GEOSCIENCE TECHNOLOGIES, INC.

GEOTECHNICAL INVESTIGATION REPORT

PROPOSED RESIDENTIAL COMPLEX PROJECT

Brgy. Coloong #1, Valenzuela City

Submitted to:

Technical Assistance Movement for People and Environment (TAMPEI)
234-A, Tandang Sora Avenue
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JUNE 2022

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1.0 INTRODUCTION

This report contains an outline of field and laboratory methods involving both simple and complex techniques that were accomplished for site characterization that are necessary to formulate geotechnical study for the engineering design of the proposed type of project.

This includes evaluation of the site for idealized condition and its implications with physical and engineering realities that are influential in proper selection and construction of any foundations / substructures on the area.

2.0 FIELD TEST

2.1 Drilling in Soils

The boring was accomplished using a rotary-drilling rig. In between sampling sections, the hole was advanced using the rotary wash method. Standard Penetration Test (SPT) is carried out by using a standard split-spoon sampler, mounted on a drive rod of sufficient strength to prevent whipping from blows delivered by 140 pound (63.5 kg) hammer free-falling from a height of 30 in. (76 cm). The value of N is reported as the resistance to penetration. It is the number of blows required to drive the tube to the last 300 mm (12 in) of penetration distance.

After the sample and tube are brought to the surface and separated, the sample is removed from the tube and properly preserved and sealed using a moisture tight plastic bag for further testing in the laboratory.

Correlation of SPT data with other soil parameters have been developed for estimates of stiffness of a soil and is a very useful supplementary classification as shown in tables below:

CONSISTENCY CLASSIFICATION FOR FINE-GRAINED SOILS
(Terzaghi & Peck, 1969)

Classification	SPT, N	Undrained Shear Strength, su (kPa)
Very soft	<2	<12
Soft	2 - 4	12 - 25
Medium stiff	4 - 8	25 - 50
Stiff	8 -15	50 -100
Very Stiff	15-30	100 - 200
Hard	>30	>200

RELATIVE DENSITY CLASSIFICATION FOR COARSE-GRAINED SOILS
(Terzaghi & Peck, 1969)

Classification	SPT, N	Relative Density, D_r (%)
Very loose	<4	0 – 15
Loose	4 – 10	15 – 35
Medium dense	10 – 30	36 – 65
Dense	30 – 50	65 – 85
Very dense	>50	85 – 100

3.0 LABORATORY TEST

Selected soil samples were subjected to the following specific tests.

3.1 Soil Particle Size Analysis (ASTM D422, ASTM D1140)

The size and quantity of individual particles found in particular soil is indicative of the performance characteristics of the soil. The percentage by weight of the material passing through each succession sieve is recorded.

3.2 The Atterberg Limits (ASTM D4318)

The liquid limit and the plastic limit tests define the upper and lower moisture content points at which a particular soil ceases to perform as a plastic. The use of this test is restricted to cohesive soils.

3.3 Moisture Content of Soils (ASTM D2216, ASTM D4959)

It is based on the weight of the water in the soil. This indicates imperative behavior of different soil types at various levels of moisture.

3.4 Standard Classification of Soils for Engineering Purposes (ASTM- D2487, ASTM D3282)

Based on the results of visual observations and prescribed laboratory tests, a soil is catalogued according to the basic soil groups, assigned a group symbol(s) and name and thereby classified. This standard classifies soils from any geographic location into categories representing the results of prescribed laboratory tests to determine the particle-size characteristics, the liquid limit, and the plasticity index.

The various groupings of the classification system have been devised to correlate in a general way with the engineering behavior of soils.

4.0 GENERAL GEOLOGY & GEOMORPHOLOGY

[1] Valenzuela is located at about 14 km (8.7 mi) north of country's capital, Manila. Valenzuela is bordered in the north by the town of Obando and the city of Meycauayan in Bulacan, the city of Navotas in the west, Malabon in the south and Quezon City and northern portion of Caloocan in the east.

[1] Wikipedia

The highest elevation point is 38 meters (125 ft) above sea level. Having a surface gradient of 0.55% and a gentle slope, hilly landscape is located in the industrial section of the city in Canumay. The average elevation point is 2 meters (6.6 ft) above sea level.

The Luzon Central plain is composed of middle tertiary sediments and Quaternary pyroclastics and lava flows, unconformably overlying Cretaceous to Lower Tertiary basement rocks. Post-basement stratigraphy on the east is distinct from that on the west.

In general, recent alluvial deposits probably derived from the Guadalupe Formation cover a considerable portion of Metro Manila, particularly the plain areas. They are composed of silts, sands and unconsolidated very poorly consolidated and unsorted pebbles, cobbles and small boulders of the underlying rocks. Gervacio (1968) disclosed two separate depositional environments for these alluvial strata; the manila Deltaic Plain and the Marikina Valley Alluvial Plain. The thickness of the alluvial deposit varies accordingly from place to place. In the deltaic areas, the deposits measure over 50 meters thick near the coast and thin-out towards the east. In the Marikina plain, it ranges from 30 meters to as much as 130 meters.
The Pleistocene Guadalupe Formation consisting of massive and thick sequence of volcanic and sedimentary rock constitutes a vast portion of Metro Manila, extending from Quezon City and Novaliches in the north to as far as Cavite in the south. Tectonic development and vulcanism accompanied by wide fluctuations of sea level during the Late Tertiary to Quaternary periods greatly influences not merely the geology and geomorphic aspects but also the structural elements. Teves and Gonzales (1950) adopt the name Guadalupe Formation with two members: a lower Alat Conglomerate and an Upper Diliman Tuff member. The formation unconformably overlies Miocene rocks.

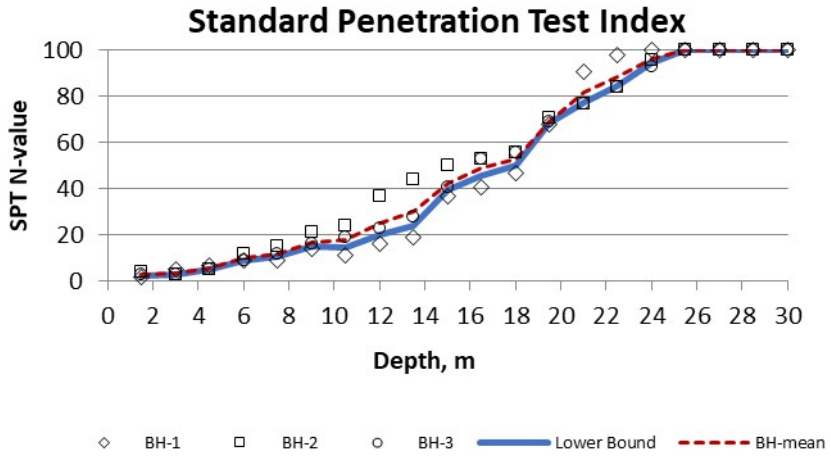
Overlying the Diliman Tuff is a sequence of unconsolidated fluvial, deltaic and marine deposits to which Purser and Diomampo (1995) proposed the name Manila Formation. The sequence is believed to have been laid down during Holocene time. The unconsolidated deposits consist of clay, silt, gravelly sand and tuffaceous silt.

The most significant structures which have important bearing to the Metro Manila are the existence of two parallel northeast trending Valley Fault Systems. These

two faults enclosed the Marikina Valley and the adjacent municipalities of Rodriguez (Montalban), San Mateo, Antipolo and the eastern sections of Metro Manila.

5.0 SUBSOIL CONDITION

Based on the three soil borings conducted at the site, fine-grained soils of silt and clay (MH, CL, CH) are occupying the upper zone, at varying thickness of at least 6m depth along the influence of BH-1 and at least 19.5m depth along locations of BH-2 and BH-3. The soils are varying from medium to high plasticity conditions. Sandy soils (SM, SP, SW-SM) are located subsequently through 30m extent depth of exploration. The site area is low-lying with seawater/groundwater level varying from +3.71m to +3.94m depth with respect to boring locations at the time of observation.



Standard penetration test is indicating very soft to medium stiff silt and clay (MH, CL) occupying the upper 4.5m depth with SPT N-values varying from 2 to 7. Medium stiff to stiff silt and clay including loose sand are extending subsequently to 7.5m depth as implied by SPT N-values increasing with depth from 5 to 15.

Very stiff to hard clay (CL, CH) and medium dense sand (SW-SM, SP) are extending from 7.5m to 13.5m depth with SPT N-values further increasing with depth from 14 to 44. Dense sand and hard clay were observed between 13.5m to 19.5m depth with SPT N-values increasing with depth from 37 to 71.

Consistently very dense sandy soil is supporting the area beyond 19.5m depth as reflected by SPT N-values ≥77 with profound refusals (≥100) through deeper levels.

6.0 DISCUSSIONS AND RECOMMENDATIONS

6.1 Structural Foundation

Considering the site location for the intended residential complex, this will require foundation through the use of embankments including the use of piles for appropriate load transfer. Embankment shall anticipate time-dependent consolidation of soils under load application noting the influencing generally soft to stiff fine-grained soils occupying the upper 8m depth.

The use of pile (either driven or drilled shaft including micropile) shall be extended ≥18m depth along locations for fixity.

6.2 Ultimate Resistance of the Underlying Soil Deposit for Offshore Structure

For the offshore location, frictional and end bearing resistance of the underlying soil deposits are given in ultimate values.

Ref: BH-1

Influence Depth	Ultimate Skin Resistance, kPa	Ultimate Uplift Skin Resistance, kPa	Tip Resistance, kPa
Upper 3m	-	-	
3m to 6m	6	6	40 kPa (≥3m)
6m to 9m	14	14	150 kPa (≥6m)
9m to 12m	22	15	830 kPa (≥9m)
12m to 15m	29	22	1140 kPa (≥12m)
15m to 18m	37	32	3600 kPa (≥15m)
18m to 21m	44	43	4300 kPa (≥18m)
21m to 24m	63	52	4300 kPa (≥21m)
24m to 27m	87	62	
>27m	100	72	

Ref: BH-2&3

Influence Depth	Ultimate Skin Resistance, kPa	Ultimate Uplift Skin Resistance, kPa	Tip Resistance, kPa
Upper 3m	-	-	
3m to 6m	6	6	40 kPa (≥3m)
6m to 9m	13	13	150 kPa (≥6m)
9m to 12m	21	21	190 kPa (≥9m)
12m to 15m	28	28	230 kPa (≥12m)
15m to 18m	35	35	270 kPa (≥15m)
18m to 21m	44	44	320 kPa (≥18m)
21m to 24m	63	52	4300 kPa (≥21m)
24m to 27m	87	62	
>27m	100	72	

6.3 Elastic Parameters

For the supporting soil on the area, the elastic parameters are as follows,

Soil Depth	**Young's Modulus (Es), MPa**	**Poisson's ratio, v**
Upper 5m	**8 000**	**0.5**
5m to 8m	**15 000**	
> 8m	**50 000**	

6.4 Pile Capacity

Results of effective stress method of analysis using the combined friction and end bearing resistance of the soil are given in safe values for bored pile/ drilled shaft sections including smaller dimensions:

Reference: BH-1

PILE SIZE	Safe Pile Axial Capacity in kN [Factor of Safety =3.0]					
	≥ 15M	≥ 18M	≥ 21M	≥ 24M	≥ 27M	≥ 30M
0.20m dia.	**270**	**390**	**520**	**640**	**760**	**880**
0.30m dia.	**420**	**600**	**820**	**1010**	**1180**	**1360**
0.40m dia.	**580**	**840**	**1150**	**1390**	**1620**	**1860**
0.60m dia.	**940**	**1340**	**1860**	**2210**	**2570**	**2930**
0.90m dia.	**1570**	**2210**	**3090**	**3620**	**4160**	**4700**
1.00m dia.	**1800**	**2520**	**3540**	**4140**	**4540**	**4330**
1.20m dia.	**2290**	**3190**	**4520**	**5240**	**5950**	**6670**

Reference: BH-2 & BH-3

PILE SIZE	Safe Pile Axial Capacity in kN [Factor of Safety =3.0]					
	≥ 15M	≥ 18M	≥ 21M	≥ 24M	≥ 27M	≥ 30M
0.20m dia.	**150**	**190**	**300**	**410**	**530**	**650**
0.30m dia.	**250**	**300**	**480**	**660**	**840**	**1020**
0.40m dia.	**350**	**420**	**680**	**920**	**1170**	**1410**
0.60m dia.	**590**	**690**	**1170**	**1530**	**1890**	**2240**
0.90m dia.	**1010**	**1180**	**2060**	**2590**	**3130**	**3670**
1.00m dia.	**1260**	**1350**	**2400**	**3000**	**3590**	**4190**
1.20m dia.	**1630**	**1740**	**3150**	**3860**	**4580**	**5300**

6.5 Seismic Considerations

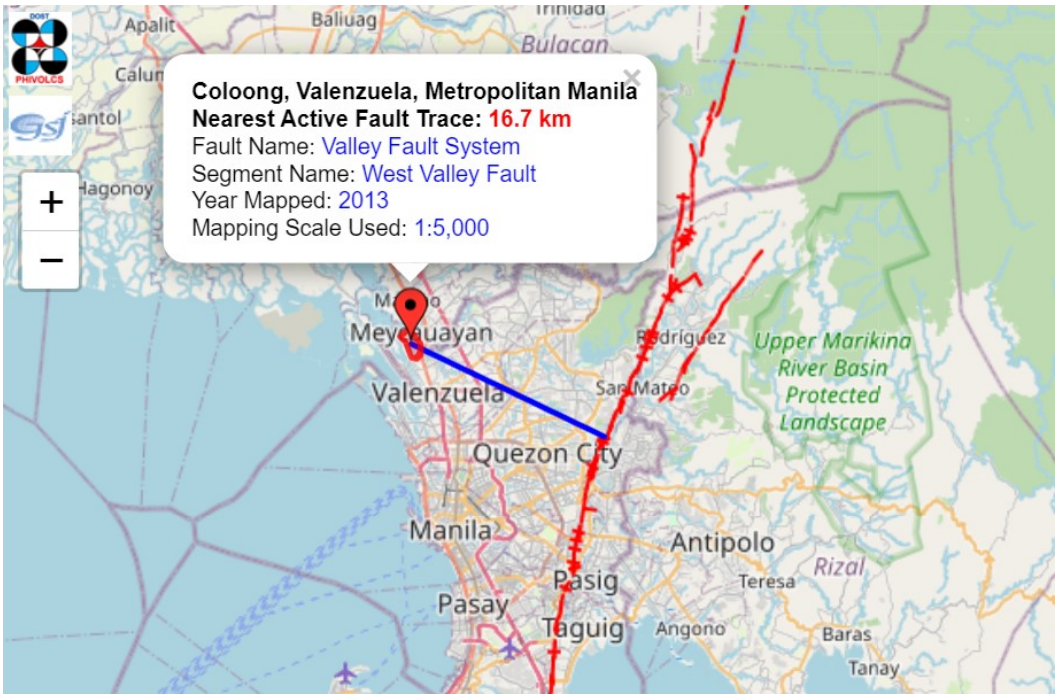
The area is categorized as under *Seismic Zone 4* with Seismic Source Type A as influenced by Valley Fault System, a group of dextral strike-slip faults[2], extending from the northern portion of Quezon City to the western side of Laguna de Bay extending south to Tagaytay Ridge in Cavite (Gervacio, 1968). The west fault is capable of producing large-scale earthquakes on its active phases with a magnitude of 7 or higher.

Specific *Soil Profile Type,* $S_{E,}$ shall be used for foundations on the upper influencing soil materials.

Near-Source Factor values of N_a*=1.0* and N_v*=1.0* shall be considered as per NSCP 2015 Tables 208-5 and 208-6.

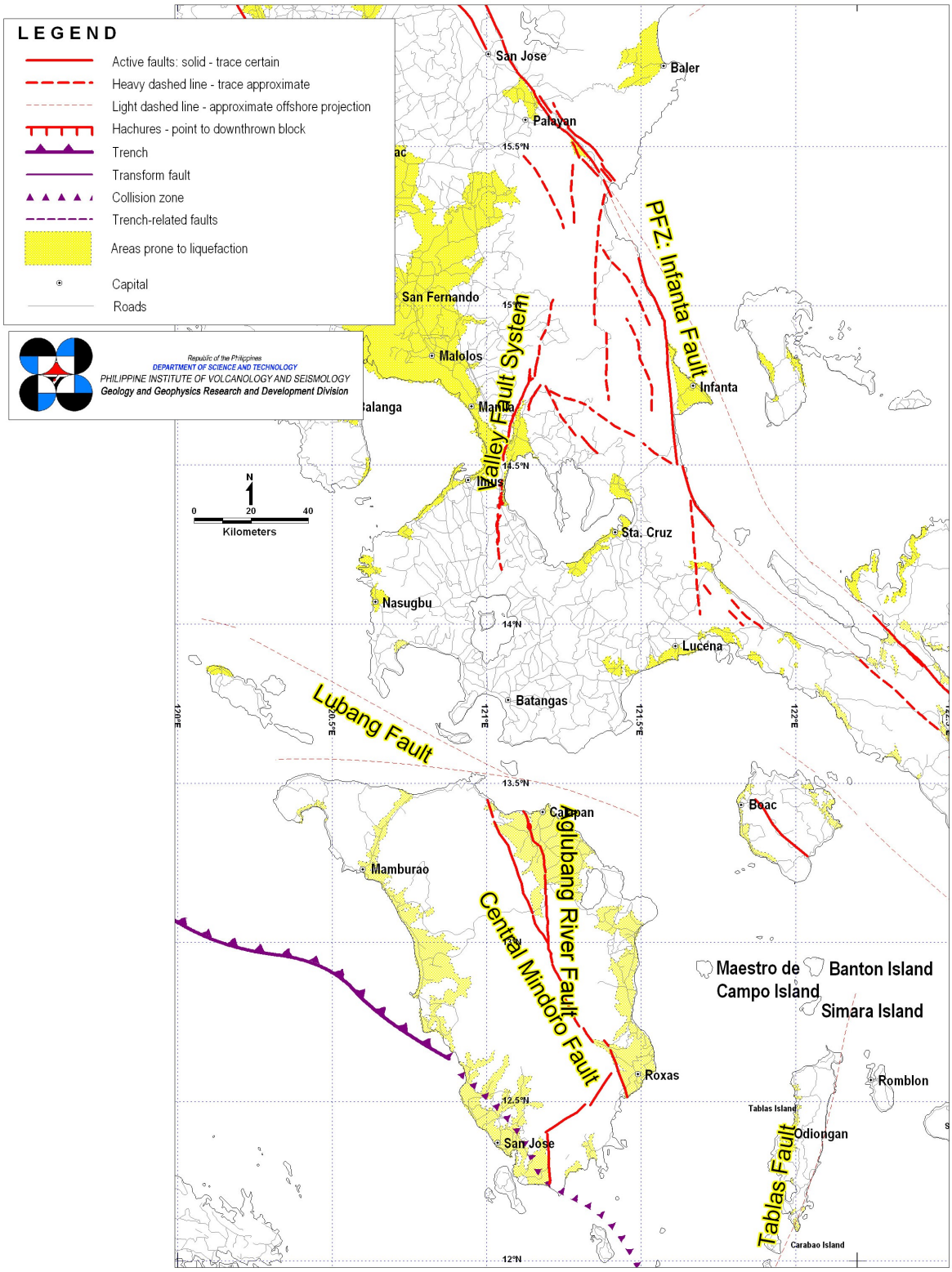
[2] Rimando & Knuepfer, Neotectonic of Marikina Valley Fault System and Tectonic Framework of Structures in Northern and Central Luzon Philippines.

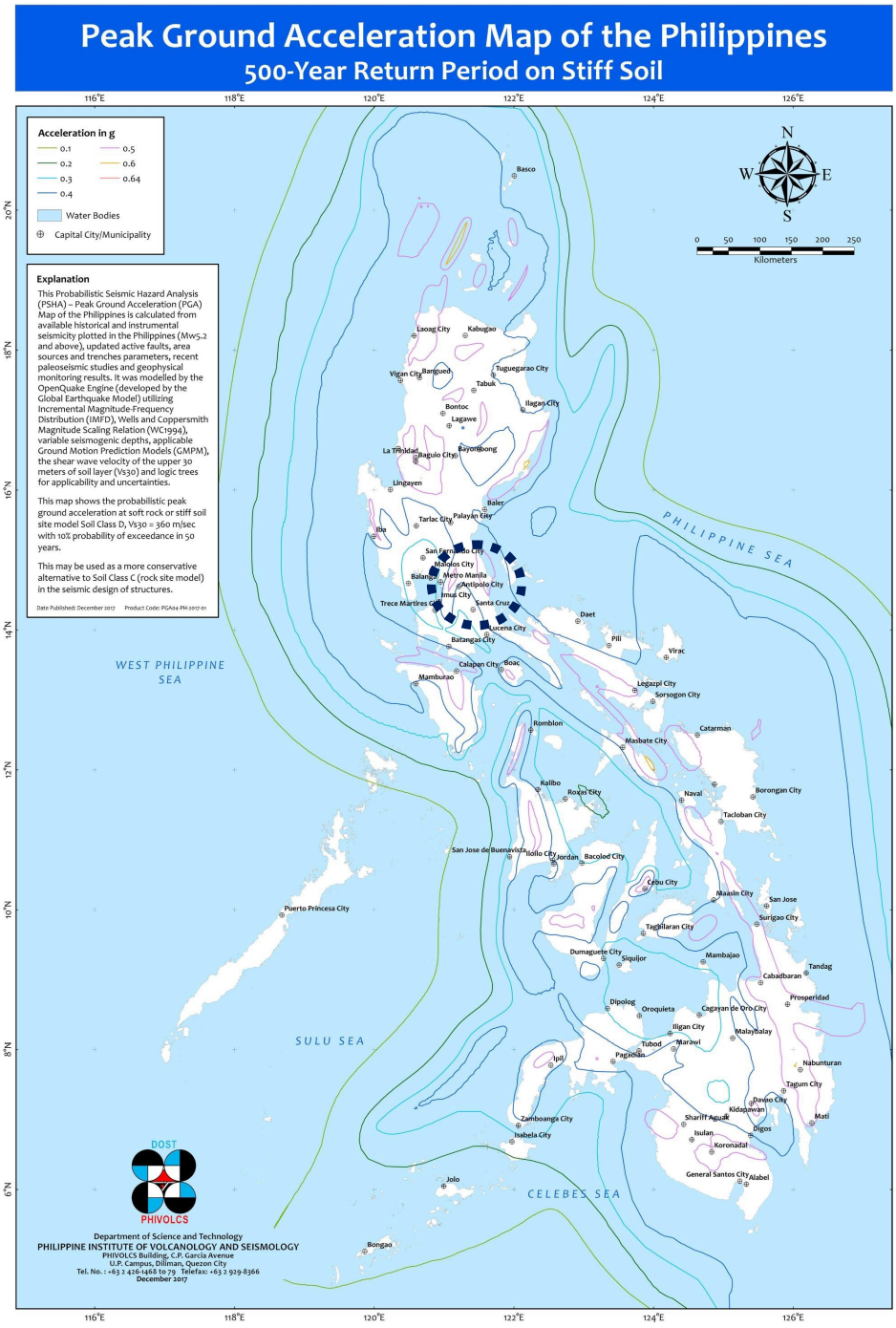
[3]Seismic Source Relative to Site Location



[3] faultfinder.phivolcs.dost.gov.ph

Active Faults and Liquefaction Susceptibility Map of Region IV-A





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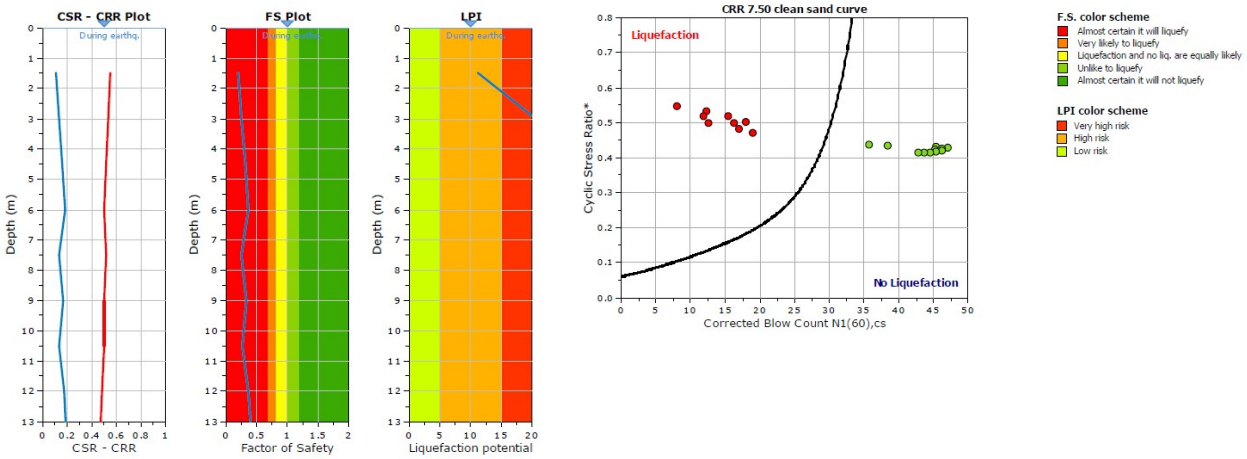
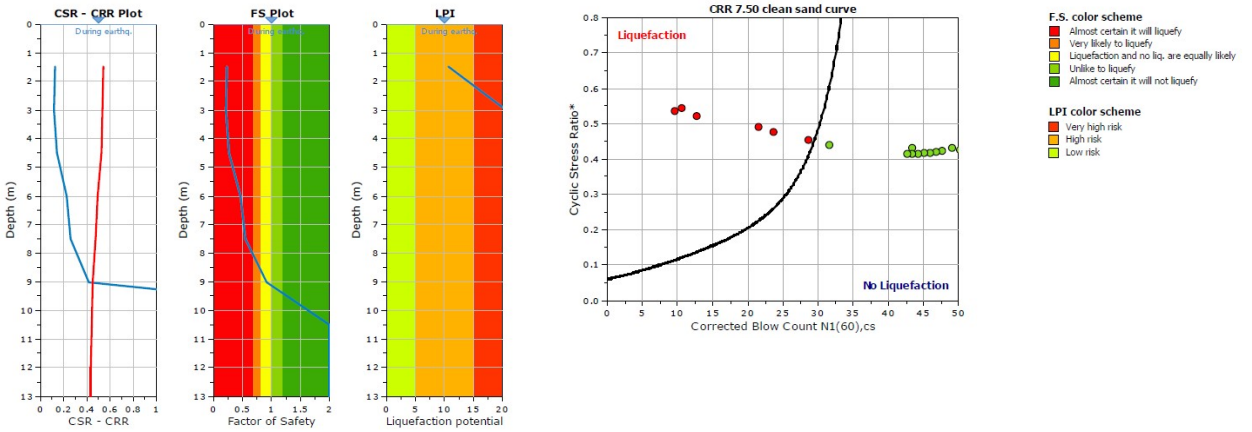
Following Idriss and Boulanger (2014) and utilizing LiqSVs software for analysis, liquefaction potential is at very high risk for the location. Peak ground acceleration of 0.40g has been used for 500-year return period for Vs30 stiff soil model as per Philippine Earthquake Model (Phivolcs, 2017).

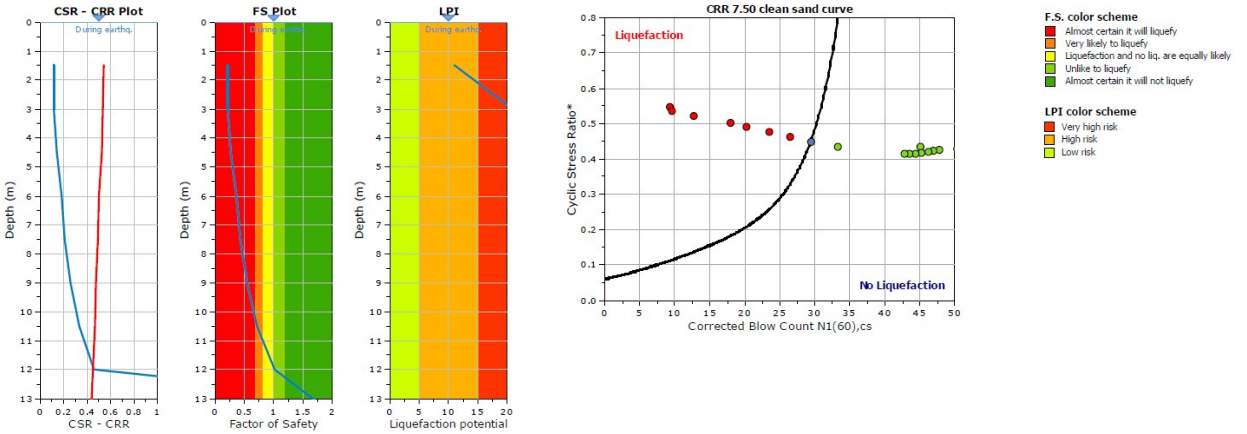
Borehole 1



Borehole 2



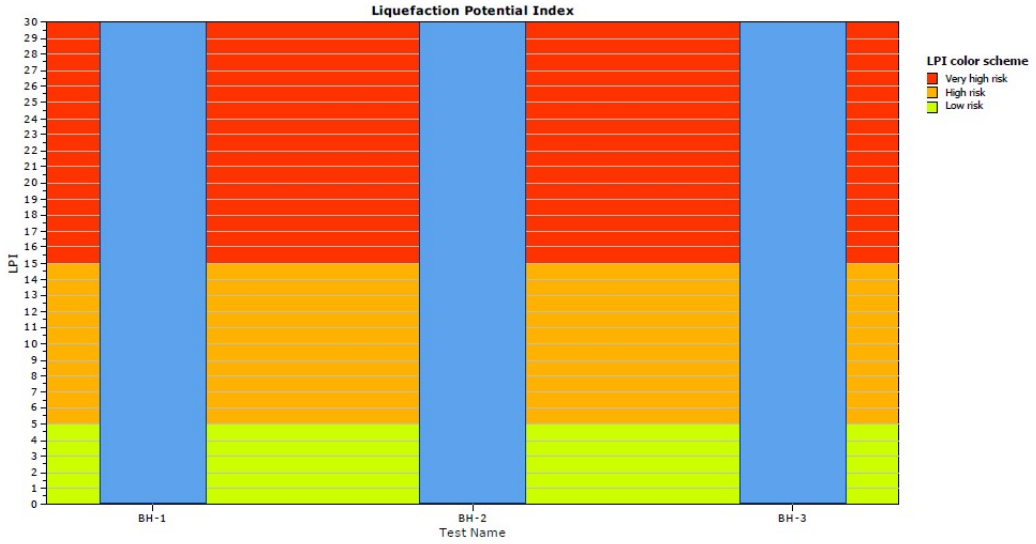
Borehole 3



Typical Range for liquefaction potential according to Iwazaki

I_L = 0.00 - No liquefaction
I_L between 0.00 and 5 - Liquefaction not probable
I_L between 5 and 15 - Liquefaction probable
I_L > 15 - Liquefaction certain

Summary calculation report for liquefaction



7.0 LIMITATIONS

Limitations must be acknowledged and the results analyzed in conjunction with the geological information for this specific area of concern. Furthermore, practical observations of the subsoil should be made during construction of every structure on the area.

Prepared by:

Geoscience Technologies, Inc.

CLIPPER N. BESIN
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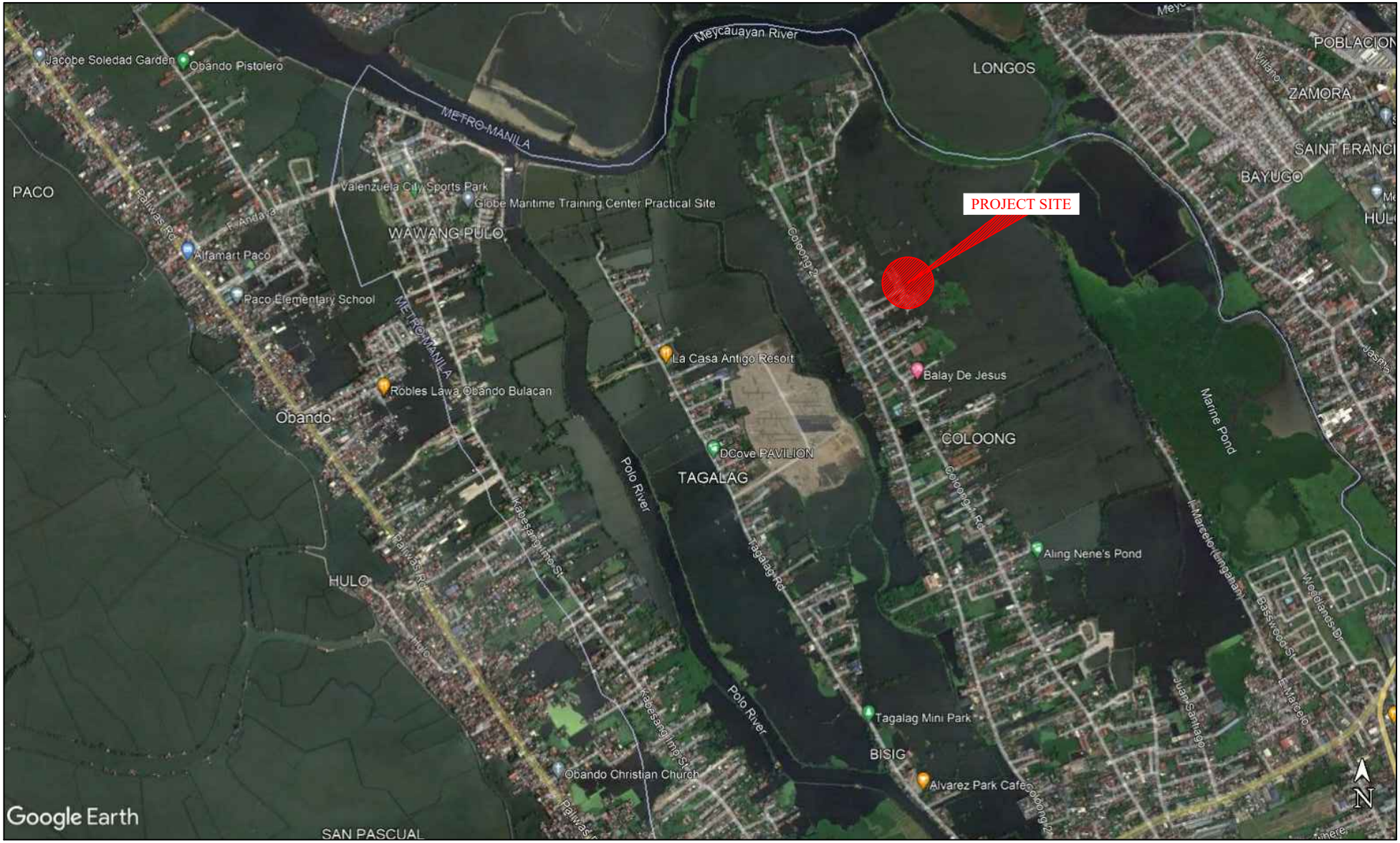
PRC No. 0078265
PTR No. 29397523 issued on
January 03, 2022 @ San Juan, Batangas

21 June 2022

A P P E N D I C E S

VICINITY MAP



GEOSCIENCE TECHNOLOGIES, INC. Rm. 207 Makati Executive Tower II, Cityland Square Dela Rosa St., Pio del Pilar, Makati City, Tel. No.: (02) 856-3174	PROJECT NAME AND LOCATION : PROPOSED RESIDENTIAL COMPLEX PROJECT Brgy. Coloong #1, Valenzuela City	SHEET CONTENT : VICINITY MAP	SHEET NO. 1 of 1

BOREHOLE LOCATION PLAN

GEOSCIENCE TECHNOLOGIES, INC. Rm. 207 Makati Executive Tower II, Cityland Square Dela Rosa St., Pio del Pilar, Makati City, Tel. No.: (02) 856-3174	PROJECT NAME AND LOCATION : PROPOSED RESIDENTIAL COMPLEX PROJECT Brgy. Coloong #1, Valenzuela City	SHEET CONTENT : BOREHOLE LOCATION PLAN	SHEET NO. 1 of 1

IDEALIZED SOIL PROFILE

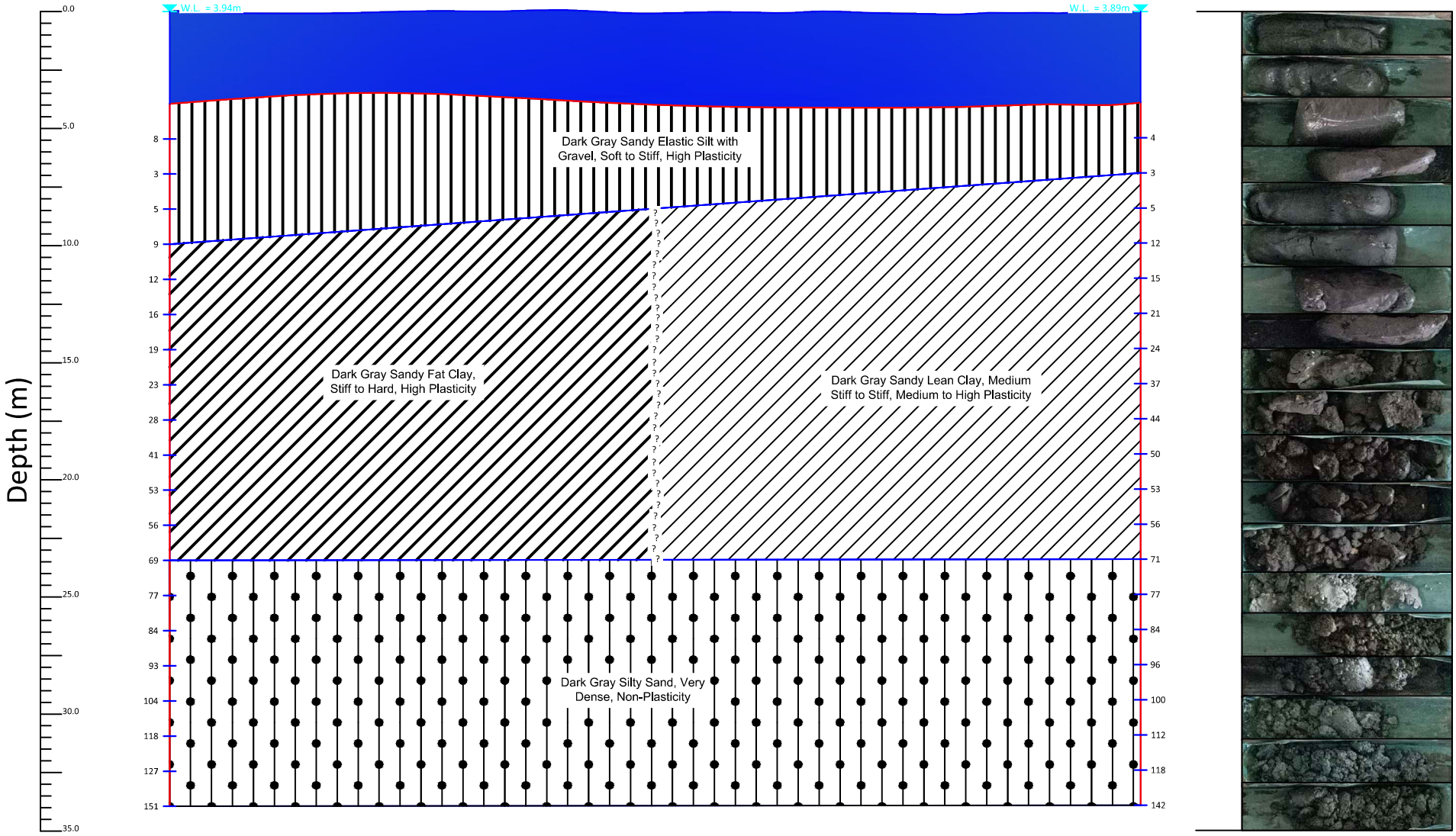
BH - 3

SPT - N Values

BH - 2

SPT - N Values

Typical Soil Sample



End of Borehole @ 30.00m Depth

End of Borehole @ 30.00m Depth

GEOSCIENCE TECHNOLOGIES, INC.
Rm. 207 Makati Executive Tower II, Cityland Square
Dela Rosa St., Pio del Pilar, Makati City, Tel. No.: (02) 856-3174

PROJECT NAME AND LOCATION :

PROPOSED RESIDENTIAL COMPLEX PROJECT

Brgy. Coloong #1, Valenzuela City

SHEET CONTENT :

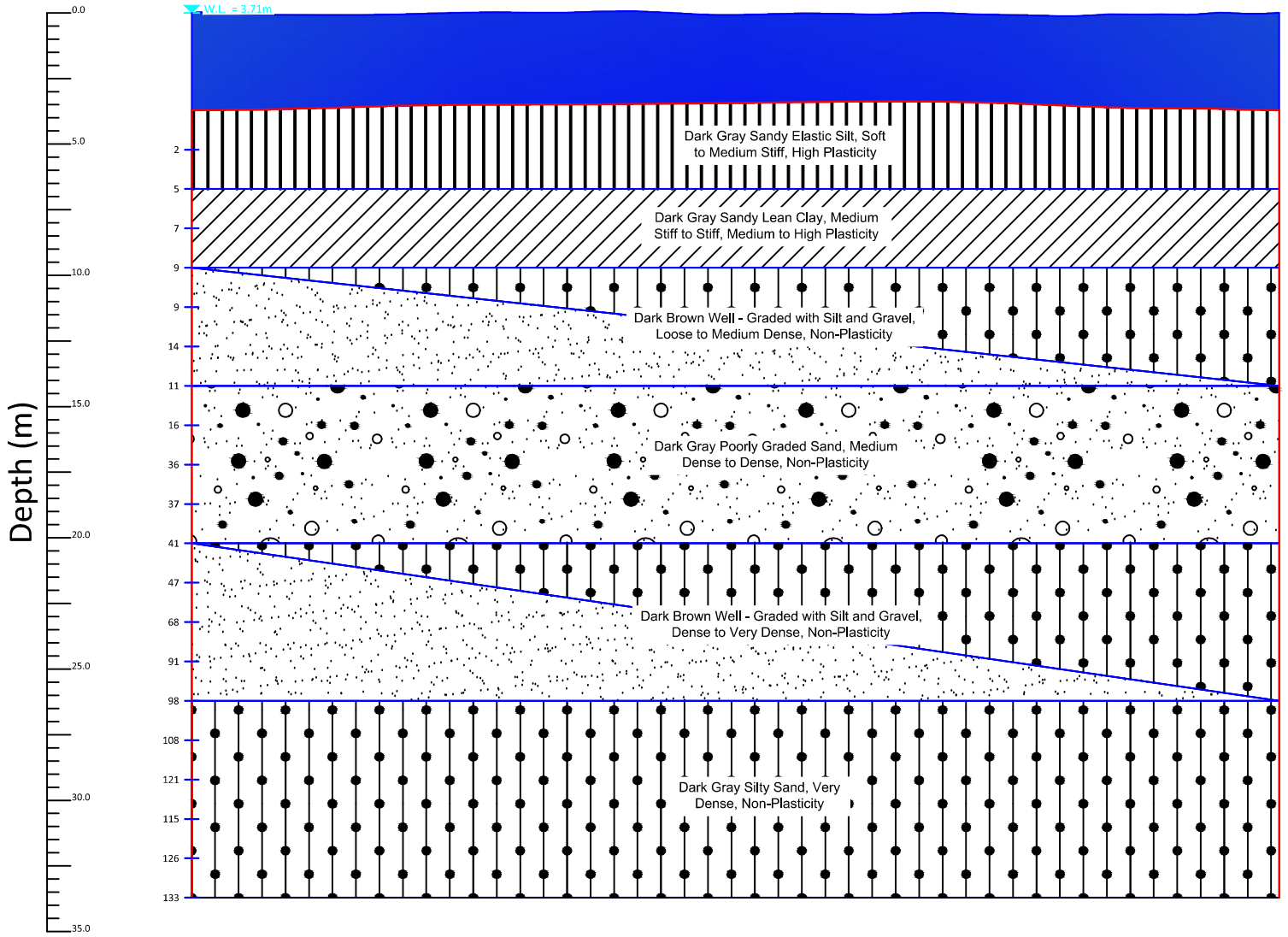
IDEALIZED SOIL PROFILE

SHEET NO.

1 of 2

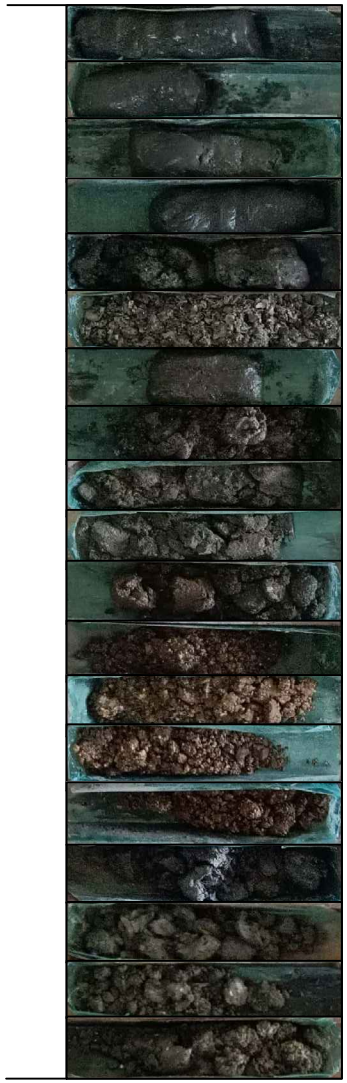
BH - 1

SPT - N Values



End of Borehole @ 30.00m Depth

Typical Soil Sample



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Brgy. Coloong #1, Valenzuela City

SHEET CONTENT :

IDEALIZED SOIL PROFILE

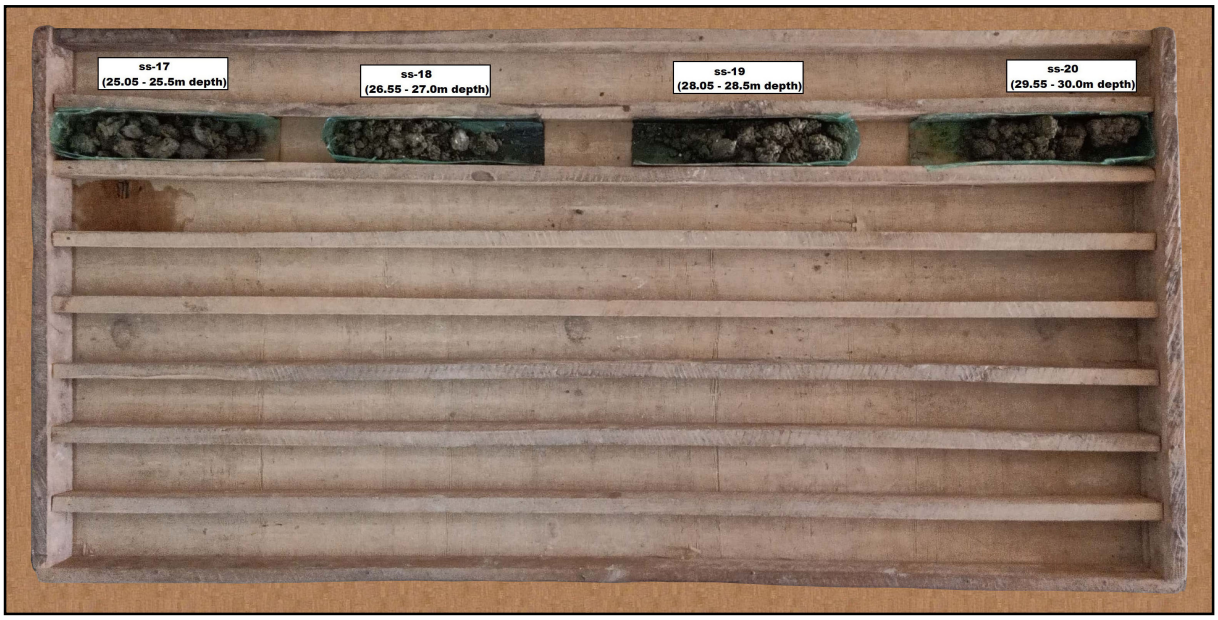
SHEET NO.

2 of 2

PHOTOGRAPHS

DRILLING WORKS

Borehole No. 1

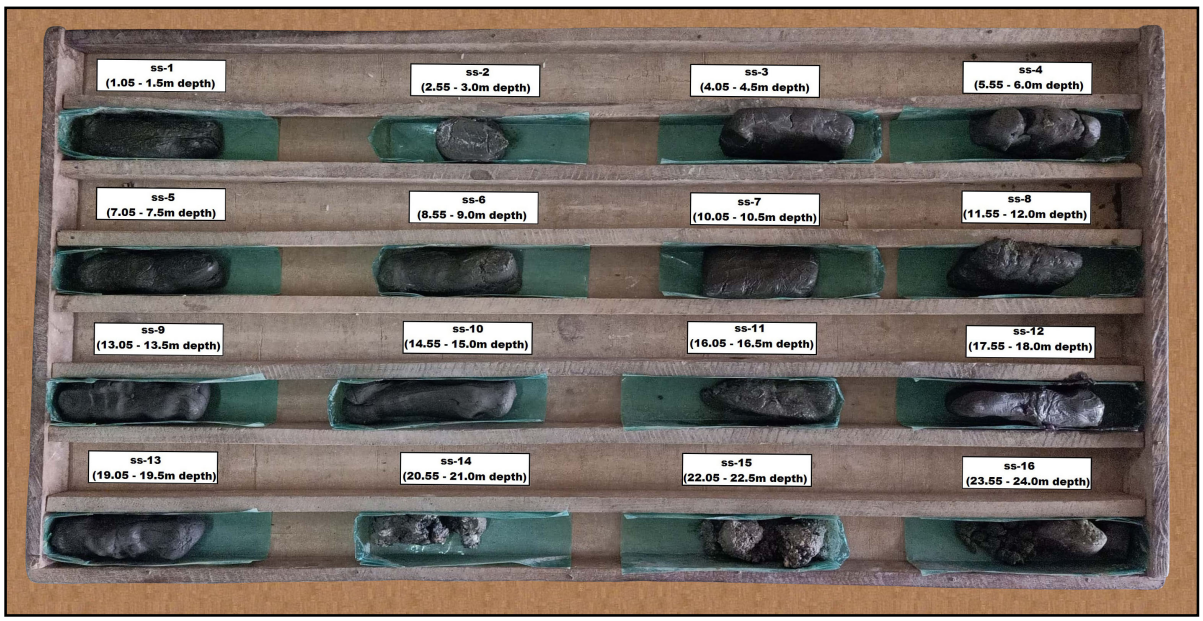


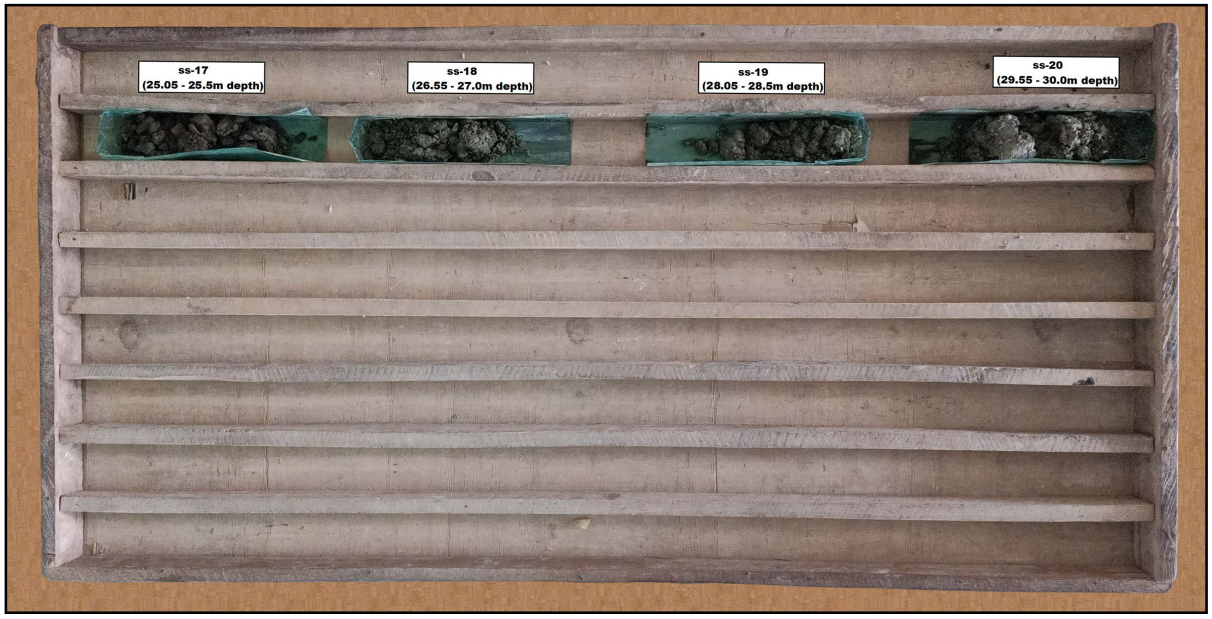
SOIL SAMPLES

Borehole No. 1

DRILLING WORKS

Borehole No. 2



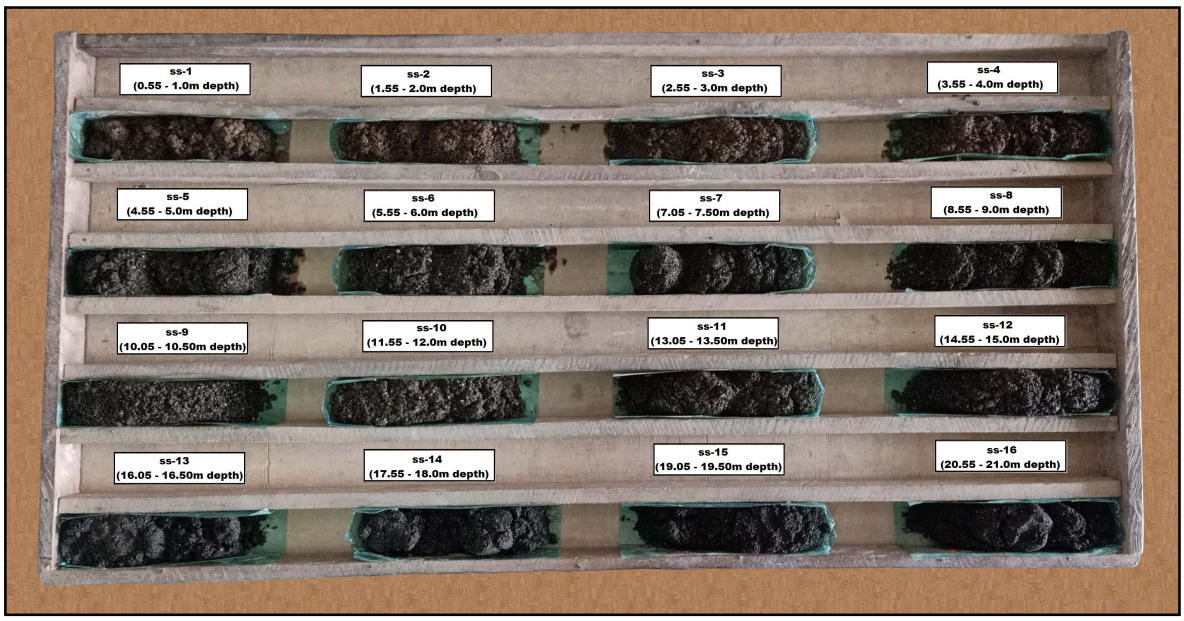


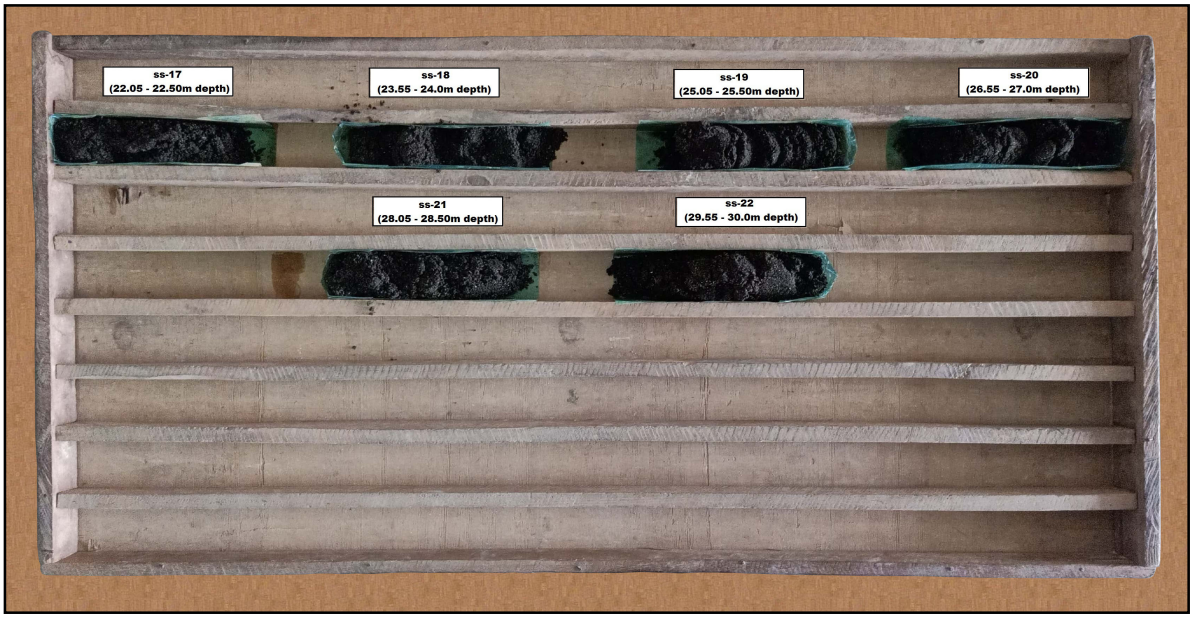
SOIL SAMPLES

Borehole No. 2

DRILLING WORKS

Borehole No. 3





SOIL SAMPLES

Borehole No. 3

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

GEOSCIENCE TECHNOLOGIES INC.

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT : **PROPOSED RESIDENTIAL COMPLEX PROJECT**
LOCATION : **Brgy. Coloong #1, Valenzuela City**
CLIENT : **Technical Assistance Movement for People and Environment (Tampei)**
Borehole No : BH-01
H2O Level bel G.S. (m) : + 3.71 m
Date Drilled : 05/02 - 06/22
Date Gauged : 05/07/2022

Final Depth : 30.00
Elevation (m) : 73.726
Northing : 1673489.577
Easting : 457538.680

Prepared By : GTI
Checked By : E.A.A
Sheet No : 1 of 2

DEPTH, m.	Sample No.	Recovery Sample %	R.Q.D. %	Log Symbol	Soil classification	DESCRIPTION	N - BLOWS (10 30 50)	Natural Moisture Content	Atterberg Limits: Liquid Limit	Atterberg Limits: Plasticity index	Sieve Analysis % Passing: 4	10	40	100	200	Specific Gravity	Other Test U.C.T.: Qu(MPa)	Strain at failure, ε (%)
1.50	ss-1	100	-		MH	Dark Gray Sandy Elastic Silt, Soft to Medium Stiff, High Plasticity	BL: 1-1-1 2											
3.00	ss-2	89	-				BL: 2-3-2 5											
4.50	ss-3	89	-		CL	Dark Gray Sandy Lean Clay, Medium Stiff to Stiff, Medium to High Plasticity	BL: 3-3-4 7											
6.00	ss-4	100	-				BL: 6-4-5 9											
7.50	ss-5	89	-		SM/SW	Dark Brown Well - Graded with Silt and Gravel, Loose to Medium Dense, Non-Plasticity	BL: 9-4-5 9											
9.00	ss-6	89	-				BL: 7-6-8 14	21.9	NP	NP	74	42	16	8	5.9	2.715		
10.50	ss-7	89	-				BL: 12-5-6 11											
12.00	ss-8	89	-		SP	Dark Gray Poorly Graded Sand, Medium Dense to Dense, Non-Plasticity	BL: 11-7-9 16											
13.50	ss-9	89	-				36 BL: 15-17-19											
15.00	ss-10	89	-				BL: 18-17-20 37	26.7	NP	NP	99	99	95	8	4.5	2.630		

CONSISTENCY

COHESIVE SOILS (Fine-Grained Soils)

N-VALUE	CLASSIFICATION
< 2	VERY SOFT
2 - 4	SOFT
4 - 8	MEDIUM STIFF
8 - 15	STIFF
15 - 30	VERY STIFF
> 30	HARD

COHESIONLESS SOILS (Coarse-Grained Soils)

N-VALUE	CLASSIFICATION
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MEDIUM DENSE
30 - 50	DENSE
> 50	VERY DENSE

TYPE OF SAMPLING

- WASH BORING (WB)
- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING

TYPE OF SOIL & ROCK

- Sandy / Silty CLAY (CL)
- Organic CLAY (CH)
- Sandy / Clayey / Organic SILTS (ML)
- Clayey SANDS (SC)
- Silty SANDS (SM)
- Well - Graded SANDS (SW)
- Poorly Graded SANDS (SP)
- Well -Graded GRAVELS (GW)
- BOULDERS
- SILTSTONE
- SANSSTONE
- LIMESTONE
- TUFF
- BASALT

MOISTURE CONTENT (MC)

RANGES	VALUE
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
15 - 30	VERY STIFF
> 100	SATURATED

ROCK QUALITY DESIGNATION (RQD)

RQD (%)	ROCK QUALITY
< 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

PERCENTAGE (% of Sand & Gravel)

RANGES (%)	DESCRIPTION
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

GEOSCIENCE TECHNOLOGIES INC.

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT : **PROPOSED RESIDENTIAL COMPLEX PROJECT**
LOCATION : **Brgy. Coloong #1, Valenzuela City**
CLIENT : **Technical Assistance Movement for People and Environment (Tampei)**
Borehole No : BH-01
H2O Level bel G.S. (m) : + 3.71 m
Date Drilled : 05/02-06/22
Date Gauged : 05/07/2022

Final Depth : 30.00
Elevation (m) : 73.726
Northing : 1673489.577
Easting : 457538.680

Prepared By : GTI
Checked By : E.A.A
Sheet No : 2 of 2

DEPTH, m.	Sample No.	Recovery Sample %	R.Q.D. %	Log Symbol	Soil classification	DESCRIPTION	N - BLOWS (10 30 50)	Natural Moisture Content	Atterberg Limits: Liquid Limit	Atterberg Limits: Plasticity index	Sieve Analysis % Passing: 4	10	40	100	200	Specific Gravity	Other Test U.C.T.: Qu(MPa)	Strain at failure,
16.5	ss-11	89	-		SP	Dark Gray Poorly Graded Sand, Medium Dense to Dense, Non-Plasticity	BL: 21-19-22 41											
18.0	ss-12	89	-				BL: 20-23-24 47											
19.5	ss-13	89	-		SM SW	Dark Brown Well - Graded with Silt and Gravel, Dense to Very Dense, Non-Plasticity	BL: 29-31-67 68	12.1	NP	NP	73	53	30	16	12	2.799		
21.0	ss-14	89	-				BL: 35-42-49 91											
22.50	ss-15	89	-				BL: 46-48-50 98											
24.0	ss-16	100	-		SM	Dark Gray Silty Sand, Very Dense, Non-Plasticity	BL: 52-55-53 108											
25.50	ss-17	100	-				BL: 56-59-62 121											
27.00	ss-18	89	-				BL: 58-55-60 115											
28.50	ss-19	89	-				BL: 64-61-65 126											
30.00	ss-20	89	-				BL: 68-66-67 133											

CONSISTENCY

COHESIVE SOILS (Fine-Grained Soils)

N-VALUE	CLASSIFICATION
< 2	VERY SOFT
2 - 4	SOFT
4 - 8	MEDIUM STIFF
8 - 15	STIFF
15 - 30	VERY STIFF
> 30	HARD

COHESIONLESS SOILS (Coarse-Grained Soils)

N-VALUE	CLASSIFICATION
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MEDIUM DENSE
30 - 50	DENSE
> 50	VERY DENSE

TYPE OF SAMPLING

- WASH BORING (WB)
- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING

TYPE OF SOIL & ROCK

- Sandy / Silty CLAY (CL)
- Organic CLAY (CH)
- Sandy / Clayey / Organic SILTS (ML)
- Clayey SANDS (SC)
- Silty SANDS (SM)
- Well - Graded SANDS (SW)
- Poorly Graded SANDS (SP)
- Well -Graded GRAVELS (GW)
- BOULDERS
- SILTSTONE
- SANSSTONE
- LIMESTONE
- TUFF
- BASALT

MOISTURE CONTENT (MC)

RANGES	VALUE
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
15 - 30	VERY STIFF
> 100	SATURATED

ROCK QUALITY DESIGNATION (RQD)

RQD (%)	ROCK QUALITY
< 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

PERCENTAGE (% of Sand & Gravel)

RANGES (%)	DESCRIPTION
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

GEOSCIENCE TECHNOLOGIES INC.

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT : **PROPOSED RESIDENTIAL COMPLEX PROJECT**
LOCATION : **Brgy. Coloong #1, Valenzuela**
CLIENT : **Technical Assistance Movement for People and Environment (Tampei)**
Borehole No : BH-02
H2O Level bel G.S. (m) : + 3.89 m
Date Drilled : 05/13-15/22
Date Gauged : 05/16/2022

Final Depth : 30.00
Elevation (m) : 74.707
Northing : 1673547.066
Easting : 457444.655

Prepared By : GTI
Checked By : E.A.A
Sheet No : 1 of 2

DEPTH, m.	Sample No.	Recovery Sample %	R.Q.D. %	Log Symbol	Soil classification	DESCRIPTION	N - BLOWS	Natural Moisture Content	Atterberg Limits: Liquid Limit	Atterberg Limits: Plasticity index	Sieve Analysis % Passing: 4	10	40	100	200	Specific Gravity	Other Test U.C.T.: Qu(MPa)	Strain at failure, ε (%)
1.50	ss-1	89	-		MH	Dark Gray Sandy Elastic Silt, Soft, High Plasticity	BL: 1-2-2 4											
3.00	ss-2	89	-				BL: 3-1-2 3											
4.50	ss-3	100	-		CL	Dark Gray Sandy Lean Clay, Medium Stiff to Stiff, Medium to High Plasticity	BL: 2-2-3 5	54.4	40	18	90	79	69	55	40	2.599		
6.00	ss-4	89	-				BL: 5-6-6 12											
7.50	ss-5	89	-				15 BL: 6-7-8											
9.00	ss-6	89	-			Dark Gray Sandy Lean Clay, Very Stiff to Hard, Medium to High Plasticity	BL: 9-11-10 21											
10.50	ss-7	89	-				24 BL: 8-12-12											
12.00	ss-8	89	-				BL: 12-18-19 37											
13.50	ss-9	89	-			Dark Gray Sandy Lean Clay, Very Stiff to Hard, Medium Plasticity	BL: 17-21-23 44											
15.00	ss-10	100	-				BL: 19-24-26 50											

CONSISTENCY

COHESIVE SOILS (Fine-Grained Soils)

N-VALUE	CLASSIFICATION
< 2	VERY SOFT
2 - 4	SOFT
4 - 8	MEDIUM STIFF
8 - 15	STIFF
15 - 30	VERY STIFF
> 30	HARD

COHESIONLESS SOILS (Coarse-Grained Soils)

N-VALUE	CLASSIFICATION
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MEDIUM DENSE
30 - 50	DENSE
> 50	VERY DENSE

TYPE OF SAMPLING

- WASH BORING (WB)
- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING

TYPE OF SOIL & ROCK

- Sandy / Silty CLAY (CL)
- Organic CLAY (CH)
- Sandy / Clayey / Organic SILTS (ML)
- Clayey SANDS (SC)
- Silty SANDS (SM)
- Well - Graded SANDS (SW)
- Poorly Graded SANDS (SP)
- Well -Graded GRAVELS (GW)
- BOULDERS
- SILTSTONE
- SANSSTONE
- LIMESTONE
- TUFF
- BASALT

MOISTURE CONTENT (MC)

RANGES	VALUE
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
15 - 30	VERY STIFF
> 100	SATURATED

ROCK QUALITY DESIGNATION (RQD)

RQD (%)	ROCK QUALITY
< 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

PERCENTAGE (% of Sand & Gravel)

RANGES (%)	DESCRIPTION
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

GEOSCIENCE TECHNOLOGIES INC.

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT : **PROPOSED RESIDENTIAL COMPLEX PROJECT**
LOCATION : **Brgy. Coloong #1, Valenzuela City**
CLIENT : **Technical Assistance Movement for People and Environment (Tampei)**
Borehole No : BH-02
H2O Level bel G.S. (m) : + 3.89 m
Date Drilled : 05/13-15/22
Date Gauged : 05/16/2022

Final Depth : 30.00
Elevation (m) : 74.707
Northing : 1673547.066
Easting : 457444.655

Prepared By : GTI
Checked By : E.A.A
Sheet No : 2 of 2

DEPTH, m.	Sample No.	Recovery Sample %	R.Q.D. %	Log Symbol	Soil classification	DESCRIPTION	N - BLOWS (10 30 50)	Natural Moisture Content	Atterberg Limits: Liquid Limit	Atterberg Limits: Plasticity index	Sieve Analysis % Passing: 4	10	40	100	200	Specific Gravity	Other Test U.C.T.: Qu(MPa)	Strain at failure, ε (%)
16.5	ss-11	89	-		CL	Dark Gray Sandy Lean Clay, Very Stiff to Hard, Medium Plasticity	BL: 21-25-28 53	35.3	NP	NP	99	94	85	79	64	2.644		
18.0	ss-12	100	-				BL: 23-27-29 56											
19.5	ss-13	100	-				BL: 28-32-39 71											
21.0	ss-14	100	-		SM	Dark Gray Silty Sand, Very Dense, Non-Plasticity	BL: 34-37-40 77											
22.50	ss-15	89	-				BL: 39-41-43 84											
24.0	ss-16	89	-				BL: 44-47-49 96											
25.50	ss-17	89	-				BL: 46-49-51 100											
27.00	ss-18	89	-				BL: 53-56-56 112	59.5	NP	NP	94	78	44	23	17	2.649		
28.50	ss-19	89	-				BL: 57-59-59 118											
30.00	ss-20	89	-				BL: 61-64-78 142											

CONSISTENCY

COHESIVE SOILS (Fine-Grained Soils)

N-VALUE	CLASSIFICATION
< 2	VERY SOFT
2 - 4	SOFT
4 - 8	MEDIUM STIFF
8 - 15	STIFF
15 - 30	VERY STIFF
> 30	HARD

COHESIONLESS SOILS (Coarse-Grained Soils)

N-VALUE	CLASSIFICATION
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MEDIUM DENSE
30 - 50	DENSE
> 50	VERY DENSE

TYPE OF SAMPLING

- WASH BORING (WB)
- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING

TYPE OF SOIL & ROCK

- Sandy / Silty CLAY (CL)
- Organic CLAY (CH)
- Sandy / Clayey / Organic SILTS (ML)
- Clayey SANDS (SC)
- Silty SANDS (SM)
- Well - Graded SANDS (SW)
- Poorly Graded SANDS (SP)
- Well -Graded GRAVELS (GW)
- BOULDERS
- SILTSTONE
- SANSSTONE
- LIMESTONE
- TUFF
- BASALT

MOISTURE CONTENT (MC)

RANGES	VALUE
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
15 - 30	VERY STIFF
> 100	SATURATED

ROCK QUALITY DESIGNATION (RQD)

RQD (%)	ROCK QUALITY
< 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

PERCENTAGE (% of Sand & Gravel)

RANGES (%)	DESCRIPTION
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

GEOSCIENCE TECHNOLOGIES INC.

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT : **PROPOSED RESIDENTIAL COMPLEX PROJECT**
LOCATION : **Brgy. Coloong #1, Valenzuela City**
CLIENT : **Technical Assistance Movement for People and Environment (Tampei)**
Borehole No : BH-03
H2O Level bel G.S. (m) : + 3.94 m
Date Drilled : 05/21-23/22
Date Gauged : 05/24/2022

Final Depth : 30.00
Elevation (m) : 74.707
Northing : 1673547.066
Easting : 457444.655

Prepared By : GTI
Checked By : E.A.A
Sheet No : 1 of 2

DEPTH, m.	Sample No.	Recovery Sample %	R.Q.D. %	Log Symbol	Soil classification	DESCRIPTION	N - BLOWS (10 30 50)	Natural Moisture Content	Atterberg Limits: Liquid Limit	Atterberg Limits: Plasticity index	Sieve Analysis % Passing: 4	10	40	100	200	Specific Gravity	Other Test U.C.T.: Qu(MPa)	Strain at failure, ε (%)
1.50	ss-1	89	-		MH	Dark Gray Sandy Elastic Silt with Gravel, Soft to Stiff, High Plasticity	BL: 1-1-2 3	86.9	50	16	81	63	48	45	43	2.600		
3.00	ss-2	89	-				BL: 2-1-2 3											
4.50	ss-3	89	-				BL: 2-2-3 5											
6.00	ss-4	89	-				BL: 5-4-5 9											
7.50	ss-5	89	-		CH	Dark Gray Sandy Fat Clay, Stiff to Hard, High Plasticity	BL: 4-6-6 12											
9.00	ss-6	100	-				BL: 6-7-9 16											
10.50	ss-7	89	-				BL: 8-9-10 19											
12.00	ss-8	100	-				BL: 9-11-1 23											
13.50	ss-9	89	-				28 BL: 11-13-15	73.6	82	49	96	92	88	87	86	2.610		
15.00	ss-10	89	-				BL: 16-19-22 41											

CONSISTENCY

COHESIVE SOILS (Fine-Grained Soils)

N-VALUE	CLASSIFICATION
< 2	VERY SOFT
2 - 4	SOFT
4 - 8	MEDIUM STIFF
8 - 15	STIFF
15 - 30	VERY STIFF
> 30	HARD

COHESIONLESS SOILS (Coarse-Grained Soils)

N-VALUE	CLASSIFICATION
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MEDIUM DENSE
30 - 50	DENSE
> 50	VERY DENSE

TYPE OF SAMPLING

- WASH BORING (WB)
- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING

TYPE OF SOIL & ROCK

- Sandy / Silty CLAY (CL)
- Organic CLAY (CH)
- Sandy / Clayey / Organic SILTS (ML)
- Clayey SANDS (SC)
- Silty SANDS (SM)
- Well - Graded SANDS (SW)
- Poorly Graded SANDS (SP)
- Well -Graded GRAVELS (GW)
- BOULDERS
- SILTSTONE
- SANSSTONE
- LIMESTONE
- TUFF
- BASALT

MOISTURE CONTENT (MC)

RANGES	VALUE
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
15 - 30	VERY STIFF
> 100	SATURATED

ROCK QUALITY DESIGNATION (RQD)

RQD (%)	ROCK QUALITY
< 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

PERCENTAGE (% of Sand & Gravel)

RANGES (%)	DESCRIPTION
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

GEOSCIENCE TECHNOLOGIES INC.

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT : **PROPOSED RESIDENTIAL COMPLEX PROJECT**
LOCATION : **Brgy. Coloong #1, Valenzuela City**
CLIENT : **Technical Assistance Movement for People and Environment (Tampei)**
Borehole No : BH-03
H2O Level bel G.S. (m) : + 3.94 m
Date Drilled : 05/21-23/22
Date Gauged : 05/24/2022

Final Depth : 30.00
Elevation (m) : 74.707
Northing : 1673547.066
Easting : 457444.655

Prepared By : GTI
Checked By : E.A.A
Sheet No : 2 of 2

DEPTH, m.	Sample No.	Recovery Sample %	R.Q.D. %	Log Symbol	Soil classification	DESCRIPTION	N - BLOWS (10 30 50)	Natural Moisture Content	Atterberg Limits: Liquid Limit	Atterberg Limits: Plasticity index	Sieve Analysis % Passing: 4	10	40	100	200	Specific Gravity	Other Test U.C.T.: Qu(MPa)	Strain at failure, ε (%)
16.5	ss-11	89	-		CH	Dark Gray Sandy Fat Clay, Hard, High Plasticity	BL: 26-24-29 53											
18.0	ss-12	89	-				BL: 24-25-31 56											
19.5	ss-13	89	-				BL: 27-31-38 69											
21.0	ss-14	89	-		SM	Dark Gray Silty Sand, Very Dense, Non-Plasticity	BL: 32-35-42 77											
22.50	ss-15	89	-				BL: 36-40-44 84	28.9	NP	NP	94	75	36	24	21	2.672		
24.0	ss-16	89	-				BL: 40-45-48 93											
25.50	ss-17	89	-				BL: 47-50-54 104											
27.00	ss-18	89	-				BL: 52-57-61 118											
28.50	ss-19	89	-				BL: 59-62-65 127											
30.00	ss-20	89	-				BL: 64-72-79 151											

CONSISTENCY

COHESIVE SOILS (Fine-Grained Soils)

N-VALUE	CLASSIFICATION
< 2	VERY SOFT
2 - 4	SOFT
4 - 8	MEDIUM STIFF
8 - 15	STIFF
15 - 30	VERY STIFF
> 30	HARD

COHESIONLESS SOILS (Coarse-Grained Soils)

N-VALUE	CLASSIFICATION
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MEDIUM DENSE
30 - 50	DENSE
> 50	VERY DENSE

TYPE OF SAMPLING

- WASH BORING (WB)
- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING

TYPE OF SOIL & ROCK

- Sandy / Silty CLAY (CL)
- Organic CLAY (CH)
- Sandy / Clayey / Organic SILTS (ML)
- Clayey SANDS (SC)
- Silty SANDS (SM)
- Well - Graded SANDS (SW)
- Poorly Graded SANDS (SP)
- Well -Graded GRAVELS (GW)
- BOULDERS
- SILTSTONE
- SANSSTONE
- LIMESTONE
- TUFF
- BASALT

MOISTURE CONTENT (MC)

RANGES	VALUE
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
15 - 30	VERY STIFF
> 100	SATURATED

ROCK QUALITY DESIGNATION (RQD)

RQD (%)	ROCK QUALITY
< 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

PERCENTAGE (% of Sand & Gravel)

RANGES (%)	DESCRIPTION
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

LABORATORY TEST RESULTS

- Moisture Content Determination
- Particle-Size Analysis
- Atterberg Limit
- Specific Gravity

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Bulacan, Philippines 3005

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645A/1
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-01
Lab. Ref. ID:	2205-SOI-2645A	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-01 @ Elev. 9.00m
Test No.:	220525-QT-2645A	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-6
		Blows:	
Date Submitted:	May 25, 2022		
Test Desired:	Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.		

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	96
		4.75	74
		2.00	42
		0.850	22
		0.425	16
		0.250	11
		0.150	8
		0.075	5.9
ASTM D2216	Moisture Content	%	21.9
ASTM C117	Material Finer Than No. 200 Sieve	%	5.9
ASTM D4318	Liquid Limit		Non Plastic
ASTM D4318	Plastic Limit		Non Plastic
ASTM D4318	Plasticity Index		Non Plastic
ASTM D854	Specific Gravity of Soil		2.715
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-1-a
ASTM D2487	Unified Soil Classification System		SW-SM - Well-graded sand with silt and gravel

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

REYNALDO GUEVARRA ENTERPRISES
Construction Materials Testing Laboratory
451 National Road, Tibag, Pulilan,
Bulacan, Philippines 3005

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E: reyguevarra@yahoo.com

DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645A/2
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-01
Lab. Ref. ID:	2205-SOI-2645A	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-01 @ Elev. 15.00m
Test No.:	220525-QT-2645A	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-10
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	100
		4.75	99
		2.00	99
		0.850	98
		0.425	95
		0.250	47
		0.150	8
		0.075	4.5
ASTM D2216	Moisture Content	%	26.7
ASTM C117	Material Finer Than No. 200 Sieve	%	4.5
ASTM D4318	Liquid Limit		Non Plastic
ASTM D4318	Plastic Limit		Non Plastic
ASTM D4318	Plasticity Index		Non Plastic
ASTM D854	Specific Gravity of Soil		2.630
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-3
ASTM D2487	Unified Soil Classification System		SP - Poorly graded sand

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645A/3
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-01
Lab. Ref. ID:	2205-SOI-2645A	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-01 @ Elev. 19.50m
Test No.:	220525-QT-2645A	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-13
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	93
		9.5	87
		4.75	73
		2.00	53
		0.850	38
		0.425	30
		0.250	21
		0.150	16
		0.075	12
ASTM D2216	Moisture Content	%	12.1
ASTM C117	Material Finer Than No. 200 Sieve	%	11.6
ASTM D4318	Liquid Limit		Non Plastic
ASTM D4318	Plastic Limit		Non Plastic
ASTM D4318	Plasticity Index		Non Plastic
ASTM D854	Specific Gravity of Soil		2.799
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-1-b
ASTM D2487	Unified Soil Classification System		SW-SM - Well-graded sand with silt and gravel

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645B/1
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-02
Lab. Ref. ID:	2205-SOI-2645B	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-02 @ Elev. 4.50m
Test No.:	220525-QT-2645B	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-3
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	97
		4.75	90
		2.00	79
		0.850	72
		0.425	69
		0.250	65
		0.150	55
		0.075	40
ASTM D2216	Moisture Content	%	54.4
ASTM C117	Material Finer Than No. 200 Sieve	%	39.8
ASTM D4318	Liquid Limit		40
ASTM D4318	Plastic Limit		22
ASTM D4318	Plasticity Index		18
ASTM D854	Specific Gravity of Soil		2.599
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-6 (3)
ASTM D2487	Unified Soil Classification System		CL - Sandy Lean Clay

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645B/2
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-02
Lab. Ref. ID:	2205-SOI-2645B	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-02 @ Elev. 16.50m
Test No.:	220525-QT-2645B	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-11
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	100
		4.75	99
		2.00	94
		0.850	87
		0.425	85
		0.250	83
		0.150	79
		0.075	64
ASTM D2216	Moisture Content	%	35.3
ASTM C117	Material Finer Than No. 200 Sieve	%	64.4
ASTM D4318	Liquid Limit		38
ASTM D4318	Plastic Limit		26
ASTM D4318	Plasticity Index		12
ASTM D854	Specific Gravity of Soil		2.644
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-6 (7)
ASTM D2487	Unified Soil Classification System		CL - Sandy Lean Clay

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645B/3
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-02
Lab. Ref. ID:	2205-SOI-2645B	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-02 @ Elev. 27.00m
Test No.:	220525-QT-2645B	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-18
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	100
		4.75	94
		2.00	78
		0.850	58
		0.425	44
		0.250	30
		0.150	23
		0.075	17
ASTM D2216	Moisture Content	%	59.5
ASTM C117	Material Finer Than No. 200 Sieve	%	17.1
ASTM D4318	Liquid Limit		Non Plastic
ASTM D4318	Plastic Limit		Non Plastic
ASTM D4318	Plasticity Index		Non Plastic
ASTM D854	Specific Gravity of Soil		2.649
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-1-b
ASTM D2487	Unified Soil Classification System		SM - Silty Sand

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645C/1
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-03
Lab. Ref. ID:	2205-SOI-2645C	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-03 @ Elev. 1.50m
Test No.:	220525-QT-2645C	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-1
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	92
		4.75	81
		2.00	63
		0.850	51
		0.425	48
		0.250	46
		0.150	45
		0.075	43
ASTM D2216	Moisture Content	%	86.9
ASTM C117	Material Finer Than No. 200 Sieve	%	42.7
ASTM D4318	Liquid Limit		50
ASTM D4318	Plastic Limit		34
ASTM D4318	Plasticity Index		16
ASTM D854	Specific Gravity of Soil		2.600
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-7-5 (4)
ASTM D2487	Unified Soil Classification System		MH - Sandy Elastic Silt with Gravel

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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RGE

DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645C/2
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-03
Lab. Ref. ID:	2205-SOI-2645C	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-03 @ Elev. 13.50m
Test No.:	220525-QT-2645C	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-9
		Blows:	

Date Submitted: May 25, 2022
Test Desired: Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	96
		9.5	96
		4.75	96
		2.00	92
		0.850	90
		0.425	88
		0.250	88
		0.150	87
		0.075	86
ASTM D2216	Moisture Content	%	73.6
ASTM C117	Material Finer Than No. 200 Sieve	%	85.7
ASTM D4318	Liquid Limit		82
ASTM D4318	Plastic Limit		33
ASTM D4318	Plasticity Index		49
ASTM D854	Specific Gravity of Soil		2.640
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-7-5 (48)
ASTM D2487	Unified Soil Classification System		CH - Sandy Fat Clay

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks

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DPWH-BRS ACCREDITED LABORATORY

Report No: PL22-2645C/3
Issue No : 1

Test Report on Soil Test

Client:	Geoscience Technologies, Inc.
Address:	Rm. 207 Makati Executive Tower II, Cityland Square, Dela Rosa St., Pio del Pilar, Makati City
Project Name:	Proposed Residential Complex
Project Location:	Brgy. Coloong #1, Valenzuela
Contractor:	Geoscience Technologies, Inc.
Tel / Fax No:	02-856-3174

Approved Signatory: Reynaldo Guevarra
General/ Technical Manager
Date of Issue: May 27, 2022

Sample Details

Received Date:	May 25, 2022	**Sample Submitted By:**	C. Morris
Job Order ID:	22-2380	**Source:**	Jobsite - BH-03
Lab. Ref. ID:	2205-SOI-2645C	**Sampled By:**	Geoscience Technologies, Inc.
Date Tested:	May 25, 2022 to May 27, 2022	**Sampled at:**	BH-03 @ Elev. 22.50m
Test No.:	220525-QT-2645C	**Sample Description:**	Soil / Bore Hole
		Sample ID:	SS-15
		Blows:	
Date Submitted:	May 25, 2022		
Test Desired:	Sieve Analysis, Natural Moisture Content, Atterberg Limit, Specific Gravity and Soil Classification Test.		

Test Results

Method	Test / Parameter		Result
ASTM D6913	Particle Size Distribution	Sieve Size (mm)	% Passing
		50.0	100
		37.5	100
		25.0	100
		19.0	100
		12.5	100
		9.5	100
		4.75	94
		2.00	75
		0.850	48
		0.425	36
		0.250	28
		0.150	24
		0.075	21
ASTM D2216	Moisture Content	%	28.9
ASTM C117	Material Finer Than No. 200 Sieve	%	20.6
ASTM D4318	Liquid Limit		Non Plastic
ASTM D4318	Plastic Limit		Non Plastic
ASTM D4318	Plasticity Index		Non Plastic
ASTM D854	Specific Gravity of Soil		2.672
ASTM D3282	Soil and Soil-Aggregates Mixtures Classification		A-1-b
ASTM D2487	Unified Soil Classification System		SM - Silty Sand

Tested by:
A.M. Francisco
Sr. Laboratory Technician

Checked by:
M.G. Guevarra
Laboratory Supervisor

Remarks