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FIELD AND LABORATORY WORK-SUMMARY REPORT AREAS 1, 2, 3, 4, 5, 5A, 7 AND 7A SIERRA-YOYO-DESAN ROAD AREA GRAVEL INVESTIGATION NORTHEASTERN, BC

Submitted to:

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1.0 INTRODUCTION AND SCOPE OF SERVICES

The British Columbia Ministry of Energy and Mines (MEM) retained AMEC Earth & Environmental Limited (AMEC) to conduct gravel investigations in the Sierra-Yoyo-Desan Road (SYD Road) area in northeastern British Columbia. The scope of services for this work is detailed in AMEC's proposal of January 9, 2003 to the MEM. The work is summarized in the project summary report (AMEC 2003f) provided to the MEM in a separate document.

This report provides a summary of the fieldwork and soil laboratory testing conducted for the target areas detailed below in Table 1:

	Table 1: Target Areas Investigated								
Target Area	Location/Access	Target Material	Type of Assessment Conducted						
Area 1 (Sahtaneh River)	At confluence of Sahtaneh River and Moss Creek, access was from km 116 of SYD for the east half and km 11.5 of the South Gunnel Road for the west half.	Gravel	Level 1 (Reconnaissance) with limited reporting						
Area 2 (Metlandoa Creek)	Around existing Sierra Jim Little Pit, Metladoa Creek Area. Access was from km 107 of the SYD Road	Gravel	Level 2 (Development Scale) but with limited soils testing and reporting						
Area 3 (Sahdoanah Creek)	Near Sahdoanah Creek. Access was from km 177 of SYD Road	Gravel	Level 2 (Development Scale) but with limited soils testing and reporting						
Area 4 (Northwestel Tower Hill)	Near airstrip east of Kotcho Lake. Winter road on a hill where Northwestel towers are located. Access is from km 132 of the SYD Road	Bedrock	Level 1 (Reconnaissance) with limited reporting						
Area 5 (Courvoisier Creek)	North side of Courvoisier Creek. Access is from km 19.5 of Komie Road	Gravel	Level 2 (Development Scale) but with limited soils testing and reporting						
Area 5A (Courvoisier Creek Hill)	Hill north of Courvoisier Creek Area to the west of the Komie Road. Access was from km 22 of the Komie Road.	Bedrock	Level 1 (Reconnaissance) with limited reporting						
Area 7/7A (Kyklo Area)	Kyklo Creek area accessed off of SYD Road either along the Kyklo Road at km 102 of the SYD Road or a well lease road at km 100 of the SYD Road	Gravel	Level 1 (Reconnaissance) with limited reporting						

Given the preliminary results of work conducted in these areas and discussions with MEM regarding the preliminary results, full reporting (as conducted for Areas 8, 9, 10 and the Elleh Creek Reserve: AMEC 2003a through 2003e) was not required.

2.0 METHODOLOGY

AMEC's specific methodology was divided into the following general tasks for the target areas detailed in this report:

- 1) Investigation planning
- 2) Field investigation (reconnaissance, test pitting and optional drilling, Level 1 and 2)
- 3) Laboratory testing
- 4) Reporting

2.1 INVESTIGATION PLANNING

Prior to conducting the field investigation, AMEC reviewed available background information and prioritized sites based on the inferred potential to find gravel and/or bedrock. During the process, AMEC had meetings with Sheldon Harrington, B.Sc. of MEM and Jim Little of Mackeno Ventures.

2.2 FIELD INVESTIGATION

The fieldwork for the gravel investigation was divided into three phases:

- 1) <u>Site Reconnaissance</u>: Prior to mobilizing equipment to the general project area, Doug Dewar, P.Eng. of AMEC, Jim Little, and Sheldon Harrington conducted a general site reconnaissance to determine the specific logistics for the field work at each site from February 17 to 25 and March 11 to 13, 2003, including:
 - a) Confirmation of site locations and access requirements
 - b) Utility issues. Note that Jim Little of Mackeno Ventures provided all utility clearances
 - c) Assessment of access issues such as snow clearing, tree cutting etc
 - d) Assessment and organization of equipment staging, turn around and parking locations for low-bed trucks
- 2) <u>Level 1 Reconnaissance Investigations</u>: The Level 1 Reconnaissance Investigations consisted of excavating test pits within a given target area at a grid spacing ranging of approximately 250 to 300 m to determine if granular materials were present. In the case of bedrock targets, test pits were excavated into bedrock, if encountered. The test pitting methodology is summarized below.
- 3) <u>Level 2 Development Scale Investigation</u>: The Level 2 Development Scale Investigations consisted of digging additional test pits in areas where granular materials were encountered to reduce the test pit grid spacing to approximately 150 m. The test pitting methodology is summarized below.

The following items describe the general test pitting methodology and sampling procedures:

- 1) For the purpose of this work granular material was defined as soil with less than 20% fines (silt and clay)
- 2) Test pits were excavated with a tracked excavator provided by Kledo Construction (refer to individual test pit logs for the excavator type). A representative of AMEC (either Shiloh Jorgensen, E.I.T., Bradley Jackman, C.Tech or Bob McFadden) supervised the test pit excavation and logged the test pits using the Modified Unified Soil Classification System.
- 3) Test pits were excavated to 3 m.
 - a) If no granular material was encountered the test pit was backfilled. No samples were taken.
 - b) If granular material was encountered, the test pit was advanced to the full reach of the excavator. At least one bulk soil sample was taken per test pit if granular material was encountered. Note that in some instances when the samples were fine grained sand, samples were not taken.

- 4) A photograph of excavated soil was taken from every test pit.
- 5) The locations of the test pits were marked on a field airphoto and the coordinates were taken with a hand-held GPS where satellite coverage was available.

Table 2 provides a summary of the test pits excavated in each target area:

Table 2: Test Pitting Summary									
Target Area	Number of Test Pits	Test Pits Encountering Granular Material	Test Pits Encountering Bedrock						
Area 1 (Sahtaneh River)	46	7	0						
Area 2 (Metlandoa Creek)	54	18	0						
Area 3 (Sahdoanah Creek)	67	31	0						
Area 4 (Northwestel Tower Hill)	8	0	8						
Area 5 (Courvoisier Creek)	74	32	0						
Area 5A (Courvoisier Creek Hill)	7	0	7						
Area 7A 7/7A (Kyklo Area)	8	0	0						
Totals	264	88	15						

2.3 LABORATORY TESTING

Samples obtained in the field were returned to AMEC's soils laboratory in Prince George. AMEC conducted wash sieve grain size analysis for selected samples collected. Table 3 details the laboratory tests conducted for each specific study area:

Table 3: Soil Laboratory Testing Details									
Target Area	Wash Sieve Analysis	Sand Equivalent Tests	Degradation Tests						
Area 2 (Metlandoa Creek)	8	0	0						
Area 3 (Sahdoanah Creek)	18	0	0						
Area 5 (Courvoisier Creek)	21	0	0						
Totals	47	0	0						

2.4 REPORTING

A project meeting was held at AMEC's Prince George Office between Doug Dewar, P.Eng. of AMEC and Sheldon Harrington and Vic Levson, P.Geo., PhD. of MEM on April 29, 2003, to discuss potential revisions for final reporting and the format of reporting for the areas (Area 1, 2, 3, 4, 5, 5A, 7, and 7A) described in this report.

The reporting is detailed in the following sections. Note for the purposes of this reporting, granular material was defined as any soil with less than 20% fines. Note that this is different than the previous Level 2 (development scale) reports where granular material was defined as containing less than 15% fines).

3.0 AREA 1: SAHTANEH RIVER

3.1 INTRODUCTION

Area 1 was located at the confluence of Sahtaneh River and Moss Creek. The east portion of Area 1 was accessed from km 116 of SYD Road and the west portion was accessed from km 111.5 on the South Gunnel Road. Refer to Figure B1 for the general location of the study area. A total of forty-six (46) test pits were excavated during February 27 to March 7, 2003. Seven (7) test pits within the western portion of Area 1 encountered granular material. Figure B2 shows the test pit location and site layout.

3.2 SOIL CONDITIONS

Soils in the study area consisted typically of silt and clay with some granular soils. Granular soils encountered in seven (7) of the forty-six (46) test pits excavated were typically sand. The sand was fine grained and contained a trace (0 to 10%) to some (10 to 20%) silt. Table 4 below provides a test pit summary for test pits encountering granular soils:

		Table 4: Te	st Pit Summ	nary Area 1 (Sahtaneh River)		
Test Pit (TP03-1-#)	#) (m) Material (m)		Granular Material (m)	Description of Granular Material*	Underlying Non- granular Material (m)	Water Table (m)
251	4.5	0.0-1.25	1.25-4.5	Sand**, some silt, SM		NE
257	3.5		0.0-3.0	Sand**, some silt, SM	3.0-3.5	3.5
258	4.0		0.0-1.5	Sand, SP	1.5-4.0	NE
259	3.5		0.0-2.5	Sand, SP	2.5-3.5	2.5
260	4.5		0.0-1.5	Sand, SP	1.5-4.5	1.5
268	3.0	0.0-1.25	1.25-3.0	Sand, SP		3.0
271	4.0	0.0-1.0	1.0-4.0	Sand, SP		NE

^{*} Note that soils from thin layers (less than 0.5 m thick) may not be included in the description (refer to test pit logs in Appendix B)

NE = Not Encountered

Detailed test pit logs are included in Appendix B.

3.3 LABORATORY TESTING

No laboratory testing was conducted for Area 1, since the fine grained sand was not sampled.

3.4 PRELIMINARY VOLUME ESTIMATE

There is estimated to be approximately 28 500 m³ of fine grained sand available within the western portion of Area 1. Refer to Figure B2 for an outline of the granular potential area.

^{**} Soils that appeared to contain between 13 and 17 percent fines (silt and clay)

Table 5: Area 1 Estimated Granular Potential								
A 2)	Average 1	Thickness	Potential V	olume (m³)				
Area (m ²⁾	Overburden	Granular Material	Overburden	Granular Material				
15 000	0.6	1.9	9 000	28 500				

The estimate of preliminary granular quantity is based on the following information and necessary assumptions:

- 1. The estimate is limited to the maximum depth of exploration of the test pits.
- 2. Depths of overburden and granular thickness are based on the average of all test logs. Volumes were calculated by multiplying the average depth by the area interpreted as having granular potential.
- 3. Pit slopes and setbacks were not considered in the volume estimate. Any setbacks and required pit slopes would reduce the actual volume of granular soils estimated.
- 4. The deposits are continuous within the defined granular area.

3.5 GRANULAR POTENTIAL

There is potential that the fine grained sand in Area 1 could be used as winter sand or borrow sand; otherwise, it appeared that the existing pit was depleted.

3.6 RECOMMENDATIONS FOR FURTHER STUDY

Based on the results of the reconnaissance level field assessment conducted by AMEC, it is not recommended that further work be conducted in Area 1.

4.0 AREA 2: METLANDOA CREEK AREA (JIM LITTLE PIT AND METLANDOA RESERVE)

4.1 INTRODUCTION

Area 2 was accessed from approximately km 107 on the SYD road. Refer to Figure C1 for the general location of the study area. A total of fifty-four (54) test pits were excavated from February 28 to March 3, 2003. Eighteen (18) test pits encountered granular material. Figure C2 shows the test pit locations and general layout of Area 2.

4.2 SOIL CONDITIONS

Soils in the study area consisted typically of silt and clay till with some granular soils. Granular soils encountered in eighteen (18) of the fifty-four (54) test pits excavated were typically sand and sand and gravel. The sand contained a trace to some silt and some gravel to being gravelly (20 to 35% content by weight). The sand and gravel contained a trace to some silt. The sand and sand and gravel were typically compact and brown in colour. Table 6 below provides a test pit summary for Area 2:

	Table 6: Test Pit Summary Area 2 (Metlandoa Creek)										
Test Pit (TP03-2-#)	Depth (m) Overburden/Non- Granular Material (m)		Granular Material (m)	Description of Granular Material*	Underlying Non- granular Material (m)	Water Table (m)					
01	3.5	0.0-0.6	0.6-2.5	Sand and Gravel, SP-SM	2.5-3.5	2.5					
02	4.0	0.0-0.3	0.3-3.2	Sand and Gravel, GP-GM	3.2-4.0	0.1					
03	3.0	0.0-0.3	0.3-2.6	Gravel**, sandy, GM	2.6-3.0	1.8					
04	2.0	0.0-1.0	1.0-2.0	Sand, SP-SM		1.1					
06	3.6	0.0-0.8	0.8-2.7	Sand, gravelly, SP-SM (0.8-1.6) Sand, some silt, SM (1.6-2.7)	2.7-3.6	NE					
13	3.1	0.0-0.8	0.8-3.0	Gravel, sandy, GM	3.0-3.1	1.9					
14	2.0	0.0-1.0	1.0-2.0	Gravel**, sandy, GM		1.5					
15	2.0	0.0-0.4	0.4-2.0	Gravel**, sandy, GM		0.5					
16	2.5	0.0-0.3	0.3-2.0	Gravel and Sand**, GM	2.0-2.5	1.0					
20	2.5	0.0-0.2	0.2-2.5	Sand, SP-SM		0.8					
21	3.0	0.0-0.3	0.3-2.8	Sand, SP	2.8-3.0	1.8					
22	2.8	0.0-0.4	0.4-1.9	Sand and Gravel, SP-SM	1.9-2.8	1.4					
27	3.4	0.0-0.3	0.3-2.3	Gravel**, sandy, GM (0.3-1.0) Sand, some gravel, SP-SM (1.0- 2.3)	2.3-3.4	NE					
36	3.2	0.0-0.5	0.5-1.7	Sand and Gravel, SP-SM	1.7-3.2	1.7					
37	2.7	0.0-0.2	0.2-2.6	Sand**, SM	2.6-2.7	1.6					
44	3.5	0.0-0.1	0.1-1.8	Gravel**, sandy, GM (0.1-0.5) Sand and Gravel, GP-GM (0.5-1.8)	1.8-3.5	NE					
47	4.0	0.0-1.1	1.1-3.8	Sand, SP-SM	3.8-4.0	3.3					
48	3.7		0.0-1.9	Sand**, some gravel, SM (0.0-1.2) Sand, some gravel, SP-SM (1.2- 1.9)	1.9-3.7	NE					

^{*} Note that soils from thin layers (less than 0.5 m thick) may not be included in the description (refer to test pit logs in Appendix C)
** Soils that appeared to contain between 13 and 19 percent fines (silt and clay)
NE = Not Encountered

Detailed test pit logs are included in Appendix C. As noted in Table 6 above, the area typically had a water table ranging from 0.5 to 1.8 m below ground surface.

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4.3 LABORATORY TESTING

Wash sieve analysis was conducted on eight samples obtained from Area 2. Table 7 below provides a summary of the wash sieve analysis results:

	Table 7: Area 2 (Metlandoa Creek) Summary of Laboratory Testing Results*											
Test	Depth (m)		Depth (m)		Soil	Fines <0.075	Sand	Grav	el (%)	Additional**	Max.	
Pit	From	То	Class*	mm (%) <4.75 mm		fine <25 mm	coarse 25-75 mm	Oversize >75 mm (%)	size (mm)			
TP-01	1.9	2.4	SP-SM	7	47	27	19	10	200			
TP-02	2.0	3.0	GP-GM	11	43	36	10	10	250			
TP-20	1.0	1.5	SP-SM	7	76	16	1	0				
TP-21	2.2	2.7	SP	5	61	28	6	0				
TP-36	1.0	1.5	SP-SM	10	48	23	19	10	150			
TP-37	0.5	1.5	SM	16	69	13	2	0				
TP-44	1.0	1.8	GP-GM	11	40	28	21	15	200			
TP-48	0.5	1.2	SM	18	60	17	5	0				
	Av	erage		11	56	23	10	6				

^{*} The modified unified classification system for soils was used to classify soil samples. SP= poorly graded sand, SW=well graded sand, SM/SW= well graded sand with 12% to 17% fines, SP/SW=borderline poorly graded to well graded sand, GP=poorly graded gravel and GW= well graded gravel.

The laboratory results are included in Appendix C.

4.4 PRELIMINARY VOLUME ESTIMATE

There is estimated to be 81 400 m³ of granular materials available within Area 2. Refer to Figure C2 for an outline of the areas judged to have granular potential.

	Table 8: Area 2 Preliminary Estimated of Potential Granular Material									
Section	Area (m ²⁾	Average	Thickness	Potential Volume (m³)						
Section	Area (m	Overburden	Granular Material*	Overburden	Granular Material					
Α	46 800	0.4	0.8	18 700	37 400					
В	43 300	0.3	0.9	13 000	39 000					
С	9 000	0.5	0.1**	N/A	N/A					
D	55 200	0.6	0.3**	N/A	N/A					
Е	E 6 100 0.4		0.8	2 400	4 900					
			Total	34 100	81 400					

^{*}The thickness was typically limited by the depth of the water table. If granular deposits were dredged from below the water table, volumes could be increased significantly.

The estimate of preliminary granular quantity is based on the following information and necessary assumptions:

^{**} The additional oversize percentage was a field estimate.

^{**}Not included in the volume available (not practical for development unless granular deposits were dredged from below the water table.

- 1. The estimate is limited to the maximum depth of exploration of the test pits.
- 2. Depths of overburden and granular thickness are based on the average of all test logs. Volumes were calculated by multiplying the average depth by the area interpreted as having granular potential.
- 3. Pit slopes and setbacks were not considered in the volume estimate. Any setbacks and required pit slopes would reduce the actual volume of granular soils estimated.
- 4. The deposits are continuous within the defined granular area.

4.5 GRANULAR POTENTIAL

Based on the laboratory results the average gradation from Area 2 was gravelly sand with some silt. There was approximately 81 400 m³ of potential granular material within Area 2. The granular material appeared to be generally suitable for general borrow with select areas being suitable for High Fines Granular Surfacing Aggregate.

4.6 RECOMMENDATIONS FOR FURTHER WORK

Given the proximity of Area 2 to the SYD Road, MEM should consider:

- 1. Having a more detailed review of the soil conditions conducted and determining if there are any areas that may be suitable for gravel extraction and have detailed reporting conducted where granular extraction is feasible.
- 2. Assessing the areas adjacent to TP-36 and 37 (Section E) to determine the extent of the granular deposits within that area.

5.0 AREA 3: SAHDOANAH CREEK

5.1 INTRODUCTION

Area 3 was located at approximately km 177 on the SYD road. Refer to Figure D1 for the general location of the study area. A total of sixty-seven (67) test pits were excavated during March 1 to March 4, 2003. Thirty-one (31) test pits encountered granular material. Figure D2 shows the test pit location and site layout.

5.2 SOIL CONDITIONS

The study area consisted of a silt and clay till plain with what appeared to be an esker-like feature of predominantly sand deposited onto the plain. The sand contained a trace to some silt and some gravel to gravelly. The sand was typically compact and brown in colour. Refer to Table 9 below for a summary of test pits encountering granular material.

	Table 9: Test Pit Summary Area 3 (Sahdoanah Creek)										
Test Pit (TP03-3-#)	Depth (m)	Overburden/Non -Granular Material (m)	Granular Material (m)	Description of Granular Material*	Underlying Non- granular Material (m)	Water Table (m)					
01	5.5	0.0-0.5	0.0-5.5	Sand, SP-SM		4.5					
05	3.7		0.0-3.7	Sand, SP-SM		2.6					
06	3.5		0.0-3.5	Sand, SP-SM		2.0					
08	3.0	0.0-0.1	0.1-3.0	Sand, SP-SM		2.2					
09	3.0	0.0-0.1	0.1-3.0	Sand, SP-SM		2.1					
10	3.0	0.0-0.1	0.1-3.0	Sand, SP-SM		2.1					
11	4.0	0.0-0.1	0.1-2.1	Sand**, SM	2.1-4.0	2.1					
12	3.5		0.0-3.5	Sand**, SM (0.0-1.9) Sand, SP-SM (1.9-3.5)		2.1					
14	4.0		0.0-4.0	Sand**, SM		1.9					
15	4.0	0.0-0.1	0.1-2.0	Sand**, SM	2.0-4.0	1.9					
19	5.5	0.0-0.1	0.1-5.5	Sand and Gravel**, SM (0.1-1.2) Sand, SP (1.2-5.5)		5.5					
20	3.5		0.0-3.5	Sand**, SM (0.0-1.0) Sand and Gravel, SP-SM (1.0-3.5)		1.9					
22	4.0		0.0-4.0	Sand, SP-SM		3.0					
23	4.0	0.0-1.0	1.0-4.0	Sand, SP		NE					
27	2.5		0.0-2.5	Sand, SP		1.5					
28	3.5	0.0-1.0	1.0-3.5	Sand, SP-SM		NE					
30	3.0	0.0-1.1	1.1-3.0	Sand, SP-SM (1.1-2.0) Sand, SP (2.0-3.0)		NE					
32	3.0	0.0-0.7	0.7-3.0	Sand, SP		NE					
34	2.5		0.0-2.5	Sand, SP-SM		1.1					
37	3.0	0.0-0.7	0.7-3.0	Sand, SW		NE					
38	4.0	0.0-0.9	0.9-4.0	Sand, SW		NE					
42	3.0	0.0-1.0	1.0-3.0	Sand, SP-SM		NE					
43	3.0	0.0-0.2	0.2-3.0	Sand**, SM		2.1					
44	3.2	0.0-0.8	0.8-3.2	Sand**, SM		NE					
48	3.5	0.0-0.7	0.7-3.5	Sand**, SM		NE					
49	3.0	0.0-0.1	0.1-3.0	Sand**, SM		NE					
51	4.0	0.0-0.8	0.8-4.0	Sand**, SM		NE					
54	4.0	0.0-0.7	0.7-4.0	Sand, SP-SM		NE					
55	3.0	0.0-0.6	0.6-1.9	Sand, SP-SM	1.9-3.0	2.2					
56	3.0	0.0-1.0	1.0-2.1	Sand, SP	2.1-3.0	1.8					
57	2.9	0.0-0.4	0.4-2.9	Sand, SP-SM		1.6					
58	3.0	0.0-0.1	0.1-1.7	Sand and Gravel, SP-SM	1.7-3.0	1.6					
59	4.0	0.0-0.8	0.8-4.0	Sand, SP	toot mit land in Ame	3.5					

^{*} Note that soils from thin layers (less than 0.5 m thick) may not be included in the description (refer to test pit logs in Appendix D)
** Soils that appeared to contain between 13 and 19 percent fines (silt and clay)

NE = Not Encountered

Detailed test pit logs are included in Appendix D.

5.3 LABORATORY TESTING

Wash sieve analysis was conducted on eighteen (18) samples obtained from Area 3. Results of the wash sieve grain size analysis are included below in Table 10 below:

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	,	Table 10:	Area 3 (Sal	ndoanah Creel	k) Summary	of Laborate	ory Testing	Results	
	Depth (m)			Fines	Sand	Gravel (%)		A 1 1141 144	Max.
Test Pit	From	То	Soil Class*	<0.075 mm (%)	<4.75 mm (%)	fine <25 mm	coarse 25-75 mm	Additional** Oversize >75 mm (%)	size (mm)
TP-01	2.5	5.0	SP-SM	6	78	15	1	2	150
TP-05	1.4	2.4	SP-SM	8	91	1	0	0	
TP-06	1.0	2.0	SP-SM	11	85	4	0	0	
TP-10	1.0	2.5	SP-SM	10	86	4	0	0	
TP-12	2.0	3.0	SP-SM	6	73	18	3	0	
TP-19	2.0	3.0	SP	3	77	17	3	0	
TP-20	1.8	2.5	SP-SM	7	61	24	8	5	150
TP-22	2.0	3.0	SP-SM	6	90	4	0	0	
TP-23	1.5	2.5	SP	4	84	8	4	0	
TP-27	1.2	1.5	SP	5	71	20	4	0	
TP-32	1.8	2.7	SP	3	91	6	0	0	
TP-34	1.1	2.0	SP-SM	7	71	19	3	0	
TP-48	1.2	2.0	SM	14	76	9	1	0	
TP-53	0.3	0.7	SP-SM	7	63	27	3	0	
TP-54	1.8	2.5	SP-SM	6	72	18	4	0	
TP-55	1.1	1.6	SP-SM	9	71	19	1	0	
TP-56	1.2	1.5	SP	5	71	20	4	0	
TP-59	2.0	3.0	SP	5	79	15	1	0	
	Avei		•	7	77	14	2	O	

^{*} The modified unified classification system for soils was used to classify soil samples. SP= poorly graded sand, SW=well graded sand, SM/SW= well graded sand with 12% to 17% fines, SP/SW=borderline poorly graded to well graded sand, GP=poorly graded gravel and GW= well graded gravel.

** The additional oversize percentage was a field estimate.

The laboratory results are included in Appendix D. The average sample gradation encountered in Area 3 is sand with some gravel and a trace silt.

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5.4 PRELIMINARY VOLUME ESTIMATE

There is estimated to be 29 200 m³ of granular materials available within Area 3. Refer to Figure D2 for an outline of the granular potential areas.

		Table 11: Area	3 Estimated Granular P	otential	
Caatlan	Area (m ²⁾	Average	Thickness	Potential	Volume (m ³)
Section	Area (m '	Overburden	Granular Material	Overburden	Granular Material
Α	1 900	0.6	2.3	1 100	4 400
В	440	0.8	2.9	400	1 300
С	6 150	0.3	2.0	1 900	12 300
D	6 600	0.4	1.7	2 600	11 200
		_	Total	6 000	29 200

5.5 GRANULAR POTENTIAL

The average sample gradation encountered in Area 3 was sand with some gravel and a trace silt. There is estimated to be approximately 29 200 m³ of sand within Area 3. The material may be gradationally suitable for use as Select Granular Subbase but the more uniformly sand gradation area may rut under vehicle loading.

5.6 RECOMMENDATIONS FOR FURTHER STUDY

AMEC does not recommend that any additional fieldwork be conducted within the study area given the current test pit spacing and predominant sand composition of the soil.

6.0 AREA 4: NORTHWESTEL TOWER HILL

6.1 INTRODUCTION

Area 4 was located near the Yoyo Airstrip southwest of Kotcho Lake on a hill where a Northwestel tower was located. The study area was accessed from km 132 on the SYD road. Refer to Figure E1 for the general location of the study area. A total of eight (8) test pits were excavated on February 27, 2003 to determine the potential depth of bedrock. Figure E2 shows the test pit location and site layout.

6.2 SOIL CONDITIONS

The study area consisted of a silt or silty sand till overlying either a mudstone (clay and silt stone) or sandstone. Bedrock was encountered in all eight of the test pits excavated. The bedrock was classified as very weak and brown in colour. Table 12 below includes a description of the soil/bedrock conditions encountered:

		Table 12: Test	Pit Summary	Area 4 (Northwestel Tower Hill)	
Test Pit (TP03-4-#)	Depth (m)	Overburden (m)	Bedrock* (m)	Description of Bedrock**	Water Table (m)
01	4.9	0.0-2.1	2.1-4.9	Mudstone, MS	NE
02	3.0	0.0-2.2	2.2-3.0	Mudstone, MS	NE
03	5.6	0.0-0.9	0.9-5.6	Sand, SP-SM (0.9-3.3) Sandstone, SS (3.3-5.6)	NE
04	3.2	0.0-1.1	1.1-3.2	Sandstone, SS	NE
05	6.1	0.0-1.1	1.1-6.1	Sandstone, SS	NE
06	4.5	0.0-2.6	2.6-4.5	Sandstone, SS	NE
07	5.5	0.0-0.1 3.2-5.2	0.1-3.2 5.2-5.5	Sand***, SM Mudstone, MS	NE
08	5.2	0.0-1.2	1.2-5.2	Sandstone, SS	NE

^{*}Includes soils interpreted to be weathered bedrock

Detailed test pit logs are included in Appendix E. Based on field observations, the sandstone was generally considered to be very weak based on field observations.

6.3 LABORATORY TESTING

No laboratory testing was conducted on bedrock samples.

6.4 QUARRY POTENTIAL

Based on the preliminary results of the field work, it appeared that the bedrock was predominantly very weak mudstone or sandstone. The material did not appear to be suitable for use as a rip-rap source or crushed product (it would be expected to be crushed to predominantly sand or finer sized particles). The material may be suitable for use as borrow material, but it is expected that closer sources to the current SYD Road alignment exist.

6.5 RECOMMENDATIONS FOR FURTHER STUDY

There is a potential that there may be more competent bedrock underlying the very weak bedrock encountered during AMEC's fieldwork. MEM may wish to consider conducting a drilling program to further evaluate underlying bedrock conditions.

^{**} Note that soils from thin layers (less than 0.5 m thick) may not be included in the description (refer to test pit logs in Appendix E)

^{***} Soils that appeared to contain between 13 and 19 percent fines (silt and clay)

NE = Not Encountered

7.0 AREA 5: COURVOISIER CREEK

7.1 INTRODUCTION

Area 5 was located at approximately km 19.5 along Komie Road. Refer to Figure F1 for the general location of the study area. A total of seventy-four (74) test pits were excavated during February 22 to February 26, 2003. Thirty-two (32) test pits encountered granular material. Figure F2 shows the test pit location and site layout.

7.2 SOIL CONDITIONS

The study area appeared to be a thin veneer of glaciofluvial sand or gravel deposited over the underlying silt and/or clay till on the edges and areas adjacent to the Courvoisier Creek meltwater channel. Granular soils encountered in thirty-two (32) of the seventy-four (74) test pits excavated were typically sand and/or gravel. The sand contained a trace to some silt and variable gravel content ranging from some gravel (10 to 25%) to gravelly (25 to 35%). The sand and gravel contained variable amounts of sand and gravel, a trace to some silt. The sand and/or gravel were typically compact and brown in colour. Table 13 below includes descriptions of the granular material encountered:

		Table 13: Tes	t Pit Summ	ary Area 5 (Courvoisier Creek)		
Test Pit (TP03-5-#)	Depth (m)	Overburden/Non -Granular Material (m)	Granular Material (m)	Description of Granular Material*	Underlying Non- granular Material (m)	Water Table (m)
08	4.9	0.0-0.5	0.5-1.5	Sand**, gravelly, SM	2.7-4.9	NE
13	3.0	0.0-0.5	0.5-1.5	Sand, gravelly, SP	1.5-3.0	NE
14	5.0	0.0-0.25	0.25-5.0	Gravel and Sand, GP-GM (0.25-1.25) Sand and Gravel, SP (1.25-5.0)		NE
51	2.3		0.0-2.3	Gravel, sandy, GW		1.7
52	4.4	0.0-1.2	1.2-3.2	Sand and Gravel, SP-SM	3.2-4.4	NE
53	3.5	0.0-0.5	0.5-3.0	Sand, SP (0.5-2.4) Gravel, sandy, GP (2.4-3.0)	3.0-3.5	3.4
56	4.4	0.0-0.8	0.8-4.2	Sand, SP	4.2-4.4	NE
57	2.4	0.0-0.3	0.3-2.4	Sand, gravelly, SP-SM		2.2
58	2.5	0.0-0.4	0.4-1.8	Sand and Gravel, SP	1.8-2.5	NE
59	3.0	0.0-0.3	0.3-1.3	Sand and Gravel, SP-SM	1.3-3.0	NE
60	3.2	0.0-0.3	0.3-2.3	Sand, SP-SM	2.3-3.0	NE
61	3.5	0.0-0.4	0.4-3.5	Gravel, sandy, GP-GM (0.4-1.8) Sand, gravelly, SP (1.8-3.5)		3.0
62	4.5	0.0-0.8	0.8-4.4	Sand, SP	4.4-4.5	NE
63	3.6	0.0-0.4	0.4-3.3	Sand and Gravel, SP-SM (0.4-1.8) Sand, SP (1.8-3.3)	3.3-3.6	NE
64	3.4	0.0-0.7	0.7-1.8	Sand and Gravel, GP	1.8-3.4	NE
65	2.5	0.0-0.3	0.3-1.5	Sand, SP-SM	1.5-2.5	NE
66	2.7	0.0-0.3	0.3-1.5	Sand, SP-SM	1.5-2.7	1.5
67	2.7	0.0-0.5	0.5-2.5	Sand and Gravel, GP-GM (0.5-1.5) Sand, SP (1.5-2.5)	2.5-2.7	1.5
68	2.0	0.0-0.3	0.3-1.4	Sand, SP-SM	1.4-2.0	1.4
69	2.8	0.0-0.5	0.5-2.8	Sand, SP	2.8	2.4
70	2.7	0.0-0.8	0.8-2.5	Sand and Gravel, GP-GM	2.5-2.7	1.9
72	2.2	0.0-0.3	0.3-1.7	Sand, SP-SM	1.7-2.2	NE
73	4.8	0.0-0.6	0.6-4.8	Sand and Gravel, GP		4.2
74	4.6	0.0-0.5	0.5-4.5	Sand, SP	4.5-4.6	NE
75	4.0		0.0-4.0	Gravel, sandy, GP-GM (0.0-0.8) Sand, SP-SM (0.8-4.0)		2.5
84	3.7	0.0-0.8	0.8-3.0	Sand and Gravel, SP (0.8-1.9) Sand, SP-SM (1.9-3.0)	3.0-3.7	NE
85	3.0	0.0-0.6	0.6-3.0	Sand and gravel, GP-GM (0.6-1.5) Gravel, sandy, GP-GM (1.5-3.0)		1.9
87	5.0	0.0-0.6	0.6-1.7	Sand and Gravel, GP-GM	1.7-5.0	NE
111	3.0		0.0-1.25	Sand and Gravel, SP	1.25-3.0	NE
112	3.0	0.0-0.25	0.25-1.8	Sand and Gravel, SP-SM	1.8-3.0	NE
150	5.0	0.0-0.25	0.25-1.75	Gravel and Sand, GP-GM	1.75-5.0	2.0
152	3.0	0.0-0.75	0.75-3.0	Gravel and Sand, GP-GM (0.75-1.5) Sand**, gravelly, SP-SM (1.5-3.0)		1.5

^{*} Note that soils from thin layers (less than 0.5 m thick) may not be included in the description (refer to test pit logs in Appendix F)
** Soils that appeared to contain between 13 and 19 percent fines (silt and clay)
NE = Not Encountered

Detailed test pit logs are included in Appendix F.

7.3 LABORATORY TESTING

Wash sieve grain size analysis was conducted on twenty-one (21) samples obtained from Area 5. Table 14 includes the results of the wash sieve analysis.

		Table 14:	Area 5 (Cou	rvoisier Creel	k) Summary (of Laborato	ory Testing	Results*	
	Dept	th (m)		Fines	Sand	Grave	el (%)	A .l .l!(! l**	Max.
Test Pit	From	То	Soil Class*	<0.075 mm (%)	<4.75 mm (%)	fine <25 mm	coarse 25-75 mm	Additional** Oversize >75 mm (%)	size (mm)
TP-08	1.2	2.5	SM	21	49	23	7	8	200
TP-13	0.5	1.5	SP	4	70	23	3	0	
TP-14	1.0	2.3	SP	3	59	27	11	0	
TP-51	1.0	2.3	GW	1	28	54	17	8	150
TP-52	1.5	3.0	SP-SM	8	46	27	19	5	200
TP-56	2.0	2.3	SP	4	95	1	0	0	
TP-57	1.0	2.2	SP-SM	6	63	23	8	8	200
TP-58	1.0	1.8	SP	3	49	29	19	8	150
TP-59	0.5	1.2	SP-SM	6	54	30	10	0	
TP-60	1.5	2.3	SP-SM	11	84	5	0	0	
TP-61	2.0	3.0	SP	4	63	27	6	5	150
TP-63	1.0 1.8	1.5 2.5	SP-SM SP	6 3	55 74	32 17	7 6	0 0	
TP-65	0.5	1.3	SP-SM	7	77	13	3	0	
TP-69	1.0	1.5	SP	4	80	15	1	0	
TP-70	1.8	2.4	GP-GM	7	45	29	19	5	100
TP-73	1.5	4.5	GP	3	45	41	11	5	150
TP-84	0.9	1.5	SP	3	54	35	8	5	200
TP-87	0.6	1.7	GP-GM	7	41	29	23	8	300
TP-111	0.0	1.25	SP	4	52	31	13	10	200
TP-112	0.25	0.8	SP-SM	6	53	25	16	0	
	Ave	rage		6	59	25	10	4	

^{*} The modified unified classification system for soils was used to classify soil samples. SP= poorly graded sand, SW=well graded sand, SM/SW= well graded sand with 12% to 17% fines, SP/SW=borderline poorly graded to well graded sand, GP=poorly graded gravel and GW= well graded gravel.

** The additional oversize percentage was a field estimate.

The laboratory results are included in Appendix F. The average gradation for Area 5 is sand and gravel (to gravelly sand) with a trace silt.

7.4 PRELIMINARY VOLUME ESTIMATE

There is estimated to be 664 000 m³ of granular materials available within Area 5. Refer to Figure F2 for an outline of the granular potential areas.

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		Ta	able 15: Area 5 Es	timated Granular Pot	tential	
Coo	tion	Area	Average	Thickness	Potential '	Volume (m³)
Sec	tion	(m ²⁾	Overburden	Granular Material	Overburden	Granular Material
Foot of	Α	51 300	0.6	1.0	31 000	51 000
East of	В	28 800	0.7	1.0	20 000	29 000
road	С	15 000	0.1	0.9	1 500	14 000
West of road	D	336 000	0.5	1.7	168 000	570 000
				Total	220 500	664 000

7.5 GRANULAR POTENTIAL

Although the deposits were relatively thin (less than 2 m in total thickness) there appeared to be a considerable amount of sand and gravel west of the road in Section D. Based on AMEC's preliminary volume estimate, there could be approximately 570 000 m³ of sand and gravel in Section D. If additional material is required in the Komie Road area above and beyond that sourced from Area 8, Section D in Area 5 appears to be the next best alternative source of granular material.

The material in area appeared to be suitable for use a Select Granular Subbase with select areas being suitable for use as High Fines Granular Surfacing Aggregate.

7.6 RECOMMENDATIONS FOR FURTHER WORK

If there appears to be additional material required within the Komie Road area, it may be advisable to have the results of the test pitting reviewed and a detailed Level 2 report prepared for Section D.

8.0 AREA 5A: COURVOISIER CREEK HILL

8.1 INTRODUCTION

Area 5A was accessed from km 22 of the Komie Road. Refer to Figure G1 for the general location of the study area. A total of seven (7) test pits were excavated on February 26, 2003 to determine the depth to bedrock, if present. Figure G2 shows the test pit location and site layout.

8.2 SOIL CONDITIONS

The study area consisted of typically clay and silt overlying sandstone. Sandstone bedrock was encountered in all seven of the test pits excavated. The sandstone was very weak and brown in colour. Table 16 below includes a description of the soil/bedrock conditions encountered:

		Table 16: Test Pit S	Summary Area	5A (Courvoisier Creek Hill)	
Test Pit (TP03-5A-#)	Depth (m)	Overburden (m)	Bedrock* (m)	Description of Bedrock**	Water Table (m)
01	4.7	0.0-1.9	1.9-4.7	Sandstone, SS	NE
02	4.1	0.0-0.4	0.4-4.1	Sandstone, SS	NE
03	4.5	0.0-0.5	0.5-4.5	Sandstone, SS	NE
04	4.5	0.0-0.4	0.4-4.5	Sandstone, SS	NE
05	4.4	0.0-0.5	0.5-4.4	Sandstone, SS	NE
06	3.6	0.0-0.4	0.4-3.6	Sandstone, SS	NE
07	5.5	0.0-0.8	0.8-5.5	Sandstone, SS	NE

^{*}Includes soils interpreted to be weathered bedrock

Detailed test pit logs are included in Appendix G. The sandstone was reported to be very weak.

8.3 LABORATORY TESTING

No laboratory testing was conducted on the bedrock sampled.

8.4 QUARRY POTENTIAL

Based on the preliminary results of the fieldwork, it appeared that the bedrock was predominantly very weak sandstone. The material did not appear to be suitable for use as a riprap source or crushed product (it would be expected to be crushed to predominantly sand or finer sized particles). The material may be suitable for use as borrow material, but it is expected that closer sources to the current SYD Road alignment exist.

8.5 RECOMMENDATIONS FOR FURTHER STUDY

There is a potential that there may be more competent bedrock underlying the very weak bedrock encountered during AMEC's fieldwork. MEM may wish to consider conducting a drilling program to further evaluate underlying bedrock conditions.

9.0 AREA 7 AND 7A: KYKLO AREA

9.1 INTRODUCTION

Area 7 and 7A was accessed off of SYD Road either along the Kyklo Road at km 102 of the SYD Road or along a well lease road at km 100 of the SYD Road. Refer to Figure H1 for the general location of the study area. A total of eight (8) test pits were excavated on February 23, 2003. No granular material was encountered. Figure H2 shows the test pit location and site layout.

9.2 SOIL CONDITIONS

The study area consisted of typically raised ridges of silt and clay till. The till was very stiff, low plastic, and brown in colour. No granular material was encountered.

Detailed test pit logs are included in Appendix H.

^{**} Note that soils from thin layers (less than 0.5 m thick) may not be included in the description (refer to test pit logs in Appendix E)

NE = Not Encountered

9.3 LABORATORY TESTING

No laboratory testing was conducted for Area 7/7A.

9.4 GRANULAR POTENTIAL

There was no granular potential identified in Area 7/7A.

10.0 LIMITATIONS

This report has been prepared for the exclusive use of the British Columbia Ministry of Energy and Mines for specific application to the areas described within this report. This report is based on 264 test pits and the results of limited laboratory testing. It should be noted that different, and possibly poorer, soil conditions may be encountered between the test pit locations and volume estimates may vary significantly.

Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. AMEC accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on this report. It has been prepared in accordance with generally accepted geological engineering practices. No other warranty, expressed or implied, is made.

11.0 CLOSURE

Should you have any questions or comments please contact the undersigned.

Respectfully submitted,

AMEC Earth & Environmental Limited

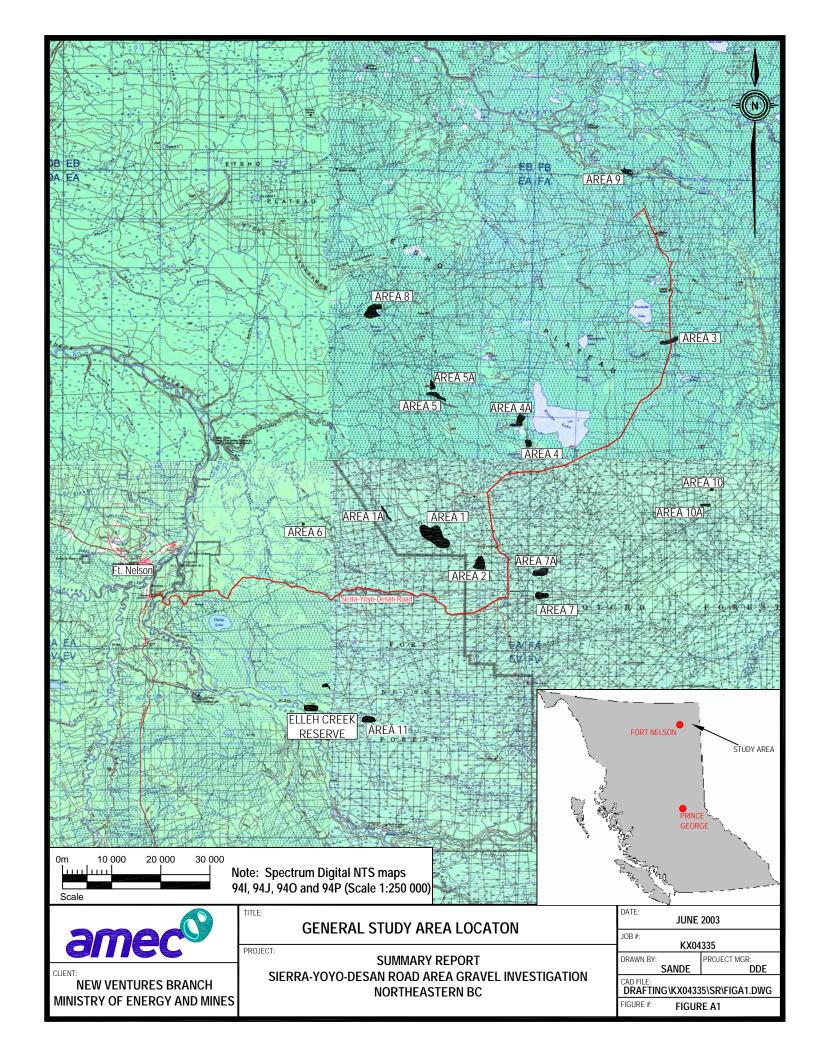
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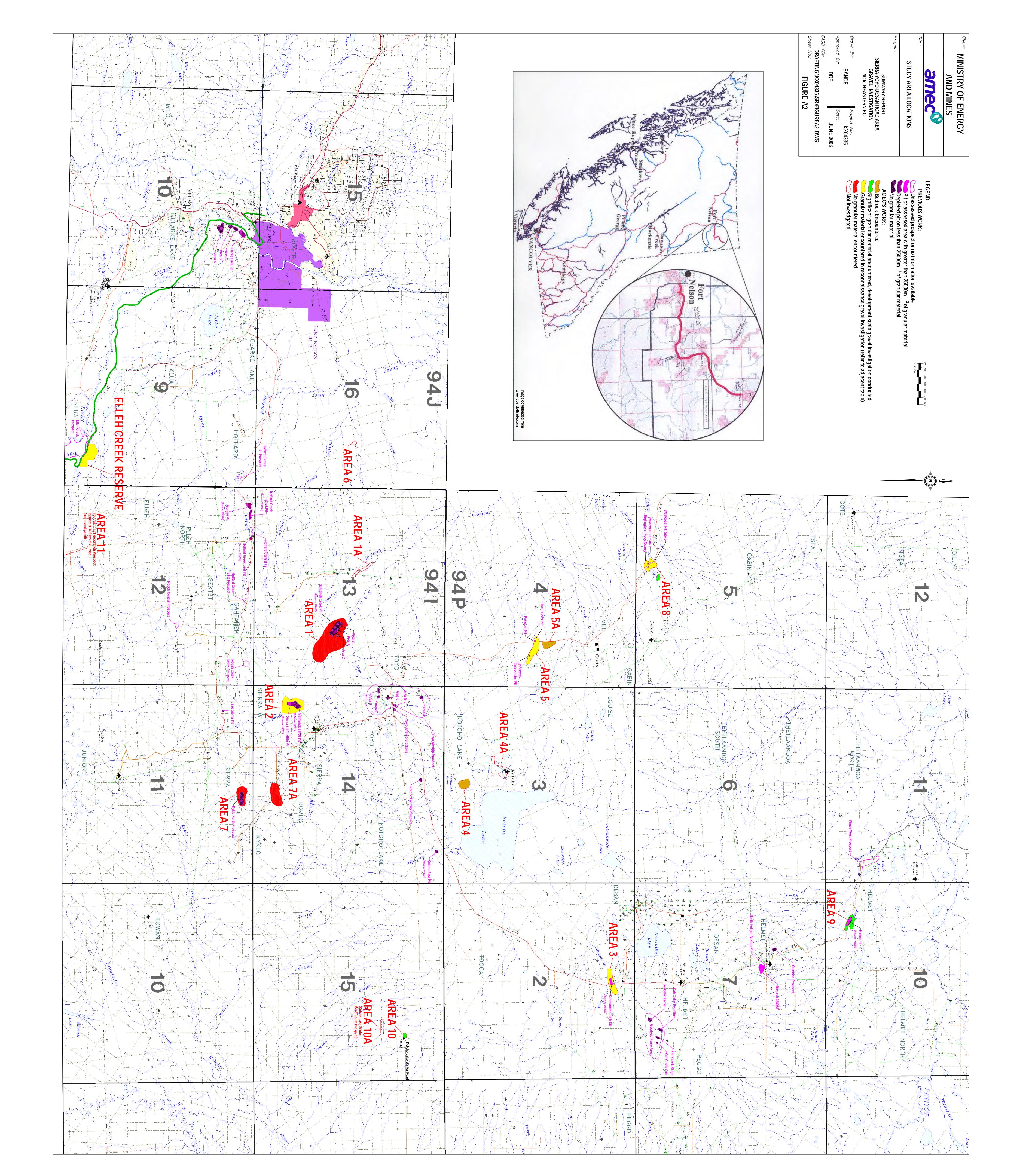
Per Doug Dewar, M.Sc., P.Eng. Geological Engineer

Nick Polysou, P.Eng Senior Geotechnical Engineer Regional Manager, Central BC.

12.0 REFERENCES

- AMEC Earth & Environmental Limited 2003a. Gravel Investigation, Area 8, Sierra-Yoyo-Desan Area Gravel Investigation, Near Fort Nelson, Northeastern, BC. Report dated 15 May, 2003 submitted to the New Ventures Branch of the Ministry of Energy and Mines, 19 pp. plus attachments.
- AMEC Earth & Environmental Limited 2003b. Gravel Investigation, Area 9, Sierra-Yoyo-Desan Area Gravel Investigation, Northeastern, BC. Report dated 15 May, 2003 submitted to the New Ventures Branch of the Ministry of Energy and Mines, 25 pp. plus attachments.
- AMEC Earth & Environmental Limited 2003c. Gravel Investigation, Area 10, Sierra-Yoyo-Desan Area Gravel Investigation, Near Fort Nelson, Northeastern, BC. Report dated 15 May, 2003 submitted to the New Ventures Branch of the Ministry of Energy and Mines, 13 pp. plus attachments.
- AMEC Earth & Environmental Limited 2003d. Elleh Creek Reserve, Level 1 (Reconnaissance) Gravel Investigation, Near Fort Nelson, Northeastern, BC. Report dated 23 May, 2003 submitted to Land and Water British Columbia. Inc. and the New Ventures Branch of the Ministry of Energy and Mines, 19 pp. plus attachments.
- AMEC Earth & Environmental Limited 2003e. Addendum Letter for Gravel Investigation, Area 8, Sierra-Yoyo-Desan Area Gravel Investigation, Northeastern, BC. Letter dated 7 July, 2003 submitted to the New Ventures Branch of the Ministry of Energy and Mines, 2 pp. plus attachments.
- AMEC Earth & Environmental Limited 2003f. Project Overview Report dated 8 July, 2003 submitted to the New Ventures Branch of the Ministry of Energy and Mines, 17 pp. plus attachments.
- Thurber Engineering Ltd. 18 December 2001. Sierra-Yoyo-Descan Road Gravel Inventory. Report to BC. Ministry of Energy and Mines, Oil and Gas Initiative Branch, 14 pp.
- Thurber Engineering Ltd. 12 February 2002. Sierra-Yoyo-Descan Road Gravel Inventory. Supplementary Report to BC. Ministry of Energy and Mines, Oil and Gas Initiative Branch, 9 pp.







Area	Sierra-	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 325			7	199	19 29		Location	on Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion	*		#	1							
GPS Lo	cation	1									1		36.							
Northing	g	6523622		Date		27 Feb	2003			1	100	1095								
Easting		0581300		Weathe	er	Sunny				1			Charles .		it Locat	tion				
Elevatio	n (m)	540		Logged	l by	BJ								Ribbor	1					
										PER DOME	100	A STATE OF THE STA								
		Soil Type			Estim	ated Gr	adation	ı	Lat	o. Grada	tion		Soil Prop	perties				oling Inforr		
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%						Dept	h (m)		ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	80	20							soft	low	brown	frozen					
0.1	0.6	SILT, sandy	ML	70	30							firm	low	brown	moist					
0.6	3.2	SILT, some sand	ML	80	20							firm	low	brown	moist					
3.2	4.0	CLAY, silty, some sand	CI	87	10	3						firm	med	brown	moist - wet					
Water	Enco	ountered: No)	11	Dept	th:		Туре:						Notes	5	11				

^{*}Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 325			1	1	16.00	1000	Location	on Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion			100								
GPS Lo	catio	า									- 1									
Northin	g	6523508		Date		27 Feb	2003													
Easting		0581294		Weathe		Sunny				100	T XE				it Locat	tion				
Elevatio	n (m)	540		Logged	by	BJ						Contract of	N. H.	Ribbor	1					
										Ass.	Di Maria					IF.				
		Soil Type		<u> </u>	Estim	ated Gr	adation		Lal	o. Gradat	tion		Soil Pro	perties				ling Inforr		
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ums to 100)%			1			Dept	h (m)	Ту	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organics	OL	80	20							loose	non	brown	frozen					
0.1	0.5	SILT, sandy	ML	75	25							loose	low	brown	moist					
0.5	3.0	SILT, some sand	ML	85	15							loose	low	brown	moist					
Water	Enc	ountered: No)		Dept	th:		Type:						Notes	3					
Remark	(S													1						

^{*}Unified soils classification system symbol



-		-Yoyo-Desan Ro	ad		tor Type		Cat 325		·:	1		三		Locatio	n Notes	3				
roject SPS Lo		KX04335		Contrac	ctor		Kledo Co	onstruc	lion	-		1 60								
Northing Easting Elevation	g	6523752 0581136		Date Weathe Logged		27 Feb Overca							1/2	Test P Ribbor	it Locat	tion				
	` '					nated Gr	adation		Lal	o. Gradat	ion				1	Г	Come	oling Inforr	nation	
Depth	n (m)	Soil Type General Soil	Type	Sı	ums to 100		Additional			ums to 100		;	Soil Prop	erties			Dept			/ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	Max. (mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec	
0	0.1	TOPSOIL, organics	OL	90	10							frozen	non	brown	frozen				Ducket	Ба
0.1	2.7	SILT, sandy	ML	75	25							loose	non	brown	moist					
2.7	4.0	SILT, trace sand	ML	90	10							loose	low	brown	moist					
Vater	Enc	ountered: No)		Dept	th:		Type:						Notes	;					

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Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type	9	Cat 325			1		1		Locatio	on Notes					
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion			3.715								
GPS Lo	cation										3.5									
Northin	-	6523742		Date		27 Feb														
Easting		0580815		Weathe		Overca	ast						4 - 15		it Locat	ion				
Elevatio	on (m)	527		Logged	by	BJ					200	Service Con-		Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion		Soil Pro	oortios			Samp	oling Inforr	nation	
Depth	n (m)	General Soil	Туре	St	ums to 100)%	Additional	Max.	Sı	ums to 100)%						Dept	h (m)	Туј	•
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	90	10							loose	non	brown	frozen					
0.1	0.4	SILT, some sand	ML	85	15							loose	non	brown	dry					
0.4	8.0	GRAVEL, silty	GM	30	30	40						loose	non	brown	dry					
0.8	4.0	CLAY (till)	CI	70	20	10						stiff	med	brown	moist					
Water	Enc	ountered: N	0		Dept	th:		Type:						Notes	•					
Remark	(S													•						

^{*}Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 325			三		411	298	Location	n Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion			The state of the s								
GPS Lo										£20		第								
Northing	-	6523829		Date		27 Feb						10-55								
Easting		0580730		Weathe		Overca	ast				AND				it Locat	tion				
Elevatio	on (m)	540		Logged	l by	BJ					1.			Ribbor	1					
		Soil Type			Estim	nated Gr	adation		Lal	o. Gradat	tion		Soil Prop	ortice			Sam	oling Inforr	nation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100	0%	Additional	Max.	Sı	ums to 100)%	`	2011 F 10¢				Dept	h (m)	Ту	/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	90	10							loose	non	brown	frozen					
0.1	0.4	SILT, sandy, trace gravel	ML	74	20	6						loose	low	brown	moist					
0.4	0.9	SAND and GRAVEL	SW	10	50	40	5	150				compact	non	brown	moist					
0.9	3.9	CLAY, silty, trace gravel	CI	80	15	5						soft - firm	med	brown	moist					
Water	Ence	ountered: N	o		Dept	th:		Type:						Notes	1					

^{*}Unified soils classification system symbol



		-Yoyo-Desan Ro	ad	Excava	tor Type		Cat 325				A 15 TO			Location	on Notes					
Project	<u> </u>	KX04335		Contrac	ctor		Kledo Co	onstruct	ion											
GPS Lo	ocation	1										1210.00	Para.							
Northin	g	6523915		Date		27 Feb	2003				OF THE	N. P. C.								
Easting	l	0580398		Weathe	er	Overca	ast				13/3			Test P	it Locat	ion				
Elevatio	on (m)			Logged	l by	BJ						25 (58)	60 7	Ribbor	า					
										1										
		Soil Type			Estim	ated Gr	adation		Lal	b. Grada	tion		Cail Draw				Samp	ling Inforr	nation	
Depth	h (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ums to 100)%	,	Soil Prop	perties			Dept	h (m)	Ту	/ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	(Chec	ck one)
FIOIII	10	Description	USC	rines	Sano	Gravei	(%)	()	rines	Sand	Graver	Consistency	Plasticity	Colour	Moisture		FIOIII	10	Bucket	Bag
0	0.2	TOPSOIL, organic	OL	95	5							frozen	low	brown	moist					
0.2	4.0	SILT, some clay, trace gravel	ML	84	15	1						soft	low	brown	moist - wet					
																				_
Water	Enco	ountered: N	0		Dept	th:		Type:						Notes	•					
Remarl	ks																			

*Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type	9	Cat 325			all con		2 / 5	1	Locatio	on Notes	;						
Project	i I	KX04335		Contrac	Contractor Kledo Construction							30 mm	The second									
GPS Lo										V	1											
Northin		6524621		Date <u>27 Feb 2003</u>									(美)									
Easting		0580400	Weathe			ast, light s	snow		0.04					it Locat	tion							
Elevatio	on (m)	543		Logged	l by	BJ							· W	Ribbor	1							
		Soil Type			Estim	nated Gr	adation		Lal	b. Gradat	tion	Soil Properties			Sampling Information			mation				
Depth	n (m)	General Soil	Sı	ums to 100	0%	Additional	Max.	Sı	Sums to 100%			3011 P10 ₁	2611162			Dept	th (m)	-	/pe			
From	То	Description	USC*	Fines	Sand	Sand Gravel Oversize (%)		(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture #	#	From	То	(Chec	k one) Bag		
0	0.1	TOPSOIL, organics	OL	95	5							frozen	low	brown	frozen					- 3		
0.1	3.8	CLAY, silty	CI	95	5							firm	med	brown	moist							
3.8	4.2	CLAY (till)	CI	84	15	1						v. stiff	med	brown	moist							
Water Encountered: No Dep							pth: Type:								Notes							

*Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type	Э	Cat 325			all of	100	W / S	4 8	Location Notes								
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	tion													
GPS L	ocation	n									-											
Northin	g	6524338		Date		28 Feb	2003			1												
Easting	asting 0580445		Weathe	Weather Clea					100				Test P	it Locat	tion							
Elevati	Elevation (m) 540			Logged	l by	BJ				100			775	Ribbor	า							
											*											
		Soil Type			Estin	nated Gr	adation		Lal	o. Grada	tion			Sampling Information								
Dept	h (m)	General Soil	Туре	Sı	ums to 10	0%	Additional		Sı	ums to 100)%	'	3011 110	perties			Dept	h (m)	Туре			
From	То	To Description USC*		Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)		
1 10111	10	Description	5	1 11165	Sanu	Glavei	(%)	()	1 11163	Saliu	Glavei	Consistency	Flasilolly	Coloui	Moisture		1 10111	10	Bucket	Bag		
0	0.2	TOPSOIL, organic	OL	95	5							frozen	non	brown	frozen							
0.2	3.8	SILT, trace clay, trace sand	ML	85	15							soft	low	brown	moist - wet							
Wate	Water Encountered: No					Depth:								Notes		•	•					
Remar	Remarks													•								

^{*}Unified soils classification system symbol



-		-Yoyo-Desan Ro	Excava			Cat 325			3/ V	-	8 (5	學學	Location Notes							
Project		KX04335		Contrac	ctor		Kledo Co	nstruct	tion											
SPS Lo	cation	1																		
Northing	orthing 6524351 Date					28 Feb	2003			7										
asting <u>0580240</u> W					er	Clear									it Locat					
Elevation (m) 533				Logged	l by	BJ							700	Ribbor	n /Stake	/ No M	arker			
		Soil Type		Estim	nated Gr	adation		Lal	o. Gradat	ion		Soil Prop	ortios			Samp	oling Inforr	nation		
Depth (m) General Soil Type				Sı	ums to 100	0%	Additional	N4	Sı	ums to 100)%	,	3011 F10	ppernes			Dept	h (m)	Ту	ре
From	То	Description USC*		Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)
110111	10	·	000	1 11103	Odrid	Olavei	(%)	, ,	11103	Odrid	Glavei	Consistency	1 lasticity	Coloui	Wolstare		1 10111	10	Bucket	Bag
0	0.2	TOPSOIL, organic	OL	90	10							frozen	non	black	frozen					
0.2	2.3	SAND, silty, some gravel	SM	30	40	30														
2.3	3.2	SILT, some sand	ML	90	10															
Nater	Enc	ountered: Y	es	Dept	th: 2.3	3 m	Type: Water Seepage						Notes							

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Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 325							Location	on Notes	1						
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion		200											
GPS Lo	ocation										The last	ELL	1									
Northin		6524144		Date		28 Feb	2003			3360	914											
Easting		0580425	Weathe	er	Clear						E MALE			it Locat								
Elevatio	on (m)	538		Logged	l by	BJ							-	Ribbor	n /Stake	/ No M	arker					
		Soil Type			Estim	nated Gr	adation		Lal	o. Gradat	ion	Soil Properties				Sampling Informat			mation			
Depth (m) General Soil Type				Sı	ums to 100	0%	Additional	Max.	Sı	ums to 100)%	,	2011 10	2011103			Dept	h (m)	-	ре		
From	То	Description	USC*	Fines	Sand Gravel Oversiz		Oversize (%)	SIZE (mm)	Fines	Sand	and Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec	k one) Bag		
0	0.2	TOPSOIL, organic	OL	90	10							frozen	non	brown	frozen					9		
0.2	3.5	SILT, sandy	ML	60	40							loose - v. loose	non	brown	moist							
Water Encountered: No Depth:								Туре:							Notes							

*Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	Excava	tor Type	9	Cat 325			20	P 10	-	1,37	Locatio	on Notes								
Projec		KX04335		Contrac			Kledo Co	onstruct	tion							•						
GPS L										340												
Northin	g	6524171		Date 28 Feb 2003																		
Easting			Weather Clear							BE	ALC: U		Test P	it Locat	tion							
_	levation (m) 554			Logged by BJ						57112				Ribbor	1							
										1		Sugar P	1									
	Soil Type				Estim	nated Gr	adation		Lal	o. Gradat	tion		Soil Bron	ortios			Samp	oling Infor	mation			
Dept	h (m)	General Soil	Туре	S	ums to 100	0%	Additional	N4=	Sums to 100%			Soil Properties					Dep		Ту	/ре		
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)		
1 10111	10	·	000	1 11103	Garia	Glavei	(%)	, ,	11103	Cana	Glavei	Consistency	1 lasticity	Coloui	Wolstare		110111	10	Bucket	Bag		
0	0.2	TOPSOIL, organic	OL	100								frozen	non	brown	frozen							
0.2	3.2	SAND, silty, trace gravel	SM	30	60	10						loose	non	brown	moist							
Wate	Water Encountered: No					Depth: T						Ц	I	Notes								
Remar	ks				•																	

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Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В		7.54				Location	on Notes	3				
Project	1	KX04335		Contrac	ctor		Kledo Co	onstruc	tion	1. 18	1									
GPS Lo		1								100	1				125 m	@ 270	degree	s from [*]	TP-252	
Northing	g	6524745		Date			h 2003			And										
Easting		0578621		Weathe	er	-27 C						As a look	1		it Loca	tion				
Elevatio	n (m)	539		Logged	by	BM					4-10-1		1	Ribbor	1					
													1							
		Soil Type			Estim	nated Gr	adation		Lal	o. Grada	tion	!	Soil Prop	perties				oling Inforr		
Depth	n (m)	General Soil	Туре	St	ums to 100	0%	Additional	Max.	St	ums to 100)%						Dept	h (m)	Туј	
From	To	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	
		'		 			(70)					Consistency							Bucket	Bag
0	0.25	TOPSOIL	OL																	
0.25	1.25	SILT	ML																	
1.25	4.5	SILT (CLAY) AND SAND	ML	50	48	2														
Water	Enco	ountered: N	0		Dept	th:		Type:			•			Notes	5					
Remark	(S																			



Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type		Cat 322				P. Said	學出版	3	Location	on Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion	1		NI W								
GPS Lo													PI)		125 m	@ 270	degrees	s from '	ΓP-252	
Northing	•	6524733		Date			h 2003			3	I Es			T 4 F):4 l	4:				
Easting		0578729		Weathe		-27 C					*	2.0			Pit Loca	tion				
Elevatio	m (m)	535		Logged	БУ	BM				2	250	1		Ribbor	1					
		Soil Type		Ī	Estim	nated Gr	adation		Lak	o. Gradat	tion		O = 11 D ====				Samp	oling Inform	nation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100	0%	Additional	Marri	Su	ıms to 100)%	,	Soil Prop	perties			Dept	h (m)	Ту	ре
From	To	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)
		Becomption				0.0.0	(%)				0.0.0	Consistency	· identity	00.00.		 			Bucket	Bag
0	0.25	TOPSOIL	OL																	
0.25	1.25	SILT	ML																	
1.25	4.5	SAND, some silt	SM	15	82	3														
Water	Enco	ountered: N	0	ll .	Dept	th:		Type:						Notes	5	II.				
Remark	(S																			



Area S	Sierra-	·Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322				1	Dunilla		Location	on Notes	5				
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion	and stable	Military		NEW SALE							
SPS Lo											450			600 m	n @ 90 c	degrees	s from A	(6524	717,057	⁷ 8251)
Northing		6524751		Date			h 2003			- 4	1		No.							
asting		0578830		Weathe		-27 C				L-ARTH					it Loca	tion				
Elevatio	n (m)	531		Logged	l by	BM						A.F.	100	Ribbor	1					
		Soil Type		Ì	Estim	ated Gr	adation		La	b. Gradat	tion	1000	0 11 10				Samp	oling Infor	mation	
Depth	(m)	General Soi	I Туре	Sı	ums to 100		Additional		S	ums to 100)%	;	Soil Prop	perties			Dept	th (m)	Ту	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)
		Becomplien	000		Jana	0.0.0	(%)			Jana	0.0.0.	Consistency	· identity	00.00.					Bucket	Bag
0	0.25	TOPSOIL																		
0.25	SILTAND																			
Nater	Enco	ountered: N	o		Dept	th:		Type:	•					Notes	5		•			
Remark	s																			

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Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В				Mark.	100 3	Location	on Notes	5				
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	- Telescope										
GPS Lo				Data			L 0000						國級		75 m (@ 180 c	degrees	from T	P-252	
Northing	-	6524662 0578857		Date Weathe	\r	-27 C	h 2003						- 11	Toet D	it Loca	tion				
Easting Elevation		532		Logged		BM								Ribbor		lion				
Liovatio) (III)	002		Loggod	, by	DIVI					S. Hall		1	TUBBOI	•					
		Soil Type			Estim	ated Gr	adation		Lal	o. Grada	tion		Soil Prop	ortice			Samp	ling Inforn	nation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%		-	Jernes			Dept	h (m)		/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec	
				1			(70)					Consistency							Bucket	Bag
0	0.25	TOPSOIL	OL																	
0.25	1.25	SILT	ML																	
1.25	3.5	CLAY	CL																	
Water	Enco	ountered: N	0	II	Dept	th:		Type:						Notes	<u> </u>	<u>II</u>				
Remark	ks													ı						

^{*}Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В		Went.	中学		A	Location	on Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	-		100	J. W.		405	0.400		, -	FD 050	
GPS Lo				Data		E More	h 2003								125 m	@ 168	degrees	s from	ГР-253	
Northin Easting	-	6524592 0578884		Date Weathe	۲r	-27 C	n 2003						No.	Test P	it Loca	tion				
Elevation		534		Logged		BM				A		A PARTY	Y	Ribbor						
	,										1	, SALT.								
		Soil Type			Estim	ated Gr	adation		Lal	o. Grada	tion		Soil Prop	perties				ling Inforn		
Deptl	h (m)	General Soil	Туре	St	ums to 100)%	Additional	Max.	St	ums to 100)%		I	· · · · · · · · · ·		,,	Deptl	h (m)		pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.25	TOPSOIL	OL																Dudnot	2.9
0.25	0.75	SILT	ML																	
0.75	3.0	CLAY	CL																	
Water	Enco	ountered: N	0		Dept	th:		Type:						Notes	3					
Remar	ks													•						

^{*}Unified soils classification system symbol



		Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322					[Fig. 17]		Location	on Notes	3				
Project GPS Lo		KX04335		Contrac	ctor		Kledo Co	onstruc	tion		EAST!				50 m (@ 124 (degrees	from T	ΓP-254	
Northing Easting	g	6524554 0578935		Date Weathe		5 Marc -27 C	h 2003							Test F	Pit Loca		g			
Elevation				Logged	l by	BM					4	1000 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Ribboı	n					
		Soil Type			Estim	ated Gr	adation		La	b. Grada	tion		Coil Dros	o ortico			Samp	oling Infor	mation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	S	ums to 100	0%	,	Soil Prop	berties			Dept	th (m)	Ту	/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec	
		•					Consistency	ļ			-			Bucket	Bag					
0	0.25	TOPSOIL	OL																	
0.25	0.5	SILT	ML																	
0.5	3.5	SAND, silty	SM	35	65															
Water	Enco	ountered: N	0		Dept	th:		Type:	•	•	•	•		Notes	5		•	•		
Remark	(S																			

^{*}Unified soils classification system symbol



rea	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322							Location	on Notes	3				
roject		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	MARAN	and adapted	And Adiaba	NAME OF							
	cation									L'ISPA		N. In Section	-		40 m	@ 84 c	legrees	from T	P-255	
lorthing		6524570		Date			h 2003						-			_				
asting		0578973		Weathe		-27 C				100	1000	THE PROPERTY OF			it Locat	tion				
levatio	on (m)	539		Logged	by	BM					101	1 - 3	The state of	Ribbor	1					
		Soil Type			Estim	nated Gr	adation		Lal	b. Gradat	tion					i	Samp	oling Infor	mation	
Depth	n (m)	General Soil	Туре	Sı					Sı	ums to 100)%	;	Soil Prop	perties				h (m)		ре
From	Max. Oversize (mm)										Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)
1 10111	om To Description USC* Fines Sand Gravel (%) (mm)										Olavei	Consistency	1 lasticity	Coloui	Wolstare		110111	10	Bucket	Bag
0																				
0.25	3.5	SILT	ML																	
Vater	Enco	ountered: N	0		Dept	th:		Type:	•				•	Notes	3	•	•	•	•	

^{*}Unified soils classification system symbol



_		Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322			N 11 - M	MANAGEM	de la constitución de la constit		Locatio	n Notes	;								
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	A THE PARTY OF THE	No.	- Constitution of the	-											
GPS Lo		='										the Charles			75 m @	② 348 c	degrees	from T	P-256					
Northing	-	6524650		Date			h 2003			-	100	Party of	No.											
Easting		0578948		Weathe		-27 C				100	THE REAL PROPERTY.				it Locat	tion								
Elevatio	n (m)	536		Logged	l by	BM					1			Ribbor	1									
										E WAS	SIFE													
		Soil Type			Estim	nated Gr	adation		Lal	o. Grada	tion		Soil Prop	erties										
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ums to 100)%						Dept	h (m)		•				
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То		k one) Bag				
0	3.0	SAND, some silt	SM	15	85														Buokot	Dag				
3.0	3.5	CLAY	CL																					
Water	Enco	ountered: Ye	es		Dept	th: 3.5	5 m	Type:	Water T	able				Notes				Sampling Information Depth (m) Tyl (Check Bucket						

^{*}Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В		cision .			LIZE BOLD	Location	on Notes	<u> </u>				
Project		KX04335		Contrac	ctor		Kledo Co	nstruct	ion	Na Propinsion		paradicular and	No. of Lot							
GPS Lo	ocation	า								. 12	-				75 m 🤅	@ 348 c	degrees	from T	P-257	
Northin	-	6524726		Date			h 2003				(1) S	The .	-							
Easting		0578928		Weathe		-27 C				500	100	100			it Locat	tion				
Elevation	on (m)	532		Logged	by	BM								Ribbor	1					
				li e				1		Proper		0.20.14				ır e	_			
5 (()	Soil Type	-	<u> </u>		ated Gr	adation			o. Gradat	_	;	Soil Prop	perties			1	oling Inform		
Depth	1 (m)	General Soil	USC*	Sı	ums to 100)% 	Additional Oversize	Max.	St	ums to 100	1%	5	I	I		#	Dept	n (m)	Ty (Chec	
From	То	Description	Fines	(%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	Bucket	Bag			
0	1.5	SAND, trace silt	SP	5	95							,							Buoket	Dag
1.5	4.0	CLAY	CL																	
Water	Ence	ountered: N	0		Dept	th:		Туре:						Notes	5					
Remarl	ks													l						

^{*}Unified soils classification system symbol



_		·Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322			J. J. Sei		LI-MILE.	LUSSIA.	Locatio	on Notes	;										
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	ANA MARKET	48	- AUG				_										
GPS Lo										100	100				60 m	@ 78 d	egrees	from T	P-258							
Northing	-	6524748		Date			h 2003				10.00															
Easting		0578984		Weathe			Windy								it Locat	tion										
Elevatio	n (m)	528		Logged	l by	BM					447	7.10	SIL	Ribbor	1											
								1		100	11 4	加大學多	27-1			r										
		Soil Type		 		nated Gr	adation			o. Gradat			Soil Prop	perties												
Depth	ı (m)	General Soil	Туре	Sı	ums to 100)% 	Additional	Max.	Su	ums to 100)%			ı	I		Dept	h (m)	1							
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	Sampling Information									
0	1.5	SAND, trace silt	SP	5	95									gray						Bag						
1.5	2.5	SAND, trace silt	SP	5	95									brown												
2.5	3.5	CLAY	CL																							
Water	Enco	ountered: Y	es		Dept	th: 2.5	i m	Type:	Water T	able				Notes	3											



	Yoyo-Desan Ro	au	Excava	tor Type		Cat 322			Addition		A	1	Location	on Notes	6									
	KX04335		Contrac	ctor		Kledo Co	onstruct	tion			Chicago de la constanta de la	1			o 4 - 0									
			Data		C Mara	h 2002			1	40	-	-		/5 m @	@ 1/2 c	degrees	from I	P-259						
-				\r					一场			-	Toet D	it Locat	tion									
						vviriay						AN ES			lion									
1 (111)	330		Logged	Бу	ואוט						1999		TTIDDOI	'										
	Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Cail Dran	ortico			Samp	oling Inform	nation						
(m)	General Soil	Туре	Sı	ums to 100)%	Additional	Mov	Sı	ums to 100	1%		5011 P101	berlies			Dept	h (m)	Ту	ре					
Soil Properties Soil Properties													k one) Bag											
0.5		SP	5	95									gray				(Check							
1.5	SAND, trace silt	SP	5	95									brown											
4.5	CLAY	CL) Tyl						
Enco	ountered: Y	es		Dept	th: 1.5	m	Type:	Water T	able		I		Notes	5	II.		Depth (m) Typ From To (Check							
((m) To 0.5 1.5 4.5	6524675 0579008 530 Soil Type (m) General Soil Type Control of the state of the st	Soil Type Soil Type To Description USC*	Soil Type Silt SAND, trace silt SP 5	Soil Type	Soil Type Sums to 100% SaND, trace silt SAND, trace silt SAND, trace silt SAND, trace silt SCLAY CL SUMS to 100% SAND, trace silt SP 5 95 SUMS to 100% SOUND TO 100% SOUND TO 100% SUMS to 100% SUM	Soil Type Sums to 100% Additional Oversize (%)	Cation	Date 6 March 2003	Date 6 March 2003	Date Date Gestivated Date D	Date General Soil Type Estimated Gradation Sums to 100% Sand Gravel General Soil Type General Soil Type Sand Gravel General Soil Type General Soil Type General Soil Type Sand Gravel General Soil Type Gene	Date General Soil Type Sums to 100% Fines Sand Gravel G	Soil Type	Color Colo	Soil Type	Soil Type	Date Date	Date Date					



Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В			2000			Location	on Notes	3									
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	1			11												
GPS Lo				Data		C M = ==	L 0000			-					85 m (@ 160 c	degrees	from T	P-260						
Northin	•	6524584		Date			th 2003							Toot D	it Loca	tion									
Easting Elevation		0579039 530		Weathe Logged		-30 C, BM	vvinay							Ribbor		tion									
Lievalic	(ווו)	550		Logged	гру	DIVI					21			KIDDOI	ı										
		Soil Type		Ī	Estim	ated Gr	adation		Lal	o. Grada	tion		Cail Dray	acrtica			Samp	ling Inforn	nation						
Depth	h (m)	General Soi	Туре	Sı	ums to 100)%	Additional	May	Sı	ums to 100)%	,	Soil Prop	berlies			Dept	h (m)	Ту	ре					
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	`						
			ion USC* Fines Sand Gravel Oversize (%) Max. (mm) Fines Sand Gravel Density / Consistency Plast																Bucket	Bag					
0	0.25	TOPSOIL	OL														# (Check								
0.25	2.25	SAND, silty	SM	25	72	3																			
2.25	4.0	CLAY	CL																To ·						
Water	Enco	ountered: Y	es		Dept	th: 2.2	5m	Type:	Water ⁻	Table		11	ı	Notes	•										
Remarl	ks																								



Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type		Cat 322				10		5	Location	n Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	何到	自由									
GPS Lo											Marie Control		The St.		50 m @	2º 108 d	degrees	from T	P-261	
Vorthing	-	6524577		Date			h 2003			1 (190)			一组织							
Easting		0579088		Weathe		-30 C,	Windy				200		-32		it Locat	tion				
Elevatio	on (m)	534		Logged	by	BM					-	N. A.		Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	ortios			Samp	oling Inforn	nation	
Depth	n (m)	General Soil	Туре	St	ums to 100)%	Additional	Max.	St	ums to 100)%		3011 106				Dept	h (m)		pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.25	TOPSOIL	OL																	
0.25	2.25	SILT	ML																	
2.25	3.5	CLAY	CL																	
Water	Enco	ountered: N	0		Dept	:h:		Type:				u		Notes						

Remarks

At 0.25 - 0.75 m lense of silty gravel on east side of test pit

At 0.75 - 1.25 m seam of gravel on east side of test pit

^{*}Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В		100	100	1		Location	on Notes	3				
Project GPS Lo				Contrac	ctor		Kledo Co	onstruct	tion						50 m @	@ 360 d	degrees	from T	P-262	
Northin	g	6524628		Date			h 2003			400			b.							
Easting	l	0579088		Weathe	er	-30 C,	Windy								it Locat	tion				
Elevation	on (m)	537		Logged	by	BM						1		Ribbor	า					
										- 4	TAR	2000				1				
		Soil Type		<u> </u>	Estim	ated Gr	adation		Lal	o. Grada	tion		Soil Prop	nerties			Samp	oling Inforr		
Dept	h (m)	General Soi	I Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%	·	-	3011100			Dept	h (m)		pe
From	To	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	
		·		<u> </u>			(70)					Consistency							Bucket	Bag
0	0.5	SILT AND CLAY	ML-CL																	
0.5	3.5	CLAY	CL																	
														Notes	<u> </u>					
Water	Enco	ountered: N	0		Dept	th:	_	Type:						. 10.00						
Remar	ks																			

^{*}Unified soils classification system symbol



Test Pit No. 264 Sierra-Yoyo-Desan Road Gravel Investigation Area No. 1

KX04335 6524682 0579066 528 Soil Type General Soil Description	I Туре	Date Weathe Logged	er I by		Kledo Co h 2003 Windy	onstruct	tion						50 m @	2 360 c	legrees	from T	P-263	
6524682 0579066 528 Soil Type General Soil	I Туре	Weathe	er I by	-30 C,				Con Pa	AND DESCRIPTION OF THE PERSON	STATE OF THE PARTY			30 6	_ 000 0	.cg.ccc	0 1	. 200	
Soil Type General Soil	I Туре	-	l by		Windy				ALC: UNK	The State of the S	THE R. L.							
General Soil	I Туре											Test P Ribbon	it Locat	tion				
	I Туре	1———	Estim	ated Gr	adation		Lal	b. Grada	tion		Soil Prop	erties			Samp	ling Inform	nation	
Description		Sı	ums to 100)%	Additional	Max.	St	ums to 100)%			7011103			Depth	າ (m)	Тур	
Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
SILT	ML																	
SILT	ML																	
CLAY	CL																	
ountered: N	o		Dept	h:		Type:						Notes						
	CLAY		CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL Notes	CLAY CL	CLAY CL	CLAY CL	CLAY CL	CLAY CL

К	en	Idi	N2

At 0 to 0.5 m trace of gravel on east side of test pit

^{*}Unified soils classification system symbol



rea	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type	Э	Cat 322	В					性一個	Location	on Notes	i				
roject		KX04335		Contrac	ctor		Kledo Co	onstruc	tion		v	100	50 3							
	cation										A 2018				540 m	@ 310	degree	s from	TP-258	
lorthing	-	6525134		Date			h 2003				711	2	7							
asting		0578591		Weathe			Windy				pre-				it Locat	ion				
levatio	n (m)	531		Logged	l by	ВМ							3	Ribbor	1					
		Soil Type			Estim	nated Gr	adation		Lat	o. Grada	tion		Soil Prop	ortico			Samp	oling Infor	mation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100	0%	Additional	Max.	Sı	ums to 100)%	,	3011 P10p	berties			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.25	TOPSOIL	OL																	
0.25	0.75	SILT	ML																	
0.75	3.5	CLAY	CL																	
Vater	Enco	ountered: N	0		Dept	th:		Type:						Notes	3					
Remark	(S							1												

^{*}Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type		Cat 322					14. 34	74	Location	on Notes	3				
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion		建川 郎		1							
	ocation											The same	40.5		375 m	@ 310	degrees	s from [*]	TP-258	
Northin	-	6524990		Date			h 2003			44	4 1		ENT							
Easting		0578682		Weathe		-30 C,	Windy			277					it Locat	tion				
Elevation	on (m)	532		Logged	by	BM								Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Grada	tion		Soil Prop	ortios			Samp	ling Inforr	nation	
Dept	h (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%	,	3011 F 10p	reities			Dept	h (m)	Ту	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Chec	k one)
110111	10	Besonption	000	1 11100	Odrid	Ciavoi	(%)	, ,	1 11100	Caria	Oravor	Consistency	1 idollolly	Ooloui	Wolotaro		110111		Bucket	Bag
0	0.25	TOPSOIL	OL																	
0.25	0.75	SILT																		
0.75	1.25	SAND	SP	5	95															
1.25	3.5	CLAY	CL																	
														Matas						
Water	Enco	ountered: N	0		Dept	:h:		Type:						Notes	•					
Remar	ks																			



		-Yoyo-Desan Ro	ad	Excava	tor Type		Cat 322					× 100	(1)	Location	on Notes	,				
roject	cation	KX04335		Contrac	ctor		Kledo Co	onstruct	tion			-	3		250 m	<i></i>	dearee	efrom T	D_258	
orthin	g	6524881		Date			h 2003					-					degree	3110111	1 -230	
asting levation	on (m)	0578766 537		Weathe Logged		-30 C, BM	Windy						E	Test P Ribbor	it Locat	tion				
		Soil Type			Estim	ated Gr	adation		Lal	b. Gradat	tion		Soil Prop	ortios			Samp	oling Inforn	nation	
Depth	h (m)	General Soil	Туре	Sı	ums to 100	1%	Additional	Max.	Sı	ums to 100)%		JOII 1 10F	Jerties	ı		Dept	h (m)		уре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	ck one) Ba
0	0.25	TOPSOIL	OL																	
0.25	2.5	SILT	ML																	
2.5	3.5	CLAY	CL																	
Vater	Enco	ountered: N	0		Dept	:h:		Type:		-				Notes	;	•				

^{*}Unified soils classification system symbol



rea	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322						6	Locatio	n Notes	3				
roject		KX04335		Contrac	ctor		Kledo Co	onstruct	tion				4							
	cation												12 1							
lorthin	-	6524783		Date			h 2003			4			-							
asting		0578864		Weathe		-30 C,	Windy					1000	TO SERVICE		it Locat	tion				
levatio	n (m)	513		Logged	l by	BM						1		Ribbor	1					
													X		1	ı				
		Soil Type			Estim	ated Gr	adation	ı	Lat	o. Gradat	tion	5	Soil Prop	erties				oling Inforr		
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ums to 100)%				1		Dept	h (m)	· ·	/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.25	TOPSOIL	OL																Buokot	Du
0.25	1.25	SILT	ML																	
1.25	1.5	SAND, trace gravel	SP-SM	10	85	5														
1.5	3.0	SAND, trace silt	SP-SM	10	90															
Vater	Enco	ountered: Y	es		Dept	th: 3.0)	Type:	Water T	able				Notes	;					



Sierra-Yoyo-Desan Road Gravel Investigation Area No. 1 Test Pit No. 269 Cat 322 B Sierra-Yoyo-Desan Road Excavator Type Location Notes Project KX04335 Kledo Construction Contractor **GPS Location** 6525197 Date 6 March 2003 Northina Weather -30 C, Windy **Test Pit Location** Easting 0578256 Elevation (m) 516 Logged by BM Ribbon Soil Type **Estimated Gradation** Lab. Gradation Sampling Information Soil Properties General Soil Type Depth (m) Depth (m) Type Sums to 100% Sums to 100% Additional Мах. Oversize (Check one) Density / USC* Description Fines Sand Gravel (mm) Plasticity Colour Moisture From To Fines Sand Gravel From To (%) Consistency Bucket Bag **TOPSOIL** OL 0 0.25 0.25 1.75 SILT ML 1.75 3.0 CLAY CL Notes Water Encountered: No Depth: Type:

Remarks

^{*}Unified soils classification system symbol



Area S	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type		Cat 322				題數	从了他都很	100	Location	on Notes	3				
Project		KX04335		Contrac	tor		Kledo Co	onstruc	tion		SE No	THE PARTY OF THE P								
SPS Lo	cation									SALE IN	CHE	-	-		250 m	@ 70 c	degrees	from T	P-269	
Northing	l	6525326		Date			h 2003			1			-							
Easting		0578448		Weathe		-30 C,	Windy			-		1 - N	177		it Loca	tion				
Elevatio	n (m)	520		Logged	by	BM								Ribbor	1					
													Take 1			<u>ir</u>				
		Soil Type		1		ated Gr	adation			o. Gradat	_		Soil Prop	perties				ling Inforn		
Depth	(m)	General Soil	Туре	Sı	ıms to 100)%	Additional	Max.	St	ums to 100	1%					l	Dept	h (m)	Ту	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec	
							(7-7)					Consistency							Bucket	Bag
0	1.0	Frozen organics																		
Nater	Enco	ountered: Y	A S		Dent	th: 1.0		Type.	Water T	able		<u> </u>		Notes	<u> </u>	<u> </u>				
Remark		Zantoroa. I			Борі			.,,,,,		~~!0										



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В		15.79			19	Location	on Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruc	tion				182							
GPS L	ocatior									2 1	THE	THE REAL PROPERTY.	1		125 m	@ 70	degrees	from 7	TP-269	
Northin	g	6525245		Date		6 Marc	h 2003					100	122							
Easting	j	0578342		Weathe	er	-30 C,	Windy			No.	000		-	Test P	it Locat	ion				
Elevati	on (m)	535		Logged	l by	BM					44.43	13.00	37.4	Ribbor	1					
										-r	1	W 18	WEST							
		Soil Type			Estim	nated Gr	adation		Lal	b. Grada	tion		Soil Prop	nartias			Samp	oling Infor	mation	
Dept	h (m)	General Soi	Туре	Sı	ums to 100	0%	Additional	Max.	Sı	ums to 100	0%	,	0011 10	Jerties			Dept	h (m)	Tyr	/ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	
1 10111	10	Bescription		1 11100	Cana	Ciavoi	(%)	` ′	1 11100	Cana	Ciavoi	Consistency	1 labiloity	Colour	Wolotaro		110111		Bucket	Bag
0	0.25	TOPSOIL	OL																	
0.25	0.75	SILT	ML																	
0.75	1.0	SILT AND SAND, trace gravel	ML	50	40	10														
1.0	4.0	SAND, trace gravel	SP	5	85	10														
Wate	r Enco	ountered: N	0		Dep	th:		Type:						Notes	•					
Remar	ks													ı						



rea 🧏	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type	9	Cat 322			1	N. Car	17.70		Location	on Notes	3				
roject		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	4										
PS Lo										2000年代制			ne i		170 m	@ 360	degrees	s from	TP-269	
lorthing		6525364		Date			h 2003			,	The State of the S	The Marie	-30							
asting		0578246		Weathe	er	-30 C,	Windy				Same !	CW.	-		it Locat	tion				
levatio	n (m)	541		Logged	by	BM					-		1000	Ribbor	1					
																i k				
		Soil Type			Estim	nated Gr	adation		La	b. Grada	tion		Soil Prop	perties				ling Inform		
Depth	(m)	General Soil	Туре	Sı	ums to 100	0%	Additional	Max.	S	ums to 100)%		-				Dept	h (m)	Ту	•
From	To	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	(Chec	
				ļ			(70)					Consistency							Bucket	Bag
0	0.25	TOPSOIL	OL																	
		SILT AND																		
0.25	1.0	SAND, trace gravel	ML	50	40	10														
1.0	1.5	SAND, trace gravel	SP	5	85	10														
1.5	3.5	CLAY	CL																	
Vater	Fncc	ountered: N	0		Dept	th·		Type:						Notes	<u> </u>					
-atol					БСР			1,700.												
Remark	S																			



Sierra-Yoyo-Desan Road Gravel Investigation Area No. 1 Test Pit No. 273 Cat 322 B Excavator Type Area Sierra-Yoyo-Desan Road **Location Notes** KX04335 Kledo Construction Project Contractor 150 m @ 270 degrees from TP-269 **GPS Location** 6525421 6 March 2003 **Northing** Date Test Pit Location Easting 0578108 Weather -30 C, Windy Ribbon Elevation (m) 543 Logged by BM Soil Type **Estimated Gradation** Lab. Gradation Sampling Information Soil Properties General Soil Type Depth (m) Depth (m) Type Sums to 100% Sums to 100% Additional Max. Oversize (Check one) Density / Description USC* (mm) Plasticity Colour From Fines Sand Gravel Fines Sand Gravel Moisture From To (%) Consistency Bucket Bag **TOPSOIL** 0 0.25 OL CLAY 0.25 2.5 CL Notes Water Encountered: No Depth: Type: Remarks

^{*}Unified soils classification system symbol



Sierra-Yoyo-Desan Road Gravel Investigation Area No. 1 Test Pit No. 274 Excavator Type Cat 322 B Area Sierra-Yoyo-Desan Road **Location Notes** Project KX04335 Kledo Construction Contractor 80 m @ 180 degrees from TP-254 **GPS Location** 6524504 6 March 2003 **Northing** Date Test Pit Location Easting 0578872 Weather -30 C, Windy Ribbon Elevation (m) 540 Logged by BM Soil Type **Estimated Gradation** Lab. Gradation Sampling Information Soil Properties General Soil Type Depth (m) Depth (m) Type Sums to 100% Additional Sums to 100% Max. Oversize (Check one) Density / Description USC* (mm) Plasticity Colour From To Fines Sand Gravel Fines Sand Gravel Moisture From (%) Consistency Bucket Bag **TOPSOIL** 0 0.25 OL SILT 0.25 3.5 ML Notes Water Encountered: No Depth: Type: Remarks



a	m	ec		Sierra	a-Yoy	o-Des	an Roa	d Gra	vel Inv	vestig	ation	Area	No.	<u>1</u>	Tes	st Pit	No.	275		
	Sierra-	Yoyo-Desan Ro KX04335 I 6524408	ad	Excava Contrac	tor Type	6 Marc	Cat 322 Kledo Co		tion						on Notes	@ 115	degrees	s from ⁻	ГР-274	
Easting Elevation		0578993 532		Weather Logged		-30 C, BM	Windy						/	Test P Ribbor	rit Locat	tion				
		Soil Type			Estim	ated Gr	adation		Lab	o. Grada	tion		Cail Daa				Samp	ling Inforn	nation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ums to 100)%	,	Soil Prop	berties			Dept	h (m)	Ту	/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	Max. (mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.25	TOPSOIL	OL																	
0.25	3.0	SILT	ML																	
Water	Enco	ountered: N	0	II	Dept	th:		Type:				II.	I	Notes	5	II.				
Remarl	ks																			

*Unified	soils	classification	system	symbo



75 m @ 115 degrees from TP-274							
Test Pit Location							
Ribbon							
Kibboli							
Soil Properties Sampling Information							
Depth (m) Type							
Density / Plasticity Colour Moisture # From To (Check one)							
Consistency Plasticity Colour Moisture From 10 Bucket Bag							
Notes							

*Unified soils classification system symbo
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rea	Sierra-	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В						Location	n Notes	}				
Project		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	图1				650 r	n @ 90 i	dearee	s and 5	0 m @	360 de	aree
	ocation									650 m @ 90 degrees and 50 m @ 360 degree from B (6523968, 0579187)								g. 00		
lorthin		6523985		Date			h 2003			100	2075	THE REAL PROPERTY.								
asting		0579877		Weathe		-35 C								Test Pit Location						
levatio	on (m)	531		Logged	by	BM				Ribbon										
		Soil Type		Ī	Estim	ated Gr	adation		La	o. Gradat	ion		Coil Dron	ortica			Samp	ling Inforr	nation	
Depth	n (m)	General Soil	Туре	Sums to 100%			Additional		Sı	Sums to 100%		Soil Pro		perties			Dept	h (m)	Туре	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check one)	
		Boodiption	000	100	Gaila	0.0.0	(%)			Garia	0.0.0.	Consistency	· identity	00.00.	.v.o.otaro				Bucket	Ba
0	0.25	TOPSOIL	OL																	
0.25	3.0	SILT	ML																	
Vater	ater Encountered: No Depth:						Туре:							Notes						
Remarl		Juntereu: 14		Туре.																

*Unified	soils	classification	system	symbo



		-Yoyo-Desan Ro	ad		tor Type)	Cat 322					1個是 1	A Tr	Location Notes							
roject		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	医靴 .	110		Mary Vin	820 r	n @ 90	degree	s and 1	5 m @	360 de	gree	
orthing asting		6523952 0580026		Date Weathe		-35 C	h 2003			Test Pit Location											
levatio	on (m)	515		Logged	by	BM								Ribbor	1						
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion		Soil Pror	ortios			Samp	oling Inform	nation		
Depth	n (m)	General Soil	Туре	Sı			Additional	Max.	St	Sums to 100%		Soli Pro		operties			Depth (m)			ре	
From	То	Description	USC*	Fines	Uversize I ,		(mm)	Fines	Sand	Gravel	Density / Consistency Plasticity		y Colour Moisture		#	From	То	(Chec Bucket	k one Ba		
0	0.25	TOPSOIL	OL																		
0.25	3.5	SILT	ML																		
																				-	
Vater	Enco	ountered: N	0	•	Dept	h:		Type:	•					Notes			-	•			

*Unified	soils	classification	system	symbo
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-		Yoyo-Desan Ro	ad	-8	tor Type		Cat 322					1	1	Location	on Notes	,						
roject	cation	KX04335		Contrac	tor		Kledo Co	onstruction							1025 m @ 90 degrees and 5 m @ 180 degrees							
lorthing asting	g	6523953 0580237 529		Date Weathe Logged	er	7 Marc -35 C BM	h 2003			Test Pit Location Ribbon										_		
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion		Cail Draw	- wti			Samp	oling Inforn	nation			
Depth	n (m)	General Soil	Туре	Sums to 100%			Additional	Max.	Sums to 100%		Soil Pro		berlies			Dept	h (m)	Туре				
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Sand Gravel Density / Consistency		Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Ba		
0	0.25	TOPSOIL	OL																			
0.25	0.75	SILT	ML																			
0.75	3.5	CLAY	CL																			
/ater Encountered: No De					Dept	epth: Type:								Notes								
emark	(S																					

	*Unified	soils	classification	system	symb
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Water Encountered: No

Remarks

Depth:

Sierra-Yoyo-Desan Road Excavator Type Cat 322 B **Location Notes** Kledo Construction Project KX04335 Contractor 500 m @ 60 degrees from C (6523477, 0580157) **GPS Location** Northing 6523797 Date 7 March 2003 Weather **Test Pit Location** -35 C Easting 0580559 ВМ Ribbon Elevation (m) 539 Logged by Soil Type **Estimated Gradation** Sampling Information Lab. Gradation Soil Properties General Soil Type Depth (m) Sums to 100% Depth (m) Type Sums to 100% Additional Мах. Oversize (Check one) Density / USC* Description (mm) From Fines Sand Gravel Fines Sand Gravel Plasticity Colour Moisture To То From (%) Consistency Bucket **TOPSOIL** OL 0 0.25 SILT 0.25 3.0 ML

Type:

Sierra-Yoyo-Desan Road Gravel Investigation Area No. 1 Test Pit No. 280

Notes

*Unified	soils	classification	system	symbo



Area	Sierra-	·Yoyo-Desan Ro	ad	Excava	tor Type		Cat 322	В					// 5	Location	on Notes					
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion	大型			1		05 6	9 440 -		f===== T	.D 000	
GPS Lo Northing Easting	g	6523744 0580606		Date Weathe		7 Marc -35 C	h 2003				65	**	d d	Test P	eit Locat		degrees	irom i	P-280	
Elevation		489		Logged		BM				Ribbon										
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Bron	oortios			Samp	oling Inform	nation	
Depth	n (m)	General Soil	Туре	Su	ıms to 100)%	Additional	Max.	Sums to 100%		Soli Prop		operties			Dept	h (m)	Туре		
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.25	TOPSOIL	OL																	
0.25	0.5	SILT	ML																	
0.5	3.0	CLAY	CL																	
																				ı
																				· <u></u>
Water	/ater Encountered: No					Depth: Type:								Notes						
Remarl	ks																			

*Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322	В				No.		Location	on Notes	1				
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion								_		_	
	ocation									+		1	, 影	4	00m @	48 deg	rees fro	om D (r	io signa	I)
Northin		No Reading		Date			h 2003			100	1000	1		Table D	14 I 4					
∃asting ∃levatio				Weathe		-35 C BM				44	330			Ribbor	it Locat	ion				
zievalic	JII (III)			Logged	Бу	DIVI						112		KIDDOI	ı					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Cail Duan				Samp	oling Inform	nation	
Depth	h (m)	General Soi	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%	,	Soil Prop	perties			Dept	h (m)	Туре	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour Moisture		#	From	То	(Check one)	
							(70)					Consistency	,				ļ		Bucket	Bag
0	0.25	TOPSOIL	OL																	
0.25	3.5	SILT	ML																	
Water	Enco	ountered: N	0	II	Dept	th:		Type:	II.			II .	I	Notes		I				

^{*}Unified soils classification system symbol



-		Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322					17811		Location	on Notes					
Project GPS Lo		KX04335		Contrac	ctor		Kledo Co	onstruc	tion		1				200r	m @ 22	28 degre	ees fro	m D	
Northing Easting	g	6523121 0580455		Date Weathe	er	7 Marc -35 C	h 2003			rigi.		200		Test P	it Locat					
Elevatio	on (m)	542		Logged	by	BM								Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	ortice			Samp	ling Inforn	nation	
Depth	n (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%	`	שוויסנו דוטן	ספווופט			Dept	h (m)		/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.25	TOPSOIL	OL																	
0.25	3.0	SILT	ML																	
Water	Enco	ountered: N	0		Dept	:h:		Type:						Notes						

^{*}Unified soils classification system symbol



Area	Sierra	-Yoyo-Desan Ro	ad	Excava	tor Type)	Cat 322			SILE			1	Location	on Notes	;				
Project KX04335			Contractor Kledo Construction					14	Bir Bir											
GPS L	ocation	1									1000	11/2 2/10	生 祖 唐							
Northin	ıg	6523465		Date		7 Marc	h 2003			1										
Easting	7	0580153		Weathe	er	-35 C				1000			3	Test P	it Locat	tion				
		544		Logged		ВМ				1	a heaf	De all	-	Ribbor						
	- ()			33						2025-	ALC: NO.		-							
Soil Type					Estim	ated Gr	adation		Lal	o. Gradat	ion		Cail Duan				Samp	Sampling Information		
Dept	h (m)	General Soi	Туре	Sı	ums to 100)%	Additional		Sı	ıms to 100	1%	,	Soil Prop	perties			Dept	h (m)	Ту	/pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	Max. (mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Chec Bucket	k one) Bag
0	0.25	TOPSOIL	OL																	
0.25	3.0	SILT	ML																	
	r Enco	untered: N	0		Dept	:h:		Type:						Notes	<u> </u>					

nified soils classification system symbol		

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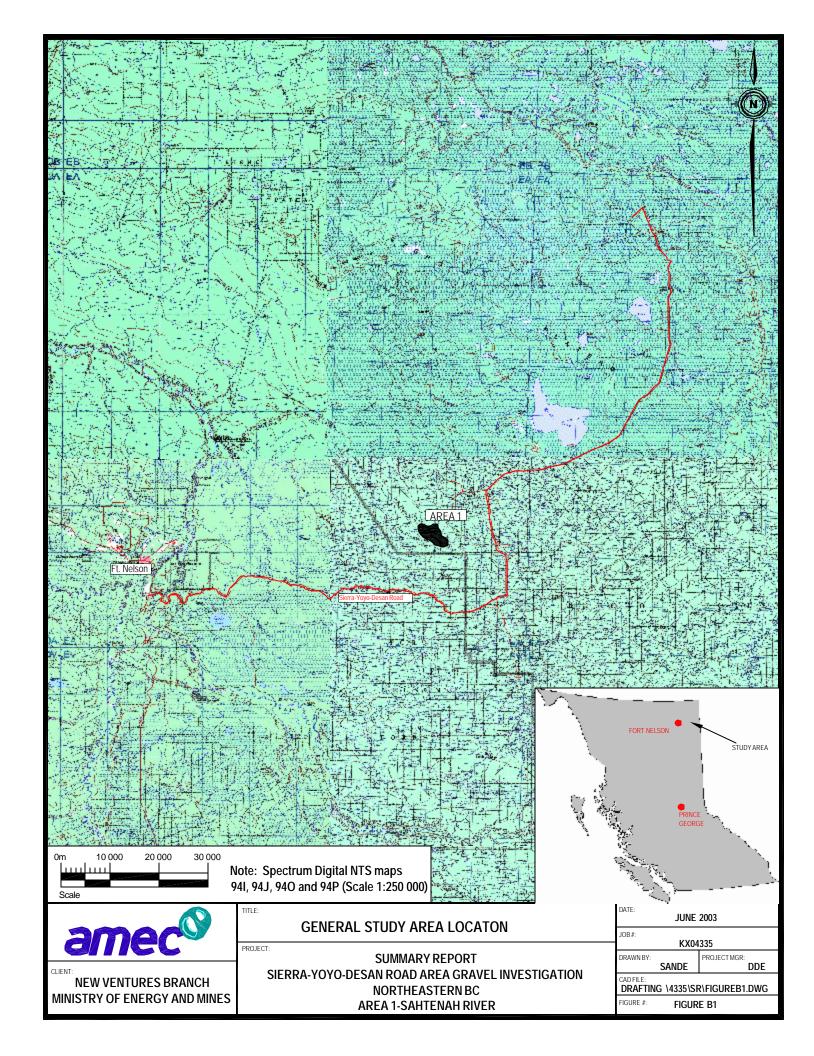
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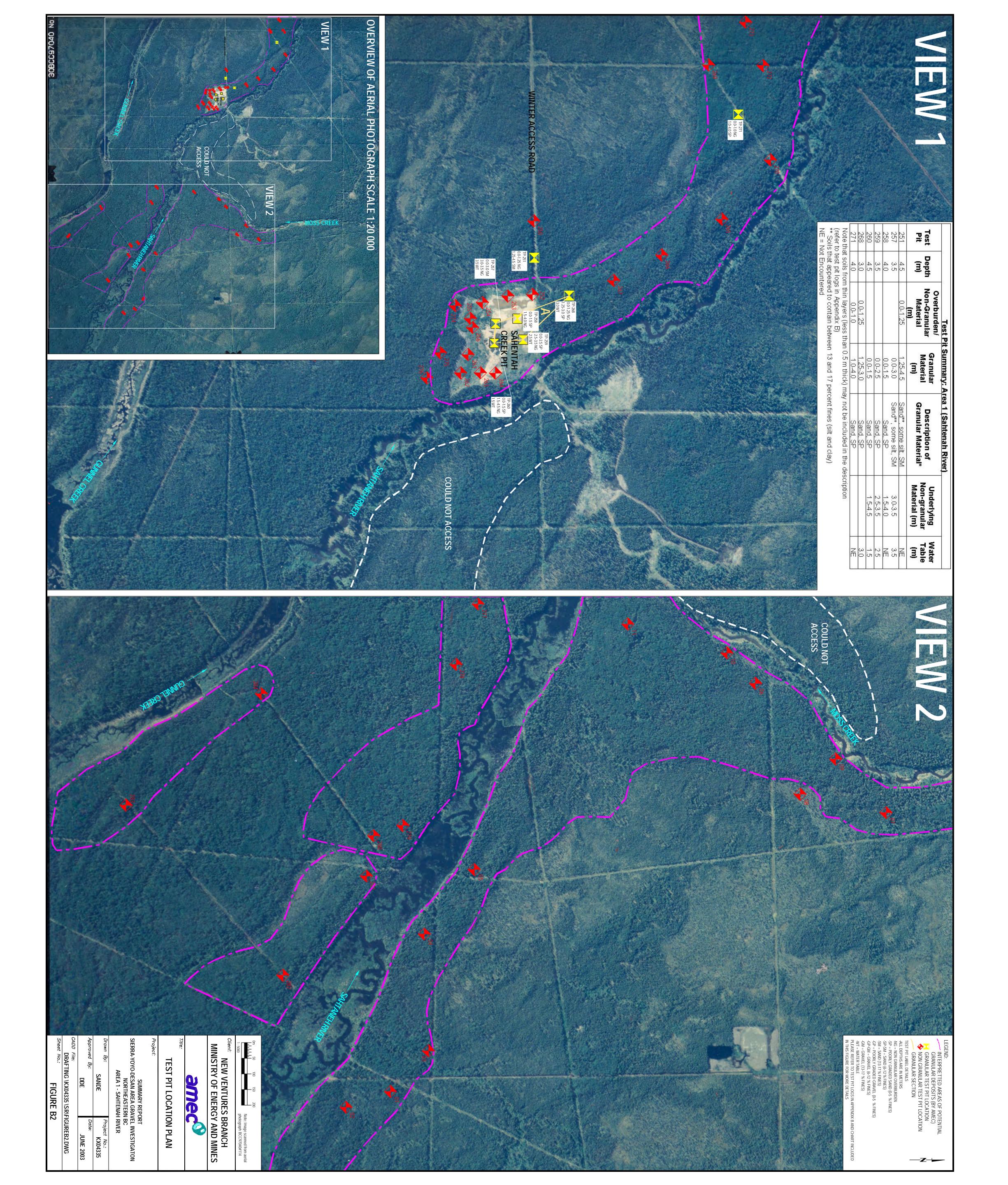
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Water Encountered: Yes Depth: 2.5 Remarks					im	Type: Water Seepage						Notes: moderate									
2.5	3.5	SILT AND CLAY, trace gravel	ML-CL	85	10	5						firm	low	gray- black	wet						
0.6	2.5	SAND AND GRAVEL	SP-SM	12	35	53	10	200	7	47	46	compact	non	brown	moist- sat.	1	1.9	2.4		х	
0.1	0.6	GRAVEL, silty, sandy	GM	22	28	50	5	200				loose	non	brown	damp						
0	0.1	TOPSOIL	OL	100								frozen	non	brown	frozen						
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand Gravel		Density / Consistency		Colour	Moisture	#	From	То	(Check Bucket	one) Bag	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100		Additional	Max.		ums to 100		S	Soil Prop	erties			Dept		Тур		
	- ()	Soil Type				ated Gr			Lo	o. Gradat	ion		E		1		Camp	ling Inforn	a a ti a a		
	•	475	589523 Weather -20C Over 75 Logged by SJ											Test Pit Location Ribbon							
Northing 6519087 Date 28 Feb 2 Easting 0589523 Weather -20C Ov												Tie	line								
	ocation		3	Contrac	ioi		Medo Co	JISH UCHOTI						100m at 350 degrees from southend of plowed							
area Projec		Yoyo-Desan Roa KX04335	a	Excavator Type JD 230 LC Contractor Kledo Construction							in all	Location Notes									

^{*}Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	С		164	4000	世界		Locatio	on Notes					
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	NAME OF		To 1987	并外级							
GPS L	ocation	n WP069	9							46					South a	long t	reeline i	n exist	ng pit	
Vorthi	ng	6518891		Date			28 Feb 2	2003				-	-							
Eastin	g	0589443		Weathe	er		-20C Ov	ercast		COR.	an .			Test P	it Locat	ion				
Elevat	ion (m)	467		Logged	l by		SJ			7			Marine F	Ribbor	า					
										L 3										
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	ortica			Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ıms to 100)%	`	SOII PIOL	berlies			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	(Check	k one)
1 10111	2	Description	5	1 11165	Sanu	Gravei	(%)	()	1 11163	Sailu	Glavei	Consistency	riasticity	Coloui	Worsture		1 10111	10	Bucket	Bag
0	0.3	TOPSOIL, peat, organic	PT	100								soft	non	black	frozen					
0.3	3.2	GRAVEL AND SAND	GP-GM	15	35	50	10	250	11	43	46	compact	non	brown	sat	1	2.0	3.0		х
3.2	4.0	CLAY AND SILT, trace gravel	CL-ML	90	5	5						firm	low- med	gray- black	wet					
Nate	r Enc	ountered: Y	es		Dept	h: 0.1	m	Type:	Water S	Seepage)	•		Notes	: light	to mo	derate			



Area	Sierra-	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	.C		di	1981	1		Locatio	n Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	tion		THE REAL PROPERTY.									
	_ocatior	_)								-	THE WAY		Sc	outh follo	wing 1	treeline	1st sei	smic lin	е
Northi	•	6518692		Date			28 Feb 2													
Eastin	-	0589401		Weathe			-20C Ov	ercast					1		it Locat	ion				
Elevat	ion (m)	461		Logged	by		SJ							Ribbor						
		Soil Type			Estim	ated Gr	adation		Lak	o. Gradat	ion		Soil Prop	ortico			Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ıms to 100)%	`	SOII PTOP	berlies			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Bag
0	0.3	TOPSOIL, organic, peat	PT	100								soft	non	black	frozen					
0.3	2.6*	GRAVEL, some silt, sandy	GM	18	30	52	5	150				compact	non	brown	sat					
2.6*	3.0*	CLAY AND SILT, trace gravel	CL-ML	90	5	5						firm	low	brown	wet					
Wate	er Ence	ountered: Y	es		Dept	th: 1.8	sm	Type:	Water S	Seepage)			Notes	: mode	erate	to heav	/y		

Remarks

^{*} Estimate difficult due to water table

^{*}Unified soils classification system symbol



Area	Sierra-\	∕oyo-Desan Roa	d	Excava	tor Type	;	JD 230 L	C		1		一年 1	(b)	Locatio	n Notes	·				
Projec	et	KX04335		Contrac	ctor		Kledo Co	onstruct	tion			-	-20							
GPS L	ocation	wP07	1				-		_	1	38 38	-	. 2	180	0m sout	h alon	g 1st se	ismic li	ine 180	m
Northi	ng	6518491		Date			28 Feb 2	2003		M y			- 3							
Eastin	g	0589391		Weathe	er		-20C Ov	ercast			To the	A Committee	1	Test P	it Locat	ion				
Elevat	ion (m)	460		Logged	l by		SJ			713	Sta To		The same	Ribbor	1					
										1118					1	<u> </u>				
		Soil Type				ated Gr	adation			o. Gradat			Soil Prop	erties				ling Inforn		
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ıms to 100)%						Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	
							(70)					Consistency							Bucket	Bag
0	0.3	TOPSOIL, organic, peat	PT	100								frozen	non	black	moist					
0.3	1.0	SAND, silty (clayey), trace gravel	SM	20	70	10						compact	non	brown	sat					
1.0	2.0	SAND, trace silt, trace gravel	SP-SM	10	80	10						compact	non	brown	sat					
Wate	r Enc	ountered: Y	es		Dept	th: 1.1	m	Туре:	Water S	Seepage)			Notes	: heav	у				

Remarks

0.8m of ice at ground surface

^{*}Unified soils classification system symbol



Area	Sierra-\	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	_C		-			1	Locatio	n Notes	1				
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruc	tion	* * *		操作	《	Fact	-West ru	ınnino	ı caicmi	c line c	ut of lo	wor
GPS L	_ocation	1								100		A STATE OF			n of JL F					
Northi	ng	6518781		Date			28 Feb 2	2003		1000		1		portio	11 01 3	11 ~ 10	oni La	St Of Cit	SEK CIO	SSIIIG
Eastin	g	0589673		Weathe	er		-20C Sur	nny		VAC	1			Test P	it Locat	ion				
Elevat	ion (m)	459		Logged	by		SJ			NAME		1 3		Ribbor	1					
										PA Page		BE OF STREET	4 19							
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	oerties			Samp	ling Inforr	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ıms to 100	1%		JOII 1 TOP	Jei lies			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.3	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.3	3.0	CLAY, silty, some sand	CI	70	25	5						firm	med	brown	wet					
3.0	3.8	CLAY, trace gravel (till)	CL	90	5	5						firm	low	gray	wet					
Wate	r Enc	ountered: Y	es	II	Dept	th: 2.7	'm	Type:	Water S	Seepage		II .	I	Notes	: slow	trickle	9			1



Δrea	Sierra-	Yoyo-Desan Roa	d	Excava	tor Type	2	JD 230 L	C			13	1 amore	N	Locatio	on Notes					
Projec		KX04335		Contrac		•	Kledo Co		tion	A Late				Locatio	JII NOLES	•				
	ocation		3	Contrac	2101		Nicuo Ot	JI ISTI GO	lion					N	lorth Soi	uth sei	ismic lin	e East	of TP-6	3
Northi		6518789	•	Date			28 Feb 2	2003		120	10		2							
Eastin	•	0589861		Weathe	ar.		-20C Sur			100		-		Test P	it Locat	ion				
	ion (m)	-		Logged			SJ							Ribbor						
Liovat		100		Loggod						- N				11,000	•					
		Soil Type			Estim	ated Gr	adation		Lat	o. Gradat	ion						Samp	ling Inforr	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100		Additional			ıms to 100			Soil Prop	perties				h (m)	Тур	ре
	_	Daganinti	1100*				Oversize	Max. (mm)				Density /	D			#	_	_	(Checl	k one)
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(111111)	Fines	Sand	Gravel	Consistency	Plasticity	Colour	Moisture		From	То	Bucket	Bag
0	0.1	TOPSOIL, organic	OL	100								frozen	non	black	frozen					
0.1	0.8	SAND, silty, trace gravel	SM	35	60	5						compact	non	brown	moist					
0.8	1.6	SAND, gravelly, trace silt	SP-SM	8	62	30						loose - compact	non	brown	moist					
1.6	2.7	SAND, trace gravel, some silt	SP-SM	12	83	5						compact	non	brown	wet					
2.7	3.6	CLAY (till)	CL	90	5	5						firm	low	gray	moist					
Wate	er Enc	ountered: N	0		Dept	th:		Туре:						Notes	5:					
Rema	rks													<u> </u>						

*Unified soils classification s	ystem s	ymbol
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Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	_C			Size.	1		Location	on Notes					
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	4			A CO							
	ocatio.	_	4								NE NE		100	East	: West se	eismic	line ~1	50m Ea	ast of T	P-6
Northi	ng	6518780		Date			28 Feb 2			100			1 49							
Eastin	g	0590067		Weathe	er		-20C Sui	nny			= 6	100			it Locat	ion				
Elevat	ion (m)	460		Logged	l by		SJ			- b	27		Will be	Ribbor	า					
										7/3		de V								
		Soil Type			Estim	ated Gr	adation		Lal	b. Gradat	tion	9	Soil Prop	erties				ling Inform		
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%	•			1		Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	
		'					(70)					Consistency							Bucket	Bag
0	0.1	TOPSOIL,	OL	100								frozen	non	black	damp					
		organic													•					
		CLAY, some																		
0.1	3.0	sand, trace	CI	80	15	5	5	150				firm	med	brown	moist					
		gravel																		
0.0	0.0	CLAY, trace	OI.	00	_	_	_	450				<i>t</i> :								
3.0	3.8	gravel (till)	CL	90	5	5	5	150				firm	low	gray	moist					
Wate	r Enc	ountered: N	0		Dept	th:		Type:						Notes	5 :					
Rema	rks																			

^{*}Unified soils classification system symbol



Area	Sierra-\	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	_C						Locatio	n Notes	;				
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	1	15 To 1	ed and	4	~150	m Sout	h alono	n 1st No	orth/So	uth seis	smic
_	ocation.		5							700		A		100	m Coun	ii along	line	J. (1.1, OO	ati 1 0010	,,,,,
Vorthi	_	6518621		Date			28 Feb 2					1					0			
Eastin	-	0589853		Weathe			-20C Sui	nny			16.60	450	A SE		it Locat	tion				
Elevat	ion (m)	460		Logged	l by		SJ					一个光丸		Ribbor	1					
									ī	-1875	<i>X</i>	7.0			1	ı .				
		Soil Type		 	Estim	ated Gr	adation		Lal	b. Grada	tion		Soil Prop	erties				ling Inforn		
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%		'				Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	<u> </u>
				 			(,0)					Consistency							Bucket	Bag
0	0.3	TOPSOIL, organic	OL	100								frozen	non	black	damp					
0.3	3.2	CLAY, some sand	CI	70	25	5						firm	med	brown	wet					
3.2	3.7	CLAY, trace gravel (till)	CL	85	5	10						firm	low	gray	wet					
Wate	r Enc	ountered: Y	es		Dept	h: 3.2	2m	Type:	Water S	Seepage)			Notes	: slow					



Area	Sierra-\	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L						THE STATE OF THE S	Locatio	n Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	tion			-								
	ocation	_	6								13.3		NO THE	~200	m North	along	North/	South s	seismic	line
Northir	•	6518983		Date			28 Feb 2			1		-								
Easting	-	0589857		Weathe			-20C Sui	nny				£15.00			it Locat	ion				
Elevati	ion (m)	464		Logged	by		SJ				gar.	la l	-	Ribbor	1					
								1					- Beachti		1					
-		Soil Type	_	 		ated Gr	adation			o. Gradat		5	Soil Prop	erties				ling Inforn		
Deb.	th (m)	General Soil	туре	Sı	ums to 100)%	Additional Oversize	Max.	St	ums to 100)%					#	Deptl	n (m)	Typ (Check	
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	Bucket	Bag
0	0.1	TOPSOIL, organic	OL	100								frozen	non	brown	damp					
0.1	3.6	CLAY, some sand, trace gravel	CI	65	25	10	5	250				firm	med	brown	moist					
Wate	r Enc	ountered: N	О	и	Dept	h:		Type:				I.		Notes): :				<u> </u>	
Remar	rks																			



Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	_C		民意			1 5	Locatio	on Notes	;				
Projec		KX04335		Contrac	ctor		Kledo Co	onstruc	tion		- The Contract of the Contract		-	North	along N	Jorth/S	South se	eismic	line tow	ards
	.ocatio		7							DEEL		6 1 68	-	140111	i along i		creek	21311110	iii ic tow	aras
Northi	ng	6519411		Date			28 Feb 2			-	-		200				Orccit			
Eastin	-	0589876		Weathe	er		-15C Su	nny					100		it Locat	tion				
Elevat	ion (m)	468		Logged	l by		SJ							Ribbor	1					
		Soil Type		1	Estim	ated Gr	adation		Lat	o. Gradat	ion						Samp	ling Inforr	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ıms to 100)%		Soil Prop	perties			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	Max. (mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	
0	1.1	SILT, some	ML	77	18	5	(**)					loose-	low	brown	damp				Bucket	Bag
1.1	3.7	SILT AND CLAY, some	CL-ML	70	20	10						firm	low	brown	moist					
3.7	3.8	CLAY, trace gravel (till)	CL	90	5	5						firm - hard	low	gray	moist					
Wate	r Enc	ountered: N	о		Dept	th:		Type:						Notes	<u> </u>					

^{*}Unified soils classification system symbol



Wate Remai		ountered: No)		Dept	th:		Type:							· -					
	_				_	_								Notes	<u> </u>					
2.2	3.0	CLAY (till)	CL	85	5	10						firm	low	gray	wet					
0.2	2.2	CLAY, sandy	CI	60	30	10	10	250				firm	med	brown	moist- wet moist-					
0	0.2	TOPSOIL, organic	OL	100								frozen	non	black	damp					
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Ba
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ıms to 100)%		Soil Prop	erties			Depti		Тур	
		Soil Type		Ì	Estim	ated Gr	adation		Lal	o. Gradat	ion				1		Samp	ling Inforn	nation	_
=levat	ion (m)	462		Logged	l by		SJ			7		AL-WAR		Ribbor)					
Eastin	_	0589531		Weathe			-20C Sui	nny			San.		LUE		it Locat	ion				
Northi		6519278	J	Date			28 Feb 2	2003		1							. 0114 01	40000		
Projec GPS I	ι .ocation	KX04335 NP078	R	Contrac	CTOF		Kledo Co	onstruc	lion						~30m N	orth o	f end of	acces	s road	
			iu			;			·:					Locatio	n Notes					
roa	Siorra \	∕oyo-Desan Roa	d	Evenue	tor Type		JD 230 L	\cap		ACT OF THE REAL PROPERTY.	St. 511	OF STREET, STR		1	m Nates					



yo-Desan Roa (X04335 WP086 (518876 (5589675 (25) Goil Type General Soil	080 Soil Type	Excavate Contract Date Weather Logged	er by Estim		JD 230 L Kledo Co 01 Mar 2 -25C Ove SJ	onstruct	tion				AT		on Notes	90m N	lorth of	TP-5		
518876 1589675 125 Soil Type General Soil	Soil Type	Weathe Logged	by Estim		-25C Ove						1	Test P			lorth of	TP-5		
589675 225 Soil Type General Soil		Weathe Logged	by Estim		-25C Ove						-	Test P	it Locat	tion				
Soil Type General Soil		Logged	by Estim		SJ	ercast			SA ST			Test P	it Locat	ion				
Soil Type General Soil			Estim					BIA CO			45.00	•	5541	•				
General Soil		Sı		ated Gr					A 10 10	E	Et a	Ribbor	1					
General Soil		Sı		ated Gr					200	136	小麦河							
		Su	400	iatoa Cit	adation		Lal	b. Gradat	tion	. ا	Soil Prop	erties				ling Inform		
Description			ums to 100)%	Additional	Max.	St	ums to 100	0%						Dept	h (m)	Тур	
_ 0001.puon	n USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	
					(7-7)					Consistency							Bucket	Bag
TOPSOIL, organic	, OL	100								frozen	non	black	frozen					
CLAY, some sand	ne CI	65	25	10						soft-firm	med	brown	moist					
CLAY	CL	90	5	5						firm	low	gray	moist					
	Yes		Dept	th: 2.7	'm	Type:	Water S	Seepage				Notes	: slow					
	tered:	tered: Yes	tered: Yes	tered: Yes Dep	tered: Yes Depth: 2.7	tered: Yes Depth: 2.7m	tered: Yes Depth: 2.7m Type:	tered: Yes Depth: 2.7m Type: Water S	tered: Yes Depth: 2.7m Type: Water Seepage Notes	tered: Yes Depth: 2.7m Type: Water Seepage Notes: slow	tered: Yes Depth: 2.7m Type: Water Seepage Notes: slow	tered: Yes Depth: 2.7m Type: Water Seepage Notes: slow	tered: Yes Depth: 2.7m Type: Water Seepage Notes: slow	tered: Yes Depth: 2.7m Type: Water Seepage Notes: slow				

411 1	••			
*I Initiad	COILC	classification	cvetam	cymha
OHIIIIGU	SUIIS	Ciassilication	SVSLEIII	SVIIIDO



Area	Sierra-\	∕oyo-Desan Roa	d	Excava	tor Type)	JD 230 l	C					7	Locatio	n Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruc	tion			100		~30r	n West o	of 2nd	North/S	South s	eismic l	lime
	_ocatior		1										4.55	- 001	11 77001		thern ric		Ciornio	
Northi	•	6518488		Date			01 Mar 2					F 3/10	- 1					.go		
Eastin		0589292		Weathe			-15C Ov	ercast							it Locat	ion				
Elevat	ion (m)	532		Logged	by		SJ			-		A Said		Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion	19					Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100		Additional		Sı	ıms to 100)%		Soil Prop	perties			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	k one)
1 10111	10	·	030	Tilles	Sand	Graver	(%)	()	1 11165	Sanu	Glavei	Consistency	Flasticity	Coloui	Moisture		110111	10	Bucket	Bag
0	0.3	TOPSOIL, organic	IL, OI 100								frozen	non	black	frozen						
0.3	0.8	CLAY, sandy	CI-MI	65	25	10						soft-firm	med	brown	moist					
0.8	3.0	GRAVEL, some clay, sandy	GM	15	30	55						compact	non	brown	wet - sat					
3.0	CLAY AND										firm	med	gray- black	wet						
Wate	er Enco	ountered: Y	es	u	Dept	h: 1.9	m	Type:	Water S	Seepage)	ш		Notes	: mode	erate			•	



Aroa	Sierra-	Yoyo-Desan Roa	d	Excava	tor Type		JD 230 L	C		1. 4	\$4076	A LINE	F 1585	Locatio	on Notes					
		KX04335	u	Contrac		,	Kledo Co		ion	White Wa	A STATE OF		A STATE OF	Locatio	notes	•				
Projec	cτ ₋ocation)	Contrac	JUI		Niedo Co	JIISHUCI	11011		200	-	as to Blog.		140m (v	voet) 2	OO doa	roos of	Tn-13	
			<u> </u>	Doto			01 Mar 2	000		-	1	The same			140111 (vesi) 2	.so degi	ees oi	1p-13	
Northi	J	6518550		Date	_								3	Tast D	it Locat					
Eastin	-	0589157		Weathe			-25C Ov	ercast		1.2	2					ion				
Elevat	ion (m)	535		Logged	ру		SJ					1/6		Ribbor	1					
				ii						6755	Part In				1	_	_			
<u> </u>		Soil Type				ated Gr	adation			o. Gradat	_		Soil Prop	erties				ling Inforn		
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ims to 100)%						Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	
							(70)					Consistency							Bucket	Bag
		TOPSOIL,	, I II																	1
0	1.0	organic, peat,	PT	100								frozen	non	black	frozen					1
		odor																		
		GRAVEL.																		
1.0	2.0	some clay/silt,	GM	15	30	55						compact	non	brown	sat					
1.0	2.0	sandy	Olvi	13	30	33						Compact	11011	DIOWII	Sat					
		Garray																		<u> </u>
																				1
																				<u> </u>
																				1
																				<u> </u>
														Notes	: mode	erate t	to heav	y, wat	er dep	th
Wate	r Enc	ountered: Ye		Dept	h: 1.5	im	Type:	Water S	Seepage)				oly high			-	-		
		-					••		. 3				- 55512		, -	- J, D		. 5 . 5 6		

Remarks

0.2m of ice at ground surface above topsoil

Beaver dam to west

^{*}Unified soils classification system symbol



Wate Rema		ountered: Y	im	Type:	Water S	Seepage	;			110103		nato t	o noav	y						
														Notes	: mode	erate t	o heav	/V		
		sandy		GM 15 30 55								non								
0.4	2.0	GRAVEL, some silt/clay,	GM	15	30	55				frozen				brown	sat					
0	0.4	SILT AND SAND	SP	40	50	10						frozen	non	brown	frozen					
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	cone) Bag
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Su	ıms to 100)%		Soil Prop	perties			Dept	h (m)	Тур	
		Soil Type		Ī	Estim	ated Gr	adation		Lak	o. Gradat		,	D-11 D	ti			Samp	ling Inform	nation	
⊏ievai	tion (m)	536		Logged	Бу		SJ			45	Mary			KIDDUI						
Eastin	•	0589299		Weathe			-25C Ov	ercast						Test P Ribbon	it Locat	ion				
Northi	-	6518645		Date			01 Mar 2				-0		100	Ů			TIOTUTE	ii iiuge	belule	pit)
-	_ocatior		3	Contrac)(O)		Tricao Or	Jiiotiao			达到 带				seismic ees into	•		•		
Projec		KX04335	-	Contrac			Kledo Co		tion		5-8									
Area	Sierra-\	∕oyo-Desan Roa	d	Excava	tor Type	,	JD 230 L	C		1200年		一位是		Locatio	n Notes					

*Unified soils classification system symbol

Sloughing in



Area	Sierra-	∕oyo-Desan Roa	d	Excava	tor Type)	JD 230 L	.C		MALE		A P		Locatio	n Notes					
Projec		KX04335		Contrac	tor		Kledo Co	nstruct	tion		de licolar									
	_ocatior		4							and the same			Assure a final a		Southw	est co	rner of	Jim Lit	tle pit	
Northi	-	6518716		Date			01 Mar 2			-4	1 1/2		-							
Eastin	-	0589228		Weathe			-25C Ov	ercast		,		Tal second			it Locat	ion				
Elevat	tion (m)	538		Logged	by		SJ						13	Ribbor	1					
		0 !! =		li e				1				- 2.34			11		_			
		Soil Type				ated Gr	adation			b. Gradat		5	Soil Prop	erties			. ——	ling Inforn		
Dep	oth (m)	General Soil	Туре	Su	ıms to 100)%	Additional Oversize	Max.	St	ums to 100)%					#	Deptl	n (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	Bag
												,							Bucket	Dag
0	0.3	TOPSOIL, organic, peat	PT	100								frozen	non	black	non					
0.3	2.0*	GRAVEL AND SAND, some clay	GM	15	35	50						loose	non	brown	sat					
2.0*	2.5	CLAY AND SILT	CL-ML	90	5	5						firm	low	gray - black	wet					
														Notes	: lots o	of wate	ar haa	\/\/		
Wate		ountered: Y	es		Dept	th: 1.0)m	Type:	Water S	Seepage)			140163	. 1015 0	n wall	oi, iiea	v y		

R	eı	m	а	r	k	S
---	----	---	---	---	---	---

Sloughing in

*Estimate

^{*}Unified soils classification system symbol



Area	Sierra-\	Yoyo-Desan Roa	d	Excava	tor Type		JD 230 L	C		DIEM!		建 出 通	OF I	Locatio	n Notes					
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	tion			THE STATE OF THE S		~10	00m wes	st alon	n east/v	vest se	ismic li	ne
	ocation.		5								74 M			10			st portic			ic
Northir	-	6518747		Date			01 Mar 2						A SE				or portio),, o, b,		
Eastin	-	0589084		Weathe			-25C Ov	ercast,s	snow	-	100				it Locat	ion				
Elevati	ion (m)	538		Logged	by		SJ			-			7	Ribbor						
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	ortico			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100	1%	Additional	Max.	Sı	ıms to 100)%	,	SOII PIO	perties			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	
0	0.7 TOPSOIL, organic, peat PT			100			(/-/					frozen	non	black	frozen				Bucket	Bag
0.7	3.8	CLAY AND SILT, some sand, trace gravel	CI-MI	80	15	5	3	150				firm	med	brown- gray	wet					
																	-			
Wate	r Enc	ountered: Y	es		Dept	h: 0.1	m	Type:	Water S	Seepage)			Notes	: slow	to mo	derate			



Area	Sierra-	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	_C		100	TO THE	A LANGE		Location	on Notes	i				
Projec	ct -ocation	KX04335 NP086	2	Contrac	ctor		Kledo Co	onstruct	tion			The state of	No.	200	m from T	TD 17	(20m w	oct to t	ho nino	lino)
Northin		6518743	5	Date			01 Mar 2	0003		of Allin		See 1	-	~200	111 110111	16-17	(SUIII W	621 10 1	ile bibe	illile)
	-	0588813		Weathe					20044	100		-		Toct D	it Locat	ion				
Eastin	-						-25C Ov	ercasi,s	SHOW			-0.	100	Ribbor		.1011				
Elevat	ion (m)	540		Logged	ру		SJ						4	RIDDOI	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	ortics			Samp	ling Inforr	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ums to 100)%	· ·		Jei iies			Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Bag
0	0.3	TOPSOIL										soft	non	black	moist					- 3
0.3	3.0	SAND, clayey	SM	30	60	10						firm	low- med	brown	wet-sat					
Wate	er Enc	ountered: Y		Dept	h: 1.5	im	Type:	Water S	Seepage	;	I.		Notes	:						

K	en	ıaı	KS	

Sloughing in



Area	Sierra-\	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L			1		11111	A	Locatio	on Notes					
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	1.1	N. HAR	1 1								
GPS L	ocation.	n WP087	7								9			Northe	ast seisi	mic lin	e east t	owards	s Jim Li	ttle pi
Northir	ng	6518825		Date			01 Mar 2	2003												
Easting	g	0589107		Weathe	er		-25C Lig	ht snov	V					Test P	it Locat	ion				
Elevati	ion (m)	547		Logged	by		SJ					起物		Ribbor	1					
										10			1							
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	arties			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Su	ums to 100	1%	Additional	Max.	Sı	ıms to 100)%	`		JOI 1163			Dept	h (m)	Тур	эе
From	To	Description	USC*	Fines	Sand	Gravel	Oversize	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	(one)
		Doddingilon			Garia	0.0.0.	(%)				0.0.0.	Consistency	· idotiony	00.00.	o.o.a.o			. •	Bucket	Bag
0	0.4	TOPSOIL, organic, peat	PT	100								soft	non	black	moist					
0.4	2.2	SAND, clayey, trace gravel	SM	30	60	10						compact	low	brown	wet					
2.3	3.6	CLAY AND SILT	CL-ML	90	5	5						firm	low- med	brown	wet					
Wate	r Enc	ountered: Y	es		Dept	:h: 0.1	m	Туре:	Water S	Seepage)			Notes	s: mode	erate				

*Unified soils classification system symbol	ol
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Area	Sierra-\	∕oyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	.C		BL.	1,8		4.	Locatio	on Notes	3			•	
Projec	ct	KX04335		Contrac	ctor		Kledo Co	nstruct	tion		5-1	是正在在	- Marie	North	east seis	emic lii	10rء م	m from	lim Litt	la nit
GPS L	ocation_	wP089	9								ALC IE	10 TOTAL CO	3	NOILI	casi sci	Siliic iii	edge	11 110111	JIIII LILL	ie pit
Northi	ng	6518910		Date			01 Mar 2	003			DE NO	VIII S	A				euge			
Eastin	g	0589226		Weathe	er		-20C Lig	ht Snov	V	15 C.	The state of	- CA	The said	Test P	it Locat	tion				
Elevat	ion (m)	556		Logged	by		SJ						di d	Ribbor	1					
												地 港區	- Na							
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion		Soil Prop	ortios			Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	N4=	Sı	ums to 100)%	,	3011 F10E	refiles			Dept	h (m)	Тур	pe
From	To	Description	IISC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	(one)
1 10111	To Description USC* Fines			111103	Janu	Olavei	(%)	(******)	1 11103	Sand	Olavei	Consistency	1 lasticity	Colodi	Worsture		110111	10	Bucket	Bag
0	0.2 TOPSOIL, organic OL			100								frozen	non	black	frozen					
0.2	0.5	SAND, some silt	SP-SM	12	78	10						compact	non	brown	wet					
0.5	1 05 1 ISP-SMII 12 1 78 1 10 1							7	76	17	compact	non	brown	sat	1	1.0	1.5		х	
Wate	er Enco	ountered: Y	es	1	Dept	th: 0.8	3m	Type:	Water S	Seepage)	u.		Notes	: mode	erate t	o heav	/y		

*Estimate too much water



Area Sierra-Yoyo-Desan Road Exca					Excavator Type JD 230 LC						Location Notes													
-								onstruction																
GPS Location WP090										~40m North along west pit edge from northeas														
					Date 01 Mar 2003							seismic line												
				Weather -20C Overcast							400			Test P	it Locat	ion								
Eleva					by		SJ			-14	-	-		Ribbor	1									
												and the second												
Soil Type					Estim	ated Gr	adation		Lab. Gradation			Soil Properties				Sampling Information								
Depth (m) General Soil Type			Sums to 100%		Additional	Max.	Sums to 100%			,	3011 10p	50.1.00			Depth (m)		- ''	Туре						
From	То	Description	iption USC*		Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check one)					
							(70)					Consistency							Bucket	Bag				
0	0.1	TOPSOIL, organic	OL	100								frozen	non	black	frozen									
0.1	0.3	SILT	ML	90	10							loose	low	brown	damp									
0.3	2.8	SAND, gravelly	SP	10	50	40			5	61	34	compact	non	brown	moist- wet	1	2.2	2.7		х				
2.8	3.0	CLAY AND SILT	CL-ML	90	5	5						firm	low	gray	wet									
Wate	er Enco	ountered: Y	es		Depth: 1.8m				oe: Water Seepage						Notes: moderate									



Area Sierra-Yoyo-Desan Road Exca					ator Type JD 230 LC Location Notes																		
•				Contrac	ctor		Kledo Co	onstruction															
	GPS Location WP091											~100m west edge of Jim Little pit											
	Northing <u>6519117</u>						01 Mar 2	A CASTALLIAN CONTRACTOR OF THE SECOND															
					Weather -20C Overo						y 3			Test Pit Location									
Elevat	levation (m) 559				l by		SJ			-				Ribbor	1								
										4.5	The state of	40	23		1	_							
		Soil Type	 	Estimated Gradation					ab. Gradation		Soil Properties						ling Inforn						
Dep	Depth (m) General Soil Type			Sums to 100%		Additional Oversize	Max.	St	ums to 100)%					#	Deptl	n (m)	Type (Check one)					
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity Co	Colour	Moisture	#	From	То	Bucket	Bag			
				 	-		` '												Ducket	Бау			
0	0.1	TOPSOIL, organic	OL	100								frozen	non	black	frozen								
0.1	0.4	SAND, silty	SM	20	75	5						loose	non	brown	moist								
0.4	1.9	SAND AND GRAVEL	SP-SM	8	48	47	5	250				compact	non	brown	wet-sat								
1.9	2.8	CLAY AND SILT	CL-ML	90	5	5						firm	low	gray- black	wet								
														Notes	: mod	arate							
Wate	r Enc	ountered: Y	'es		Dep	th: 1.4	lm	Type:	Water S	Seepage)			Notes: moderate									
Wate Rema		ountered: Y	'es		Dep	th: 1.4	łm	Туре:	Water S	Seepage	•			Notes	s: mode	erate							



ra-Yoyo-Desan Ro	92	Contract Date Weathe	er I by		JD 230 L Kledo Co 01 Mar 2 -20C Ov SJ	onstruct	tion			1		~70m a	on Notes along we	est edç	ge of Jin	n Little	pit (pip	eline							
6519205 0589189 557 Soil Type General So		Weathe Logged	l by		01 Mar 2 -20C Ov	.003				1			along we		ge of Jin	n Little	pit (pip	eline							
0589189 557 Soil Type General So	oil Type	Weathe Logged	l by		-20C Ov																				
Soil Type General So	bil Type	Logged	l by			ercast																			
Soil Type General So	oil Type				SJ				ercast							Test Pit Location									
General So	oil Type		Fstim					Sale.	THE REAL PROPERTY.	No.	Ribbon														
	oil Type		Estimated Gradation				Lak	o. Gradat	tion	Soil Properties					nation										
Description		Sums to 100%			Additional	Max.	Su	Sums to 100%			soli Prop	reities			Depth			ре							
	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket								
TOPSOIL, organic	OL	100								soft	non	black	damp				Bucket	Bag							
GRAVEL AND	GP-GM	8	35	57	10	300				compact	non	brown	moist												
SAND, clayey trace gravel	', SM	30	60	10						compact	non	brown	moist												
6 CLAY	CL	90	5	5						firm	low	gray	moist												
ncountered:	Yes	Depth: 2.6m				Type:	Water S	Seepage)			Notes: slow													
6	GRAVEL AND SAND SAND, clayey trace gravel CLAY	GRAVEL AND SAND GP-GM SAND, clayey, trace gravel SM	GRAVEL AND SAND GP-GM 8 SAND, clayey, trace gravel SM 30 CLAY CL 90	GRAVEL AND SAND GP-GM 8 35 SAND, clayey, trace gravel SM 30 60 CLAY CL 90 5	GRAVEL AND SAND GP-GM 8 35 57 SAND, clayey, trace gravel SM 30 60 10 CLAY CL 90 5 5	GRAVEL AND SAND GP-GM 8 35 57 10 SAND, clayey, trace gravel SM 30 60 10 CLAY CL 90 5 5	GRAVEL AND SAND GP-GM 8 35 57 10 300 SAND, clayey, trace gravel SM 30 60 10 CLAY CL 90 5 5	GRAVEL AND SAND GP-GM 8 35 57 10 300 SAND, clayey, trace gravel SM 30 60 10 CLAY CL 90 5 5	GRAVEL AND SAND GP-GM 8 35 57 10 300 SAND, clayey, trace gravel SM 30 60 10 CLAY CL 90 5 5	GRAVEL AND SAND GP-GM 8 35 57 10 300 SAND, clayey, trace gravel SM 30 60 10 CLAY CL 90 5 5	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact SAND, clayey, trace gravel SM 30 60 10 compact CLAY CL 90 5 5 firm	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non SAND, clayey, trace gravel SM 30 60 10 compact non CLAY CL 90 5 5 firm low	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non brown SAND, clayey, trace gravel SM 30 60 10 compact non brown CLAY CL 90 5 5 firm low gray	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non brown moist SAND, clayey, trace gravel SM 30 60 10 compact non brown moist CLAY CL 90 5 5 firm low gray moist	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non brown moist SAND, clayey, trace gravel SM 30 60 10 compact non brown moist CLAY CL 90 5 5 firm low gray moist	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non brown moist sand strategy of trace gravel SM 30 60 10 compact non brown moist sand strategy of the sand str	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non brown moist sand strategy of trace gravel SM 30 60 10 compact non brown moist sand strategy of the strategy o	GRAVEL AND SAND GP-GM 8 35 57 10 300 compact non brown moist compact non brown moist compact non brown moist firm low gray moist Notes: slow							



Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	C					W	Location	on Notes					
Projec	t .ocatio	KX04335 n WP09	2	Contrac	ctor		Kledo Co	onstruct	tion		10	1		Acros	s pipelin	e Metla	adoa Ci	reek pi	t interse	ction
Northir		6519488	J	Date			01 Mar 2										east sei	smic li	ne	
Easting	•	0589360		Weathe			-15C Ov	ercast				- 社会			it Locat	ion				
Elevati	ion (m)	568		Logged	by		SJ							Ribbor	1					
		Soil Type		Ì	Estim	ated Gr	adation		Lak	o. Gradat	tion		Soil Prop	ortico			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Su	ums to 100)%	,		Der lies			Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Bag
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.1	3.5	SILT AND CLAY, trace gravel	ML-CL	80	10	10						firm	low	brown	damp					
3.5	3.6	CLAY (till)	CL	90	5	5						firm	low	gray	damp					
Wate	r Enc	ountered: N	o		Dept	th:		Туре:						Notes	 :					
Remai	rks	_																		



Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type	;	JD 230 L	_C		1/2				Locatio	n Notes					
Projec	ct Locatio	KX04335 n WP09	1	Contrac	ctor		Kledo Co	onstruct	tion	11					n north o		-			
Northi Eastin	ng	6519641 0589389		Date Weathe	er		01 Mar 2 -15C Ov								eismic li it Locat		urber (2	2001) p	it to the	eas
Elevat	ion (m)	572		Logged	by		SJ				1			Ribbor	1					
		Soil Type		Ì	Estim	ated Gr	adation		Lal	b. Gradat	tion		Soil Prop	ortico			Samp	ling Inform	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%		JOII FTOL	Jei lies	_		Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.1	0.5	SILT, some sand	ML	85	15							firm	low	brown	damp					
0.5	3.3	SILT AND CLAY, trace gravel	CL-ML	75	15	10						firm	low- med	brown	damp					
Wate	er Enc	ountered: N	0		Dept	th:		Туре:						Notes): ::					

^{*}Unified soils classification system symbol



		untered: Y				th: 2.3				Seepage				Notes	: slow					
3.1	3.6	SILT AND CLAY	CL-ML	90	5	5						firm	low	gray	moist					
0.1	3.1	CLAY, some silt, some sand(till)	CI	68	20	12	10	300				firm	med	brown	moist					
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one Ba
Dep	oth (m)	General Soil	Туре	Sı	ums to 100		Additional	Max.	Sı	ums to 100)%		Soil Prop	erties				h (m)	Тур	ре
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion	MARKET STATE					Samp	ling Inform	nation	
Elevati	ion (m)	575		Logged	by		SJ						1	Ribbor	1					
Eastin		0589358		Weathe	er		-15C Ov							Test P	it Locat	tion				
GPS L Northir	.ocatior ng	n WP099 6519745	0	Date			01 Mar 2	2003					STATE OF THE PARTY OF				th pipeli			
Projec		KX04335	_	Contrac	ctor		Kledo Co	onstruct	ion			A STATE OF THE STA	PAR	~20r	n south	of bea	ver dar	n perpe	endicula	ar to
Area	Sierra-\	∕oyo-Desan Roa	d	Excava	tor Type)	JD 230 L			影響影		al alla	441	Locatio	n Notes	5				

*Unified soils classification system symbol

Remarks



Area		Yoyo-Desan Roa	ıd	Excava	tor Type	<u> </u>	JD 230 L	С						Locatio	n Notes					
Projec		KX04335		Contrac		-	Kledo Co		tion	1	.466									
GPS L	ocation	n WP09	6							-		A STATE OF THE PARTY OF THE PAR	No.		Northe	ast co	rner of	Jim Litt	le Pit	
Northi	ng	6519427		Date			01 Mar 2			- 9	1	22	No.							
Eastin	_	0589408		Weathe	er		-15C Ov	ercast				A Long	4		it Locat	ion				
Elevat	ion (m)	575		Logged	l by		SJ				1700	AGE	N TO	Ribbor	1					
											100		ATL		1					
		Soil Type		ļ		ated Gr	adation			o. Gradat	_	9	Soil Prop	erties				ling Inforn		
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)% I	Additional	Max.	Su	ims to 100)%			1		,,	Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	To	(Check Bucket	-
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp				вискет	Bag
0.1	0.3	SILT, some sand	ML	80	15	5						soft -firm	low	brown	damp					
0.3	1.0	GRAVEL, sandy, some silt	GM	15	30	55						compact	non	brown	moist					
1.0	2.3	SAND, some gravel	SP-SM	8	72	20						compact	non	brown	moist					
2.3	3.1	CLAY AND SILT	CI-MI	80	10	10						firm	med	brown	moist					
3.1	3.4	CLAY (till)	CL	85	5	10						firm	low	gray	moist					
Wate	r Enc	ountered: N	o		Dept	th:		Type:						Notes	3 :					
Rema	rks																			

^{*}Unified soils classification system symbol



-		Yoyo-Desan Roa	nd	Excava	tor Type		JD 230 L			200		至三	10	Locatio	n Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruc	tion			*	NA.	Northw	est seis	mic lir	ne Metla	idoa Ci	reek Re	ser
	ocation		7							at .	100		6			•	~50m			
Northir	•	6519576		Date			02 Mar 2			1		1.7	100							
Easting		0589307		Weathe			-30C Ov	ercast		1 20					it Locat	ion				
Elevati	ion (m)	519		Logged	l by		SJ			Alexander .	6			Ribbor	1					
		Soil Type		1	Estim	nated Gr	adation		La	b. Gradat	tion		400		1		Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100		Additional			ums to 100			Soil Prop	perties			Dept		Ту	ре
F	т.	Description	LICC*				Oversize	Max. (mm)				Density /	DIii-	0-1	Maiatona	#	F	То	(Checl	k one)
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(11111)	Fines	Sand	Gravel	Consistency	Plasticity	Colour	Moisture		From	10	Bucket	Bag
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.1	3.4	CLAY, silty, some sand	CL	83	12	5						firm	low	brown	damp					
Wate	r Enc	ountered: N	lo		Dept	th:		Type:						Notes	:					
Remai	rks																			

^{*}Unified soils classification system symbol



Area	Sierra-`	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	C		200	图30		64	Location	on Notes	;			,	
Projec GPS L	t .ocatio	KX04335 n WP098	3	Contrac	ctor		Kledo Co	onstruct	ion		3		W.	Thurb	er line i					smic
Northir	ng	6519455		Date			02 Mar 2	003			老				iine,	, by in	urbers	(2001)	ріт	
Easting	-	0589174		Weathe			-20C Ov	ercast		53		A			it Locat	tion				
Elevati	ion (m)	511		Logged	by		SJ				N			Ribbor	1					
		Soil Type		l	Estim	ated Gr	adation		Lal	o. Grada	tion		Coil Dror	ortica			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%	`	Soil Prop	perties			Dept	h (m)	Тур	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.1	3.5	CLAY, silty, some sand	CI	75	15	10	10	300				soft-firm	med	brown	moist					
3.5	3.7	CLAY, some silt	CL	90	5	5						firm	low	gray	moist					
Wate	r Enc	ountered: N	0		Dept	:h:		Type:						Notes	S :					
Remai	rks																			



Area	Sierra-	Yoyo-Desan Roa	nd	Excava	tor Type)	JD 230 L	_C		1				Locatio	n Notes					
Proje		KX04335		Contrac	ctor		Kledo Co	onstruc	tion	6/	AND THE REAL PROPERTY.	西州	""		-	(000	4) 1:1			
	_ocatio	n		. .			00.14			-		- 10	1		Thurbe	r (200	1) pit h	ole by	P-29	
Northi	-			Date			02 Mar 2					100				_				
Eastin				Weathe			-20C Ov	ercast							it Locat	ion				
Elevat	ion (m)			Logged	l by		SJ						-	No Ma	rker					
		Soil Type		1	Estim	nated Gr	adation		ادا	b. Grada	tion						Samr	oling Inform	nation	
Dep	epth (m) General Soil Type Sums to 100% Additional Oversize (mm) Fines Sand Gravel Density / Placticity Colour Moisture															th (m)	Тур	oe .		
From	То	Description	USC*									Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	one) Bag
0	1.2	GRAVEL, silty, sandy	GM	30	45						compact	non	brown	moist	1	0.5	1.2	Duonet	X	
1.2	1.4	CLAY, silty	CL	75	15	10						firm	low	brown	moist					
Wate	er Enc	ountered: N	О		Dep	th:		Type:			•	•		Notes): 		•	•		
Rema	rks	_																		

^{*}Unified soils classification system symbol



Area	Sierra-Y	∕oyo-Desan Roa	d	Excava	tor Type)	JD 230 L	C					1	Locatio	on Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	tion			The same of	4							
	ocation													Northw	est seis	mic lir	ne Metla	idoa C	reek Re	eserv
Northir	-	651972		Date			02 Mar 2			-4	100									
Easting	•	058919		Weathe			-20C Ov	ercast		-	# _				it Locat	ion				
Elevati	ion (m)	503		Logged	l by		SJ			-				Ribbor	1					
		Soil Type		Ì	Estim	ated Gr	adation		Lal	o. Gradat	ion				1		Samp	ling Inforr	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ums to 100	1%	3	Soil Prop	perties			Dept	h (m)	Ту	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Checl	k one)
		·			Garia	0.0.0.	(%)				0.0.0.	Consistency	· identity	00.00.				. •	Bucket	Bag
0	1.0	TOPSOIL, organic, peat	PT	100								soft	non	black	damp					
1.0	3.1	CLAY, silty, sandy, trace to some gravel	CI	65	25	10	5	200				firm	med	brown	wet					
Nate	r Enco	ountered: N	0		Dept	th:		Type:						Notes	S:					

^{*}Unified soils classification system symbol



	5-202			T_					-	Selection of the	ary Anna	C. C. STANGERS	. LEIGHT WAY	<u> </u>						
-		Yoyo-Desan Roa		Excava		•	JD 230 L				ARES	THE STATE OF	大生态	Locatio	on Notes	5				
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	ion		200	7		~100n	n east a	long ea	ast wes	t seism	ic line a	at top
	ocation.	_									1000		1				ladoa F			
Northi	-	6519956		Date			02 Mar 2			4	1									
Eastin	-	0589203		Weathe			-15C Ov	ercast					2		it Locat	tion				
Elevat	ion (m)	497		Logged	by		SJ			1 TO 1				Ribbor	1					
										J. R.	A									
		Soil Type			Estim	ated Gr	adation		Lab	o. Gradat	ion	ç	Soil Prop	erties			Samp	ling Inform	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100	1%	Additional	Max.	Su	ıms to 100)%		JOII 1 10F	ortics .			Dept	h (m)	Тур	эе
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	(one)
1 10111		·	000	1 11100	Ourid	Ciavoi	(%)	` ′	1 11100	Odrid	Ciavoi	Consistency	ridottoity	Coloui	Wolotaro		110111		Bucket	Bag
		SILT AND																		l
0	2.1	CLAY, some	ML-CL	85	15							soft	low	brown	moist					l
		sand																		
2.1	3.0	CLAY, silty,	CI	75	15	10	10	200				firm	med	brown	wet					l
	0.0	some sand	0.					200						5.011.1						<u> </u>
3.0	3.4	CLAY AND SILT	CL-ML	85	5	10	10	200				firm	low	gray	wet					
																				<u> </u>
Wate	r Enc	ountered: N	lo		Dept	:h:		Type:						Notes):					
Rema	rks																			



Area	Sierra-Y	oyo-Desan Roa	ıd	Excava	tor Type)	JD 230 l	_C		建工业	-		1 1 1 1 1 1 1 1	Location	on Notes	;				
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	tion				A I DINNE	Fast	along ea	ast/we	st seisn	nic line	interse	cted
	ocation									31		-600		Laot	_		rth/sou		1110100	olou
Northi	-	No Signal		Date			02 Mar 2			9	- A	THE REAL PROPERTY.								
Eastin	-			Weathe			-20C Ov	ercast			100	-	9775		it Locat	tion				
Elevat	ion (m)			Logged	by		SJ			332				Ribbor	1					
		0 !! =		1						10/61	10 Table	The same			1		_			
		Soil Type		ļ		ated Gr	adation	1		o. Gradat		5	Soil Prop	erties				ling Inform		
Dep	th (m)	General Soil	Туре	Sı	ums to 100)% I	Additional	Max.	St	ıms to 100)%					,,	Dept	h (m)	Tyl	-
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	100								frozen	non	black	damp					
0.1	2.2	SILT AND CLAY, some sand	CL-ML	85	15							soft-firm	low	brown	moist					
2.2	3.2	CLAY, silty, some sand	CI	75	15	10	10	200				firm	med	brown	moist					
3.2	3.6	CLAY AND SILT	CL-ML	85	5	10						firm	low	gray	moist					
Wate	r Enco	ountered: N	o		Dept	th:	1	Type:				ı		Notes): :					•

^{*}Unified soils classification system symbol



Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	.C			1		9	Locatio	on Notes	;				
ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	100	100		1							
		01										13	~	10m we	st of se	eismic li	ine inte	rsectio	n
ng			Date									-							
ıg							ercast				图 连翼				tion				
tion (m)	490		Logged	l by		SJ				7/2			Ribbor	1					
									1	20		-			1				
				Estim	ated Gr	adation		Lal	b. Grada	tion	9	Soil Pron	erties						
oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	May	St	ums to 100)%	,					Dept	h (m)		-
То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	`	k one) Bag
0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.3	SILT, clayey, some sand	ML	80	20							soft-firm	low	brown	moist					
3.1	CLAY, silty, some sand	CI	75	15	10	5	200				firm	med	brown	moist					
3.2	CLAY AND SILT	CL-ML	80	10	10						firm	low	gray	moist					
er Enc	ountered: No	D		Dept	h:		Туре:						Notes);				•	
	ct Location ng g cion (m) To 0.1 0.3 3.1 3.2	Ct	New Year New Year	Contract	Contractor Con	Contractor Con	Contractor Con	Contractor Kledo Construct	Contractor Con	Contractor Con	Contractor Kledo Construction Contractor Kledo Construction Contractor Contractor	Contractor Con	Contractor Con	Contractor Con	Contractor Kledo Construction WP0101 ng 6519837 g 0589087 Weather -20C Overcast Logged by SJ Soil Type Estimated Gradation Soil Properties To Description USC* Fines Sand Gravel Orange Consistency Soil Type Sums to 100% Oversize Consistency Fines Sand Gravel Oversize Consistency Oversize Oversize Oversize Oversize Oversize Oversize Oversize	Contractor WP0101 Ing 6519837 Igg 0589087 Ignor of one (m) 490 Soil Type Sums to 100% To Description USC* Fines Sand Gravel Organic Organic Oscillar, organ	Contractor Con	Contractor Con	Contractor Con



Wate		ountered: Y	es		Dept	:h: 1.9	m	Туре:	Water S	Seepage	:			Notes	s: slow					
2.9	3.4	CLAY AND SILT	CL	80	10	10	5	250				firm	low	gray	moist					
0.3	2.9	CLAY, silty, some sand	CI	75	15	10						soft-firm	med	brown	moist]
0	0.3	TOPSOIL, organic	OL	100								soft	non	black	moist					
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
Dep	oth (m)	General Soil	Туре	Sı	ıms to 100)%	Additional	Max.	Sı	ıms to 100)%		Soil Prop	reflies			Dept	h (m)	Тур	
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Poil Dran	ortion			Samp	ling Inform	nation	
elevat	ion (m)	483		Logged	by		SJ			AL.				Ribbor	1					
astin	_	0588968		Weathe	· -		-20C Ov	ercast				1			it Locat	tion				
Northi	ng	6519735		Date			02 Mar 2			7								ŭ		
	ocation)2	Contrac	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Tricuo Oc	nisti uot	1011	1	10		5/	~13	0m from	TP-33	3 west a	along se	eismic I	ine
Projec		KX04335	-	Contrac			Kledo Co		ion		體經	建版 《特	的原行	Locatio	JII 140103	•				
\rea	Sierra-\	Yoyo-Desan Roa	d	Excava	tor Type	1	JD 230 L	C		M. Call	Control of the last	李基联 从 他	Distri	Locatio	on Notes	•				

^{*}Unified soils classification system symbol



Area	Sierra-\	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	.C		時開	WATER AND THE PARTY.		000	Locatio	n Notes	5				
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	ion		陸。例									
GPS L	.ocatior	י WP01	03							4	-		200	~18	5m from	1 TP-34	4 west a	along s	eismic I	ine
Northir	ng	6519588		Date			02 Mar 2				The same of		-							
Eastin	g	0588843		Weathe	er		-20C Ov	ercast		100			U-		it Locat	tion				
Elevati	ion (m)	479		Logged	l by		SJ				27			Ribbor	1					
										7	6	E BOARD								
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion	9	Soil Prop	erties			Samp	ling Inform	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ıms to 100)%			7011100			Dept	h (m)	Ту	Эе
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Bag
0	0.5	TOPSOIL, organic	OL	100								soft	non	black	moist					
0.5	2.9	CLAY, silty, some sand	CI	75	15	10						soft-firm	med	brown	moist					
2.9	3.1	CLAY AND SILT	CL-ML	80	10	10						firm	low	gray	moist					
Wate	r Enc	ountered: No))		Dept	th:		Type:				<u>II</u>		Notes):	<u> </u>				



rea	Sierra-\	Yoyo-Desan Roa	ad	Excava	tor Type)	JD 230 l	_C				THE STATE OF	4	Locatio	n Notes					
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	tion											
	ocation.	_	04							100	The same		- 1000		~	180m	west of	TP-35		
Iorthi	•	6519364		Date			02 Mar 2				No. of the last									
astin	•	0588640		Weathe			-20C Su	nny			12	500			it Locat	ion				
levat	ion (m)	473		Logged	l by		SJ							Ribbor	1					
										200					1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion	5	Soil Prop	erties				ling Inforn		
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ıms to 100)%						Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Bag
0	0.2	TOPSOIL, organic	OL	100								soft	non	black	moist					
0.2	0.5	CLAY, silty, some sand	CI	80	15	5						soft-firm	med	brown	moist					
0.5	1.7	SAND AND GRAVEL	SP-SM	12	39	49	10	150	10	48	42	compact	non	brown	moist	1	1.0	1.5		х
1.7	3.2	CLAY AND SILT	CL	80	10	10						firm	low	gray	moist					
Vate	r Enc	ountered: Y	es		Dept	th: 1.7	'm	Type:	Water S	Seepage)			Notes	: slow					

*Unified soil	s class	sification	ı system	symbo)l
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Area	Sierra-\	∕oyo-Desan Roa	d	Excava	tor Type)	JD 230 L	_C		173	NASSAGE.		NE SE	Locatio	on Notes	;				
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	ion	THE LONG THE STREET	12, 120,000	District Miles	E							
	ocation.										1			~15	0m wes	t from '	TP-37 a	along s	eismic I	ine
Northi	ng	6519241		Date			02 Mar 2				1	THE RESERVE								
Eastin	-	0588531		Weathe			-20C Su	nny					1		it Locat	tion				
Elevat	ion (m)	469		Logged	by		SJ			- 1		200		Ribbor	1					
										13		A PARIS	4							
		Soil Type			Estim	ated Gr	adation		Lat	o. Gradat	ion	ç	Soil Prop	erties			Samp	ling Inform		
Dep	oth (m)	General Soil	Туре	St	ums to 100	0%	Additional	Max.	Su	ıms to 100)%			Citics			Dept	h (m)	Тур	pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.2	TOPSOIL, organic	OL	100								soft	non	black	moist					
0.2	1.0	SAND, gravelly, some clay	SM	15	55	30						compact	non	brown	moist- sat					
1.0	2.6	SAND, some gravel, some clay	SM	15	68	17			16	69	15	compact	non	brown	sat	1	0.5	1.5		Х
2.6	2.7	CLAY	CL	90	5	5						firm	low	gray	wet					
Wate	r Enc	ountered: Y	es		Dept	th: 1.6	Sm	Type:	Water S	Seepage)	u		Notes	: heav	У				

Remarks

Sloughing in

Thurber pit WP106 6519531, 0588829, 470m ~0.6m gravelly clay, followed by clay with gravelly layers, SR5-15



Area	Sierra-	∕oyo-Desan Roa	ıd	Excava	tor Type	9	JD 230 I	_C		1 4 1	4 4 1 4			Locatio	on Notes					
Projec	ct	KX04335		Contrac	ctor		Kledo C	onstruc	tion		9	A STATE OF THE STA	F44							
GPS L	_ocatior	WP107	7								13		1		1	100m v	west of	TP-29		
Northi	-	6519461		Date			02 Mar 2													
Eastin	-	0589051		Weathe			-20C Su	nny		1			· DA		it Locat	ion				
Elevat	ion (m)	470		Logged	l by		SJ				4		H. A. St.	Ribbor	1					
				1						4500			C. MISSING		1	_				
	11 ()	Soil Type	-	 		nated Gr	adation	1		b. Gradat	_		Soil Prop	erties				ling Inform		
Dep	oth (m)	General Soil	Туре	Sı	ums to 100	0% 	Additional Oversize	Max.	St	ums to 100)%		1		ı	#	Dept	h (m)	Tyr (Check	
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	Bucket	Bag
0	0.1	TOPSOIL, organic	OL	100								frozen	non	black	frozen					
0.1	1.8	GRAVEL, clayey (silty), sandy	GC	30	30	40						compact								
1.8	2.4	CLAY, silty, some sand	CI	70	20	10						firm	med	brown	moist					
2.4	3.0	CLAY AND SILT	CL-ML	85	10	5						firm	low	gray	moist					
Wate	er Enco	ountered: Y	Dep	th: 1.5	īm	Type:	Water S	Seepage)	u		Notes	3 :							



Area	Sierra-\	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	_C		国旗				Locatio	n Notes	5				
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	THE SECTION AND ADDRESS OF THE PARTY.			1							
3PS L	_ocatior	n WP108	3								44				~	120m	south of	TP-38	3	
Vorthi	ng	6519327		Date			02 Mar 2	2003				7/73								
Eastin	ıg	0589039		Weathe	er		-20C Su	nny			-				it Locat	tion				
Elevat	tion (m)	467		Logged	by		SJ			10.0				Ribbor	1					
										1 - 1										
		Soil Type			Estim	ated Gr	adation		Lab	. Gradat	ion	ç	Soil Prop	erties			Samp	ling Inforn		
Dep	oth (m)	General Soil	Туре	St	ums to 100	1%	Additional	Max.	Su	ms to 100	1%			ocitics .			Dept	h (m)	Ту	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.3	TOPSOIL, organic	OL	100								frozen	non	black	damp					
0.3	1.0	GRAVEL, clayey, sandy	GC	30	30	40	5	150				firm	med	brown	moist					
1.0	2.4	CLAY, some sand, some gravel	CI	70	15	15						firm	med	brown	moist					
2.4	3.0	CLAY, silty, trace gravel	CL	80	10	10						firm	low	brown- gray	moist					
Water Encountered: No						:h:		Type:						Notes):					



Area	Sierra-\	oyo-Desan Roa	ıd	Excava	tor Type		JD 230 L			表表	霍 烈 [188	经 联络 机		Locatio	n Notes					
Area Projec		KX04335		Contrac		7	Kledo Co		tion		計劃			Locatio	n notes					
	ocatior			Sonital	JUI		Medo C	Ji ioti uci	uon						~	125m	west of	TP-38		
Northir		6519482		Date			02 Mar 2	2003				Pi								
Easting	9	0588904		Weathe	er		-20C Su	nny					-	Test P	it Locat	ion				
Elevati	on (m)	465		Logged	l by		SJ				di.	A	-	Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	ion		Soil Prop	erties				ling Inforr		
Dept	th (m)	General Soil	Туре	St	ums to 100)%	Additional	Max.	St	ums to 100	%		· · · · · · · · · · · · · · · · · · ·				Dept	h (m)	Тур	
From	To	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	<u> </u>
		TOPSOIL,		-			(/-)					Consistency							Bucket	Bag
0	0.2	organic	OL	100								frozen	non	black	damp					
0.2	2.2	CLAY, silty, sandy	CI	70	30							firm	med	brown	moist					
2.2	2.6	CLAY AND SILT	CL-ML	80	10	10						firm	low	gray	moist					
Water Encountered: No Depth: Type:											Notes	:					<u> </u>			
Remar	ks																			

^{*}Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Roa	nd	Excava	tor Type)	JD 230 l	_C			医			Location	on Notes	;				
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	NOT PE	N. W.	7 Table								
GPS L	_ocatio	n WP11	0							M TO A			1		~100)m 40	degrees	s of TP	-40	
Northi	ng	6519590		Date			02 Mar 2	2003												
Eastin	g	0588963		Weathe	er		-20C Su	nny			No.			Test P	it Locat	tion				
Elevat	ion (m)	461		Logged	by		SJ			4-1-2		Carlo Carlo		Ribbor	า					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion	9	Soil Prop	erties			Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	St	ums to 100)%						Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	100								frozen	non	black	damp					
0.1	0.8	GRAVEL, some clay, sandy	GC	20	35	45						compact	non	brown	moist					
0.8	2.1	CLAY, silty, some sand	CI	70	20	10						firm	med	brown	moist					
2.1	2.7	CLAY AND SILT	CL-ML	80	10	10						firm	low	gray	moist					
Wate	ater Encountered: No					th:	•	Type:						Notes	<u> </u>	ı			•	

^{*}Unified soils classification system symbol



Area	Sierra-`	Yoyo-Desan Roa	ıd	Excava	tor Type		JD 230 L	C			Salesan	Lip article	Kimiran	Location	on Notes	5				
Project	t ocatio	KX04335 n WP11	1	Contrac	ctor		Kledo Co	onstruct	ion	1.30					TP-	13 ~26	0 degre	es. 100)m	
Northir	ng	6518468	•	Date			03 Mar 2				•		3				o a o g. c	,		
Easting Elevati	g ion (m)	0589146 464		Weathe Logged			-20C Ove	ercast,S	Snow		3.			Test P Ribbor	Pit Locat	tion				
																ir —	_			
Den	th (m)	Soil Type General Soil	Type	Q ₁	Estim ums to 100	ated Gr				o. Gradat ums to 100			Soil Prop	erties				ling Inform h (m)	nation Typ	pe
From	To	Description	USC*	Fines	Sand	Gravel	Additional Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Check	-
		· ·	000	1 11100	Gund	Ciavoi	(%)	` ′	1 11100	Cana	Ciavoi	Consistency	1 identify	Colour	Woldtard		110111		Bucket	Bag
0	0.7	TOPSOIL, organic, peat	PT	100								frozen, soft	non	black	moist					
0.7	2.9	SAND, some gravel, clayey	SC	30	50	20						compact	med	brown	wet-sat					
Wate	r Enc	ountered: Y	es		Dept	h: 1.0)m	Type:	Water S	Seepage	e		•	Notes	s: slow					
Remar	rks																			

*Unified soils classification system symbol

Sloughing in



Area	Sierra-\	∕oyo-Desan Roa	d	Excava	tor Type		JD 230 L	C		1.8	1	MS NIL	温度	Location	on Notes	3				
Projec	et	KX04335		Contrac	ctor		Kledo Co	onstruct	ion			7	相手							
GPS L	ocation	wP01	12									100			~	-240 d	egrees,	150m		
Northi	ng	6518384		Date			03 Mar 2	2003			Sec.	SEE 183	Marie							
Eastin	g	0589001		Weathe	er		-20C Ov	ercast,S	Snow			200			it Locat	tion				
Elevat	ion (m)	465		Logged	by		SJ							Ribbor	1					
											255									
		Soil Type		<u> </u>	Estim	ated Gr	adation		Lal	o. Gradat	tion	9	Soil Prop	erties			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100	1%	Additional	Max.	Sı	ums to 100)%	,			1		Dept	h (m)	Тур	-
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	0.1	TOPSOIL, organic	OL	100								soft	non	black	damp					
0.1	0.9	SILT, some sand	ML	85	15							firm	low	brown	damp					
0.9	3.0	SAND, some silt	SM	20	80							compact	non	brown	damp- sat					
3.0	3.5	CLAY AND SILT	CL	80	10	10						firm	low	gray	wet					
Wate	r Enco	ountered: Y	es	и	Dept	h: 2.8	Bm	Type:	Water S	Seepage)	II.	1	Notes	: slow		1			

K	er	na	ırı	(S

Sloughing in

^{*}Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L	_C					1	Locatio	n Notes	;				
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	Company of the last	profile	Sec.	-	Perr	endicul	ar to tr	ee line	southe	ast acc	ess
	_ocatio	n WP11:	3							-4	100			1 014	orialoan	ui to ti	road	Journe	ast acc	000
Northi	•	6519207		Date			03 Mar 2										Toda			
Eastin	•	0589559		Weathe			-20C Lig	ht Snov	V						it Locat	ion				
Elevat	ion (m)	466		Logged	l by		SJ					The same of		Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Gradat	tion						Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ums to 100)%		Soil Prop	perties			Dept	h (m)	Туј	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	Max. (mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check	·
		TOROGU					(7-7)					Consistency							Bucket	Bag
0	0.1	TOPSOIL, organic, roots, grass	OL	100								soft	non	black	damp					
0.1	0.5	GRAVEL, silty	GM	17	28	55	15	200				compact	non	brown	damp					
0.5	1.8	GRAVEL AND SAND	GP-GM	12	30	58	15	200	11	40	49	compact	non	brown	damp	1	1.0	1.8	х	
1.8	2.5	CLAY AND SILT	CI-MI	80	10	10						firm	low- med	brown	moist					
2.5	3.5	CLAY AND SILT	CL-ML	80	10	10						firm	low- med	gray	moist					
Wate	r Enc	ountered: N	o		Dept	th:		Type:						Notes	-					



A	Ciorro \	Yoyo-Desan Roa		I = v = e v =	tou Turns		ID 220 I					The same	OCAAMA		NI 1					
		KX04335	iu	Excava)	JD 230 L		ion	THE MAN	المطاعلة	MANAGES AND	MAN Y	Locatio	n Notes	i				
Project GPS L	ι .ocatior		4	Contrac	TOF		Kledo Co	nstruci	lion	MAIN	1		THE REAL PROPERTY.	No	rtheast o	of Jim I	Little Pit	bv ac	cess roa	ad
Northi		6519257	•	Date			03 Mar 2	003		-										
Eastin	-	0589460		Weathe	er	-	-15C Lig		V		4	1 12	3	Test P	it Locat	ion				
	ion (m)	463		Logged	by		SJ			. Error				No Ma	rker					
					,					827	Side a	4	100							
		Soil Type			Estim	ated Gr	adation		Lak	. Gradat	ion		Cail Dran	o retico			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	N4	Su	ms to 100	1%	,	Soil Prop	berties			Depth	n (m)	Тур	эе
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	(Check	
1 10111			000	1 11100	Cana	Ciavoi	(%)	, ,	1 11100	Cana	Ciavoi	Consistency	ridotiony	Coloui	Wichelard		1 10111		Bucket	Bag
0	0.6	GRAVEL, roots	GM	12	38	50						compact	non	brown	damp					
0.6	1.3	TOPSOIL	OL	100								soft	non	black	moist					
1.3	2.1	SAND AND GRAVEL, some silt	GM	15	38	47	10	150				compact	non	brown	moist					
2.1	3.1	SILT AND CLAY, trace gravel	CI-MI	80	10	10						firm	med	brown	moist					
3.1	4.4	SILT AND CLAY	CL-ML	80	10	10						firm	low	gray	moist					
Wate	r Enc	ountered: N	0		Dep	th:		Туре:						Notes	3					
Rema	rks				•		<u>"</u>							•						



Area	Sierra-	Yoyo-Desan Roa	ad	Excava	tor Type)	JD 230 L	_C						Location	on Notes					
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion											
	_ocatior		5								-	A	-	Tre	e line no	rth ea	st portic	n of Ji	m Little	Pit
Vorthi	-	6519379		Date			03 Mar 2			-	ALC:	The same	-							
Eastin	•	0589457		Weathe			-20C Lig	ht Snov	V	1		THE REAL PROPERTY.			it Locat	ion				
Elevat	ion (m)	468		Logged	l by		SJ						1	Ribbor	1					
		Soil Type			Estim	ated Gr	adation		Lal	o. Grada	tion		Coil Dron	ortico			Samp	ling Inforr	nation	
Dep	oth (m)	General Soil	Туре	Si	ums to 100)%	Additional	Max.	Sı	ums to 100)%		Soil Prop	Jerues .			Dept	h (m)	Туј	ре
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
0	3.7	CLAY, silty, trace gravel	CI	75	15	10						firm	med	brown	moist				Bucket	Вад
3.7	4.4	CLAY AND SILT	CL-ML	80	10	10						firm	low	gray	moist					
Vate	r Enc	ountered: N	lo		Dept	th:		Type:						Notes	:				-	-

^{*}Unified soils classification system symbol



				•							17.50									
Area	Sierra-	∕oyo-Desan Roa	d	Excava	tor Type)	JD 230 L			Anna Back	MINIST		0.389	Location	on Notes	•				ļ
Projec	ct	KX04335		Contrac	ctor		Kledo Co	onstruct	tion			-	-	No	rtheast o	orner	lim Litt	le Pit h	v ninelii	ne
GPS L	_ocatio	wP116	3							162	122		Diame.	140	rtiroast c		rossing		y pipeiii	10
Northi	ng	6519353		Date			03 Mar 2	003		1	3		経験			C	rossirig			
Eastin	ıg	0589420		Weathe	er		-20C Ov	ercast			1		SAM	Test P	it Locat	tion				
Elevat	tion (m)	466		Logged	l by		SJ			1			1	No Ma	rker					
											SEE	1000								
		Soil Type			Estim	ated Gr	adation		Lal	b. Gradat	tion	,	2 a il D				Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional		Sı	ums to 100)%	`	Soil Prop	erties			Dept	h (m)	Тур	эe
F	т.	Description	LICC*		0	0	Oversize	Max. (mm)	Finan	0	0	Density /	DI4:-''	0-1	Maiatan	#	F	т-	(Check	(one)
From	То	Description	USC*	Fines	Sand	Gravel	(%)	(11111)	Fines	Sand	Gravel	Consistency	Plasticity	Colour	Moisture		From	То	Bucket	Bag
		GRAVEL,																		
0	0.8	some silt,	GM	15	35	50	5	150				compact	non	brown	damp					
		sandy																		
		SILT, organics																		
8.0	1.1	(TOPSOIL)	ML	85	15							firm	low	brown	damp					
		,		-																
4.4	2.0*	SAND, some silt, trace	SP-SM	40	60	20								h	moist-					
1.1	3.8*	gravel	SP-SIVI	12	68	20						compact	non	brown	sat					
0.0*	4.0	CLAY AND	01 141	00	40	40						<i>r</i> .	١.							
3.8*	4.0	SILT, trace	CL-ML	80	10	10						firm	low	gray	wet					
		gravel																		<u> </u>
Wate	r Enc	ountered: Y	06		Dent	th: 3.3	2m	Type	Water S	Saanaas	_			Notes	: mode	erate				
vvale	FI LIIC	Junicieu. I	C3		Debi	3.3	7111	iype.	vvaler	beepage	,									ļ

K	em	ıar	KS

*Estimate

^{*}Unified soils classification system symbol



Area	Sierra-\	Yoyo-Desan Roa	nd	Excava	tor Type)	JD 230 L	.C		SECTION AND ADDRESS OF		E COMPA		Locatio	n Notes					
Projec	et	KX04335		Contrac			Kledo Co	onstruct	tion					~150r	n northe	aet ale	and acc	oce ro	ad into	traas
GPS L	ocation	n WP11	7							是特別					n north					
Northi	•	6519368		Date			03 Mar 2				24						Huibei	(2001)	tost pit	
Eastin	•	0589623		Weathe			-20C Lig	ht Snov	V				1		it Locat	ion				
Elevat	ion (m)	472		Logged	by		SJ							Ribbor						
		Soil Type			Estim	ated Gr	adation		Lal	b. Gradat	tion		Cail Dran	o retico			Samp	ling Inforn	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ums to 100)%		Soil Prop	berlies			Dept	h (m)	Тур	ре
From	To	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	(Check	
							(70)					Consistency							Bucket	Bag
0	1.2	SAND, some gravel	SM	15	35	50			18	60	22	compact	non	brown	damp	1	0.5	1.2		х
1.2	1.9	SAND, some gravel	SP-SM	12	58	30						compact	non	brown	moist					
1.9	3.4	SILT AND CLAY	ML-CL	80	10	10						firm	low	brown	moist					
3.4	3.7	SILT AND CLAY	ML-CL	80	10	10						firm	low	gray	moist					
Wate	r Enc	ountered: N	lo		Dept	th:		Type:						Notes	:					



KX04335 sion WP118 6519505 0589647 m) 474 Soil Type	3	Contract Date Weathe			Kledo Co	onstruc	tion	1	1.4	E P								
6519505 0589647 m) 474	3	Weathe								THE RESERVE OF THE PARTY OF	100 100 100 100 100 100 100 100 100 100							
0589647 m) 474		Weathe								A Deal of		~15	0m TP-4	18 nort	heast a	long a	ccess ro	oad
m) 474		-			03 Mar 2						- THE							
			er		-20C Lig	ht Snov	V		P. T. Co.				it Locat	ion				
Soil Type		Logged	by		SJ			2		ALIF		Ribbor	1					
Soil Type								1		10 mg	-100							
			Estim	nated Gr	adation		Lal	o. Gradat	tion		Soil Prop	ortics			Samp	ling Inforn	nation	
General Soil	Туре	St	ums to 100	0%	Additional	Max.	St	ums to 100)%		JOII 1 10F	ocitios .			Dept	h (m)	Тур	
Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	k one) Bag
SILT, clayey, some sand, trace gravel	ML	80	15	5						firm	low	brown	moist					
0 CLAY, silty	CI	85	10	5						firm-stiff	med	brown	moist					
ncountered: N	0	I	Dept	th:		Туре:						Notes	:					
3	SILT, clayey, some sand, trace gravel CLAY, silty	SILT, clayey, some sand, trace gravel	SILT, clayey, some sand, trace gravel CLAY, silty CI 85	SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10	SILT, clayey, some sand, trace gravel CLAY, silty CI 80 15 5 10 5	Description USC* Fines Sand Gravel (%) SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC* Fines Sand Gravel (%) (mm) SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC* Fines Sand Gravel (%) (mm) Fines SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC* Fines Sand Gravel (%) (mm) Fines Sand SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5 firm-stiff	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Plasticity SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5 firm-stiff med	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Plasticity Colour SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5 (mm) Fines Sand Gravel Consistency Plasticity Colour firm low brown firm-stiff med brown	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Plasticity Colour Moisture SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Cons	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Plasticity Colour Moisture From Sand, trace gravel CLAY, silty CI 85 10 5 (mm) Fines Sand Gravel Consistency Plasticity Colour Moisture From Information Informa	Description USC* Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Plasticity Colour Moisture From To SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5	Description USC Fines Sand Gravel (%) (mm) Fines Sand Gravel Consistency Plasticity Colour Moisture From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5 From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 10 5 From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CLAY, silty CI 85 Notes From To Bucket SILT, clayey, some sand, trace gravel CLAY, silty CLAY, silt

^{*}Unified soils classification system symbol



Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 I	С		1000	10 h 10		2010	Locatio	n Notes					
Projec		KX04335		Contrac			Kledo C		tion		Distance		16	Locatio	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	'				
	ocation		9									STORY OF THE PARTY	1	Sout	hwest a	long a	ccess r	oad tov	ward TF	² -48
Northi	ng	6519419		Date			03 Mar 2	2003				no or or				ŭ				
Eastin		0589653		Weathe	er		-20C Lig	ht Snov	V	196		lula in	13/	Test P	it Locat	ion				
Elevat	ion (m)	472		Logged	by		SJ					45		No Ma	rker					
											Me Ve	* Ser	THE REAL PROPERTY.							
		Soil Type			Estim	nated Gr	adation		Lal	o. Grada	tion	,	Soil Prop	ortios			Samp	ling Inforr	nation	
Dep	oth (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Sı	ıms to 100)%	`	3011 10p	Jei lies			Dept	th (m)	Ту	ре
From	To	Description	USC*	Fines	Sand	Gravel	Oversize	(mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	То	(Checl	
		·	000		Jana	O.a.o.	(%)			-	O.a.o.	Consistency	· identity	00.00.					Bucket	Bag
0	3.0	SILT, clayey, some sand, trace gravel	ML	80	15	5						firm-hard	low	brown	moist					
Wate	r Enc	ountered: N	o		Dept	th:		Туре:						Notes	:					
Rema	rks																			

^{*}Unified soils classification system symbol



Remarks	_																			
Water Eı	ncol	untered: N	0		Dep	th:		Type:						Notes	:					
	(m) General Soil Type Sums to 100% Addition To Description USC* Fines Sand Gravel (%)																			
	Soil Type Estimated Grada (m) General Soil Type Sums to 100% Ac O O																			
0 3.	1	SILT, trace	CI-MI	80	10	10	10	300				firm-hard	low- med	brown	moist					
From To	0	·	USC*	Fines	Sand	Gravel	(%)	(mm)	Fines	Sand	Gravel	Consistency	Plasticity	Colour	Moisture		From	То	Bucket	Bag
Depth (m)				Sı)%	Additional Oversize	Max.		ums to 100		Density /				#	Dept	th (m)	Tyl (Check	
	_				Estim	ated Gr	adation	ı	Lal	b. Grada	tion	9	Soil Prop	erties			. — — — — — — — — — — — — — — — — — — —	ling Inforn		
Lievation (111) _4	+ 70		Logged	Бу		33						A STATE	INO IVIA	IKCI					
Easting Elevation (_	0589890 476		Weathe Logged			-20C Lig SJ	nt Snov	V					No Ma	it Locat	ion				
Northing	_	6519636		Date			03 Mar 2				The Res		1	Tast D			, ,	•		
GPS Loca		WP120)							4	100			200			(2001)			
Project		KX04335		Contrac	ctor		Kledo Co	onstruc	tion	10				200	m of TF	2-49 nc	orth run	nina se	eismic li	ne
Area Sier	ra-Yo	yo-Desan Roa	d	Excava	tor Type	;	JD 230 L	_C			1	原用4 /章	E - 11 -	Location	on Notes	;				

^{*}Unified soils classification system symbol



•		SILT, some					(%)					Consistency							Bucket	Ba
From	То		USC*	Fines	Sand	Gravel	(%)	(mm)	Fines	Sand	Gravel	Consistency	Plasticity		Moisture		From	То	Bucket	Bag
0	0.6	clay, some sand	ML	85	15							firm	low	brown	damp					
0.6	3.4	CLAY, silty, trace gravel	CI	60	20	20	10	300				firm-hard	low- med	brown	moist					
Wate	er Enco	ountered: N	0		Dept	:h:		Type:						Notes	<u> </u>	<u> </u>				_

^{*}Unified soils classification system symbol



Area	Sierra-`	Yoyo-Desan Roa	d	Excava	tor Type)	JD 230 L	.C		医小	图图影			Locatio	n Notes	3				
Projec	t	KX04335		Contrac	ctor		Kledo Co	onstruct	tion	社会制	July 30		Wall in							
	ocatio		2											South	n along i	northw	est/sou	theast	seismic	line
Northir	ng	6519678		Date			03 Mar 2					4								
Easting	g	0590259		Weathe	er		-20C Ov	ercast					华		it Locat	ion				
Elevati	on (m)	487		Logged	by		SJ					ALC: N		Ribbor	1					
												The state of the s	事中で		1					
		Soil Type				ated Gr	adation			o. Gradat	_		Soil Prop	erties				ling Inforn	1	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	Max.	Su	ıms to 100)%			1		,,	Dept	h (m)	Тур	
From	То	Description	USC*	Fines	Sand	Gravel	Oversize (%)	(mm)	Fines	Sand	Gravel	Density / Consistency	Plasticity	Colour	Moisture	#	From	То	(Check Bucket	one) Bag
0	0.1	TOPSOIL, organic, roots	OL	100								soft	non	black	damp					
0.1	0.8	SILT, sandy, some clay	ML	70	30							firm	low	brown	moist					
0.8	3.3	CLAY AND SILT, some sand, trace to some gravel	CI-MI	60	20	20	10	200				firm-hard	low- med	brown	moist					
Wate	r Enc	ountered: N	0	U	Dept	th:		Type:				П		Notes):					
Remar	ks													1						



Area	Sierra-	Yoyo-Desan Roa	ıd	Excava	tor Type)	JD 230 L			表真		A 35 W	10厘%	Locatio	n Notes	3				
Projec		KX04335		Contrac	ctor		Kledo Co	onstruct	tion	1		THE REAL PROPERTY.	11/23/2	End	l of north	nwest/s	southea	st spis	mic line	at 4
GPS L	.ocatio	n WP123	3							SE STATE OF		A PORT		Liic	i oi iioiti		creek	3013013	THIC III IC	, at
Northir	ng	6519614		Date			03 Mar 2	2003		- ill	1	-VAA					CICCK			
Easting	g	0590337		Weathe	er		-20C Ov	ercast		979 A				Test P	it Locat	ion				
Elevati	ion (m)	483		Logged	by		SJ					建建		Ribbor	1					
											1,950									
		Soil Type			Estim	ated Gr	adation		Lal	b. Gradat	ion		Soil Prop	ortico			Samp	ling Inforn	nation	
Dep	th (m)	General Soil	Туре	Sı	ums to 100)%	Additional	N4	Sı	ums to 100)%	`	JOII FTO	reilles			Deptl	h (m)	Тур	pe
From	То	Description	USC*	Fines	Sand	Gravel	Oversize	Max. (mm)	Fines	Sand	Gravel	Density /	Plasticity	Colour	Moisture	#	From	To	(Check	(one)
1 10111	10	·	0	1 11163	Janu	Olavei	(%)	,	1 11103	Sand	Olavei	Consistency	1 lasticity	Coloui	Moisture		110111	10	Bucket	Bag
0	3.5	SILT AND CLAY, gravelly, some sand	CI-MI	50	20	30	200	10				firm-hard	low- med	brown	moist					
														Notes						
Wate	r Enc	ountered: N	0		Dept	:h:		Type:						140163	'•					
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