FACTUAL DATA REPORT ON SOIL INVESTIGATION (Draft)
PROPOSED TRANSFER STATION FACILITY
MILE 98.5, WONOWON, BC

Submitted to:

Peace River Regional District
Box 810, 1981 Alaska Avenue
Dawson Creek, BC.
V1J 4HZ

Submitted by:

Northern Geo Testing & Engineering Ltd.
9211 - 100 Ave
Fort St. John, BC
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May 19, 2011
Project No. NG748

May 19, 2011

Northern Geo File No.: NG748

Peace River Regional District
Box 810, 1981 Alaska Avenue
Dawson Creek, BC. V1G 4H8

Attention: **Jeff Rahn**

RE: **Factual Data Report on Soil Investigation**
Proposed Transfer Station Facility
Mile 98.5, Wonowon, BC

1.0 INTRODUCTION

Northern Geo Testing & Engineering Ltd. (Northern Geo) presents herein the geotechnical engineering report for the proposed Transfer Station facility. This geotechnical engineering report provides factual data for the construction of the proposed transfer station facility. Information provided by Peace River Regional District indicates that the proposed development includes Rig Mats, Recycling Bin, Compaction Bin, shared shed and attendant's shack. A retaining wall and Roll- Off Bin is also included in this proposed development. Attachments to this report includes a testpits location plan, testpit logs, and raw geotechnical data as outline in site meeting conversation between representatives of Northern Geo and Peace River Regional District, and included, but was not limited to, the following:

- A geotechnical testpitting investigation to assess the subsurface soil and groundwater conditions at the site;
- Laboratory testing of selected samples obtained during the investigation; and,
- Preparation of a geotechnical report summarizing the findings of the field investigation and laboratory analyses, including comments on the bearing capacity of the existing soil sugrade.

Testing or assessment of soils with respect to environmental considerations is beyond the scope of this report.

2.0 SITE AND PROJECT DESCRIPTION

The proposed development area is located along the decommissioned road at south of 98.5 mile Alaska Highway within the Peace River Regional District, part of DL 1668 comprising ±

14.51 ha, Licence of occupation #814568, Lands File #8002645. At the time of the tespitting investigation 40% (approximately) of the proposed development were covered with popular trees of 0.1 to 0.2 m dia. The remaining 60% area was covered with grass. The site was grading towards north east. The proposed site is bounded to the north by gravel road (decommissioned), south- west by vacant land and existing land planted with popular tree on the east. It is understood that more than 50% portion of the proposed development site was a land fill area. No more land filling was allowed after the year of 1998.

As per the PRRD Figure 7 (Wonowon Transfer Station Site Development Plan & Conceptual Layout) proposed development including a multiple bins, retaining wall, attendant's shack along with share shed and gravelled access Road..

3.0 GEOTECHNICAL INVESTIGATION

A geotechnical investigation was conducted on May 11, 2011, and included the tespitting and sampling of eight (8) testpits using a backhoe owned and operated by Bracton Contracting Ltd. of Fort St. John, BC. The testpitts were advanced to depths ranging from 0 .75 m to 3.3 m below the existing ground surface. All testpit locations were chosen/ decided by Peace River Regional District on-site representative. Underground utility locates were completed through BC One Call submission. A representative of Northern Geo logged the various soil layers as observed from the test pits and collected soil samples.

The soil sampling and testing procedures were generally as follows:

- Samples were logged and classified based on visual examination.
- Selected soil samples were obtained at 0.5 to 1.0 m depth intervals for moisture content and Atterbergs Plastic and Liquid Limits and grain size determinations (Hydrometer) test.
- Indirect measurements of cohesive strength were carried out on clay samples using a hand-held pocket penetrometer.
- Groundwater depths were measured in each test pit at their completion.

Laboratory testing included the following:

- Moisture contents conducted on all samples.
- Atterberg liquid and plastic limits on five (5) selected samples.
- Grain size distribution tests on four (4) selected samples.
- Detailed salinity tests on three (3) selected samples.

The results of in-situ and laboratory testing described above are shown on the attached borehole logs (Appendix B) and are also included in the Summary of Laboratory Analyses (Appendix C) and in Table1, Table 2 and Table 3 of this report.

The soils encountered during the investigation were logged and sampled by a representative of Northern Geo. Representative samples obtained during the investigation were sent to our Fort St. John laboratory for testing. Natural moisture content determinations, Atterberg Limits, grain-size distribution analyses, were undertaken in our Fort St. John laboratory on selected samples. Samples for analytical and specialty analyses testing such as determinations of water soluble sulphates content, soil resistivity and pH are being conducted by AGAT Laboratories.

3.0 SUBSURFACE CONDTIONS AND LABORATORY TEST RESULTS

3.1 FIELD OBSERVATIONS

The soil stratigraphy encountered during the geotechnical testpitting investigation is representative of the approximate testpit locations depicted in Figure 1 (Appendix A). Stratigraphy may vary with depth and lateral distance across the site. Detailed descriptions of the soils encountered and laboratory test results are provided in the attached Borehole Logs (Appendix B) and the Laboratory Test Results (Appendix C).

Based on the results of the geotechnical drilling investigation, the stratigraphy of the site includes various types of fill and top soil overlying clay/ silt / sandstone layers. Detailed soil descriptions are presented in the attached borehole logs.

Top Soil: A layer of topsoil was encountered to depths ranging 0.04 m to 0.06 m below the existing ground surface in all of the testpits TP11- 1, through TP11- 8.

A total of two (2) natural moisture contents were conducted on selected samples of the top soil, yielding results ranging from 42 percent to 55 percent.

Miscellaneous Fill (clayey silt/ silty clay):

The fill was present in four (4) out of eight (8) testpits, TP11- 5 through TP11- 8. The fill encountered at various different depths contains the different proportion of clay/ silt/ gravel/ clay shale/ sandstone with different consistency. The fill was ranging from 2.9 to 3.1 m below existing grade.

A mixture of clay, silt, gravel/sandstone and metal/plastic/wood debris (garbage), was encountered in four of the testpits TP11- 5 through TP11- 8, extending to depths ranging from 0.6 m to 0.8 m below the existing ground surface.

A total of twenty two (22) natural moisture content determinations were conducted on selected samples of the fill soil, yielding results that ranged from 6 percent to 22 percent with the majority of the results exceeding 15 percent.

Atterberg Limit determinations were conducted on selected samples of the fill. The results of the determinations of selected samples of the silt yielding Plastic and Liquid Limits ranging from 17 percent to 21 percent and 28 percent to 44 percent, respectively. The clay fill was determined to be of low to medium plasticity.

Pocket penetrometer readings, ranged from 250 kPa to 400 kPa exhibiting evidence of a very stiff to hard consistency.

Single one (1) grain size distribution (Hydrometer) test was conducted on selected sample of the fill, shows the presence of clay- 13%, silt- 63% and sand- 10%.

Clay and Silt: Silt and clay layer was encountered in all of the eight testpits TP11- 1 to TP11- 8, depths ranging from 0.6 m to 3.1 m below the existing ground surface. Four testpits TP11- 5 to TP11- 8 terminated within the this soil deposits. The silt and clay layer described as, medium plastic, very stiff strength/consistency.

Pocket penetrometer readings, ranging from 150 to 450 kPa indicating a stiff to hard / compact to dense consistency.

Natural moisture content determinations results ranged from 13 to 25 percent.

Atterberg Limit determination was conducted on selected sample of the silt and clay. The results of the determinations of selected sample of the silt yielding Plastic and Liquid Limits ranging from 18 percent to 19 percent and 36 percent to 44 percent, respectively. The silt and clay was determined to be of medium plasticity.

Pocket penetrometer readings, ranged from 150 kPa to 450 kPa exhibiting evidence of a very stiff to hard consistency.

A total of two (3) grain size distribution (Hydrometer) test was conducted on selected sample of the clay and silt layer, shows the presence of clay- 35 to 45%, silt- 41 to 46% and sand- 10 to 19%.

Silt: A layer of silt was present in one of the testpit TP11- 3 to a depth of 0.4 m below existing grade. The consistency of the silt was compact and was brown in colour.

The natural moisture content of the silt observed was 56%.

Bed Rock (Sandstone): Bed Rock (Sandstone) layer was encountered in four out of eight testpits TP11- 1 to TP11- 4. The depths of bed rock ranging from 0.6 to 2 m below the existing grade. The colour of the bed rock was grey.

Groundwater: Seepage was observed at a depth of 1.8 m below existing grade in the testpit TP11-1 during the geotechnical subsurface investigation. All other testpits were dry on completion.

Frost: The potential frost penetration depth of the Fort St. John area is approximately 2.8 m below the existing ground surface based on climatic data for number of degree-days below 0 degrees Celsius by Environment Canada.

3.2 LABORATORY TEST RESULTS

The following tables contain the laboratory test results carried out on selected samples from the site. Included are Atterberg Limits classification results, hydrometer tests and detailed salinity test results. Detailed results have also been included on the borehole logs and in Appendix C.

TABLE 1: ATTERBERG LIMITS TEST RESULTS

Testpit No.	Depth Below Grade (m)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Moisture Content (%)	Liquidity Index	Soil Classification
TP11-2	1.2	41	19	22	21	0.09	CI
TP11-4	0.6	36	18	18	19	0.05	CI
TP11-6	1.2	34	17	17	16	0.06	CI
TP11-7	2.0	28	21	7	10	1.57	CL-ML
TP11-7	2.5	45	19	26	18	0.04	CI

TABLE 2: HYDROMETER TEST RESULTS

Testpit No.	Depth Below Grade (m)	Sand %	Silt %	Clay %	Soil Description
TP11-2	1.2	14	41	45	Clay & Silt
TP11-4	0.6	19	46	34	Silt, Clayey
TP11-7	2.0	24	63	13	Silt
TP11-7	2.5	10	50	40	Clay & Silt

TABLE 3: DETAILED SALINITY TEST RESULTS

Testpit No.	Depth Below Grade (m)	Soluble Sulphates Content (%)	Resistivity (Ohm-cm)	pH	Chloride, Soluble (mg/L)
TP11-2	1.2	0.0008	9740	6.8	4
TP11-4	0.6	0.0004	15600	6.5	4
TP11-7	2.0	0.0013	5080	6.8	4

4.0 DISCUSSIONS AND SOIL PARAMETERS

The results of the subsurface exploration, founded native clay and silt layer overlying sandstone bedrock in the tree covered (non fill) area and underlying the miscellaneous fill in the land fill area. The consistency of this layer was stiff to hard and of medium plasticity. The factored ultimate bearing capacity of 125 kPa and a serviceability bearing pressure of 75 kPa may be used for silt and clay subgrade. A modulus of subgrade reaction may be taken as 20,000 kN/m^3.

A Fill layer 3 m in thickness underlying top soil layer, was observed in the land fill area, the consistency of the fill was stiff to very stiff/ compact to dense. The factored ultimate bearing capacity of 100 kPa and a serviceability bearing pressure of 65 kPa may be used for fill subgrade. A modulus of subgrade reaction may be taken as 15,000 kN/m^3.

Bed rock (sandstone) was encountered in the non land fill area. The factored ultimate bearing capacity of 150 kPa and a serviceability bearing pressure of 100 kPa may be used for bed rock subgrade.

5.0 CLOSURE

Data presented herein are based on the geotechnical evaluation of the findings of the tespitting completed on May 11, 2011. The material in this report reflects Northern Geo's best judgement in light of the information available to Northern Geo at the time of preparation of this report. If conditions other than those are noted during subsequent phases of development, Northern Geo should be notified and given the opportunity to review and revise the current recommendations, if necessary.

This report has been prepared for the exclusive use of Peace River Regional District and their consultants and representatives for the specific application to the development described within this report. Any use which a third party make of this report or any reliance on or decisions made based on it are the responsibility of such third parties. Northern Geo accepts no responsibility

for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

We appreciate the opportunity to be of service to you. If you have any questions regarding the contents of this report, or if we can be of further assistance to you on this project, please call the undersigned.

Sincerely,
Northern Geo Testing & Engineering Ltd.
A Branch of the Metro Group of Companies.

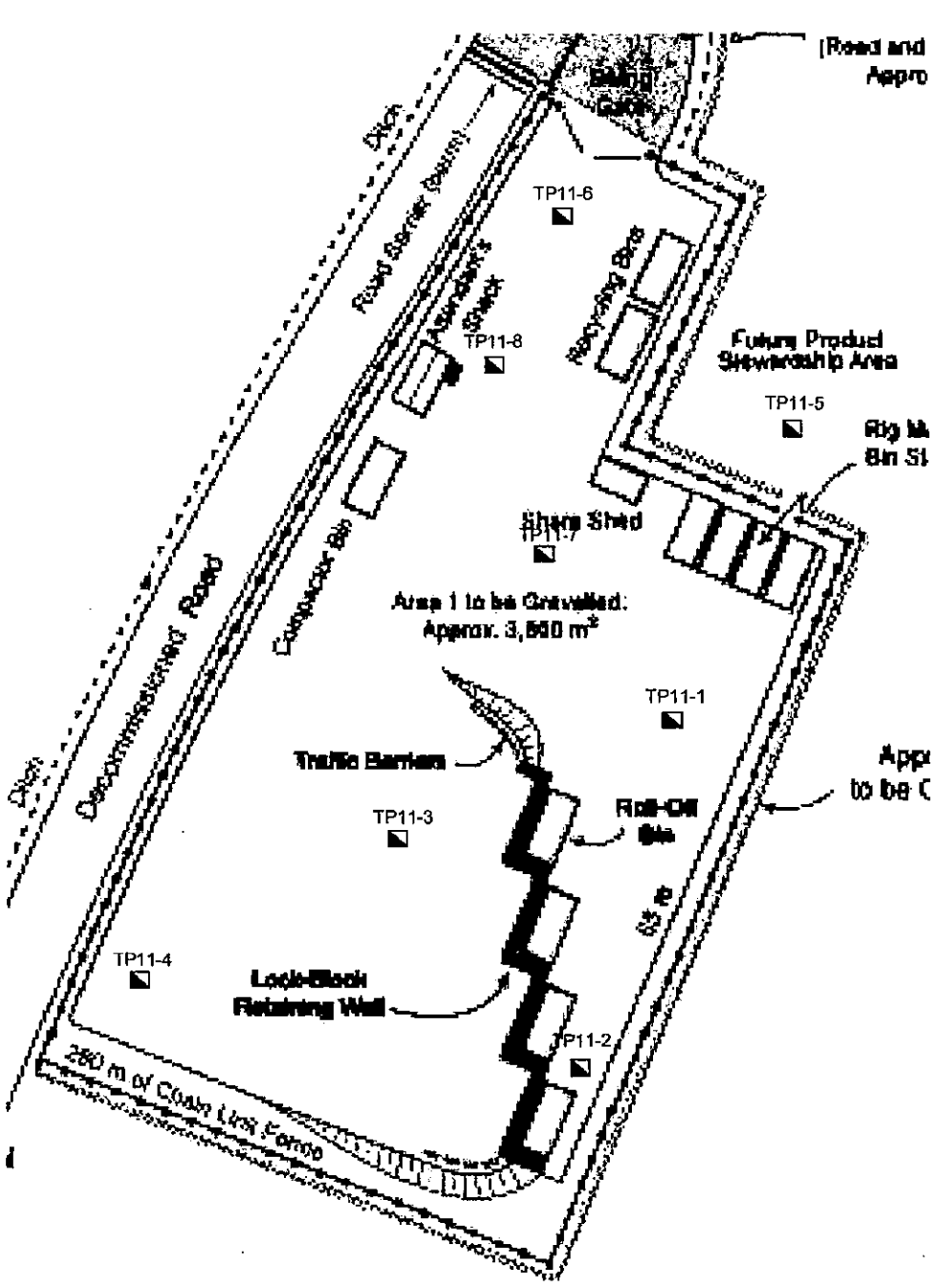
Reviewed By

Rajinder Bains, P.Eng.
Geotechnical Engineer

Mike Robinson
Branch Manager, Principal

Appendix A

Testpits Location Plan



NOTE:

Refrence Peace River Regional District Figur 7, March 2011.

LEGEND:

TP11- = testpit location

All locations are approximate

	CLIENT: PEACE RIVER REGIONAL DISTRICT BOX810, 1981 ALASKA AVENUE DAWSON CREEK, BC	DWN BY: RB CHK'D BY: MR APP RB SCALE: NTS	TEST PIT LOCATION PLAN TRANSFER STATION WONOWON	DATE: May 15, 2011 PROJECT NO: NG 748 REV. NO.: FIGURE No. FIGURE 1

Appendix B

Testpits Logs

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: **TP11-1**
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'27.1", W 121°44'11.1"	ELEVATION:

SAMPLE TYPE: ■ SHELBY TUBE | ⊘ NO RECOVERY | ⊠ SPT | ▭ DISTURBED | ☐ A-CASING | ▮ CONTINUOUS

BACKFILL TYPE: ■ BENTONITE | ☐ PEA GRAVEL | ▥ SLOUGH | ⁘ GROUT | ▨ DRILL CUTTINGS | ⁘ SAND

Depth (m)	■ STANDARD PEN (N) ■ 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
		TOPSOIL		TOPSOIL, contains roots/rootlets, organics, leaves, soft, dark brown, thickness, 0.05 m.						
		CI		CLAY, some silt, medium plastic, very stiff to hard, brown		G1		MC = 55%		
0.5								PP @ 0.5 = 400kPa MC = 15%		0.5
		SANDSTONE		SANDSTONE, very dense, grey		G2				
				Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 0.8 m.						
1.0										1.0
1.5										1.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN Geo DRILLING & ENGINEERING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 0.8 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11
	Page 1 of 1

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: **TP11-2**
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42.25'25.8", W 121°44'17.2"	ELEVATION:

SAMPLE TYPE: ■ SHELBY TUBE | ☒ NO RECOVERY | ☒ SPT | ▤ DISTURBED | ☐ A-CASING | ▮ CONTINUOUS

BACKFILL TYPE: ■ BENTONITE | ☐ PEA GRAVEL | ▥ SLOUGH | ⁘ GROUT | ▨ DRILL CUTTINGS | ⁘ SAND

Depth (m)	STANDARD PEN (N) 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
0	●	OH		TOPSOIL, contains roots/rootlets, organics, leaves, soft, dark brown, thickness, 0.05 m.		G1		MC = 42%		0
				CLAY, some silt, medium plastic, firm to stiff, inclusins of roots, grey brown, wet						
0.5	●					G2		MC = 25%		0.5
				-- no roots/rootlets, stiff @ 0.8 m						
1.0	●	CH				G3		PP @ 1.0 = 150kPa MC = 22%		1.0
	⊢⊣					G4		PL = 19 LL = 41 SAND- 14%, SILT- 41%, CLAY- 45%		
1.5										1.5
				--seapage of water @ 1.8 m						
2.0		SANDSTONE		SANDSTONE, very dense, grey				PP @ 2.0 = 125kPa		2.0
				Testpit base was saturated. Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 2.1 m.						
2.5										2.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN Geo TESTING & ENGINEERING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 2.1 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11
	Page 1 of 1

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: TP11-3
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'26.8", W 121°44'16.7"	ELEVATION:

SAMPLE TYPE: SHELBY TUBE | NO RECOVERY | SPT | DISTURBED | A-CASING | CONTINUOUS

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	STANDARD PEN (N) 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
		OH		TOPSOIL, contains roots/rootlets, organics, leaves, soft, dark brown, thickness, 0.06 m.						
		ML		SILT, some clay, compact/ very stiff, low plastic, brown, wet		G1		MC = 56%		
0.5		CI		CLAY, some silt, medium plastic, very stiff to hard, grey-brown, wet		G2		PP @ 0.8 = 450kPa MC = 12%		0.5
1.0		SANDSTONE		SANDSTONE, very dense, grey, wet		G3		MC = 2%		1.0
1.5				Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 1.1 m.						1.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN GEO TESTING & MONITORING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 1.1 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: TP11-4
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'26.2", W 121°44'18.6"	ELEVATION:

SAMPLE TYPE: ■ SHELBY TUBE | ⊘ NO RECOVERY | ⊠ SPT | ▤ DISTURBED | ☐ A-CASING | ◧ CONTINUOUS

BACKFILL TYPE: ■ BENTONITE | ☐ PEA GRAVEL | ▥ SLOUGH | ⁘ GROUT | ▨ DRILL CUTTINGS | ⁘ SAND

Depth (m)	■ STANDARD PEN (N) ■ 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
		TOPSOIL		TOPSOIL, contains roots/rootlets, organics, leaves, soft, dark brown, thickness, 0.05 m.						
				CLAY, some silt, medium plastic, very stiff to hard, grey-brown @ 0.7 m						
	●					G1		MC = 17%		
		CI		-grey, ocasional gravel and sand stone @ 0.35 m						
0.5										0.5
	●—					G2		PP @ 0.6 = 450kPa PL = 18 LL = 36 MC = 22% SAND- 19%, SILT- 45%, CLAY- 35%		
		SANDSTONE		SANDSTONE, very dense, grey						
				Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 0.8 m.						
1.0										1.0
1.5										1.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN Geo

LOGGED BY: RB	COMPLETION DEPTH: 0.8 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: TP11-5
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'28.1", W 121°44'11.9"	ELEVATION:

SAMPLE TYPE: ■ SHELBY TUBE | ⊘ NO RECOVERY | ⊠ SPT | ▤ DISTURBED | ☐ A-CASING | ▯▯ CONTINUOUS

BACKFILL TYPE: ■ BENTONITE | ☐ PEA GRAVEL | ▯▯ SLOUGH | ⁘ GROUT | ▨ DRILL CUTTINGS | ⁘ SAND

■ STANDARD PEN (N) ■ — 20 40 60 80

PLASTIC — MC — LIQUID — 20 40 60 80

Depth (m)	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
0	OH		TOPSOIL, contains roots/rootlets, organics,metal/ plastic pieces, soft, brown, thickness, 0.05 m.						0
			FILL, contains clay, some silt, trace gravel, wood/metal/ plastic pieces, medium to high plastic, very stiff, brown		G1		MC = 17%		
0.5					G2		MC = 19%		0.5
			--dark grey, no more metal/ plastic pieces, ocasional sandstone @0.6m						
1.0					G3		PP @ 1.0 = 400kPa MC = 18%		1.0
1.5	FILL		--siltstone, fine sand, dense/ hard, inclusions of oxidations @ 1.5 m		G4		MC = 17%		1.5
2.0			-- some sandstone, trace clay shale pieces, hard/ very dense, grey-brown @ 2 m		G5		PP @ 2.0 = 450kPa MC = 12%		2.0
2.5									2.5
			-- more sandstone and clay shale @ 2.8 m						
3.0					G6		MC = 17%		3.0
	CI		CLAY & SILT, medium plastic, very stiff, trace gravel, grey		G7		MC = 13%		
			Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 3.2 m.						
3.5									3.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN GEO TESTING & ENGINEERING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 3.2 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: TP11-6
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'28.7", W 121°44'12"	ELEVATION:

SAMPLE TYPE: ■ SHELBY TUBE | ⊘ NO RECOVERY | ⊠ SPT | ▭ DISTURBED | ▯ A-CASING | ▮ CONTINUOUS

BACKFILL TYPE: ■ BENTONITE | ▭ PEA GRAVEL | ▥ SLOUGH | ⁘ GROUT | ▨ DRILL CUTTINGS | ⁘ SAND

Depth (m)	STANDARD PEN (N) 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
0		OH		TOPSOIL, contains roots/rootlets, organics,metal/ plastic pieces, soft, brown, thickness, 0.05 m.						0
				FILL, contains, clay, some silt, trace gravel and sandstone, ocasional wood/metal/ plastic pieces, medium to high plastic, very stiff/compact, grey- brown		G1		MC = 18%		
0.5						G2		PP @ 0.5 = 250kPa MC = 19%		0.5
1.0				--clay shale, dense, brown @1.0 m						1.0
						G3		PL = 17 LL = 34 MC = 12%		
				-- dark grey, silly @1.3 m						
1.5				--fine sand, some silt, some sandstone, brown @ 1.4 m		G4		MC = 6%		1.5
		FILL								
2.0										2.0
				--clay, trace clay shale, medium plastic, hard @ 2.2 m						
2.5						G5		PP @ 2.5 = 300kPa MC = 16%		2.5
3.0				--more clay shale pieces @ 3.0 m		G6		MC = 4%		3.0
		CI		CLAY & SILT, medium plastic, very stiff, trace gravel, grey		G7		PP @ 3.2 = 275kPa MC = 14%		
3.5				Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 3.3 m.						3.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN GEO TESTING & ENGINEERING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 3.3 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: TP11-7
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'27.7", W 121°44'13.3"	ELEVATION:

SAMPLE TYPE: ■ SHELBY TUBE | ⊘ NO RECOVERY | ⊠ SPT | ▤ DISTURBED | ☐ A-CASING | ▮ CONTINUOUS

BACKFILL TYPE: ■ BENTONITE | ☐ PEA GRAVEL | ▥ SLOUGH | ⁘ GROUT | ▨ DRILL CUTTINGS | ⁘ SAND

Depth (m)	STANDARD PEN (N) 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
0	●	OH		TOPSOIL, contains roots/rootlets, organics,metal/ plastic pieces, soft, brown, thickness, 0.05 m.						0
				FILL, contains, clay, some silt, trace gravel and sandstone, ocasional wood/metal/ plastic pieces, medium plastic, very stiff/compact, grey- brown --dark grey, very stiff @ 0.35 m		G1		MC = 21%		
0.5				-- sandy, silty, compact to dense, brown, no more garbage @ 0.5 m --clayey, medium plastic, very stiff @ 0.7 m						0.5
1.0	●					G2		PP @ 1.0 = 275kPa MC = 22%		1.0
				--ocasional sandstone, brown @1.1 m						
1.5		FILL		--some sandstone, trace clay shale, grey @1.6 m						1.5
2.0	⊢					G6		PL = 21 LL = 28 SAND- 24%, SILT- 63%, CLAY- 13%		2.0
	●					G3		PP @ 2.2 = 450kPa MC = 11%		
2.5				-- silt, clayey, medium plastic, compact/ very stiff, trace sandstone and clay shale pieces, grey						2.5
	●					G4		PP @ 2.8 = 400kPa MC = 17%		
3.0	⊢	CI		CLAY & SILT, medium plastic, very stiff, trace gravel, grey		G5		PP @ 3.1 = 300kPa PL = 19 LL = 44 MC = 14% SAND- 10%, SILT- 50%, CLAY- 40%		3.0
				Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 3.2 m.						
3.5										3.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN GEO TESTING & MONITORING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 3.2 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11

PEACE RIVER REGIONAL DISTRICT	Wonowon Tranfer Station	BOREHOLE NO: TP11-8
Bracton Contracting Ltd,	98.5 Mile Wonowon	PROJECT NO: NG 748
Backhoe	N 56°42'28.5", W 121°44'13.6"	ELEVATION:

SAMPLE TYPE: SHELBY TUBE | NO RECOVERY | SPT | DISTURBED | A-CASING | CONTINUOUS

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	STANDARD PEN (N) 20 40 60 80 / PLASTIC MC LIQUID 20 40 60 80	USCS	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	OTHER TESTS COMMENTS	INSTRUMENTATION DATA	Depth (m)
0		OH		TOPSOIL, contains roots/rootlets, organics,wood/ metal/ plastic pieces, soft, brown, thickness, 0.05 m.						0
				FILL, contains, clay, some silt, trace gravel and sandstone, ocasional wood/metal/ plastic pieces, medium plastic, very stiff/compact, grey- brown		G1		MC = 19%		
0.5										0.5
1.0				--dark grey, very stiff/ dense, no more garbage @ 1.0 m		G2		PP @ 1.0 = 350kPa MC = 12%		1.0
				--sandy, silty, compact to dense, brown @ 1.2 m						
1.5		FILL		--clayey, medium plastic, very stiff @ 1.5 m						1.5
2.0				--some sandstone, trace clay shale, grey @ 2 m		G3		PP @ 2.0 = 400kPa MC = 6%		2.0
2.5				--silt, clayey, medium plastic, compact/ very stiff, trace sandstone and clay shale pieces, grey @ 2.5 m						2.5
				CLAY & SILT, medium plastic, very stiff, trace gravel, grey						
3.0		CI				G4		PP @ 3.0 = 300kPa MC = 14%		3.0
				Testpit was dry upon completion Trench was backfilled with removed soil and packed using backhoe bucket End of test pit at 3.1 m.						
3.5										3.5

BOREHOLE LOG NG748.GPJ NORTHERN GEO.GDT 05/19/11

NORTHERN GEO TESTING & ENGINEERING LTD.

LOGGED BY: RB	COMPLETION DEPTH: 3.1 m
REVIEWED BY: MR	COMPLETION DATE: 11/05/11

Appendix C

Summary of Laboratory Analyses

Project No.:NG748		
Client : PRRD		
Sample # :TP11-2	Location: Mile 98.5, Alaska Hihgway, Wonowon, BC	
Depth of Sample Taken: 1.2 m		
Tested By Eng./Tech.: RB		

9211-100 AVENUE, FORT ST. JOHN, BC, V1J 1X6

ATTERBERG'S LIMITS

LIQIUD LIMIT (WL)

TRIAL NO.	1	2
NO. OF BLOWS	27	27
CONTAINER NO.		
WT OF WET SAMPLE + TARE	29.86	28.91
WT OF DRY SAMPLE + TARE	21.62	20.95
TARE OF CONTAINER	1.29	1.28
WT OF WATER	8.24	7.96
WT OF DRY SOIL	20.33	19.67
WATER CONTENT %	40.53	40.47
CORR'D WATER CONTENT %	40.73	40.83

BLOW FACTORS

Number	ASTM	ALB.
20	0.974	0.9753
21	0.979	0.9807
22	0.985	0.9858
23	0.990	0.9907
24	0.995	0.9954
25	1.000	1.0000
26	1.005	1.0044
27	1.009	1.0087
28	1.014	1.0128
29	1.018	1.0168
30	1.022	1.0206

PLASTIC LIMIT (WP)

TRIAL NO.	1	2
CONTAINER NO.		
WT OF WET SAMPLE + TARE	8.44	8.55
WT OF DRY SAMPLE + TARE	7.32	7.42
TARE OF CONTAINER	1.29	1.29
WT OF WATER	1.12	1.13
WT OF DRY SOIL	6.03	6.13
WATER CONTENT %	18.6	18.4

CORR'D WATER CONTENT %

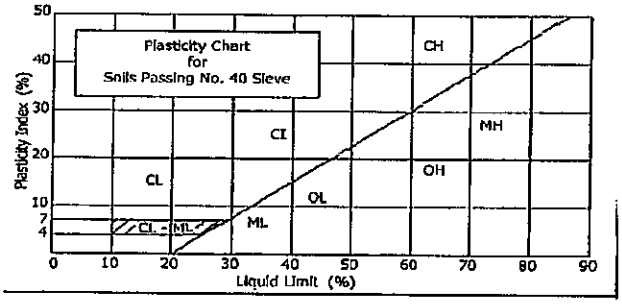
Number	ASTM	CORR. W.C-1	CORR. W.C-2
20	0.974	39.48	39.42
21	0.979	39.68	39.62
22	0.985	39.92	39.86
23	0.990	39.92	40.06
24	0.995	40.13	40.27
25	1.000	40.33	40.47
26	1.005	40.53	40.67
27	1.009	40.73	40.83
28	1.014	40.90	41.03
29	1.018	41.10	41.20
30	1.022	41.26	41.36

NATURAL WATER CONTENT (W)

TRIAL NO.	
CONTAINER NO.	
WT OF WET SAMPLE + TARE	378
WT OF DRY SAMPLE + TARE	312
TARE OF CONTAINER	
WT OF WATER	66
WT OF DRY SOIL (Wo)	312
WATER CONTENT (W) %	21

PLASTICITY INDEX (PI)

Liquid Limit W_L	Plastic Limit Wp	Plastici.Ind. PI
40.8	18.5	22.3



PLASTICITY: PI > 22
L L< 50
Plots above 'A' line
CONSTITUENT: Clay of Medium Plasticity

Project No.:NG748	
Client : PRRD	
Sample # :TP11-4	Location: Mile 98.5, Alaska Hihgway, Wonowon, BC
Depth of Sample Taken: 0.6 m	
Tested By Eng./Tech.: RB	

9211-100 AVENUE, FORT ST. JOHN, BC, V1J 1X6

ATTERBERG'S LIMITS

LIQIUD LIMIT (WL)

TRIAL NO.	1	2
NO. OF BLOWS	30	30
CONTAINER NO.		
WT OF WET SAMPLE + TARE	31.27	30.84
WT OF DRY SAMPLE + TARE	23.53	23.22
TARE OF CONTAINER	1.27	1.28
WT OF WATER	7.74	7.62
WT OF DRY SOIL	22.26	21.94
WATER CONTENT %	34.77	34.73
CORR'D WATER CONTENT %	35.4	35.5

BLOW FACTORS

Number	ASTM	ALB.
20	0.974	0.9753
21	0.979	0.9807
22	0.985	0.9858
23	0.990	0.9907
24	0.995	0.9954
25	1.000	1.0000
26	1.005	1.0044
27	1.009	1.0087
28	1.014	1.0128
29	1.018	1.0168
30	1.022	1.0206

PLASTIC LIMIT (WP)

TRIAL NO.	1	2
CONTAINER NO.		
WT OF WET SAMPLE + TARE	7.48	6.5
WT OF DRY SAMPLE + TARE	6.55	5.72
TARE OF CONTAINER	1.28	1.27
WT OF WATER	0.93	0.78
WT OF DRY SOIL	5.27	4.45
WATER CONTENT %	17.6	17.5

CORR'D WATER CONTENT %

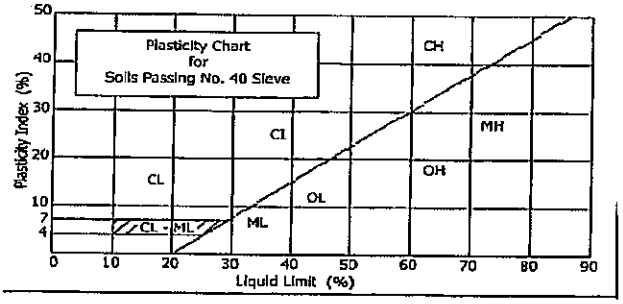
Number	ASTM	CORR. W.C-1	CORR. W.C-2
20	0.974	33.87	33.83
21	0.979	34.04	34.00
22	0.985	34.25	34.21
23	0.990	34.25	34.38
24	0.995	34.42	34.56
25	1.000	34.60	34.73
26	1.005	34.77	34.90
27	1.009	34.94	35.04
28	1.014	35.08	35.22
29	1.018	35.26	35.36
30	1.022	35.40	35.50

NATURAL WATER CONTENT (W)

TRIAL NO.	
CONTAINER NO.	
WT OF WET SAMPLE + TARE	287
WT OF DRY SAMPLE + TARE	241
TARE OF CONTAINER	
WT OF WATER	46
WT OF DRY SOIL (Wo)	241
WATER CONTENT (W) %	19

PLASTICITY INDEX (PI)

Liquid Limit W_L	Plastic Limit Wp	Plastici.Ind. PI
35.5	17.6	17.9



PLASTICITY: PI < 22
L L< 50
Plots above 'A' line
CONSTITUENT: Clay of Medium Plasticity

Project No.:NG748		
Client : PRRD		
Sample # :TP11-6	Location: Mile 98.5, Alaska Hihgway, Wonowon, BC	
Depth of Sample Taken: 1.2 m		
Tested By Eng./Tech.: RB		

9211-100 AVENUE, FORT ST. JOHN, BC, V1J 1X6

ATTERBERG'S LIMITS

LIQIUD LIMIT (WL)

TRIAL NO.	1	2
NO. OF BLOWS	20	20
CONTAINER NO.		
WT OF WET SAMPLE + TARE	30.07	29.75
WT OF DRY SAMPLE + TARE	22.56	22.32
TARE OF CONTAINER	1.28	1.27
WT OF WATER	7.51	7.43
WT OF DRY SOIL	21.28	21.05
WATER CONTENT %	35.29	35.30
CORR'D WATER CONTENT %	34.37	34.38

BLOW FACTORS

Number	ASTM	ALB.
20	0.974	0.9753
21	0.979	0.9807
22	0.985	0.9858
23	0.990	0.9907
24	0.995	0.9954
25	1.000	1.0000
26	1.005	1.0044
27	1.009	1.0087
28	1.014	1.0128
29	1.018	1.0168
30	1.022	1.0206

PLASTIC LIMIT (WP)

TRIAL NO.	1	2
CONTAINER NO.		
WT OF WET SAMPLE + TARE	7.56	7.75
WT OF DRY SAMPLE + TARE	6.66	6.81
TARE OF CONTAINER	1.28	1.29
WT OF WATER	0.9	0.94
WT OF DRY SOIL	5.38	5.52
WATER CONTENT %	16.7	17.0

CORR'D WATER CONTENT %

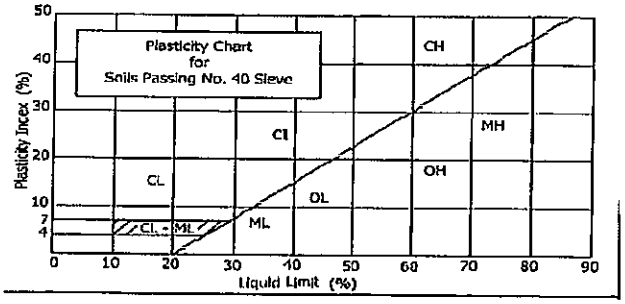
Number	ASTM	CORR. W.C-1	CORR. W.C-2
20	0.974	34.37	34.38
21	0.979	34.55	34.56
22	0.985	34.76	34.77
23	0.990	34.76	34.94
24	0.995	34.94	35.12
25	1.000	35.11	35.30
26	1.005	35.29	35.47
27	1.009	35.47	35.61
28	1.014	35.61	35.79
29	1.018	35.79	35.93
30	1.022	35.93	36.07

NATURAL WATER CONTENT (W)

TRIAL NO.	
CONTAINER NO.	
WT OF WET SAMPLE + TARE	186
WT OF DRY SAMPLE + TARE	161
TARE OF CONTAINER	
WT OF WATER	25
WT OF DRY SOIL (Wo)	161
WATER CONTENT (W) %	16

PLASTICITY INDEX (PI)

Liquid Limit W_L	Plastic Limit Wp	Plastici.Ind. PI
34.4	16.9	17.5



PLASTICITY: PI < 22

L L< 50

Plots above 'A' line

CONSTITUENT: Clay of Medium Plasticity

Project No.:NG748		
Client : PRRD		
	Location: Mile 98.5, Alaska	
Sample # :TP11-7	Hihgway, Wonowon, BC	
Depth of Sample Taken: 2 m		
Tested By Eng./Tech.: RB		

9211-100 AVENUE, FORT ST. JOHN, BC, V1J 1X6

ATTERBERG'S LIMITS

LIQIUD LIMIT (WL)

TRIAL NO.	1	2
NO. OF BLOWS	25	24
CONTAINER NO.		
WT OF WET SAMPLE + TARE	31.32	30.31
WT OF DRY SAMPLE + TARE	24.65	23.86
TARE OF CONTAINER	1.3	1.29
WT OF WATER	6.67	6.45
WT OF DRY SOIL	23.35	22.57
WATER CONTENT %	28.57	28.58
CORR'D WATER CONTENT %	28.42	28.43

BLOW FACTORS

Number	ASTM	ALB.
20	0.974	0.9753
21	0.979	0.9807
22	0.985	0.9858
23	0.990	0.9907
24	0.995	0.9954
25	1.000	1.0000
26	1.005	1.0044
27	1.009	1.0087
28	1.014	1.0128
29	1.018	1.0168
30	1.022	1.0206

PLASTIC LIMIT (WP)

TRIAL NO.	1	2
CONTAINER NO.		
WT OF WET SAMPLE + TARE	7.88	8.5
WT OF DRY SAMPLE + TARE	6.7	7.24
TARE OF CONTAINER	1.28	1.29
WT OF WATER	1.18	1.26
WT OF DRY SOIL	5.42	5.95
WATER CONTENT %	21.8	21.2

CORR'D WATER CONTENT %

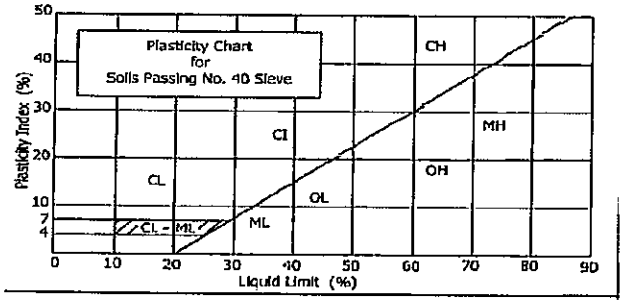
Number	ASTM	CORR. W.C-1	CORR. W.C-2
20	0.974	27.82	27.83
21	0.979	27.97	27.98
22	0.985	28.14	28.15
23	0.990	28.14	28.29
24	0.995	28.28	28.43
25	1.000	28.42	28.58
26	1.005	28.57	28.72
27	1.009	28.71	28.83
28	1.014	28.82	28.98
29	1.018	28.97	29.09
30	1.022	29.08	29.21

NATURAL WATER CONTENT (W)

TRIAL NO.	
CONTAINER NO.	
WT OF WET SAMPLE + TARE	219
WT OF DRY SAMPLE + TARE	199
TARE OF CONTAINER	
WT OF WATER	20
WT OF DRY SOIL (Wo)	199
WATER CONTENT (W) %	10

PLASTICITY INDEX (PI)

Liquid Limit W_L	Plastic Limit Wp	Plastici.Ind. PI
28.4	21.5	7.0



PLASTICITY: PI ≤ 7

L L< 50

Plots above 'A' line

CONSTITUENT: CL- ML Low Plasticity

Project No.:NG748		
Client : PRRD		
Sample # :TP11-7	Location: Mile 98.5, Alaska Hihgway, Wonowon, BC	
Depth of Sample Taken: 3.1 m		
Tested By Eng./Tech.: RB		

9211-100 AVENUE, FORT ST. JOHN, BC, V1J 1X6

ATTERBERG'S LIMITS

LIQIUD LIMIT (WL)

TRIAL NO.	1	2
NO. OF BLOWS	22	22
CONTAINER NO.		
WT OF WET SAMPLE + TARE	26.13	26.61
WT OF DRY SAMPLE + TARE	18.4	18.73
TARE OF CONTAINER	1.28	1.29
WT OF WATER	7.73	7.88
WT OF DRY SOIL	17.12	17.44
WATER CONTENT %	45.15	45.18
CORR'D WATER CONTENT %	44.47	44.51

BLOW FACTORS

Number	ASTM	ALB.
20	0.974	0.9753
21	0.979	0.9807
22	0.985	0.9858
23	0.990	0.9907
24	0.995	0.9954
25	1.000	1.0000
26	1.005	1.0044
27	1.009	1.0087
28	1.014	1.0128
29	1.018	1.0168
30	1.022	1.0206

PLASTIC LIMIT (WP)

TRIAL NO.	1	2
CONTAINER NO.		
WT OF WET SAMPLE + TARE	8.03	7.74
WT OF DRY SAMPLE + TARE	6.95	6.71
TARE OF CONTAINER	1.28	1.29
WT OF WATER	1.08	1.03
WT OF DRY SOIL	5.67	5.42
WATER CONTENT %	19.0	19.0

CORR'D WATER CONTENT %

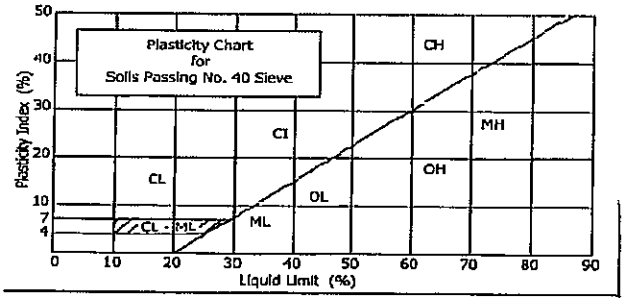
Number	ASTM	CORR. W.C-1	CORR. W.C-2
20	0.974	43.98	44.01
21	0.979	44.20	44.23
22	0.985	44.47	44.51
23	0.990	44.47	44.73
24	0.995	44.70	44.96
25	1.000	44.93	45.18
26	1.005	45.15	45.41
27	1.009	45.38	45.59
28	1.014	45.56	45.82
29	1.018	45.78	46.00
30	1.022	45.96	46.18

NATURAL WATER CONTENT (W)

TRIAL NO.	
CONTAINER NO.	
WT OF WET SAMPLE + TARE	285
WT OF DRY SAMPLE + TARE	242
TARE OF CONTAINER	
WT OF WATER	43
WT OF DRY SOIL (Wo)	242
WATER CONTENT (W) %	18

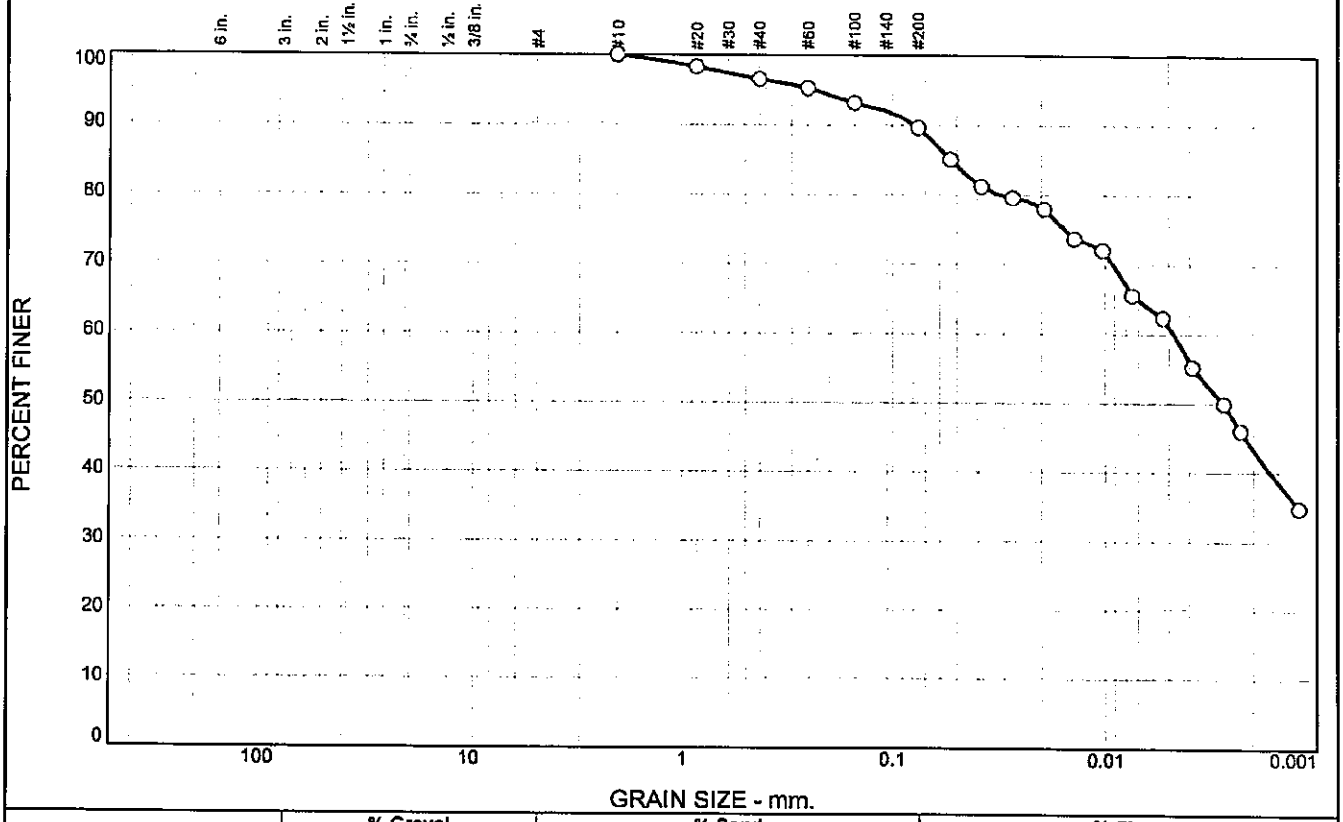
PLASTICITY INDEX (PI)

Liquid Limit W_L	Plastic Limit Wp	Plastici.Ind. PI
44.5	19.0	25.5



PLASTICITY: PI > 22
L L< 50
Plots above 'A' line
CONSTITUENT: Clay of Medium Plasticity

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.4	7.0	46.4	43.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	98.3		
#40	96.6		
#60	95.3		
#100	93.1		
#200	89.6		

* (no specification provided)

Material Description

SILT AND CLAY

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0528 D_{60}= 0.0048 D_{50}= 0.0028
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

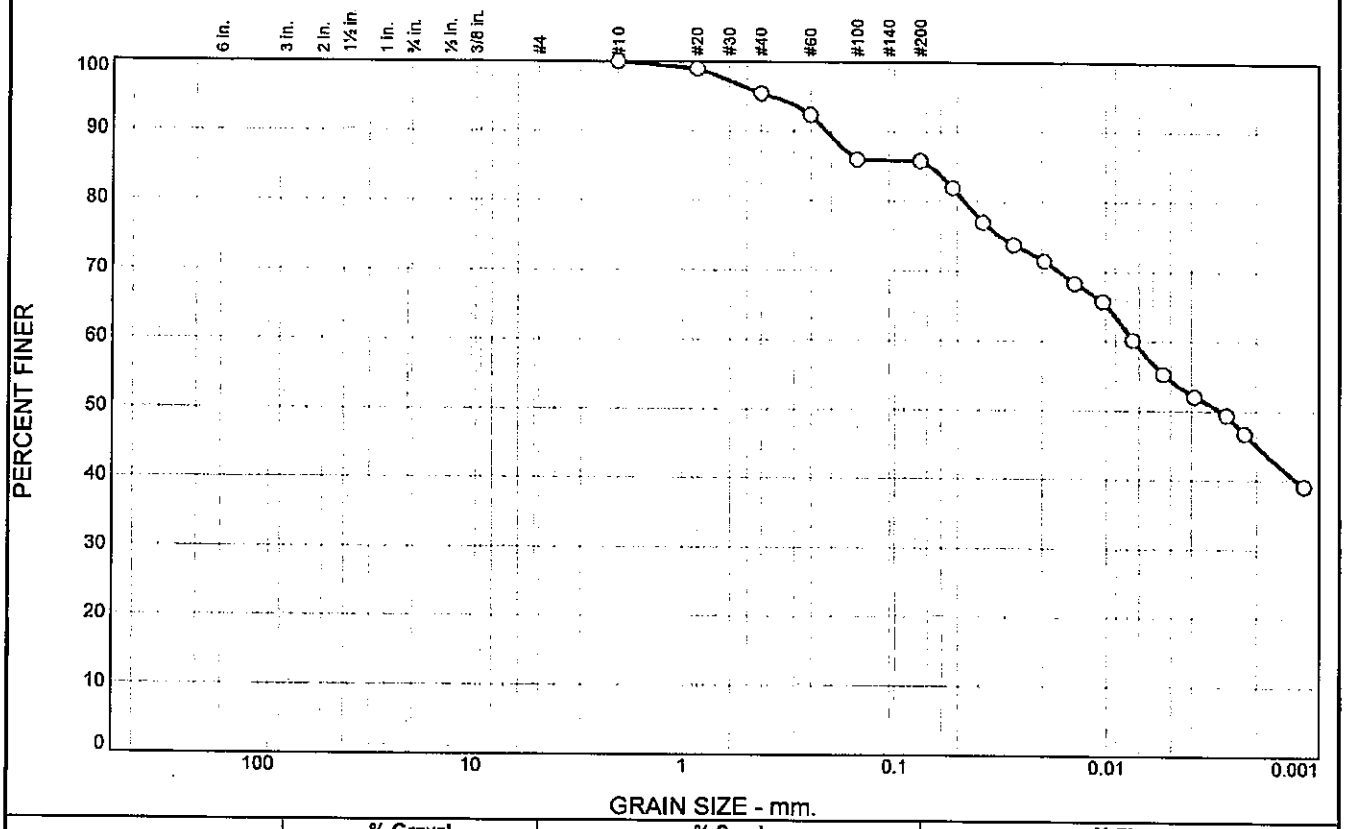
Remarks

Sample Number: TP11-7 **Depth:** 3.1 m **Date:** May 16,2011

Northern Geo Testing & Engineering, Ltd.	**Client:** PEACE RIVER REGIONAL DISTRICT
	Project: Wonowon Transfer Station
Fort St. John, BC	**Project No:** NG 748 **Figure**

Tested By: RB **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.6	9.6	40.7	45.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.0		
#40	95.4		
#60	92.4		
#100	86.0		
#200	85.8		

* (no specification provided)

Material Description

SILT AND CLAY

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0670 D_{60}= 0.0074 D_{50}= 0.0029
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

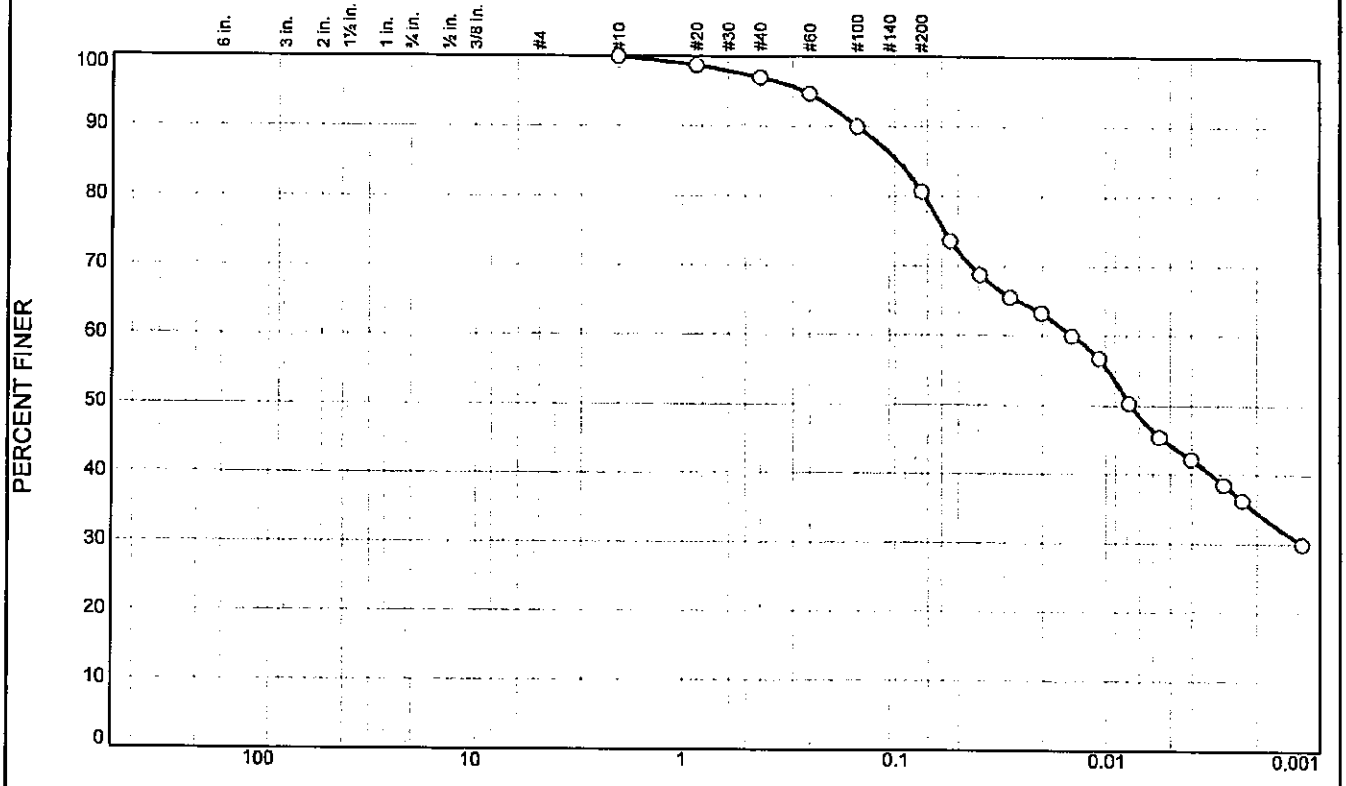
Remarks

Sample Number: TP11-2 **Depth:** 1.2 m **Date:** May16,2011

Northern Geo Testing & Engineering, Ltd.	**Client:** PEACE RIVER REGIONAL DISTRICT
	Project: Wonowon Transfer Station
Fort St. John, BC	**Project No:** NG 748 **Figure**

Tested By: RB **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.0	16.3	46.2	34.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	98.7		
#40	97.0		
#60	94.6		
#100	90.0		
#200	80.7		

* (no specification provided)

Material Description

CLAYEY, SILT

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0963 D_{60}= 0.0145 D_{50}= 0.0077
D_{30}= 0.0012 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

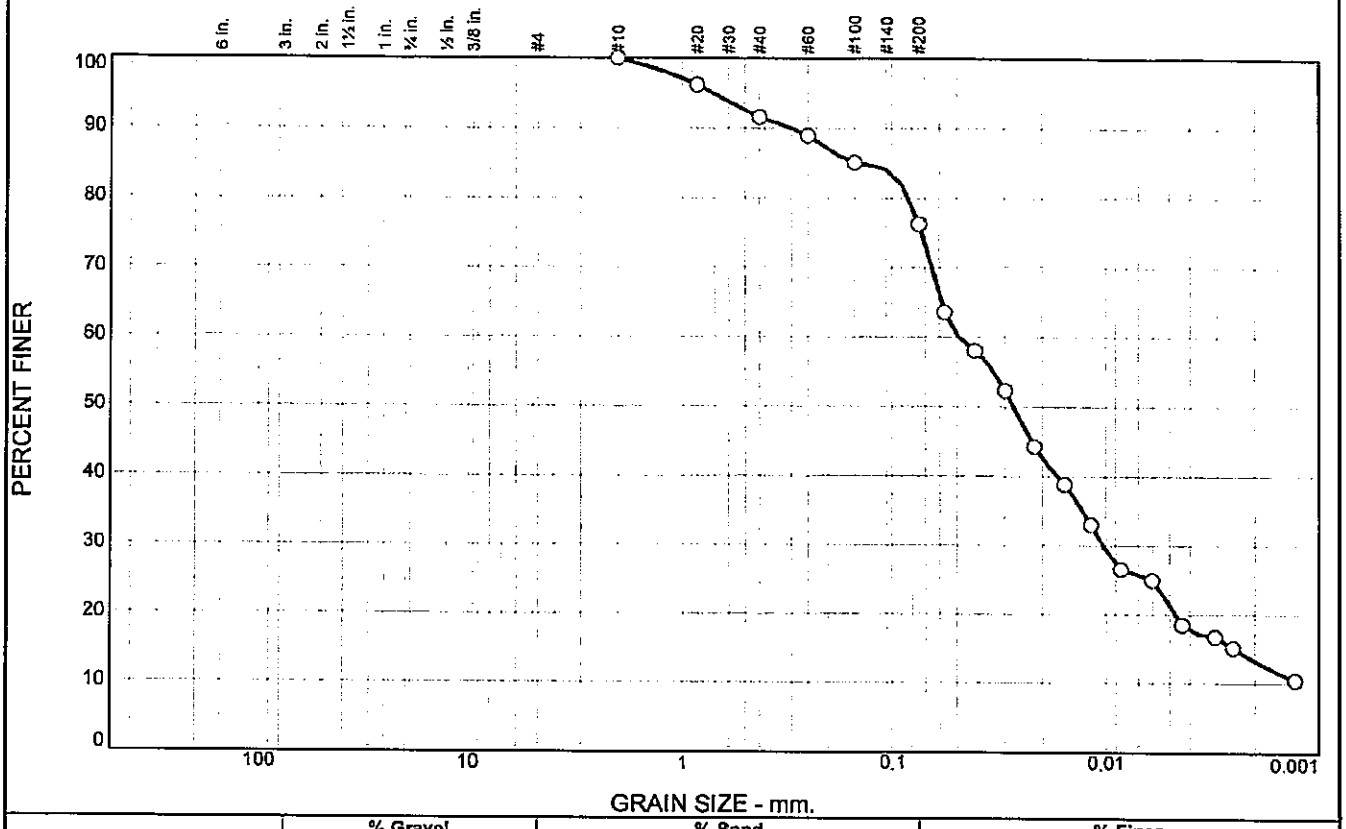
Remarks

Sample Number: TP11-4 **Depth:** 0.6 m **Date:** May 16,2011

Northern Geo Testing & Engineering, Ltd.	**Client:** PEACE RIVER REGIONAL DISTRICT
	Project: Wonowon Transfer Station
Fort St. John, BC	**Project No:** NG 748 **Figure**

Tested By: RB **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.4	15.4	62.9	13.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	96.2		
#40	91.6		
#60	88.9		
#100	85.1		
#200	76.2		

* (no specification provided)

Material Description

SILT

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.1440 D_{60}= 0.0492 D_{50}= 0.0274
D_{30}= 0.0103 D_{15}= 0.0025 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample Number: TP11-7 **Depth:** 2.0 m **Date:** May 16,2011

Northern Geo Testing & Engineering, Ltd.	**Client:** PEACE RIVER REGIONAL DISTRICT
	Project: Wonowon Transfer Station
Fort St. John, BC	**Project No:** NG 748 **Figure**

Tested By: RB **Checked By:** MR

AGAT Laboratories

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CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11G492867

PROJECT NO: NG 748

CLIENT NAME: NORTHERN GEO TESTING & ENGINEERING

ATTENTION TO: MIKE ROBINSON

Soil Analysis for Salinity - GP

DATE SAMPLED: May 11, 2011 | **DATE RECEIVED: May 13, 2011** | **DATE REPORTED: May 15, 2011** | **SAMPLE TYPE: Soil**

Parameter	Unit	G / S	RDL	TP11-2,depth=1.2m 2398578	TP11-4,depth=0.6m 2398580	TP11-6,depth=1.2m 2398581	TP11-7,depth=12.0m 2398582 → 2.0m
pH (Saturated Paste)	pH Units		N/A	6.8	6.5	NSQ	6.8
Resistivity	ohm.cm		1	9740	15600	NSQ	5080
Chloride, Soluble	mg/L		2	4	4	NSQ	4
Sulfate, Soluble %	%			0.0008	0.0004	NSQ	0.0013

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2398581 NSQ-Inadequate sample to perform analysis.

Certified By: Angela Bond