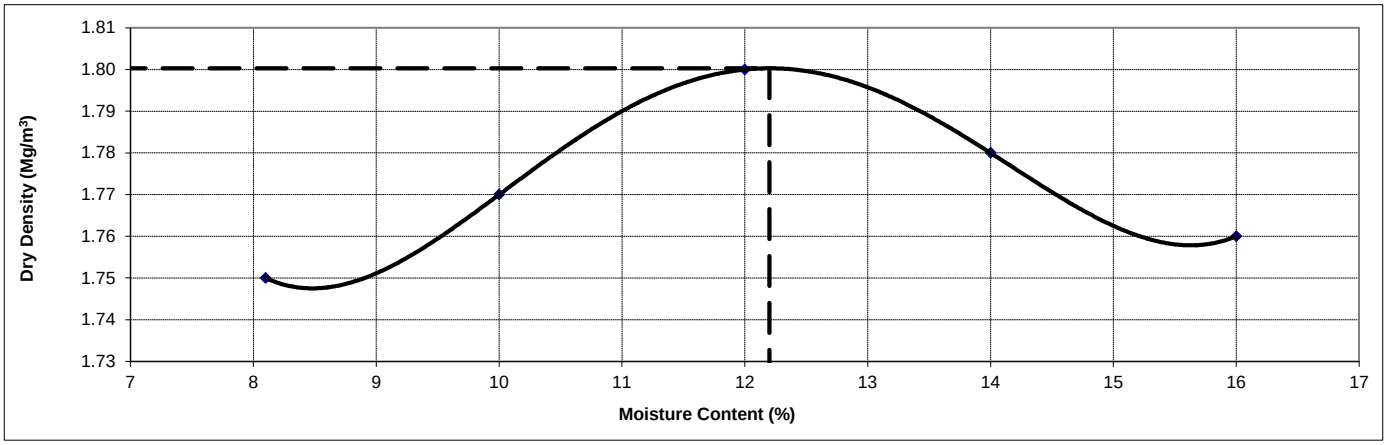


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP14 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

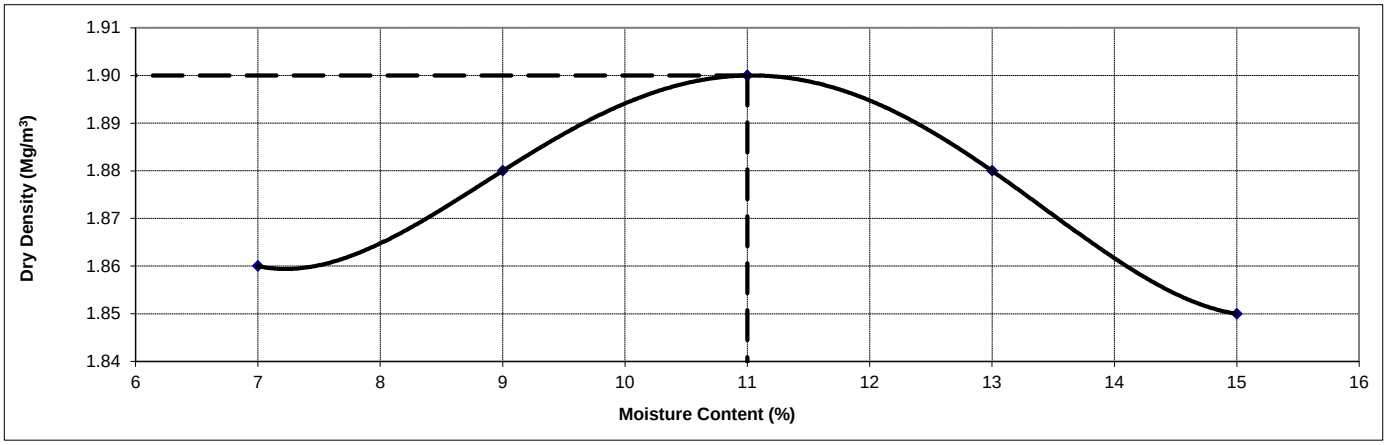


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP015 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

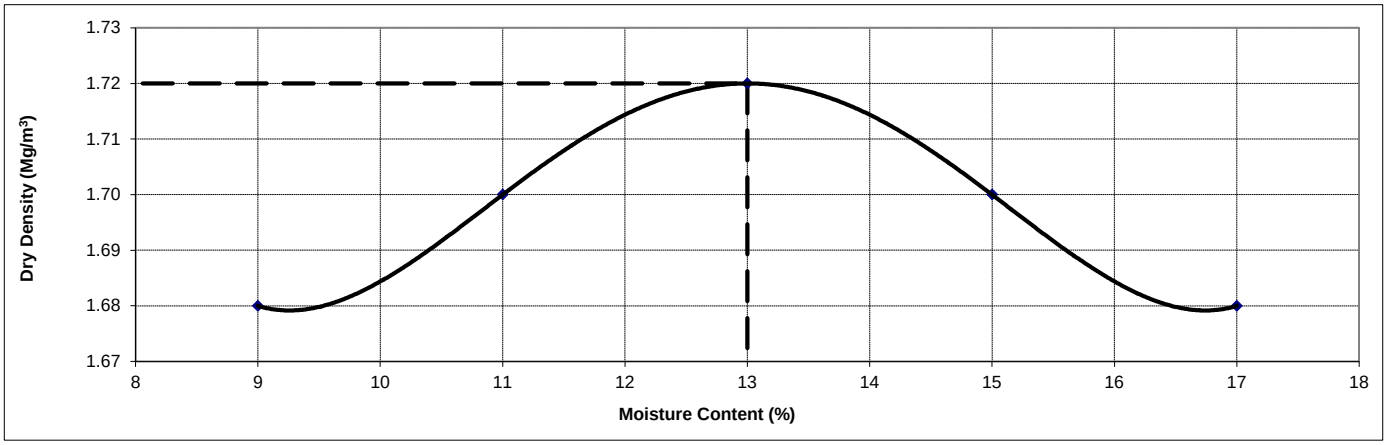


Maximum Dry Density (Mg/m^3)	1.90	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP16 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

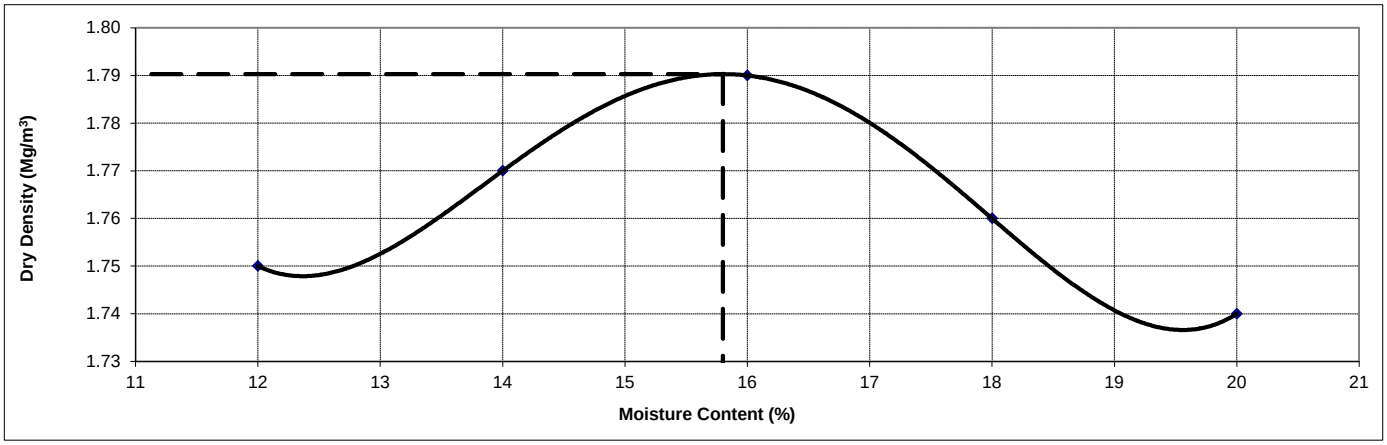


Maximum Dry Density (Mg/m^3)	1.72	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	27/07/2015
Sample Location	TP17 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

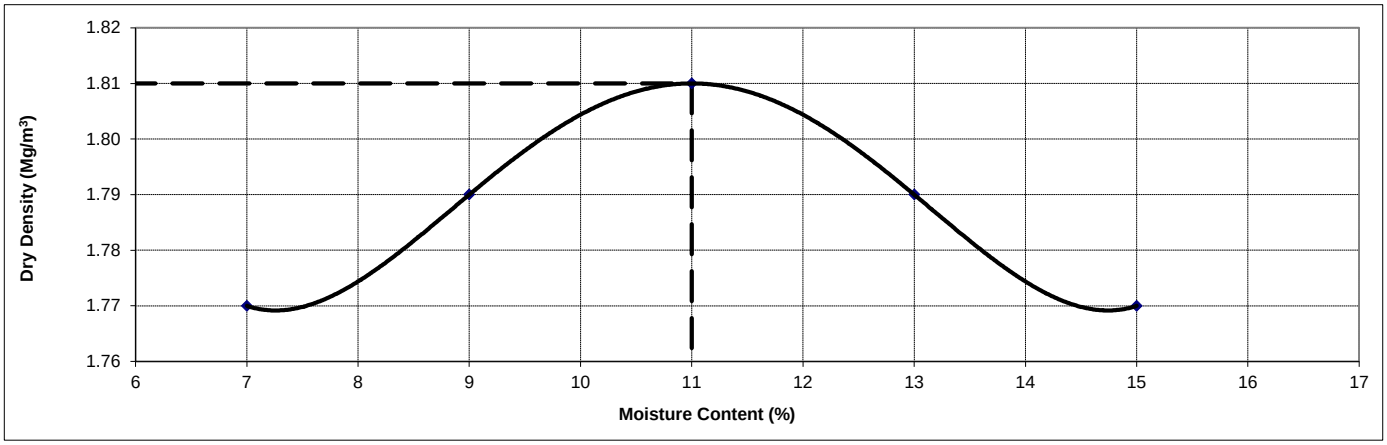


Maximum Dry Density (Mg/m^3)	1.79	**Optimum Moisture Content (%)**	16

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	27/07/2015
Sample Location	TP18 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

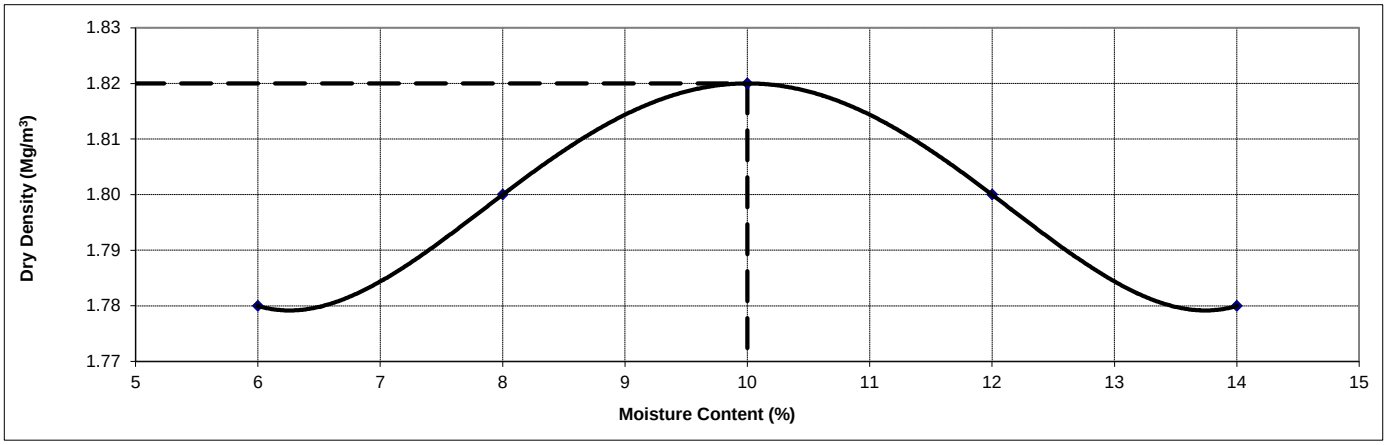


Maximum Dry Density (Mg/m^3)	1.81	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	27/07/2015
Sample Location	TP19 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	29/07/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

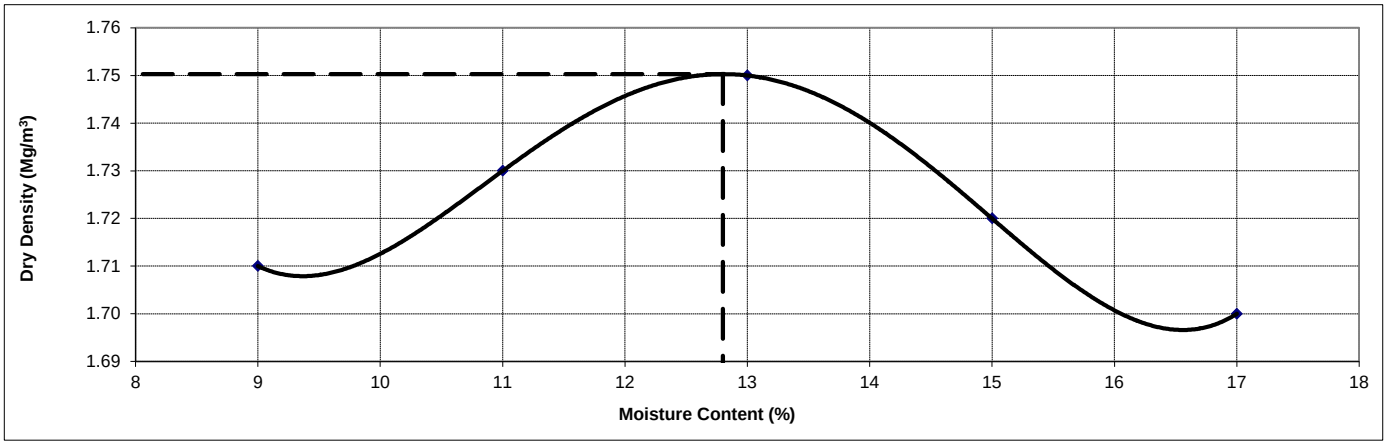


Maximum Dry Density (Mg/m^3)	1.82	**Optimum Moisture Content (%)**	10

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP020 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

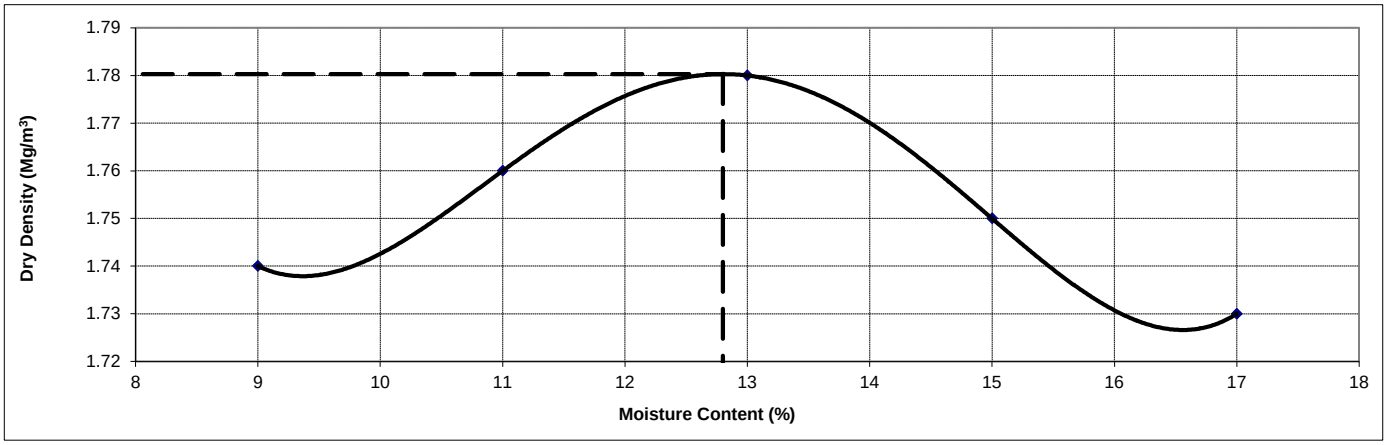


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP21 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

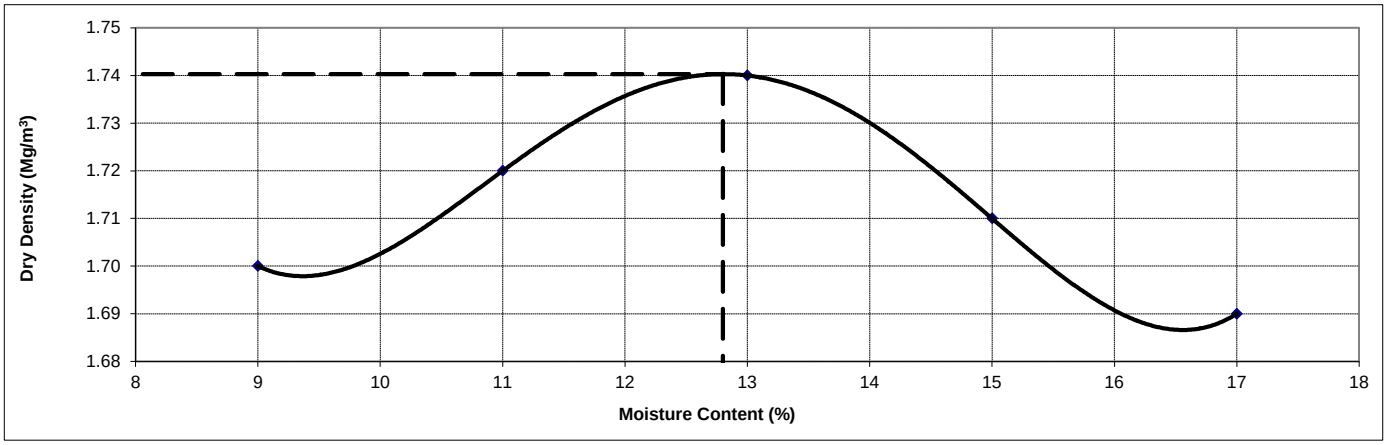


Maximum Dry Density (Mg/m^3)	1.78	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP22 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

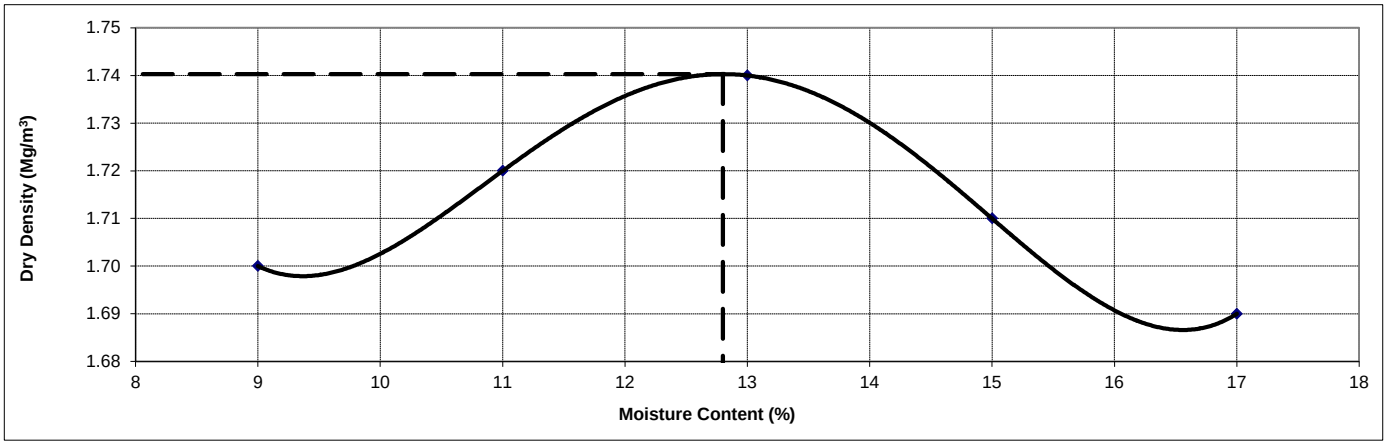


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP23 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

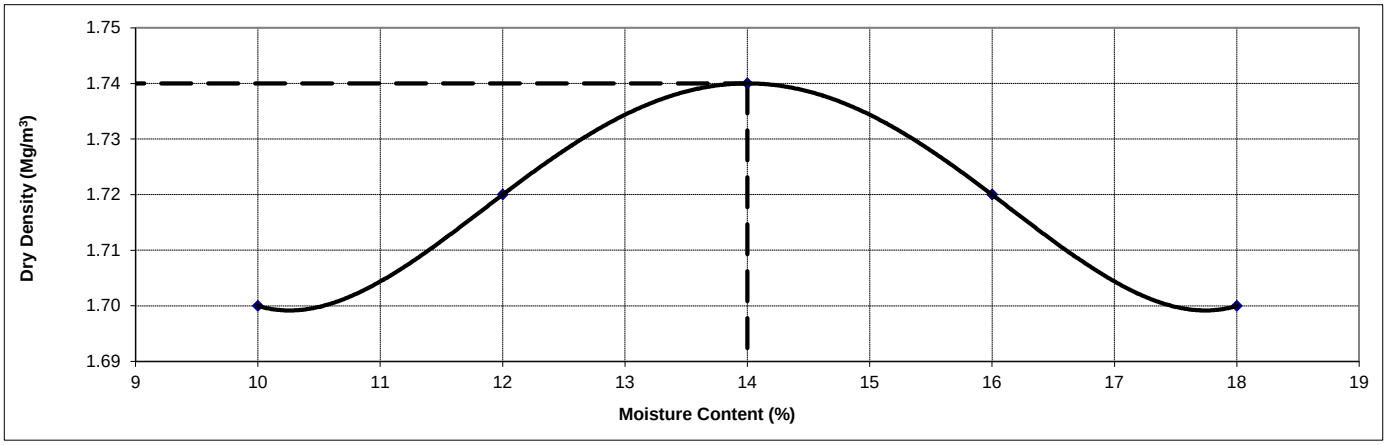


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP24 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

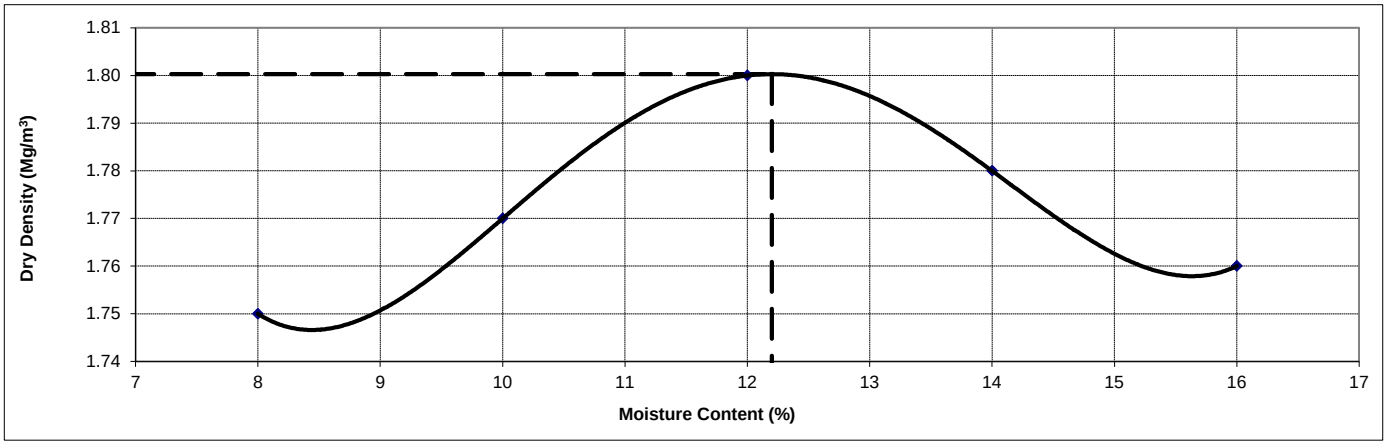


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP25 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

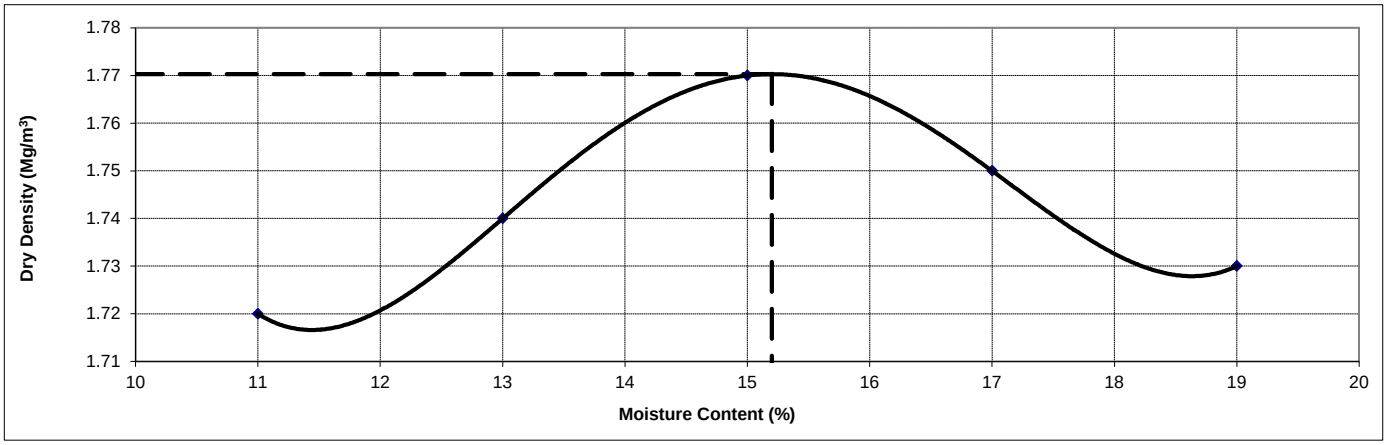


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP26 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

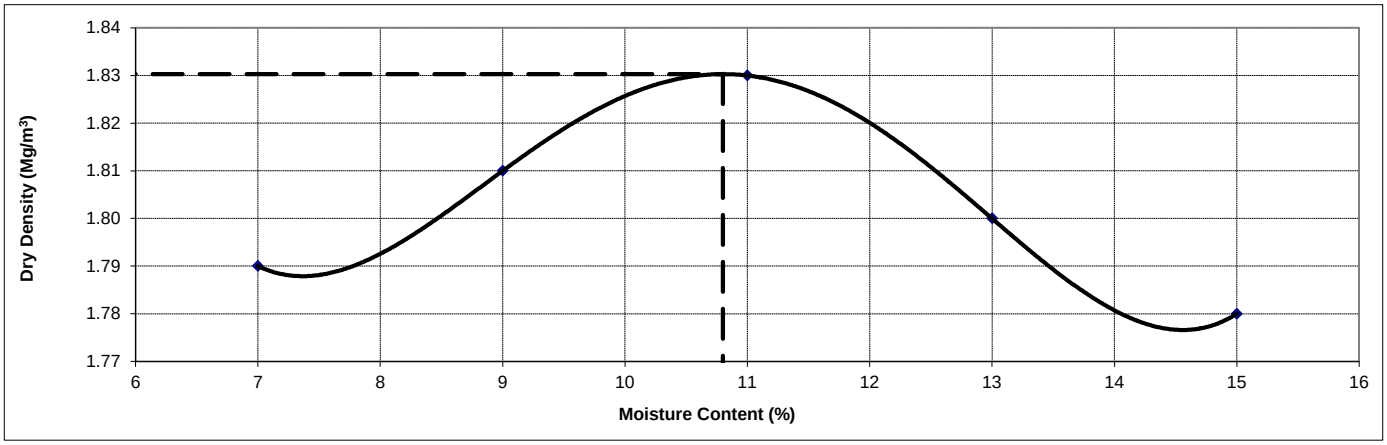


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP27 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

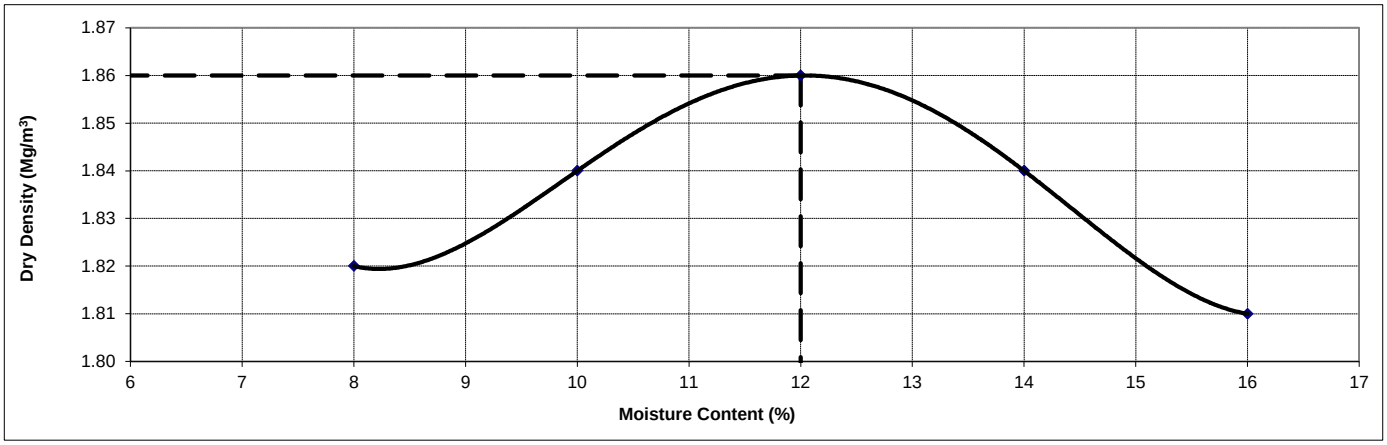


Maximum Dry Density (Mg/m^3)	1.83	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP28 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

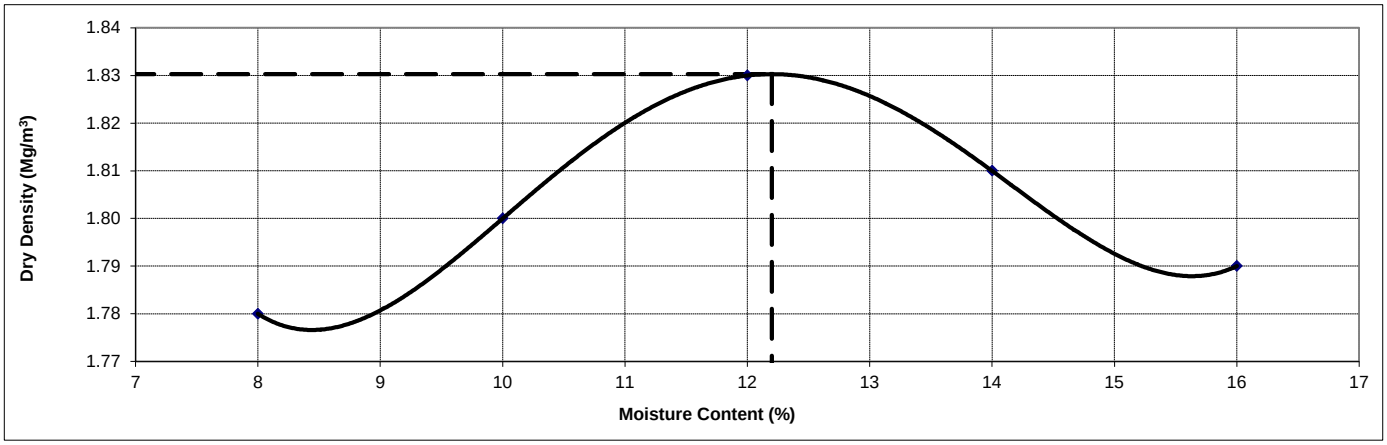


Maximum Dry Density (Mg/m^3)	1.86	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP29 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

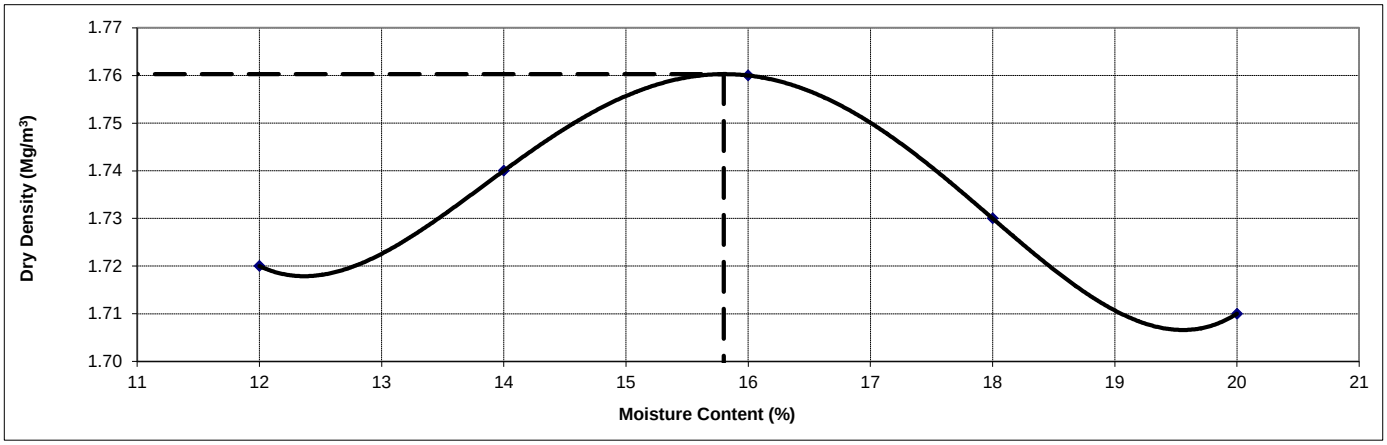


Maximum Dry Density (Mg/m^3)	1.83	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP30 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

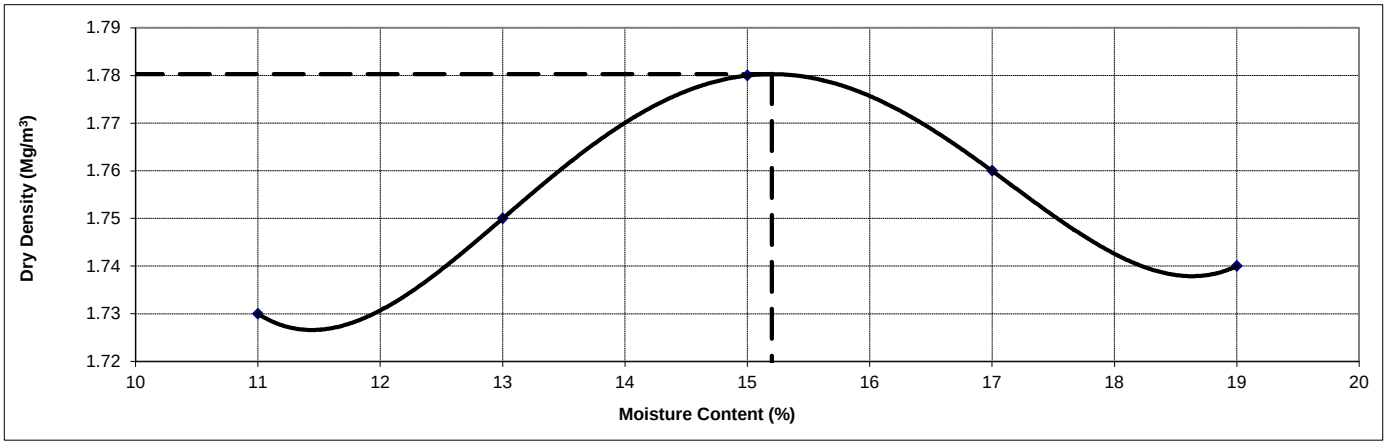


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	16

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP31 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

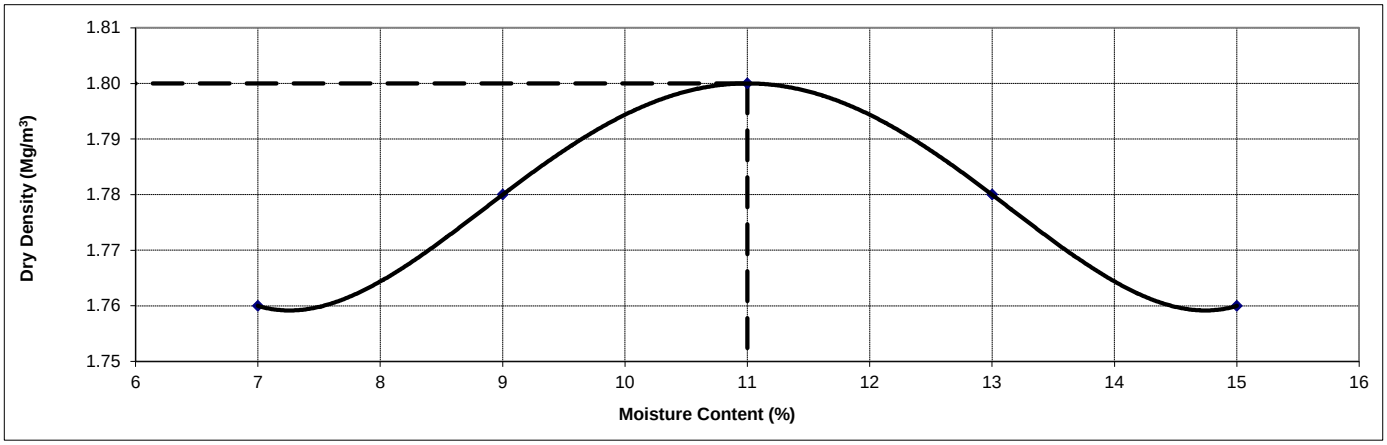


Maximum Dry Density (Mg/m^3)	1.78	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP32 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

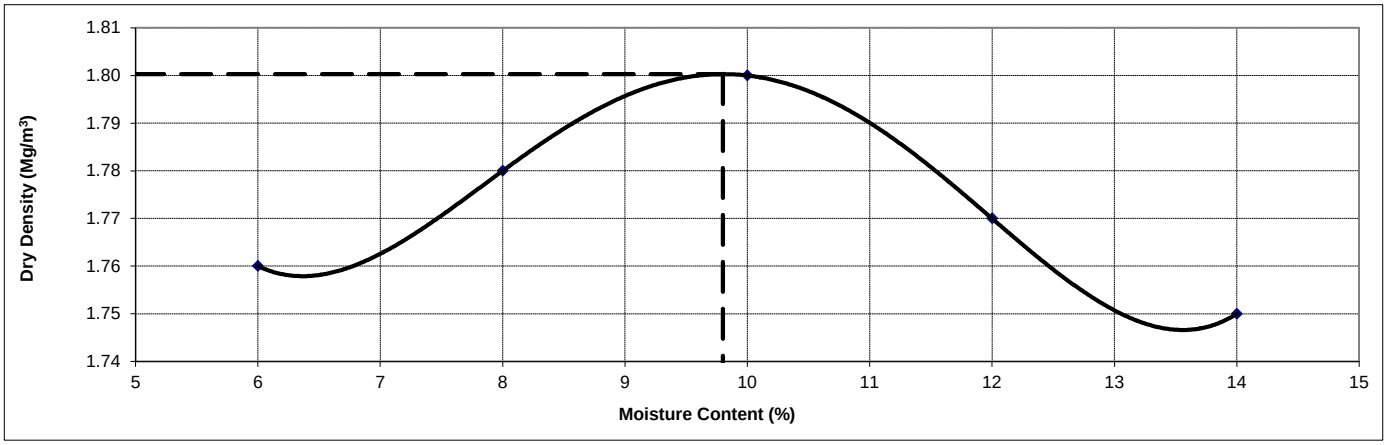


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP33 DEPTH 1.00.-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

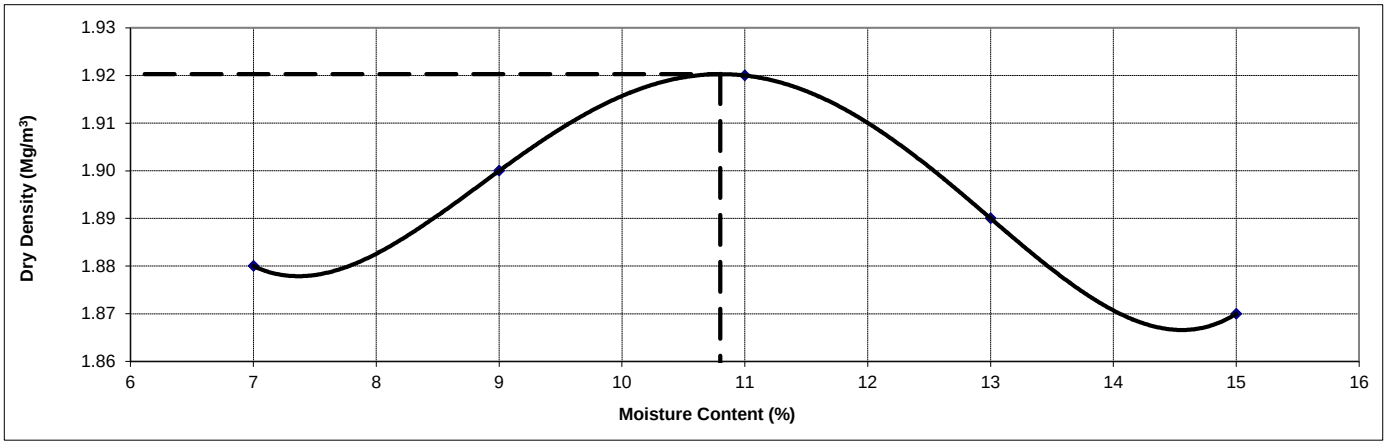


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	10

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP34 DEPTH 1.00.-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

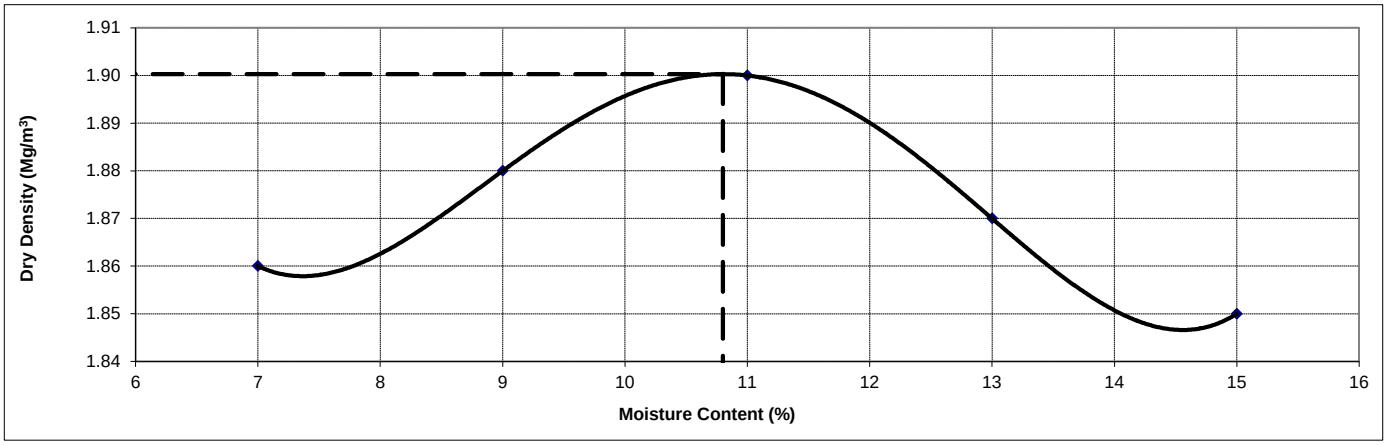


Maximum Dry Density (Mg/m^3)	1.92	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP35 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	02/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

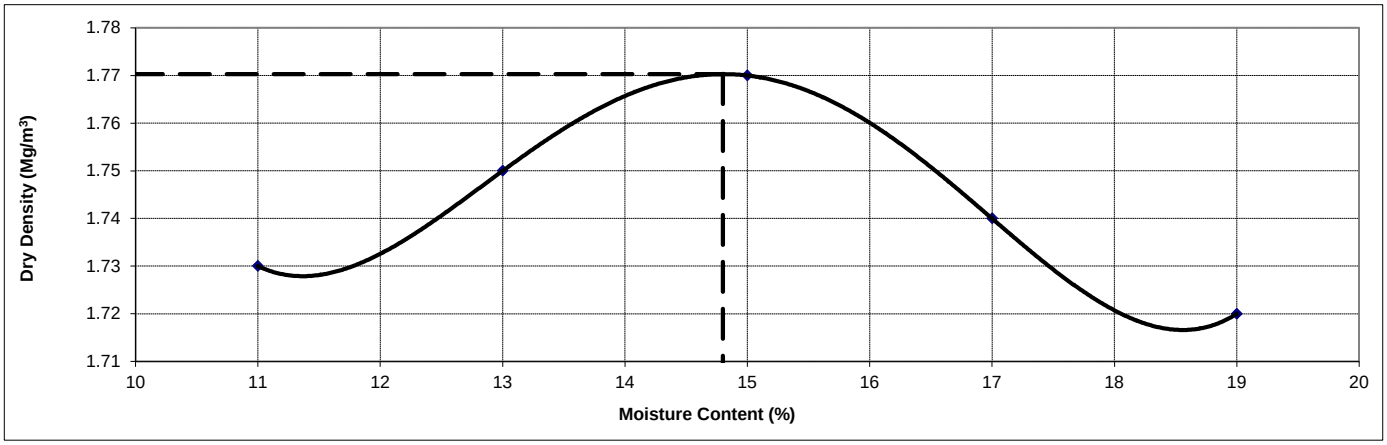


Maximum Dry Density (Mg/m^3)	1.90	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP36 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	02/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

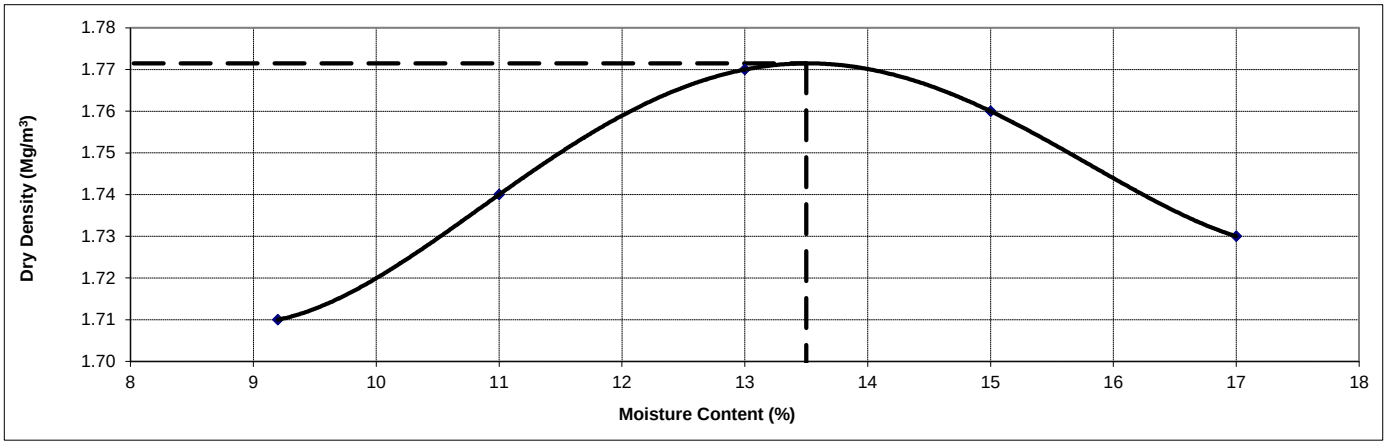


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP37 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

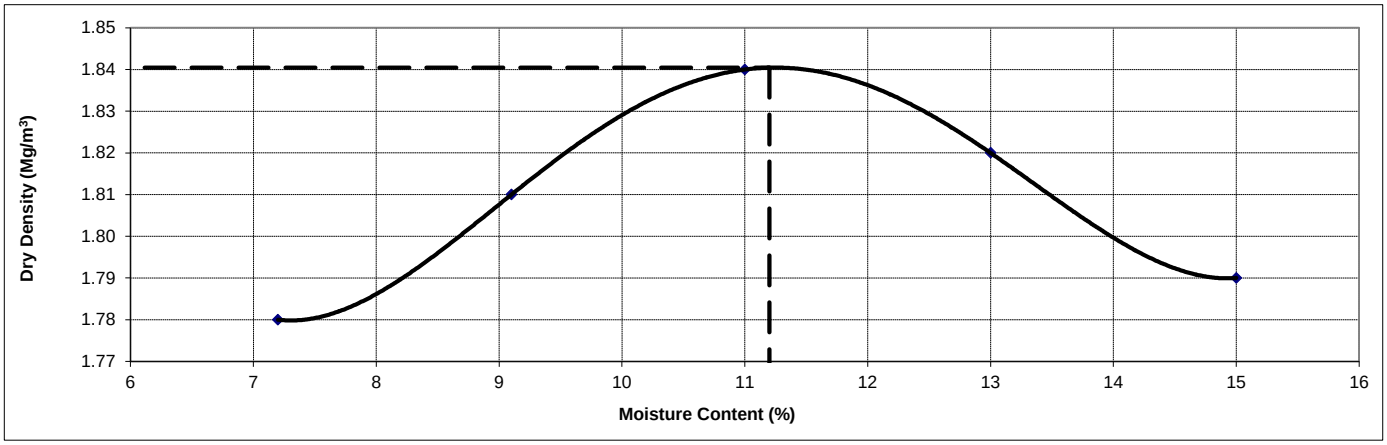


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP38 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

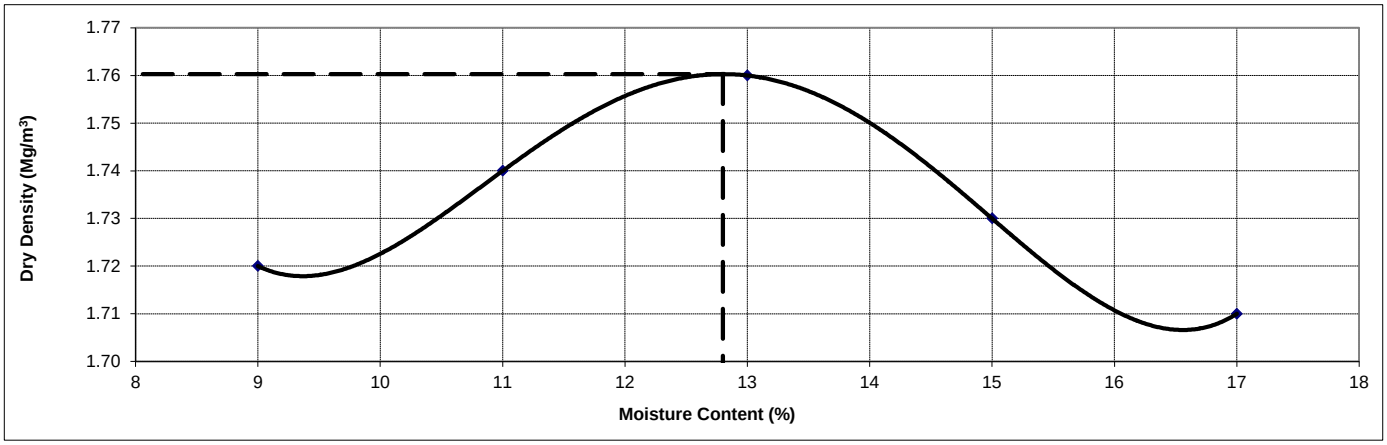


Maximum Dry Density (Mg/m^3)	1.84	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP39 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

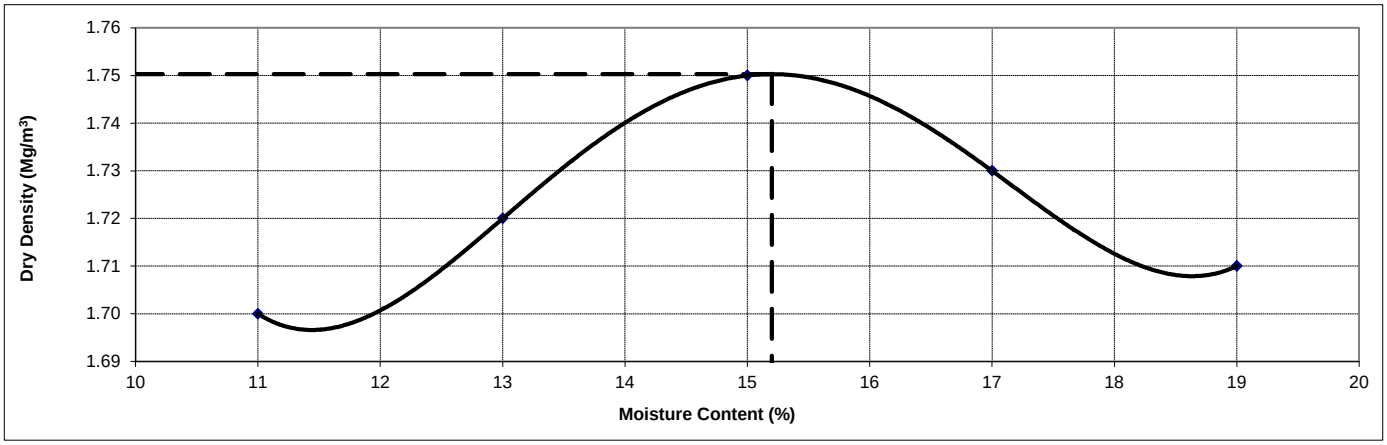


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP40 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

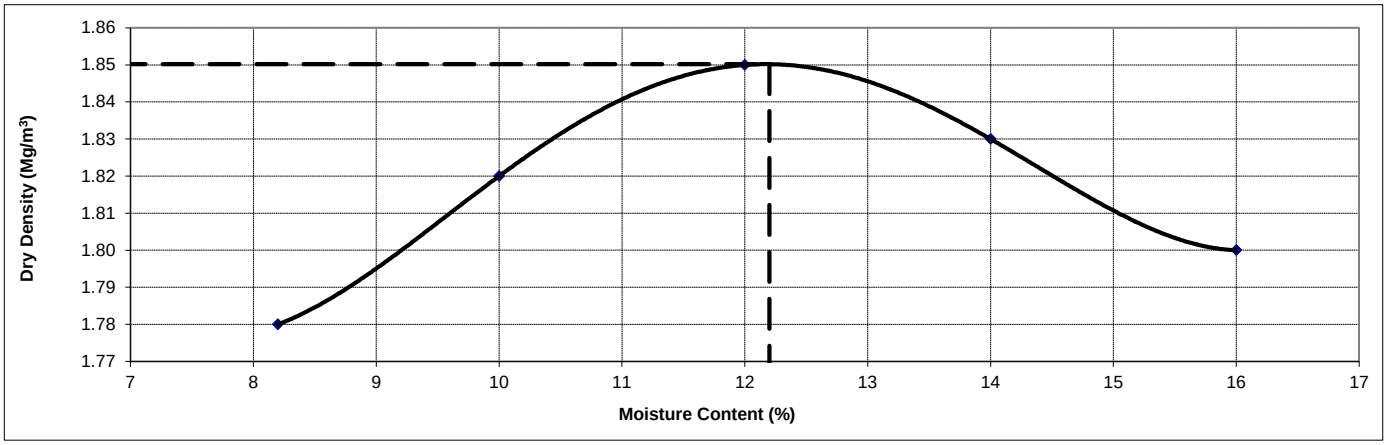


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP41 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

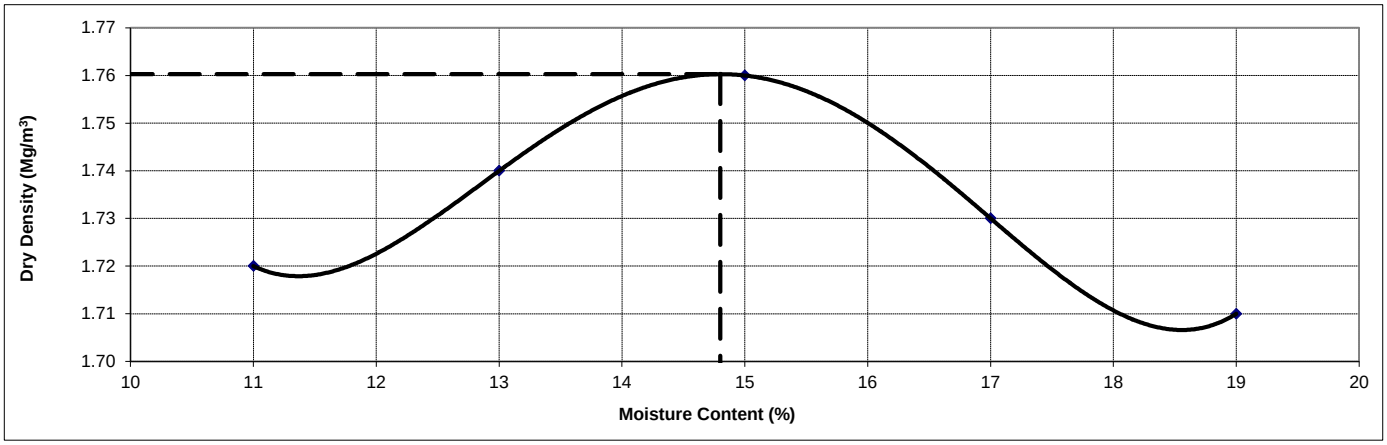


Maximum Dry Density (Mg/m^3)	1.85	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP42 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

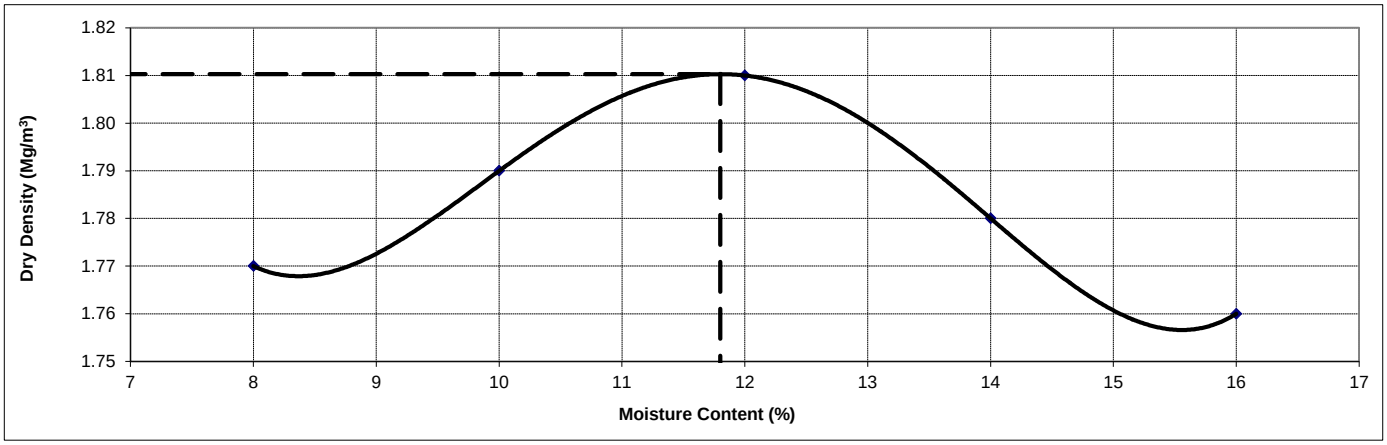


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP43 DEPTH 1.00-1.50m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

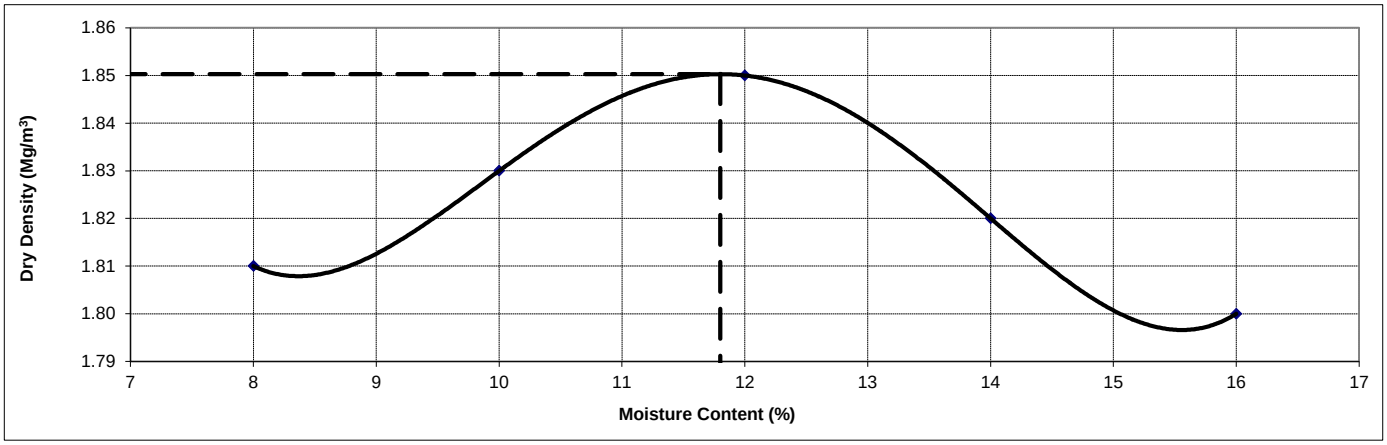


Maximum Dry Density (Mg/m^3)	1.81	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP44 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

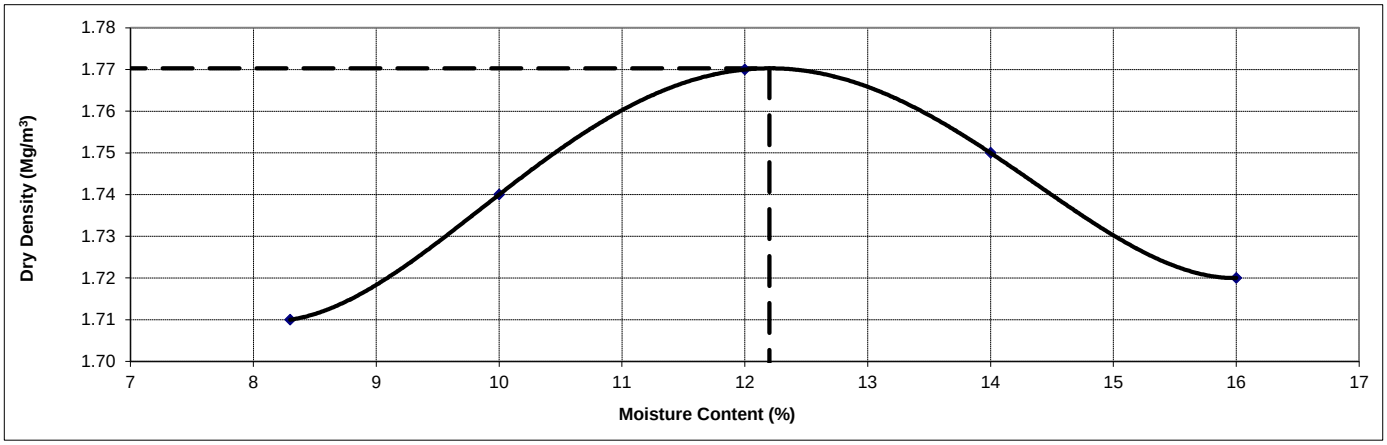


Maximum Dry Density (Mg/m^3)	1.85	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP45 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

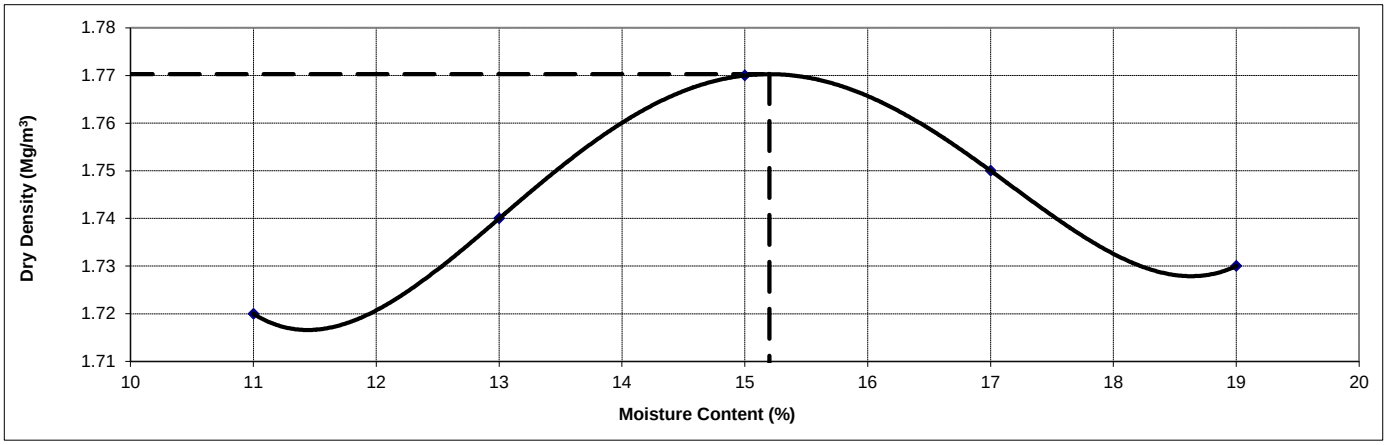


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP46 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

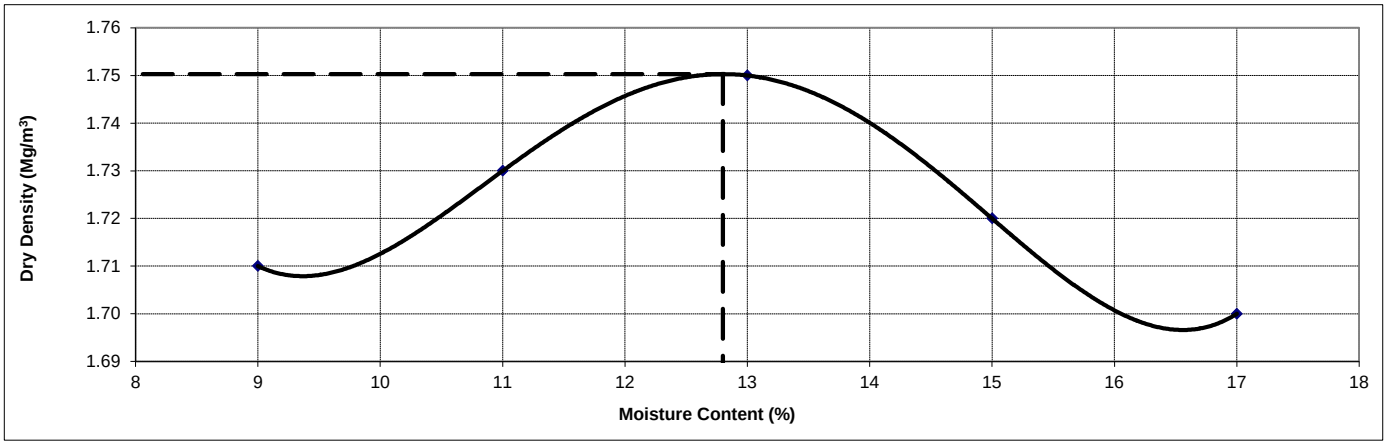


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP47 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

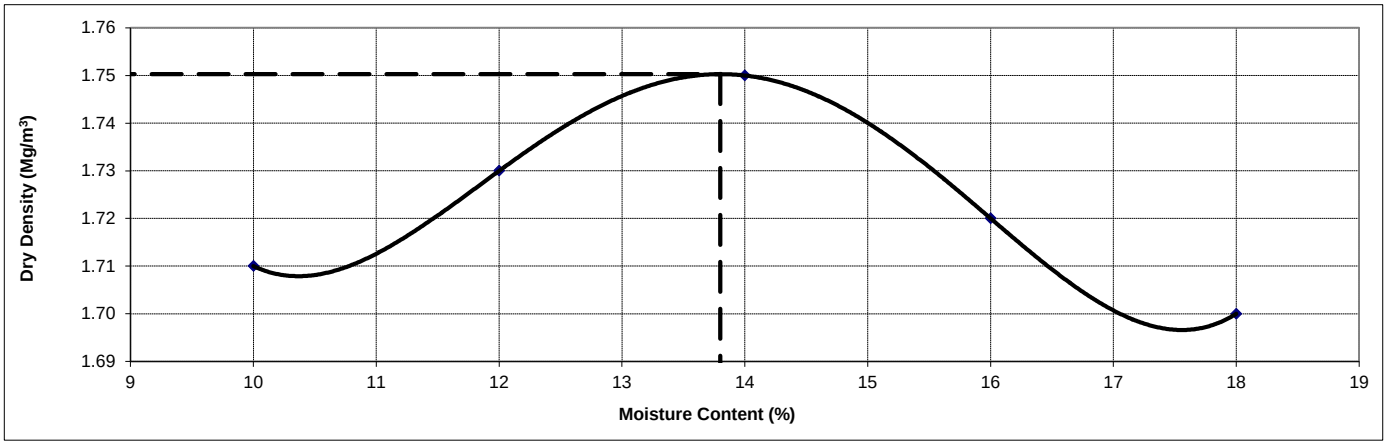


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP48 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

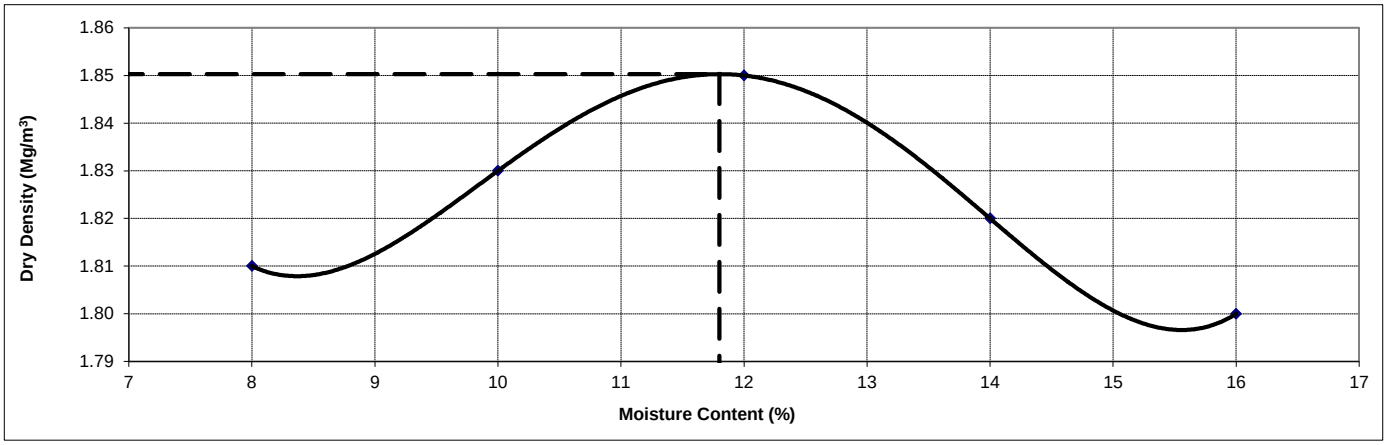


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP49 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

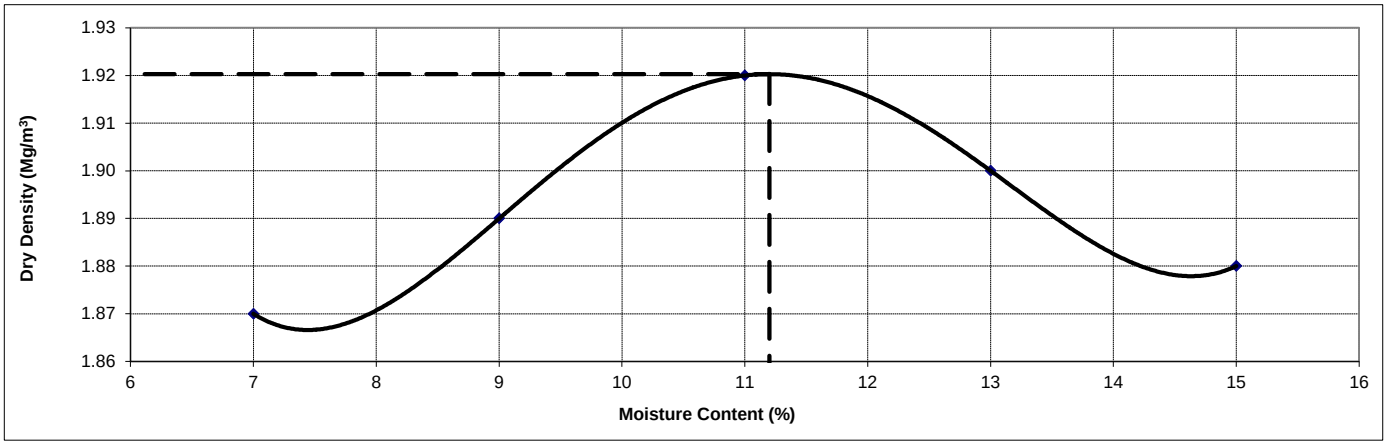


Maximum Dry Density (Mg/m^3)	1.85	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP50 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

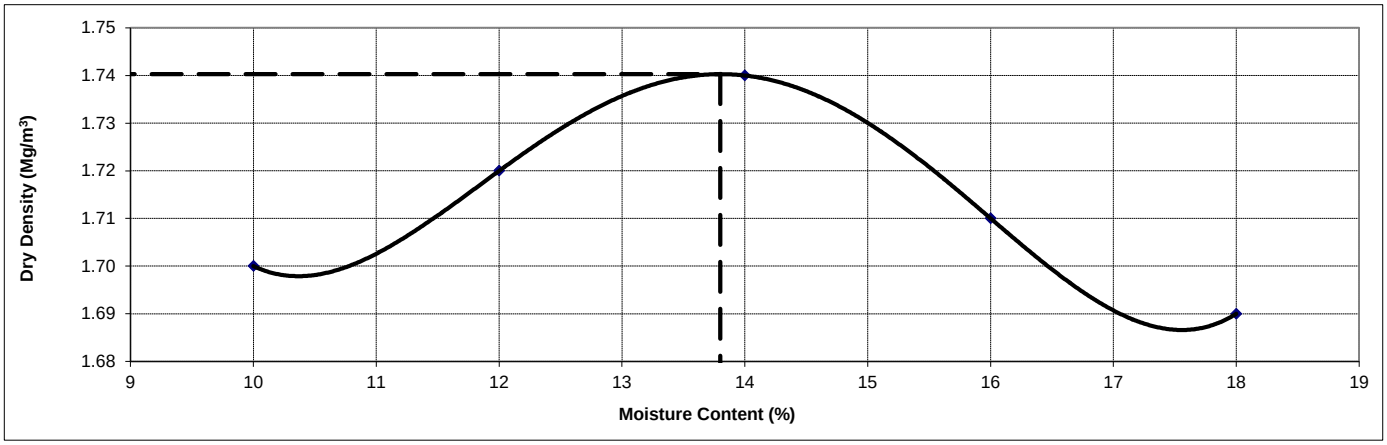


Maximum Dry Density (Mg/m^3)	1.92	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP51 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

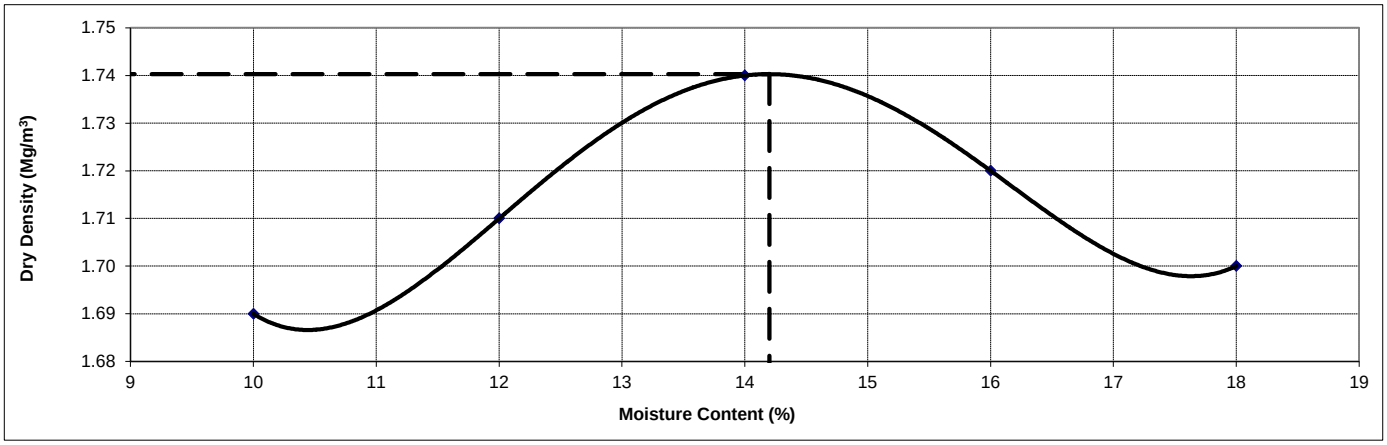


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP52 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

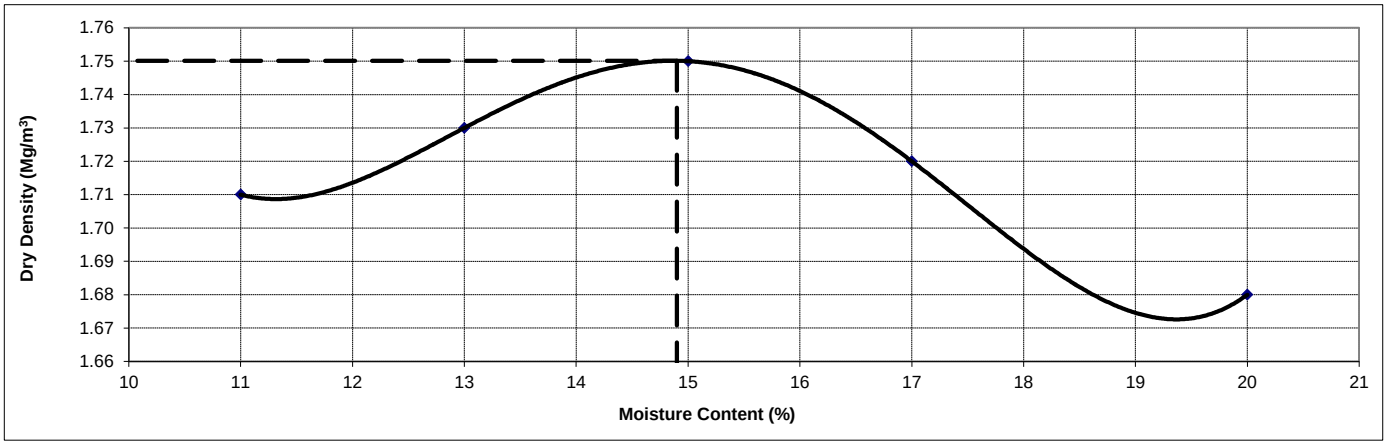


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP53 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

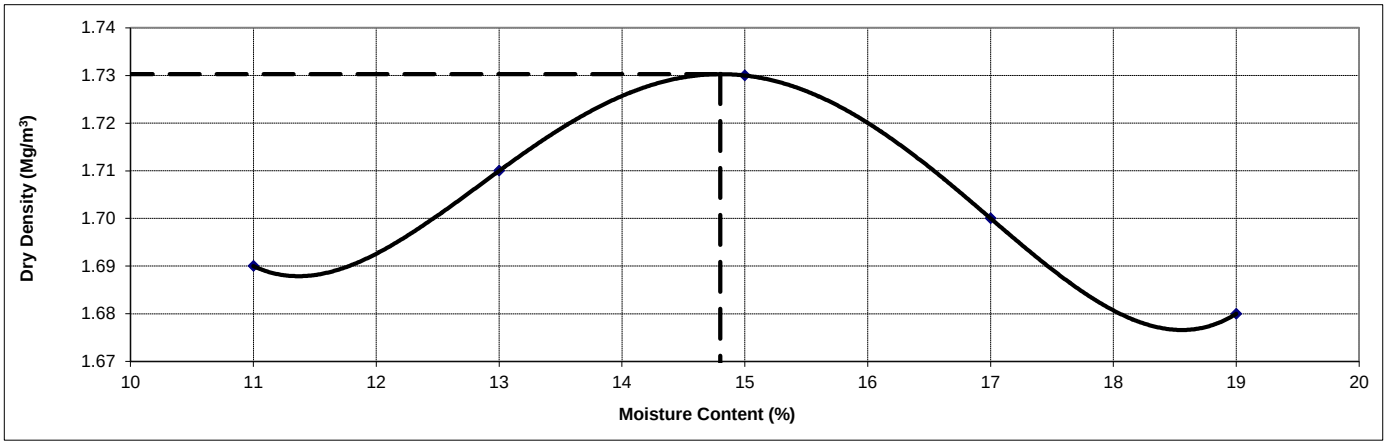


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP54 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

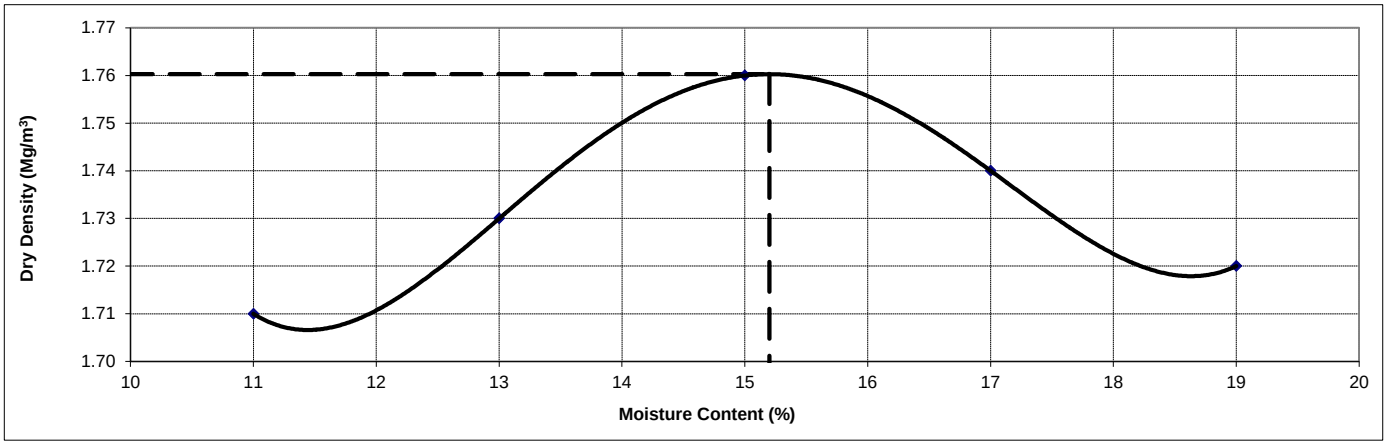


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP55 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	07/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

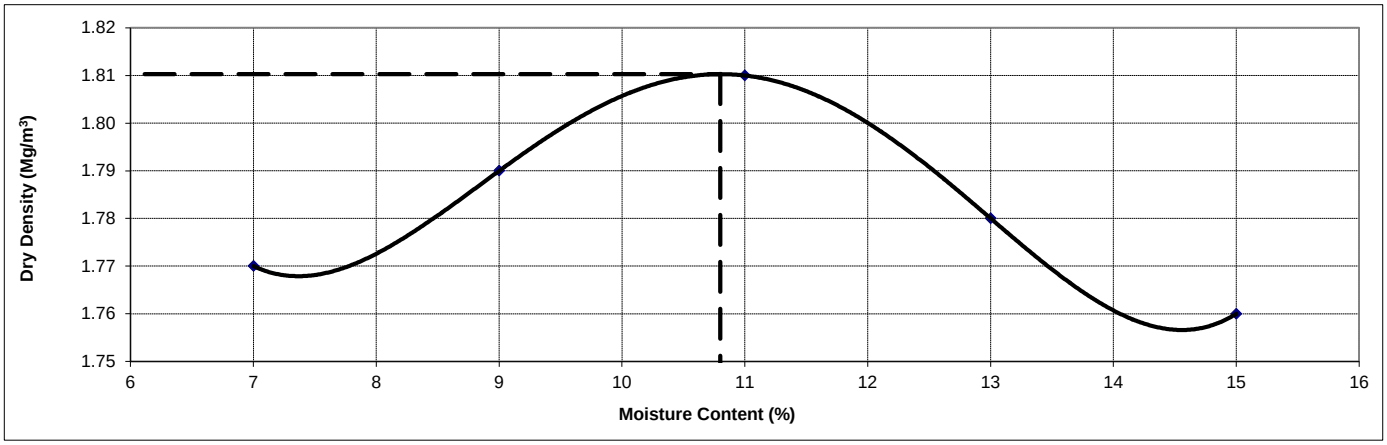


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP56 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

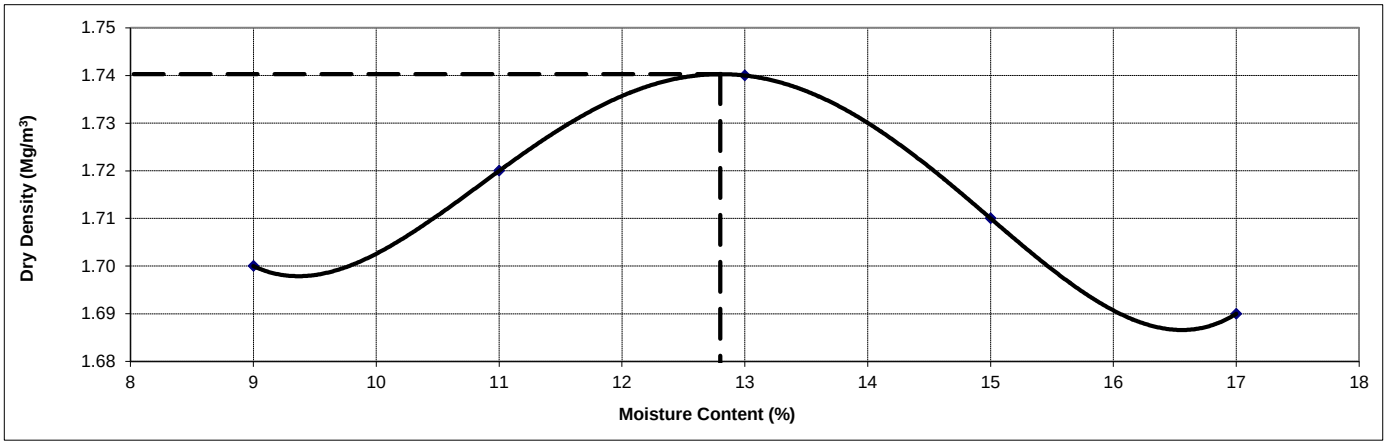


Maximum Dry Density (Mg/m^3)	1.81	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP57 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

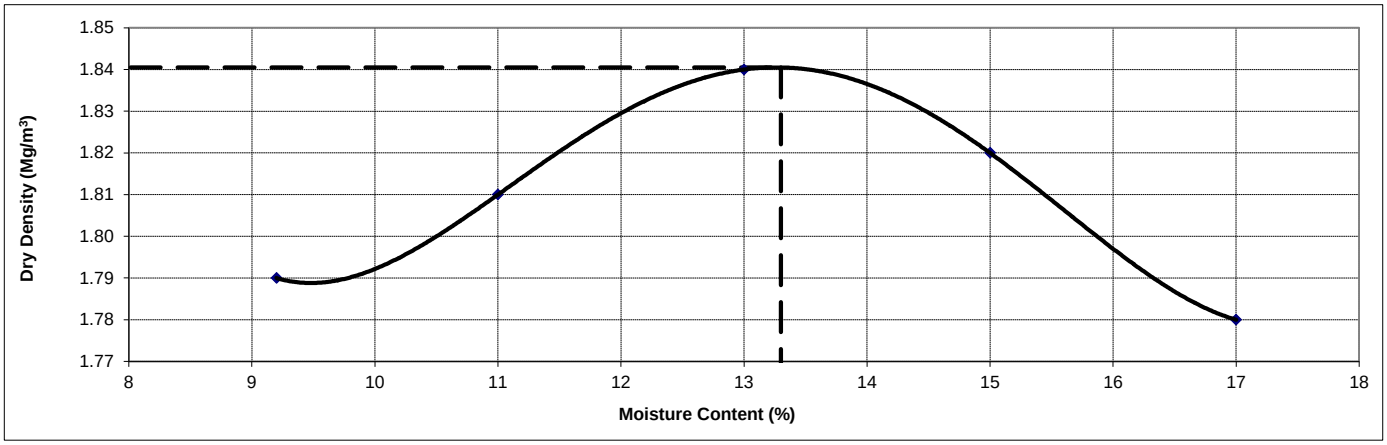


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP58 DEPTH 3.00-4.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

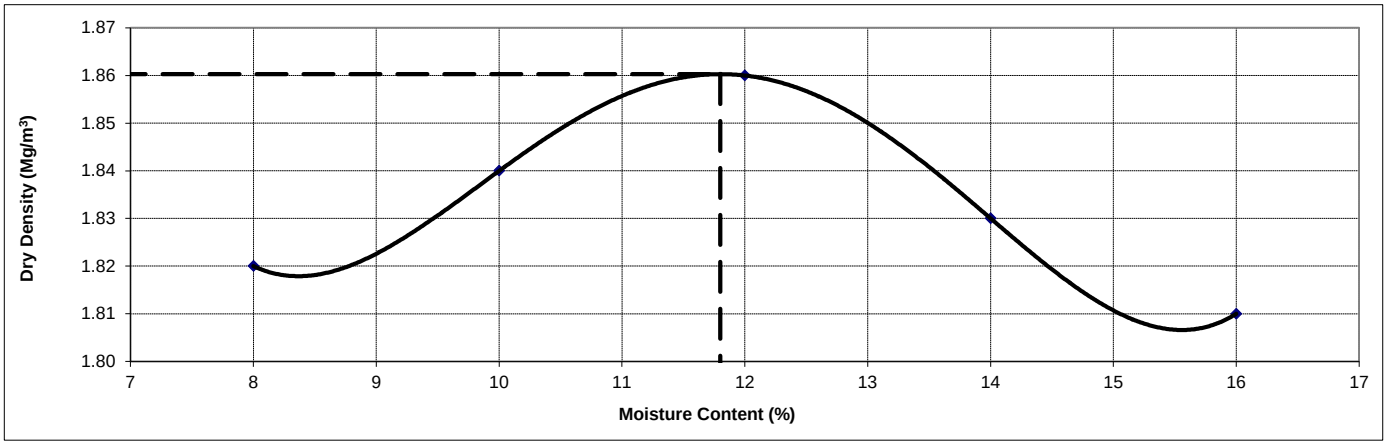


Maximum Dry Density (Mg/m^3)	1.84	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP59 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

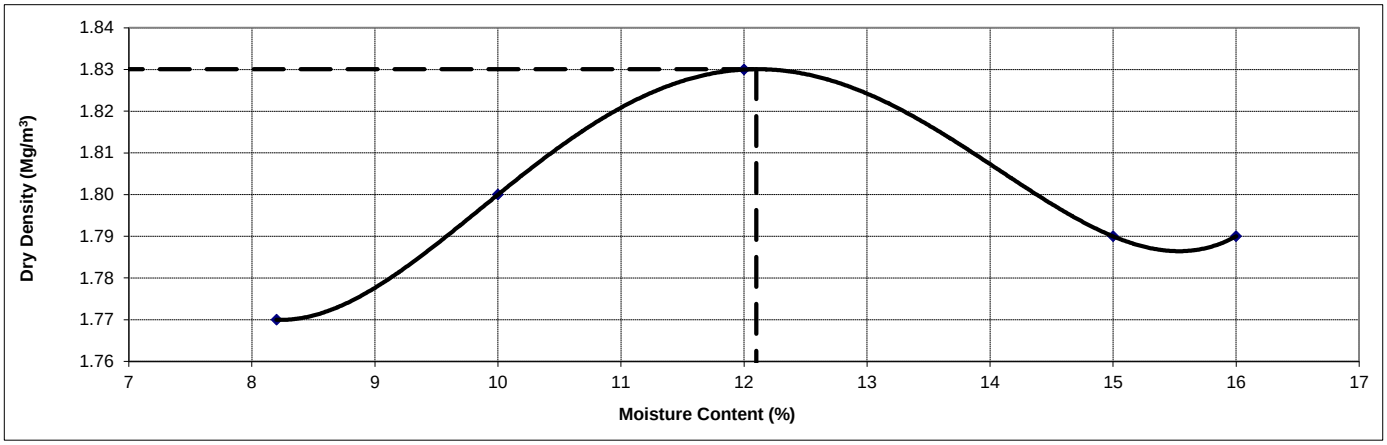


Maximum Dry Density (Mg/m^3)	1.86	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP60 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

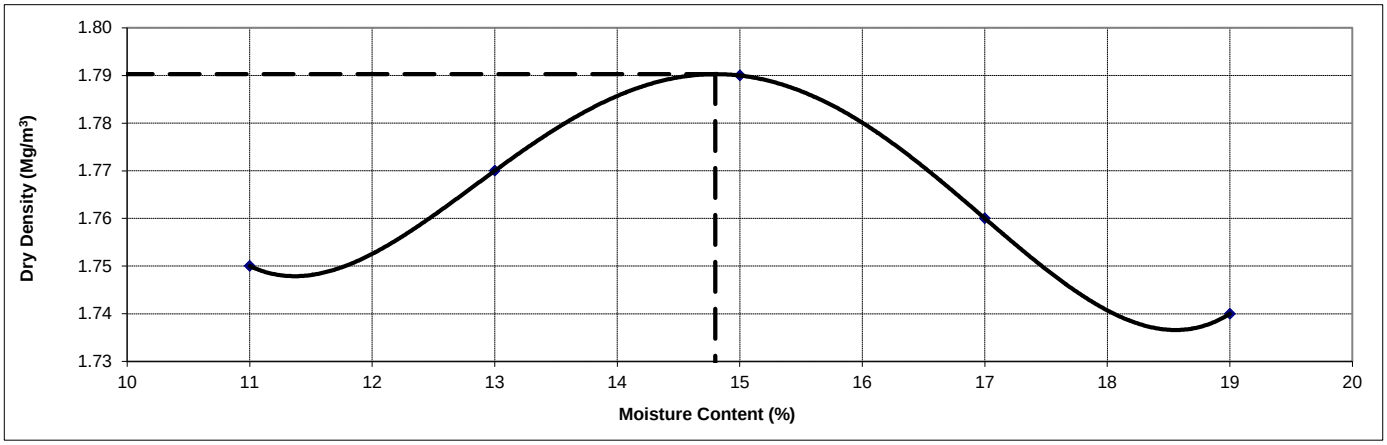


Maximum Dry Density (Mg/m^3)	1.83	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP61 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

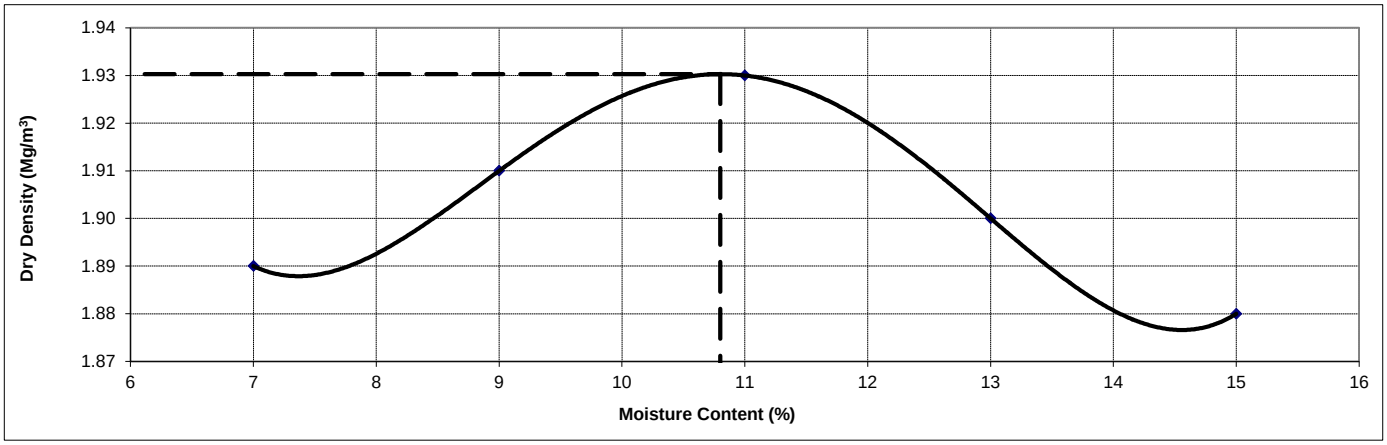


Maximum Dry Density (Mg/m^3)	1.79	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP62 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

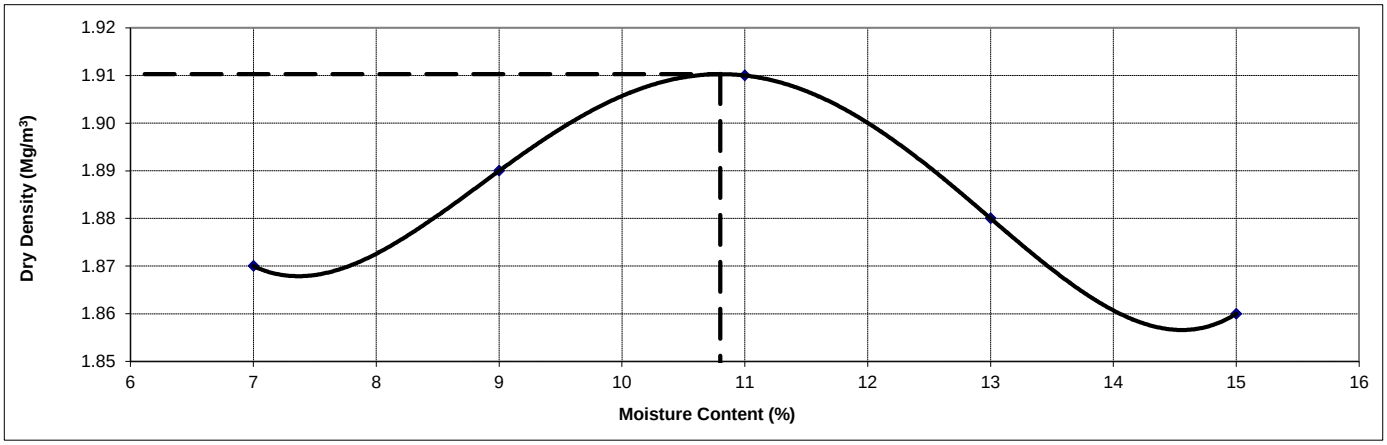


Maximum Dry Density (Mg/m^3)	1.93	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP63 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

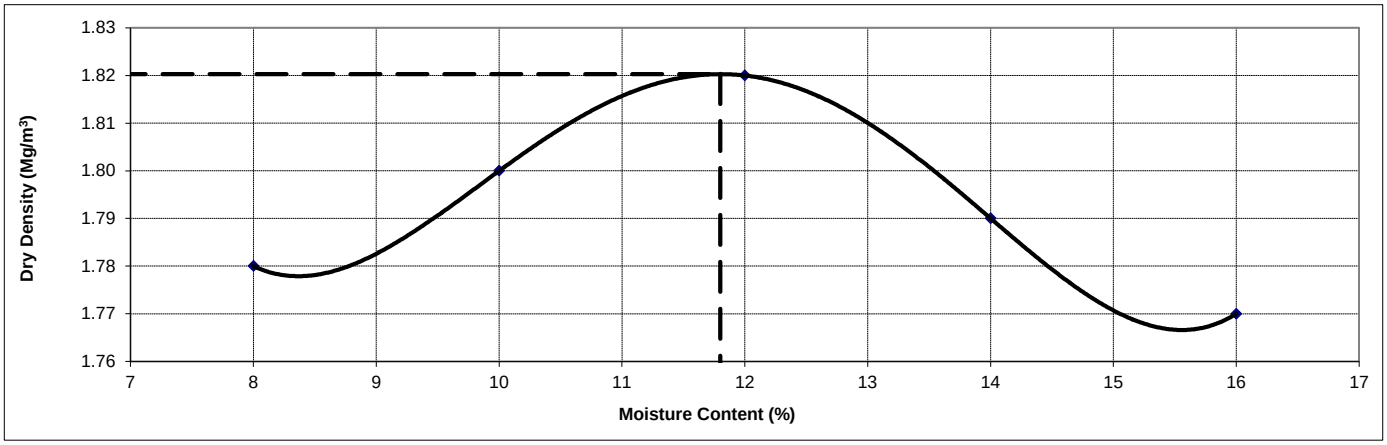


Maximum Dry Density (Mg/m^3)	1.91	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP64 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

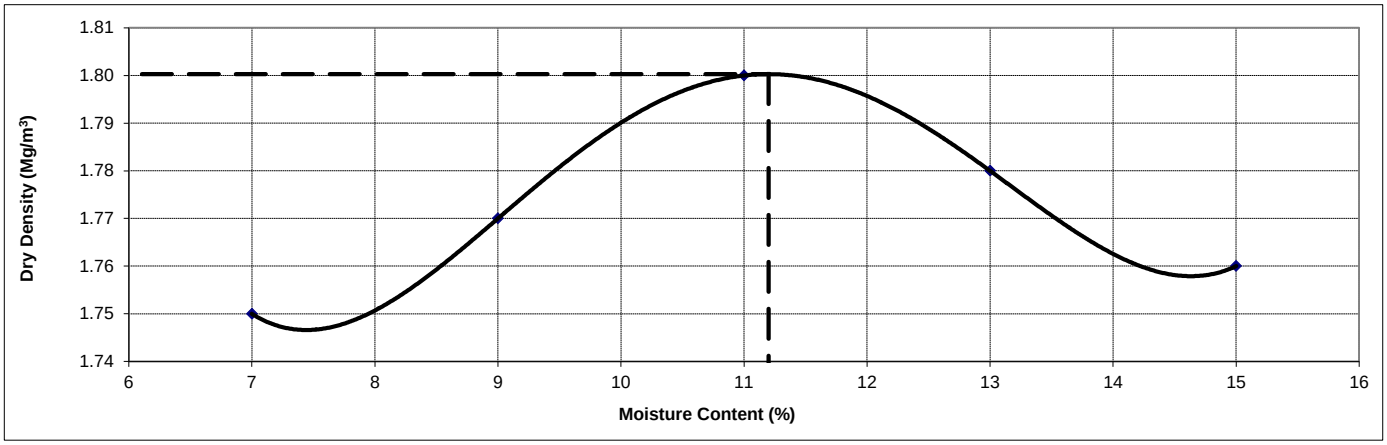


Maximum Dry Density (Mg/m^3)	1.82	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP65 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

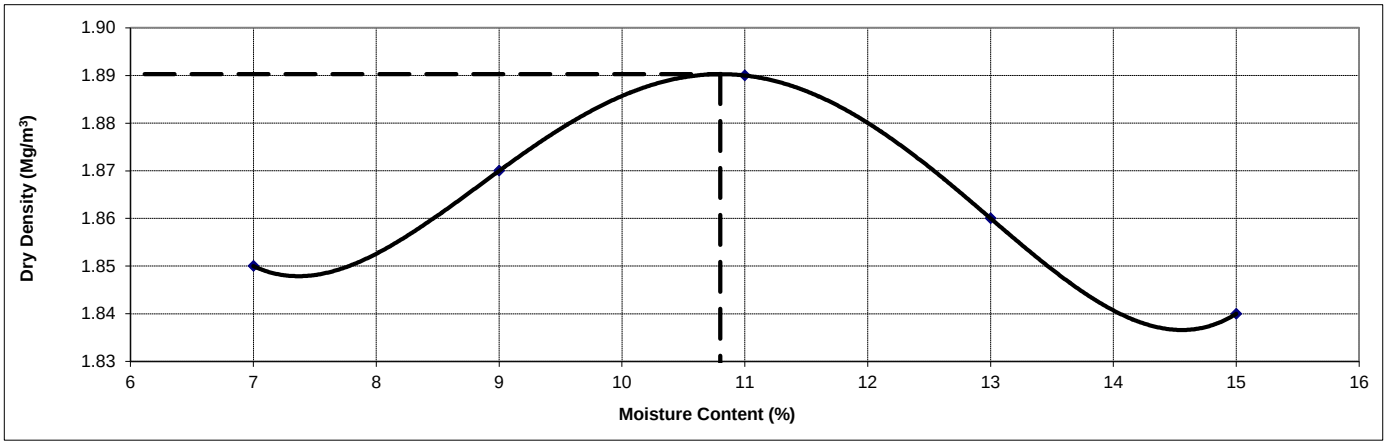


Maximum Dry Density (Mg/m^3)	1.80	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP66 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

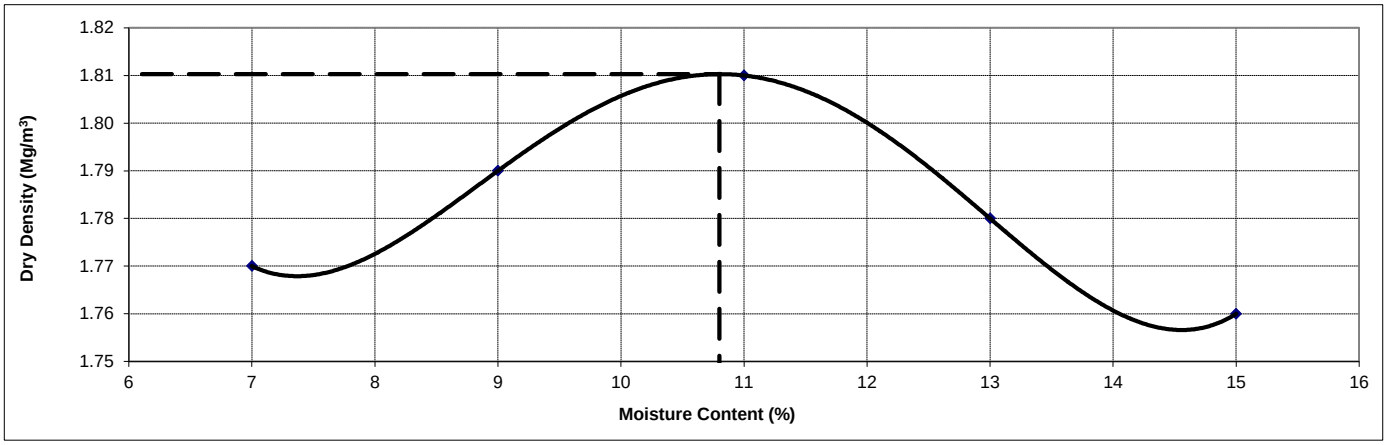


Maximum Dry Density (Mg/m^3)	1.89	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP67 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	12/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

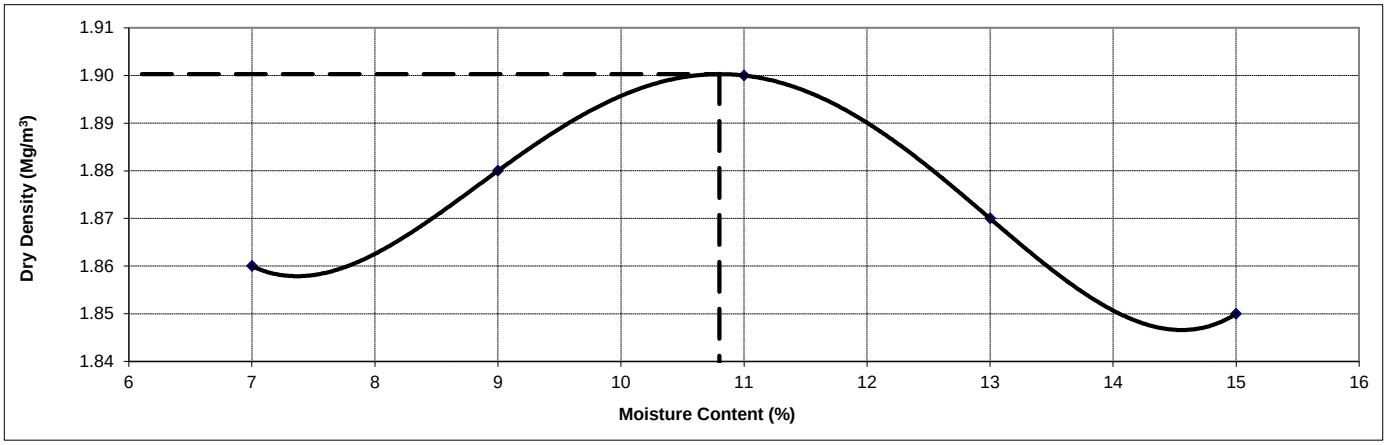


Maximum Dry Density (Mg/m^3)	1.81	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP68 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

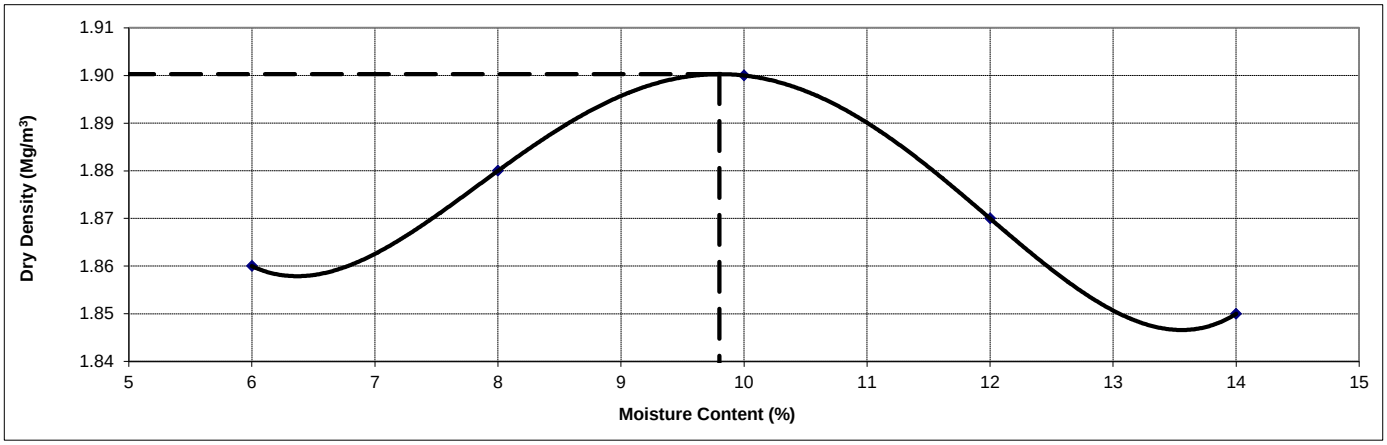


Maximum Dry Density (Mg/m^3)	1.90	**Optimum Moisture Content (%)**	11

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP69 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

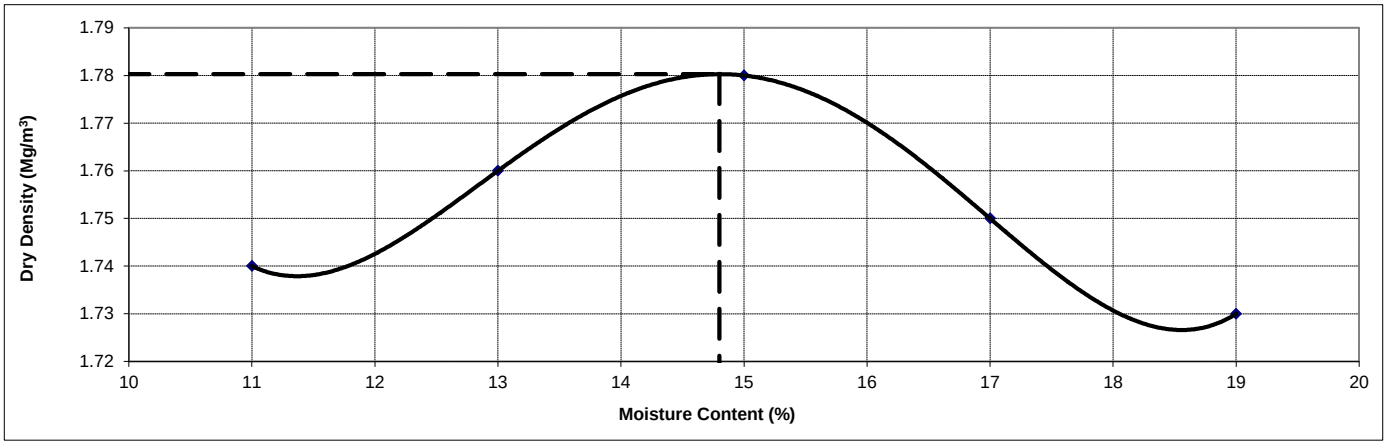


Maximum Dry Density (Mg/m^3)	1.90	**Optimum Moisture Content (%)**	10

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP70 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

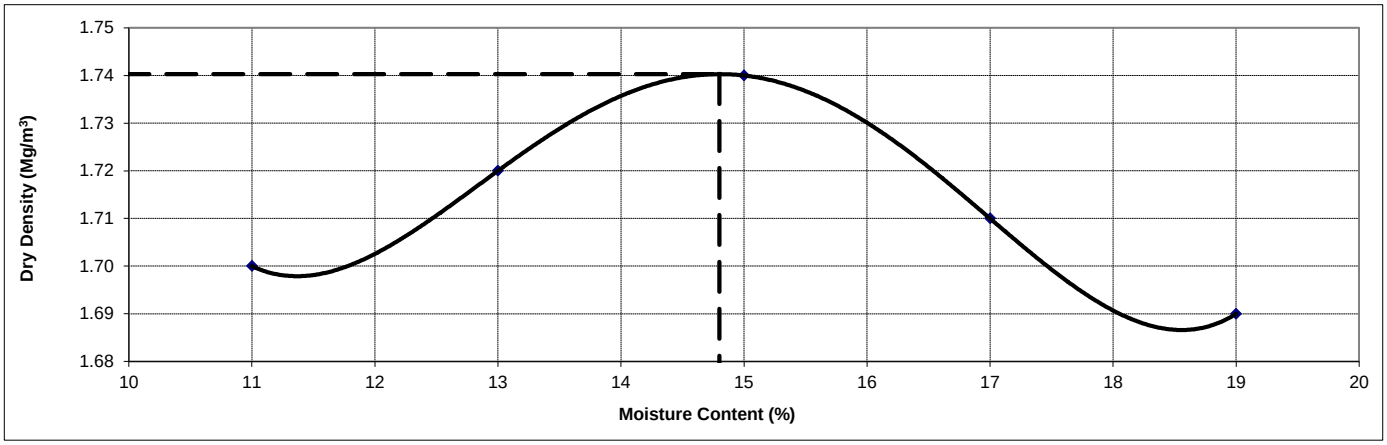


Maximum Dry Density (Mg/m^3)	1.78	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP71 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

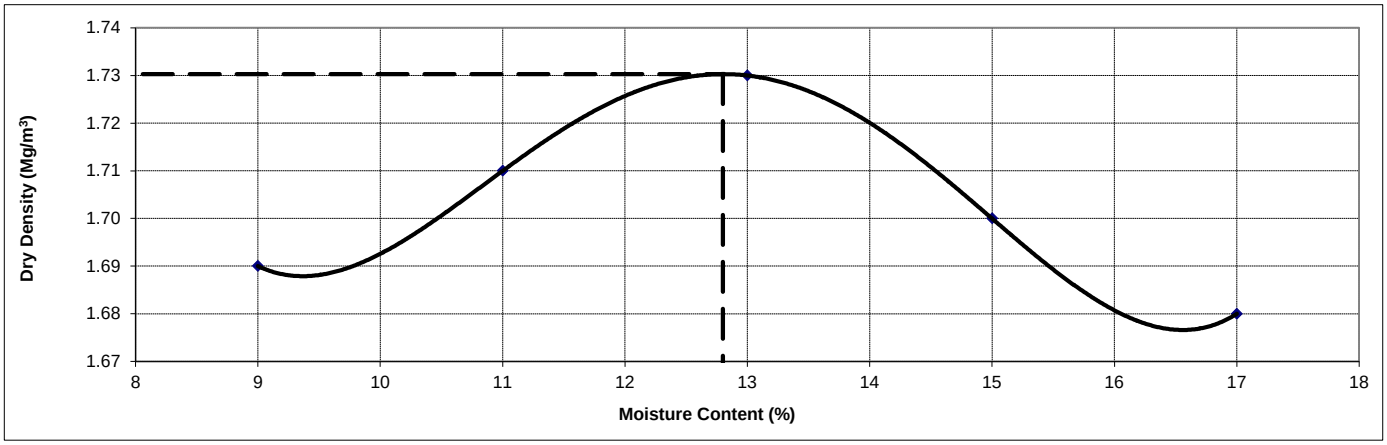


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP72 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

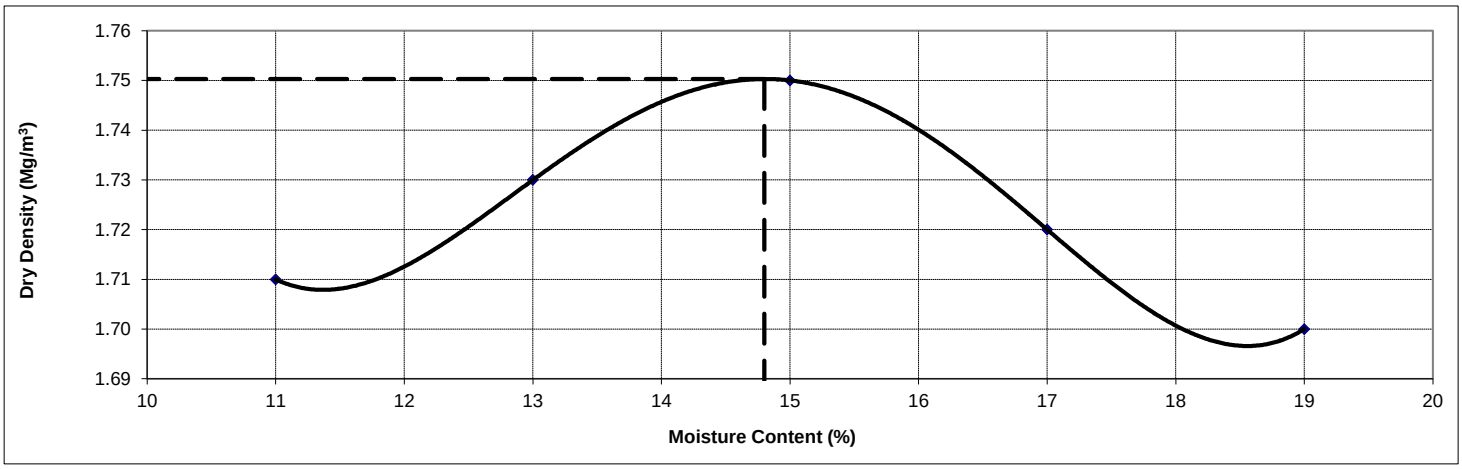


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP73 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	Nil		

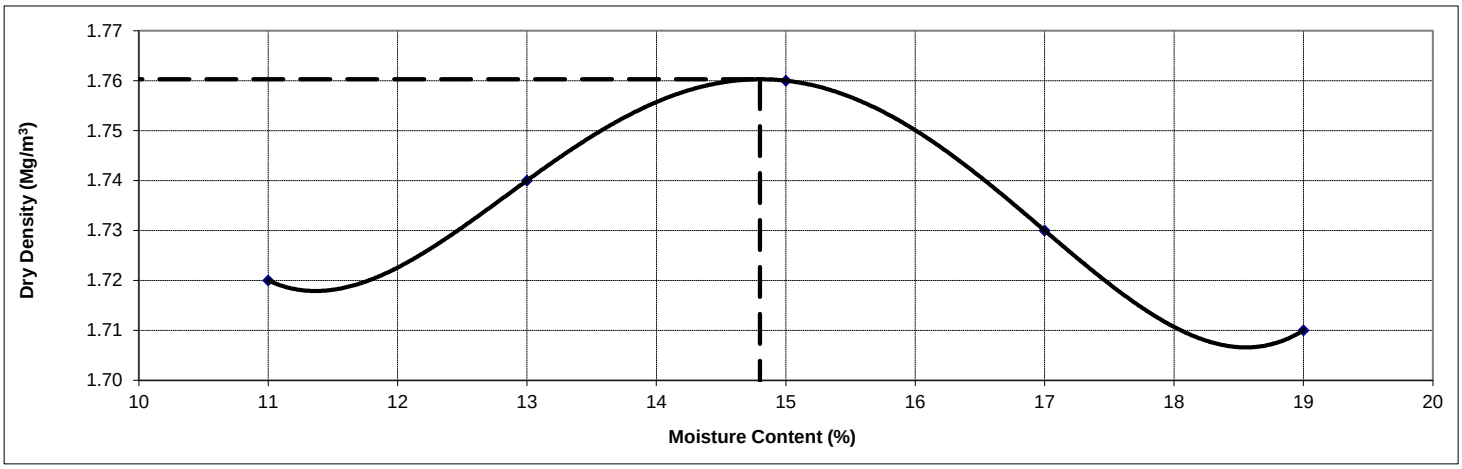


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP74, DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	NIL	**Sampling Method**	ASTM D 75-09
Lot Size	NIL	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	Nil		

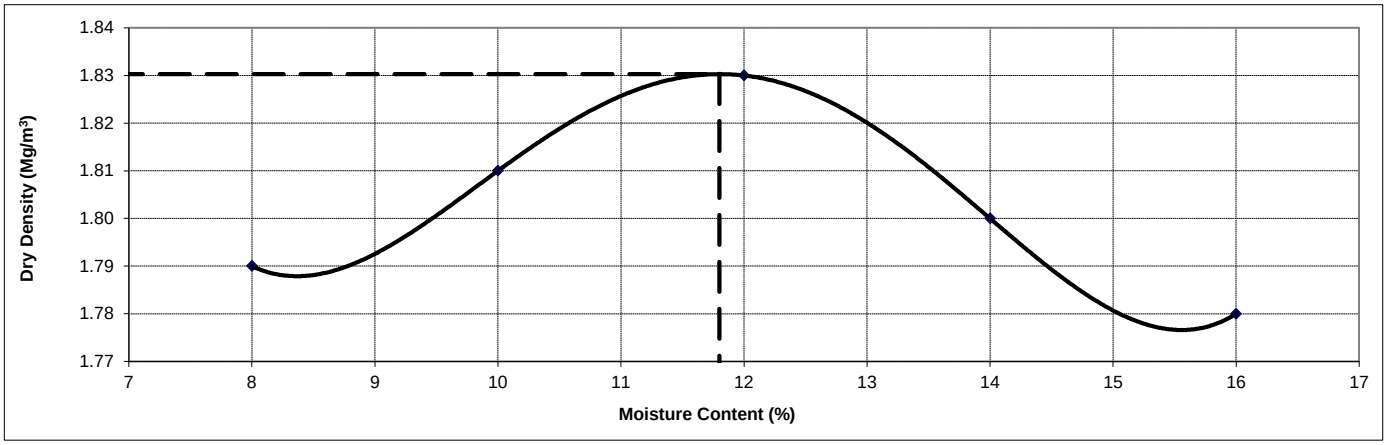


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP75 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

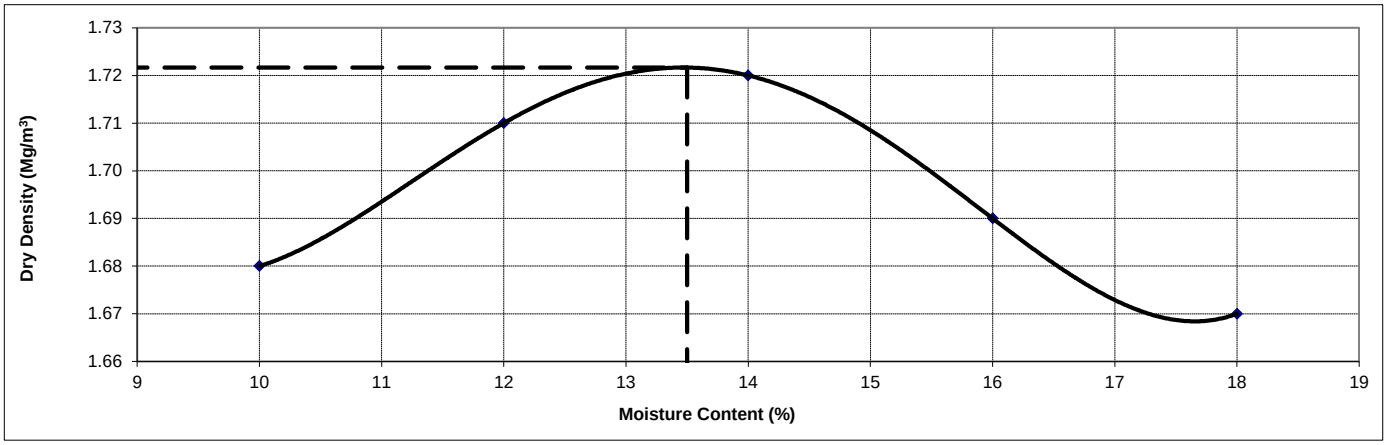


Maximum Dry Density (Mg/m^3)	1.83	**Optimum Moisture Content (%)**	12

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP76 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

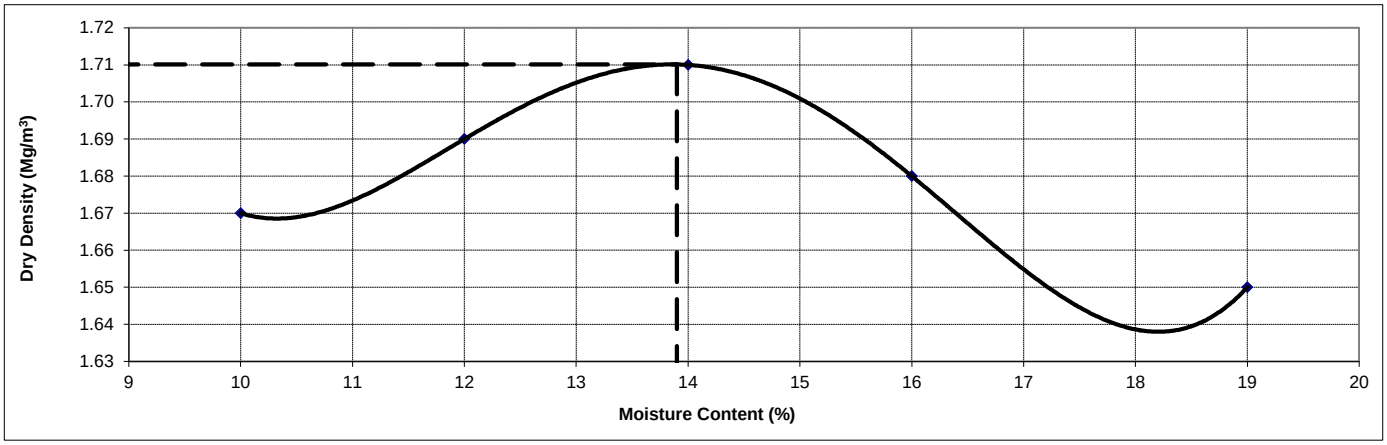


Maximum Dry Density (Mg/m^3)	1.72	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP77 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

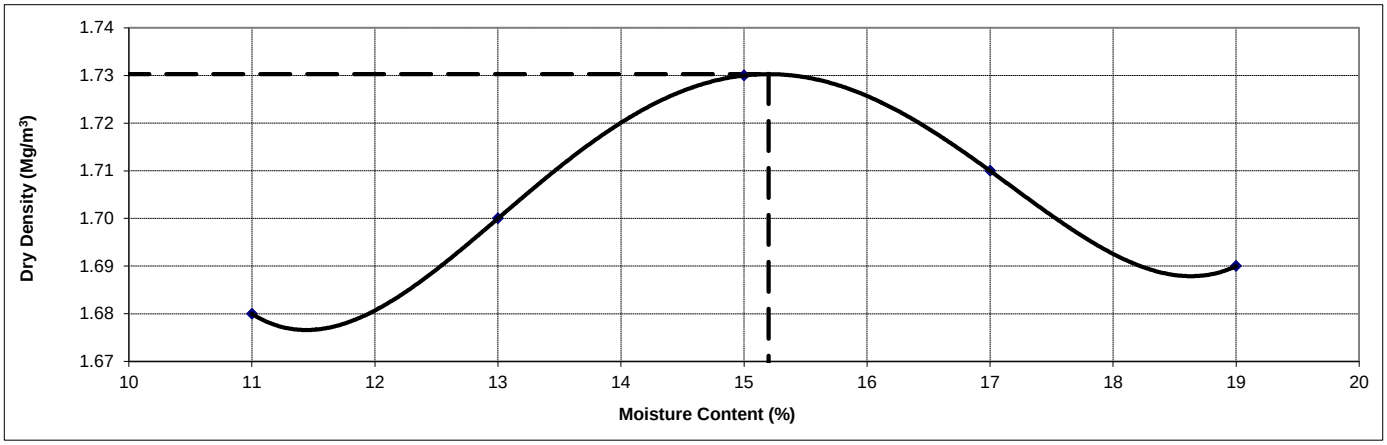


Maximum Dry Density (Mg/m^3)	1.71	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP78 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

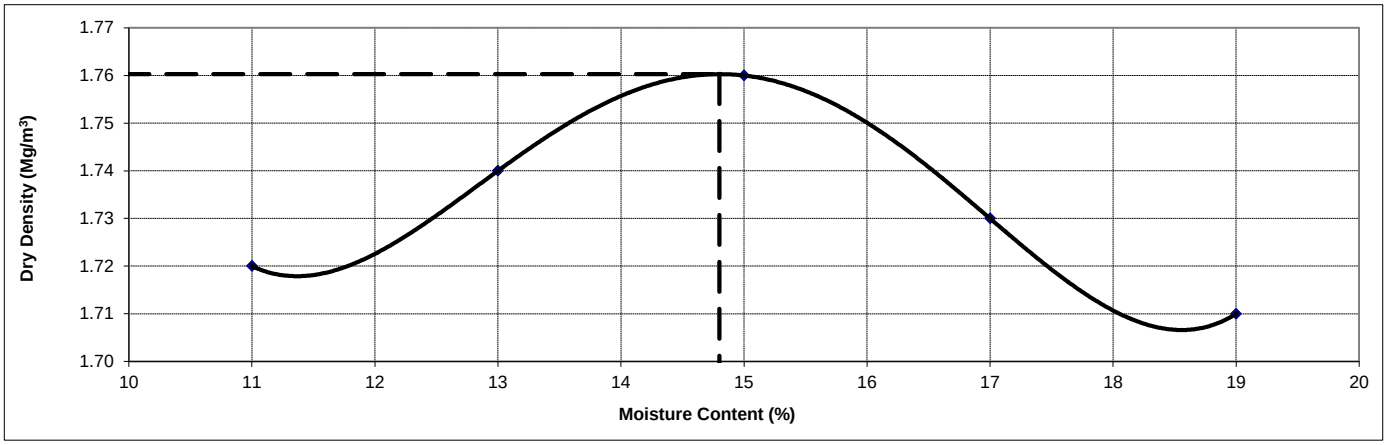


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP79 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

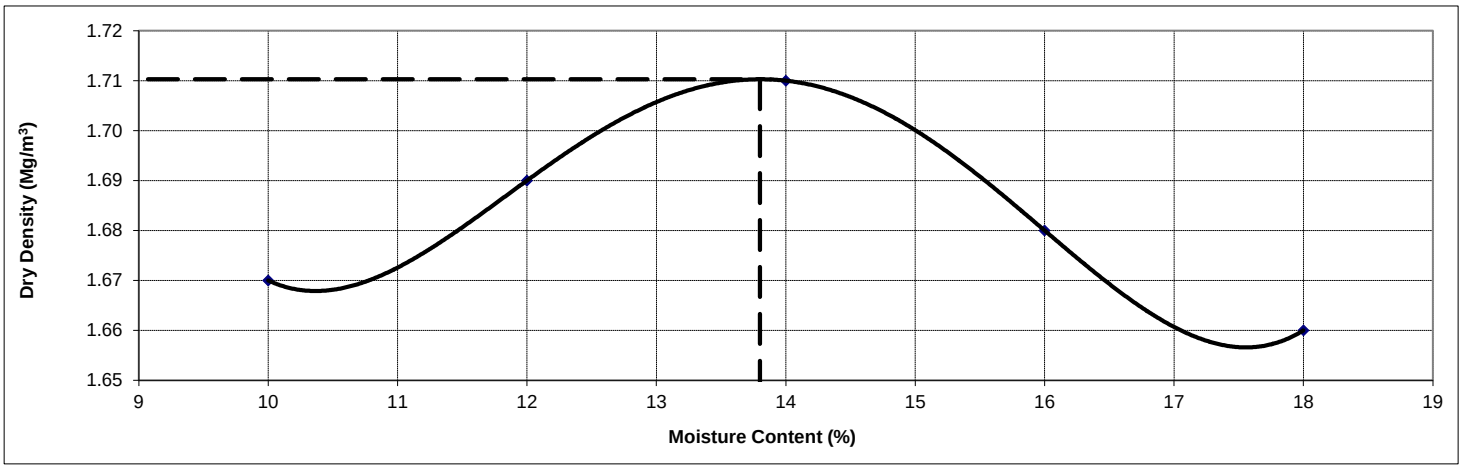


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP80, DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	NIL	**Sampling Method**	ASTM D 75-09
Lot Size	NIL	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	Nil		

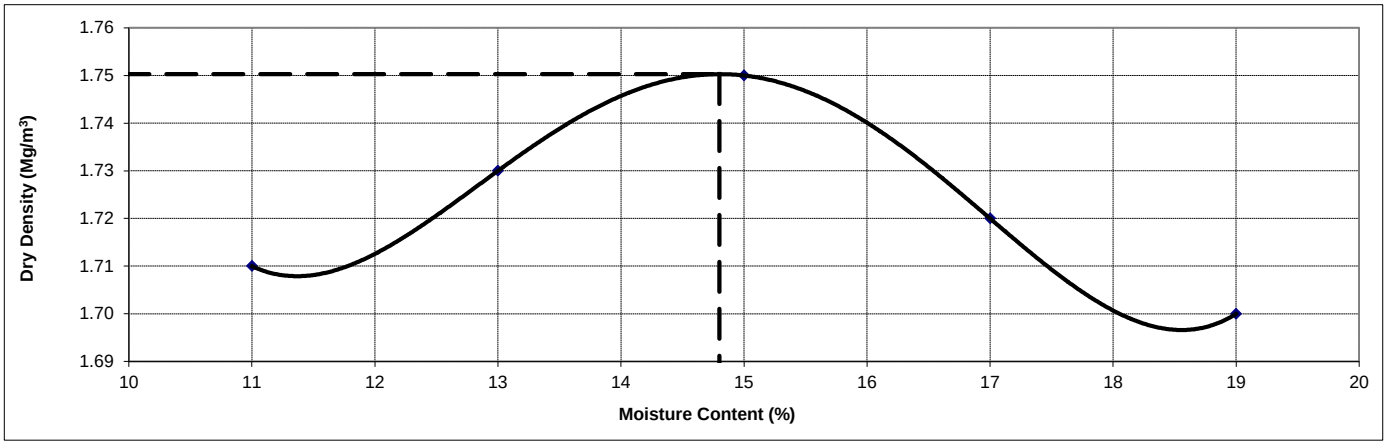


Maximum Dry Density (Mg/m^3)	1.71	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP81 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

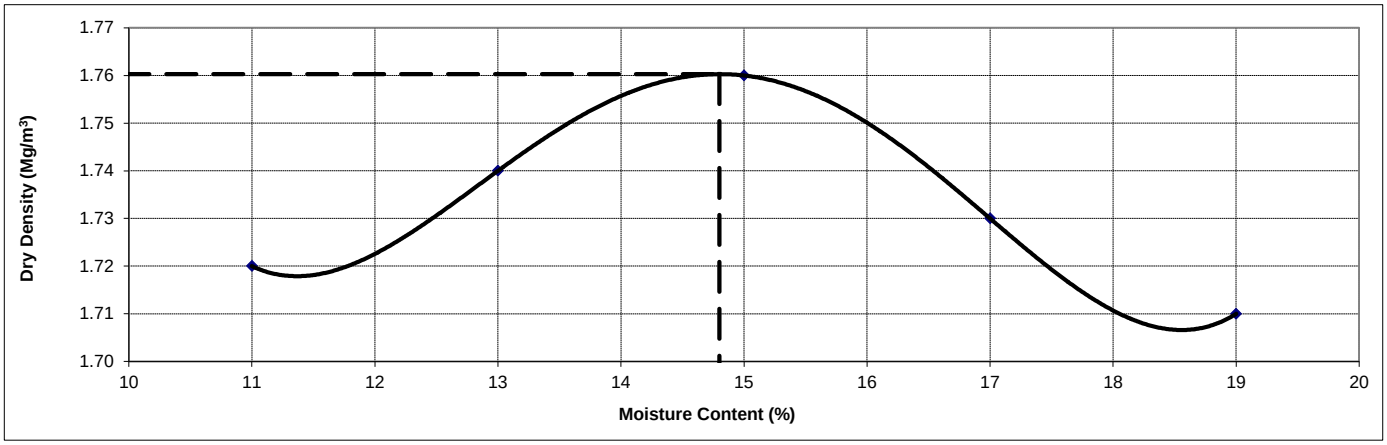


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP82 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

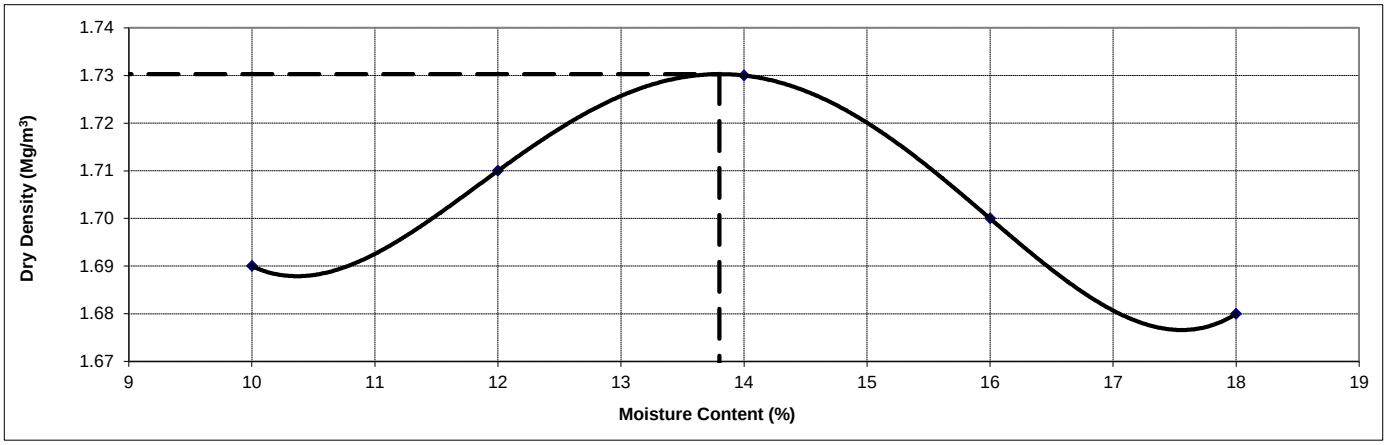


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP83 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

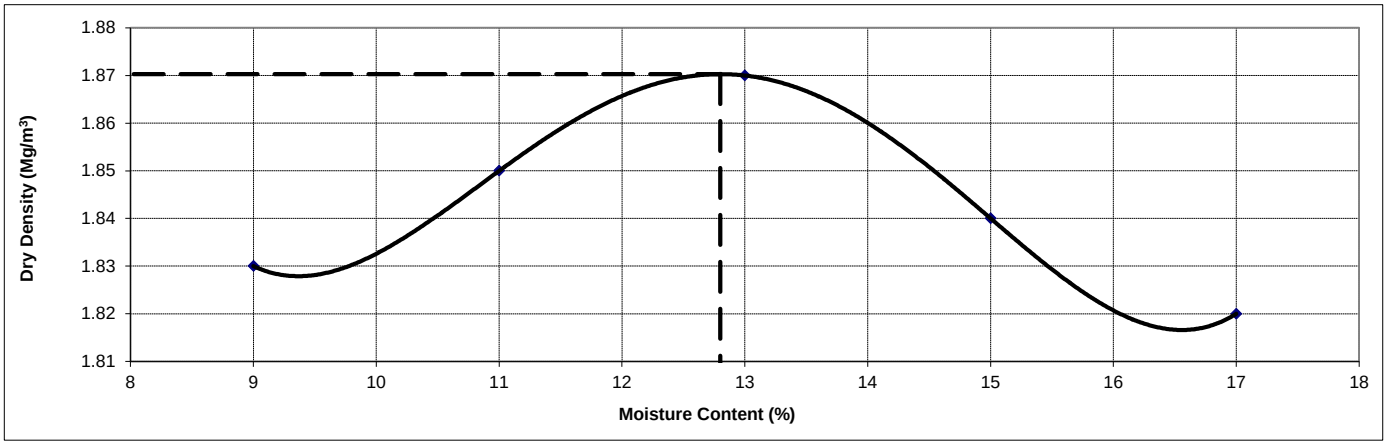


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP84 DEPTH 0.00-0.50m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	17/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

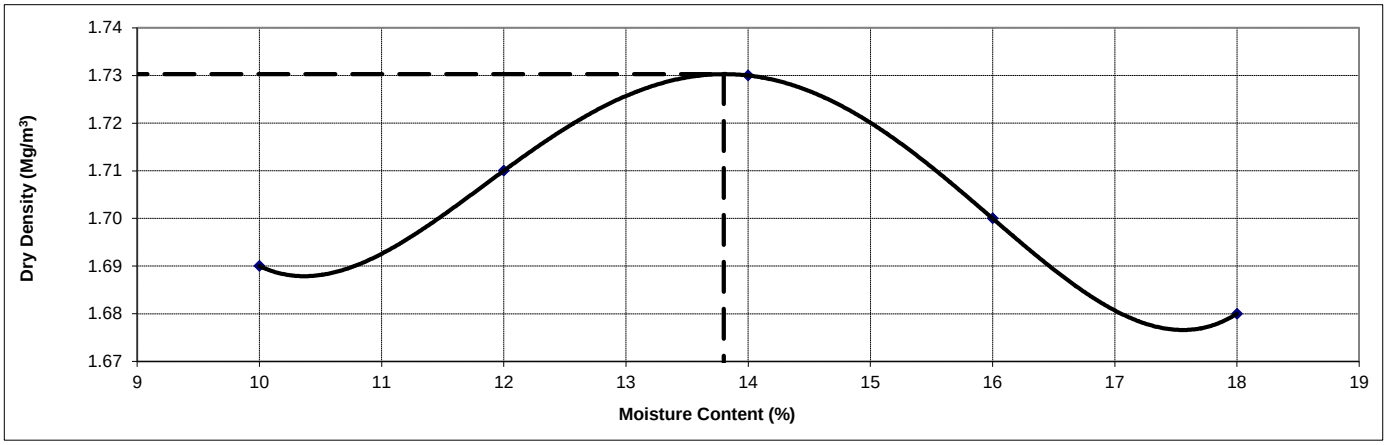


Maximum Dry Density (Mg/m^3)	1.87	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP85 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

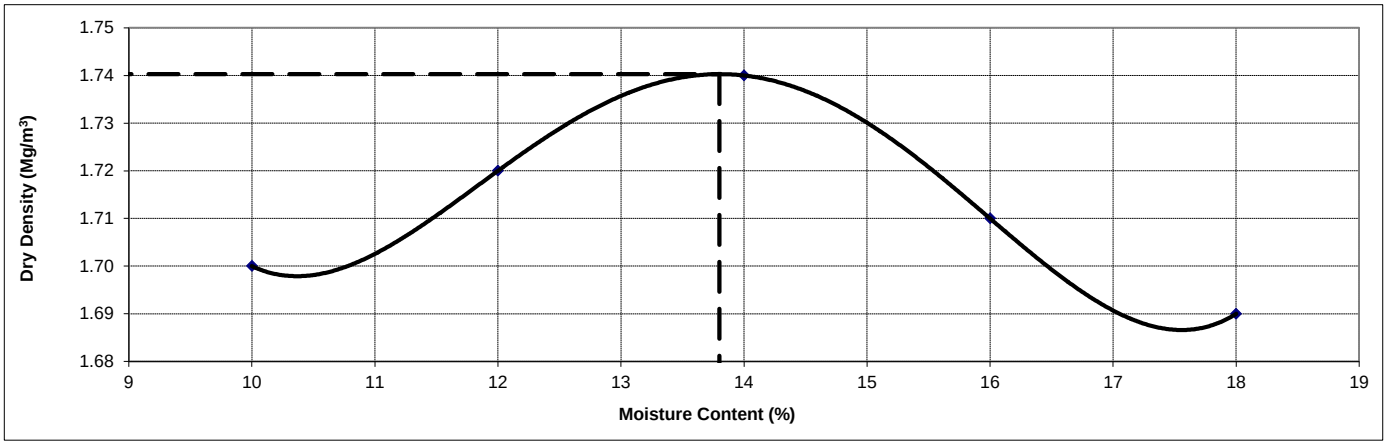


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP86 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

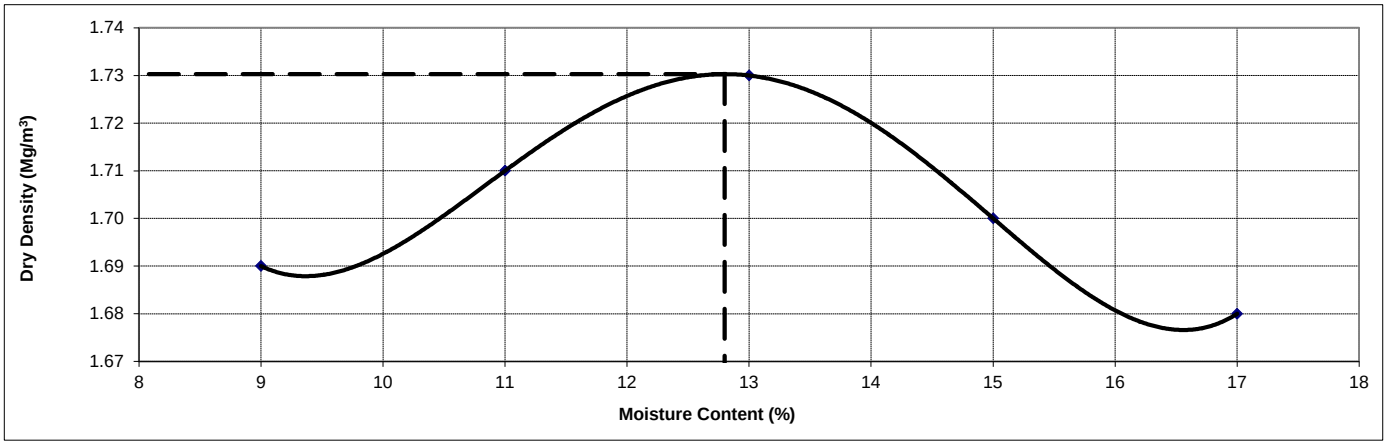


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP87 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

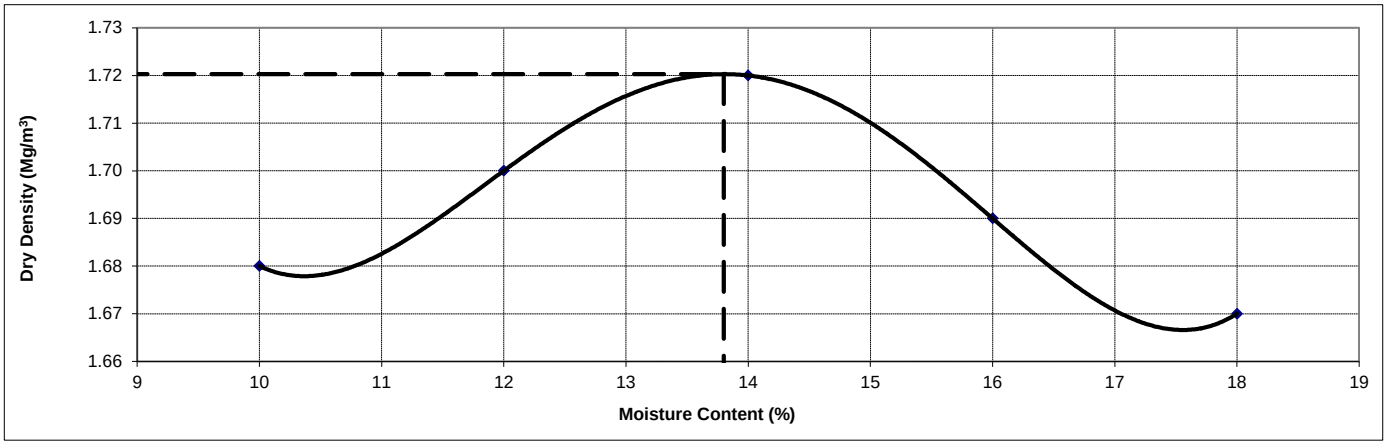


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP88 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

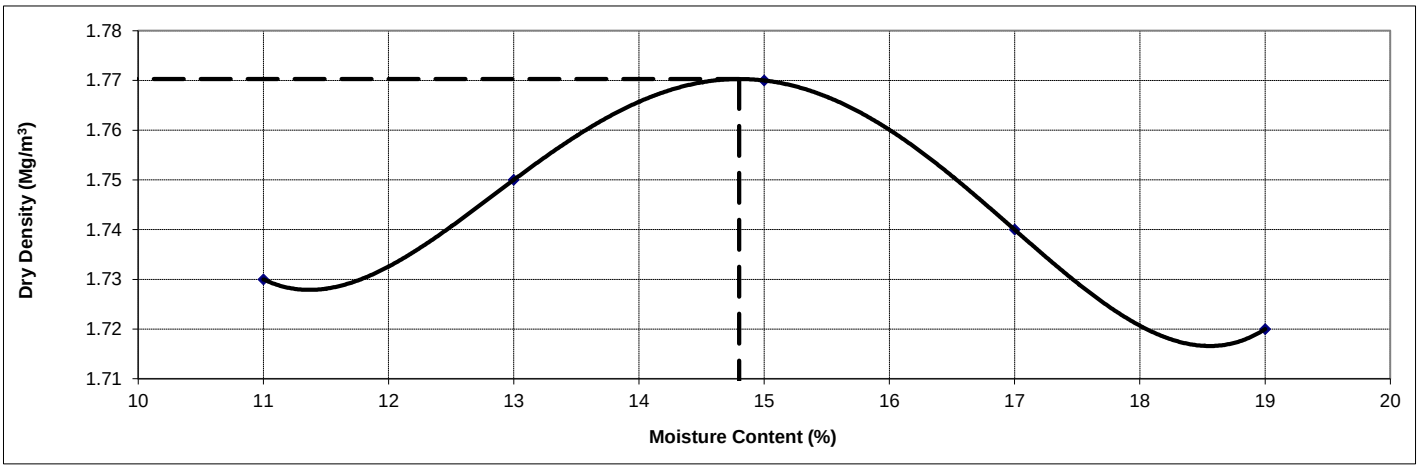


Maximum Dry Density (Mg/m^3)	1.72	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP089, DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	Nil		

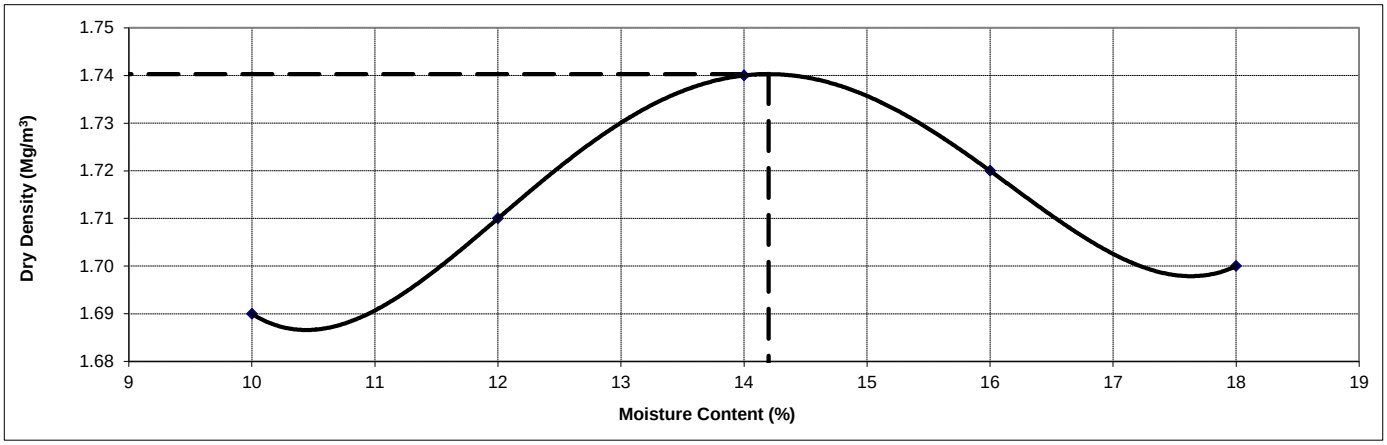


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP90 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

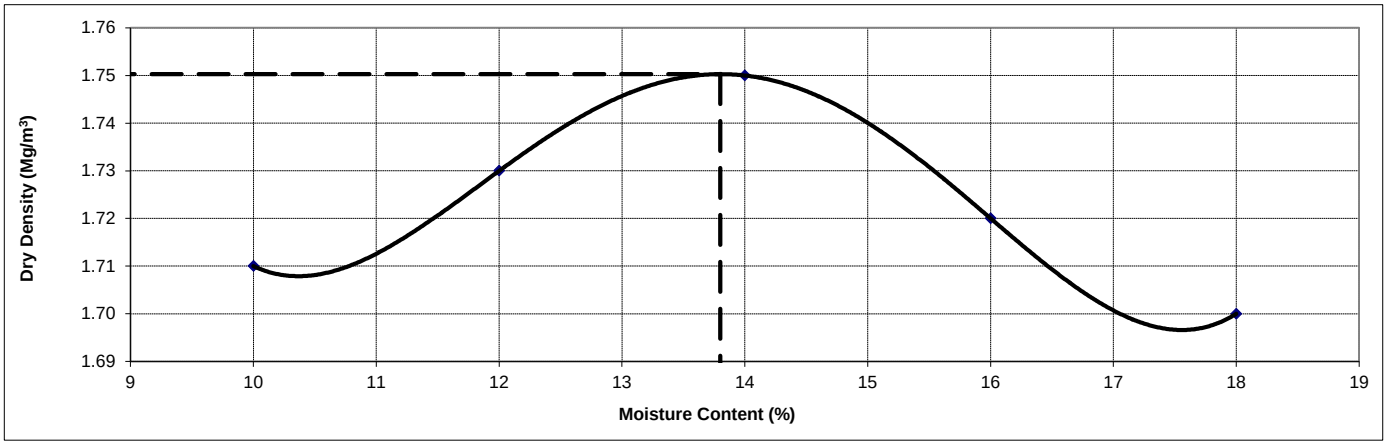


Maximum Dry Density (Mg/m^3)	1.74	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP91 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

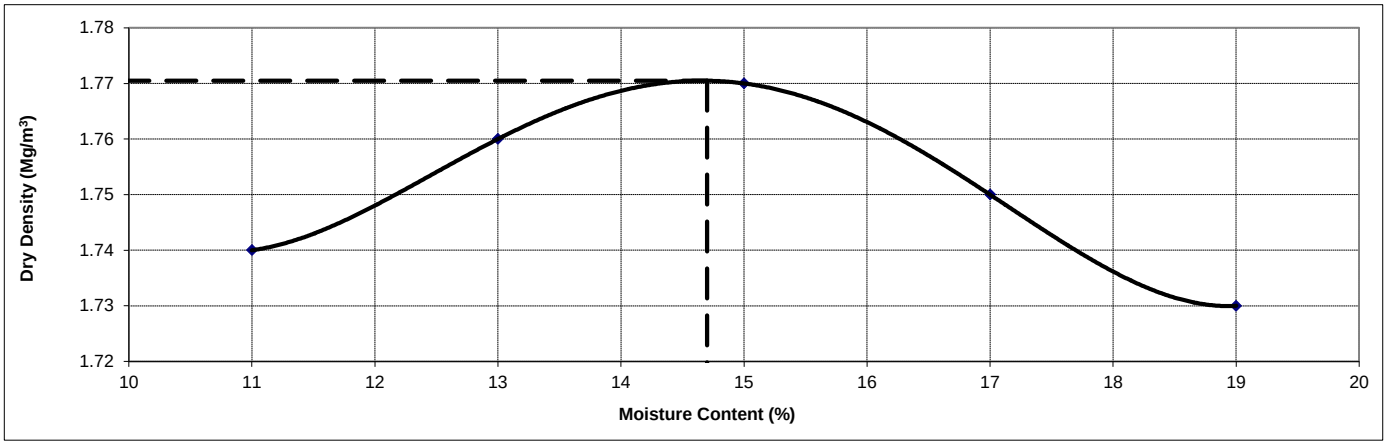


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP92 DEPTH 3.00-4.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

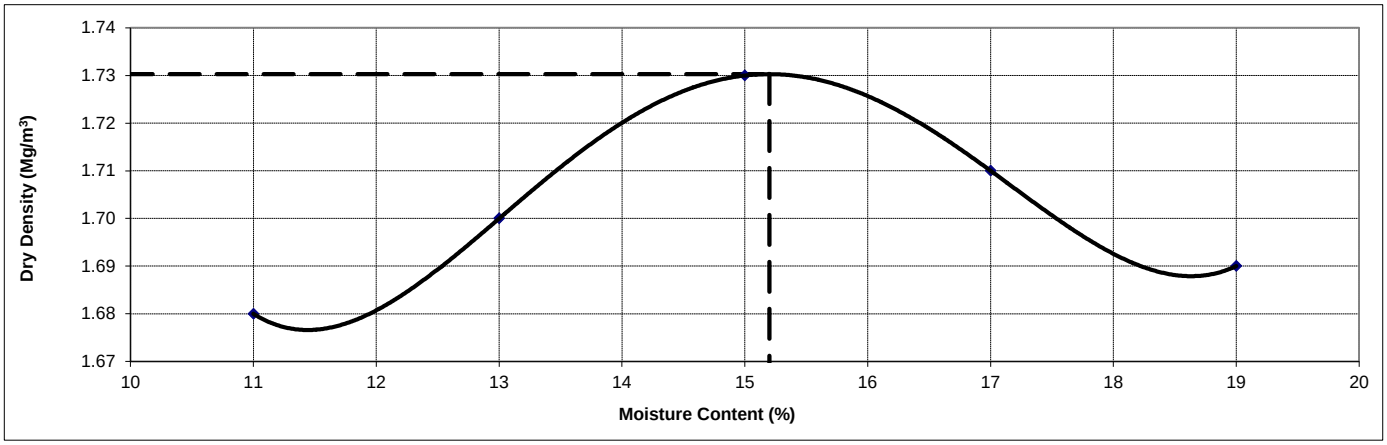


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP93 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

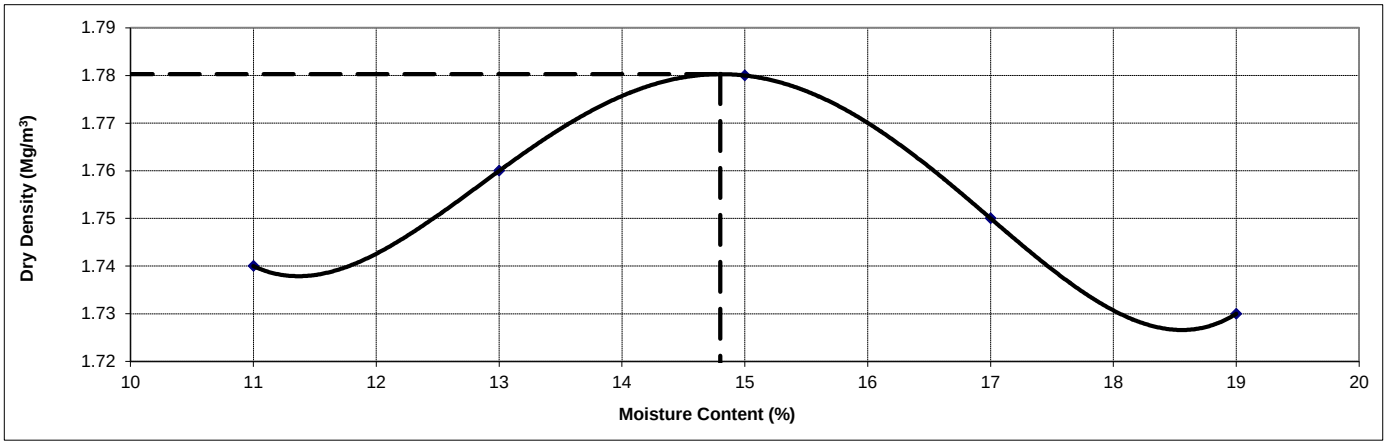


Maximum Dry Density (Mg/m^3)	1.73	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP94 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

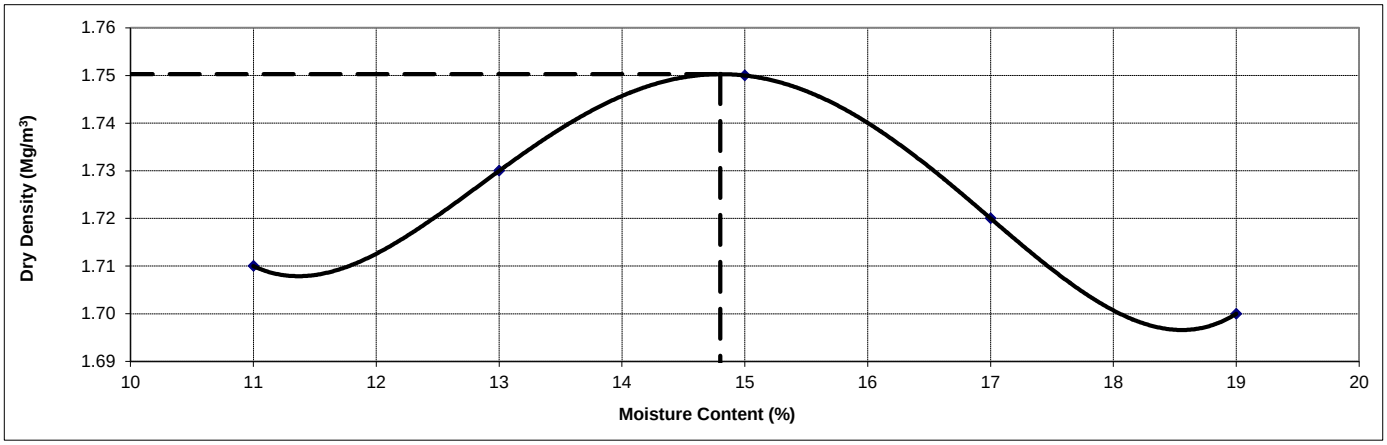


Maximum Dry Density (Mg/m^3)	1.78	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP95 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

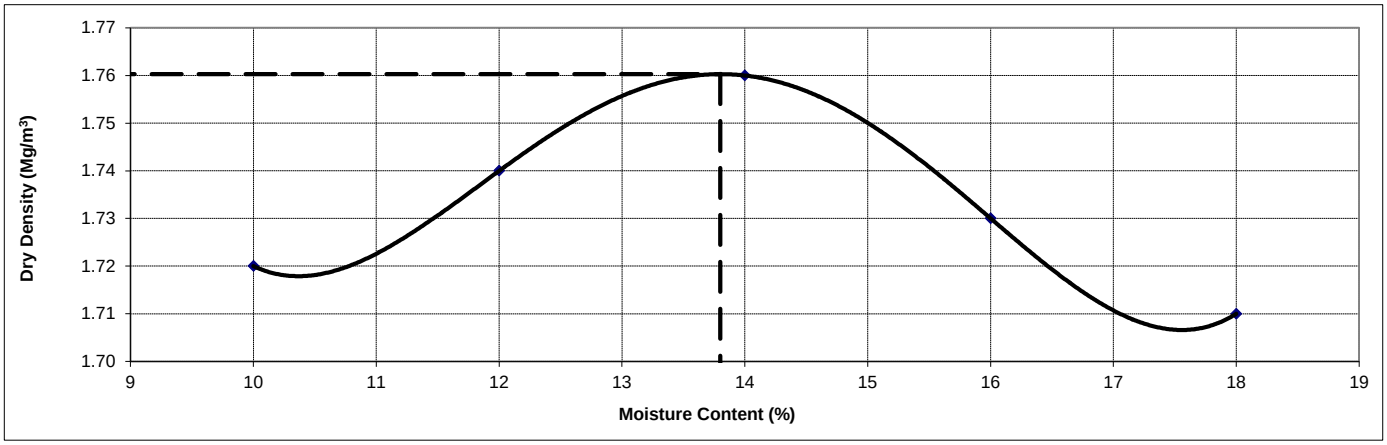


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP96 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

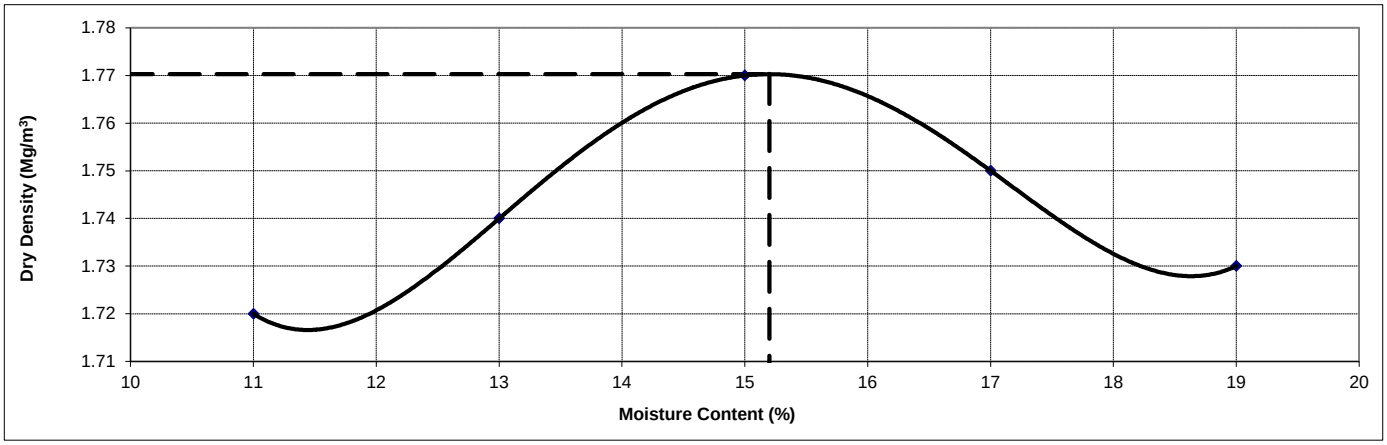


Maximum Dry Density (Mg/m^3)	1.76	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP97 DEPTH 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

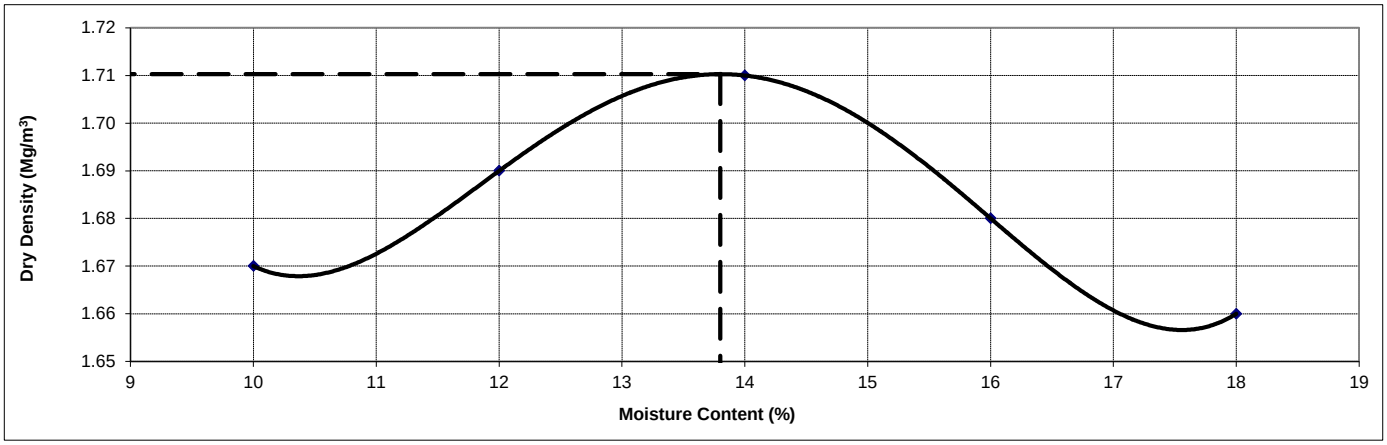


Maximum Dry Density (Mg/m^3)	1.77	**Optimum Moisture Content (%)**	15

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP98 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

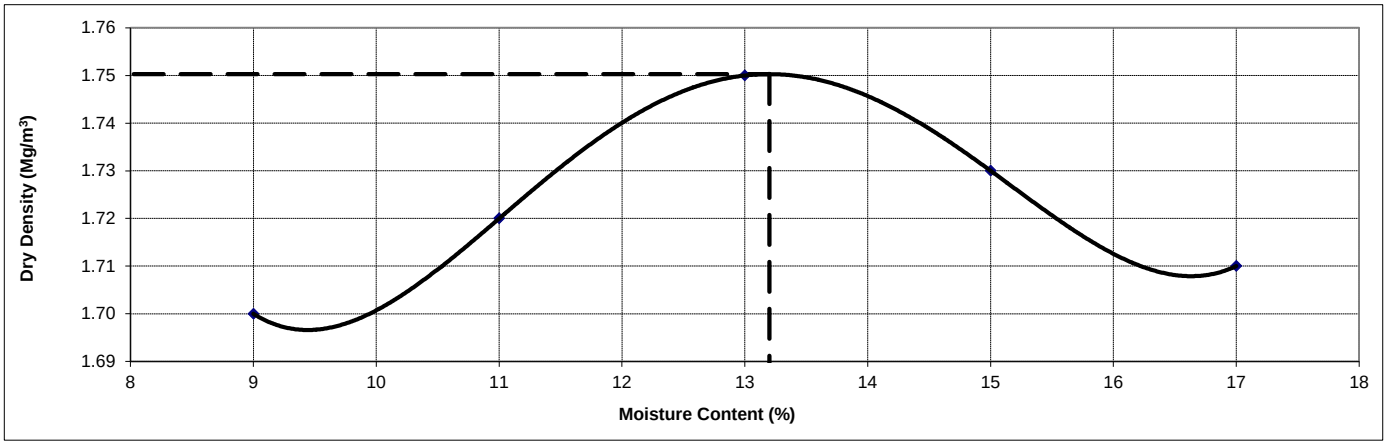


Maximum Dry Density (Mg/m^3)	1.71	**Optimum Moisture Content (%)**	14

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP99 DEPTH 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

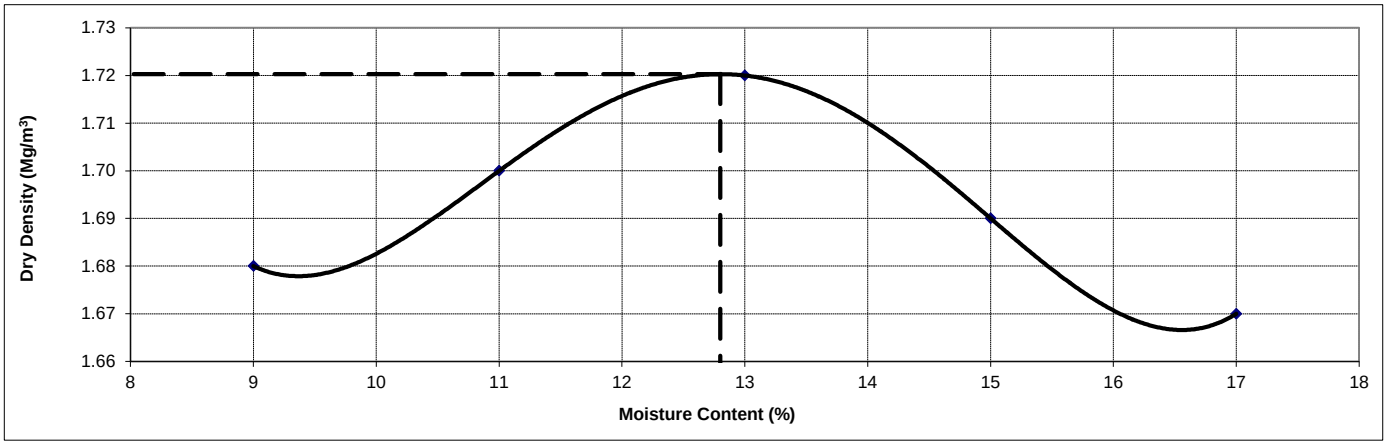


Maximum Dry Density (Mg/m^3)	1.75	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

Test Report on Moisture-Dry Density Relationship

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Description	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP100 DEPTH 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D 75-09
Lot Size	N.P.	**Sample Size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990(Amd.8258-95),Cl.7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.2.6.1	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990,Test 3,(Amd.13925-02),Cl.3.5.4.2	**Date Tested**	22/08/2015
Test Method Var.	Nil	**Tested By**	BIKI
Sample Used	Separate	**Type of Compactor**	Manual (4.5kg Rammer)
Ret. on 20 mm sieve	Nil	**No.of Layers/ Blows**	5/27
Mould Used	One Liter	**Part. Density (mg/m^3)**	2.65 (Assumed)
Remarks	NIL		

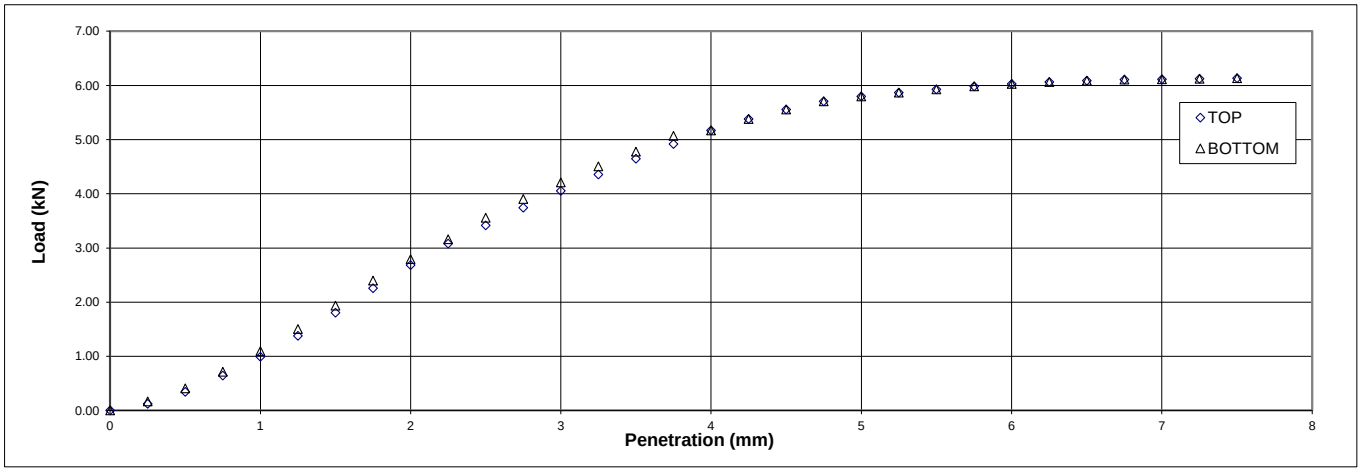


Maximum Dry Density (Mg/m^3)	1.72	**Optimum Moisture Content (%)**	13

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP002 Depth 1.00-1.50m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.86 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg

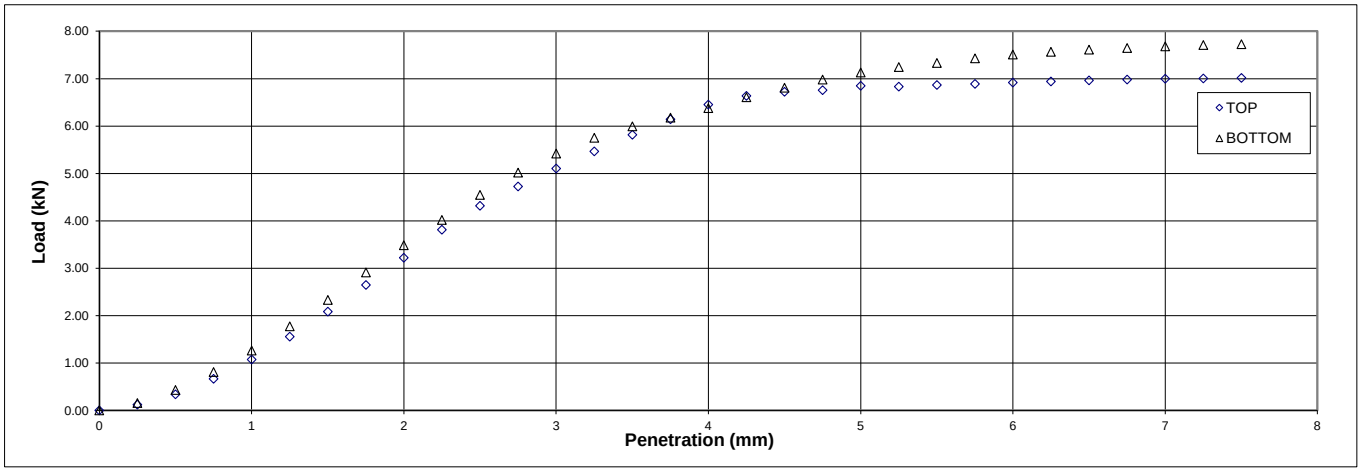


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	28	29	15	0.02
Bottom	29	29	15	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP003 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.90 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	10 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



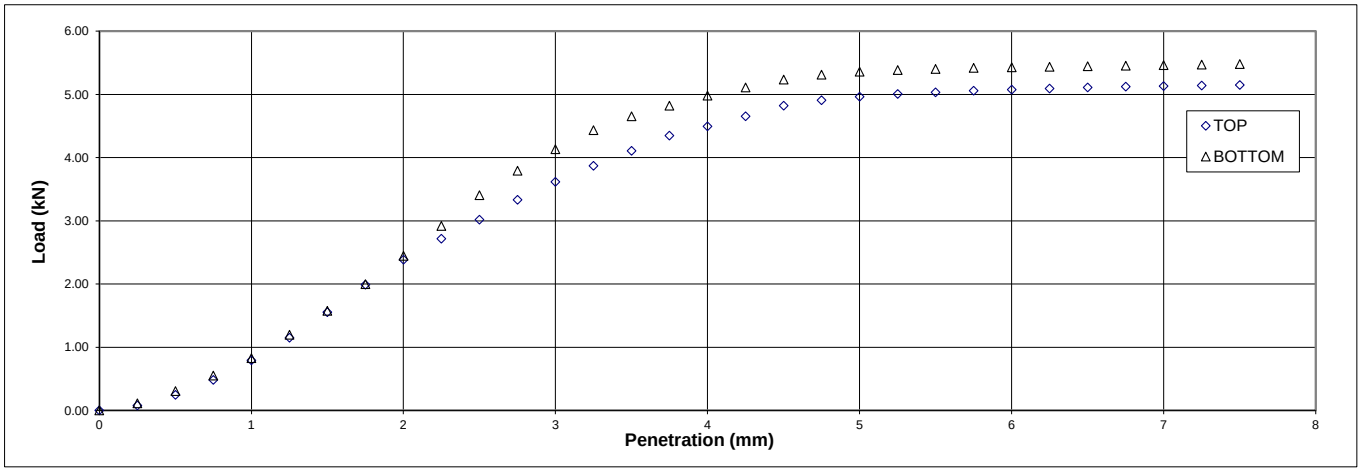
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	38	34	14	0.01
Bottom	40	37	14	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP004 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.84 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



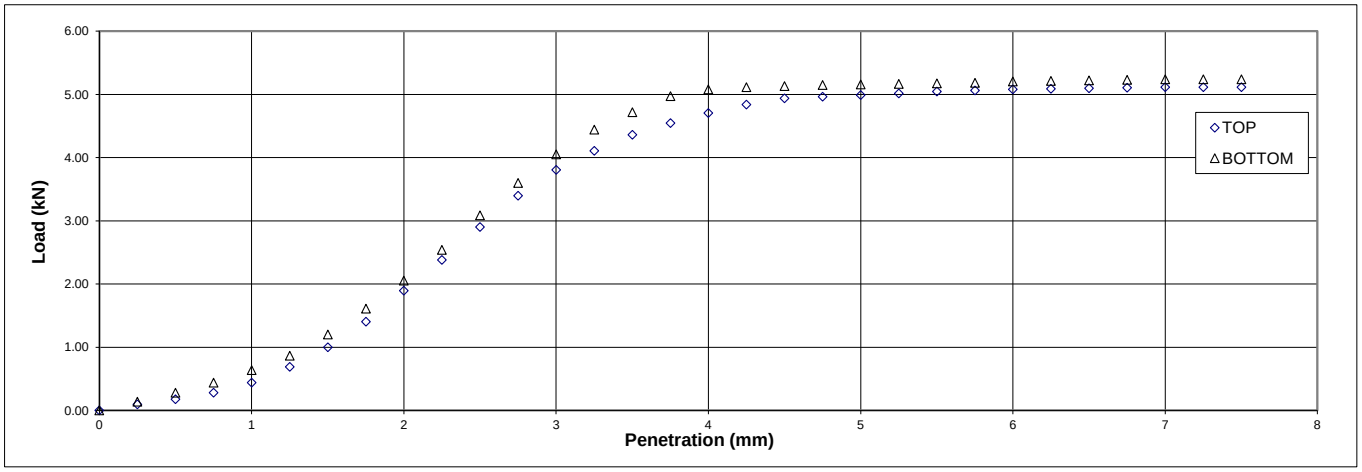
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	27	25	16	0.02
Bottom	31	27	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP005 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	26/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/7-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.84 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



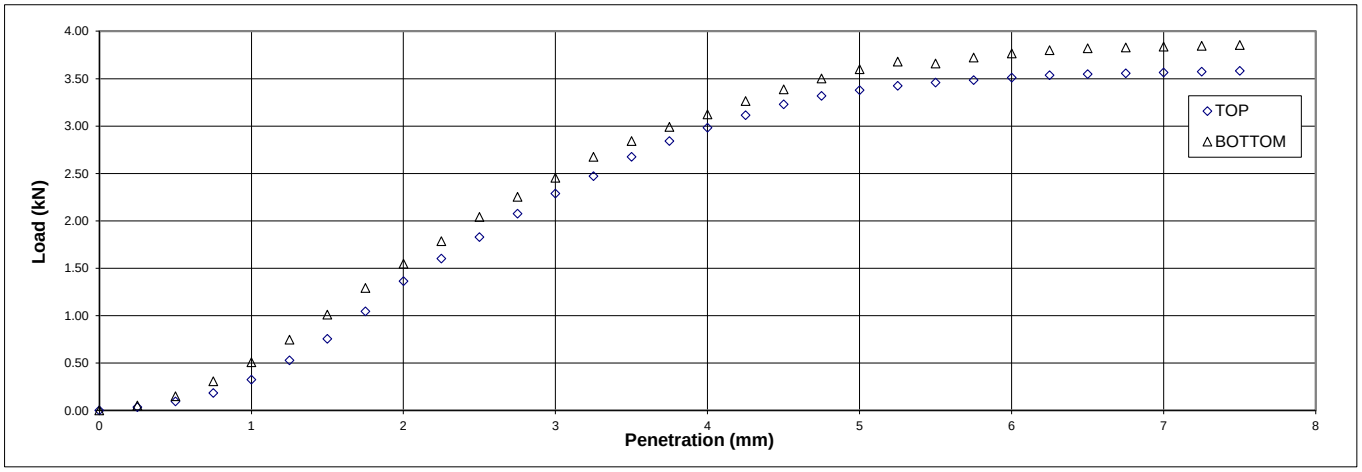
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	32	25	16	0.02
Bottom	34	26	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP008 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.78 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg

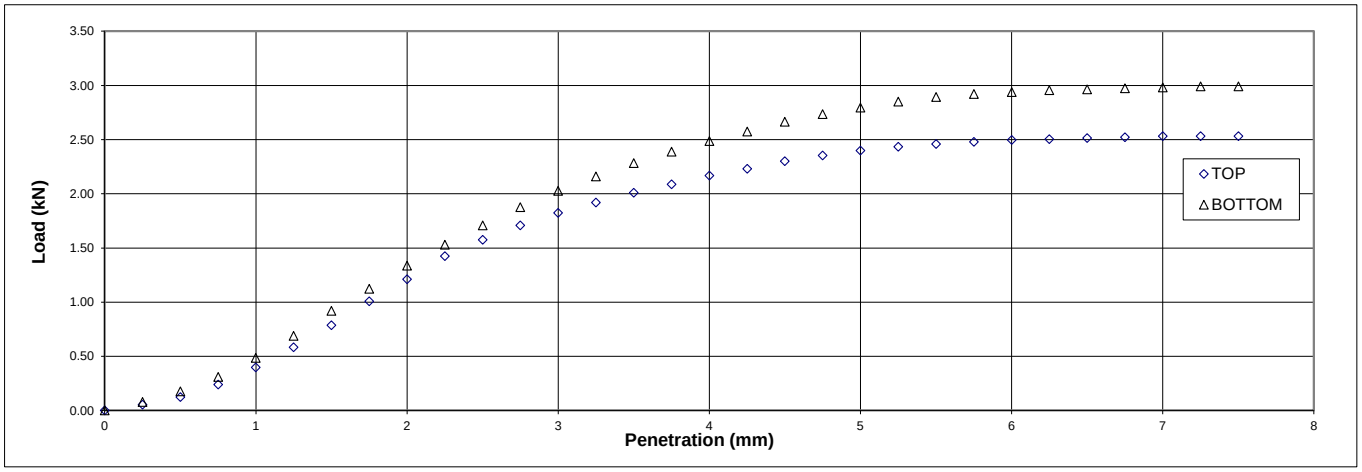


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	17	17	20	0.04
Bottom	19	18	20	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP009 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.73 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



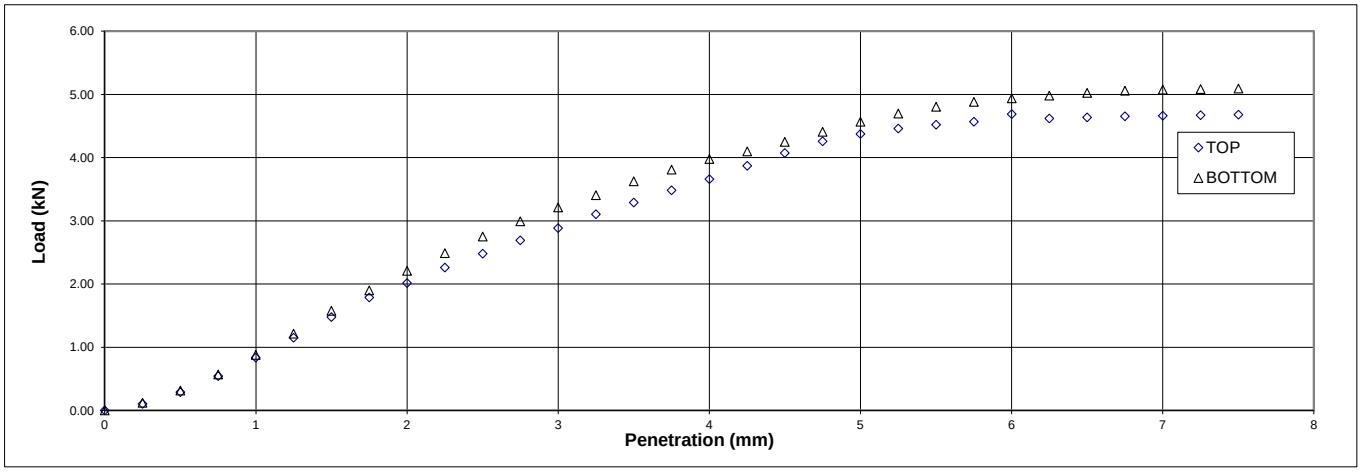
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	14	12	20	0.02
Bottom	15	14	20	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	26/07/2015
Sample Location	TP011 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.80 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



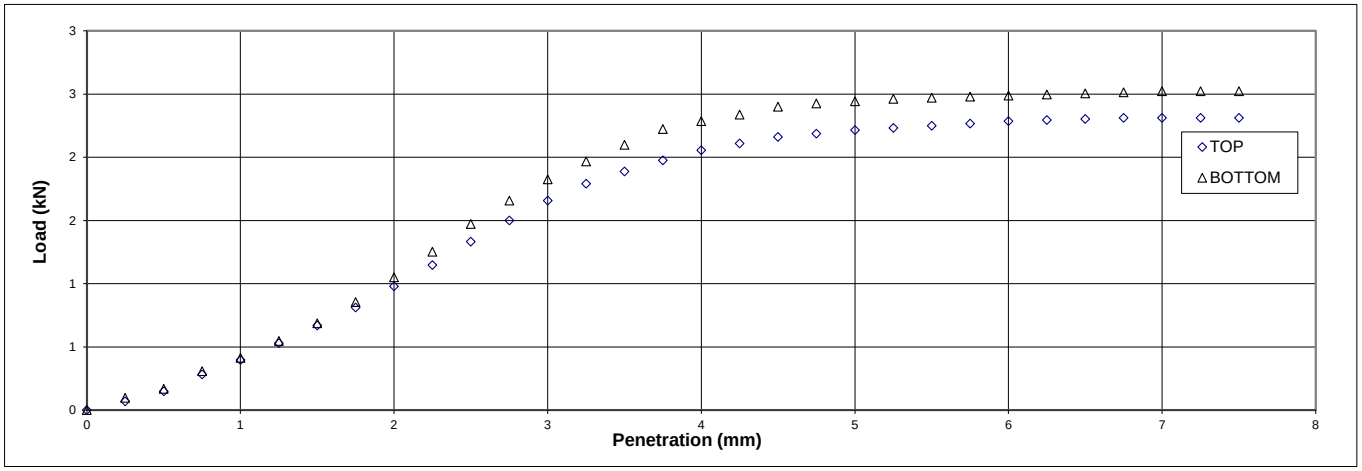
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	20	22	17	0.02
Bottom	21	23	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP013 Depth 3.00-4.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	110 kg
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	Nil	**Initial Sample Density**	1.73 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	14 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg

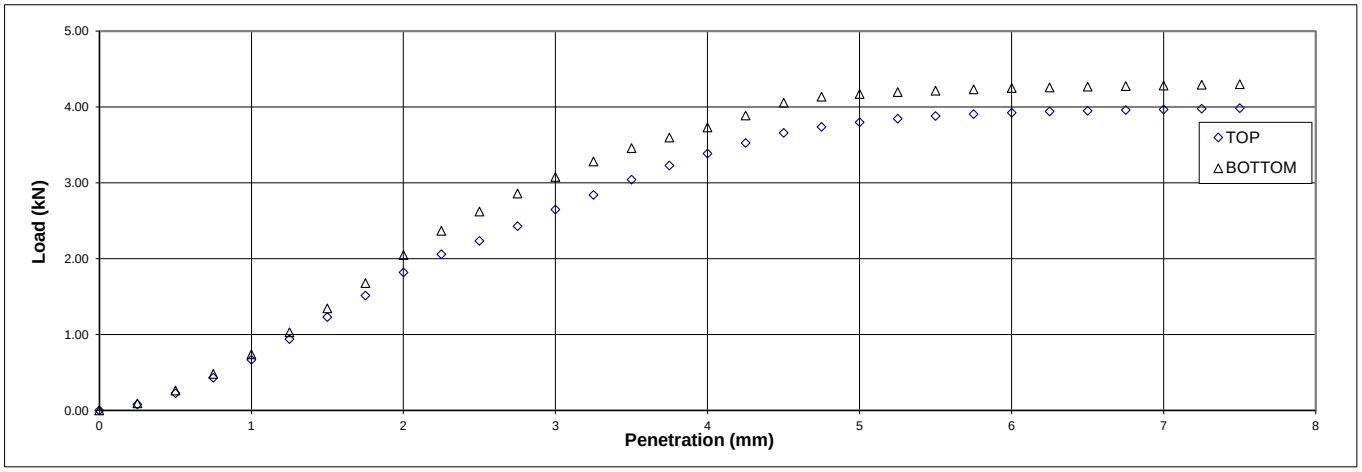


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	12	11	16	0.02
Bottom	14	13	17	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP014 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.80 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



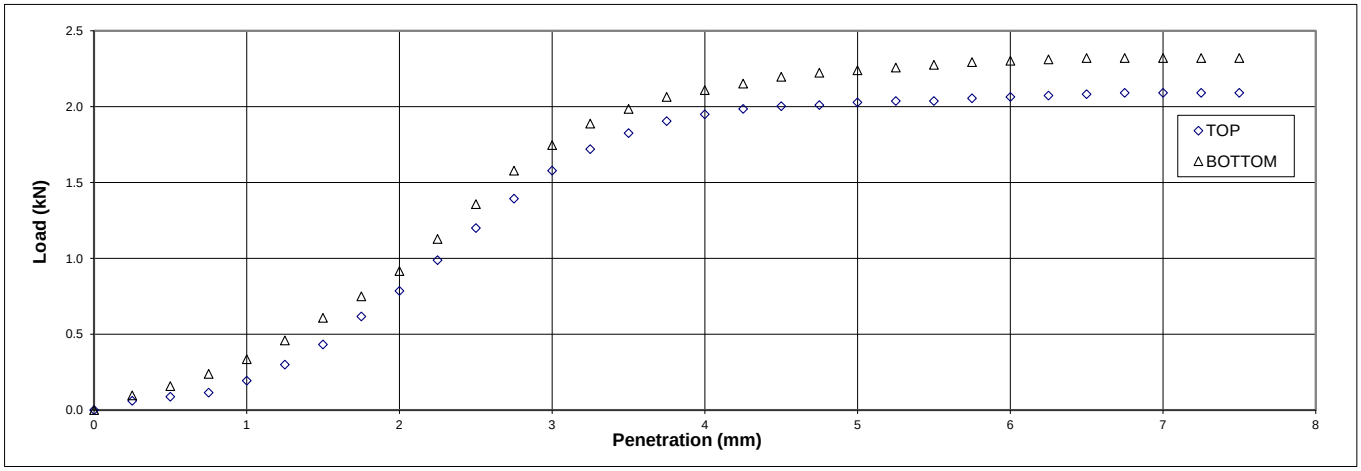
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	20	19	17	0.02
Bottom	23	21	17	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP016 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	110 kg
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	Nil	**Initial Sample Density**	1.72 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg

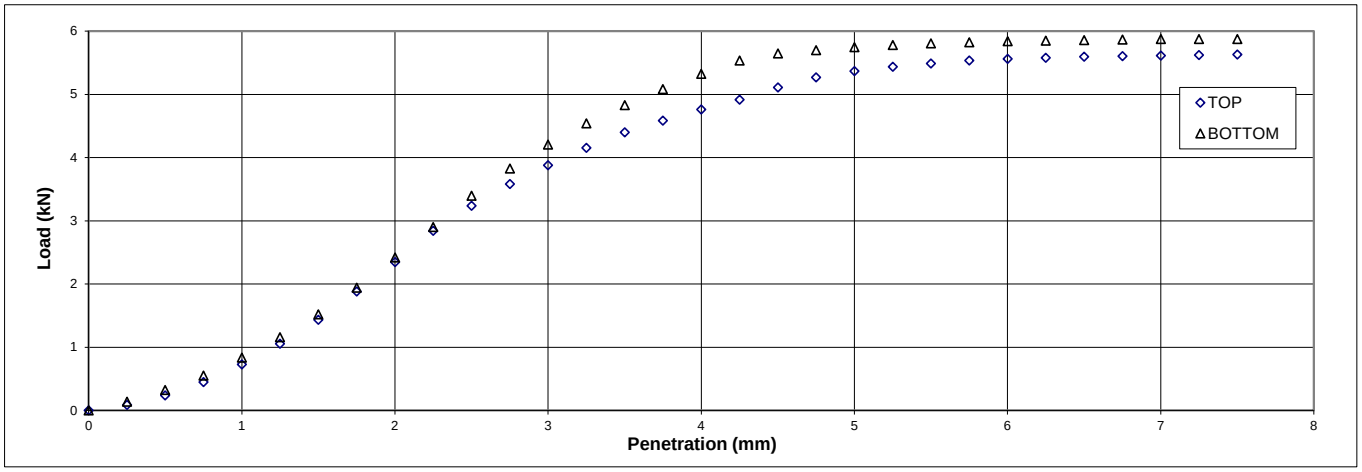


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	13	10	17	0.02
Bottom	14	12	18	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	27/07/2015
Sample Location	TP018 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.81 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg

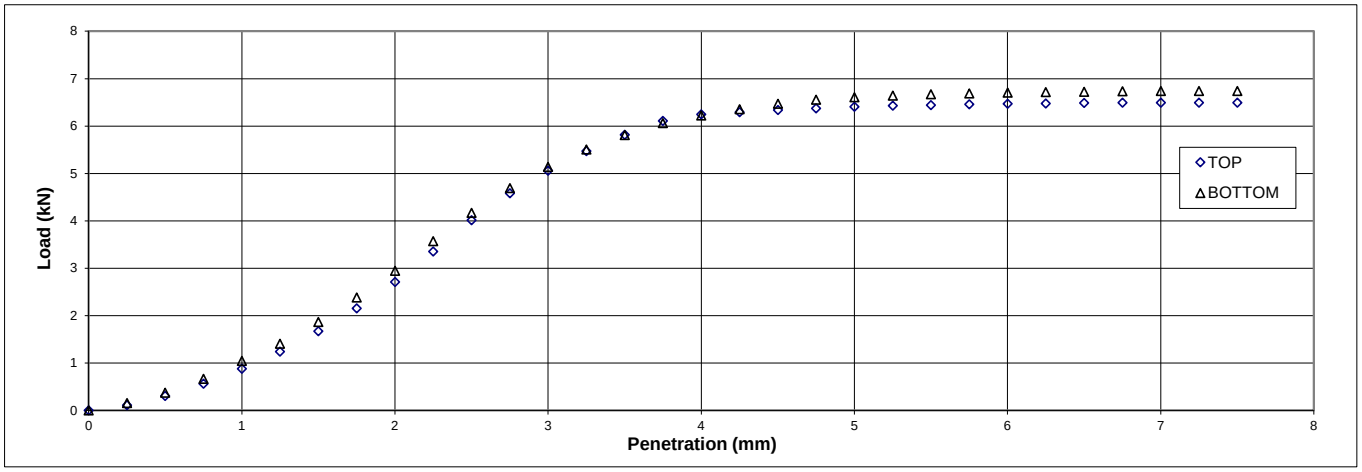


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	30	28	17	0.02
Bottom	32	29	17	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	27/07/2015
Sample Location	TP019 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	27/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	29/07-02/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.82 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	10 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg

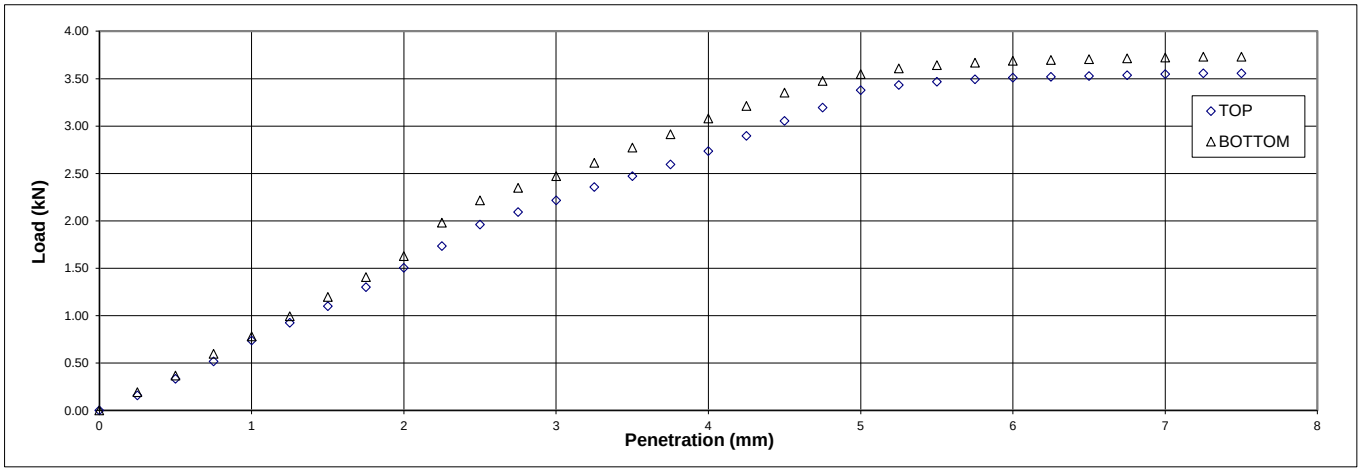


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	37	32	16	0.02
Bottom	37	33	17	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP020 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.75 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcharge**	4.5 Kg



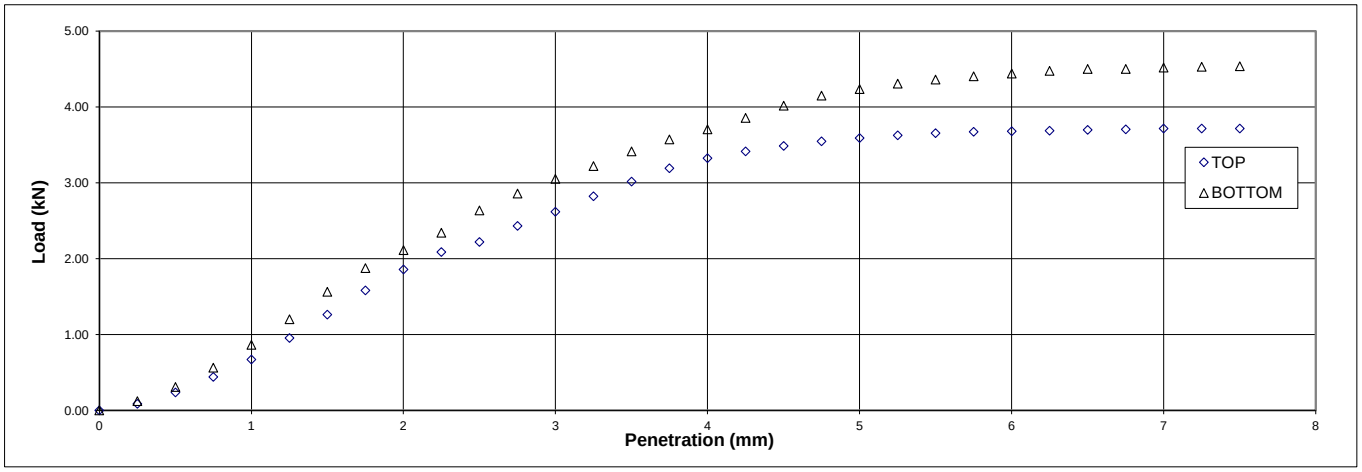
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	15	17	18	0.02
Bottom	20	18	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP021 Depth 2.0-3.0m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.78 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



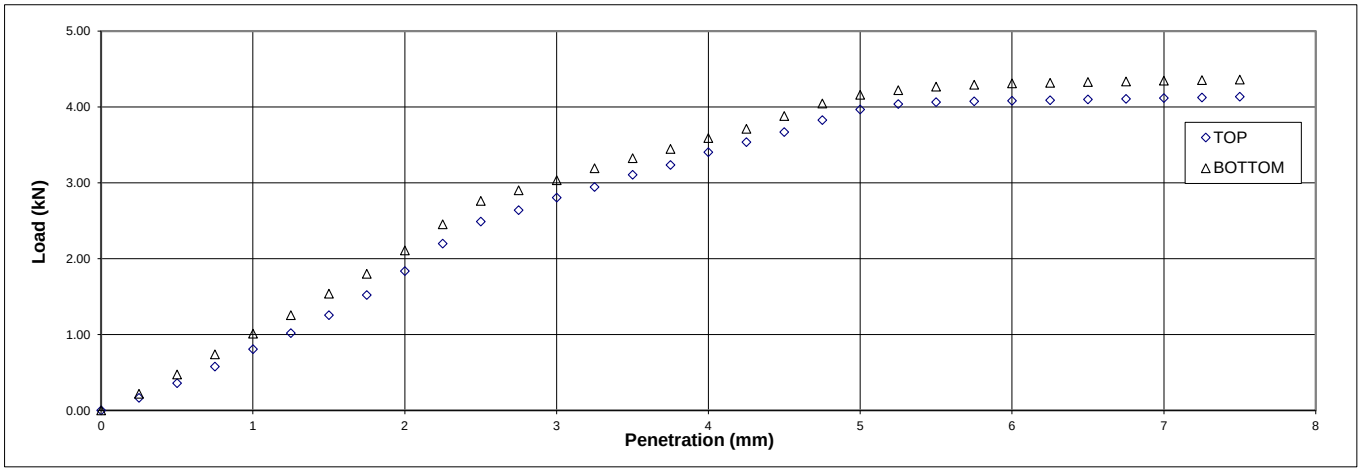
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	19	18	18	0.02
Bottom	21	22	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	29/07/2015
Sample Location	TP022 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.74 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



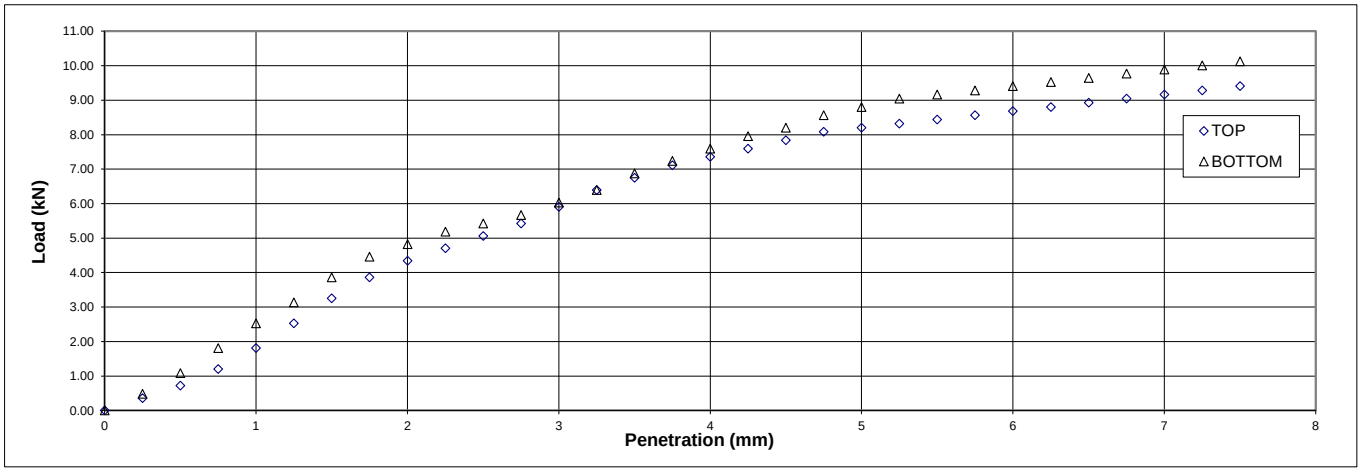
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	21	20	17	0.02
Bottom	22	21	17	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP023 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.74 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



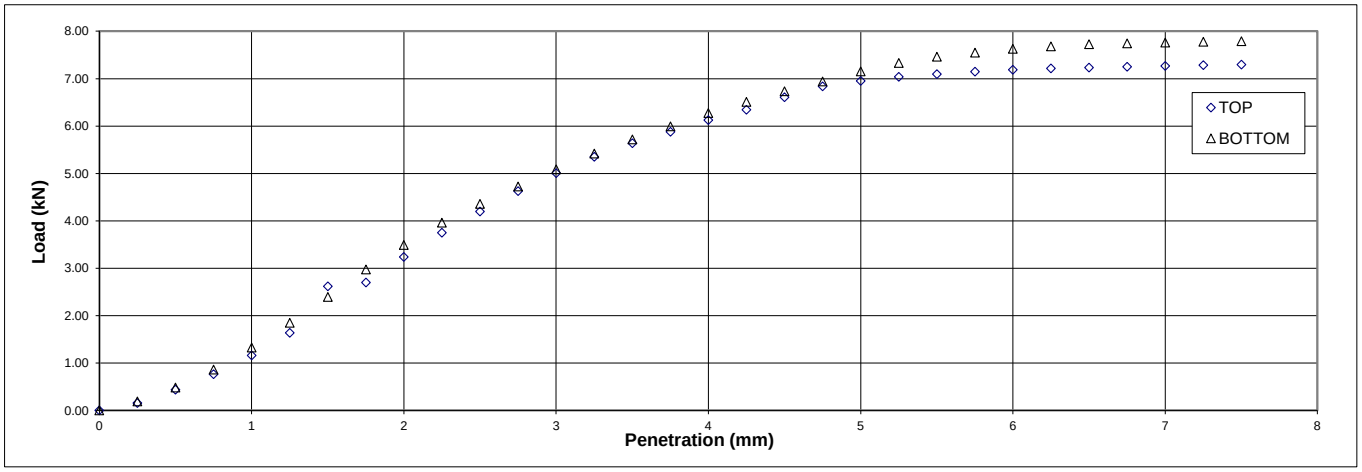
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	41	42	15	0.02
Bottom	42	45	15	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	28/07/2015
Sample Location	TP028 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.86 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



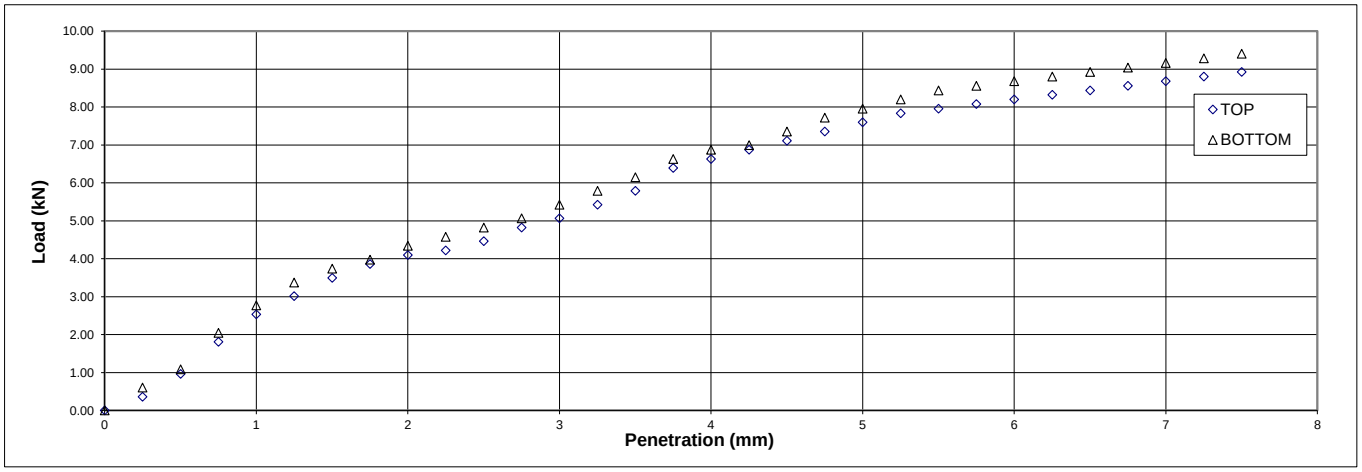
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	34	35	16	0.02
Bottom	35	36	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP034 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.92 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



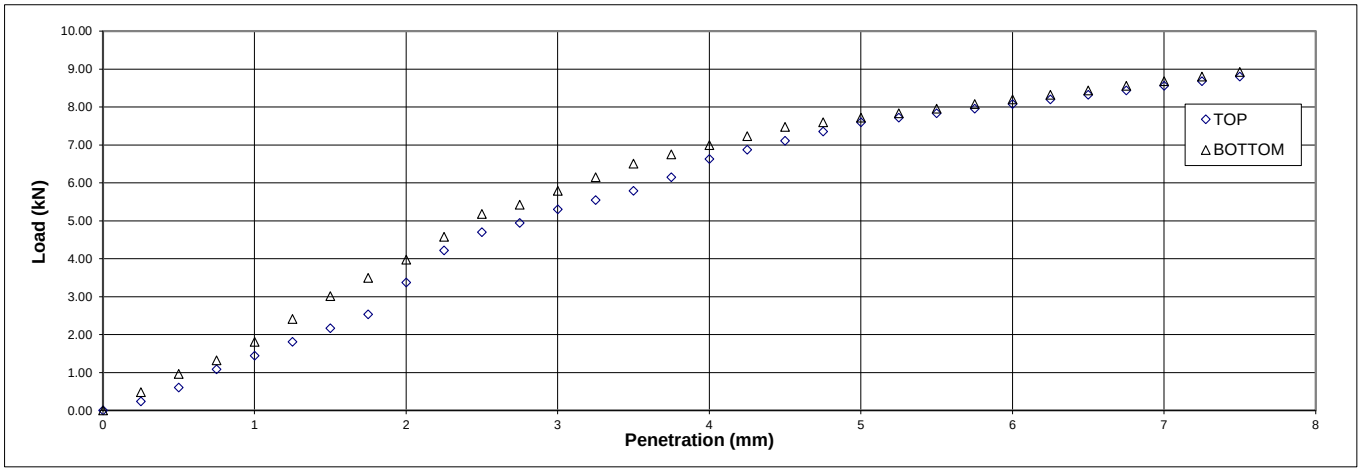
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	36	39	15	0.02
Bottom	37	40	15	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP035 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	31/07/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	03-07/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.90 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



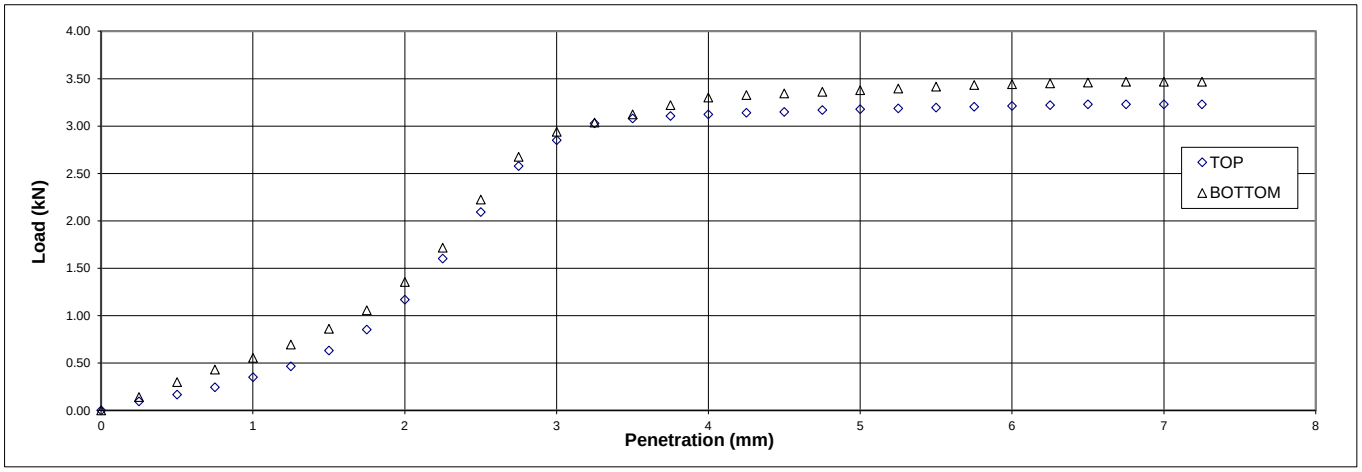
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	37	39	15	0.01
Bottom	40	39	15	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP036 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.77 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



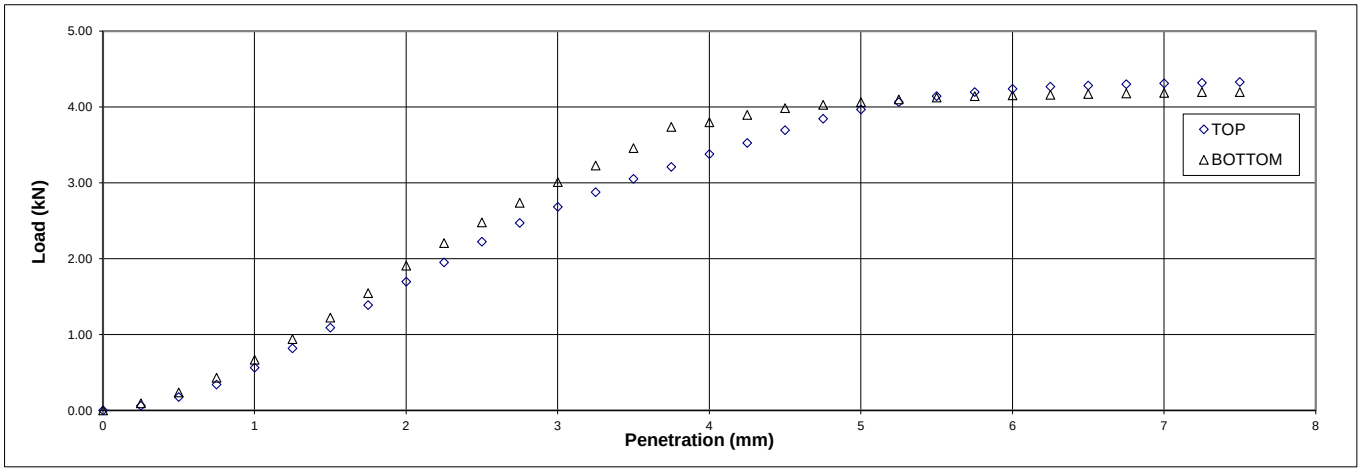
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	22	16	19	0.02
Bottom	20	17	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP037 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.77 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



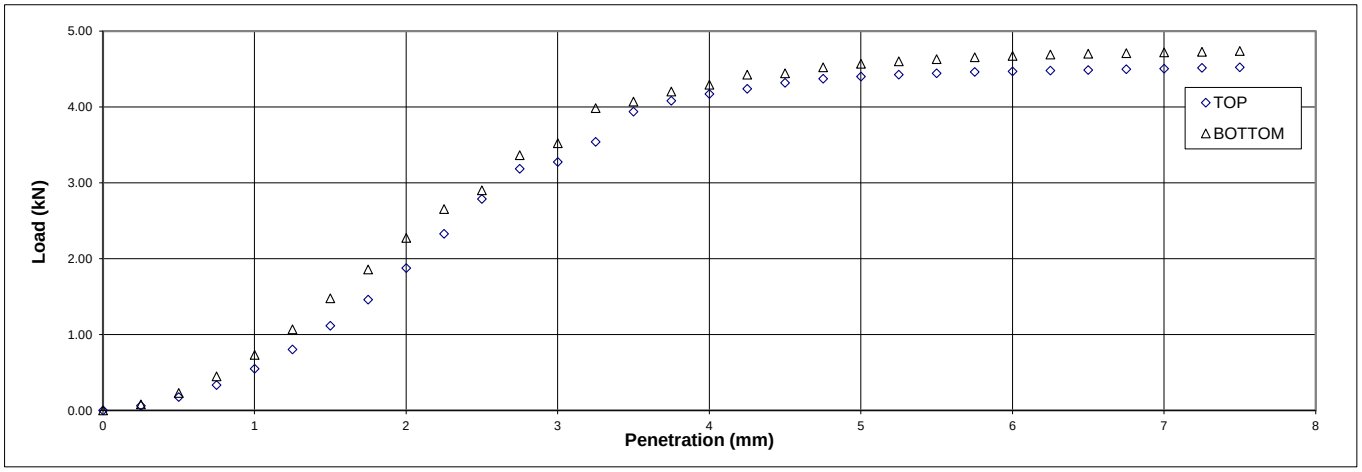
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	20	21	17	0.02
Bottom	23	21	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP038 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.84 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



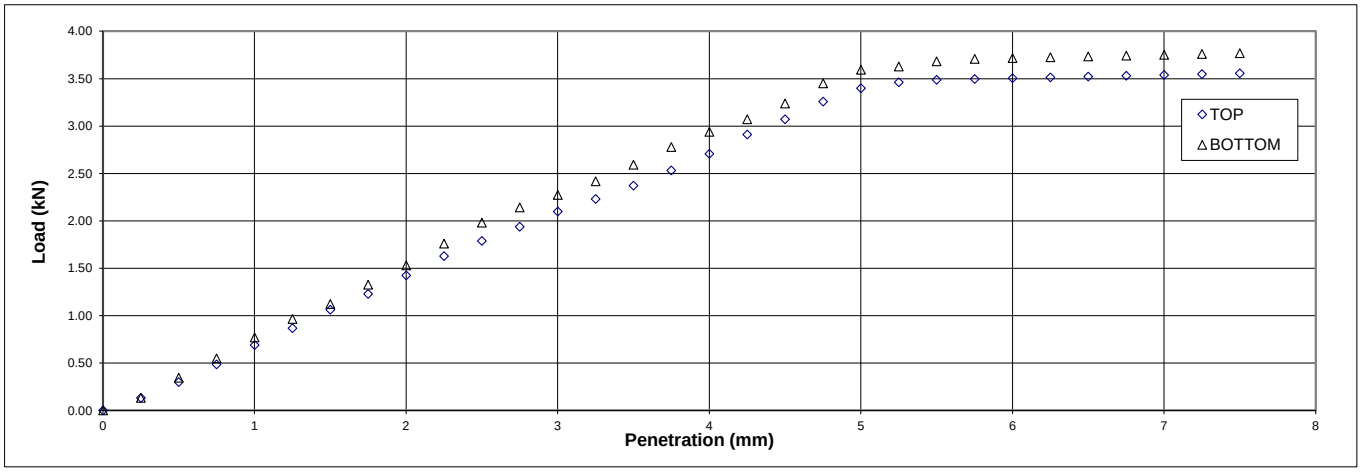
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	26	22	15	0.02
Bottom	26	23	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP039 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.76 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



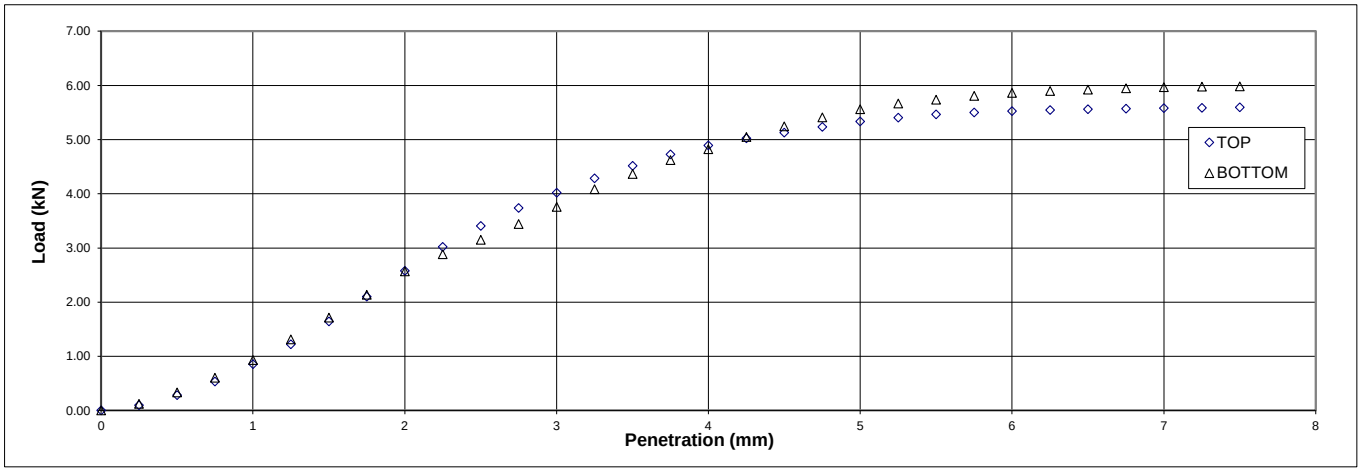
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	14	17	17	0.02
Bottom	15	18	17	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP041 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.85 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



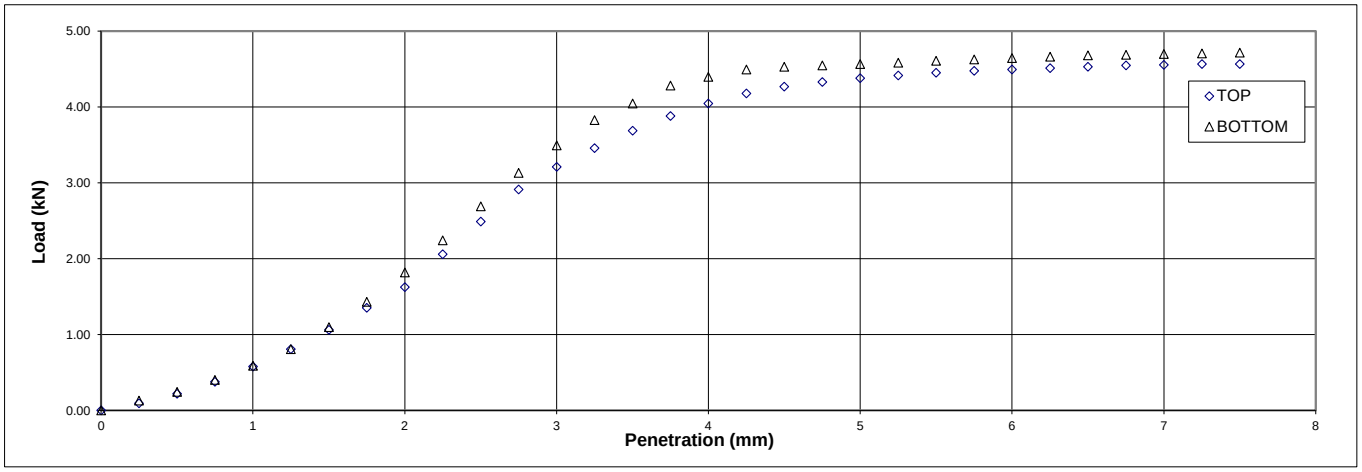
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	30	27	16	0.02
Bottom	28	29	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP042 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.76 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



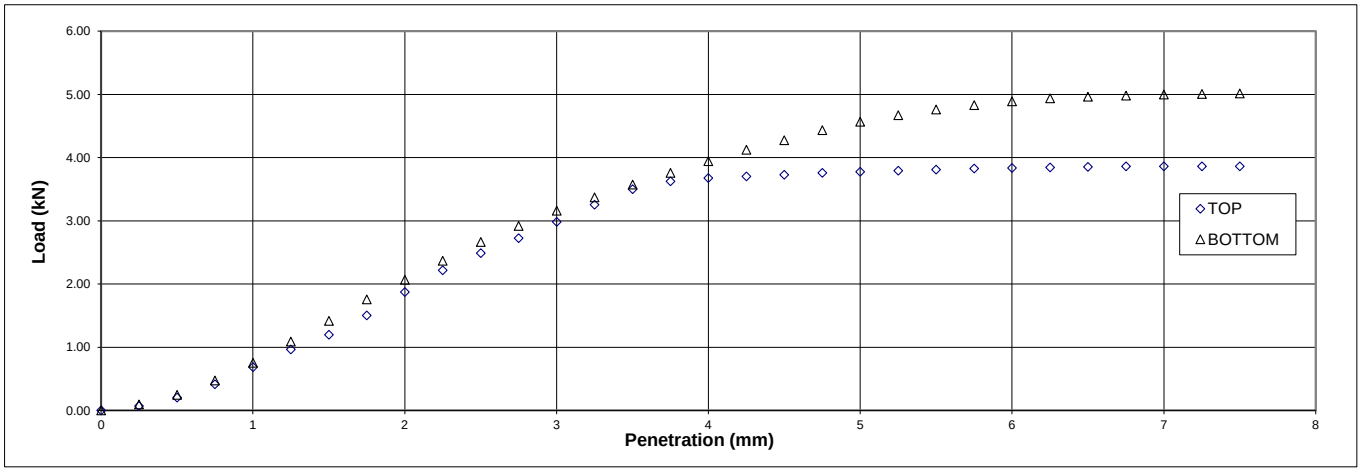
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	25	30	19	0.02
Bottom	34	35	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP043 Depth 1.00-1.50m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.81 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



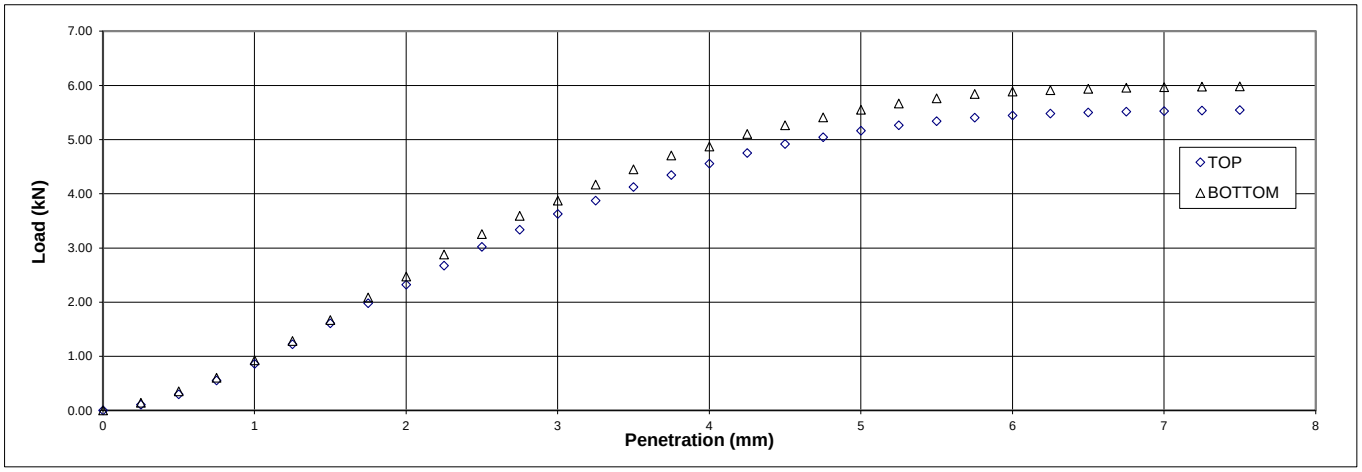
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	22	19	16	0.02
Bottom	22	23	17	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP044 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.85 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



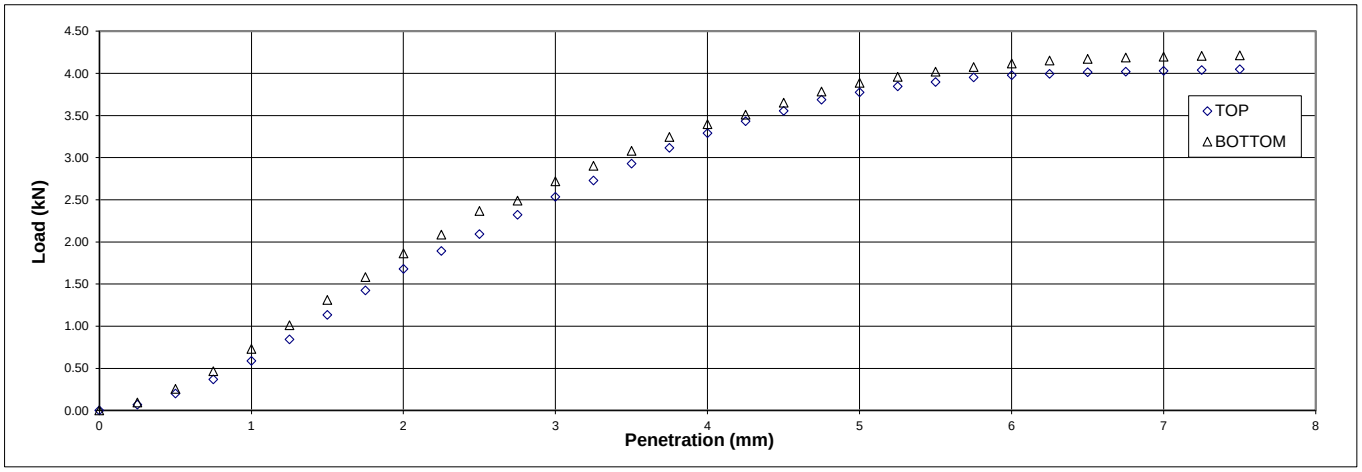
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	28	27	16	0.02
Bottom	28	29	17	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP045 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.77 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



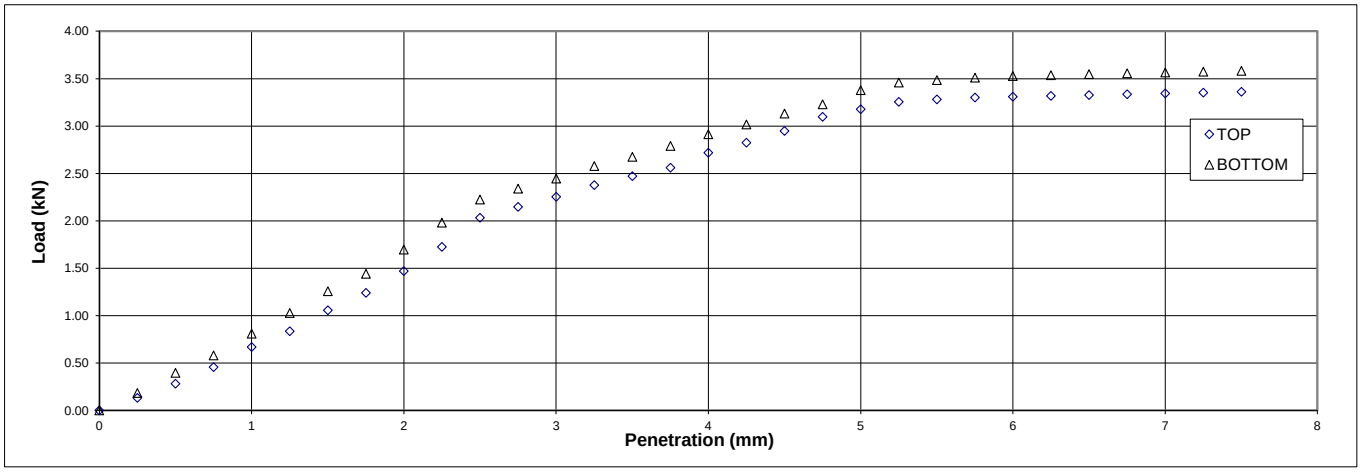
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	17	19	17	0.02
Bottom	19	20	17	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP047 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.75 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg

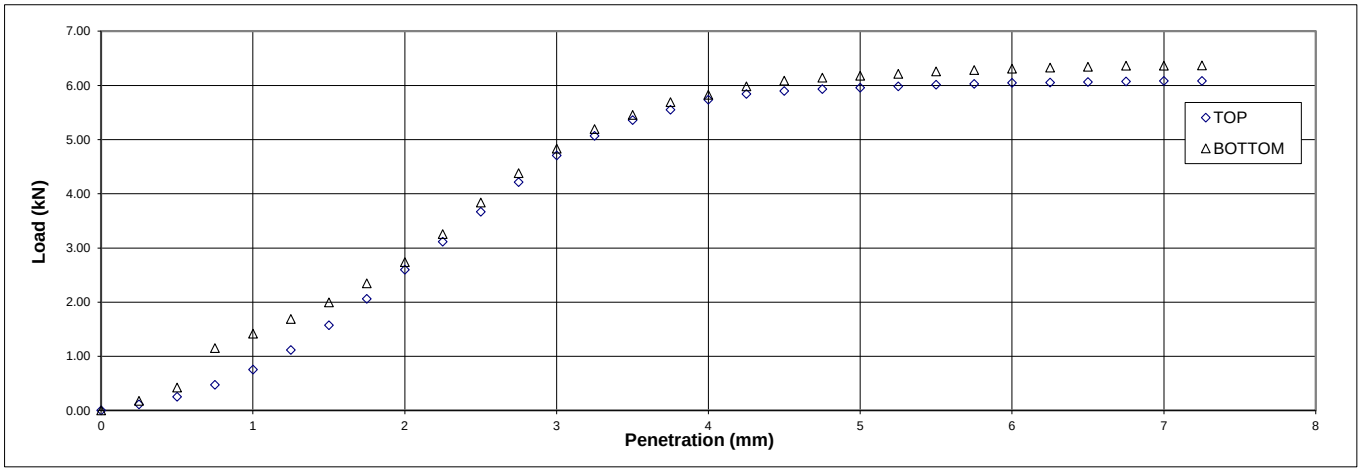


CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	16	16	17	0.02
Bottom	18	17	17	

MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	30/07/2015
Sample Location	TP049 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	05/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	08-12/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.85 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



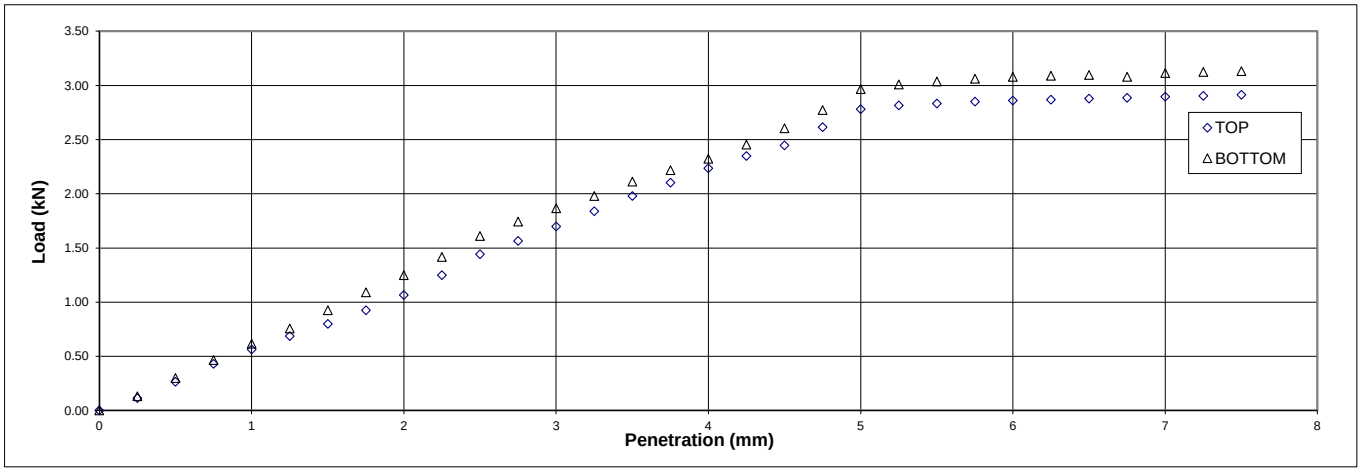
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	38	30	16	0.02
Bottom	36	31	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP051 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.74 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	14 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



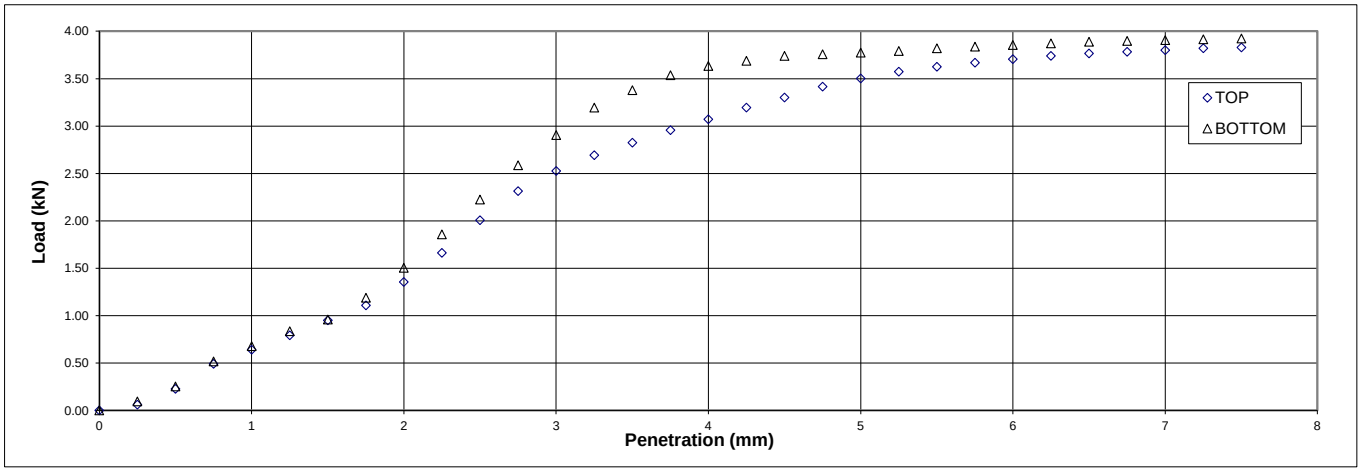
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	11	14	19	0.02
Bottom	13	15	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP053 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.75 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



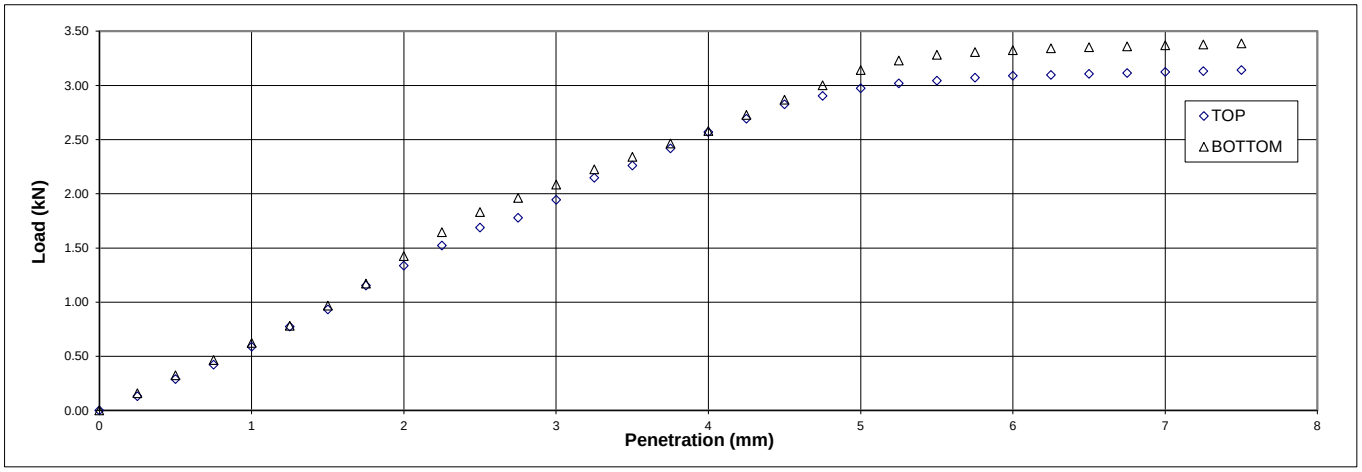
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	22	19	20	0.02
Bottom	24	19	20	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP057 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.74 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



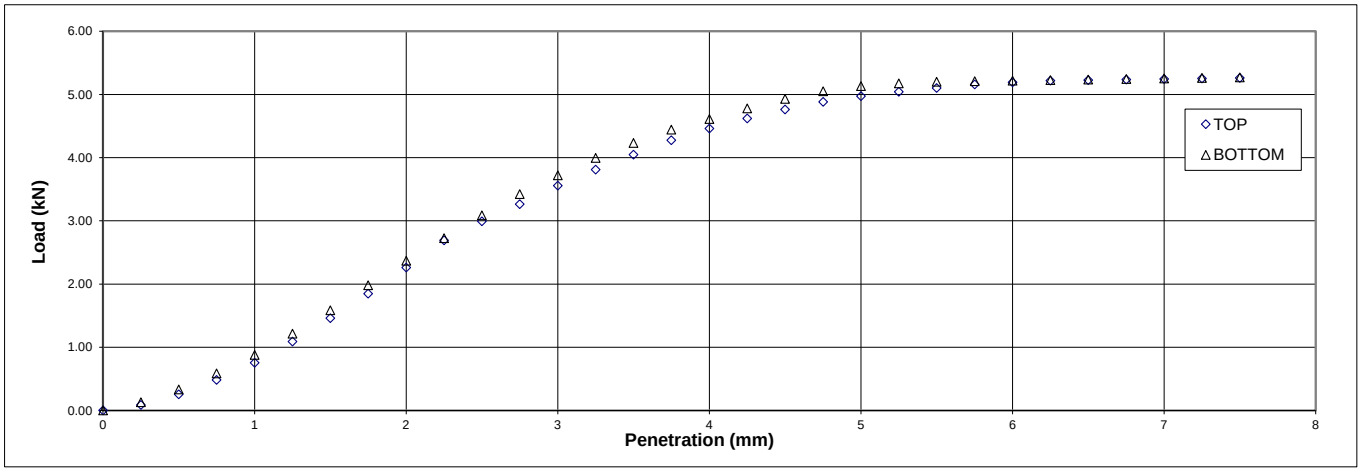
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	13	15	17	0.02
Bottom	14	16	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP058 Depth 3.00-4.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.84 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



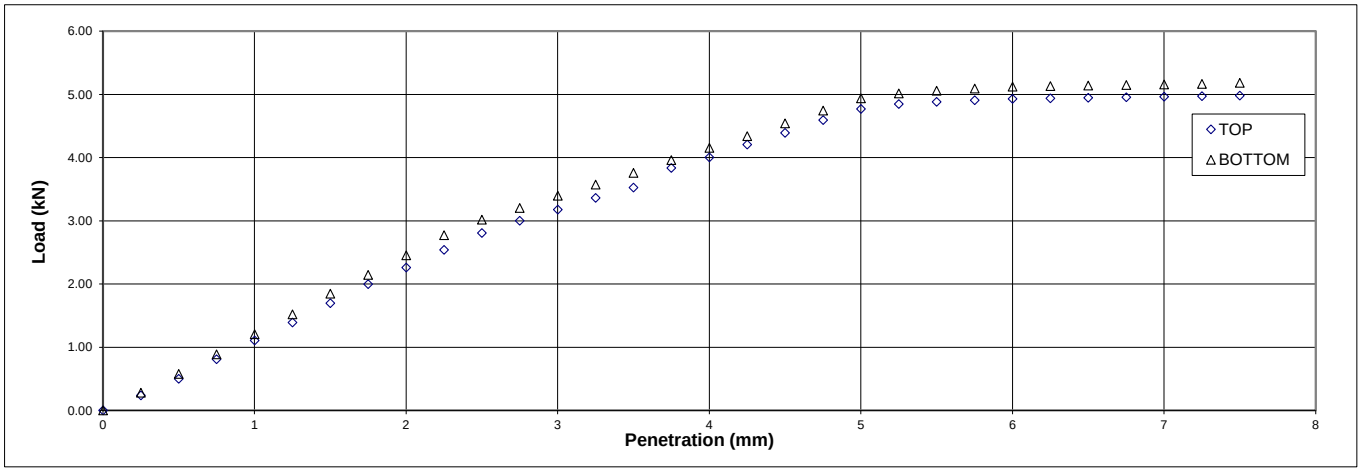
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	26	25	18	0.02
Bottom	26	26	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP059 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	10/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	13-17/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.86 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



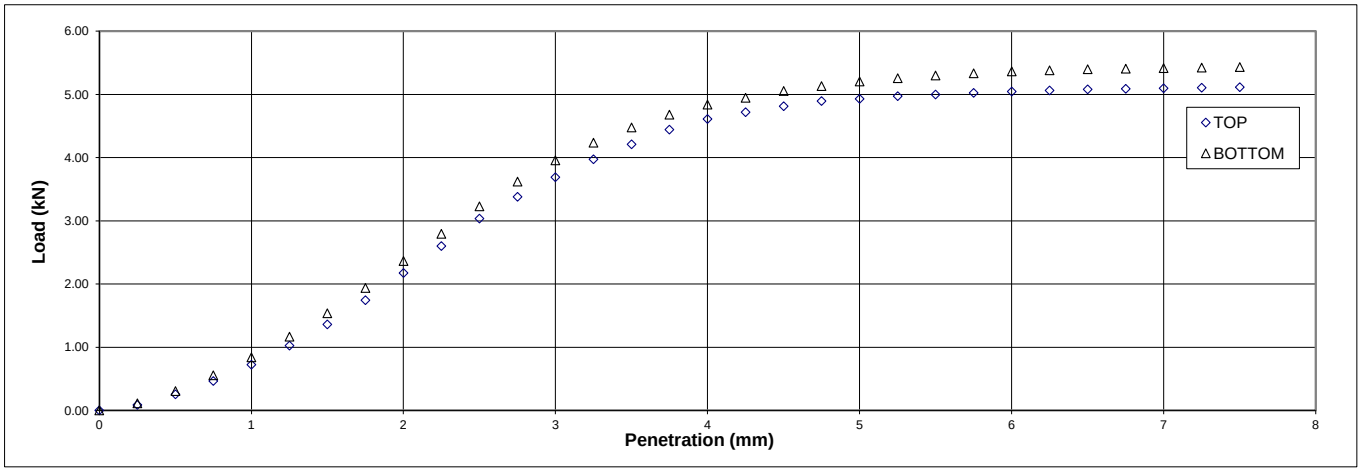
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	22	24	15	0.02
Bottom	23	25	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP060 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	23-27/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.83 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



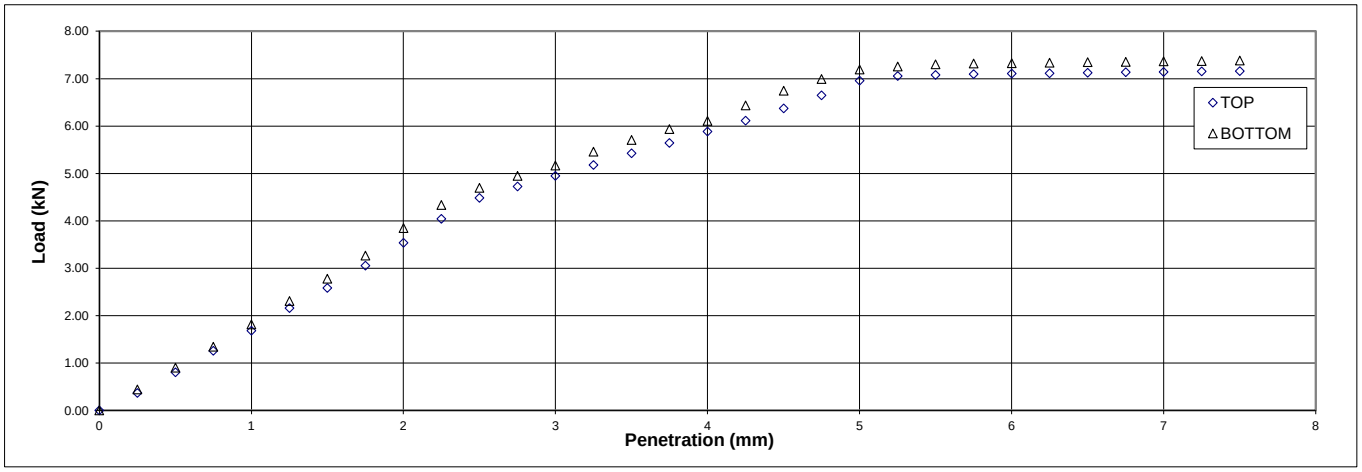
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	28	25	16	0.02
Bottom	30	26	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	31/07/2015
Sample Location	TP066 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	23-27/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.89 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



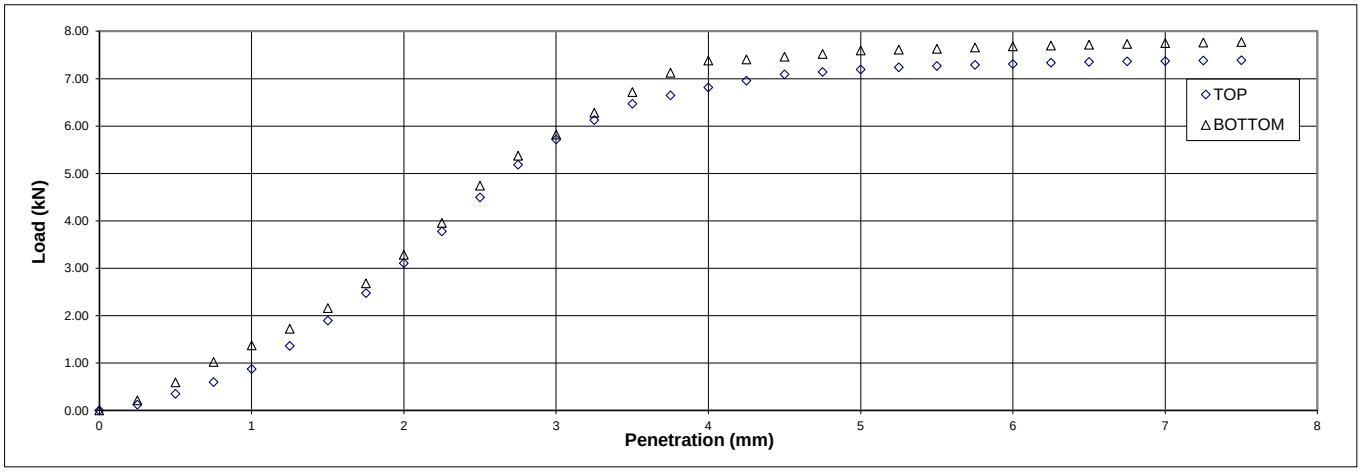
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	35	35	14	0.02
Bottom	36	36	15	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP068 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.90 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	11 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



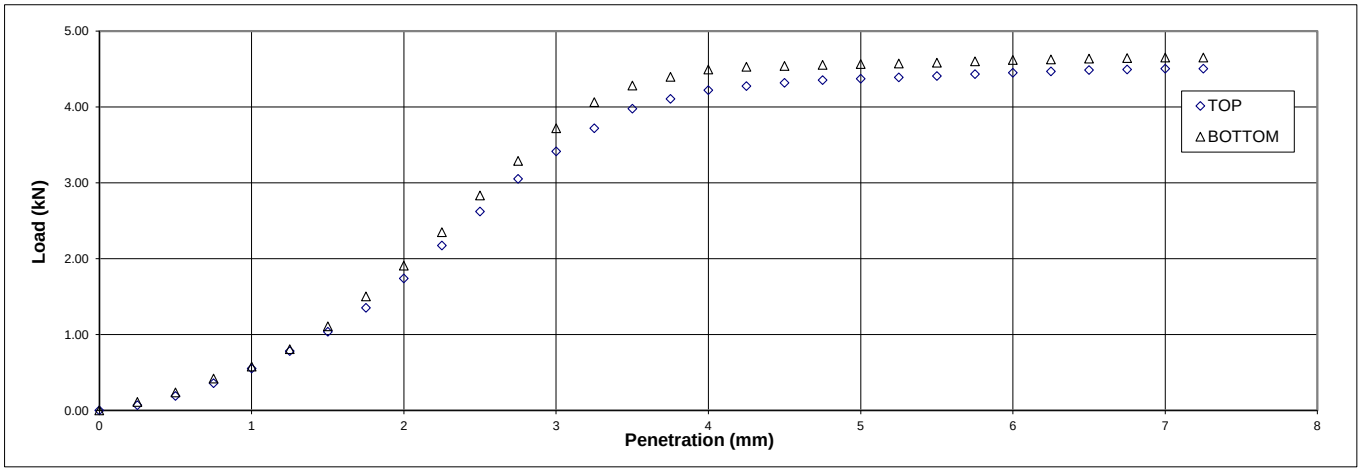
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	46	36	14	0.01
Bottom	46	38	14	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP070 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.78 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



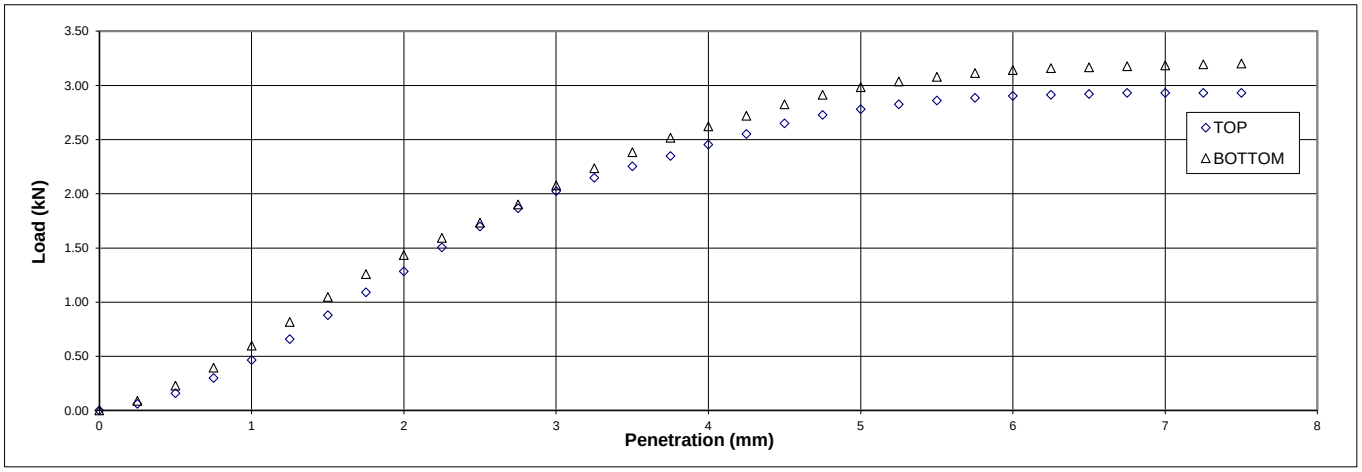
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	30	22	18	0.02
Bottom	32	23	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	01/08/2015
Sample Location	TP071 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.74 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



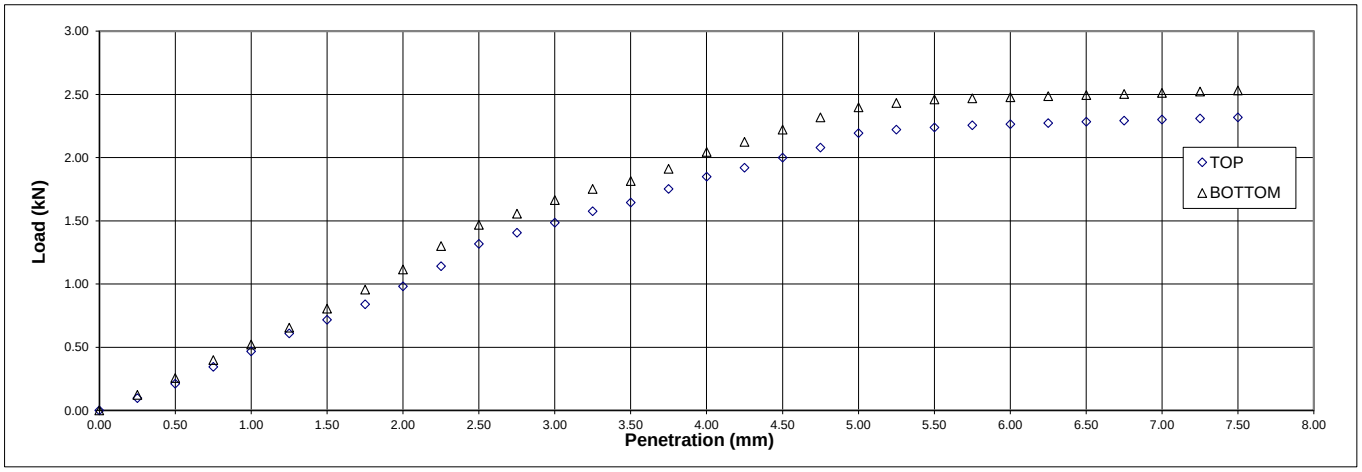
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	15	14	19	0.02
Bottom	15	15	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP072 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.73 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	13 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



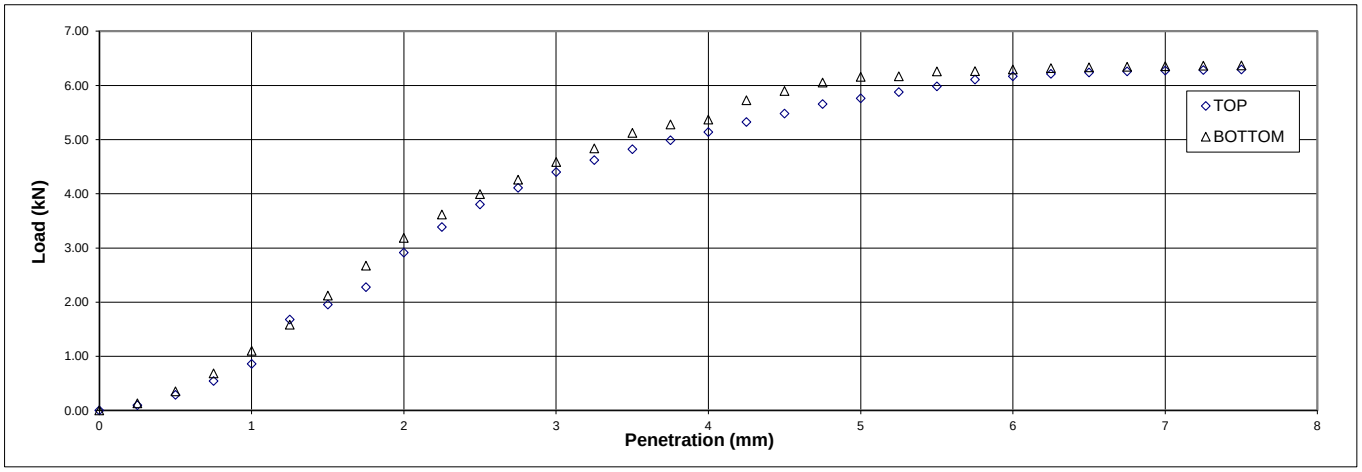
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	11	11	18	0.03
Bottom	12	12	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP075 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.83 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	12 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



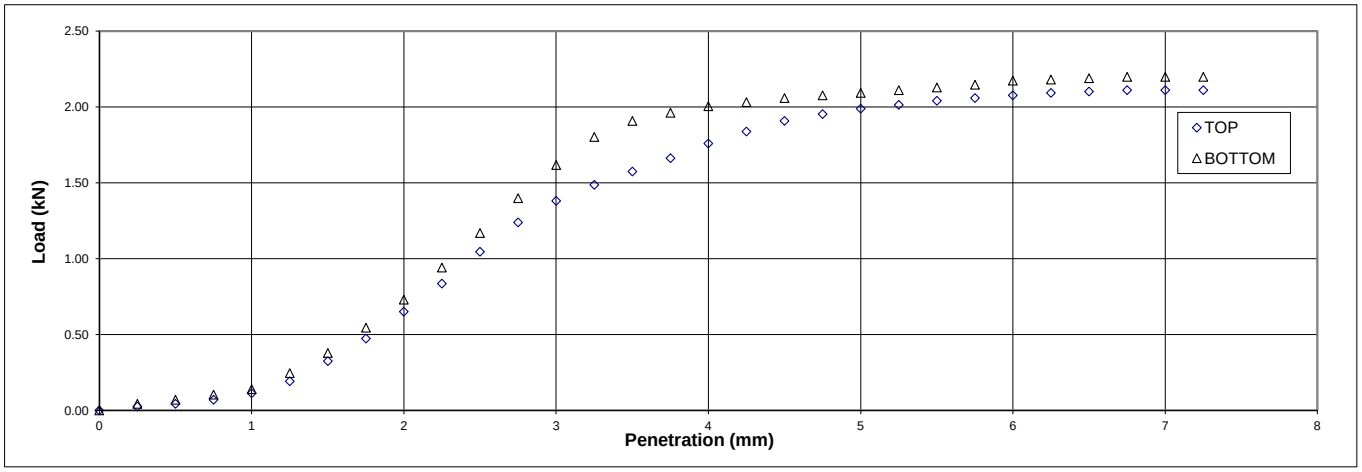
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	33	30	16	0.02
Bottom	33	31	16	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP077 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.71 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	14 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



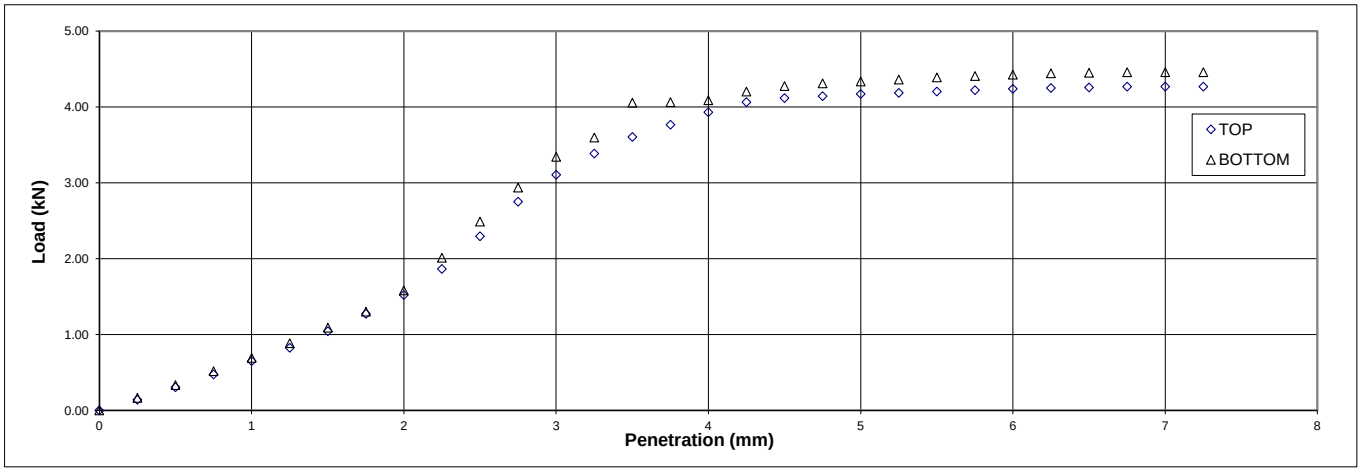
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	12	10	19	0.02
Bottom	14	11	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP079 Depth 2.00-3.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.76 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



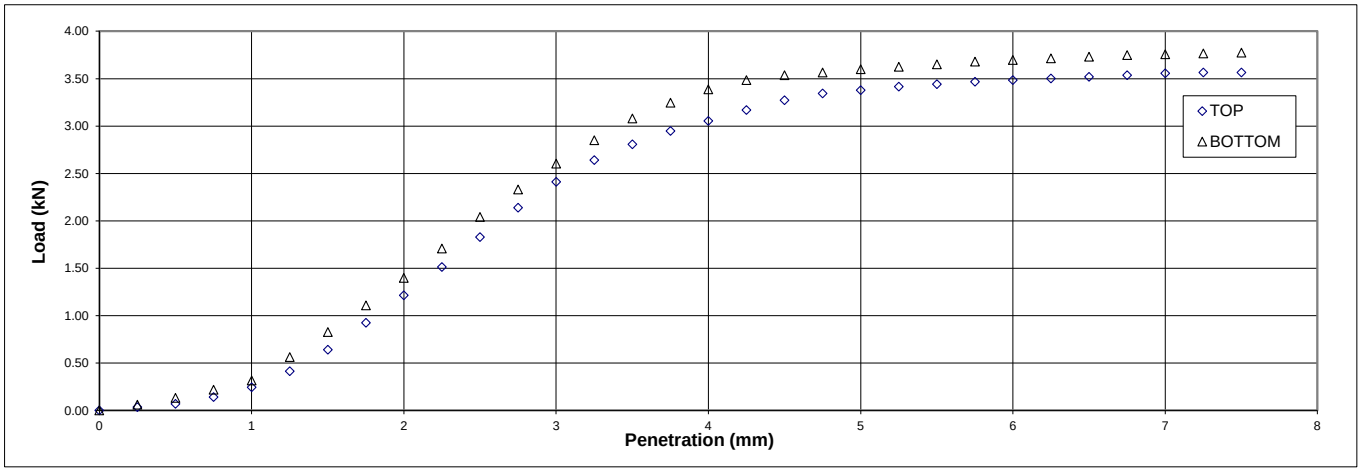
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	21	21	19	0.02
Bottom	22	22	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP081 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.75 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



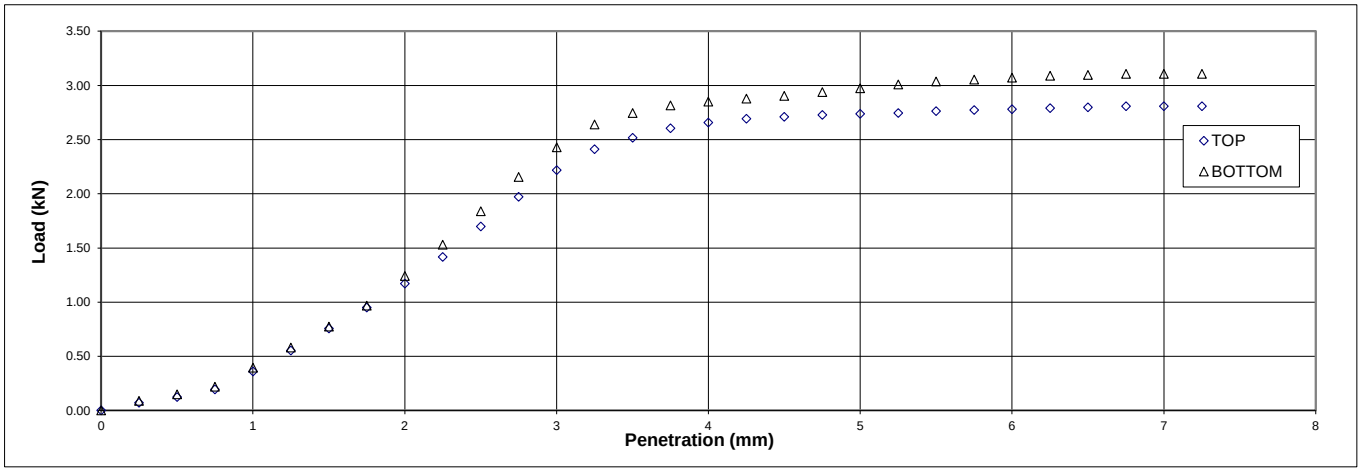
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	21	17	19	0.02
Bottom	22	18	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	02/08/2015
Sample Location	TP083 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	15/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	18-22/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.73 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	14 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



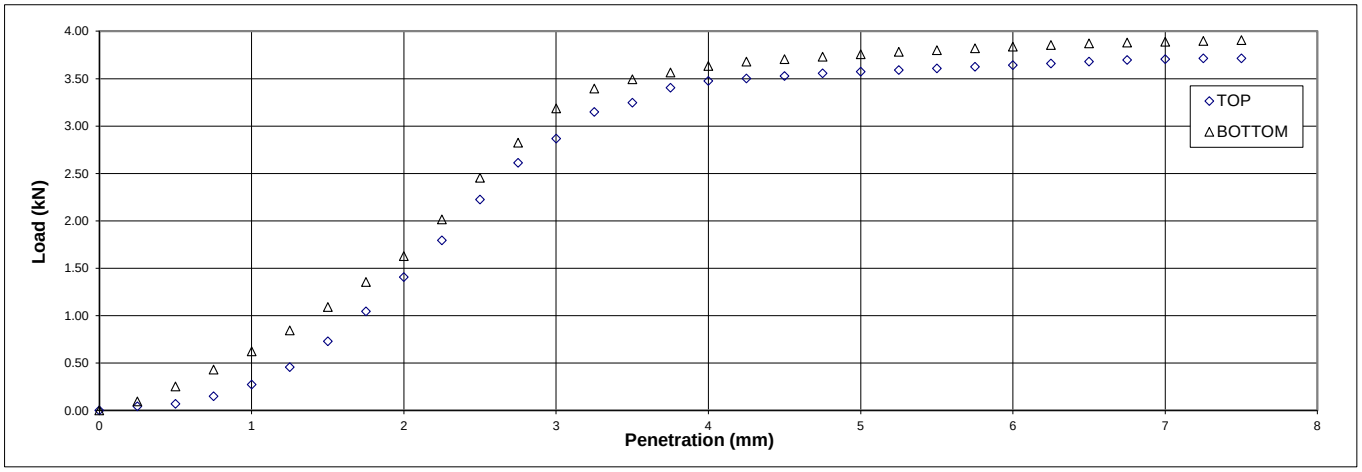
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	17	14	18	0.02
Bottom	19	15	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP086 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	23-27/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.74 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	14 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



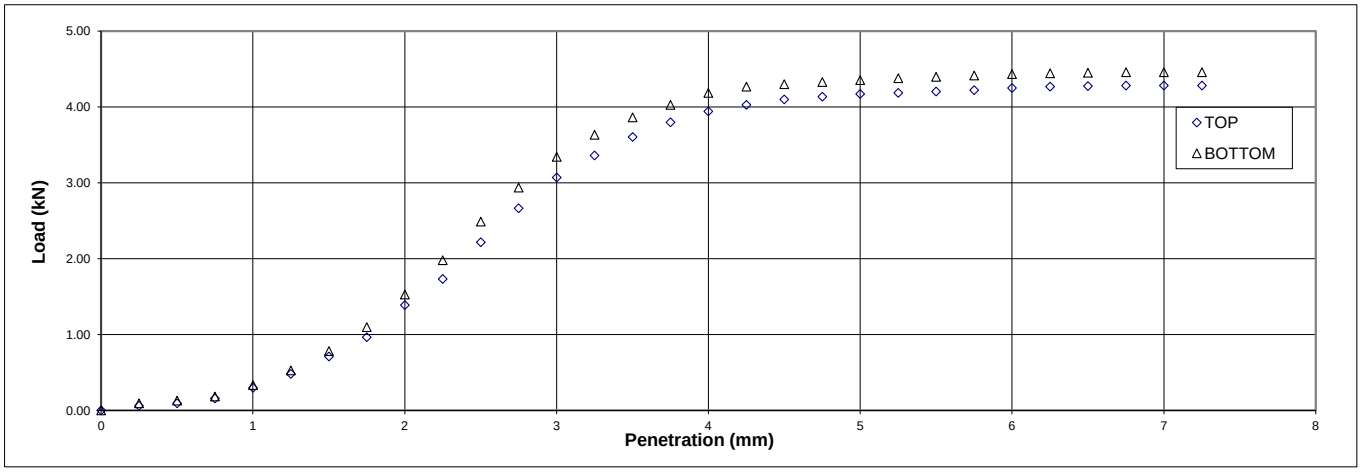
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	25	18	18	0.02
Bottom	26	19	18	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	03/08/2015
Sample Location	TP092 Depth 3.00-4.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	23-27/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.77 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



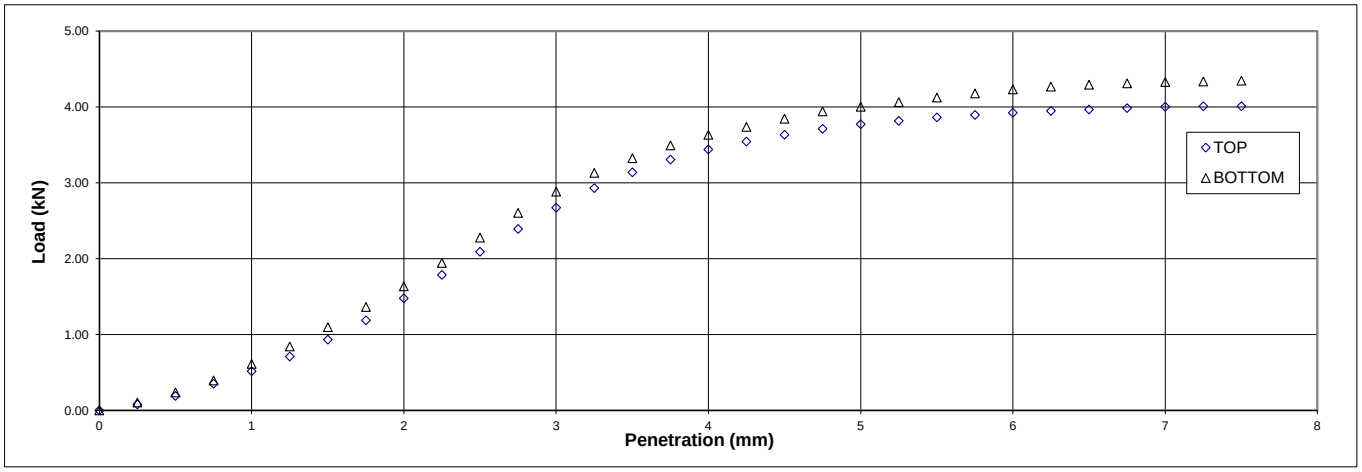
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	30	22	15	0.02
Bottom	30	22	15	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP094 Depth 1.00-2.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	23-27/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.78 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	15 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



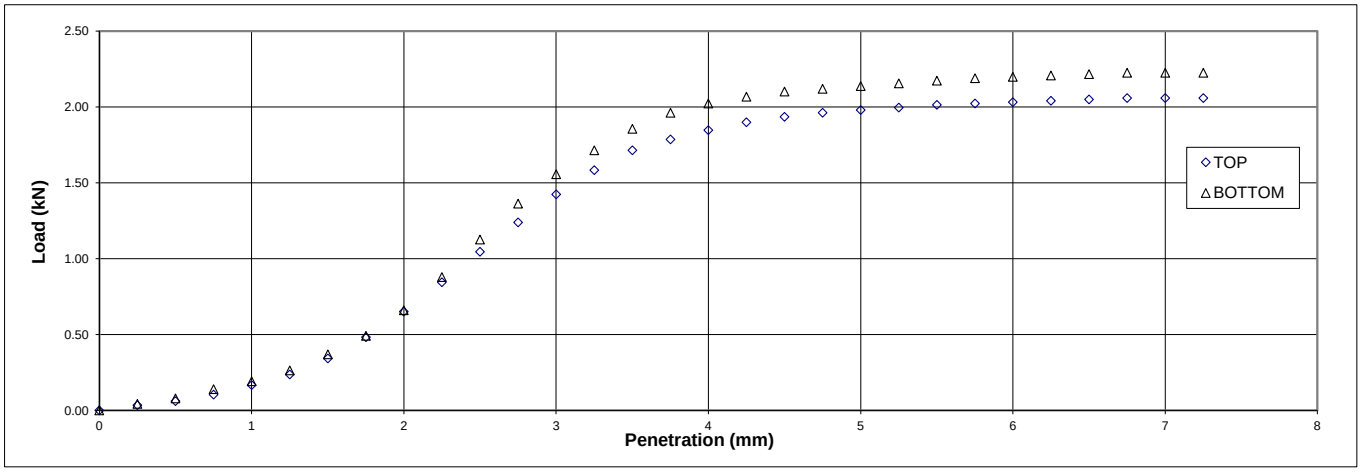
CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	21	20	19	0.02
Bottom	22	21	19	

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MATRIX LABORATORY L.L.C.

REPORT ON CALIFORNIA BEARING RATIO (CBR)

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.		
Customer	N.P.	**Date Reported**	27/08/2015
Consultant	CH2M MACE JV	**Request No.**	XSD/15-0143
Project No.	XSD/15-0143		
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Customer's Ref.**	N.P.
Sample Descr.	SAND	**Sampled By**	Matrix
Source	SITE	**Sampling Date**	04/08/2015
Sample Location	TP098 Depth 0.00-1.00m	**Sampling Cert.**	N.P.
Lot No.	N.P.	**Sampling Method**	ASTM D-75-09
Lot Size	N.P.	**Sample size**	90 kg.
Initial Sample Prep.	BS 1377:P1:1990 (Amd. 13925-02), Cl. 7.6	**Sample Brt. In By**	Matrix
Sample Prep.	BS 1377:P4:1990 (Amd. 13925-02), Cl. 7.2.3.2	**Date Received**	20/08/2015
Test Method	BS 1377:P4:1990 (Amd. 13925-02), Test 7	**Date Tested**	23-27/08/2015
Test Method Var.	Nil	**Tested By**	ERWIN
Oversize Mat. Ren. (%)	NIL	**Initial Sample Density**	1.71 Mg/m^3
Cond. Of Sample	Soaked	**Initial Moist. Cont.**	14 %
Sample Prep. Method	Static Compression	**Soaking Period**	96 Hrs.
Remarks	CBR @ 95% M.D.D.	**Surcahrge**	4.5 Kg



CBR Value (%)	@ 2.5mm	@ 5.0mm	Final Moisture Content (%)	Swell %
Top	12	10	19	0.02
Bottom	13	11	19	

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APPENDIX D

FIELD TESTS

APPENDIX D1

PERMEABILITY TEST RESULTS

MATRIX LABORATORY L.L.C

TABLE D - 1

REPORT ON PERMEABILITY TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	**Report No.**	XSD/15-0143
Contractor	N.P.	**Date Reported**	23/08/2015
Consultant	CH2M MACE JV	**Request No.**	N.P.
Project No.	XSD/15-0143	**Customer's Ref.**	N.P.
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	**Date Tested**	21/06-10/08/2015
Test Method	BS 5930: 1999+A2:2010 Cl. 25.4	**Test Location**	Check Below
Test Method Var.	Nil	**Tested By**	Navas

TEST RESULTS :

Test No.	Location	Depth (m)	Permeability (m/sec)
1	BH-A55	2.0 - 3.0	9.47E-05
2	BH-B15	4.0 - 5.0	1.04E-04
3	BH-B16	3.0 - 4.0	7.45E-05
4	BH-A01	3.0 - 4.0	9.45E-05
5	BH-A02	4.0 - 5.0	1.17E-04
6	BH-B08	3.0 - 4.0	8.43E-05
7	BH-B09	2.0 - 3.0	6.73E-05
8	BH-B10	3.0 - 4.0	7.78E-05
9	BH-C17	5.0 - 6.0	1.08E-04
10	BH-A05	3.0 - 4.0	1.17E-04
11	BH-A08	4.0 - 5.0	8.70E-05
12	BH-B12	5.0 - 6.0	9.80E-05
13	BH-A11	2.0 - 3.0	6.92E-05
14	BH A14	2.0 - 3.0	1.48E-04
15	BH-A42	2.0 - 3.0	1.16E-04
16	BH B58	6.5 - 7.5	7.45E-05
17	BH-B33	3.0 - 4.0	9.07E-05

Test No.	Location	Depth (m)	Permeability (m/sec)
18	BH-B36	3.0 - 4.0	1.43E-04
19	BH-B40	4.0 - 5.0	6.90E-05
20	BH-B42	2.0 - 3.0	4.79E-05
21	BH-B19	5.0 - 6.0	6.06E-05
22	BH-B46	4.0 - 5.0	7.68E-05
23	BH-C24	5.0 - 6.0	4.79E-05
24	BH-C27	2.0 - 3.0	1.99E-04
25	BH-A54	4.0 - 5.0	4.62E-05
26	BH-B22	2.0 - 3.0	7.68E-05
27	BH-B26	4.0 - 5.0	6.77E-05
28	BH-A49	3.0 - 4.0	1.51E-04
29	BH-B48	4.0 - 5.0	9.82E-05
30	BH-B52	3.0 - 4.0	6.85E-05
31	BH-A45	5.0 - 6.0	1.69E-04
32	BH-B28	2.0 - 3.0	4.28E-05
33	BH-A18	3.0 - 4.0	4.00E-05
34	BH-A21	2.0 - 3.0	4.51E-05
35	BH-A24	3.0 - 4.0	7.68E-05
36	BH-A27	2.0 - 3.0	3.82E-05
37	BH-A31	2.0 - 3.0	1.17E-04
38	BH-A35	3.0 - 4.0	4.79E-05
39	BH-A37	2.0 - 3.0	4.76E-05
40	BH-A40	3.0 - 4.0	6.85E-05

APPENDIX D2

MEXE-CONE PENETRATION TEST RESULTS

MATRIX LABORATORY L.L.C.

TABLE D2 - 1
REPORT ON MEXE CONE PENETRATION TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Consultant	CH2M MACE JV	Date Reported	23/08/2015
Project Name	PROPOSED PN1403-DTCJA EXPO DEVELOPMENT	Date Tested	12-17/08/2015
Test Method	Soil Assessment Cone Penetrometer - British Army	Tested By	Erwin

TEST RESULTS :

Test Location	Test Depth (mbgl)	Penetration Depth (mm)	CBR (%)			
			Test 1	Test 2	Test 3	AVERAGE
TP01	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP02	0.00	75.0	13.0	10.0	11.0	11.3
TP03	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP04	0.00	75.0	12.0	11.0	12.0	11.7
TP05	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP06	0.00	75.0	1.8	1.5	1.8	1.6
		150.0	14.0	13.0	14.0	13.7
TP07	0.00	75.0	2.0	2.5	2.3	2.3
		150.0	12.5	12.0	13.0	12.5
TP08	0.00	75.0	2.7	3.0	2.5	2.7
TP09	0.00	75.0	4.5	5.0	4.2	4.6
TP10	0.00	75.0	12.0	9.0	10.0	10.3
TP11	0.00	75.0	6.5	7.0	7.1	6.9
TP12	0.00	75.0	2.6	3.0	2.5	2.7
TP13	0.00	75.0	9.0	11.0	10.0	10.0
TP14	0.00	75.0	3.9	2.2	4.5	3.5
		150.0	11.0	13.0	14.0	12.7
TP15	0.00	75.0	8.0	10.0	9.6	9.2
TP16	0.00	75.0	7.5	3.1	5.3	5.3
		150.0	14.0	14.0	14.0	14.0
TP17	0.00	75.0	11.0	10.0	9.5	10.2
TP18	0.00	75.0	2.6	1.8	2.0	2.1
		150.0	10.5	14.5	12.0	12.3
	0.50	75.0	10.0	11.0	10.0	10.3
TP19	0.00	75.0	2.2	1.6	2.0	1.9
		150.0	5.0	5.2	4.8	5.0
		225.0	11.0	12.0	10.0	11.0
		300.0	14.0	14.0	13.0	13.7
	0.50	75.0	12.0	8.0	11.0	10.3

Test Location	Test Depth (mbgl)	Penetration Depth (mm)	CBR (%)			
			Test 1	Test 2	Test 3	AVERAGE
TP20	0.00	75.0	1.5	2.0	1.8	1.8
		150.0	10.0	11.0	10.0	10.3
	0.50	75.0	7.0	9.0	6.0	7.3
TP21	0.00	75.0	1.2	2.0	2.1	1.8
		150.0	12.0	11.0	11.0	11.3
	0.50	75.0	12.0	10.0	10.0	10.7
TP22	0.00	75.0	3.0	1.6	2.5	2.4
		150.0	11.0	13.0	14.0	12.7
	0.50	75.0	10.0	12.0	9.0	10.3
TP23	0.00	75.0	0.5	1.0	0.7	0.7
		150.0	11.0	14.0	12.0	12.3
	0.50	75.0	11.0	12.2	10.0	11.1
TP24	0.00	75.0	4.0	3.5	3.8	3.8
		150.0	12.0	13.0	12.0	12.3
	0.50	75.0	12.0	11.0	11.0	11.3
TP25	0.00	75.0	1.0	0.5	1.1	0.9
		150.0	9.0	10.0	9.5	9.5
	0.50	75.0	10.0	12.0	12.2	11.4
TP26	0.00	75.0	3.0	2.5	2.0	2.5
		150.0	11.0	12.0	11.0	11.3
	0.50	75.0	12.0	11.0	12.5	11.8
TP27	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP28	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP29	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP30	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP31	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP32	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP33	0.00	75.0	7.0	6.5	7.4	7.0
TP34	0.00	75.0	6.0	5.8	6.5	6.1
TP35	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP36	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP37	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP38	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP39	0.00	75.0	0.5	0.8	1.0	0.8
		150.0	14.0	12.0	14.0	13.3
	0.50	75.0	8.0	7.5	8.2	7.9
TP40	0.00	75.0	N.P.	N.P.	N.P.	N.P.

Test Location	Test Depth (mbgl)	Penetration Depth (mm)	CBR (%)			
			Test 1	Test 2	Test 3	AVERAGE
TP41	0.00	75.0	7.0	5.0	7.0	6.3
		150.0	14.0	13.0	14.0	13.7
	0.50	75.0	12.0	11.5	13.0	12.2
TP42	0.00	75.0	13.0	14.0	12.0	13.0
TP43	0.00	75.0	11.0	9.5	10.5	10.3
TP44	0.00	75.0	0.5	1.0	0.5	0.7
		150.0	2.0	2.5	1.5	2.0
		225.0	11.0	12.0	10.0	11.0
	0.50	75.0	5.0	8.0	6.5	6.5
TP45	0.00	75.0	0.9	1.5	1.0	1.1
		15.0	7.5	6.5	7.0	7.0
		225.0	14.0	13.5	14.0	13.8
	0.00	75.0	2.0	2.0	2.5	2.2
TP46	0.00	75.0	9.0	7.0	8.5	8.2
TP47	0.00	75.0	0.5	1.0	0.9	0.8
		150.0	6.0	5.0	5.5	5.5
		225.0	12.0	10.0	11.5	11.2
	0.50	75.0	2.0	1.5	1.5	1.7
		150.0	13.0	12.0	10.5	11.8
TP48	0.00	75.0	2.0	1.5	2.5	2.0
		150.0	12.0	11.0	10.2	11.1
	0.50	75.0	7.0	5.5	6.5	6.3
TP49	0.00	75.0	1.5	2.0	2.5	2.0
		150.0	7.0	5.5	6.5	6.3
		225.0	14.0	14.5	13.0	13.8
	0.50	75.0	7.0	10.5	8.8	8.8
TP50	0.00	75.0	10.1	9.5	12.0	10.5
TP51	0.00	75.0	1.9	2.0	2.5	2.1
		150.0	6.0	8.5	9.0	7.8
		225.0	14.5	14.0	14.5	14.3
	0.50	75.0	5.0	3.5	6.2	4.9
TP52	0.00	75.0	3.0	4.5	6.2	4.6
		150.0	14.0	11.5	12.5	12.7
TP53	0.00	75.0	0.2	0.5	0.9	0.5
		150.0	2.5	2.0	204.0	69.5
		225.0	12.5	11.5	12.0	12.0
	0.50	75.0	7.0	6.5	7.0	6.8

Test Location	Test Depth (mbgl)	Penetration Depth (mm)	CBR (%)			
			Test 1	Test 2	Test 3	AVERAGE
TP54	0.00	75.0	3.0	2.5	1.8	2.4
		150.0	8.0	8.0	6.2	7.4
		225.0	14.0	12.1	13.5	13.2
	0.50	75.0	5.0	4.5	6.2	5.2
TP55	0.00	75.0	1.2	0.5	1.5	1.1
		150.0	5.0	4.5	6.0	5.2
		225.0	12.0	12.5	11.5	12.0
	0.50	75.0	10.0	9.5	10.0	9.8
TP56	0.00	75.0	5.0	3.5	4.0	4.2
		150.0	12.5	14.0	13.5	13.3
TP57	0.00	75.0	3.0	4.5	3.5	3.7
		150.0	12.0	10.0	9.5	10.5
	0.50	75.0	3.5	5.0	4.0	4.2
TP58	0.00	75.0	0.6	1.2	1.5	1.1
		150.0	5.1	6.5	5.0	5.5
		225.0	13.0	14.5	14.0	13.8
	0.50	75.0	3.1	4.2	4.5	3.9
		150.0	12.0	9.5	10.0	10.5
TP59	0.00	75.0	10.5	12.0	11.0	11.2
TP60	0.00	75.0	8.5	7.0	8.0	7.8
TP61	0.00	75.0	3.0	2.5	3.5	3.0
		150.0	10.5	11.0	12.0	11.2
	0.50	75.0	7.5	10.0	9.0	8.8
TP62	0.00	75.0	1.0	2.5	3.0	2.2
		150.0	13.5	12.3	14.0	13.3
TP63	0.00	75.0	10.2	9.5	11.0	10.2
TP64	0.00	75.0	0.9	2.5	1.5	1.6
		150.0	10.5	14.5	12.0	12.3
TP65	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP66	0.00	75.0	1.0	2.1	1.5	1.5
		150.0	11.0	11.5	10.0	10.8
TP67	0.00	75.0	12.0	14.0	13.5	13.2
TP68	0.00	75.0	11.5	14.0	13.5	13.0
TP69	0.00	75.0	10.0	13.0	11.0	11.3
TP70	0.00	75.0	7.5	10.5	12.0	10.0
TP71	0.00	75.0	7.0	8.5	7.5	7.7
		150.0	14.0	13.0	12.5	13.2

Test Location	Test Depth (mbgl)	Penetration Depth (mm)	CBR (%)			
			Test 1	Test 2	Test 3	AVERAGE
TP72	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP73	0.00	75.0	N.P.	14.0	N.P.	14.0
TP74	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP75	0.00	75.0	12.0	14.5	13.0	13.2
TP76	0.00	75.0	12.5	14.0	13.0	13.2
TP77	0.00	75.0	3.0	2.5	4.0	3.2
		150.0	5.5	6.0	8.0	6.5
		225.0	12.0	14.0	11.5	12.5
	0.50	75.0	8.0	7.5	6.5	7.3
TP78	0.00	75.0	2.5	2.0	2.5	2.3
		150.0	8.0	5.0	7.0	6.0
		225.0	11.0	10.2	14.0	11.7
	0.50	75.0	6.0	5.2	5.5	5.6
TP79	0.00	75.0	2.0	3.2	2.5	2.6
		150.0	4.5	6.0	5.5	5.3
		225.0	12.0	11.0	14.0	12.3
	0.50	75.0	5.2	7.5	6.5	6.4
TP80	0.00	75.0	N.P.	N.P.	N.P.	N.P.
TP81	0.00	75.0	5.0	4.2	6.5	5.2
		150.0	12.0	10.5	14.0	12.2
	0.50	75.0	9.0	6.7	10.5	8.7
TP82	0.00	75.0	2.0	1.5	2.5	2.0
		150.0	10.1	9.5	14.0	11.2
	0.50	75.0	6.5	8.2	9.1	7.9
TP83	0.00	75.0	0.9	1.8	2.5	1.7
		150.0	11.2	13.0	12.5	12.2
TP84	0.00	75.0	1.0	1.5	1.2	1.2
		150.0	9.2	11.0	10.0	10.1
TP85	0.00	75.0	10.2	9.1	11.0	10.1
TP86	0.00	75.0	2.0	1.8	2.9	2.2
		150.0	12.0	11.2	11.0	11.4
	0.50	75.0	10.5	14.0	12.5	12.3
TP87	0.00	75.0	1.0	2.0	0.8	1.3
		150.0	10.5	9.0	9.2	9.6
	0.50	75.0	8.5	7.0	7.5	7.7
TP88	0.00	75.0	0.5	1.0	0.5	0.7
		150.0	6.7	5.2	6.0	5.8

Test Location	Test Depth (mbgl)	Penetration Depth (mm)	CBR (%)			
			Test 1	Test 2	Test 3	AVERAGE
[illegible]		225.0	14.0	11.5	12.5	12.7
	0.50	75.0	N.P.	N.P.	N.P.	N.P.
TP89	0.00	75.0	0.5	0.6	0.9	0.7
		150.0	3.2	4.0	3.5	3.6
		225.0	12.0	11.5	10.5	11.3
	0.50	75.0	12.5	13.0	11.5	12.3
TP90	0.00	75.0	6.0	7.5	5.5	6.3
	0.50	75.0	2.0	1.8	1.8	1.9
		150.0	11.5	14.0	12.0	12.5
TP91	0.00	75.0	9.2	8.5	9.0	8.9
TP92	0.00	75.0	1.2	2.0	0.8	1.3
		150.0	10.5	10.0	11.2	10.6
TP93	0.00	75.0	2.5	1.5	2.1	2.0
		150.0	10.0	12.0	11.5	11.2
TP94	0.00	75.0	0.6	1.2	1.0	0.9
		150.0	10.5	11.0	12.5	11.3
	0.50	75.0	7.0	9.5	8.2	8.2
TP95	0.00	75.0	2.5	1.0	2.0	1.8
		150.0	10.0	11.5	12.0	11.2
TP96	0.00	75.0	0.5	1.5	1.0	1.0
		150.0	10.2	14.0	12.5	12.2
	0.50	75.0	3.0	5.2	4.5	4.2
TP97	0.00	75.0	10.1	12.5	13.0	11.9
TP98	0.00	75.0	2.5	1.9	2.1	2.2
		150.0	14.0	12.5	10.0	12.2
TP99	0.00	75.0	6.2	7.5	8.0	7.2
TP100	0.00	75.0	3.0	5.2	4.5	4.2
		150.0	11.5	13.5	12.0	12.3

APPENDIX D3

DYNAMIC CONE PENETRATION TEST RESULTS

MATRIX LABORATORY L.L.C.

TABLE D3 - 1
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	12/06/2015
Project No.	XSD/15-0143	Test Location	TP-01
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	42	-	-	-	-	-
1	54	12	12	1	12	18.1
5	67	13	3	1	3	100.0
5	78	11	2	1	2	100.0
5	86	8	2	1	2	100.0
5	90	4	1	1	1	100.0
5	93	3	1	1	1	100.0
5	95	2	0	1	0	100.0
5	96	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 2
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-02
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	67	-	-	-	-	-
1	103	36	36	1	36	5.3
1	136	33	33	1	33	5.8
1	154	18	18	1	18	11.5
1	172	18	18	1	18	11.5
1	181	9	9	1	9	24.9
5	190	9	2	1	2	100.0
5	197	7	1	1	1	100.0
5	201	4	1	1	1	100.0
5	203	2	0	1	0	100.0
5	204	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 3
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-03
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	31	-	-	-	-	-
1	72	41	41	1	41	4.6
1	116	44	44	1	44	4.2
1	142	26	26	1	26	7.6
1	163	21	21	1	21	9.6
1	174	11	11	1	11	19.9
5	184	10	2	1	2	100.0
5	190	6	1	1	1	100.0
5	195	5	1	1	1	100.0
5	197	2	0	1	0	100.0
5	199	2	0	1	0	100.0
5	200	1	0	2	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 4
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-04
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	67	-	-	-	-	-
1	89	22	22	1	22	9.2
1	122	33	33	1	33	5.8
1	134	12	12	1	12	18.1
1	143	9	9	1	9	24.9
1	151	8	8	1	8	28.4
5	197	46	9	1	9	24.3
5	220	23	5	1	5	52.9
5	249	29	6	1	6	40.8
5	267	18	4	1	4	69.6
5	289	22	4	1	4	55.6
5	309	20	4	1	4	61.8
5	330	21	4	1	4	58.5
5	349	19	4	1	4	65.5
5	382	33	7	1	7	35.3
5	401	19	4	1	4	65.5
5	425	24	5	1	5	50.4
5	450	25	5	1	5	48.1
5	469	19	4	1	4	65.5
5	477	8	2	1	2	100.0
5	483	6	1	1	1	100.0
5	487	4	1	1	1	100.0
5	489	2	0	1	0	100.0
5	490	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 5
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-05
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	59	-	-	-	-	-
1	170	111	111	1	111	1.5
1	205	35	35	1	35	5.4
1	239	34	34	1	34	5.6
1	257	18	18	1	18	11.5
1	271	14	14	1	14	15.2
1	284	13	13	1	13	16.5
1	295	11	11	1	11	19.9
5	308	13	3	1	3	100.0
5	320	12	2	1	2	100.0
5	327	7	1	1	1	100.0
5	330	3	1	1	1	100.0
5	331	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 6
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-06
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	76	-	-	-	-	-
1	120	44	44	1	44	4.2
1	161	41	41	1	41	4.6
1	184	23	23	1	23	8.7
1	211	27	27	1	27	7.3
1	225	14	14	1	14	15.2
1	236	11	11	1	11	19.9
1	250	14	14	1	14	15.2
1	262	12	12	1	12	18.1
1	273	11	11	1	11	19.9
1	284	11	11	1	11	19.9
1	295	11	11	1	11	19.9
1	303	8	8	1	8	28.4
1	335	32	32	1	32	6.0
5	367	32	6	1	6	36.5
5	409	42	8	1	8	28.9
5	443	34	7	1	7	34.1
5	479	36	7	1	7	32.0
5	500	21	4	1	4	58.5
5	563	63	13	1	13	17.1
5	600	37	7	1	7	31.0
5	610	10	2	1	2	100.0
5	613	3	1	1	1	100.0
5	615	2	0	1	0	100.0
5	610	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 7
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	12/09/2015
Project No.	XSD/15-0143	Test Location	TP-06
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	97	-	-	-	-	-
1	150	53	53	1	53	3.4
1	163	13	13	1	13	16.5
1	176	13	13	1	13	16.5
1	184	8	8	1	8	28.4
5	210	26	5	1	5	46.1
5	219	9	2	1	2	100.0
5	225	6	1	1	1	100.0
5	228	3	1	1	1	100.0
5	229	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 8
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-07
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	54	-	-	-	-	-
1	103	49	49	1	49	3.7
1	149	46	46	1	46	4.0
1	186	37	37	1	37	5.1
1	204	18	18	1	18	11.5
1	229	25	25	1	25	7.9
1	240	11	11	1	11	19.9
5	247	7	1	1	1	100.0
5	254	7	1	1	1	100.0
5	257	3	1	1	1	100.0
5	259	2	0	1	0	100.0
5	260	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 9
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-08
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Ver.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	67	-	-	-	-	-
1	93	26	26	1	26	7.6
1	106	13	13	1	13	16.5
1	120	14	14	1	14	15.2
1	131	11	11	1	11	19.9
1	140	9	9	1	9	24.9
5	173	33	7	1	7	35.3
5	201	28	6	1	6	42.4
5	225	24	5	1	5	50.4
5	248	23	5	1	5	52.9
5	267	19	4	1	4	65.5
5	287	20	4	1	4	61.6
5	309	22	4	1	4	55.6
5	331	22	4	1	4	55.6
5	352	21	4	1	4	58.5
5	381	29	6	1	6	40.8
5	405	24	5	1	5	50.4
5	429	24	5	1	5	50.4
5	451	22	4	1	4	55.6
5	476	25	5	1	5	48.1
5	490	14	3	1	3	100.0
5	498	8	2	1	2	100.0
5	504	6	1	1	1	100.0
5	508	4	1	1	1	100.0
5	509	1	0	1	0	100.0

MATRIX LABORATORY LLC.

TABLE D3 - 10
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	12/09/2015
Project No	XSD/15-0143	Test Location	TP-09
Project Name	PROPOSED PN1403-DTCJV-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	59	-	-	-	-	-
1	130	71	71	1	71	2.5
1	164	34	34	1	34	5.6
1	182	18	18	1	18	11.5
1	205	23	23	1	23	8.7
1	221	16	16	1	16	13.1
1	233	12	12	1	12	18.1
5	286	53	11	1	11	20.8
5	314	28	6	1	6	42.4
5	342	28	6	2	11	19.5
5	360	18	4	3	11	20.3
5	377	17	3	4	14	15.7
5	392	15	3	5	15	14.1
5	406	14	3	6	17	12.4
5	413	7	1	7	10	22.7
5	416	3	1	8	5	50.4
5	420	4	1	9	7	32.0
5	423	3	1	10	6	39.3
5	426	3	1	11	7	35.3
5	428	2	0	12	5	50.4
5	430	2	0	13	5	46.1
5	431	1	0	14	3	100.0

MATRIX LABORATORY L L C

TABLE D3 - 11
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	12/06/2015
Project No.	XSD/15-0143	Test Location	TP-10
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Ver.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	65	-	-	-	-	-
1	100	35	35	1	35	5.4
1	125	25	25	1	25	7.9
1	139	14	14	1	14	15.2
1	146	7	7	1	7	33.0
5	170	24	5	1	5	50.4
5	185	15	3	1	3	85.3
5	187	2	0	1	0	100.0
5	188	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE D3 - 12
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-11
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	91	41	41	1	41	4.6
1	127	36	36	1	36	5.3
1	150	23	23	1	23	8.7
1	165	15	15	1	15	14.1
1	174	9	9	1	9	24.9
5	185	11	2	1	2	100.0
5	189	4	1	1	1	100.0
5	193	4	1	2	2	100.0
5	197	4	1	3	2	100.0
5	199	2	0	4	2	100.0
5	200	1	0	5	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 13
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-12
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	100	-	-	-	-	-
1	130	30	30	1	30	6.5
1	141	11	11	1	11	19.9
1	150	9	9	1	9	24.9
5	175	25	5	1	5	46.1
5	189	14	3	1	3	100.0
5	203	14	3	1	3	100.0
5	212	9	2	1	2	100.0
5	223	11	2	2	1	55.6
5	225	2	0	3	1	100.0
5	226	1	0	4	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 14
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-13
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	58	-	-	-	-	-
1	128	70	70	1	70	2.5
1	163	35	35	1	35	5.4
1	182	19	19	1	19	10.8
1	197	15	15	1	15	14.1
5	226	29	6	1	6	40.8
5	239	13	3	1	3	100.0
5	256	17	3	1	3	74.2
5	279	23	5	1	5	52.9
5	288	9	2	2	4	69.6
5	310	22	4	3	13	16.2
5	325	15	3	4	12	18.1
5	342	17	3	5	17	12.2
5	364	22	4	6	26	7.5
5	380	16	3	7	22	9.0
5	395	15	3	8	24	8.3
5	410	15	3	9	27	7.3
5	417	7	1	10	14	15.2
5	421	4	1	11	9	25.6
5	423	2	0	12	5	50.4
5	425	2	0	13	5	46.1
5	426	1	0	14	3	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 15
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-13
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	48	-	-	-	-	-
1	86	38	38	1	38	5.0
1	132	46	46	1	46	4.0
1	170	38	38	1	38	5.0
1	201	31	31	1	31	6.2
1	228	27	27	1	27	7.3
1	239	11	11	1	11	19.9
1	249	10	10	1	10	22.2
5	276	27	5	1	5	44.2
5	299	23	5	2	9	24.3
5	316	17	3	3	10	21.7
5	328	12	2	4	10	23.2
5	337	9	2	5	9	24.9
5	343	6	1	6	7	32.0
5	347	4	1	7	6	42.4
5	350	3	1	8	5	50.4
5	352	2	0	9	4	69.6
5	354	2	0	10	4	61.8
5	355	1	0	11	2	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 16
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-14
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	85	-	-	-	-	-
1	120	35	35	1	35	5.4
1	157	37	37	1	37	5.1
1	189	32	32	1	32	6.0
1	205	16	16	1	16	13.1
1	218	13	13	1	13	16.5
1	230	12	12	1	12	18.1
1	245	15	15	1	15	14.1
1	257	12	12	1	12	18.1
1	266	9	9	2	18	11.5
1	274	8	8	3	24	8.3
5	310	36	7	4	29	6.8
5	353	43	9	5	43	4.3
5	399	46	9	6	55	3.3
5	427	28	6	7	39	4.8
5	460	33	7	8	53	3.4
5	500	40	8	9	72	2.4
5	537	37	7	10	74	2.4
5	565	28	6	11	62	2.9
5	591	26	5	12	62	2.8
5	620	29	6	13	75	2.3
5	635	15	3	14	42	4.4
5	657	22	4	15	66	2.7
5	674	17	3	16	54	3.3
5	676	2	0	17	7	34.1
5	677	1	0	18	4	69.6

MATRIX LABORATORY L.L.C.

TABLE D3 - 17
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP 14
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Ervin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	145	55	55	1	55	3.3
1	159	14	14	1	14	15.2
1	169	10	10	1	10	22.2
1	177	8	8	1	8	28.4
5	199	22	4	1	4	55.6
5	215	16	3	1	3	79.4
5	222	7	1	1	1	100.0
5	224	2	0	1	0	100.0
5	225	1	0	2	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 18
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-15
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	35	-	-	-	-	-
1	87	52	52	1	52	3.5
1	129	42	42	1	42	4.4
1	156	27	27	1	27	7.3
1	192	36	36	1	36	5.3
1	210	18	18	1	18	11.5
1	227	17	17	1	17	12.2
5	259	32	6	1	6	36.5
5	273	14	3	1	3	100.0
5	281	8	2	2	3	79.4
5	285	4	1	3	2	100.0
5	287	2	0	4	2	100.0
5	288	1	0	5	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 19
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-18
Project Name	PROPOSED PN1403-DICJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	65	-	-	-	-	-
1	90	25	25	1	25	7.9
1	121	31	31	1	31	6.2
1	150	29	29	1	29	6.7
1	175	25	25	1	25	7.9
1	197	22	22	1	22	9.2
1	221	24	24	1	24	8.3
1	240	19	19	1	19	10.8
1	250	10	10	1	10	22.2
1	257	7	7	2	14	15.2
5	290	33	7	3	20	10.3
5	320	30	6	4	24	8.3
5	355	35	7	5	35	5.4
5	390	35	7	6	42	4.4
5	420	30	6	7	42	4.4
5	440	20	4	8	32	6.0
5	461	21	4	9	38	5.0
5	490	29	6	10	58	3.1
5	519	29	6	11	64	2.8
5	532	13	3	12	31	6.2
5	564	32	6	13	83	2.1
5	574	10	2	14	28	7.0
5	579	5	1	15	15	14.1
5	581	2	0	16	6	36.5
5	582	1	0	17	3	74.2

MATRIX LABORATORY L.L.C.

TABLE D3 - 20

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	12/08/2015
Project No.	XSD/15-0143	Test Location	TP-16
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	91	-	-	-	-	-
1	144	53	53	1	53	3.4
1	157	13	13	1	13	16.5
1	178	21	21	1	21	9.6
1	192	14	14	1	14	15.2
1	207	15	15	1	15	14.1
5	226	19	4	1	4	65.5
5	234	8	2	1	2	100.0
5	240	6	1	1	1	100.0
5	246	6	1	2	2	100.0
5	250	4	1	3	2	100.0
5	252	2	0	4	2	100.0
5	253	1	0	5	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 21
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	28/09/2015
Consultant	CH2M MACE JV	Date Tested	12/09/2015
Project No.	XSD/15-0143	Test Location	TP-17
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	69	-	-	-	-	-
1	104	35	35	1	35	5.4
1	134	30	30	1	30	6.5
1	151	17	17	1	17	12.2
1	164	13	13	1	13	16.5
5	167	3	1	1	1	100.0
5	178	11	2	1	2	100.0
5	186	8	2	1	2	100.0
5	191	5	1	1	1	100.0
5	193	2	0	2	1	100.0
5	196	2	0	3	1	100.0
5	196	5	1	2	2	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 22
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	13/09/2015
Project No.	XSD/15-0143	Test Location	TP-18
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	194	99	99	1	99	1.7
1	222	28	28	1	28	7.0
1	241	19	19	1	19	10.8
1	259	18	18	1	18	11.5
1	272	13	13	1	13	16.5
1	286	14	14	1	14	15.2
1	300	14	14	1	14	15.2
1	315	15	15	1	15	14.1
1	326	11	11	2	22	9.2
1	339	13	13	3	39	4.8
1	347	8	8	4	32	6.0
5	390	43	9	5	43	4.3
5	421	31	6	6	37	5.1
5	455	34	7	7	48	3.9
5	485	30	6	8	48	3.8
5	513	28	6	9	50	3.6
5	540	27	5	10	54	3.4
5	566	26	5	11	57	3.1
5	594	28	6	12	67	2.6
5	624	30	6	13	76	2.2
5	654	30	6	14	84	2.0
5	677	23	5	15	89	2.5
5	700	23	5	16	74	2.4
5	726	26	5	17	88	1.9
5	755	29	6	18	104	1.6
5	785	30	6	19	114	1.5
5	815	30	6	20	120	1.4
5	843	28	6	21	118	1.4
5	870	27	5	22	119	1.4
5	904	34	7	23	156	1.0
5	933	29	6	24	139	1.2
5	955	22	4	25	110	1.5
5	970	15	3	26	78	2.2
5	981	11	2	27	59	3.0
5	985	4	1	28	22	9.0
5	987	2	0	29	12	18.6
5	988	1	0	30	6	39.3

MATRIX LABORATORY L.L.C.

TABLE D3 - 23
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	13/06/2015
Project No.	XSD/15-0143	Test Location	TP-18
Project Name	PROPOSED PN1403-DTC.IA-EXPO DEVELOPMENT	Test Depth (mbgl)	0 50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	102	-	-	-	-	-
1	124	22	22	1	22	9 2
1	134	10	10	1	10	22.2
5	185	51	10	1	10	21.7
5	220	35	7	1	7	33 0
5	250	30	6	1	6	39.3
5	279	29	6	1	6	40.8
5	310	31	6	1	6	37.8
5	340	30	6	1	6	39.3
5	371	31	6	2	12	17.4
5	405	34	7	3	20	10.0
5	429	24	5	4	19	10.7
5	458	29	6	5	29	6.7
5	489	31	6	6	37	5.1
5	520	31	6	7	43	4.3
5	549	29	6	8	46	4.0
5	575	26	5	9	47	3 9
5	605	30	6	10	60	3 0
5	634	29	6	11	64	2.8
5	670	36	7	12	86	2 0
5	704	34	7	13	88	1 9
5	745	41	8	14	115	1 4
5	786	41	8	15	123	1 3
5	821	35	7	16	112	1 5
5	860	39	8	17	133	1.2
5	891	31	6	18	112	1.5
5	910	19	4	19	72	2.4
5	918	8	2	20	32	6 0
5	923	5	1	21	21	9 6
5	925	2	0	22	9	25 6
5	927	2	0	23	9	24 3
5	928	1	0	24	5	50.4

MATRIX LABORATORY L.L.C.

TABLE D3 - 24

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-18
Project Name	PROPOSED PN1403-DTCJA EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	96	-	-	-	-	-
1	117	21	21	1	21	9.6
1	129	12	12	1	12	16.1
1	140	11	11	1	11	19.9
1	152	12	12	1	12	18.1
5	184	32	6	1	6	36.5
5	206	22	4	1	4	55.6
5	230	24	5	1	5	50.4
5	259	29	6	1	6	40.8
5	278	19	4	2	8	30.1
5	299	21	4	3	13	17.1
5	330	31	6	4	25	8.0
5	374	44	9	5	44	4.2
5	398	24	5	6	29	6.8
5	411	13	3	7	18	11.3
5	419	8	2	8	13	16.8
5	425	6	1	0	11	20.3
5	428	3	1	10	6	39.3
5	430	2	0	11	4	55.6
5	432	2	0	12	5	50.4
5	433	1	0	13	3	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 25
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-19
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	84	-	-	-	-	-
1	175	91	91	1	91	1.9
1	240	65	65	1	65	2.7
1	270	30	30	1	30	6.5
1	291	21	21	1	21	9.6
1	309	18	18	1	18	11.5
1	323	14	14	1	14	15.2
1	336	13	13	1	13	16.5
5	389	53	11	1	11	20.8
5	421	32	6	1	6	36.5
5	445	24	5	1	5	50.4
5	469	24	5	1	5	50.4
5	497	28	6	1	6	42.4
5	522	25	5	1	5	48.1
5	546	24	5	1	5	50.4
5	566	20	4	1	4	61.8
5	582	16	3	1	3	79.4
5	598	16	3	1	3	79.4
5	613	15	3	1	3	85.3
5	630	17	3	1	3	74.2
5	644	14	3	1	3	100
5	657	13	3	1	3	100
5	670	13	3	1	3	100
5	681	11	2	1	2	100
5	687	6	1	1	1	100
5	692	5	1	1	1	100
5	696	4	1	1	1	100
5	700	4	1	1	1	100
5	703	3	1	1	1	100
5	705	2	0	1	0	100
5	706	1	0	1	0	100

MATRIX LABORATORY L.L.C.

TABLE D3 - 26
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	13/09/2015
Project No.	XSD/15-0143	Test Location	TP-19
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	68	13	13	1	13	16.5
1	102	34	34	1	34	5.6
1	127	25	25	1	25	7.9
5	148	21	4	1	4	58.5
5	166	18	4	1	4	69.6
5	187	21	4	1	4	58.5
5	205	18	4	1	4	69.6
5	225	20	4	1	4	61.8
5	243	18	4	1	4	69.6
5	260	17	3	1	3	74.2
5	270	10	2	1	2	100.0
5	280	10	2	1	2	100.0
5	287	7	1	1	1	100.0
5	293	6	1	1	1	100.0
5	300	7	1	1	1	100.0
5	304	4	1	1	1	100.0
5	306	2	0	1	0	100.0
5	307	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 27
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-19
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	20	-	-	-	-	-
1	27	7	7	1	7	33.0
1	35	8	8	1	8	28.4
5	49	14	3	1	3	100.0
5	59	10	2	1	2	100.0
5	65	6	1	1	1	100.0
5	67	2	0	1	0	100.0
5	69	2	0	1	0	100.0
5	70	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 28
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-20
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Ervin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	64	-	-	-	-	-
1	117	53	53	1	53	3.4
1	156	39	39	1	39	4.8
1	192	36	36	1	36	5.3
1	221	29	29	1	29	6.7
1	254	33	33	1	33	5.8
1	286	32	32	1	32	6.0
1	301	15	15	1	15	14.1
1	315	14	14	1	14	15.2
1	327	12	12	2	24	8.3
5	368	41	8	3	25	8.1
5	406	38	8	4	30	6.4
5	445	39	8	5	39	4.8
5	473	28	6	6	34	5.7
5	506	33	7	7	46	4.0
5	549	43	9	8	69	2.6
5	592	43	9	9	77	2.2
5	642	50	10	10	100	1.7
5	683	41	8	11	90	1.9
5	726	43	9	12	103	1.6
5	748	22	4	13	57	3.1
5	759	11	2	14	31	6.3
5	770	11	2	15	33	5.8
5	775	5	1	16	16	13.1
5	781	6	1	17	20	10.0
5	796	15	3	18	54	3.4
5	811	15	3	19	57	3.2
5	823	12	2	20	48	3.8
5	830	7	1	21	29	6.6
5	835	5	1	22	22	9.2
5	838	3	1	23	14	15.4
5	841	3	1	24	14	14.7
5	843	2	0	25	10	22.2
5	844	1	0	26	5	46.1

MATRIX LABORATORY L.L.C.

TABLE D3 - 29
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-20
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	42	-	-	-	-	-
1	103	61	61	1	61	2.9
1	142	39	39	1	39	4.8
1	178	36	36	1	36	5.3
1	192	14	14	1	14	15.2
1	226	34	34	1	34	5.6
1	259	33	33	1	33	5.8
1	289	30	30	1	30	6.5
1	321	32	32	1	32	6.0
1	340	19	19	2	36	5.0
1	351	11	11	3	33	5.8
5	400	49	10	4	39	4.8
5	442	42	8	5	42	4.4
5	473	31	6	6	37	5.1
5	492	19	4	7	27	7.4
5	516	24	5	8	38	4.9
5	532	16	3	9	29	6.8
5	545	13	3	10	26	7.6
5	557	12	2	11	26	7.5
5	564	7	1	12	17	12.4
5	567	3	1	13	8	29.3
5	569	2	0	14	6	42.4
5	571	2	0	15	6	39.3
5	572	1	0	16	3	79.4

MATRIX LABORATORY L.L.C

TABLE D3 - 30
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-20
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	78	-	-	-	-	-
1	124	46	46	1	46	4.0
1	147	23	23	1	23	8.7
1	196	49	49	1	49	3.7
1	210	14	14	1	14	15.2
1	236	26	26	1	20	7.6
1	259	23	23	1	23	8.7
1	273	14	14	1	14	15.2
1	285	12	12	1	12	18.1
5	300	15	3	2	6	39.3
5	311	11	2	3	7	35.3
5	319	8	2	4	6	36.5
5	325	6	1	5	6	39.3
5	330	5	1	6	6	39.3
5	333	3	1	7	4	58.5
5	336	3	1	8	5	50.4
5	339	3	1	9	5	44.7
5	341	2	0	10	4	61.8
5	343	2	0	11	4	55.6
5	344	1	0	12	2	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 31
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	13/06/2015
Project No.	XSD/15-0143	Test Location	TP-21
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	137	87	87	1	87	2.0
1	160	23	23	1	23	8.7
1	175	15	15	1	15	14.1
1	187	12	12	1	12	18.1
1	199	12	12	1	12	18.1
1	219	20	20	1	20	10.2
1	230	11	11	1	11	19.9
1	242	12	12	1	12	18.1
1	250	8	8	2	16	13.1
1	263	13	13	3	39	4.8
1	272	9	9	4	36	5.3
1	327	55	55	5	275	0.5
5	360	33	7	6	40	4.7
5	395	35	7	7	49	3.7
5	421	26	5	8	42	4.5
5	440	19	4	9	34	5.6
5	465	25	5	10	50	3.7
5	490	25	5	11	55	3.3
5	520	30	6	12	72	2.4
5	547	27	5	13	70	2.5
5	572	25	5	14	70	2.5
5	600	28	6	15	84	2.0
5	635	35	7	16	112	1.5
5	659	24	5	17	82	2.1
5	680	21	4	18	76	2.3
5	705	25	5	19	95	1.8
5	725	20	4	20	80	2.2
5	750	25	5	21	105	1.6
5	772	22	4	22	97	1.7
5	794	22	4	23	101	1.7
5	820	26	5	24	125	1.3
5	842	22	4	25	110	1.5
5	865	23	5	26	120	1.4
5	881	16	3	27	86	2.0
5	905	24	5	28	134	1.2
5	924	19	4	29	110	1.5
5	935	11	2	30	66	2.7
5	945	10	2	31	62	2.9
5	950	5	1	32	32	6.0
5	952	2	0	33	13	16.2
5	953	1	0	34	7	34.1

MATRIX LABORATORY L.L.C

TABLE D3 - 32
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-21
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	72	-	-	-	-	-
1	142	70	70	1	70	2.5
1	173	31	31	1	31	6.2
1	195	22	22	1	22	9.2
1	210	15	15	1	15	14.1
1	226	16	16	1	16	13.1
1	237	11	11	1	11	19.9
5	287	50	10	1	10	22.2
5	304	17	3	1	3	74.2
5	337	33	7	2	13	16.2
5	351	14	3	3	8	26.9
5	375	24	5	4	19	10.7
5	390	15	3	5	15	14.1
5	405	15	3	6	18	11.5
5	413	8	2	7	11	19.5
5	420	7	1	8	11	19.5
5	425	5	1	9	9	24.9
5	436	11	2	10	22	9.2
5	442	6	1	11	13	16.2
5	445	3	1	12	7	32.0
5	448	3	1	13	8	29.3
5	451	3	1	14	8	26.9
5	453	2	0	15	6	39.3
5	454	1	0	16	3	79.4

MATRIX LABORATORY L.L.C.

TABLE D3 - 33
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-21
Project Name	PROPOSED PN1403-D1 CJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	82	-	-	-	-	-
1	142	60	60	1	60	3.0
1	204	62	62	1	62	2.9
1	247	43	43	1	43	4.3
1	289	42	42	1	42	4.4
1	321	32	32	1	32	6.0
1	363	42	42	1	42	4.4
1	392	29	29	1	29	6.7
1	411	19	19	1	19	10.8
1	424	13	13	2	26	7.6
5	496	72	14	3	43	4.3
5	558	60	12	4	48	3.8
5	601	45	9	5	45	4.1
5	635	34	7	6	41	4.6
5	659	24	5	7	34	5.7
5	681	22	4	8	35	5.4
5	702	21	4	9	38	5.0
5	717	15	3	10	30	6.5
5	726	9	2	11	20	10.3
5	729	3	1	12	7	32.0
5	731	2	0	13	5	46.1
5	732	1	0	14	3	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 34
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-22
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	151	76	76	1	76	2.3
1	217	66	66	1	66	2.7
1	261	44	44	1	44	4.2
1	300	39	39	1	39	4.8
1	342	42	42	1	42	4.4
1	370	28	28	1	28	7.0
1	390	20	20	1	20	10.2
1	401	11	11	1	11	19.9
1	411	10	10	2	20	10.2
1	420	9	9	3	27	7.3
1	453	33	33	4	132	1.2
5	505	52	10	5	52	3.5
5	547	42	8	6	50	3.6
5	600	53	11	7	74	2.3
5	651	51	10	8	82	2.1
5	717	66	13	9	119	1.4
5	782	65	13	10	130	1.3
5	820	38	8	11	84	2.1
5	862	42	9	12	101	1.7
5	890	28	6	13	73	2.4
5	912	22	4	14	62	2.9
5	925	13	3	15	39	4.8
5	935	10	2	16	32	6.0
5	942	7	1	17	24	8.4
5	946	4	1	18	14	14.7
5	948	2	0	19	8	30.1
5	949	1	0	20	4	61.8

MATRIX LABORATORY L.L.C.

TABLE D3 - 35
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-22
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0-50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	100	37	37	1	37	5.1
1	152	52	52	1	52	3.5
1	210	58	58	1	58	3.1
1	245	35	35	1	35	5.4
1	282	37	37	1	37	5.1
1	307	25	25	1	25	7.9
1	320	13	13	1	13	16.5
1	330	10	10	1	10	22.2
1	339	9	9	2	18	11.5
5	380	41	8	3	25	8.1
5	425	45	9	4	36	5.3
5	461	36	7	5	36	5.3
5	500	39	8	6	47	3.9
5	545	45	9	7	63	2.8
5	600	55	11	8	88	1.9
5	640	40	8	9	72	2.4
5	671	31	6	10	62	2.9
5	695	24	5	11	53	3.4
5	721	26	5	12	62	2.8
5	740	19	4	13	49	3.7
5	757	17	3	14	48	3.9
5	770	13	3	15	39	4.6
5	780	10	2	16	32	6.0
5	789	9	2	17	31	6.3
5	794	5	1	18	18	11.5
5	795	25	5	16	80	2.2

MATRIX LABORATORY L.L.C

TABLE D3 - 36
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	13/06/2015
Project No.	XSD/15-0143	Test Location	TP-22
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	90	40	40	1	40	4.7
1	135	45	45	1	45	4.1
1	181	46	46	1	46	4.0
1	212	31	31	1	31	6.2
1	235	23	23	1	23	8.7
1	249	14	14	1	14	15.2
1	258	9	9	1	9	24.9
5	300	42	8	1	8	26.9
5	341	41	8	2	16	12.7
5	387	46	9	3	28	7.1
5	415	28	6	4	22	9.0
5	437	22	4	5	22	9.2
5	450	13	3	6	16	13.5
5	471	21	4	7	29	6.6
5	485	14	3	8	22	9.0
5	497	12	2	9	22	9.3
5	505	8	2	10	16	13.1
5	509	4	1	11	0	25.6
5	601	92	18	12	221	0.7
5	602	1	0	13	3	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 37
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-23
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	36	-	-	-	-	-
1	92	56	56	1	56	3.2
1	148	56	56	1	56	3.2
1	192	44	44	1	44	4.2
1	258	66	66	1	66	2.7
1	296	38	38	1	38	5.0
1	329	33	33	1	33	5.8
1	364	35	35	1	35	5.4
1	392	28	28	1	28	7.0
1	423	31	31	2	62	2.9
1	459	36	36	3	108	1.5
1	473	14	14	4	56	3.2
1	490	17	17	5	85	2.0
1	501	11	11	6	66	2.7
5	573	72	14	7	101	1.7
5	624	51	10	8	82	2.1
5	655	31	6	9	56	3.2
5	683	28	6	10	56	3.2
5	709	26	5	11	57	3.1
5	731	22	4	12	53	3.4
5	745	14	3	13	36	5.2
5	755	10	2	14	28	7.0
5	759	4	1	15	12	18.1
5	763	4	1	16	13	16.6
5	767	4	1	17	14	15.7
5	770	3	1	18	11	20.3
5	772	2	0	19	8	30.1
5	773	1	0	20	4	61.8

MATRIX LABORATORY L.L.C.

TABLE D3 - 38
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-23
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	139	84	84	1	84	2.0
1	176	37	37	1	37	5.1
1	204	28	28	1	28	7.0
1	228	24	24	1	24	8.3
1	254	26	26	1	26	7.6
1	273	19	19	1	19	10.8
1	296	23	23	1	23	8.7
1	311	15	15	1	15	14.1
1	330	19	10	2	38	5.0
1	351	21	21	3	63	2.8
1	372	21	21	4	84	2.0
1	385	13	13	5	65	2.7
5	446	61	12	6	73	2.4
5	493	47	9	7	66	2.7
5	542	49	10	8	78	2.2
5	563	21	4	9	38	5.0
5	575	12	2	10	24	8.3
5	583	8	2	11	18	11.8
5	590	7	1	12	17	12.4
5	595	5	1	13	13	16.5
5	599	4	1	14	11	19.5
5	603	4	1	15	12	16.1
5	605	2	0	16	6	36.5
5	607	2	0	17	7	34.1
5	608	1	0	18	4	69.6

MATRIX LABORATORY LLC

TABLE D3 - 39
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-23
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	125	52	52	1	52	3.5
1	161	36	36	1	36	5.3
1	192	31	31	1	31	6.2
1	214	22	22	1	22	9.2
1	228	14	14	1	14	15.2
1	239	11	11	1	11	19.9
5	296	57	11	1	11	19.1
5	346	50	10	1	10	22.2
5	392	46	9	2	18	11.2
5	408	16	3	3	10	23.2
5	419	11	2	4	9	25.6
5	426	7	1	5	7	33.0
5	432	6	1	6	7	32.0
5	435	3	1	7	4	58.5
5	437	2	0	8	3	79.4
5	438	1	0	9	2	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 40
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-24
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	35	-	-	-	-	-
1	100	65	65	1	65	2.7
1	151	51	51	1	51	3.6
1	165	14	14	1	14	15.2
1	205	40	40	1	40	4.7
1	265	60	60	1	60	3.0
1	295	30	30	1	30	6.5
1	315	20	20	1	20	10.2
1	365	50	50	1	50	3.7
1	394	29	29	2	58	3.1
1	425	31	31	3	93	1.8
1	458	33	33	4	132	1.2
1	491	33	33	5	165	1.0
1	505	14	14	6	84	2.0
5	580	75	15	7	105	1.6
5	630	50	10	8	80	2.2
5	660	30	6	9	54	3.4
5	695	35	7	10	70	2.5
5	715	20	4	11	44	4.2
5	742	27	5	12	65	2.7
5	765	23	5	13	60	3.0
5	774	9	2	14	25	7.9
5	781	7	1	15	21	9.6
5	790	9	2	16	29	6.8
5	795	5	1	17	17	12.2
5	796	1	0	18	4	69.6

MATRIX LABORATORY L.L.C.

TABLE 03 - 41
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-24
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0-50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	45	-	-	-	-	-
1	105	60	60	1	60	3.0
1	125	20	20	1	20	10.2
1	175	50	50	1	50	3.7
1	201	26	26	1	26	7.6
1	235	34	34	1	34	5.6
1	256	21	21	1	21	9.6
1	284	28	28	1	28	7.0
1	315	31	31	1	31	6.2
1	340	25	25	2	50	3.7
1	361	21	21	3	63	2.8
1	380	19	19	4	76	2.3
1	401	21	21	5	105	1.6
5	425	24	5	6	29	6.8
5	445	20	4	7	28	7.0
5	469	24	5	8	38	4.9
5	485	16	3	9	29	6.8
5	515	30	6	10	60	3.0
5	525	10	2	11	22	9.2
5	545	20	4	12	48	3.8
5	558	13	3	13	34	5.7
5	561	3	1	14	8	26.9
5	575	14	3	15	42	4.4
5	580	5	1	16	16	13.1
5	585	5	1	17	17	12.2
5	587	2	0	18	7	32.0

MATRIX LABORATORY L.L.C.

TABLE 03 - 42
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-24
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	45	-	-	-	-	-
1	95	50	50	1	50	3.7
1	125	30	30	1	30	6.5
1	145	20	20	1	20	10.2
1	180	35	35	1	35	5.4
1	205	25	25	1	25	7.9
1	245	40	40	1	40	4.7
1	255	10	10	1	10	22.2
5	284	29	6	1	6	40.8
5	305	21	4	2	8	26.9
5	354	49	10	3	29	6.8
5	395	41	8	4	33	5.9
5	415	20	4	5	20	10.2
5	425	10	2	6	12	18.1
5	435	10	2	7	14	15.2
5	440	5	1	8	8	28.4
5	442	2	0	9	4	60.6

MATRIX LABORATORY L.L.C.

TABLE D3 - 43
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-25
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	182	92	92	1	92	1.8
1	259	77	77	1	77	2.3
1	300	41	41	1	41	4.6
1	357	57	57	1	57	3.2
1	400	43	43	1	43	4.3
1	443	43	43	1	43	4.3
1	460	17	17	1	17	12.2
1	479	19	19	1	19	10.8
1	489	10	10	1	10	22.2
1	495	6	6	1	6	30.3
5	562	67	13	1	13	16.0
5	600	38	8	1	8	30.1
5	647	47	9	1	9	23.7
5	689	42	8	1	8	26.9
5	715	26	5	1	5	46.1
5	740	25	5	1	5	48.1
5	762	22	4	1	4	55.6
5	780	18	4	1	4	69.6
5	795	15	3	1	3	85.3
5	810	15	3	1	3	85.3
5	820	10	2	1	2	100.0
5	827	7	1	2	3	100.0
5	832	5	1	3	3	85.3
5	834	2	0	4	2	100.0
5	835	1	0	5	1	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 44
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-25
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0 50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8 0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	60	-	-	-	-	-
1	127	67	67	1	67	2.6
1	152	25	25	1	25	7.9
1	187	35	35	1	35	5.4
1	210	23	23	1	23	8.7
1	231	21	21	1	21	9.6
1	250	19	19	1	19	10.8
1	260	10	10	1	10	22 2
1	267	7	7	1	7	33.0
5	310	43	9	1	9	26.2
5	350	40	8	1	8	29.4
5	400	50	10	1	10	22.2
5	437	37	7	1	7	31.0
5	481	44	9	1	9	25.6
5	517	36	7	1	7	32 0
5	539	22	4	1	4	55.6
5	550	11	2	1	2	100.0
5	561	11	2	1	2	100.0
5	571	10	2	1	2	100.0
5	580	9	2	1	2	100 0
5	585	5	1	1	1	100 0
5	590	5	1	1	1	100 0
5	593	3	1	1	1	100 0
5	595	2	0	1	0	100 0
5	596	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE D3 - 45
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No.	XSDV15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No	XSDV15-0143	Test Location	TP-25
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	47	-	-	-	-	-
1	100	53	53	1	53	3.4
1	157	57	57	1	57	3.2
1	195	38	38	1	38	5.0
1	226	31	31	1	31	6.2
1	237	11	11	1	11	19.9
1	244	7	7	1	7	33.0
5	300	56	11	1	11	19.5
5	341	41	8	1	8	27.7
5	375	34	7	1	7	34.1
5	400	25	5	1	5	49.1
5	419	19	4	1	4	65.5
5	429	10	2	1	2	100.0
5	441	12	2	1	2	100.0
5	451	10	2	1	2	100.0
5	460	9	2	1	2	100.0
5	465	5	1	1	1	100.0
5	467	2	0	1	0	100.0
5	469	2	0	1	0	100.0
5	470	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 46
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-26
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	125	50	50	1	50	3.7
1	184	59	59	1	59	3.0
1	245	61	61	1	61	2.9
1	305	60	60	1	60	3.0
1	365	60	60	1	60	3.0
1	395	30	30	1	30	6.5
1	415	20	20	1	20	10.2
1	425	10	10	1	10	22.2
5	435	10	2	1	2	100.0
5	485	50	10	1	10	22.2
5	521	36	7	1	7	32.0
5	594	73	15	1	15	14.5
5	625	31	6	1	6	37.8
5	684	59	12	1	12	18.4
5	714	30	6	1	6	39.3
5	735	21	4	1	4	58.5
5	770	35	7	1	7	33.0
5	830	60	12	1	12	18.1
5	890	60	12	1	12	18.1
5	915	25	5	1	5	48
5	954	39	8	1	8	29
5	994	40	8	1	8	28

MATRIX LABORATORY L.L.C.

TABLE D3 - 47
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L. L. C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-26
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	54	-	-	-	-	-
1	94	40	40	1	40	4.7
1	105	11	11	1	11	19.9
1	195	90	90	1	90	1.9
1	250	55	55	1	55	3.3
1	275	25	25	1	25	7.9
1	290	15	15	1	15	14.1
1	304	14	14	1	14	15.2
5	359	55	11	1	11	19.9
5	410	51	10	1	10	21.7
5	465	55	11	1	11	19.9
5	510	45	9	1	9	24.9
5	560	50	10	1	10	22.2
5	620	60	12	1	12	18.1
5	670	50	10	1	10	22.2
5	725	55	11	1	11	19.9
5	760	35	7	1	7	33.0
5	792	32	6	1	6	36.5
5	840	48	10	1	10	23.2
5	880	40	8	1	8	28.4
5	920	40	8	1	8	28.4
5	955	35	7	1	7	33.0
5	975	20	4	1	4	61.8
5	990	15	3	1	3	85.3

MATRIX LABORATORY L.L.C.

TABLE D3 - 48
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-26
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	105	-	-	-	-	-
1	130	25	25	1	25	7.9
1	145	15	15	1	15	14.1
1	180	35	35	1	35	5.4
5	210	30	6	1	6	39.3
5	250	40	8	1	8	28.4
5	275	25	5	1	5	48.1
5	307	32	6	1	6	36.5
5	323	16	3	1	3	79.4
5	340	17	3	1	3	74.2
5	351	11	2	1	2	100.0
5	363	12	2	1	2	100.0
5	373	10	2	1	2	100.0
5	379	6	1	1	1	100.0
5	385	6	1	1	1	100.0
5	397	12	2	1	2	100.0
5	410	13	3	1	3	100.0
5	424	14	3	1	3	100.0
5	434	10	2	1	2	100.0
5	450	16	3	1	3	79.4
5	464	14	3	1	3	100.0
5	475	11	2	1	2	100.0
5	490	15	3	1	3	85.3
5	510	20	4	1	4	61.8
5	519	9	2	1	2	100.0
5	520	1	0	1	0	100.0
5	525	5	1	1	1	100.0
5	527	2	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 49
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-27
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	18	-	-	-	-	-
1	29	11	11	1	11	19.9
5	41	12	2	1	2	100.0
5	49	8	2	1	2	100.0
5	55	6	1	1	1	100.0
5	59	4	1	1	1	100.0
5	63	4	1	1	1	100.0
5	65	2	0	1	0	100.0
5	67	2	0	1	0	100.0
5	69	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 50
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-28
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	15	-	-	-	-	-
1	29	14	14	1	14	15.2
1	33	4	4	1	4	61.6
1	44	11	11	1	11	19.9
5	63	19	4	1	4	65.5
5	70	7	1	1	1	100.0
5	77	7	1	1	1	100.0
5	84	7	1	1	1	100.0
5	92	8	2	1	2	100.0
5	101	9	2	1	2	100.0
5	105	4	1	1	1	100.0
5	107	2	0	1	0	100.0
5	109	2	0	1	0	100.0
5	110	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 51
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	13/06/2015
Project No.	XSD/15-0143	Test Location	TP-29
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	27	-	-	-	-	-
1	39	12	12	1	12	18.1
1	51	12	12	1	12	18.1
1	62	11	11	1	11	19.9
1	73	11	11	1	11	19.8
5	96	23	5	1	5	52.9
5	109	13	3	1	3	100.0
5	121	12	2	1	2	100.0
5	125	4	1	1	1	100.0
5	127	2	0	1	0	100.0
5	129	2	0	1	0	100.0
5	131	2	0	1	0	100.0
5	132	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 52
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-30
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	20	-	-	-	-	-
1	31	11	11	1	11	19.9
5	40	9	2	1	2	100.0
5	45	5	1	1	1	100.0
5	50	5	1	1	1	100.0
5	53	3	1	1	1	100.0
5	55	2	0	1	0	100.0
5	58	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 53
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-31
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	36	-	-	-	-	-
1	47	11	11	1	11	19.9
1	59	12	12	1	12	18.1
5	69	10	2	1	2	100.0
5	73	4	1	1	1	100.0
5	75	2	0	1	0	100.0
5	76	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 54
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-32
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	40	-	-	-	-	-
1	51	11	11	1	11	19.9
5	65	14	3	1	3	100.0
5	74	9	2	1	2	100.0
5	83	9	2	1	2	100.0
5	90	7	1	1	1	100.0
5	95	5	1	1	1	100.0
5	99	4	1	1	1	100.0
5	102	3	1	1	1	100.0
5	104	2	0	1	0	100.0
5	106	2	0	1	0	100.0
5	107	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 65
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	13/06/2015
Project No.	XSD/15-0143	Test Location	TP-33
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	49	-	-	-	-	-
1	63	14	14	1	14	15.2
1	74	11	11	1	11	19.9
5	82	8	2	1	2	100.0
5	90	8	2	1	2	100.0
5	97	7	1	1	1	100.0
5	103	6	1	1	1	100.0
5	105	2	0	1	0	100.0
5	106	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 56
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-34
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	59	-	-	-	-	-
1	87	28	28	1	28	7.0
1	110	23	23	1	23	9 7
1	132	22	22	1	22	9.2
1	150	18	18	1	18	11.5
1	163	13	13	1	13	16.5
1	180	17	17	1	17	12 2
1	200	20	20	1	20	10.2
1	215	15	15	1	15	14 1
5	250	41	8	1	8	27.7
5	279	23	5	1	5	52.9
5	301	22	4	1	4	55.6
5	327	26	5	1	5	46 1
5	340	13	3	1	3	100.0
5	356	16	3	1	3	79 4
5	370	14	3	1	3	100.0
5	380	10	2	1	2	100 0
5	390	10	2	1	2	100 0
5	401	11	2	1	2	100 0
5	409	8	2	1	2	100.0
5	416	7	1	1	1	100
5	421	5	1	1	1	100
5	425	4	1	1	1	100
5	427	2	0	1	0	100
5	430	3	1	1	1	100
5	432	2	0	1	0	100
5	434	2	0	1	0	100
5	435	1	0	1	0	100

MATRIX LABORATORY L.L.C

TABLE D3 - 57
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-34
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	79	16	16	1	16	13.1
1	92	13	13	1	13	16.5
1	105	13	13	1	13	16.5
5	126	21	4	1	4	58.5
5	137	11	2	1	2	100.0
5	145	8	2	1	2	100.0
5	152	7	1	1	1	100.0
5	159	7	1	1	1	100.0
5	164	5	1	1	1	100.0
5	166	2	0	1	0	100.0
5	168	2	0	1	0	100.0
5	170	2	0	1	0	100.0
5	171	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 58
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	13/08/2015
Project No.	XSD/15-0143	Test Location	TP-35
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	40	-	-	-	-	-
1	53	13	13	1	13	16.5
1	64	11	11	1	11	19.9
5	79	15	3	1	3	85.3
5	87	8	2	1	2	100.0
5	99	12	2	1	2	100.0
5	106	7	1	1	1	100.0
5	117	11	2	1	2	100.0
5	125	8	2	1	2	100.0
5	130	5	1	1	1	100.0
5	134	4	1	1	1	100.0
5	136	2	0	1	0	100.0
5	137	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 59
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-36
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	36	-	-	-	-	-
1	48	12	12	1	12	18.1
1	57	9	9	1	9	24.9
5	75	18	4	1	4	69.6
5	90	15	3	1	3	85.3
5	101	11	2	1	2	100.0
5	110	9	2	1	2	100.0
5	117	7	1	1	1	100.0
5	126	9	2	1	2	100.0
5	130	4	1	1	1	100.0
5	135	5	1	1	1	100.0
5	142	7	1	1	1	100.0
5	145	3	1	1	1	100.0
5	147	2	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 60
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-37
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	62	12	12	1	12	18.1
1	80	18	18	1	18	11.5
1	95	15	15	1	15	14.1
5	108	13	3	1	3	100.0
5	117	9	2	1	2	100.0
5	120	3	1	1	1	100.0
5	123	3	1	1	1	100.0
5	126	3	1	1	1	100.0
5	129	3	1	1	1	100.0
5	131	2	0	1	0	100.0
5	132	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 61
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-38
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	42	-	-	-	-	-
1	53	11	11	1	11	19.9
1	67	14	14	1	14	15.2
1	76	9	9	1	9	24.9
5	99	23	5	1	5	52.9
5	111	12	2	1	2	100.0
5	120	9	2	1	2	100.0
5	126	6	1	1	1	100.0
5	131	5	1	1	1	100.0
5	135	4	1	1	1	100.0
5	138	3	1	1	1	100.0
5	140	2	0	1	0	100.0
5	141	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 62
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-39
Project Name	PROPOSED PN1403-DTCJA- EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS ;

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	175	85	85	1	85	2.0
1	227	52	52	1	52	3.5
1	250	23	23	1	23	8.7
1	281	31	31	1	31	6.2
1	305	24	24	1	24	8.3
1	327	22	22	1	22	9.2
1	340	13	13	1	13	16.5
1	352	12	12	1	12	18.1
1	361	9	9	1	9	24.9
5	420	59	12	1	12	18.4
5	473	53	11	1	11	20.8
5	515	42	8	1	8	26.9
5	551	36	7	1	7	32.0
5	590	39	8	1	8	29.3
5	650	60	12	1	12	18.1
5	689	39	8	1	8	29.3
5	711	22	4	1	4	55.6
5	749	38	8	1	8	30.1
5	770	21	4	1	4	58.5
5	795	25	5	1	5	46
5	816	21	4	1	4	59
5	831	15	3	1	3	85
5	847	16	3	1	3	79
5	860	13	3	1	3	100
5	871	11	2	1	2	100
5	881	10	2	1	2	100
5	888	7	1	1	1	100
5	895	7	1	1	1	100
5	858	3	1	1	1	100
5	899	1	0	1	0	100

MATRIX LABORATORY L.L.C.

TABLE D3 - 63
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-39
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	71	-	-	-	-	-
1	157	86	86	1	86	2.0
1	200	43	43	1	43	4.3
1	241	41	41	1	41	4.6
1	270	29	29	1	29	6.7
1	285	15	15	1	15	14.1
1	297	12	12	1	12	18.1
1	305	8	8	1	8	28.4
5	350	45	9	1	9	24.9
5	391	41	8	1	8	27.7
5	437	46	9	1	9	24.3
5	460	23	5	1	5	52.8
5	481	21	4	1	4	58.5
5	500	19	4	1	4	65.5
5	519	19	4	1	4	65.5
5	531	12	2	1	2	100.0
5	543	12	2	1	2	100.0
5	555	12	2	1	2	100.0
5	565	10	2	1	2	100.0
5	572	7	1	1	1	100.0
5	577	5	1	1	1	100.0
5	582	5	1	1	1	100.0
6	585	3	1	1	1	100.0
6	587	2	0	1	0	100.0
6	588	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 64
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No	XSD/15-0143	Test Location	TP-39
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	60	-	-	-	-	-
1	101	41	41	1	41	4.6
1	132	31	31	1	31	6.2
1	160	28	28	1	28	7.0
1	190	30	30	1	30	6.5
1	207	17	17	1	17	12.2
1	215	8	8	1	8	26.4
5	259	44	9	1	9	25.6
5	291	32	6	1	6	36.5
5	325	34	7	1	7	34.1
5	347	22	4	1	4	55.6
5	365	18	4	1	4	69.6
5	379	14	3	1	3	100.0
5	390	11	2	1	2	100.0
5	399	9	2	1	2	100.0
5	405	6	1	1	1	100.0
5	409	4	1	1	1	100.0
5	411	2	0	1	0	100.0
5	412	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 65
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15 0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-40
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	157	84	84	1	84	2.0
1	201	44	44	1	44	4.2
1	252	51	51	1	51	3.8
1	297	45	45	1	45	4.1
1	321	24	24	1	24	8.3
1	337	16	16	1	16	13.1
1	349	12	12	1	12	18.1
1	356	7	7	1	7	33.0
5	420	64	13	1	13	16.8
5	463	43	9	1	9	26.2
5	500	37	7	1	7	31.0
5	535	35	7	1	7	33.0
5	569	34	7	1	7	34.1
5	605	36	7	1	7	32.0
5	630	25	5	1	5	46.1
5	650	20	4	1	4	61.8
5	667	17	3	1	3	74.2
5	681	14	3	1	3	100.0
5	691	10	2	1	2	100.0
5	700	9	2	1	2	100
5	706	6	1	1	1	100
5	708	2	0	1	0	100
5	709	1	0	1	0	100

MATRIX LABORATORY L.L.C.

TABLE D3 - 66
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-40
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	51	-	-	-	-	-
1	125	74	74	1	74	2.4
1	155	30	30	1	30	6.5
1	189	34	34	1	34	5.6
1	210	21	21	1	21	9.6
1	222	12	12	1	12	18.1
1	231	9	9	1	9	24.9
5	242	11	2	1	2	100.0
5	250	8	2	1	2	100.0
5	253	3	1	1	1	100.0
5	259	6	1	1	1	100.0
5	269	10	2	1	2	100.0
5	271	2	0	1	0	100.0
5	281	10	2	1	2	100.0
5	289	8	2	1	2	100.0
5	297	8	2	1	2	100.0
5	303	6	1	1	1	100.0
5	308	5	1	1	1	100.0
5	311	3	1	1	1	100.0
5	313	2	0	1	0	100.0
5	315	2	0	1	0	100.0
5	316	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 67
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-41
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	77	-	-	-	-	-
1	131	54	54	1	54	3.4
1	183	52	52	1	52	3.5
1	211	28	28	1	28	7.0
1	233	22	22	1	22	9.2
1	252	19	19	1	19	10.8
1	267	15	15	1	15	14.1
1	280	13	13	1	13	16.5
1	293	13	13	1	13	16.5
1	305	12	12	1	12	18.1
1	312	7	7	1	7	33.0
5	361	49	10	1	10	22.7
5	400	39	8	1	8	29.3
5	434	34	7	1	7	34.1
5	467	33	7	1	7	35.3
5	500	33	7	1	7	35.3
5	531	31	6	1	6	37.8
5	564	33	7	1	7	35.3
5	599	35	7	1	7	33.0
5	634	35	7	1	7	33.0
5	667	33	7	1	7	35
5	696	29	6	1	6	41
5	722	26	5	1	5	46
5	750	28	6	1	6	42
5	775	25	5	1	5	48
5	811	36	7	1	7	32
5	843	32	6	1	6	37
5	867	24	5	1	5	50
5	880	13	3	1	3	100
5	890	10	2	1	2	100
5	899	9	2	1	2	100
5	906	7	1	1	1	100
5	909	3	1	1	1	100
5	911	2	0	1	0	100
5	912	1	0	1	0	100

MATRIX LABORATORY L.L.C.

TABLE D3 - 68
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-41
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Edwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	100	-	-	-	-	-
1	130	30	30	1	30	6.5
1	145	15	15	1	15	14.1
1	160	15	15	1	15	14.1
1	170	10	10	1	10	22.2
5	221	51	10	1	10	21.7
5	283	42	8	1	8	26.9
5	301	38	8	1	8	30.1
5	333	32	6	1	6	36.5
5	361	28	6	1	6	42.4
5	390	29	6	1	6	40.8
5	420	30	6	1	6	39.3
5	449	29	6	1	6	40.8
5	474	25	5	1	5	48.1
5	501	27	5	1	5	44.2
5	524	23	5	1	5	52.9
5	542	18	4	1	4	69.6
5	560	18	4	1	4	69.6
5	569	9	2	1	2	100.0
5	577	8	2	1	2	100.0
5	586	9	2	1	2	100.0
5	591	5	1	1	1	100.0
5	595	4	1	1	1	100.0
5	598	3	1	1	1	100.0
5	600	2	0	1	0	100.0
5	610	10	2	1	2	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 69
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-41
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	62	12	12	1	12	18.1
1	73	11	11	1	11	19.9
1	82	9	9	1	9	24.9
5	107	25	5	1	5	48.1
5	117	10	2	1	2	100.0
5	122	5	1	1	1	100.0
5	125	3	1	1	1	100.0
5	127	2	0	1	0	100.0
5	128	1	0	1	0	100.0

MATRIX LABORATORY LLC

TABLE D3 - 70
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-42
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Ervin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	60	-	-	-	-	-
1	78	18	18	1	18	11.5
1	85	7	7	1	7	33.0
5	115	30	6	1	6	39.3
5	132	17	3	1	3	74.2
5	150	18	4	1	4	69.6
5	160	10	2	1	2	100.0
5	170	10	2	1	2	100.0
5	179	9	2	1	2	100.0
5	186	7	1	1	1	100.0
5	190	4	1	1	1	100.0
5	193	3	1	1	1	100.0
5	195	2	0	1	0	100.0
5	196	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 71
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE .IV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-43
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	70	-	-	-	-	-
1	130	60	60	1	60	3.0
1	170	40	40	1	40	4.7
1	185	15	15	1	15	14.1
1	200	15	15	1	15	14.1
1	209	9	9	1	9	24.9
5	260	51	10	1	10	21.7
5	300	40	8	1	8	28.4
5	343	43	9	1	9	26.2
5	375	32	6	1	6	38.5
5	401	26	5	1	5	46.1
5	429	28	6	1	6	42.4
5	500	71	14	1	14	15.0
5	515	15	3	1	3	85.3
5	525	10	2	1	2	100.0
5	534	9	2	1	2	100.0
5	546	12	2	1	2	100.0
5	553	7	1	1	1	100.0
5	558	5	1	1	1	100.0
5	562	4	1	1	1	100.0
5	564	2	0	1	0	100
5	566	2	0	1	0	100
5	567	1	0	1	0	100

MATRIX LABORATORY L.L.C.

TABLE D3 - 72
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CHZM MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-41
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	80	30	30	1	30	6.5
1	95	15	15	1	15	14.1
5	127	32	6	1	6	35.5
5	140	13	3	1	3	100.0
5	167	27	5	1	5	44.2
5	180	13	3	1	3	100.0
5	190	10	2	1	2	100.0
5	199	9	2	1	2	100.0
5	210	11	2	1	2	100.0
5	215	5	1	1	1	100.0
5	218	3	1	1	1	100.0
5	220	2	0	1	0	100.0
5	221	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE D3 - 73
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-44
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	150	-	-	-	-	-
1	242	92	92	1	92	1.8
1	285	43	43	1	43	4.3
1	310	25	25	1	25	7.9
1	330	20	20	1	20	10.2
1	346	16	16	1	16	13.1
1	362	16	16	1	16	13.1
1	375	13	13	1	13	16.5
1	384	9	9	1	9	24.9
5	433	49	10	1	10	22.7
5	475	42	8	1	8	26.9
5	511	36	7	1	7	32.0
5	550	39	8	1	8	29.3
5	590	40	8	1	8	28.4
5	631	41	8	1	8	27.7
5	676	45	9	1	9	24.9
5	725	49	10	1	10	22.7
5	782	57	11	1	11	19.1
5	850	68	14	1	14	15.7
5	941	91	18	1	18	11.3

MATRIX LABORATORY L.L.C.

TABLE D3 - 74
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	15/06/2015
Project No.	XSD/15-0143	Test Location	TP-44
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	N4	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	130	-	-	-	-	-
1	182	52	52	1	52	3.5
1	195	13	13	1	13	16.5
1	211	16	16	1	16	13.1
1	227	16	16	1	16	13.1
1	240	13	13	1	13	16.5
1	250	10	10	1	10	22.2
5	315	65	13	1	13	16.5
5	375	60	12	1	12	18.1
5	440	65	13	1	13	16.5
5	510	70	14	1	14	15.2
5	585	75	15	1	15	14.1
5	667	82	16	1	16	12.7
5	700	93	19	1	19	11.1
5	865	105	21	1	21	9.6
5	940	75	15	1	15	14.1
5	945	5	1	1	1	100.0
5	950	5	1	1	1	100.0
5	953	3	1	1	1	100.0
5	955	2	0	1	0	100.0
5	957	2	0	1	0	100.0
5	958	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3- 75
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	15/06/2015
Project No.	XSD/15-0143	Test Location	TP-44
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	9.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	90	27	27	1	27	7.3
1	115	25	25	1	25	7.9
1	123	8	8	1	8	26.4
5	181	68	12	1	12	18.8
5	210	29	6	1	6	40.6
5	235	25	5	1	5	48.1
5	250	15	3	1	3	85.3
5	269	18	4	1	4	65.5
5	277	8	2	1	2	100.0
5	287	10	2	1	2	100.0
5	295	8	2	1	2	100.0
5	301	6	1	1	1	100.0
5	306	5	1	1	1	100.0
5	309	3	1	1	1	100.0
5	311	2	0	1	0	100.0
5	313	2	0	1	0	100.0
5	315	2	0	1	0	100.0
5	317	2	0	1	0	100.0
5	318	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE 03 - 76
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-45
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	100	-	-	-	-	-
1	210	110	110	1	110	1.5
1	281	71	71	1	71	2.5
1	335	54	54	1	54	3.4
1	357	22	22	1	22	9.2
1	370	13	13	1	13	16.5
1	382	12	12	1	12	18.1
1	391	9	9	1	9	24.9
5	443	52	10	1	10	21.2
5	480	37	7	1	7	31.0
5	519	39	8	1	8	29.3
5	556	37	7	1	7	31.0
5	597	41	8	1	8	27.7
5	630	33	7	1	7	35.3
5	670	40	8	1	8	28.4
5	721	51	10	1	10	21.7
5	784	63	13	1	13	17.1
5	850	66	13	1	13	16.2
5	900	50	10	1	10	22.2
5	940	40	8	1	8	28.4
5	971	31	6	1	6	38
5	995	24	5	1	5	50

MATRIX LABORATORY L L C

TABLE D3 - 77
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-45
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	100	-	-	-	-	-
1	154	54	54	1	54	3.4
1	197	43	43	1	43	4.3
1	219	22	22	1	22	9.2
1	230	11	11	1	11	18.9
1	245	15	15	1	15	14.1
1	255	10	10	1	10	22.2
1	264	9	9	1	9	24.9
5	320	56	11	1	11	19.5
5	382	62	12	1	12	17.4
5	447	65	13	1	13	16.5
5	507	60	12	1	12	18.1
5	589	82	16	1	16	12.7
5	660	71	14	1	14	15.0
5	751	91	18	1	18	11.3
5	847	96	19	1	19	10.7
5	900	53	11	1	11	20.8
5	950	50	10	1	10	22.2
5	970	20	4	1	4	61.8
5	985	15	3	1	3	85.3
5	995	10	2	1	2	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 78
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	15/09/2015
Project No.	XSD/15-0143	Test Location	TP-45
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	70	-	-	-	-	-
1	105	35	35	1	35	5.4
1	120	15	15	1	15	14.1
1	131	11	11	1	11	19.9
1	140	9	9	1	9	24.9
5	200	60	12	1	12	18.1
5	237	37	7	1	7	31.0
5	275	38	8	1	8	30.1
5	300	25	5	1	5	48.1
5	319	19	4	1	4	65.5
5	329	10	2	1	2	100.0
5	340	11	2	1	2	100.0
5	351	11	2	1	2	100.0
5	361	10	2	1	2	100.0
5	370	9	2	1	2	100.0
5	377	7	1	1	1	100.0
5	385	8	2	1	2	100.0
5	391	6	1	1	1	100.0
5	398	7	1	1	1	100.0
5	403	5	1	1	1	100.0
5	406	3	1	1	1	100.0
5	409	3	1	1	1	100.0
5	411	2	0	1	0	100.0
5	413	2	0	1	0	100.0
5	415	2	0	1	0	100.0
5	418	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 79
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-46
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	141	66	66	1	66	2.7
1	180	39	39	1	39	4.8
1	192	12	12	1	12	18.1
1	207	15	15	1	15	14.1
1	217	10	10	1	10	22.2
1	225	8	8	1	8	28.4
5	271	46	9	1	9	24.3
5	307	36	7	1	7	32.0
5	341	34	7	1	7	34.1
5	365	24	5	1	5	50.4
5	389	24	5	1	5	50.4
5	401	12	2	1	2	100.0
5	421	20	4	1	4	61.8
5	437	16	3	1	3	79.4
5	445	8	2	1	2	100.0
5	456	11	2	1	2	100.0
5	464	8	2	1	2	100.0
5	475	11	2	1	2	100.0
5	485	10	2	1	2	100.0
5	495	10	2	1	2	100
5	504	9	2	1	2	100
5	510	6	1	1	1	100
5	514	4	1	1	1	100
5	517	3	1	1	1	100
5	519	2	0	1	0	100
5	521	2	0	1	0	100
5	522	1	0	1	0	100

MATRIX LABORATORY L.L.C

TABLE D3 - 80

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-46
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS ;

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	54	-	-	-	-	-
1	90	36	36	1	36	5.3
1	105	15	15	1	15	14.1
1	113	8	8	1	8	28.4
5	142	29	6	1	6	40.6
5	164	22	4	1	4	55.6
5	190	26	5	1	5	46.1
5	199	9	2	1	2	100.0
5	211	12	2	1	2	100.0
5	219	8	2	1	2	100.0
5	225	6	1	1	1	100.0
5	229	4	1	1	1	100.0
5	233	4	1	1	1	100.0
5	235	2	0	1	0	100.0
5	237	2	0	1	0	100.0
5	239	2	0	1	0	100.0
5	240	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE D3 - 81
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-47
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	92	-	-	-	-	-
1	190	98	98	1	98	1.7
1	282	92	92	1	92	1.8
1	351	69	69	1	69	2.5
1	370	19	19	1	19	10.8
1	382	12	12	1	12	18.1
1	390	8	8	1	8	26.4
5	447	57	11	1	11	19.1
5	489	42	8	1	8	26.9
5	522	33	7	1	7	35.3
5	560	38	8	1	8	30.1
5	600	40	8	1	8	28.4
5	635	35	7	1	7	33.0
5	674	39	8	1	8	29.3
5	720	46	9	1	9	24.3
5	775	55	11	1	11	18.9
5	830	55	11	1	11	19.9
5	861	31	6	1	6	37.8
5	890	29	6	1	6	40.8
5	919	29	6	1	6	40.8
5	939	20	4	1	4	62
5	955	16	3	1	3	79
5	980	25	5	1	5	48
5	996	16	3	1	3	79

MATRIX LABORATORY L.L.C.

TABLE D3 - 82
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No	XSD/15-0143	Test Location	TP-47
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	65	-	-	-	-	-
1	99	34	34	1	34	5.6
1	117	18	18	1	18	11.5
1	130	13	13	1	13	16.5
1	141	11	11	1	11	19.9
1	150	9	9	1	9	24.9
5	200	50	10	1	10	22.2
5	241	41	8	1	8	27.7
5	279	38	8	1	8	30.1
5	303	24	5	1	5	50.4
5	323	20	4	1	4	61.8
5	339	16	3	1	3	79.4
5	350	11	2	1	2	100.0
5	360	10	2	1	2	100.0
5	369	9	2	1	2	100.0
5	379	10	2	1	2	100.0
5	387	8	2	1	2	100.0
5	395	8	2	1	2	100.0
5	400	5	1	1	1	100.0
5	404	4	1	1	1	100.0
5	407	3	1	1	1	100.0
5	409	2	0	1	0	100.0
5	411	2	0	1	0	100.0
5	412	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE D3 - 83

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	15/09/2015
Project No.	XSD/15-0143	Test Location	TP-48
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	175	95	95	1	95	1.8
1	243	68	68	1	68	2.6
1	300	57	57	1	57	3.2
1	351	51	51	1	51	3.6
1	379	28	28	1	28	7.0
1	389	10	10	1	10	22.2
1	399	10	10	1	10	22.2
1	405	6	6	1	6	39.3
5	467	62	12	1	12	17.4
5	511	44	9	1	9	25.6
5	560	49	10	1	10	22.7
5	612	52	10	1	10	21.2
5	650	38	8	1	8	30.1
5	687	37	7	1	7	31.0
5	705	18	4	1	4	60.6
5	729	24	5	1	5	50.4
5	770	41	8	1	8	27.7
5	830	60	12	1	12	18.1
5	889	59	12	1	12	18.4
5	923	34	7	1	7	34
5	964	41	8	1	8	28
5	994	30	6	1	6	39

MATRIX LABORATORY L.L.C.

TABLE D3 - 84

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	15/06/2015
Project No.	XSD/15-0143	Test Location	TP-48
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	98	-	-	-	-	-
1	152	54	54	1	54	3.4
1	199	47	47	1	47	3.9
1	230	31	31	1	31	6.2
1	250	20	20	1	20	10.2
1	271	21	21	1	21	9.6
1	285	14	14	1	14	15.2
1	295	10	10	1	10	22.2
5	359	64	13	1	13	16.8
5	407	48	10	1	10	23.2
5	465	58	12	1	12	18.8
5	506	41	8	1	8	27.7
5	560	54	11	1	11	20.3
5	615	55	11	1	11	19.9
5	670	55	11	1	11	19.9
5	712	42	8	1	8	26.9
5	759	47	9	1	9	23.7
5	792	33	7	1	7	35.3
5	831	39	8	1	8	29.3
5	872	41	8	1	8	27.7
5	911	39	8	1	8	29.3
5	943	32	6	1	6	36.5
5	970	27	5	1	5	44.2
5	995	25	5	1	5	48.1

MATRIX LABORATORY L.L.C.

TABLE D3 - 85

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-48
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	91	-	-	-	-	-
1	129	38	38	1	38	5.0
1	143	14	14	1	14	15.2
1	151	8	8	1	8	28.4
5	202	51	10	1	10	21.7
5	243	41	8	1	8	27.7
5	275	32	6	1	6	36.5
5	307	32	6	1	6	36.5
5	323	16	3	1	3	79.4
5	340	17	3	1	3	74.2
5	351	11	2	1	2	100.0
5	363	12	2	1	2	100.0
5	373	10	2	1	2	100.0
5	379	6	1	1	1	100.0
5	385	6	1	1	1	100.0
5	397	12	2	1	2	100.0
5	410	13	3	1	3	100.0
5	424	14	3	1	3	100.0
5	434	10	2	1	2	100.0
5	443	9	2	1	2	100.0
5	452	9	2	1	2	100.0
5	460	8	2	1	2	100.0
5	468	8	2	1	2	100.0
5	474	6	1	1	1	100.0
5	478	4	1	1	1	100.0
5	480	2	0	1	0	100.0
5	483	3	1	1	1	100.0
5	485	2	0	1	0	100.0
5	487	2	0	1	0	100.0
5	488	1	0	1	0	100.0
5	490	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 86
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15 0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-49
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	85	-	-	-	-	-
1	190	105	105	1	105	1.6
1	287	97	97	1	97	1.7
1	340	53	53	1	53	3.4
1	362	22	22	1	22	9.2
1	387	25	25	1	25	7.9
1	409	22	22	1	22	9.2
1	420	11	11	1	11	19.9
1	430	10	10	1	10	22.2
5	481	51	10	1	10	21.7
5	522	41	8	1	8	27.7
5	557	35	7	1	7	33.0
5	585	28	6	1	6	42.4
5	605	20	4	1	4	61.8
5	647	42	8	1	8	26.9
5	700	53	11	1	11	20.8
5	747	47	9	1	9	23.7
5	785	38	8	1	8	30.1
5	810	25	5	1	5	48.1
5	834	24	5	1	5	50.4
5	861	27	5	1	5	44
5	885	24	5	1	5	50
5	912	27	5	1	5	44
5	937	25	5	1	5	48
5	953	16	3	1	3	70
5	970	17	3	1	3	74
5	984	14	3	1	3	100
5	995	11	2	1	2	100

MATRIX LABORATORY L.L.C.

TABLE D3 - 87
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-49
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	92	-	-	-	-	-
1	152	60	60	1	60	3.0
1	200	48	48	1	48	3.6
1	225	25	25	1	25	7.9
1	240	15	15	1	15	14.1
1	252	12	12	1	12	18.1
1	262	10	10	1	10	22.2
1	270	8	8	1	8	28.4
5	331	61	12	1	12	17.7
5	382	51	10	1	10	21.7
5	430	48	10	1	10	23.2
5	465	35	7	1	7	33.0
5	492	27	5	1	5	44.2
5	540	48	10	1	10	23.2
5	571	31	6	1	6	37.8
5	600	29	6	1	6	40.8
5	625	25	5	1	5	48.1
5	651	26	5	1	5	46.1
5	682	31	6	1	6	37.8
5	700	18	4	1	4	69.6
5	727	27	5	1	5	44.2
5	750	23	5	1	5	52.9
5	773	23	5	1	5	52.9
5	795	22	4	1	4	55.6
5	817	22	4	1	4	55.6
5	835	18	4	1	4	69.6
5	855	20	4	1	4	61.8
5	871	16	3	1	3	79.4
5	900	29	6	1	6	40.8
5	920	20	4	1	4	61.8
5	931	11	2	1	2	100.0
5	940	9	2	1	2	100.0
5	945	5	1	1	1	100.0
5	950	5	1	1	1	100.0
5	953	3	1	1	1	100.0
5	956	3	1	1	1	100.0
5	958	2	0	1	0	100.0
5	960	2	0	1	0	100.0
5	961	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 88

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-49
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	52	-	-	-	-	-
1	101	49	49	1	49	3.7
1	121	20	20	1	20	10.2
1	131	10	10	1	10	22.2
5	181	50	10	1	10	22.2
5	219	38	8	1	8	30.1
5	249	30	6	1	6	39.3
5	272	23	5	1	5	52.9
5	299	27	5	1	5	44.2
5	315	16	3	1	3	79.4
5	330	15	3	1	3	85.3
5	344	14	3	1	3	100.0
5	360	16	3	1	3	79.4
5	372	12	2	1	2	100.0
5	380	8	2	1	2	100.0
5	388	8	2	1	2	100.0
5	395	7	1	1	1	100.0
5	399	4	1	1	1	100.0
5	403	4	1	1	1	100.0
5	405	2	0	1	0	100.0
5	406	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -89

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-50
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	51	-	-	-	-	-
1	70	19	19	1	19	10.8
1	84	14	14	1	14	15.2
1	92	8	8	1	8	28.4
1	127	35	35	1	35	5.4
1	160	33	33	1	33	5.8
1	171	11	11	1	11	19.9
1	181	10	10	1	10	22.2
1	190	9	9	1	9	24.9
5	195	5	1	1	1	100.0
5	197	2	0	1	0	100.0
5	199	2	0	1	0	100.0
5	200	1	0	1	0	100.0

MATRIX LABORATORY L L C

TABLE D3 -90
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-51
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	79	-	-	-	-	-
1	182	103	103	1	103	1.6
1	250	68	68	1	68	2.6
1	280	30	30	1	30	6.5
1	292	12	12	1	12	18.1
1	315	23	23	1	23	8.7
1	329	14	14	1	14	15.2
5	381	52	10	1	10	21.2
5	422	41	8	1	8	27.7
5	463	41	8	1	8	27.7
5	510	47	9	1	9	23.7
5	564	54	11	1	11	20.3
5	605	41	8	1	8	27.7
5	670	65	13	1	13	16.5
5	721	51	10	1	10	21.7
5	764	43	9	1	9	26.2
5	811	47	9	1	9	23.7
5	880	69	14	1	14	15.4
5	910	30	6	1	6	39.3
5	942	32	6	1	6	36.5
5	972	30	6	1	6	39
5	991	19	4	1	4	65

MATRIX LABORATORY L.L.C.

TABLE D3 -91
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-51
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	130	55	55	1	55	3.3
1	210	80	80	1	80	2.2
1	231	21	21	1	21	9.8
1	245	14	14	1	14	15.2
1	256	11	11	1	11	19.9
1	265	9	9	1	9	24.9
5	317	52	10	1	10	21.2
5	365	48	10	1	10	23.2
5	400	35	7	1	7	33.0
5	441	41	8	1	8	27.7
5	485	44	9	1	9	25.6
5	520	35	7	1	7	33.0
5	561	41	8	1	8	27.7
5	600	39	8	1	8	29.3
5	641	41	8	1	8	27.7
5	679	38	8	1	8	30.1
5	701	22	4	1	4	55.6
5	732	31	6	1	6	37.8
5	761	29	6	1	6	40.8
5	795	34	7	1	7	34.1
5	810	15	3	1	3	85.3
5	821	11	2	1	2	100.0
5	831	10	2	1	2	100.0
5	840	9	2	1	2	100.0
5	846	5	1	1	1	100.0
5	849	4	1	1	1	100.0
5	852	3	1	1	1	100.0
5	855	3	1	1	1	100.0
5	857	2	0	1	0	100.0
5	859	2	0	1	0	100.0
5	860	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -92
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-51
Project Name	PROPOSED PN1403-D1CJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	79	-	-	-	-	-
1	120	41	41	1	41	4.6
1	130	10	10	1	10	22.2
1	137	7	7	1	7	31.0
5	181	44	9	1	9	25.6
5	222	41	8	1	8	27.7
5	250	28	6	1	6	42.4
5	270	20	4	1	4	61.8
5	285	15	3	1	3	85.3
5	300	15	3	1	3	85.3
5	310	10	2	1	2	100.0
5	319	9	2	1	2	100.0
5	325	6	1	1	1	100.0
5	333	8	2	1	2	100.0
5	347	14	3	1	3	100.0
5	357	10	2	1	2	100.0
5	369	12	2	1	2	100.0
5	375	6	1	1	1	100.0
5	381	6	1	1	1	100.0
5	388	7	1	1	1	100.0
5	394	6	1	1	1	100.0
5	398	4	1	1	1	100.0
5	400	2	0	1	0	100.0
5	402	2	0	1	0	100.0
5	403	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 93
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	15/09/2015
Project No.	XSD/15-0143	Test Location	TP-52
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	101	-	-	-	-	-
1	200	99	99	1	99	1.7
1	262	62	62	1	62	2.9
1	300	38	38	1	38	5.0
1	341	41	41	1	41	4.6
1	362	21	21	1	21	9.6
1	375	13	13	1	13	16.5
1	385	10	10	1	10	22.2
5	427	42	8	1	8	26.9
5	470	43	9	1	9	26.2
5	507	37	7	1	7	31.0
5	527	20	4	1	4	61.8
5	571	44	9	1	9	25.6
5	621	50	10	1	10	22.2
5	680	59	12	1	12	18.4
5	737	57	11	1	11	19.1
5	782	45	9	1	9	24.9
5	850	68	14	1	14	15.7
5	907	52	10	1	10	21.2
5	941	39	8	1	8	29.3
5	973	32	6	1	6	37
5	990	17	3	1	3	74

MATRIX LABORATORY L.L.C.

TABLE D3 - 94
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-52
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Ehwa

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	92	-	-	-	-	-
1	150	58	58	1	58	3.1
1	187	37	37	1	37	5.1
1	203	16	16	1	16	13.1
1	215	12	12	1	12	18.1
1	224	9	9	1	9	24.9
5	280	56	11	1	11	19.5
5	332	52	10	1	10	21.2
5	375	43	9	1	9	26.2
5	399	24	5	1	5	50.4
5	432	33	7	1	7	35.3
5	470	38	8	1	8	30.1
5	501	31	6	1	6	37.8
5	530	29	6	1	6	40.8
5	550	20	4	1	4	61.8
5	571	21	4	1	4	58.5
5	593	22	4	1	4	55.6
5	610	17	3	1	3	74.2
5	629	19	4	1	4	65.5
5	641	12	2	1	2	100.0
5	659	18	4	1	4	69.6
5	669	10	2	1	2	100.0
5	677	8	2	1	2	100.0
5	685	8	2	1	2	100.0
5	690	5	1	1	1	100.0
5	695	5	1	1	1	100.0
5	697	2	0	1	0	100.0
5	699	2	0	1	0	100.0
5	700	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 95

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - I L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-52
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	95	45	45	1	45	4.1
1	115	20	20	1	20	10.2
1	126	11	11	1	11	19.9
1	133	7	7	1	7	33.0
5	170	37	7	1	7	31.0
5	175	5	1	1	1	100.0
5	177	2	0	1	0	100.0
5	178	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 96
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-53
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	175	85	85	1	85	2.0
1	210	35	35	1	35	5.4
1	235	25	25	1	25	7.9
1	250	15	15	1	15	14.1
1	264	14	14	1	14	15.2
1	275	11	11	1	11	19.9
1	282	7	7	1	7	33.0
5	340	58	12	1	12	18.8
5	382	42	8	1	8	26.9
5	415	33	7	1	7	35.3
5	450	35	7	1	7	33.0
5	493	43	9	1	9	20.2
5	527	34	7	1	7	34.1
5	600	73	15	1	15	14.5
5	674	74	15	1	15	14.3
5	727	53	11	1	11	20.8
5	780	53	11	1	11	20.8
5	821	41	8	1	8	27.7
5	852	31	6	1	6	37.8
5	882	30	6	1	6	39
5	910	28	6	1	6	47
5	931	21	4	1	4	59
5	950	19	4	1	4	65
5	974	24	5	1	5	50
5	993	19	4	1	4	65

MATRIX LABORATORY L.L.C.

TABLE D3 - 97
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No	XSD/15-0143	Test Location	TP-53
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	N0	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	82	-	-	-	-	-
1	150	68	68	1	68	2.6
1	201	51	51	1	51	3.6
1	237	36	36	1	36	5.3
1	251	14	14	1	14	15.2
1	263	12	12	1	12	18.1
1	271	8	8	1	8	28.4
5	325	54	11	1	11	20.3
5	382	57	11	1	11	19.1
5	431	49	10	1	10	22.7
5	475	44	9	1	9	25.6
5	507	32	6	1	6	36.5
5	539	32	6	1	6	36.5
5	582	43	9	1	9	26.2
5	627	45	9	1	9	24.9
5	660	33	7	1	7	35.3
5	714	54	11	1	11	20.3
5	770	56	11	1	11	19.5
5	815	45	9	1	9	24.9
5	840	25	5	1	5	48.1
5	875	35	7	1	7	33.0
5	915	40	8	1	8	28.4
5	959	44	9	1	9	25.6
5	991	32	6	1	6	36.5

MATRIX LABORATORY L.L.C.

TABLE D3- 98
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-53
Project Name	PROPOSED PN1400-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	149	69	69	1	69	2.5
1	170	21	21	1	21	9.6
1	185	15	15	1	15	14.1
1	195	10	10	1	10	22.2
5	247	52	10	1	10	21.2
5	291	44	9	1	9	25.6
5	329	38	8	1	8	30.1
5	355	26	5	1	5	46.1
5	376	21	4	1	4	58.5
5	394	18	4	1	4	69.6
5	420	26	5	1	5	46.1
5	431	11	2	1	2	100.0
5	440	9	2	1	2	100.0
5	446	6	1	1	1	100.0
5	449	3	1	1	1	100.0
5	452	3	1	1	1	100.0
5	454	2	0	1	0	100.0
5	456	2	0	1	0	100.0
5	458	2	0	1	0	100.0
5	459	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 - 99
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/03/2015
Consultant	CH2M MACE JV	Date Tested	15/03/2015
Project No.	XSD/15-0143	Test Location	TP-54
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	159	64	64	1	64	2.8
1	187	28	28	1	28	7.0
1	215	28	28	1	28	7.0
1	232	17	17	1	17	12.2
1	245	13	13	1	13	16.5
1	256	11	11	1	11	19.9
1	263	7	7	1	7	33.0
5	319	56	11	1	11	19.5
5	370	51	10	1	10	21.7
5	415	45	9	1	9	24.9
5	450	35	7	1	7	33.0
5	520	70	14	1	14	15.2
5	579	59	12	1	12	18.4
5	631	52	10	1	10	21.2
5	679	48	10	1	10	23.2
5	727	48	10	1	10	23.2
5	760	33	7	1	7	35.3
5	831	71	14	1	14	15.0
5	890	59	12	1	12	18.4
5	937	47	9	1	9	24
5	984	47	9	1	9	24

MATRIX LABORATORY L.L.C.

TABLE D3 - 100
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-54
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	70	-	-	-	-	-
1	135	65	65	1	65	2.7
1	162	27	27	1	27	7.3
1	180	18	18	1	18	11.5
1	193	13	13	1	13	16.5
1	202	9	9	1	9	24.9
5	251	49	10	1	10	22.7
5	300	49	10	1	10	22.7
5	342	42	8	1	8	26.9
5	375	33	7	1	7	35.3
5	400	25	5	1	5	48.1
5	453	53	11	1	11	20.8
5	497	44	9	1	9	25.6
5	562	65	13	1	13	16.5
5	610	48	10	1	10	23.2
5	673	63	13	1	13	17.1
5	729	56	11	1	11	19.5
5	773	44	9	1	9	25.6
5	821	48	10	1	10	23.2
5	863	42	8	1	8	26.9
5	900	37	7	1	7	31.0
5	937	37	7	1	7	31.0
5	970	33	7	1	7	35.3
5	992	22	4	1	4	55.6

MATRIX LABORATORY L.L.C

TABLE D3 - 101
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-54
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	53	-	-	-	-	-
1	92	39	39	1	39	4.8
1	137	45	45	1	45	4.1
1	151	14	14	1	14	15.2
5	163	12	2	1	2	100.0
5	171	8	2	1	2	100.0
5	225	54	11	1	11	20.3
5	277	52	10	1	10	21.2
5	342	65	13	1	13	16.5
5	387	45	9	1	9	24.9
5	451	64	13	1	13	16.8
5	505	54	11	1	11	20.3
5	527	22	4	1	4	55.8
5	539	12	2	1	2	100.0
5	549	10	2	1	2	100.0
5	557	8	2	1	2	100.0
5	565	8	2	1	2	100.0
5	570	5	1	1	1	100.0
5	574	4	1	1	1	100.0
5	579	5	1	1	1	100.0
5	582	3	1	1	1	100.0
5	582	0	0	1	0	100.0
5	587	5	1	1	1	100.0
5	589	2	0	1	0	100.0
5	591	2	0	1	0	100.0
5	592	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -102
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	15/06/2015
Project No	XSD/15-0143	Test Location	TP-55
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	187	92	92	1	92	1.8
1	230	43	43	1	43	4.3
1	251	21	21	1	21	9.6
1	262	11	11	1	11	19.9
1	275	13	13	1	13	16.5
1	284	9	9	1	9	24.9
5	290	6	1	1	1	100.0
5	302	12	2	1	2	100.0
5	359	57	11	1	11	19.1
5	410	51	10	1	10	21.7
5	492	82	16	1	16	12.7
5	554	62	12	1	12	17.4
5	595	41	8	1	8	27.7
5	650	55	11	1	11	19.9
5	709	59	12	1	12	18.4
5	767	58	12	1	12	18.8
5	827	60	12	1	12	18.1
5	870	43	9	1	9	26.2
5	912	42	8	1	8	25.9
5	953	41	8	1	8	28
5	987	34	7	1	7	34
5	999	12	2	2	5	50

MATRIX LABORATORY L.L.C.

TABLE D3 -103
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-55
Project Name	PROPOSED PN1403-DTCJA EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	82	-	-	-	-	-
1	155	73	73	1	73	2.4
1	200	45	45	1	45	4.1
1	227	27	27	1	27	7.3
1	240	13	13	1	13	16.5
1	252	12	12	1	12	18.1
1	260	8	8	1	8	28.4
5	320	60	12	1	12	18.1
5	371	51	10	1	10	21.7
5	415	44	9	1	9	25.6
5	441	26	5	1	6	46.1
5	470	29	6	1	6	40.8
5	501	31	6	1	6	37.8
5	560	59	12	1	12	18.4
5	627	67	13	1	13	16.0
5	700	73	15	1	15	14.5
5	759	59	12	1	12	18.4
5	801	42	8	1	8	20.9
5	847	46	9	1	9	24.3
5	890	43	9	1	9	26.2
5	927	37	7	1	7	31.0
5	950	23	5	1	5	52.0
5	972	22	4	1	4	55.6
5	990	18	4	1	4	69.6

MATRIX LABORATORY L.L.C.

TABLE D3 -104
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-55
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	100	37	37	1	37	5.1
1	135	35	35	1	35	5.4
1	150	15	15	1	15	14.1
1	160	10	10	1	10	22.2
1	166	6	6	1	6	39.3
5	201	35	7	1	7	33.0
5	263	62	12	1	12	17.4
5	315	52	10	1	10	21.2
5	360	45	9	1	9	24.9
5	400	40	8	1	8	28.4
5	421	21	4	1	4	58.5
5	439	18	4	1	4	69.0
5	450	11	2	1	2	100.0
5	460	10	2	1	2	100.0
5	467	7	1	1	1	100.0
5	475	8	2	1	2	100.0
5	484	9	2	1	2	100.0
5	491	7	1	1	1	100.0
5	500	9	2	1	2	100.0
5	505	5	1	1	1	100.0
5	510	5	1	1	1	100.0
5	513	3	1	1	1	100.0
5	518	5	1	1	1	100.0
5	520	2	0	1	0	100.0
5	522	2	0	1	0	100.0
5	523	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -105
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-56
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	120	45	45	1	45	4.1
1	152	32	32	1	32	6.0
1	173	21	21	1	21	9.6
1	180	7	7	1	7	33.0
1	185	5	5	1	5	48.1
5	207	22	4	1	4	55.6
5	250	43	9	1	9	26.2
5	280	30	6	1	6	39.3
5	301	21	4	1	4	58.5
5	325	24	5	1	5	50.4
5	350	25	5	1	5	48.1
5	369	19	4	1	4	65.5
5	450	81	16	1	16	12.9
5	501	51	10	1	10	21.7
5	547	46	9	1	9	24.3
5	589	42	8	1	8	26.9
5	599	10	2	1	2	100.0
5	610	11	2	1	2	100.0
5	621	11	2	1	2	100.0
5	630	9	2	1	2	100.0
5	639	9	2	1	2	100.0
5	645	6	1	1	1	100.0
5	650	5	1	1	1	100.0
5	654	4	1	1	1	100.0
5	656	2	0	1	0	100.0
5	658	2	0	1	0	100.0
5	659	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -106
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-56
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	56	-	-	-	-	-
1	106	50	50	1	50	3.7
1	116	10	10	1	10	22.2
1	124	8	8	1	8	28.4
5	170	46	9	2	18	11.2
5	201	31	6	3	19	11.1
5	227	26	5	4	21	9.8
5	239	12	2	1	2	100.0
5	250	11	2	1	2	100.0
5	257	7	1	1	1	100.0
5	266	9	2	1	2	100.0
5	273	7	1	1	1	100.0
5	279	6	1	1	1	100.0
5	282	3	1	1	1	100.0
5	285	3	1	1	1	100.0
5	287	2	0	1	0	100.0
5	289	2	0	1	0	100.0
5	291	2	0	1	0	100.0
5	292	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -107

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-57
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	92	-	-	-	-	-
1	189	97	97	1	97	1 7
1	273	84	84	1	84	2 0
1	321	48	48	1	48	3.8
1	340	19	19	1	19	10.8
1	355	15	15	1	15	14 1
1	365	10	10	1	10	22.2
1	377	12	12	1	12	18.1
1	385	8	8	1	8	26.4
5	441	56	11	1	11	19.5
5	502	61	12	1	12	17.7
5	547	45	9	1	9	24.9
5	600	53	11	1	11	20.8
5	672	72	14	1	14	14.7
5	715	43	9	1	9	26.2
5	763	48	10	1	10	23.2
5	802	39	8	1	8	29.3
5	849	47	9	1	9	23.7
5	892	43	9	1	9	26 2
5	930	38	8	1	8	30 1
5	962	32	6	1	6	37
5	995	33	7	1	7	35

MATRIX LABORATORY L.L.C.

TABLE D3 -108

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-57
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Ver.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	120	45	45	1	45	4.1
1	151	31	31	1	31	6.2
1	173	22	22	1	22	9.2
1	190	17	17	1	17	12.2
1	201	11	11	1	11	19.9
1	210	9	9	1	9	24.9
5	261	51	10	1	10	21.7
5	305	44	9	1	9	25.6
5	347	42	8	1	8	26.9
5	382	35	7	1	7	33.0
5	415	33	7	1	7	35.3
5	439	24	5	1	5	50.4
5	475	36	7	1	7	32.0
5	507	32	6	1	6	36.5
5	545	38	8	1	8	30.1
5	573	28	6	1	6	42.4
5	597	24	5	1	5	50.4
5	621	24	5	1	5	50.4
5	640	19	4	1	4	65.5
5	653	13	3	1	3	100.0
5	665	12	2	1	2	100.0
5	675	10	2	1	2	100.0
5	684	9	2	1	2	100.0
5	697	13	3	1	3	100.0
5	719	22	4	1	4	55.6
5	732	13	3	1	3	100.0
5	755	23	5	1	5	52.0
5	800	45	9	1	9	24.9
5	831	31	6	1	6	37.8
5	849	18	4	1	4	69.6
5	859	10	2	1	2	100.0
5	863	4	1	1	1	100.0
5	868	5	1	1	1	100.0
5	872	4	1	1	1	100.0
5	875	3	1	1	1	100.0
5	877	2	0	1	0	100.0
5	879	2	0	-	0	100.0
5	880	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 -109
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-57
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Ver.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	89	39	39	1	39	4.8
1	101	12	12	1	12	18.1
1	120	19	19	1	19	10.8
1	135	15	15	1	15	14.1
1	145	10	10	1	10	22.2
5	197	52	10	1	10	21.2
5	237	40	8	1	8	28.4
5	270	33	7	1	7	35.3
5	285	15	3	1	3	85.3
5	296	11	2	1	2	100.0
5	304	8	2	1	2	100.0
5	314	10	2	1	2	100.0
5	321	7	1	1	1	100.0
5	327	5	1	1	1	100.0
5	331	4	1	1	1	100.0
5	335	4	1	1	1	100.0
5	338	3	1	1	1	100.0
5	340	2	0	1	0	100.0
5	342	2	0	1	0	100.0
5	343	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -110
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15 0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACF JV	Date Tested	15/06/2015
Project No.	XSD/15-0143	Test Location	TP 58
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	190	95	95	1	95	1.8
1	240	50	50	1	50	3.7
1	273	33	33	1	33	5.8
1	290	17	17	1	17	12.2
1	305	15	15	1	15	14.1
1	314	9	9	1	9	24.9
5	365	51	10	1	10	21.7
5	410	45	9	1	9	24.9
5	453	43	9	1	9	26.2
5	497	44	9	1	9	25.6
5	562	65	13	1	13	16.5
5	627	65	13	1	13	16.5
5	682	55	11	1	11	19.9
5	727	45	9	1	9	24.9
5	753	26	5	1	5	46.1
5	787	34	7	1	7	34.1
5	812	25	5	1	5	48.1
5	852	40	8	1	8	28.4
5	890	38	8	1	8	30.1
5	925	35	7	1	7	33
5	959	34	7	1	7	34
5	970	11	2	2	4	56
5	992	22	4	3	13	16

MATRIX LABORATORY L.L.C.

TABLE D3 -111
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/06/2015
Project No.	XSD/15-0143	Test Location	TP-58
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	74	-	-	-	-	-
1	150	76	76	1	76	2.3
1	173	23	23	1	23	8.7
1	191	18	18	1	18	11.5
1	209	18	18	1	18	11.5
1	215	6	6	1	6	39.3
1	263	48	48	1	48	3.8
1	310	47	47	1	47	3.9
5	351	41	8	1	8	27.7
5	392	41	8	1	8	27.7
5	423	31	6	1	6	37.8
5	440	17	3	1	3	74.2
5	475	35	7	1	7	33.0
5	523	48	10	1	10	23.2
5	574	51	10	1	10	21.7
5	610	36	7	1	7	32.0
5	637	27	5	1	5	44.2
5	672	35	7	1	7	33.0
5	701	29	6	1	6	40.8
5	742	41	8	1	8	27.7
5	785	43	9	1	9	26.2
5	843	58	12	1	12	18.8
5	870	27	5	1	5	44.2
5	897	27	5	1	5	44.2
5	910	13	3	1	3	100.0
5	919	9	2	1	2	100.0
5	927	8	2	1	2	100.0
5	940	13	3	1	3	100.0
5	950	10	2	1	2	100.0
5	959	9	2	1	2	100.0
5	967	8	2	1	2	100.0
5	975	8	2	1	2	100.0
5	981	6	1	1	1	100.0
5	987	6	1	1	1	100.0
5	992	5	1	1	1	100.0
5	997	5	1	1	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -112
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/05/2015
Consultant	CH2M MADE JV	Date Tested	15/05/2015
Project No.	XSD/15-0143	Test Location	TP-58
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	43	-	-	-	-	-
1	75	32	32	1	32	6.0
1	87	12	12	1	12	18.1
1	95	8	8	1	8	28.4
5	140	45	9	1	9	24.9
1	177	37	37	1	37	5.1
5	212	35	7	1	7	33.0
5	237	25	5	1	5	48.1
5	260	23	5	1	5	52.9
5	275	15	3	1	3	85.3
5	287	12	2	1	2	100.0
5	298	11	2	1	2	100.0
5	302	4	1	1	1	100.0
5	307	5	1	1	1	100.0
5	309	2	0	1	0	100.0
5	314	5	1	1	1	100.0
5	319	5	1	1	1	100.0
5	323	4	1	1	1	100.0
5	325	2	0	1	0	100.0
5	328	3	1	1	1	100.0
5	330	2	0	1	0	100.0
5	332	2	0	1	0	100.0
5	334	2	0	1	0	100.0
5	335	1	0	1	0	100.0

MATRIX LABORATORY LLC.

TABLE D3 -113
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	15/06/2015
Project No.	XSD/15-0143	Test Location	TP-59
Project Name	PROPOSED PN1400-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	105	32	32	1	32	6.0
1	127	22	22	1	22	9.2
1	137	10	10	1	10	22.2
1	145	8	8	1	8	28.4
5	190	45	9	1	9	24.9
5	243	53	11	1	11	20.8
5	281	38	8	1	8	30.1
5	299	18	4	1	4	69.6
5	327	28	6	1	6	42.4
5	345	18	4	1	4	69.6
5	360	15	3	1	3	85.3
5	374	14	3	1	3	100.0
5	383	9	2	1	2	100.0
5	389	6	1	1	1	100.0
5	395	6	1	1	1	100.0
5	400	5	1	1	1	100.0
5	403	3	1	1	1	100.0
5	406	3	1	1	1	100.0
5	408	2	0	1	0	100.0
5	409	1	0	1	0	100

MATRIX LABORATORY L.L.C.

TABLE D3 -114
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15 0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	15/08/2015
Project No.	XSD/15-0143	Test Location	TP-60
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS ;

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	85	-	-	-	-	-
1	137	52	52	1	52	3.6
1	160	23	23	1	23	8.7
1	180	20	20	1	20	10.2
1	195	15	15	1	15	14.1
1	209	14	14	1	14	15.2
1	218	9	9	1	9	24.9
5	270	52	10	1	10	21.2
5	310	40	8	1	8	28.4
5	353	43	9	1	9	26.2
5	387	34	7	1	7	34.1
5	407	20	4	1	4	61.8
5	430	23	5	1	5	52.9
5	452	22	4	1	4	55.6
5	473	21	4	1	4	58.5
5	490	17	3	1	3	74.2
5	505	15	3	1	3	85.3
5	515	10	2	1	2	100.0
5	527	12	2	1	2	100.0
5	534	7	1	1	1	100.0
5	539	5	1	1	1	100
5	544	5	1	1	1	100
5	548	4	1	2	2	100
5	551	3	1	2	1	100
5	554	3	1	3	2	100
5	558	4	1	3	3	100
5	560	2	0	4	2	100
5	562	2	0	4	2	100
5	564	2	0	5	2	100
5	565	1	0	5	1	100

MATRIX LABORATORY L.L.C.

TABLE D3 -115
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	16/06/2015
Project No.	XSD/15-0143	Test Location	TP-61
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	87	-	-	-	-	-
1	135	48	48	1	48	3.8
1	156	21	21	1	21	9.6
1	167	11	11	1	11	19.9
1	168	1	1	2	2	100.0
5	169	1	0	3	1	100.0
5	170	1	0	4	1	100.0
5	206	36	7	1	7	32.0
5	245	39	8	1	8	29.3
5	273	28	6	1	6	42.4
5	300	27	5	1	5	44.2
5	322	22	4	1	4	55.6
5	345	23	5	1	5	52.9
5	350	5	1	1	1	100.0
5	367	17	3	1	3	74.2
5	380	13	3	1	3	100.0
5	392	12	2	1	2	100.0
5	415	23	5	1	5	52.9
5	439	24	5	1	5	50.4
5	470	31	6	1	6	37.8
5	501	31	6	1	6	38
5	527	26	5	1	5	46
5	545	18	4	2	7	32
5	581	46	9	3	28	7
5	630	39	8	4	31	6
5	661	31	6	5	31	6
5	695	34	7	6	41	5
5	737	42	8	7	59	3
5	750	13	3	8	21	10
5	790	40	8	9	72	2
5	819	29	6	10	58	3
5	845	26	5	11	57	3
5	900	55	11	12	132	1
5	931	31	6	13	81	2
5	950	19	4	14	53	3
5	967	17	3	15	51	4
5	990	23	5	16	74	2

MATRIX LABORATORY L.L.C.

TABLE D3 -116
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-81
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	81	31	31	1	31	6.2
1	100	19	19	1	19	10.8
1	113	13	13	1	13	16.5
1	121	8	8	1	8	28.4
5	170	49	10	1	10	22.7
5	209	39	8	1	8	29.3
5	240	31	6	1	6	37.8
5	282	42	8	1	8	26.9
5	311	29	6	1	6	40.6
5	335	24	5	1	5	50.4
5	357	22	4	1	4	55.6
5	372	15	3	1	3	85.3
5	399	27	5	1	5	44.2
5	437	38	8	1	8	30.1
5	480	43	9	1	9	26.2
5	500	20	4	1	4	61.8
5	516	16	3	1	3	79.4
5	527	11	2	1	2	100.0
5	535	8	2	1	2	100.0
5	541	6	1	1	1	100.0
5	546	5	1	1	1	100.0
5	550	4	1	1	1	100.0
5	553	3	1	1	1	100.0
5	556	3	1	1	1	100.0
5	558	2	0	1	0	100.0
5	560	2	0	1	0	100.0
5	561	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -117
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	16/09/2015
Project No.	XSD/15-0143	Test Location	TP-62
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	64	-	-	-	-	-
1	110	46	46	1	46	4.0
1	151	41	41	1	41	4.6
1	173	22	22	1	22	9.2
1	185	12	12	1	12	18.1
1	194	9	9	1	9	24.9
5	240	46	9	1	9	24.3
5	273	33	7	1	7	35.3
5	300	27	5	1	5	44.2
5	327	27	5	1	5	44.2
5	354	27	5	1	5	44.2
5	362	8	2	1	2	100.0
5	378	16	3	1	3	78.4
5	385	7	1	1	1	100.0
5	390	5	1	1	1	100.0
5	393	3	1	1	1	100.0
5	395	2	0	1	0	100.0
5	397	2	0	1	0	100.0
5	399	2	0	1	0	100.0
5	400	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -118
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No	XSD/15-0143	Test Location	TP-63
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	77	27	27	1	27	7.3
1	85	8	8	1	8	28.4
1	93	8	8	1	8	28.4
5	137	44	9	1	9	25.6
1	162	25	25	1	25	7.9
1	180	18	18	1	18	11.5
5	192	12	2	1	2	100.0
5	201	9	2	1	2	100.0
5	210	9	2	1	2	100.0
5	215	5	1	1	1	100.0
5	220	6	1	1	1	100.0
5	224	4	1	1	1	100.0
5	230	6	1	1	1	100.0
5	233	3	1	1	1	100.0
5	236	3	1	1	1	100.0
5	240	4	1	1	1	100.0
5	242	2	0	1	0	100.0
5	244	2	0	1	0	100.0
5	245	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 -119
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-64
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	65	-	-	-	-	-
1	110	45	45	1	45	4.1
1	145	35	35	1	35	5.4
1	170	25	25	1	25	7.9
1	187	17	17	1	17	12.2
1	199	12	12	1	12	18.1
1	207	8	8	1	8	28.4
5	250	43	9	1	9	26.2
5	291	41	8	1	8	27.7
5	323	32	6	1	6	36.5
5	350	27	5	1	5	44.2
5	373	23	5	1	5	52.9
5	395	22	4	1	4	55.6
5	416	21	4	1	4	58.5
5	425	9	2	1	2	100.0
5	433	8	2	1	2	100.0
5	440	7	1	1	1	100.0
5	444	4	1	1	1	100.0
5	447	3	1	1	1	100.0
5	449	2	0	1	0	100.0
5	450	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 -120
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-65
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	45	-	-	-	-	-
1	67	22	22	1	22	9.2
1	77	10	10	1	10	22.2
1	85	8	8	1	8	28.4
5	130	45	9	1	9	24.9
5	145	15	3	1	3	85.3
5	153	8	2	1	2	100.0
5	160	7	1	1	1	100.0
5	165	5	1	1	1	100.0
5	168	3	1	1	1	100.0
5	170	2	0	1	0	100.0
5	172	2	0	1	0	100.0
5	173	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -121
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	16/09/2015
Project No.	XSD/15-0143	Test Location	TP-66
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	81	-	-	-	-	-
1	123	42	42	1	42	4.4
1	151	28	28	1	28	7.0
1	173	22	22	1	22	9.2
1	185	12	12	1	12	16.1
1	193	8	8	1	8	28.4
5	245	52	10	1	10	21.2
5	290	45	9	1	9	24.9
5	321	31	6	1	6	37.8
5	355	34	7	1	7	34.1
5	379	24	5	1	5	50.4
5	400	21	4	1	4	58.5
5	421	21	4	1	4	58.5
5	440	19	4	1	4	65.5
5	450	10	2	1	2	100.0
5	457	7	1	1	1	100.0
5	461	4	1	1	1	100.0
5	465	4	1	1	1	100.0
5	469	4	1	1	1	100.0
5	472	3	1	1	1	100.0
5	475	3	1	1	1	100.0
5	477	2	0	1	0	100.0
5	479	2	0	1	0	100.0
5	480	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -122
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No	XSD/15-0143
Contractor	N P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-67
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	90	35	35	1	35	5.4
1	121	31	31	1	31	6.2
1	137	16	16	1	16	13.1
1	145	8	8	1	8	28.4
5	184	39	8	1	8	29.3
5	220	36	7	1	7	32.0
5	251	31	6	1	6	37.8
5	273	22	4	1	4	55.6
5	290	17	3	1	3	74.2
5	304	14	3	1	3	100.0
5	313	9	2	1	2	100.0
5	320	7	1	1	1	100.0
5	326	6	1	1	1	100.0
5	329	3	1	1	1	100.0
5	333	4	1	1	1	100.0
5	336	3	1	1	1	100.0
5	339	3	1	1	1	100.0
5	341	2	0	1	0	100.0
5	343	2	0	1	0	100.0
5	345	2	0	1	0	100.0
5	346	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -123
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-68
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	62	-	-	-	-	-
1	74	12	12	1	12	18.1
1	80	6	6	1	6	39.3
5	86	6	1	1	1	100.0
5	92	6	1	1	1	100.0
5	98	6	1	1	1	100.0
5	104	6	1	1	1	100.0
5	110	6	1	1	1	100.0
5	116	6	1	1	1	100.0
5	122	6	1	1	1	100.0
5	128	6	1	1	1	100.0
5	134	6	1	1	1	100.0
5	140	6	1	1	1	100.0
5	146	6	1	1	1	100.0
5	152	6	1	1	1	100.0
5	158	6	1	1	1	100.0
5	164	6	1	1	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -124

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M-MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-69
Project Name	PROPOSED PN1403-DTC.IA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	70	20	20	1	20	10.2
1	75	5	5	1	5	48.1
5	103	28	6	1	6	42.4
5	117	14	3	1	3	100.0
5	125	8	2	1	2	100.0
5	137	12	2	1	2	100.0
5	143	6	1	1	1	100.0
5	147	4	1	1	1	100.0
5	150	3	1	1	1	100.0
5	153	3	1	1	1	100.0
5	155	2	0	1	0	100.0
5	157	2	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -125
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	1P-70
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	102	39	39	1	39	4.6
1	130	28	28	1	28	7.0
1	141	11	11	1	11	19.9
1	150	9	9	1	9	24.9
5	200	50	10	1	10	22.2
5	232	32	6	1	6	36.5
5	250	18	4	1	4	69.6
5	263	13	3	1	3	100.0
5	270	7	1	1	1	100.0
5	275	5	1	1	1	100.0
5	279	4	1	1	1	100.0
5	283	4	1	1	1	100.0
5	285	2	0	1	0	100.0
5	286	1	0	1	0	100.0

MATRIX LABORATORY L.L.C

TABLE D3 -126
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-71
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR [%]
0	110	-	-	-	-	-
1	162	52	52	1	52	3.5
1	190	28	28	1	28	7.0
1	211	21	21	1	21	9.6
1	225	14	14	1	14	15.2
1	244	19	19	1	19	10.8
1	261	17	17	1	17	12.2
1	274	13	13	1	13	16.5
1	285	11	11	1	11	19.9
1	294	9	9	1	9	24.9
5	331	37	7	1	7	31.0
5	362	31	6	1	6	37.8
5	384	22	4	1	4	55.6
5	410	26	5	1	5	46.1
5	425	15	3	1	3	85.3
5	445	20	4	1	4	61.8
5	468	23	5	1	5	52.9
5	492	24	5	1	5	50.4
5	510	18	4	1	4	69.6
5	530	20	4	1	4	61.8
5	545	15	3	1	3	85
5	560	15	3	1	3	85
5	575	15	3	2	6	39
5	590	15	3	2	5	44.2
5	608	18	4	2	7	32.0
5	635	27	5	2	12	18
5	660	25	5	2	12	18
5	686	26	6	3	15	15
5	712	24	5	3	13	15.9
5	732	20	4	3	12	18.1
5	754	22	4	3	14	15
5	775	21	4	3	14	15
5	790	15	3	4	11	20
5	807	17	3	4	13	16.6
5	820	13	3	4	10	21.2
5	830	10	2	4	8	27
5	842	12	2	4	11	21
5	854	12	2	5	11	20
5	865	11	2	5	11	20.8
5	878	13	3	5	13	16.5
5	890	12	2	5	12	17
5	920	30	6	5	32	6

MATRIX LABORATORY L.L.C.

TABLE D3 -127
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-71
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	175	95	95	1	95	1.8
1	220	45	45	1	45	4.1
1	242	22	22	1	22	9.2
1	260	18	18	1	18	11.5
1	271	11	11	1	11	19.9
1	280	9	9	1	9	24.9
5	327	47	9	1	9	23 7
5	360	33	7	1	7	35 3
5	385	25	5	1	5	48.1
5	402	17	3	1	3	74.2
5	420	18	4	1	4	69.6
5	437	17	3	1	3	74.2
5	450	13	3	1	3	100.0
5	467	17	3	1	3	74.2
5	480	13	3	1	3	100.0
5	493	13	3	1	3	100.0
5	500	7	1	1	1	100.0
5	509	9	2	1	2	100.0
5	519	10	2	1	2	100.0
5	527	8	2	1	2	100.0
5	535	8	2	1	2	100 0
5	540	5	1	1	1	100 0
5	545	5	1	1	1	100 0
5	553	8	2	1	2	100 0
5	560	7	1	1	1	100.0
5	566	6	1	1	1	100 0
5	572	6	1	1	1	100 0
5	580	8	2	1	2	100 0
5	583	3	1	1	1	100 0
5	587	4	1	1	1	100 0
5	591	4	1	1	1	100.0
5	593	2	0	1	0	100 0
5	596	3	1	1	1	100 0
5	599	3	1	1	1	100 0
5	601	2	0	1	0	100 0
5	603	2	0	1	0	100 0
5	604	1	0	1	0	100 0

MATRIX LABORATORY L.L.C

TABLE D3 -128
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	16/09/2015
Project No.	XSD/15-0143	Test Location	TP-71
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	75	25	25	1	25	7.9
1	84	9	9	1	9	24.9
5	130	46	9	1	9	24.3
5	167	37	7	1	7	31.0
5	180	13	3	1	3	100.0
5	190	10	2	1	2	100.0
5	201	11	2	1	2	100.0
5	209	8	2	1	2	100.0
5	213	4	1	1	1	100.0
5	216	3	1	1	1	100.0
5	218	2	0	1	0	100.0
5	219	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -129

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	20/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-72
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	47	-	-	-	-	-
1	55	8	8	1	8	26.4
5	67	12	2	1	2	100.0
6	73	6	1	1	1	100.0
5	75	2	0	1	0	100.0
5	76	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -130
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-73
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	63	13	13	1	13	16.5
1	71	8	8	1	8	28.4
5	86	15	3	1	3	85.3
5	93	7	1	1	1	100.0
5	96	3	1	1	1	100.0
5	98	2	0	1	0	100.0
5	99	1	0	2	0	100.0

MATRIX LABORATORY LLC.

TABLE D3 -131
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-74
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	45	-	-	-	-	-
1	57	12	12	1	12	16.1
1	67	10	10	1	10	22.2
1	75	8	8	1	8	28.4
5	99	24	5	1	5	50.4
5	110	11	2	1	2	100.0
5	119	9	2	1	2	100.0
5	125	6	1	2	2	100.0
5	129	4	1	2	2	100.0
5	133	4	1	3	2	100.0
5	137	4	1	3	3	100.0
5	140	3	1	4	2	100.0
5	142	2	0	4	2	100.0
5	143	1	0	5	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -132
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-75
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	59	9	9	1	9	24.9
5	75	16	3	1	3	79.4
5	87	12	2	1	2	100.0
5	93	6	1	1	1	100.0
5	99	6	1	1	1	100.0
5	102	3	1	1	1	100.0
5	104	2	0	2	1	100.0
5	106	2	0	2	1	100.0
5	107	1	0	3	1	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -133
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	16/09/2015
Project No.	XSD/15-0143	Test Location	TP-76
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	67	-	-	-	-	-
1	93	26	26	1	26	7.6
1	110	17	17	1	17	12.2
1	117	7	7	1	7	33.0
5	157	40	8	1	8	28.4
5	190	33	7	1	7	35.3
5	217	27	5	1	5	44.2
5	240	23	5	2	9	24.3
5	265	25	5	2	12	18.6
5	290	25	5	3	14	15.0
5	319	29	6	3	19	10.6
5	344	25	5	4	19	10.7
5	372	28	6	4	24	8.2
5	400	28	6	5	27	7.3
5	424	24	5	5	26	7.7
5	452	28	6	6	33	5.9
5	475	23	5	6	29	6.7
5	495	20	4	7	27	7.2
5	517	22	4	7	32	6.0
5	540	23	5	8	36	5.3
5	560	20	4	8	33	5.8
5	573	13	3	9	23	8.7
5	584	11	2	9	21	9.9
5	592	8	2	10	16	13.3
5	595	3	1	10	6	37.8
5	597	2	0	11	4	56.5
5	598	1	0	11	2	100.0

MATRIX LABORATORY L.L.C

TABLE D5 -134
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-77
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	45	-	-	-	-	-
1	96	51	51	1	51	3.6
1	116	20	20	1	20	10.2
1	140	24	24	1	24	8.3
1	178	38	38	1	38	5.0
1	215	37	37	1	37	5.1
1	240	25	25	1	25	7.9
1	260	20	20	2	40	4.7
1	275	15	15	2	30	6.4
1	291	16	16	3	45	4.1
1	321	30	30	3	100	1.7
1	335	14	14	4	54	3.4
1	347	12	12	4	52	3.5
1	356	9	9	5	43	4.3
5	400	44	9	5	47	3.9
5	437	37	7	6	43	4.3
5	470	33	7	6	42	4.5
5	499	29	6	7	40	4.7
5	532	33	7	7	48	3.8
5	565	33	7	8	52	3.5
5	600	35	7	8	58	3.1
5	633	33	7	9	58	3.1
5	667	34	7	9	63	2.8
5	700	33	7	10	65	2.7
5	737	37	7	10	70	2.3
5	780	43	9	11	93	1.8
5	820	40	8	11	91	1.9
5	855	35	7	12	83	2.1
5	890	35	7	12	86	2.0
5	931	41	8	13	105	1.6
5	973	42	8	13	112	1.5
5	995	22	4	14	61	2.9

MATRIX LABORATORY L.L.C.

TABLE D3 -135
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	16/06/2015
Project No.	XSD/15-0143	Test Location	TP-77
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	101	51	51	1	51	3.6
1	130	29	29	1	29	6.7
1	152	22	22	1	22	9.2
1	173	21	21	1	21	9.6
1	200	27	27	1	27	7.3
1	219	19	19	1	19	10.8
1	231	12	12	2	24	8.3
1	240	9	9	2	21	9.6
5	291	51	10	3	29	6.7
1	342	51	51	3	170	0.9
1	385	43	43	4	165	1.0
1	420	35	35	4	152	1.1
1	453	33	33	5	160	1.0
5	487	34	7	5	36	5.2
5	515	28	6	6	33	5.0
5	539	24	5	6	30	6.4
5	570	31	6	7	42	4.4
5	595	25	5	7	37	5.2
5	635	40	8	8	63	2.8
5	687	52	10	8	87	2.0
5	710	23	5	9	41	4.6
5	725	15	3	9	28	7.0
5	757	32	6	10	63	2.8
5	790	33	7	10	68	2.6
5	812	22	4	11	46	3.9
5	832	20	4	11	45	4.1
5	857	25	5	12	59	3.0
5	875	18	4	12	44	4.2
5	889	14	3	13	36	5.3
5	899	10	2	13	27	7.4
5	910	11	2	14	30	6.4
5	922	12	2	14	34	5.6
5	935	13	3	15	39	4.9
5	947	12	2	15	37	5.1
5	959	12	2	16	38	5.0
5	970	11	2	16	36	5.3
5	981	11	2	17	37	5.1
5	990	9	2	17	31	6.2
5	997	7	1	18	25	7.9

MATRIX LABORATORY L L C

TABLE D3 -136
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	10/09/2015
Project No.	XSD/15-0143	Test Location	TP-77
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	85	35	35	1	35	5.4
1	99	14	14	1	14	15.2
1	111	12	12	1	12	18.1
1	123	12	12	1	12	18.1
1	135	12	12	1	12	18.1
1	146	11	11	1	11	19.9
1	154	8	8	2	16	13.1
5	201	47	9	2	22	9.2
5	253	52	10	3	29	6.6
1	289	36	36	3	120	1.4
1	307	18	18	4	69	2.5
1	329	22	22	4	95	1.8
1	351	22	22	5	106	1.6
5	373	22	4	5	23	8.5
5	397	24	5	6	28	7.0
5	430	33	7	6	42	4.5
5	462	32	6	7	44	4.2
5	475	13	3	7	19	10.8
5	490	15	3	8	23	8.5
5	511	21	4	8	35	5.4
5	523	12	2	9	21	9.5
5	537	14	3	9	26	7.6
5	550	13	3	10	26	7.7
5	562	12	2	10	25	8.0
5	575	13	3	11	28	6.9
5	586	11	2	11	25	8.0
5	595	9	2	12	21	9.5
5	603	8	2	12	20	10.3
5	613	10	2	13	26	7.7
5	619	6	1	13	16	13.1
5	622	3	1	14	8	27.3
5	626	4	1	14	11	19.0
5	629	3	1	15	9	25.2
5	632	3	1	15	9	24.3
5	634	2	0	16	6	36.0
5	636	2	0	16	7	35.7
5	638	2	0	17	7	34.5
5	639	1	0	17	3	72.6

MATRIX LABORATORY L.L.C.

TABLE D3 -137

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-78
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	175	85	85	1	85	2.0
1	200	25	25	1	25	7.9
1	215	15	15	1	15	14.1
1	231	16	16	1	16	13.1
1	242	11	11	1	11	19.9
1	261	19	19	1	19	10.8
1	270	9	9	2	18	11.5
1	277	7	7	2	16	12.8
1	295	18	18	3	51	3.6
1	327	32	32	3	107	1.6
1	340	13	13	4	50	3.7
1	352	12	12	4	52	3.5
1	360	8	8	5	39	4.9
5	407	47	9	5	50	3.6
5	445	38	8	6	44	4.2
5	481	36	7	6	46	4.0
5	502	21	4	7	29	6.8
5	557	55	11	7	81	2.1
5	602	45	9	8	70	2.5
5	637	35	7	8	56	3.1
5	671	34	7	9	60	3.0
5	702	31	6	9	58	3.1
5	740	38	8	10	75	2.3
5	782	42	8	10	87	2.0
5	819	37	7	11	80	2.2
5	847	28	6	11	63	2.8
5	890	43	9	12	102	1.6
5	920	30	6	12	74	2.4
5	947	27	5	13	69	2.5
5	972	25	5	13	67	2.6
5	994	22	4	14	61	2.9

MATRIX LABORATORY L.L.C.

TABLE D3 -138
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-78
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	117	42	42	1	42	4.4
1	135	18	18	1	18	11.5
1	158	21	21	1	21	9.6
1	177	21	21	1	21	9.6
1	205	28	28	1	28	7.0
1	220	15	15	1	15	14.1
1	229	9	9	2	18	11.5
6	250	21	4	2	10	22.7
5	277	27	5	3	15	13.8
5	375	98	20	3	65	2.7
5	417	42	8	4	32	6.0
5	460	43	9	4	37	5.1
5	487	27	5	5	26	7.6
5	503	16	3	5	17	12.2
5	535	32	8	6	37	5.1
5	550	15	3	6	19	10.8
5	577	27	5	7	37	5.1
5	601	24	5	7	35	5.4
5	642	41	8	8	64	2.8
5	695	53	11	8	88	1.9
5	730	35	7	9	62	2.9
5	762	32	6	9	60	3.0
5	787	25	5	10	49	3.7
5	801	14	3	10	29	6.7
5	825	24	5	11	52	3.5
5	850	25	5	11	57	3.2
5	882	32	6	12	76	2.3
5	897	15	3	12	37	5.1
5	919	22	4	13	56	3.2
5	937	18	4	13	48	3.8
5	945	8	2	14	22	9.1
5	957	12	2	14	34	5.6
5	980	23	5	15	68	2.6

MATRIX LABORATORY LLC

TABLE D3 -139
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-78
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	90	35	35	1	35	5.4
1	121	31	31	1	31	6.2
1	140	19	19	1	19	10.8
1	157	17	17	1	17	12.2
1	168	11	11	1	11	19.9
1	175	7	7	1	7	33.0
5	221	46	9	2	18	11.2
5	268	47	9	2	22	9.2
5	297	29	6	3	16	12.7
5	327	30	6	3	20	10.2
5	350	23	5	4	18	11.7
5	369	19	4	4	16	12.7
5	380	11	2	5	11	20.7
5	397	17	3	5	18	11.4
5	425	28	6	6	33	5.9
5	451	26	5	6	33	5.8
5	470	19	4	7	28	7.6
5	492	22	4	7	32	8.0
5	505	13	3	8	20	10.0
5	517	12	2	8	20	10.2
5	529	12	2	9	21	9.5
5	540	11	2	9	21	9.9
5	552	12	2	10	24	8.5
5	560	8	2	10	17	12.6
5	567	7	1	11	15	13.9
5	571	4	1	11	9	24.7
5	574	3	1	12	7	32.5
5	577	3	1	12	7	31.0
5	579	2	0	13	5	46.7
5	581	2	0	13	5	44.8
5	582	1	0	14	3	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -140
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-79
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	150	70	70	1	70	2.5
1	201	51	51	1	51	3.6
1	237	36	36	1	36	5.3
1	271	34	34	1	34	5.6
1	295	24	24	1	24	8.3
1	317	22	22	1	22	9.2
1	330	13	13	2	26	7.6
1	347	17	17	2	40	4.7
1	366	19	19	3	64	3.4
1	379	13	13	3	43	4.3
1	390	11	11	4	42	4.4
1	397	7	7	4	30	6.4
5	445	48	10	5	46	4.0
5	492	47	9	5	50	3.6
5	539	47	9	6	55	3.3
5	575	36	7	6	46	4.0
5	599	24	5	7	33	5.0
5	636	37	7	7	54	3.3
5	670	34	7	8	53	3.4
5	692	22	4	8	37	5.2
5	725	33	7	9	58	3.1
5	751	26	5	9	49	3.8
5	789	38	8	10	75	2.3
5	805	16	3	10	33	5.8
5	824	19	4	11	41	4.5
5	845	21	4	11	48	3.9
5	890	45	9	12	106	1.6
5	919	29	6	12	72	2.4
5	940	21	4	13	54	3.4
5	975	35	7	13	93	1.8
5	993	18	4	14	50	3.7

MATRIX LABORATORY L.L.C.

TABLE D3 -141
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-79
Project Name	PROPOSED PN1403-DTC.IA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	67	-	-	-	-	-
1	137	70	70	1	70	2.5
1	160	23	23	1	23	8.7
1	182	22	22	1	22	9.2
1	195	13	13	1	13	16.5
1	206	11	11	1	11	19.9
1	213	7	7	1	7	33.0
5	260	47	9	2	19	10.9
5	307	47	9	2	22	9.2
5	342	35	7	3	20	10.3
5	376	34	7	3	23	8.9
5	395	19	4	4	15	14.5
5	421	26	5	4	23	8.9
5	452	31	6	5	30	6.5
5	479	27	5	5	29	6.8
5	500	21	4	6	25	8.1
5	546	45	9	6	57	3.2
5	579	34	7	7	46	4.0
5	595	16	3	7	23	8.5
5	621	26	5	8	41	4.6
5	645	24	5	8	40	4.7
5	679	34	7	9	60	3.0
5	700	21	4	9	39	4.8
5	721	21	4	10	41	4.5
5	742	21	4	10	43	4.3
5	765	23	5	11	50	3.7
5	797	32	6	11	73	2.4
5	825	28	6	12	66	2.7
5	850	25	5	12	62	2.9
5	879	29	6	13	74	2.3
5	804	15	3	13	40	4.7
5	927	33	7	14	91	1.9
5	951	24	5	14	69	2.6
5	973	22	4	15	65	2.7
5	981	8	2	15	25	8.1
5	989	8	2	16	25	7.8

MATRIX LABORATORY L.L.C.

TABLE D3 -142

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-79
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	53	-	-	-	-	-
1	115	62	62	1	62	2.9
1	152	37	37	1	37	5.1
1	158	6	6	1	6	39.3
1	200	42	42	1	42	4.4
1	215	15	15	1	15	14.1
1	226	11	11	1	11	19.9
1	233	7	7	2	14	15.2
5	281	48	10	2	22	8.0
5	319	38	8	3	22	9.4
5	350	31	6	3	21	9.8
5	375	25	5	4	19	10.7
5	392	17	3	4	15	14.4
5	412	20	4	5	19	10.6
5	430	18	4	5	19	10.7
5	457	27	5	6	32	6.1
5	480	23	5	6	29	6.7
5	495	15	3	7	21	9.9
5	510	15	3	7	22	9.2
5	521	11	2	8	17	12.0
5	535	14	3	8	23	8.6
5	542	7	1	9	12	17.5
5	551	9	2	9	17	12.4
5	556	5	1	10	10	22.6
5	560	4	1	10	8	27.4
5	564	4	1	11	9	26.0
5	567	3	1	11	7	34.1
5	569	2	0	12	5	51.2
5	571	2	0	12	5	48.9
5	572	1	0	13	3	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -143

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	16/06/2015
Project No.	XSD/15-0143	Test Location	TP-80
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	73	23	23	1	23	8.7
1	85	12	12	1	12	18.1
1	93	8	8	1	8	28.4
5	127	34	7	1	7	34.1
5	145	18	4	1	4	69.6
5	157	12	2	1	2	100.0
5	164	7	1	1	1	100.0
5	170	6	1	1	1	100.0
5	175	5	1	1	1	100.0
5	177	2	0	1	0	100.0
5	178	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -144
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-81
Project Name	PROPOSED PN1403-D ICJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	150	75	75	1	75	2.3
1	182	32	32	1	32	6.0
1	201	19	19	1	19	10.6
1	227	26	26	1	26	7.6
1	240	13	13	1	13	16.5
1	252	12	12	1	12	18.1
1	261	9	9	1	9	24.9
5	310	49	10	1	10	22.7
5	352	42	8	1	8	26.9
5	391	39	8	1	8	29.3
5	427	36	7	1	7	32.0
5	470	43	9	1	9	26.2
5	501	31	6	1	6	37.8
5	537	36	7	1	7	32.0
5	582	45	9	1	9	24.9
5	620	38	8	1	8	30.1
5	655	35	7	1	7	33.0
5	679	24	5	1	5	50.4
5	700	21	4	1	4	58.5
5	727	27	5	1	5	44
5	751	24	5	1	5	50
5	772	21	4	2	8	27
5	797	25	5	2	12	19
5	829	32	6	3	18	11
5	870	41	8	3	27	7
5	907	37	7	4	28	7
5	940	33	7	4	29	7
5	962	22	4	5	21	10
5	979	17	3	5	18	11
5	987	8	2	6	9	24
5	992	5	1	6	6	37

MATRIX LABORATORY L.L.C.

TABLE D3 -145
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP 81
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	107	44	44	1	44	4.2
1	131	24	24	1	24	8.3
1	154	23	23	1	23	8.7
1	167	13	13	1	13	16.5
1	179	12	12	1	12	18.1
1	188	9	9	1	9	24.9
5	240	52	10	1	10	21.2
5	290	50	10	1	10	22.2
5	329	39	8	1	8	29.3
5	355	26	5	1	5	40.1
5	372	17	3	1	3	74.2
5	395	23	5	1	5	52.9
5	417	22	4	1	4	55.6
5	435	18	4	1	4	69.6
5	456	21	4	1	4	58.5
5	475	19	4	1	4	65.5
5	497	22	4	1	4	55.6
5	521	24	5	1	5	50.4
5	552	31	6	1	6	37.8
5	587	35	7	1	7	33.0
5	610	23	5	1	5	52.9
5	625	15	3	1	3	85.3
5	637	12	2	1	2	100.0
5	650	13	3	1	3	100.0
5	669	19	4	1	4	65.5
5	680	11	2	1	2	100.0
5	693	13	3	1	3	100.0
5	705	12	2	1	2	100.0
5	716	11	2	1	2	100.0
5	722	6	1	1	1	100.0
5	730	8	2	1	2	100.0
5	735	5	1	1	1	100.0
5	737	2	0	1	0	100.0
5	740	3	1	1	1	100.0
5	742	2	0	1	0	100.0
5	743	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -146
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-61
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	92	37	37	1	37	5.1
1	121	29	29	1	29	6.7
1	137	16	16	1	16	13.1
1	146	9	9	1	9	24.9
5	192	46	9	1	9	24.3
5	237	45	9	1	9	24.9
5	274	37	7	1	7	31.0
5	301	27	5	1	5	44.2
5	320	19	4	1	4	65.5
5	335	15	3	1	3	85.3
5	344	9	2	1	2	100.0
5	354	10	2	1	2	100.0
5	362	8	2	1	2	100.0
5	370	8	2	1	2	100.0
5	375	5	1	1	1	100.0
5	378	3	1	1	1	100.0
5	380	2	0	1	0	100.0
5	382	2	0	1	0	100.0
5	383	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 - 147
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	16/09/2015
Project No.	XSD/15-0143	Test Location	TP-82
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	195	100	100	1	100	1.7
1	283	88	88	1	88	2.8
1	290	27	27	1	27	7.3
1	317	27	27	1	27	7.3
1	335	18	18	1	18	11.5
1	350	15	15	1	15	14.1
1	363	13	13	1	13	16.6
1	375	12	12	1	12	18.1
1	387	12	12	1	12	18.1
1	399	12	12	1	12	18.1
1	410	11	11	1	11	19.9
1	420	10	10	1	10	22.2
1	429	9	9	1	9	24.9
5	470	41	8	1	8	27.7
5	517	47	9	1	9	23.7
5	570	53	11	1	11	20.8
5	607	37	7	1	7	31.0
5	645	38	8	1	8	30.1
5	687	42	8	1	8	26.9
5	707	20	4	1	4	61.8
5	731	24	5	1	5	50.4
5	752	21	4	1	4	58.5
5	770	18	4	1	4	69.6
5	792	22	4	1	4	55.6
5	810	18	4	1	4	69.6
5	827	17	3	1	3	74.2
5	850	23	5	1	5	52.9
5	900	50	10	1	10	22.2
5	942	42	8	1	8	26.0
5	970	28	6	1	6	42.4
5	996	26	5	1	5	46.1

MATRIX LABORATORY L.L.C

TABLE D3 -148
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-82
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	160	87	87	1	87	2.0
1	200	40	40	1	40	4.7
1	241	41	41	1	41	4.6
1	280	39	39	1	39	4.8
1	305	25	25	1	25	7.9
1	325	20	20	1	20	10.2
1	337	12	12	1	12	18.1
1	345	8	8	1	8	28.4
5	392	47	9	1	9	23.7
5	427	35	7	1	7	33.0
5	460	33	7	1	7	35.3
5	485	25	5	1	5	48.1
5	507	22	4	1	4	55.6
5	527	20	4	1	4	61.8
5	550	23	5	1	5	52.9
5	592	42	8	1	8	26.9
5	635	43	9	1	9	26.2
5	670	35	7	1	7	33.0
5	697	27	5	1	5	44.2
5	735	38	8	1	8	30.1
5	787	52	10	1	10	21.2
5	840	53	11	1	11	20.8
5	883	43	9	1	9	26.2
5	919	36	7	1	7	32.0
5	931	12	2	1	2	100.0
5	952	21	4	1	4	56.5
5	967	15	3	1	3	85.3
5	980	13	3	1	3	100.0
5	995	15	3	1	3	85.3

MATRIX LABORATORY LLC.

TABLE D3 -149

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	18/08/2015
Project No.	XSD/15-0143	Test Location	TP-82
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Yar.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	57	-	-	-	-	-
1	124	67	67	1	67	2.6
1	156	32	32	1	32	6.0
1	170	14	14	1	14	15.2
1	187	17	17	1	17	12.2
1	199	12	12	1	12	18.1
1	208	9	9	1	9	24.9
5	258	48	10	1	10	23.2
5	290	34	7	1	7	34.1
5	321	31	6	1	6	37.8
5	347	26	5	1	5	46.1
5	365	18	4	1	4	69.6
5	382	17	3	1	3	74.2
5	395	13	3	1	3	100.0
5	436	41	8	1	8	27.7
5	471	35	7	1	7	33.0
5	500	29	6	1	6	40.8
5	525	25	5	1	5	46.1
5	550	25	5	1	5	46.1
5	567	17	3	1	3	74.2
5	580	13	3	1	3	100.0
5	591	11	2	1	2	100.0
5	597	6	1	1	1	100.0
5	603	6	1	1	1	100.0
5	609	6	1	1	1	100.0
5	702	93	19	1	19	11.1
5	705	3	1	1	1	100.0
5	708	3	1	1	1	100.0
5	710	2	0	1	0	100.0
5	712	2	0	1	0	100.0
5	713	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -150
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	18/08/2015
Project No.	XSD/15-0143	Test Location	TP-83
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	87	-	-	-	-	-
1	150	63	63	1	63	2.8
1	182	32	32	1	32	6.0
1	200	18	18	1	18	11.5
1	219	19	19	1	19	10.8
1	227	8	8	1	8	20.4
5	275	48	10	1	10	23.2
5	299	24	5	1	5	50.4
5	340	41	8	1	8	27.7
5	373	33	7	1	7	35.3
5	400	27	5	1	5	44.2
5	446	46	9	1	9	24.3
5	490	44	9	1	9	25.6
5	520	30	6	1	6	39.3
5	547	27	5	1	5	44.2
5	563	16	3	1	3	70.4
5	587	24	5	1	5	50.4
5	600	13	3	1	3	100.0
5	642	42	8	1	8	26.9
5	687	45	9	1	9	24.9
5	730	43	9	1	9	26.2
5	763	33	7	1	7	35.3
5	812	49	10	1	10	22.7
5	856	44	9	1	9	25.6
5	900	44	9	1	9	25.6
5	931	31	6	1	6	37.8
5	952	21	4	1	4	58.5
5	980	28	6	1	6	42.4
5	994	14	3	1	3	100

MATRIX LABORATORY L L C

TABLE D3 -151

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-63
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	70	-	-	-	-	-
1	137	67	67	1	67	2.6
1	170	33	33	1	33	5.8
1	200	30	30	1	30	6.6
1	220	20	20	1	20	10.2
1	233	13	13	1	13	16.5
1	242	9	9	1	9	24.9
5	290	48	10	1	10	23.2
5	325	35	7	1	7	33.0
5	367	42	8	1	8	26.9
5	400	33	7	1	7	35.3
5	421	21	4	1	4	58.5
5	440	19	4	1	4	65.5
5	457	17	3	1	3	74.2
5	470	13	3	1	3	100.0
5	482	12	2	1	2	100.0
5	491	9	2	1	2	100.0
5	512	21	4	1	4	58.5
5	530	18	4	1	4	68.6
5	542	12	2	1	2	100.0
5	552	10	2	1	2	100.0
5	561	9	2	1	2	100.0
5	570	9	2	1	2	100.0
5	575	5	1	1	1	100.0
5	581	6	1	1	1	100.0
5	585	4	1	1	1	100.0
5	587	2	0	1	0	100.0
5	588	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -152
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	16/09/2015
Project No.	XSD/15-0143	Test Location	TP-84
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	77	-	-	-	-	-
1	125	48	48	1	48	3.8
1	150	25	25	1	25	7.9
1	171	21	21	1	21	9.6
1	189	18	18	1	18	11.5
1	195	6	5	1	6	39.3
5	243	48	10	1	10	23.2
5	290	47	9	1	9	23.7
5	331	41	8	1	8	27.7
5	374	43	9	1	9	26.2
5	399	25	5	1	5	48.1
5	425	26	5	1	5	46.1
5	450	25	5	1	5	48.1
5	485	35	7	1	7	33.0
5	510	25	5	1	5	48.1
5	542	32	6	1	6	36.5
5	570	28	6	1	6	42.4
5	600	30	6	1	6	39.3
5	619	19	4	1	4	65.5
5	640	21	4	1	4	58.5
5	659	19	4	1	4	65
5	675	16	3	1	3	79
5	689	14	3	2	6	42
5	700	11	2	2	5	47
5	711	11	2	3	6	38
5	722	11	2	3	7	31
5	729	7	1	4	5	44
5	735	6	1	4	5	46
5	739	4	1	5	4	64
5	744	5	1	5	5	45
5	747	3	1	6	4	72
5	749	2	0	6	3	100
5	750	1	0	7	1	100

MATRIX LABORATORY L.L.C.

TABLE D3 -153
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-84
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	107	44	44	1	44	4.2
1	131	24	24	1	24	8.3
1	154	23	23	1	23	8.7
1	167	13	13	1	13	16.5
1	179	12	12	1	12	18.1
1	188	9	9	1	9	24.9
5	240	52	10	1	10	21.2
5	290	50	10	1	10	22.2
5	329	39	8	1	8	29.3
5	355	26	5	1	5	46.1
5	372	17	3	1	3	74.2
5	395	23	5	1	5	52.9
5	417	22	4	1	4	55.6
5	435	18	4	1	4	69.6
5	456	21	4	1	4	58.5
5	475	19	4	1	4	65.5
5	497	22	4	1	4	55.6
5	521	24	5	1	5	50.4
5	552	31	6	1	6	37.8
5	587	35	7	1	7	33.0
5	610	23	5	1	5	52.9
5	625	15	3	1	3	85.3
5	637	12	2	1	2	100.0
5	650	13	3	1	3	100.0
5	669	19	4	1	4	65.5
5	680	11	2	1	2	100.0
5	693	13	3	1	3	100.0
5	705	12	2	1	2	100.0
5	716	11	2	1	2	100.0
5	722	6	1	1	1	100.0
5	730	8	2	1	2	100.0
5	735	5	1	1	1	100.0
5	737	2	0	1	0	100.0
5	740	3	1	1	1	100.0
5	742	2	0	1	0	100.0
5	743	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -154
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CHZM MACE JV	Date Tested	16/08/2015
Project No.	XSD/15-0143	Test Location	TP-85
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	130	67	67	1	67	2.6
1	152	22	22	1	22	8.2
1	170	18	18	1	18	11.5
1	185	15	15	1	15	14.1
1	194	9	9	1	9	24.9
5	240	46	9	1	9	24.3
5	265	25	5	1	5	48.1
5	281	16	3	1	3	79.4
5	292	11	2	1	2	100.0
5	299	7	1	1	1	100.0
5	305	6	1	1	1	100.0
5	308	3	1	1	1	100.0
5	309	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -155
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L C.	Report No.	XSD/15-0143
Contractor	N P.	Date Reported	23/08/2015
Consultant	CH2M HILL/ACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-86
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	131	58	58	1	58	3.1
1	160	29	29	1	29	5.7
1	187	27	27	1	27	7.3
1	199	12	12	1	12	18.1
1	210	11	11	1	11	19.9
1	219	9	9	1	9	24.9
5	270	51	10	1	10	21.7
5	317	47	9	1	9	23.7
5	350	33	7	2	13	16.2
5	387	37	7	3	22	9.1
5	415	28	6	4	22	9.0
5	440	25	5	5	25	7.9
5	463	23	5	6	28	7.1
5	482	19	4	7	27	7.4
5	500	18	4	8	29	6.8
5	517	17	3	9	31	6.3
5	526	11	2	10	22	9.2
5	536	10	2	11	22	9.2
5	570	32	6	12	77	2.3
5	602	32	6	13	83	2.1
5	627	25	5	14	70	2.5
5	650	23	5	15	69	2.5
5	682	32	6	16	102	1.6
5	700	18	4	17	61	2.9
5	727	27	5	18	87	1.7
5	750	23	5	19	87	2.0
5	787	37	7	20	148	1.1
5	810	23	5	21	97	1.7
5	815	5	1	22	22	9.2
5	827	12	2	23	55	3.3
5	837	10	2	24	48	3.8
5	845	8	2	25	40	4.7
5	849	4	1	26	21	9.0
5	852	3	1	27	16	12.9
5	854	2	0	28	11	19.5
5	855	1	0	29	6	40.8

MATRIX LABORATORY L.L.C.

TABLE D3 -156
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-86
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	87	32	32	1	32	6.0
1	100	13	13	1	13	16.5
1	111	11	11	1	11	19.9
1	120	9	9	1	9	24.9
5	171	51	10	1	10	21.7
5	220	49	10	1	10	22.7
5	263	43	9	1	9	20.2
5	301	38	8	1	8	30.1
5	340	39	8	2	16	13.5
5	365	25	5	3	15	14.1
5	392	27	5	4	22	9.3
5	415	23	5	5	23	8.7
5	427	12	2	6	14	14.7
5	439	12	2	7	17	12.4
5	447	8	2	8	13	16.8
5	453	6	1	9	11	20.3
5	460	7	1	10	14	15.2
5	465	5	1	11	11	19.9
5	467	2	0	12	5	50.4
5	469	2	0	13	5	46.1
5	470	1	0	14	3	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -157
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-87
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	190	95	95	1	95	1.8
1	243	53	53	1	53	3.4
1	270	27	27	1	27	7.3
1	295	25	25	1	25	7.9
1	317	22	22	1	22	9.2
1	330	13	13	1	13	16.5
1	352	22	22	1	22	9.2
1	365	13	13	1	13	16.5
1	376	11	11	2	22	9.2
1	384	8	8	3	24	8.3
5	429	45	9	4	36	5.3
5	482	53	11	5	53	3.4
5	530	48	10	6	58	3.1
5	575	45	9	7	63	2.8
5	603	28	6	8	45	4.1
5	635	32	6	9	58	3.1
5	671	36	7	10	72	2.4
5	705	34	7	11	75	2.3
5	740	35	7	12	84	2.0
5	785	45	9	13	117	1.4
5	810	25	5	14	70	2.5
5	831	21	4	15	63	2.8
5	855	24	5	16	77	2.3
5	900	45	9	17	153	1.0
5	953	53	11	18	191	0.8
5	990	37	7	19	141	1.1

MATRIX LABORATORY L.L.C

TABLE D3 -158
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-67
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	63	-	-	-	-	-
1	124	61	61	1	61	2.9
1	157	33	33	1	33	5.8
1	170	13	13	1	13	16.5
1	185	15	15	1	15	14.1
1	197	12	12	1	12	18.1
1	205	8	8	1	8	26.4
5	254	49	10	1	10	22.7
5	291	37	7	1	7	31.0
5	335	44	9	2	18	11.8
5	370	35	7	3	21	9.6
5	401	31	6	4	25	8.0
5	445	44	9	5	44	4.2
5	490	45	9	6	54	3.4
5	536	46	9	7	64	2.8
5	561	25	5	8	40	4.7
5	590	29	6	9	52	3.5
5	619	29	6	10	58	3.1
5	640	21	4	11	46	4.0
5	663	23	5	12	55	3.3
5	690	27	5	13	70	2.5
5	715	25	5	14	70	2.5
5	731	16	3	15	48	3.8
5	749	18	4	16	58	3.1
5	767	18	4	17	61	2.9
5	777	10	2	18	36	5.3
5	785	8	2	19	30	6.4
5	792	7	1	20	28	7.0
5	795	3	1	21	13	17.1
5	798	3	1	22	13	16.2
5	802	4	1	23	18	11.2
5	805	4	1	24	19	10.7
5	808	2	0	25	10	22.2
5	810	2	0	26	10	21.2
5	811	1	0	27	5	44.2

MATRIX LABORATORY L.L.C.

TABLE D3 -159

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	17/06/2015
Project No.	XSD/15-0143	Test Location	TP-87
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	50	-	-	-	-	-
1	100	50	50	1	50	3.7
1	131	31	31	1	31	6.2
1	145	14	14	1	14	15.2
1	154	9	9	1	9	24.9
5	200	46	9	1	9	24.3
5	243	43	9	1	9	26.2
5	275	32	6	1	6	36.5
5	300	25	5	1	5	48.1
5	321	21	4	2	8	26.9
5	330	9	2	3	5	44.2
5	339	9	2	4	7	32.0
5	343	4	1	5	4	61.8
5	347	4	1	6	5	50.4
5	350	3	1	7	4	58.5
5	352	2	0	8	3	79.4
5	353	1	0	9	2	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -160
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-88
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	95	-	-	-	-	-
1	187	92	92	1	92	1.8
1	230	43	43	1	43	4.3
1	262	32	32	1	32	6.0
1	283	21	21	1	21	9.6
1	300	17	17	1	17	12.2
1	312	12	12	1	12	18.1
5	320	8	2	1	2	100.0
5	367	47	9	1	9	23.7
5	420	53	11	2	21	9.5
5	463	43	9	3	26	7.7
5	500	37	7	4	30	6.6
5	537	37	7	5	37	5.1
5	570	33	7	6	40	4.7
5	601	31	6	7	43	4.3
5	630	29	6	8	46	4.0
5	652	22	4	9	40	4.7
5	701	49	10	10	98	1.7
5	755	54	11	11	119	1.4
5	800	45	9	12	108	1.5
5	842	42	8	13	109	1.5
5	900	58	12	14	162	1.0
5	942	42	8	15	126	1.3
5	970	28	6	16	90	1.9
5	999	29	6	17	99	1.7

MATRIX LABORATORY L.L.C.

TABLE D3 -161
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No.	XSD/15-0143
Contractor	N P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-88
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	147	67	67	1	67	2.6
1	170	23	23	1	23	8.7
1	192	22	22	1	22	9.2
1	205	13	13	1	13	16.5
1	214	9	9	1	9	24.9
5	260	46	9	1	9	24.3
5	303	43	9	1	9	26.2
5	340	37	7	1	7	31.0
5	379	39	8	2	16	13.5
5	397	18	4	3	11	20.3
5	419	22	4	4	18	11.8
5	451	32	6	5	32	6.0
5	490	39	8	6	47	3.9
5	527	37	7	7	52	3.5
5	550	23	5	8	37	5.1
5	581	31	5	9	56	3.2
5	615	34	7	10	68	2.6
5	630	15	3	11	33	5.9
5	647	17	3	12	41	4.6
5	657	10	2	13	26	7.6
5	665	8	2	14	22	9.0
5	673	8	2	15	24	8.3
5	680	7	1	16	22	9.0
5	687	7	1	17	24	8.4
5	693	6	1	18	22	9.3
5	696	3	1	19	11	19.1
5	700	4	1	20	16	13.1
5	705	5	1	21	21	9.6
5	710	5	1	22	22	9.2
5	713	3	1	23	14	15.4
5	716	3	1	24	14	14.7
5	719	3	1	25	15	14.1
5	722	3	1	25	16	13.5
5	724	2	0	27	11	20.3
5	725	1	0	28	0	42.4

MATRIX LABORATORY L.L.C

TABLE D3 -162
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/09/2015
Consultant	CH2M MACE JV	Date Tested	17/09/2015
Project No.	XSD/15-0143	Test Location	TP-88
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	60	-	-	-	-	-
1	100	40	40	1	40	4.7
1	121	21	21	1	21	9.6
1	133	12	12	1	12	18.1
1	140	7	7	1	7	33.0
5	187	47	9	1	9	23.7
5	203	16	3	1	3	79.4
5	225	22	4	1	4	55.6
5	230	5	1	1	1	100.0
5	233	3	1	2	1	100.0
5	237	4	1	3	2	100.0
5	241	4	1	4	3	79.4
5	245	4	1	5	4	61.8
5	250	5	1	6	6	39.3
5	252	2	0	7	3	100.0
5	254	2	0	8	3	79.4
5	256	2	0	9	4	69.6
5	257	1	0	10	2	100.0

MATRIX LABORATORY L.L.C.

TABLE 03 -163
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	HP-89
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	110	-	-	-	-	-
1	191	81	81	1	81	2.1
1	226	35	35	1	35	5.4
1	251	25	25	1	25	7.9
1	266	15	15	1	15	14.1
1	277	11	11	1	11	19.9
1	289	12	12	1	12	16.1
1	299	10	10	1	10	22.2
1	308	9	9	1	9	24.9
5	354	46	9	2	18	11.2
5	387	33	7	3	20	10.3
5	412	25	5	4	20	10.2
5	439	27	5	5	27	7.3
5	465	26	5	6	31	6.2
5	487	22	4	7	31	6.3
5	508	21	4	8	34	5.7
5	530	22	4	9	40	4.7
5	553	23	5	10	46	4.0
5	576	23	5	11	51	3.6
5	598	22	4	12	53	3.4
5	620	22	4	13	57	3.1
5	642	22	4	14	62	2.9
5	664	22	4	15	66	2.7
5	686	22	4	16	70	2.5
5	710	24	5	17	82	2.1
5	731	21	4	18	76	2.3
5	754	23	5	19	87	2.0
5	778	24	5	20	96	1.8
5	808	30	6	21	126	1.3
5	830	22	4	22	97	1.7
5	857	27	5	23	124	1.3
5	885	28	6	24	134	1.2
5	917	32	6	25	160	1.0
5	945	28	6	26	146	1.1

MATRIX LABORATORY L.L.C.

TABLE D3 -164
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15 0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-69
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	115	-	-	-	-	-
1	142	27	27	1	27	7.3
1	157	15	15	1	15	14.1
1	167	10	10	1	10	22.2
1	176	9	9	1	9	24.9
5	216	40	8	1	8	28.4
5	251	35	7	1	7	33.0
5	286	35	7	1	7	33.0
5	321	35	7	1	7	33.0
5	354	33	7	2	13	16.2
5	383	29	6	3	17	11.9
5	407	24	5	4	19	10.7
5	430	23	5	5	23	8.7
5	455	25	5	6	30	6.5
5	478	23	5	7	32	6.0
5	507	29	6	8	46	4.0
5	536	29	6	9	52	3.5
5	567	31	6	10	62	2.9
5	593	26	5	11	57	3.1
5	624	31	6	12	74	2.3
5	656	32	6	13	83	2.1
5	690	34	7	14	95	1.8
5	720	30	6	15	90	1.9
5	751	31	6	16	99	1.7
5	785	34	7	17	116	1.4
5	817	32	6	18	115	1.4
5	845	28	6	19	106	1.6
5	875	30	6	20	120	1.4
5	904	29	6	21	122	1.3
5	930	26	5	22	114	1.4
5	955	25	5	23	115	1.4

MATRIX LABORATORY L.L.C.

TABLE D3 -165
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-69
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	116	41	41	1	41	4.6
1	127	11	11	1	11	19.9
1	139	12	12	1	12	18.1
1	150	11	11	1	11	19.9
1	159	9	9	1	9	24.9
1	200	41	41	1	41	4.6
5	245	45	9	1	9	24.9
5	271	26	5	1	5	46.1
5	298	27	5	2	11	20.3
5	327	29	6	3	17	11.9
5	351	24	5	4	19	10.7
5	370	19	4	5	19	10.8
5	395	25	5	6	30	6.5
5	421	26	5	7	36	5.2
5	450	29	6	8	46	4.0
5	487	37	7	9	67	2.6
5	503	16	3	10	32	6.0
5	525	22	4	11	48	3.8
5	547	22	4	12	53	3.4
5	570	23	5	13	60	3.0
5	601	31	6	14	87	2.0
5	629	29	6	15	84	2.0
5	652	23	5	16	74	2.4
5	670	18	4	17	61	2.9
5	684	14	3	18	50	3.6
5	697	13	3	19	49	3.7
5	709	12	2	20	48	3.8
5	719	10	2	21	42	4.4
5	727	8	2	22	35	5.4
5	736	9	2	23	41	4.5
5	742	6	1	24	29	6.8
5	746	4	1	25	20	10.2
5	750	4	1	26	21	9.8
5	755	3	1	27	16	12.9
5	758	2	0	28	11	19.5
5	760	1	0	29	6	40.8

MATRIX LABORATORY L.L.C.

TABLE D - 166
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-90
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	67	-	-	-	-	-
1	96	29	29	1	29	6.7
1	127	31	31	1	31	6.2
1	154	27	27	1	27	7.3
1	171	17	17	1	17	12.2
1	179	8	8	1	8	28.4
1	211	32	6	1	6	36.5
5	230	19	4	1	4	65.5
5	241	11	2	1	2	100.0
5	261	20	4	2	8	28.4
5	280	19	4	3	11	19.1
5	297	17	3	4	14	15.7
5	310	13	3	5	13	16.5
5	320	10	2	6	12	18.1
5	337	17	3	7	24	8.4
5	350	13	3	8	21	9.8
5	362	12	2	9	22	9.3
5	376	14	3	10	28	7.0
5	390	14	3	11	31	6.3
5	401	11	2	12	26	7.5
5	415	14	3	13	36	5.2
5	426	11	2	14	31	6.3
5	435	9	2	15	27	7.3
5	446	11	2	16	35	5.4
5	459	13	3	17	44	4.2
5	472	13	3	18	47	3.9
5	482	10	2	19	38	5.0
5	502	20	4	20	80	2.2
5	518	16	3	21	67	2.6
5	534	16	3	22	70	2.5
5	551	17	3	23	78	2.2
5	570	19	4	24	91	1.9
5	587	17	3	25	85	2.0
5	609	22	4	26	114	1.4
5	628	19	4	27	103	1.6
5	650	22	4	28	123	1.3
5	675	25	5	29	145	1.1
5	697	22	4	30	132	1.2
5	725	28	6	31	174	0.9
5	751	26	5	32	166	0.9
5	782	31	6	33	205	0.8
5	817	35	7	34	238	0.6
5	840	23	5	35	161	1.0
5	873	33	7	36	238	0.6
5	895	22	4	37	160	1.0
5	920	25	5	38	190	0.8
5	947	27	5	39	211	0.7

MATRIX LABORATORY L L C

TABLE D3 -167
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-90
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	100	-	-	-	-	-
1	131	31	31	1	31	8.2
1	143	12	12	1	12	18.1
1	157	14	14	1	14	15.2
1	163	6	6	1	6	39.3
5	197	34	7	1	7	34.1
5	228	31	6	1	6	37.8
5	257	29	6	1	6	40.8
5	288	31	6	1	6	37.8
5	315	27	5	2	11	20.3
5	342	27	5	3	16	12.9
5	369	27	5	4	22	9.3
5	396	27	5	5	27	7.3
5	422	26	5	6	31	6.2
5	455	33	7	7	46	4.0
5	492	37	7	8	59	3.0
5	530	38	8	9	68	2.6
5	574	44	9	10	88	1.9
5	591	17	3	11	37	5.1
5	611	20	4	12	48	3.8
5	650	39	8	13	101	1.7
5	669	19	4	14	53	3.4
5	680	11	2	15	33	5.8
5	832	152	30	16	486	0.3
5	895	63	13	17	214	0.7
5	940	45	9	18	162	1.0

MATRIX LABORATORY L.L.C

TABLE 03 -168

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER L.L.C.	Report No.	XSDN15-0143
Contractor	N.P.	Date Reported	20/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSDN15-0143	Test Location	TP-90
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	NIL	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	60	-	-	-	-	-
1	112	52	52	1	52	3.5
1	150	38	38	1	38	5.0
1	171	21	21	1	21	9.6
1	183	12	12	1	12	18.1
1	192	9	9	1	9	24.9
5	240	48	10	1	10	23.2
5	285	45	9	1	9	24.9
5	329	44	9	1	9	25.6
5	371	42	8	2	17	12.4
5	399	28	6	3	17	12.4
5	427	28	5	4	22	9.0
5	451	24	5	5	24	8.3
5	479	28	6	6	34	5.7
5	501	22	4	7	31	6.3
5	537	36	7	8	58	3.1
5	555	18	4	9	32	5.9
5	590	35	7	10	70	2.5
5	620	30	6	11	98	2.7
5	649	29	6	12	70	2.5
5	670	21	4	13	56	3.3
5	687	17	3	14	48	3.9
5	700	13	3	15	39	4.8
5	715	15	3	16	48	3.8
5	730	15	3	17	51	3.6
5	744	14	3	18	53	3.6
5	756	12	2	19	45	4.0
5	765	9	2	20	36	5.3
5	776	11	2	21	46	4.0
5	784	8	2	22	35	5.4
5	793	9	2	23	41	4.5
5	800	7	1	24	34	5.7
5	805	5	1	25	25	7.9
5	810	5	1	26	26	7.6
5	815	5	1	27	27	7.3
5	818	3	1	28	17	12.4
5	821	3	1	29	17	11.9
5	823	2	0	30	12	18.1
5	825	2	0	31	12	17.4
5	827	2	0	32	13	16.8
5	829	2	0	33	13	16.2
5	830	1	0	34	7	34.1

MATRIX LABORATORY L.L.C.

TABLE D - 169
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-91
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	110	20	20	1	20	10.2
1	127	17	17	1	17	12.2
1	141	14	14	1	14	15.2
1	154	13	13	1	13	16.5
1	160	6	6	1	6	39.3
5	191	31	6	1	6	37.8
5	215	24	5	1	5	50.4
5	233	18	4	1	4	69.6
5	247	14	3	1	3	100.0
5	261	14	3	1	3	100.0
5	280	19	4	1	4	65.5
5	293	13	3	1	3	100.0
6	309	16	3	1	3	79.4
5	322	13	3	1	3	100.0
5	331	9	2	1	2	100.0
5	345	14	3	1	3	100.0
5	357	12	2	1	2	100.0
5	367	10	2	1	2	100.0
5	376	9	2	1	2	100.0
5	385	9	2	1	2	100
5	398	13	3	1	3	100
5	411	13	3	2	5	46
5	423	12	2	2	4	58.7
5	434	11	2	2	4	55.6
5	443	9	2	2	4	63
5	454	11	2	2	5	45
5	465	11	2	3	6	41
5	474	9	2	3	5	47.7
5	482	8	2	3	5	50.4
5	490	14	3	3	9	25
5	506	10	2	3	7	34
5	516	10	2	4	7	32
5	525	9	2	4	7	33.9
5	538	11	2	4	9	25.6
5	547	11	2	4	9	24
5	558	11	2	4	10	23
5	573	15	3	5	14	15
5	586	13	3	5	12	17.3
5	602	16	3	5	16	13.1
5	615	13	3	5	14	16
5	630	15	3	5	16	13
5	640	10	2	6	11	20
5	657	17	3	6	20	10.4
5	670	13	3	6	16	13.5
5	684	14	3	6	17	12
5	700	16	3	6	20	10
5	717	17	3	7	22	9
5	735	18	4	7	24	8.1
5	751	16	3	7	22	9.0
5	770	19	4	7	27	7
5	786	16	3	7	24	8
5	804	18	4	8	27	7
5	823	19	4	8	30	6.6
5	842	19	4	8	30	6.4
5	860	18	4	8	30	7
5	881	21	4	8	35	5
5	891	10	2	9	17	12
5	920	29	6	9	51	3.6
5	941	21	4	9	38	5.0

MATRIX LABORATORY L L C

TABLE D3 -170

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-91
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	92	-	-	-	-	-
1	110	18	18	1	18	11.5
1	120	10	10	1	10	22.2
1	132	12	12	1	12	18.1
1	141	9	9	1	9	24.9
5	172	31	6	1	6	37.9
5	191	19	4	1	4	65.5
5	209	18	4	1	4	59.6
5	227	18	4	1	4	59.6
5	242	15	3	1	3	85.3
5	260	18	4	1	4	59.6
5	275	15	3	1	3	85.3
5	289	14	3	1	3	100.0
5	305	16	3	1	3	79.4
5	322	17	3	1	3	74.2
5	343	21	4	1	4	58.5
5	364	21	4	1	4	58.5
5	383	19	4	1	4	65.5
5	406	23	5	1	5	52.9
5	430	24	5	1	5	50.4
5	450	20	4	1	4	61.8
5	478	28	6	1	6	42.4
5	507	29	6	1	6	40.8
5	532	25	5	1	5	48.1
5	561	29	6	1	6	40.8
5	590	29	6	1	6	40.8
5	617	27	5	1	5	44.2
5	642	25	5	1	5	48.1
5	662	20	4	1	4	61.8
5	681	19	4	1	4	65.5
5	700	19	4	1	4	65.5
5	715	15	3	1	3	85.3
5	736	21	4	1	4	58.5
5	757	21	4	1	4	58.5
5	800	43	9	1	9	26.2
5	815	15	3	1	3	85.3
5	834	19	4	1	4	65.5
5	870	36	7	1	7	32.0
5	911	41	8	1	8	27.7
5	952	41	8	1	8	27.7

MATRIX LABORATORY L.L.C.

TABLE D - 171
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-01
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	90	17	17	1	17	12.2
1	101	11	11	1	11	19.9
1	110	9	9	1	9	24.9
5	142	32	6	1	6	36.5
5	170	28	6	1	6	42.4
5	201	31	6	1	6	37.8
5	237	36	7	1	7	32.0
5	270	33	7	1	7	35.3
5	295	25	5	1	5	46.1
5	315	21	4	1	4	58.5
5	340	24	5	1	5	50.4
5	353	13	3	1	3	100.0
5	375	22	4	1	4	55.6
5	397	22	4	1	4	55.6
5	419	22	4	1	4	55.6
5	437	18	4	1	4	69.6
5	460	23	5	1	5	52.9
5	474	14	3	1	3	100.0
5	495	21	4	1	4	58.5
5	537	42	8	1	8	26.9
5	580	43	9	1	9	26.2
5	607	27	5	1	5	44.2
5	640	33	7	1	7	35.3
5	663	23	5	1	5	52.9
5	685	22	4	1	4	55.6
5	701	16	3	1	3	79.4
5	720	19	4	1	4	66.5
5	732	12	2	1	2	100.0
5	743	11	2	1	2	100.0
5	750	7	1	1	1	100.0
5	761	11	2	1	2	100.0
5	770	9	2	1	2	100.0
5	779	9	2	1	2	100.0
5	785	6	1	1	1	100.0
5	790	5	1	1	1	100.0
5	794	4	1	1	1	100.0
5	797	3	1	1	1	100.0
5	799	2	0	1	0	100.0
5	801	2	0	1	0	100.0
5	802	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -172
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	17/06/2015
Project No.	XSD/15-0143	Test Location	TP-92
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	87	-	-	-	-	-
1	170	83	83	1	83	2.1
1	215	45	45	1	45	4.1
1	245	30	30	1	30	6.5
1	260	15	15	1	15	14.1
1	273	13	13	1	13	16.5
1	281	8	8	1	8	28.4
5	317	36	7	1	7	32.0
5	345	28	6	1	6	42.4
5	370	25	5	1	5	48.1
5	392	22	4	1	4	56.6
5	420	28	6	1	6	42.4
5	447	27	5	1	5	44.2
5	470	23	5	1	5	52.9
5	501	31	6	1	6	37.8
5	532	31	6	1	6	37.8
5	550	18	4	1	4	69.6
5	574	24	5	1	5	50.4
5	595	21	4	1	4	58.5
5	610	15	3	1	3	85.3
5	651	41	8	1	8	28
5	692	41	8	1	8	28
5	737	45	9	2	18	11
5	764	27	5	2	10	22.9
5	787	23	5	2	9	24.3
5	805	18	4	2	8	29
5	827	22	4	2	11	21
5	853	26	5	3	14	16
5	880	27	5	3	15	13.9
5	907	27	5	3	16	12.9
5	934	27	5	3	17	12
5	950	16	3	3	11	20

MATRIX LABORATORY L.L.C.

TABLE D3 -173
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-92
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0 50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Ver.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	90	-	-	-	-	-
1	131	41	41	1	41	4.6
1	150	19	19	1	19	10.6
1	167	17	17	1	17	12 2
1	179	12	12	1	12	18.1
1	186	7	7	1	7	33.0
5	235	49	10	1	10	22.7
5	270	35	7	1	7	33.0
5	297	27	5	1	5	44.2
5	340	43	9	1	9	26.2
5	375	35	7	1	7	33.0
5	402	27	5	1	5	44.2
5	436	34	7	1	7	34.1
5	460	24	5	1	5	50 4
5	487	27	5	1	5	44 2
5	525	38	8	1	8	30 1
5	570	45	9	1	9	24.9
5	597	27	5	1	5	44.2
5	625	28	6	1	6	42.4
5	656	31	6	1	6	37 8
5	680	24	5	1	5	50.4
5	697	17	3	1	3	74.2
5	721	24	5	1	5	50.4
5	742	21	4	1	4	58.5
5	765	23	5	1	5	52.9
5	787	22	4	1	4	55.6
5	801	14	3	1	3	100.0
5	820	19	4	1	4	65.5
5	830	19	4	1	4	65.5
5	855	16	3	1	3	79.4
5	864	9	2	1	2	100 0
5	879	15	3	1	3	65 3
5	890	11	2	1	2	100 0
5	899	9	2	1	2	100 0
5	906	7	1	1	1	100.0
5	910	4	1	1	1	100.0
5	915	5	1	1	1	100.0
5	919	4	1	1	1	100.0
5	922	3	1	1	1	100.0
5	924	2	0	1	0	100.0
5	925	1	0	2	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -174
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-92
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	101	46	46	1	46	4.0
1	130	29	29	1	29	6.7
1	145	15	15	1	15	14.1
1	154	9	9	1	9	24.9
5	190	36	7	1	7	32.0
5	217	27	5	1	5	44.2
5	240	23	5	1	5	52.9
5	263	23	5	1	5	52.9
5	287	24	5	1	5	50.4
5	300	13	3	1	3	100.0
5	323	23	5	1	5	52.9
5	347	24	5	1	5	50.4
5	369	22	4	1	4	55.6
5	380	11	2	1	2	100.0
5	391	11	2	1	2	100.0
5	407	16	3	1	3	79.4
5	419	12	2	1	2	100.0
5	425	6	1	1	1	100.0
5	434	9	2	1	2	100.0
5	438	4	1	1	1	100.0
5	441	3	1	1	1	100.0
5	444	3	1	1	1	100.0
5	446	2	0	1	0	100.0
5	447	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -175
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/082015
Consultant	CH2M MACF JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-93
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	101	26	26	1	26	7.6
1	117	16	16	1	16	13.1
1	125	8	8	1	8	26.4
5	153	28	6	1	6	42.4
5	180	27	5	1	5	44.2
5	200	20	4	1	4	61.8
5	213	13	3	1	3	100.0
5	217	4	1	1	1	100.0
5	220	3	1	1	1	100.0
5	224	4	1	1	1	100.0
5	226	2	0	1	0	100.0
5	226	2	0	1	0	100.0
5	229	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -176

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	17/06/2015
Project No.	XSD/15-0143	Test Location	TP-94
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	93	-	-	-	-	-
1	187	94	94	1	94	1.8
1	283	96	96	1	96	1.8
1	290	7	7	1	7	33.0
1	321	31	31	1	31	6.2
1	340	19	19	1	19	10.8
1	357	17	17	1	17	12.2
1	369	12	12	1	12	18.1
1	377	8	8	1	8	28.4
5	420	43	9	1	9	26.2
5	465	45	9	1	9	24.9
5	500	35	7	1	7	33.0
5	543	43	9	1	9	26.2
5	579	36	7	1	7	32.0
5	610	31	6	1	6	37.6
5	654	44	9	1	9	25.8
5	691	37	7	1	7	31.0
5	732	41	8	1	8	27.7
5	765	33	7	1	7	35.3
5	792	27	5	1	5	44.2
5	821	29	6	1	6	41
5	847	26	5	1	5	46
5	900	53	11	2	21	10
5	945	45	9	3	27	7

MATRIX LABORATORY L.L.C

TABLE D3 -177
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	17/06/2015
Project No.	XSD/15-0143	Test Location	TP-94
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	70	-	-	-	-	-
1	151	81	81	1	81	2.1
1	200	49	49	1	49	3.7
1	227	27	27	1	27	7.3
1	240	13	13	1	13	16.5
1	253	13	13	1	13	16.5
1	262	9	9	1	9	24.9
5	309	47	9	1	9	23.7
5	352	43	9	1	9	26.2
5	390	38	8	1	8	30.1
5	427	37	7	1	7	31.0
5	451	24	5	1	5	50.4
5	477	26	5	1	5	46.1
5	495	18	4	1	4	69.6
5	537	42	8	1	8	26.9
5	570	33	7	1	7	35.3
5	601	31	6	1	6	37.8
5	629	28	6	1	6	42.4
5	675	46	9	1	9	24.3
5	707	32	6	1	6	36.5
5	745	38	8	1	8	30.1
5	800	55	11	1	11	19.9
5	842	42	8	1	8	26.9
5	885	43	9	1	9	26.2
5	900	15	3	1	3	85.3
5	925	25	5	1	5	48.1
5	942	17	3	1	3	74.2

MATRIX LABORATORY L.L.C.

TABLE D3 -178
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-04
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	140	65	65	1	65	2.7
1	164	24	24	1	24	8.3
1	179	15	15	1	15	14.1
1	187	8	8	1	8	28.4
5	241	54	11	1	11	20.3
5	289	48	10	1	10	23.2
5	317	28	6	1	6	42.4
5	355	38	8	1	8	30.1
5	381	26	5	1	5	46.1
5	402	21	4	1	4	58.5
5	420	18	4	1	4	69.6
5	463	43	9	1	9	26.2
5	495	32	6	1	6	36.5
5	521	26	5	1	5	46.1
5	545	24	5	1	5	50.4
5	563	18	4	1	4	69.6
5	587	24	5	1	5	50.4
5	603	16	3	1	3	79.4
5	619	16	3	1	3	79.4
5	640	21	4	1	4	58.5
5	655	15	3	1	3	85.3
5	669	14	3	1	3	100.0
5	679	10	2	1	2	100.0
5	685	6	1	1	1	100.0
5	690	5	1	1	1	100.0
5	695	5	1	1	1	100.0
5	701	0	1	1	1	100.0
5	705	4	1	1	1	100.0
5	708	3	1	1	1	100.0
5	710	2	0	1	0	100.0
5	711	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -179
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-94
Project Name	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	135	55	55	1	55	3.3
1	150	15	15	1	15	14.1
1	163	13	13	1	13	16.5
1	171	8	8	1	8	28.4
5	217	46	9	1	9	24.3
5	265	48	10	1	10	23.2
5	301	36	7	1	7	32.0
5	340	39	8	1	8	29.3
5	372	32	6	1	6	36.5
5	400	28	6	1	6	42.4
5	422	22	4	1	4	55.6
5	440	18	4	1	4	69.6
5	467	27	5	1	5	44.2
5	480	13	3	1	3	100.0
5	492	12	2	1	2	100.0
5	505	13	3	1	3	100.0
5	517	12	2	1	2	100.0
5	530	13	3	1	3	100.0
5	546	16	3	1	3	79.4
5	560	14	3	1	3	100
5	571	11	2	1	2	100
5	580	9	2	2	4	70
5	591	11	2	3	7	35
5	600	9	2	4	7	37
5	606	6	1	5	6	39
5	610	4	1	6	5	50
5	613	3	1	7	4	59
5	616	3	1	8	5	50
5	618	2	0	9	4	70
5	620	2	0	10	4	62
5	621	1	0	11	2	100

MATRIX LABORATORY L.L.C.

TABLE D3 -180
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/06/2015
Consultant	CH2M MACE JV	Date Tested	17/06/2015
Project No.	XSD/15-0143	Test Location	TP-95
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Ervin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	40	-	-	-	-	-
1	55	15	15	1	15	14.1
1	63	8	8	1	8	28.4
5	101	38	8	1	8	30.1
5	130	29	6	1	6	40.8
5	146	16	3	1	3	79.4
5	157	11	2	1	2	100.0
5	163	6	1	1	1	100.0
5	170	7	1	1	1	100.0
5	174	4	1	1	1	100.0
5	177	3	1	1	1	100.0
5	180	3	1	1	1	100.0
5	182	2	0	1	0	100.0
5	183	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -181
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-96
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	93	-	-	-	-	-
1	190	97	97	1	97	1.7
1	253	63	63	1	63	2.8
1	300	47	47	1	47	3.9
1	325	25	25	1	25	7.9
1	339	14	14	1	14	15.2
1	349	10	10	1	10	22.2
1	358	9	9	1	9	24.9
5	400	42	8	1	8	26.9
5	438	38	8	1	8	30.1
5	465	27	5	1	5	44.2
5	500	35	7	1	7	33.0
5	550	50	10	1	10	22.2
5	592	42	8	1	8	26.9
5	631	39	8	1	8	29.3
5	670	39	8	1	8	29.3
5	692	22	4	1	4	55.6
5	725	33	7	1	7	35.3
5	751	26	5	1	5	48.1
5	780	29	6	1	6	40.8
5	817	37	7	1	7	31
5	850	33	7	1	7	35
5	891	41	8	2	16	13
5	923	32	6	3	19	11
5	947	24	5	4	19	11

MATRIX LABORATORY LLC

TABLE D3 -182
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-95
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	78	-	-	-	-	-
1	120	42	42	1	42	4.4
1	141	21	21	1	21	9.6
1	159	18	18	1	18	11.5
1	167	8	8	1	8	28.4
5	220	53	11	1	11	20.8
5	263	43	9	1	9	26.2
5	301	38	8	1	8	30.1
5	340	39	8	1	8	29.3
5	375	35	7	1	7	33.0
5	400	25	5	1	5	46.1
5	421	21	4	1	4	58.5
5	445	24	5	1	5	50.4
5	467	22	4	1	4	55.6
5	500	33	7	1	7	35.3
5	535	35	7	1	7	33.0
5	573	38	8	1	8	30.1
5	607	34	7	1	7	34.1
5	642	35	7	1	7	33.0
5	685	43	9	1	9	26.2
5	720	35	7	1	7	33.0
5	771	51	10	1	10	21.7
5	810	39	8	1	8	29.3
5	851	41	8	1	8	27.7
5	892	41	8	1	8	27.7
5	923	31	6	1	6	37.8
5	950	27	5	1	5	44.2

MATRIX LABORATORY L.L.C.

TABLE D3 -183
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-96
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	55	-	-	-	-	-
1	97	42	42	1	42	4.4
1	130	33	33	1	33	5.8
1	147	17	17	1	17	12.2
1	156	9	9	1	9	24.9
5	200	44	9	1	9	25.6
5	247	47	9	1	9	23.7
5	290	43	9	1	9	26.2
5	325	35	7	1	7	33.0
5	351	26	5	1	5	46.1
5	372	21	4	1	4	58.5
5	396	23	5	1	5	52.9
5	417	22	4	1	4	55.6
5	429	12	2	1	2	100.0
5	435	6	1	1	1	100.0
5	450	15	3	1	3	85.3
5	472	22	4	1	4	55.6
5	493	21	4	1	4	56.5
5	515	22	4	1	4	55.6
5	530	15	3	1	3	85.3
5	546	16	3	1	3	79.4
5	560	14	3	1	3	100.0
5	572	12	2	1	2	100.0
5	582	10	2	1	2	100.0
5	591	9	2	1	2	100.0
5	602	11	2	1	2	100.0
5	610	8	2	1	2	100.0
5	615	5	1	1	1	100.0
5	617	2	0	1	0	100.0
5	620	3	1	1	1	100.0
5	622	2	0	1	0	100.0
5	624	2	0	1	0	100.0
5	625	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -184
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-97
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	117	42	42	1	42	4.4
1	130	13	13	1	13	16.5
1	142	12	12	1	12	18.1
1	151	9	9	1	9	24.9
5	200	49	10	1	10	22.7
5	237	37	7	1	7	31.0
5	259	22	4	1	4	55.6
5	280	21	4	1	4	58.5
5	301	21	4	1	4	58.5
5	319	18	4	1	4	69.6
5	325	6	1	1	1	100.0
5	331	6	1	1	1	100.0
5	339	8	2	1	2	100.0
5	343	4	1	1	1	100.0
5	346	3	1	1	1	100.0
5	349	3	1	1	1	100.0
5	351	2	0	1	0	100.0
5	353	2	0	1	0	100.0
5	354	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -185
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-96
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Ver.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	87	-	-	-	-	-
1	153	66	66	1	66	2.7
1	200	47	47	1	47	3.9
1	225	25	25	1	25	7.9
1	239	14	14	1	14	15.2
1	251	12	12	1	12	18.1
1	260	9	9	1	9	24.9
5	303	43	9	1	9	26.2
5	345	42	8	1	8	28.9
5	371	26	5	1	5	46.1
5	400	29	6	1	6	40.8
5	425	25	5	1	5	46.1
5	451	26	5	1	5	46.1
5	463	12	2	1	2	100.0
5	475	12	2	1	2	100.0
5	492	17	3	1	3	74.2
5	520	28	6	1	6	42.4
5	541	21	4	1	4	58.5
5	575	34	7	1	7	34.1
5	613	38	8	1	8	30.1
5	645	32	6	1	6	37
5	692	47	9	1	9	24
5	735	43	9	2	17	12
5	782	47	9	3	28	7
5	820	38	8	4	30	6
5	857	37	7	5	37	5
5	900	43	9	6	52	4
5	935	35	7	7	49	4

MATRIX LABORATORY L.L.C.

TABLE D3 -186

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-98
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	9.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	74	-	-	-	-	-
1	132	58	58	1	58	3.1
1	155	23	23	1	23	8.7
1	167	12	12	1	12	18.1
1	179	12	12	1	12	18.1
1	187	8	8	1	8	26.4
5	229	42	8	1	8	26.9
5	267	38	8	1	8	30.1
5	301	34	7	1	7	34.1
5	332	31	6	1	6	37.8
5	357	25	5	1	5	48.1
5	390	33	7	1	7	35.3
5	450	60	12	1	12	18.1
5	497	47	9	1	9	23.7
5	529	32	6	1	6	36.5
5	560	31	6	1	6	37.8
5	582	22	4	1	4	55.6
5	600	18	4	1	4	69.6
5	623	23	5	1	5	52.9
5	647	24	5	1	5	50.4
5	662	15	3	1	3	85.3
5	685	23	5	1	5	52.9
5	700	15	3	1	3	85.3
5	731	31	6	1	6	37.8
5	763	32	6	1	6	36.5
5	800	37	7	1	7	31.0
5	842	42	8	1	8	26.9
5	880	38	8	1	8	30.1
5	897	17	3	1	3	74.2
5	920	23	5	1	5	52.9
5	937	17	3	1	3	74.2

MATRIX LABORATORY LLC

TABLE D3 -187
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-98
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	62	-	-	-	-	-
1	115	53	53	1	53	3.4
1	151	36	36	1	36	5.3
1	187	36	36	1	36	5.3
1	200	13	13	1	13	16.5
1	209	9	9	1	9	24.9
5	251	42	8	1	8	26.9
5	290	39	8	1	8	29.3
5	337	47	9	1	9	23.7
5	359	22	4	1	4	55.6
5	372	13	3	1	3	100.0
5	393	21	4	1	4	58.5
5	410	17	3	1	3	74.2
5	427	17	3	1	3	74.2
5	450	23	5	1	5	52.9
5	463	13	3	1	3	100.0
5	475	12	2	1	2	100.0
5	491	16	3	1	3	79.4
5	507	16	3	1	3	79.4
5	515	8	2	1	2	100.0
5	525	10	2	1	2	100.0
5	537	12	2	1	2	100.0
5	550	13	3	1	3	100.0
5	561	11	2	1	2	100.0
5	570	9	2	1	2	100.0
5	576	6	1	1	1	100.0
5	580	4	1	1	1	100.0
5	583	3	1	1	1	100.0
5	585	2	0	1	0	100.0
5	587	2	0	1	0	100.0
5	589	2	0	1	0	100.0
5	590	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3 -188
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-98
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	100	-	-	-	-	-
1	187	87	87	1	87	2.0
1	230	43	43	1	43	4.3
1	245	15	15	1	15	14.1
1	256	11	11	1	11	19.9
1	265	9	9	1	9	24.9
5	313	48	10	1	10	23.2
5	351	38	8	1	8	30.1
5	387	36	7	1	7	32.0
5	399	12	2	1	2	100.0
5	430	31	6	1	6	37.8
5	455	25	5	1	5	46.1
5	478	23	5	1	5	52.9
5	500	22	4	1	4	55.6
5	523	23	5	1	5	52.9
5	545	22	4	1	4	55.6
5	570	25	5	1	5	46.1
5	603	33	7	1	7	35.3
5	645	42	8	1	8	26.9
5	697	52	10	1	10	21.2
5	731	34	7	1	7	34
5	762	31	6	1	6	38
5	800	38	8	2	15	14
5	835	35	7	3	21	10
5	857	22	4	4	18	12
5	879	22	4	5	22	9
5	890	11	2	6	13	10
5	910	20	4	7	28	7
5	935	25	5	8	40	5

MATRIX LABORATORY L.L.C.

TABLE D3 -189

REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-99
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	73	-	-	-	-	-
1	137	64	64	1	64	2.8
1	155	18	18	1	18	11.5
1	166	11	11	1	11	19.9
1	174	8	8	1	8	28.4
5	220	46	9	1	9	24.3
5	237	17	3	1	3	74.2
5	270	33	7	1	7	35.3
5	300	30	6	1	6	39.3
5	327	27	5	1	5	44.2
5	345	18	4	1	4	69.6
5	362	17	3	1	3	74.2
5	380	18	4	1	4	69.6
5	393	13	3	1	3	100.0
5	435	42	8	1	8	26.9
5	463	28	6	1	6	42.4
5	490	27	5	1	5	44.2
5	507	17	3	1	3	74.2
5	513	6	1	1	1	100.0
5	518	5	1	1	1	100.0
5	521	3	1	1	1	100.0
5	523	2	0	1	0	100.0
5	525	2	0	1	0	100.0
5	526	1	0	1	0	100.0

MATRIX LABORATORY L.L.C.

TABLE D3-190
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15 0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-100
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	93	-	-	-	-	-
1	174	81	81	1	81	2.1
1	215	41	41	1	41	4.6
1	237	22	22	1	22	9.2
1	250	13	13	1	13	16.5
1	262	12	12	1	12	18.1
1	271	9	9	1	9	24.9
5	317	46	9	1	9	24.3
5	370	53	11	1	11	20.8
5	397	27	5	1	5	44.2
5	439	42	8	1	8	26.9
5	475	36	7	1	7	32.0
5	497	22	4	1	4	55.6
5	523	26	5	1	5	46.1
5	575	52	10	1	10	21.2
5	593	18	4	1	4	69.6
5	625	32	6	1	6	36.5
5	663	38	8	1	8	30.1
5	700	37	7	1	7	31.0
5	735	35	7	1	7	33.0
5	727	-8	-2	1	-2	100
5	759	32	6	1	6	37
5	793	34	7	2	14	18
5	829	36	7	3	22	9
5	855	26	5	4	21	10
5	890	35	7	5	35	5
5	923	33	7	6	40	5
5	940	17	3	7	24	8

MATRIX LABORATORY L.L.C.

TABLE D3-191
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L.L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No	XSD/15-0143	Test Location	TP-100
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	0.50
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	75	-	-	-	-	-
1	127	52	52	1	52	3.5
1	150	23	23	1	23	8.7
1	165	15	15	1	15	14.1
1	174	9	9	1	9	24.9
5	215	41	8	1	8	27.7
5	261	46	9	1	9	24.3
5	303	42	8	1	8	26.9
5	341	38	8	1	8	30.1
5	385	44	9	1	9	25.6
5	407	22	4	1	4	56.6
5	438	31	6	1	6	37.8
5	459	21	4	1	4	58.5
5	480	21	4	1	4	58.5
5	507	27	5	1	5	44.2
5	542	35	7	1	7	33.0
5	575	33	7	1	7	35.3
5	601	26	5	1	5	46.1
5	625	24	5	1	5	50.4
5	656	31	6	1	6	37.6
5	689	33	7	1	7	35.3
5	699	10	2	1	2	100.0
5	719	20	4	1	4	61.8
5	740	21	4	1	4	58.5
5	763	23	5	1	5	52.9
5	790	27	5	1	5	44.2
5	827	37	7	1	7	31.0
5	850	23	5	1	5	52.9
5	888	38	8	1	8	30.1
5	907	19	4	1	4	65.5
5	927	20	4	1	4	61.8
5	940	13	3	1	3	100.0

MATRIX LABORATORY L.L.C.

TABLE D3-192
REPORT ON DCP TEST

Client	DUBAI WORLD TRADE CENTER - L L.C.	Report No.	XSD/15-0143
Contractor	N.P.	Date Reported	23/08/2015
Consultant	CH2M MACE JV	Date Tested	17/08/2015
Project No.	XSD/15-0143	Test Location	TP-100
Project Name	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	Test Depth (mbgl)	1.00
Test Method	ASTM D6951/D6951M - 09	Hammer Weight	8.0 kg
Test Method Var.	Nil	Tested By	Erwin

TEST RESULTS :

No. of Blows	Cumulative Penetration (mm)	Penetration Between Readings (mm)	Penetration per Blow (mm)	Hammer Factor	DCP Index (mm/blow)	CBR (%)
0	80	-	-	-	-	-
1	103	43	43	1	43	4.3
1	127	24	24	1	24	8.3
1	139	12	12	1	12	16.1
1	147	8	8	1	8	28.4
6	165	38	8	1	8	30.1
5	220	35	7	1	7	33.0
5	253	33	7	1	7	35.3
5	280	27	5	1	5	44.2
5	303	23	5	1	5	52.9
5	325	22	4	1	4	55.8
5	350	25	5	1	5	48.1
5	382	32	6	1	6	36.5
5	399	17	3	1	3	74.2
5	430	31	6	1	6	37.8
5	457	27	5	1	5	44.2
5	473	16	3	1	3	79.4
5	495	22	4	1	4	55.6
5	517	22	4	1	4	55.6
5	529	12	2	1	2	100.0
5	539	10	2	1	2	100.0
5	550	11	2	1	2	100.0
5	561	11	2	1	2	100.0
5	570	9	2	1	2	100.0
5	579	9	2	1	2	100.0
5	585	6	1	1	1	100.0
5	590	5	1	1	1	100.0
5	595	5	1	1	1	100.0
5	597	2	0	1	0	100.0
5	599	2	0	1	0	100.0
5	601	2	0	1	0	100.0
5	602	1	0	1	0	100.0
5	604	2	0	1	0	100.0
5	605	1	0	1	0	100.0

APPENDIX E

PIEZOMETER READINGS

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 1						
	BH-B01	BH-B02	BH-B04	BH-B05	BH-B07	BH-C07	BH-C11
27-Jun-15	12.50	11.53	12.32	10.17	9.17	11 30	12.78
	+12.36m DMD	+11.60m DMD	+11.37m DMD	+10.94m DMD	+10.60m DMD	+10.45m DMD	+11.58m DMD
4-Jul-15	12.50	11.52	12.33	10.17	9.16	11.30	12.76
	+12.36m DMD	+11.61m DMD	+11.38m DMD	+10.94m DMD	+10.61m DMD	+10.45m DMD	+11.60m DMD
11-Jul-15	12.55	11.68	12.31	10.16	9.11	11.30	12.80
	+12.31m DMD	+11.45m DMD	+11 38m DMD	+10 95m DMD	+10 66m DMD	+10.45m DMD	+11 58m DMD
18-Jul-15	12.51	11.70	12.20	10.15	9.15	11.26	12.75
	+12.35m DMD	+11.43m DMD	+11.49m DMD	+10.96m DMD	+10.62m DMD	+10.50m DMD	+11.61m DMD
18-Aug-15	12.45	11 40	12.25	10.10	9 10	11 20	12 73
	+12.41m DMD	+11.73m DMD	+11.44m DMD	+11.01m DMD	+10.67m DMD	+10.55m DMD	+11.63m DMD
1-Sep-15	12.47	11.43	12.17	10.10	9.14	11.20	12.75
	+12.39m DMD	+11.70m DMD	+11.52m DMD	+11.01m DMD	+10.63m DMD	+10 55m DMD	+11 61m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 2				
	BH-A56	BH-A57	BH-B16	BH-B17	BH-C13
1 Jul-15	15.50	15.30	16.00	18.00	13.38
	+13.25m DMD	+12.24m DMD	+15.25m DMD	+12.38m DMD	+11 90m DMD
8-Jul-15	15.46	15.31	16.80	17 50	13.40
	+13.29m DMD	+12 23m DMD	+14.45m DMD	+12.88m DMD	+11.80m DMD
15-Jul-15	15.50	15 30	18 10	18.00	13.40
	+13.25m DMD	+12.24m DMD	+15.15m DMD	+12.38m DMD	+11 88m DMD
22-Jul-15	15.45	15.30	16.10	17.90	13.35
	+13.30m DMD	+12 24m DMD	+15.15m DMD	+12.48m DMD	+11,93m DMD
22-Aug-15	15.40	15 26	16.00	17.50	13.30
	+13.35m DMD	+12.23m DMD	+15.25m DMD	+12.88m DMD	+11.98m DMD
1-Sep-15	15.40	15.27	16.00	17.68	13.40
	+13 35m DMD	+12.27m DMD	+15.25m DMD	+12.70m DMD	+11 88m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 3								
	BH-A02	BH-B09	BH-B10	BH-C02	BH-C04	BH-C06	BH-C10	BH-C15	BH-C19
11-Jul-15	1.80	2.05	1.56	5.78	9.00	10.50	12.00	10.50	3.30
	+8.05m DMD	+9.54m DMD	+9.92m DMD	+10.94m DMD	+8.32m DMD	+10.04m DMD	+10.65m DMD	+10.55m DMD	+10.54m DMD
18-Jul-15	1.74	2.00	1.55	5.80	9.00	10.55	12.10	10.41	3.30
	+8.12m DMD	+9.59m DMD	+9.93m DMD	+10.92m DMD	+8.32m DMD	+9.99m DMD	+10.55m DMD	+10.64m DMD	+10.54m DMD
25-Jul-15	1.81	2.05	1.50	5.85	9.11	10.70	11.94	10.50	3.35
	+8.05m DMD	+9.54m DMD	+9.98m DMD	+10.87m DMD	+8.21m DMD	+9.84m DMD	+10.71m DMD	+10.55m DMD	+10.49m DMD
1-Aug-15	1.75	2.00	1.50	5.80	8.50	10.00	11.95	10.40	3.30
	+8.11m DMD	+9.59m DMD	+9.98m DMD	+10.92m DMD	+8.82m DMD	+10.54m DMD	+10.70m DMD	+10.65m DMD	+10.54m DMD
1-Sep-15	1.70	2.00	1.52	5.80	8.45	10.20	11.90	10.42	3.27
	+8.16m DMD	+9.59m DMD	+9.96m DMD	+10.92m DMD	+8.87m DMD	+10.34m DMD	+10.75m DMD	+10.63m DMD	+10.57m DMD

MATRIX LABORATORY LLC

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 4						
	BH-A04	BH-A07	BH-B11	BH-B12	BH-B13	BH-C20	BH-C21
13-Jul-15	6.00	10.00	9.90	11.88	11.62	10.75	8.86
	+9.92m DMD	+10.59m DMD	+11.18m DMD	+11.52m DMD	+11.33m DMD	+9.92m DMD	+11.40m DMD
20-Jul-15	5.94	10.05	9.95	11.85	11.65	10.80	8.86
	+9.98m DMD	+10.54m DMD	+11.13m DMD	+11.55m DMD	+11.30m DMD	+9.87m DMD	+11.40m DMD
27-Jul-15	6.00	9.97	9.90	11.90	11.65	10.75	8.90
	+9.92m DMD	+10.62m DMD	+11.18m DMD	+11.50m DMD	+11.30m DMD	+9.92m DMD	+11.36m DMD
3-Aug-15	5.90	9.92	9.80	11.84	11.55	10.72	8.40
	+10.02m DMD	+10.67m DMD	+11.28m DMD	+11.56m DMD	+11.40m DMD	+9.95m DMD	+11.86m DMD
1-Sep-15	5.84	9.94	9.84	11.81	11.57	10.71	8.51
	+10.08m DMD	+10.65m DMD	+11.24m DMD	+11.59m DMD	+11.38m DMD	+9.96m DMD	+11.75m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 5							
	BH-A11	BH-A12	BH-A15	BH-A16	BH-B56	BH-B57	BH-B58	BH-B59
20-Jul-15	14.40	9.80	12.75	11.50	12.00	10.70	5.00	8.70
	+11.53m DMD	+12.26m DMD	+12.31m DMD	+13.58m DMD	+13.30m DMD	+13.64m DMD	+12.31m DMD	+12.94m DMD
27-Jul-15	14.43	9.84	12.78	11.54	11.97	10.68	5.08	8.68
	+11.50m DMD	+12.22m DMD	+12.28m DMD	+13.52m DMD	+13.33m DMD	+13.66m DMD	+12.23m DMD	+12.96m DMD
3-Aug-15	14.35	9.76	12.69	11.50	12.10	10.71	4.97	8.74
	+11.58m DMD	+12.30m DMD	+12.37m DMD	+13.58m DMD	+13.20m DMD	+13.63m DMD	+12.34m DMD	+12.90m DMD
10-Aug-15	14.30	9.71	12.63	11.47	12.00	10.65	4.95	8.60
	+11.60m DMD	+12.35m DMD	+12.43m DMD	+13.59m DMD	+13.30m DMD	+13.69m DMD	+12.36m DMD	+13.04m DMD
1-Sep-15	14.30	9.75	12.60	11.40	12.00	10.70	4.84	8.06
	+11.63m DMD	+12.31m DMD	+12.46m DMD	+13.66m DMD	+13.30m DMD	+13.64m DMD	+12.47m DMD	+12.98m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 6								
	BH-B32	BH-B34	BH-B36	BH-B37	BH-B38	BH-B39	BH-B41	BH-B43	BH-C29
3-Aug-15	12.11	7.80	7.93	8.15	8.37	8.40	8.80	9.00	9.15
	+14.23m DMD	+13.09m DMD	+12.82m DMD	+12.16m DMD	+12.08m DMD	+12.05m DMD	+11.57m DMD	+12.14m DMD	+11.82m DMD
10-Aug-15	12.05	7.81	7.80	8.11	8.38	8.41	8.79	9.10	9.08
	+14.29m DMD	+13.08m DMD	+12.95m DMD	+12.20m DMD	+12.07m DMD	+12.04m DMD	+11.58m DMD	+12.04m DMD	+11.69m DMD
17-Aug-15	12.00	7.74	7.85	8.07	8.30	8.36	8.75	9.00	9.10
	+14.34m DMD	+13.15m DMD	+12.90m DMD	+12.24m DMD	+12.15m DMD	+12.09m DMD	+11.62m DMD	+12.14m DMD	+11.87m DMD
24-Aug-15	12.00	7.80	7.80	8.10	8.30	8.30	8.71	8.87	9.05
	+14.34m DMD	+13.09m DMD	+12.95m DMD	+12.21m DMD	+12.15m DMD	+12.15m DMD	+11.66m DMD	+12.27m DMD	+11.92m DMD
1-Sep-15	12.04	7.77	7.84	8.05	8.27	8.35	8.75	8.90	9.05
	+14.30m DMD	+13.12m DMD	+12.91m DMD	+12.26m DMD	+12.18m DMD	+12.10m DMD	+11.62m DMD	+12.24m DMD	+11.92m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 7						
	BH-A59	BH-B18	BH-B20	BH-B44	BH-B45	BH-C23	BH-C24
1-Aug-15	17.00	18.30	18.90	18.30	12.90	16.50	17.88
	+14.40m DMD	+13.79m DMD	+13.41m DMD	+12.06m DMD	+12.98m DMD	+13.00m DMD	+13.08m DMD
8-Aug-15	16.80	18.20	18.74	18.30	12.94	16.51	17.84
	+14.60m DMD	+13.89m DMD	+13.47m DMD	+12.06m DMD	+12.94m DMD	+12.99m DMD	+13.12m DMD
15-Aug-15	17.04	18.22	18.80	18.25	12.80	16.40	17.60
	+14.36m DMD	+13.87m DMD	+13.41m DMD	+12.11m DMD	+13.08m DMD	+13.10m DMD	+13.36m DMD
22-Aug-15	16.75	18.20	18.70	18.27	12.84	16.45	17.74
	+14.65m DMD	+13.89m DMD	+13.51m DMD	+12.09m DMD	+13.04m DMD	+13.06m DMD	+13.22m DMD
1-Sep-15	16.80	18.25	18.70	18.20	12.79	16.40	17.60
	+14.60m DMD	+13.84m DMD	+13.51m DMD	+12.16m DMD	+13.09m DMD	+13.10m DMD	+13.36m DMD

MATRIX LABORATORY L.L.C

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 8					
	BH-A52	BH-A53	BH-B23	BH-B24	BH-B26	BH-B27
6-Aug-15	14.15	14.50	17.90	18.30	16.80	14.00
	+14.95m DMD	+14.77m DMD	+14.15m DMD	+14.10m DMD	+13.63m DMD	+14.37m DMD
13-Aug-15	14.20	14.51	17.92	18.20	16.84	13.70
	+14.90m DMD	+14.76m DMD	+14.13m DMD	+14.20m DMD	+13.59m DMD	+14.67m DMD
20-Aug-15	14.13	14.45	18.00	18.25	16.70	13.50
	+14.97m DMD	+14.82m DMD	+14.05m DMD	+14.15m DMD	+13.73m DMD	+14.87m DMD
1-Sep-15	14.20	14.40	17.90	18.17	16.69	13.64
	+14.90m DMD	+14.87m DMD	+14.15m DMD	+14.23m DMD	+13.74m DMD	+14.73m DMD

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 9				
	BH-A49	BH-A51	BH-B49	BH-B53	BH-B54
8-Aug-15	13.50	15.50	12.25	11.00	12.80
	+13.99m DMD	+14.40m DMD	+16.25m DMD	+16.85m DMD	+15.03m DMD
15-Aug-15	13.54	15.30	12.36	11.08	12.76
	+13.95m DMD	+14.60m DMD	+16.14m DMD	+16.77m DMD	+15.07m DMD
22-Aug-15	13.40	15.44	12.20	10.87	12.70
	+14.09m DMD	+14.46m DMD	+16.30m DMD	+16.98m DMD	+15.13m DMD
1-Sep-15	13.47	15.31	12.22	10.93	12.67
	+14.02m DMD	+14.59m DMD	+16.28m DMD	+16.92m DMD	+15.16m DMD

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 10			
	BH-A43	BH-A46	BH-B29	BH-B55
9-Aug-15	11.60	10.40	12.10	12.10
	+14.39m DMD	+15.43m DMD	+15.51m DMD	+14.62m DMD
16-Aug-15	11.54	10.32	12.10	12.05
	+14.45m DMD	+15.51m DMD	+15.51m DMD	+14.67m DMD
23-Aug-15	11.50	10.29	12.05	12.10
	+14.49m DMD	+15.54m DMD	+15.56m DMD	+14.62m DMD
1-Sep-15	11.51	10.33	12.00	12.05
	+14.48m DMD	+15.50m DMD	+15.61m DMD	+14.67m DMD

MATRIX LABORATORY L.L.C

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 11								
	BH-A17	BH-A19	BH-A20	BH-A22	BH-A24	BH-A28	BH-A29	BH-A30	BH-A33
10-Aug-15	12.20	11.80	11.60	10.65	13.00	12.30	12.54	12.00	12.40
	+15.55m DMD	+14.65m DMD	+14.85m DMD	+16.71m DMD	+14.96m DMD	+15.83m DMD	+15.96m DMD	+15.16m DMD	+17.57m DMD
17-Aug-15	12.17	11.75	11.60	10.63	12.97	12.30	12.50	12.07	12.33
	+15.58m DMD	+14.70m DMD	+14.85m DMD	+16.73m DMD	+14.99m DMD	+15.83m DMD	+16.00m DMD	+15.09m DMD	+17.64m DMD
24-Aug-15	12.15	11.67	11.60	10.60	12.95	12.23	12.49	12.10	12.35
	+15.60m DMD	+14.78m DMD	+14.85m DMD	+16.76m DMD	+15.01m DMD	+15.90m DMD	+16.01m DMD	+15.06m DMD	+17.62m DMD
1-Sep-15	12.10	11.70	11.57	10.62	13.00	12.20	12.50	12.00	12.30
	+15.65m DMD	+14.75m DMD	+14.88m DMD	+16.74m DMD	+14.96m DMD	+15.93m DMD	+16.00m DMD	+15.16m DMD	+17.67m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - ZONE 12			
	BH-A35	BH-A36	BH-A37	BH-A41
11-Aug-15	11.50	10.15	12.00	10.80
	+19.66m DMD	+18.58m DMD	+17.89m DMD	+20.02m DMD
18-Aug-15	11.54	10.10	12.00	10.74
	+19.62m DMD	+18.63m DMD	+17.89m DMD	+20.08m DMD
25-Aug-15	11.45	10.05	12.00	10.80
	+19.71m DMD	+18.68m DMD	+17.88m DMD	+20.02m DMD
1-Sep-15	11.50	10.07	11.94	10.70
	+19.66m DMD	+18.66m DMD	+17.95m DMD	+20.12m DMD

MATRIX LABORATORY L.L.C.

PIEZOMETER READINGS

Date	PIEZOMETER LOCATIONS - GEOCONSULT		
	BH-14	BH-15	No Label
	E: 481120; N: 2762437	E: 480984; N: 2762132	E: 480548; N: 2761616
27-Jun-15	10.13	10.00	12.13
4-Jul-15	10.12	9.82	11.31
11-Jul-15	10.18	9.85	12.00
18-Jul-15	10.12	10.00	11.35
18-Aug-15	10.10	9.90	11.30
1-Sep-15	10.04	9.85	11.75

APPENDIX F

GAS MONOTORING READINGS

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	23/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095_1/14620
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-B01	BH-B04	BH-C07	BH-A56	BH-G16
DATE	12/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	996	997	997	996	996
METHANE - CH_4 (%)	0.3	0.1	0.2	1.1	0.1
METHANE - LEL (%)	6	2	4	22	2
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.2	20.6	19.5	20.4	20.6
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.5	79.3	80.3	78.5	79.3

* LEL - Lower Explosive Limit

BOREHOLE NO.	BH-C13	BH-A02	BH-C15	BH-C19	BH-A04
DATE	12/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	997	998	997	998	997
METHANE - CH_4 (%)	0.1	2.8	0.3	0.4	0.5
METHANE - LEL (%)	2	56	6	8	10
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.3	20.5	20.4	20.7	20.7
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.6	76.7	79.3	78.9	78.8

* LEL - Lower Explosive Limit

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L L C	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	23/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 36 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095_1/14628
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-C20	BH-A12	BH-A15	BH-B56	BH-B58
DATE	12/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	998	1002	1001	1002	1002
METHANE - CH_4 (%)	0.8	0.1	0.3	0.3	0.3
METHANE - LEL (%)	16	2	6	6	6
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.1	21.0	20.7	20.0	19.0
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.1	78.9	79.0	79.7	80.7

* LEL - Lower Explosive Limit

BOREHOLE NO.	BH-B34	BH-B38	BH-B43	BH-B45	BH-A53
DATE	12/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1003	1002	1002	1002	1002
METHANE - CH_4 (%)	0.3	0.3	0.2	0.5	0.1
METHANE - LEL (%)	6	6	4	10	2
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.3	20.4	19.7	20.7	20.5
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.4	79.3	80.1	78.8	79.4

* LEL - Lower Explosive Limit

MATRIX LABORATORY L.L.C

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L.L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	23/06/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11085
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11085_1/14628
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-B24	BH-B26	BH-A49	BH-B54	BH-B55
DATE	12/06/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1002	1002	1002	1002	1002
METHANE - CH_4 (%)	0.1	0.2	0.5	0.9	0.7
METHANE - LEL (%)	2	4	10	16	14
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.7	20.4	19.7	20.6	20.4
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.7	79.4	79.8	78.6	78.9

* LEL- Lower Explosive Limit

BOREHOLE NO.	BH-A19	BH-A20	BH-A30	BH-A35	BH-A41
DATE	12/06/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1002	1002	1002	1002	1002
METHANE - CH_4 (%)	0.4	0.5	0.7	0.8	0.8
METHANE - LEL (%)	8	10	14	16	16
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.5	20.6	19.8	19.5	19.5
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.1	78.9	79.5	79.7	79.7

* LEL- Lower Explosive Limit

MATRIX LABORATORY L.L.C

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L.L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	23/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095 1/14828
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-B01	BH-B04	BH-C07	BH-A56	BH-B16
DATE	19/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	999	999	1000	999	999
METHANE - CH_4 (%)	0.3	0.2	0.2	0.3	0.1
METHANE - LEL (%)	6	4	4	6	2
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.8	20.8	20.0	20.0	19.8
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	78.9	79.0	79.8	79.7	80.1

* LEL- Lower Explosive Limit

BOREHOLE NO.	BH-C13	BH-A02	BH-C15	BH-C19	BH-A04
DATE	19/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	999	1001	1000	1001	1000
METHANE - CH_4 (%)	0.1	0.8	0.2	0.7	0.3
METHANE - LEL (%)	2	16	4	14	6
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	19.8	20.1	20	19.3	20.2
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	80.1	79.0	79.8	80.0	79.5

* LEL- Lower Explosive Limit

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L.L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	23/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095_1/14626
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-C20	BH-A12	BH-A15	BH-B56	BH-B58
DATE	19/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1000	1002	1001	1002	1002
METHANE - CH_4 (%)	0.4	0.1	0.3	0.4	0.5
METHANE - LEL (%)	8	2	6	8	10
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.0	21.1	20.8	19.9	18.9
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.6	78.8	78.9	79.7	80.6

* LEL - Lower Explosive Limit

BOREHOLE NO.	BH-B34	BH-B38	BH-B43	BH-B45	BH-A53
DATE	19/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1003	1002	1002	1002	1002
METHANE - CH_4 (%)	0.5	0.4	0.3	0.5	0.1
METHANE - LEL (%)	10	8	6	10	2
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.2	20.3	19.6	20.7	20.5
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.3	79.3	80.1	78.5	79.4

* LEL - Lower Explosive Limit

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	23/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11085
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11085_1/14628
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-B24	BH-B26	BH-A49	BH-B54	BH-B55
DATE	19/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1002	1002	1002	1002	1002
METHANE - CH_4 (%)	0.2	0.2	0.5	1.0	1.0
METHANE - LEL (%)	4	4	12	20	20
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.5	20.4	20.7	20.5	20.2
HYDROGEN SULPHIDE -H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.3	79.4	78.7	78.5	78.8

* LEL- Lower Explosive Limit

BOREHOLE NO.	BH-A19	BH-A20	BH-A30	BH-A35	BH-A41
DATE	19/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	1002	1002	1002	1002	1002
METHANE - CH_4 (%)	0.5	0.7	0.8	0.9	0.9
METHANE - LEL (%)	10	14	16	18	18
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.6	20.6	19.6	19.5	19.5
HYDROGEN SULPHIDE -H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	78.9	78.7	79.0	79.5	79.6

* LEL- Lower Explosive Limit

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L.L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	27/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095_1/14628
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-B01	BH-B04	BH-C07	BH-A56	BH-B16
DATE	26/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	998	998	998	997	997
METHANE - CH_4 (%)	0.1	0.1	0.1	0.1	0.1
METHANE - LEL (%)	2	2	2	2	2
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.4	20.1	19.5	20.0	20.0
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.5	79.8	80.4	79.9	79.9

* LEL- Lower Explosive Limit

BOREHOLE NO.	BH-C13	BH-A02	BH-C15	BH-C19	BH-A04
DATE	26/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	997	997	1000	998	999
METHANE - CH_4 (%)	0.0	0.7	0.2	0.5	0.3
METHANE - LEL (%)	2	14	4	10	6
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20	20.2	20.2	19.5	20.2
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	80.0	79.1	79.6	80.0	79.4

* LEL- Lower Explosive Limit

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L.L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403-DTCJA-EXPO DEVELOPMENT	DATE REPORTED	27/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095_1/14628
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-C20	BH-A12	BH-A15	BH-B56	BH-B59
DATE	26/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	999	999	999	998	999
METHANE - CH_4 (%)	0.3	0.1	0.3	0.5	0.1
METHANE - LEL (%)	6	2	6	10	6
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.1	20.4	20.3	20.0	19.4
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.6	79.5	79.4	79.5	80.3

* LEL- Lower Explosive Limit

BOREHOLE NO.	BH-B34	BH-B38	BH-B43	BH-B45	BH-A53
DATE	26/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	999	999	999	999	998
METHANE - CH_4 (%)	0.4	0.3	0.2	0.2	0.2
METHANE - LEL (%)	8	6	4	4	4
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.2	20.3	19.6	20.3	20.3
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.4	79.4	80.0	79.5	79.5

* LEL- Lower Explosive Limit

MATRIX LABORATORY L.L.C.

GAS MONITORING READINGS

CLIENT	DUBAI WORLD TRADE CENTER - L.L.C.	REF. NO.	XSD/15-0143
PROJECT NAME	PROPOSED PN1403 DTCJA-EXPO DEVELOPMENT	DATE REPORTED	27/08/2015
LOCATION	PLOT NOS. 5219784, 5219785 & 5219786, MADINAT AL MATAAR, DUBAI, U.A.E.	WEATHER/TEMP.	SUNNY / 35 °C

GAS MONITOR

MODEL	GEM 2000 PLUS	SERIAL NO.	GM11095
CALIBRATION	11 JUNE 2015	CERTIFICATE NO.	GM11095_1/14628
RESOLUTION	0.1% (CH_4, CO_2, O_2)	CALIBRATION TEMP. RANGE	33.5 °C

GAS READING

BOREHOLE NO.	BH-B24	BH-B26	BH-A49	BH-B54	BH-B55
DATE	26/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	998	998	998	998	998
METHANE - CH_4 (%)	0.2	0.3	0.1	0.3	0.4
METHANE - LEL (%)	4	6	2	6	8
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.4	20.3	20.3	20.3	20.2
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.4	79.4	79.6	79.4	79.4

* LEL- Lower Explosive Limit

BOREHOLE NO.	BH-A19	BH-A20	BH-A30	BH-A35	BH-A41
DATE	26/08/2015				
FLOW RATE (M^3/HR)	0.00	0.00	0.00	0.00	0.0
BAROMETRIC PRESSURE (mB)	998	998	998	998	998
METHANE - CH_4 (%)	0.4	0.3	0.5	0.2	0.2
METHANE - LEL (%)	8	6	10	4	4
CARBON DIOXIDE - CO_2 (%)	0.0	0.0	0.0	0.0	0.0
OXYGEN - O_2 (%)	20.3	20.4	20.1	20.3	20.2
HYDROGEN SULPHIDE - H_2S (ppm)	0.0	0.0	0.0	0.0	0.0
BALANCE GASES (%)	79.3	79.3	79.4	79.5	79.6

* LEL - Lower Explosive Limit

APPENDIX G

TRIAL PIT PHOTOGRAPHS



TP01 DEPTH 0.00m TO 0.50m



TP02 DEPTH 0.00m TO 1.50m



TP03 DEPTH 0.00m TO 1.50m



TP04 DEPTH 0.00m TO 3.0m



TP05 DEPTH 0.00m TO 1.00m



TP06 DEPTH 0.00m TO 3.00m



TP07 DEPTH 0.00m TO 1.00m



TP08 DEPTH 0.00m TO 3.00m



TP09 DEPTH 0.00m TO 3.00m



TP010 DEPTH 0.00m TO 1.50m



TP011 DEPTH 0.00m TO 2.00m



TP012 DEPTH 0.00m TO 4.00m



TP13 DEPTH 0.00m TO 3.00m



TP014 DEPTH 0.00m TO 4.00m



TP15 DEPTH 0.00m TO 3.00m



TP016 DEPTH 0.00m TO 4.00m



TP017 DEPTH 0.00m TO 1.50m



TP018 DEPTH 0.00m TO 2.00m



TP019 DEPTH 0.00m TO 1.00m



TP020 DEPTH 0.00m TO 4.00m



TP021 DEPTH 0.00m TO 4.00m



TP022 DEPTH 0.00m TO 4.00m



TP023 DEPTH 0.00m TO 4.00m



TP024 DEPTH 0.00m TO 4.00m



TP025 DEPTH 0.00m TO 4.00m



TP026 DEPTH 0.00m TO 4.00m



TP027 DEPTH 0.00m TO 1.00m



TP028 DEPTH 0.00m TO 2.00m



TP029 DEPTH 0.00m TO 4.00m



TP030 DEPTH 0.00m TO 0.50m



TP031 DEPTH 0.00m TO 0.50m



TP032 DEPTH 0.00m TO 0.50m



TP033 DEPTH 0.00m TO 2.00m



TP034 DEPTH 0.00m TO 1.00m



TP035 DEPTH 0.00m TO 1.50m



TP036 DEPTH 0.00m TO 1.00m



TP037 DEPTH 0.00m TO 2.00m



TP038 DEPTH 0.00m TO 2.00m



TP039 DEPTH 0.00m TO 3.00m



TP040 DEPTH 0.00m TO 3.00m



TP041 DEPTH 0.00m TO 3.00m



TP042 DEPTH 0.00m TO 1.00m



TP043 DEPTH 0.00m TO 1.50m



TP044 DEPTH 0.00m TO 3.00m



TP045 DEPTH 0.00m TO 4.00m



TP046 DEPTH 0.00m TO 2.00m



TP047 DEPTH 0.00m TO 4.00m



TP048 DEPTH 0.00m TO 4.00m



TP049 DEPTH 0.00m TO 3.00m



TP050 DEPTH 0.00m TO 1.00m



TP051 DEPTH 0.00m TO 4.00m



TP052 DEPTH 0.00m TO 3.00m



TP053 DEPTH 0.00m TO 4.00m



TP054 DEPTH 0.00m TO 4.00m



TP055 DEPTH 0.00m TO 4.00m



TP056 DEPTH 0.00m TO 2.00m



TP057 DEPTH 0.00m TO 4.00m



TP058 DEPTH 0.00m TO 4.00m



TP059 DEPTH 0.00m TO 1.00m



TP060 DEPTH 0.00m TO 1.50m



TP061 DEPTH 0.00m TO 2.00m



TP062 DEPTH 0.00m TO 1.00m



TP063 DEPTH 0.00m TO 1.00m



TP064 DEPTH 0.00m TO 1.00m



TP065 DEPTH 0.00m TO 0.50m



TP066 DEPTH 0.00m TO 1.00m



TP067 DEPTH 0.00m TO 0.50m



TP068 DEPTH 0.00m TO 4.00m



TP069 DEPTH 0.00m TO 0.50m



TP070 DEPTH 0.00m TO 0.50m



TP071 DEPTH 0.00m TO 3.00m



TP072 DEPTH 0.00m TO 4.00m



TP073 DEPTH 0.00m TO 2.00m



TP074 DEPTH 0.00m TO 2.00m



TP075 DEPTH 0.00m TO 1.50m



TP076 DEPTH 0.00m TO 2.00m



TP077 DEPTH 0.00m TO 4.00m



TP078 DEPTH 0.00m TO 4.00m



TP079 DEPTH 0.00m TO 4.00m



TP080 DEPTH 0.00m TO 1.00m



TP081 DEPTH 0.00m TO 3.00m



TP082 DEPTH 0.00m TO 4.00m



TP083 DEPTH 0.00m TO 2.00m



TP084 DEPTH 0.00m TO 2.50m



TP085 DEPTH 0.00m TO 1.00m



TP086 DEPTH 0.00m TO 2.00m



TP087 DEPTH 0.00m TO 2.00m



TP088 DEPTH 0.00m TO 3.00m



TP089 DEPTH 0.00m TO 3.00m



TP090 DEPTH 0.00m TO 4.00m



TP091 DEPTH 0.00m TO 4.00m



TP092 DEPTH 0.00m TO 4.00m



TP093 DEPTH 0.00m TO 4.00m



TP094 DEPTH 0.00m TO 4.00m



TP095 DEPTH 0.00m TO 3.00m



TP096 DEPTH 0.00m TO 4.00m



TP097 DEPTH 0.00m TO 3.00m



TP098 DEPTH 0.00m TO 3.00m



TP099 DEPTH 0.00m TO 3.00m



TP0100 DEPTH 0.00m TO 3.00m

APPENDIX H

RECOMMENDATIONS FOR CONCRETE
(Extract of BS 8500-1: 2006)

Table A.2 **Classification of ground conditions**

Sulfate and magnesium					Design sulfate class	Natural soil		Brownfield [A]		ACEC-class (design sulfate class)
2:1 water/soil extract		Groundwater		Total potential sulfate [B]		Static water	Mobile water	Static water	Mobile water	
SO_4 mg/l	Mg [C] mg/l	SO_4 mg/l	Mg [C] mg/l	SO_4 %		pH	pH	pH [D]	ph [D]	
<500	—	<400	—	<0.24	DS-1	≥2.5	—	≥2.5	—	AC-1s
						—	>5.5	—	>6.5	AC-1 [E]
						—	2.5 to 5.5	—	5.6 to 6.5	AC-2z
						—	—	—	4.5 to 5.5	AC-3z
						—	—	—	2.5 to 4.5	AC-4z
500 to 1 500	—	400 to 1 400	—	0.24 to 0.6	DS-2	>3.5	—		—	AC-1s
						—	>5.5	—	>6.5	AC-2
						2.5 to 3.5	—		—	AC-2s
						—	2.5 to 5.5	—	5.6 to 6.5	AC3z
						—	—	—	4.5 to 5.5	AC-4z
						—	—	—	2.5 to 4.5	AC-5z
1 600 to 3 000	—	1 500 to 3 000	—	0.7 to 1.2	DS-3	>3.5	—	>5.5	—	AC-2s
						—	>5.5	—	>6.5	AC-3
						2.5 to 3.5	—	2.5 to 5.5	—	AC-3s
						—	2.5 to 5.5	—	5.6 to 6.5	AC-4
						—	—	—	2.5 to 5.5	AC-5
3 100 to 6 000	≤1 200	3 100 to 6 000	≤1 000	1.3 to 2.4	DS-4	>3.5		>5.5	—	AC-3s
						—	>5.5	—	>6.5	AC-4
						2.5 to 3.5	—	2.5 to 5.5	—	AC-4s
						—	2.5 to 5.5	—	2.5 to 6.5	AC-5
3 100 to 6 000	>1 200 [C]	3 100 to 6 000	>1 000 [C]	1.3 to 2.4	DS-4m	Not found in UK natural ground		>5.5		AC-3s
									>6.5	AC-4m
								2.5 to 5.5		AC-4ms
									2.5 to 6.5	AC-5m
>6 000	≤1 200	>6 000	≤1 100	>2.4	DS-5	>3.5	—	>5.5	—	AC-4s
						2.5 to 3.5	≥2.5	2.5 to 5.5	≥2.5	AC-6
>6 000	>1 200 [C]	>6 000	>1 100 [C]	>2.4	DS-5m	Not found in UK natural ground		>5.5	—	AC-4ms
								2.5 to 5.5	≥2.5	AC-5m

[A] "Brownfield" sites are those that might contain chemical residues remaining from previous industrial use or from imported wastes.

[B] Applies only to sites where concrete will be exposed to sulfate ions (SO_4), which can result from the oxidation of sulfides such as pyrite, following ground disturbance.

[C] The limit on water-soluble magnesium does not apply to brackish groundwater (chloride content between 12 g/l and 18 g/l). This allows these sites to be classified in the row above. This table does not cover sea water and stronger brines.

[D] An additional account is taken of hydrochloric and nitric acids by adjustment to sulfate content (see BRE Special Digest 1 [1]).

[E] For flowing water that is potentially aggressive to concrete owing to high purity or an aggressive carbon dioxide level greater than 15 mg/l, increase the ACEC class to AC-2z (see BRE Special Digest 1 [1]).

Table A.6 **Cement and combination types** [A]

Broad designation [B]	Composition	Comprises cement and combination types (see BS 8500-2:2006, Table 1)
CEM I	Portland cement	CEM I
SRPC	Sulfate-resisting Portland cement	SRPC
IIA	Portland cement with 6% to 20% fly ash, ground granulated blastfurnace slag, limestone, or 6% to 10% silica fume [C]	CEM II/A-L, CEM II/A-LL, CIIA-L, CIIA-LL, CEM II/A-S, CIIA-S, CEM II/A-V, CIIA-V, CEM II/A-D
IIB-S	Portland cement with 21% to 35% ground granulated blastfurnace slag	CEM II/B-S, CIIB-S
IIB-V	Portland cement with 21% to 35% fly ash	CEM II/B-V, CIIB-V
IIB+SR	Portland cement with 25% to 35% fly ash	CEM II/B-V+SR, CIIB-V+SR
IIIA [D], [E]	Portland cement with 36% to 65% ground granulated blastfurnace slag	CEM III/A, CIIIA
IIIA+SR [E]	Portland cement with 36% to 65% ground granulated blastfurnace slag with additional requirements that enhance sulfate resistance	CEM III/A+SR [F], CIIIA+SR [F]
IIIB [E], [G]	Portland cement with 66% to 80% ground granulated blastfurnace slag	CEM III/B, CIIIB
IIIB+SR [E]	Portland cement with 66% to 80% ground granulated blastfurnace slag with additional requirements that enhance sulfate resistance	CEM III/B+SR [F], CIIIB+SR [F]
IVB-V	Portland cement with 36% to 55% fly ash	CEM IV/B(V), CIVB

A) There are a number of cements and combinations not listed in this table that may be specified for certain specialist applications. See BRE Special Digest 1 [1] for the sulfate-resisting characteristics of other cements and combinations. See IP 17/05 [7] for the use of high ggbs content cements and combinations in secant piling applications.

B) The use of these broad designations is sufficient for most applications. Where a more limited range of cement or combinations types is required, select from the notations given in BS 8500-2:2006, Table 1.

C) When IIA or IIA-D is specified, CEM I and silica fume may be combined in the concrete mixer using the *k*-value concept; see BS EN 206-1:2000, **5.2.5.2.3**.

D) Where IIIA is specified, IIIA+SR may be used.

E) Inclusive of low early strength option (see BS EN 197-4 and the "L' classes in BS 8500-2:2006, Table A.1).

F) "+SR" indicates additional restrictions related to sulfate resistance. See BS 8500-2:2006, Table 1, footnote D.

G) Where IIIB is specified, IIIB+SR may be used.

Table A.9 **Selection of the nominal cover and DC-class or designated concrete and the number of APM for in-situ concrete elements** [A] **where the hydraulic gradient due to groundwater is five or less** [B], [C], [D]

ACEC-class	Lowest nominal cover [E], mm	Intended working life [F]	
		At least 50 years [G], [H]	At least 100 years
AC-1s, AC-1	50[I], 75[J]	DC-1 (RC25/30 if reinforced)	DC-1 (RC25/30 if reinforced)
AC-2s, AC-2	50[I], 75[J]	DC-2 (FND2)	DC-2 (FND2)
AC-2z	50[I], 75[J]	DC-2z (FND2z)	DC-2z (FND2z)
AC-3s	50[I], 75[J]	DC-3 (FND3)	DC-3 (FND3)
AC-3z	50[I], 75[J]	DC-3z (FND3z)	DC-3z (FND3z)
AC-3	50[I], 75[J]	DC-3 (FND3)	DC-3 + one APM of choice, FND3 + one APM of choice, DC-4 or FND4
AC-4s	50[I], 75[J]	DC-4 (FND4)	DC-4 (FND4)
AC-4z	50[I], 75[J]	DC-4z (FND4z)	DC-4z (FND4z)
AC-4	50[I], 75[J]	DC-4 (FND4)	DC-4 + one APM from APM2 to APM5, or FND4 + one APM from APM2 to APM5
AC-4ms	50[I], 75[J]	DC-4m (FND4m)	DC-4m (FND4m)
AC-4m	50[I], 75[J]	DC-4m (FND4m)	DC-4m + one APM from APM2 to APM5, or FND4m + one APM from APM2 to APM5
AC-5z	50[I], 75[J]	DC-4z (FND4z) + APM3 [K]	DC-4z (FND4z) + APM3 [K]
AC-5	50[I], 75[J]	DC-4 (FND4) + APM3 [K]	DC-4 (FND4) + APM3 [K]
AC-5m	50[I], 75[J]	DC-4m (FND4m)+ APM3 [K]	DC-4m (FND4m) + APM3 [K]

A) For guidance on precast concrete products, see BRE Special Digest 1 [1].

B) Where the hydraulic gradient across a concrete element is greater than 5, one step in DC-class or one APM over and above the number indicated in the table should be applied except where the original provisions included APM3. Where APM3 is already required, or has been selected, an additional APM is not necessary.

C) A section thickness of 140 mm or less should be avoided in in-situ construction but where this is not practicable, apply one step higher DC-class (designated concrete) or an additional APM except where the original provisions included APM3. Where APM3 is already required, or has been selected, an additional APM is not necessary.

D) Where a section thickness greater than 450 mm is used and some surface chemical attack is acceptable, a relaxation of one step in DC-class (designated concrete) may be applied. For reinforced concrete, the cover should be sufficiently thick to allow for estimated surface degradation during the intended working life.

E) Where the ground contains chlorides, the nominal cover should comprise the recommended minimum cover for the associated XD or XS class plus an allowance for deviation, Δc, of at least 25 mm for concrete to be cast against blinding and at least 50 mm for concrete to be cast directly against soil, and the more onerous limiting values for the concrete should be selected.

F) Designated concrete classes are given in parentheses.

G) Foundations of low-rise housing that has an intended working life of "at least 100 years" may be constructed with concrete selected from the column headed "at least 50 years".

H) Structures with an intended working life of "at least 50 years" but for which the consequences of failure would be relatively serious, should be classed as having an intended working life of "at least 100 years" for the selection of the DC-class (designated concrete) and APM.

I) For concrete cast against blinding.

J) For concrete cast directly against the soil.

K) Where APM3 is not practical, select an alternative APM.

Table A.11 **Limiting values of composition and properties for concrete where a DC-class is specified**

DC-class	Max. w/c ratio	Min. cement or combination content (kg/m³) for max. aggregate size				Cement and combination types	Grouping used in BRE SD1: 2005 [1]
		⩾40 mm	20 mm	14 mm	10 mm		
DC-1 A)	—	—	—	—	—	All in Table A.6	A to G
DC-2	0.55	300	320	340	360	IIB-V+SR, IIIA+SR, IIIB+SR, IVB-V	D, E, F
	0.50	320	340	360	380	CEM I, SRPC, IIA-D, IIA-Q, IIA-S, IIA-V, IIB-S, IIB-V, IIIA, IIIB	A, G
	0.45	340	360	380	380	IIA-L or LL ⩾42,5	B
	0.40	360	380	380	380	IIA-L or LL 32,5	C
DC-2z	0.55	300	320	340	360	All in Table A.6	A to G
DC-3	0.50	320	340	360	380	IIIB+SR	F
	0.45	340	360	380	380	IVB-V	E
	0.40	360	380	380	380	IIB-V+SR, IIIA+SR, SRPC	D, G
DC-3z	0.50	320	340	360	380	All in Table A.6	A to G
DC-4	0.45	340	360	380	380	IIIB+SR	F
	0.40	360	380	380	380	IVB-V	E
	0.35	380	380	380	380	IIB-V+SR, IIIA+SR, SRPC	D, G
DC-4z	0.45	340	360	380	380	All in Table A.6	A to G
DC-4m	0.45	340	360	380	380	IIIB+SR	F

A) If the concrete is reinforced or contains embedded metal, the minimum concrete quality for 20 mm maximum aggregate size is C25/30, 0.65, 260 or designated concrete RC25/30.

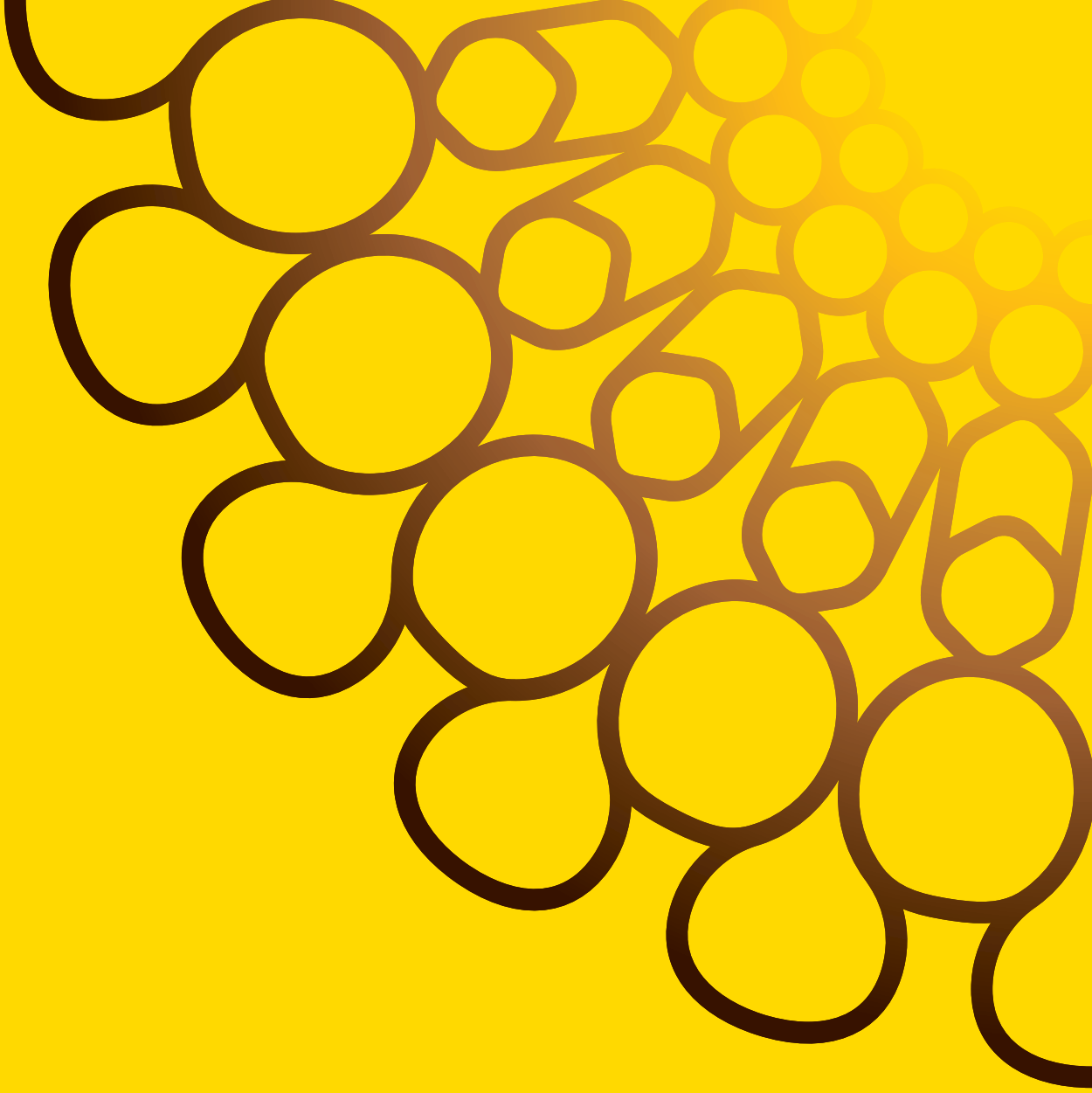
Where concrete is to be in contact with sea water, it needs to be of a sufficient quality to resist sea water attack. The recommendations to resist reinforcement corrosion induced by sea water (see Table A.4 and Table A.5) provide concretes with adequate resistance to the chemical attack on the concrete by sea water. Where unreinforced concrete is to be in contact with sea water, the maximum w/c ratio should not be more than and minimum cement or combination content should be not less than that given in Table A.12.

Table A.12 **Limiting values of composition for unreinforced concrete in contact with sea water**

Max. w/c ratio	Min. cement or combination content (kg/m³) for max. aggregate size				Cement and combination types A)	Indicative compressive strength class B)
	⩾40 mm	20 mm	14 mm	10 mm		
0.55	280	300	320	340	CEM I, SRPC, IIA, IIB-S	(C28/35)
0.55	280	300	320	340	IIB-V, IIB-V+SR, IIIA, IIIA+SR	(C25/30)
0.55	280	300	320	340	IIIB, IIIB+SR, IVB-V	(C20/25)

A) See Table A.6.

B) This is an indicative compressive strength class and not a recommended minimum compressive strength class for durability; see **A.4.2.**



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