

Technical Summary

January 2024

Pit Name: McTavish Pit

Provincial Pit Number: 0411

Location: McTavish Pit is approximately 900m west of Glenemma. Access from Highway 97, then Salmon River Road for 2.1km, then Yankee Flats Road for 400m, then left onto McTavish Road for 700m into the pit. (Figure 1).

Legal Land Description: The site is currently a Section 16 Map Reserve (LF# 0092720) held by the British Columbia Ministry of Transportation and Infrastructure (BC MoTI). The legal description of the Map Reserve is "South $\frac{1}{2}$ of Legal Subdivision 14, Northwest $\frac{1}{4}$ Section 30, Township 17, Range 10, W6M.". The UTM coordinates are Zone 11, 332258.43 Easting, 5593655.37 Northing. The layout of the Map Reserve boundary is shown in the legal plan (Figure 2).

Subsurface Investigation: Subsurface investigations at McTavish Pit were carried out in 2016, 2007 and 1998 by the Ministry of Transportation & Infrastructure.

In 2016 twelve (12) test pits were excavated to depths ranging from 0.3 to 5.0m, in 2007, eighteen (18) test pits were excavated to depths ranging from 3.5 to 5.0m and in 1998, eight (8) test pits were excavated to depths ranging from 2.4m to 4.5m. During the test pitting, subsurface soil and groundwater conditions were logged and representative samples of the granular materials were collected for laboratory testing and future reference. Laboratory testing was carried out on fourteen (14) of the 2016 samples (some from different depths within the same test pit), and seven (7) each from the 2007 and 1998 samples, at AMEC laboratories to assess the gradation and durability characteristics. The tests completed were wet sieve analysis, micro deval, sand equivalent, relative density, and absorption.

Based on the results of the 2016 and 2007 investigations, two granular areas were defined (Figure 3). The detailed results of the subsurface testing are provided in the Test Pit Summaries and test pit locations are shown on the Pit Development Plan (Figure 3).

Material Gradation: Table 1 shows the gradation as a percentage by weight of the fines (silts and clays), sand and gravel components as well as the Unified Soil Classification (USC [included after test pit summary]) for the samples tested.

Table 1: Pit Run Gradation

Test Pit	Depth (m)	Fines (%)* <0.075mm	Sand (%)* 0.075- 4.75mm	Gravel (%)* 4.75-75mm	USC
TP16-01	0-0.3	3	75.4	21.6	SP
TP16-01A	1.5-3.3	2.1	46.8	51.1	GP
TP16-02	0.5-0.8	2.1	64.8	33.1	SP
TP16-03	1.8-5.0	0.7	42.4	56.9	GP
TP16-04	0.3-1.5	1.5	40.1	58.4	GP
TP16-05	2.0-5.0	1.9	48.2	49.8	GP
TP16-07	0.2-1.5	1.9	76	22.1	SP
TP16-08	3.0-5.0	0.5	56.2	43.3	SP
TP16-09	0-1.5	2.4	51.1	46.5	SP
TP16-10	1.0-4.0	2.9	36.2	61	GP
TP16-11	0-2.0	1.6	40.7	57.7	GP
TP16-11A	2.0-5.0	1	64.2	34.8	SP
TP16-12	2.5-5.0	0,7	47	52.3	GP
2016 Averages		1.7	53.0	45.3	SP
TP07-01	1.3-3.5	2.3	53	44	SP
TP07-02	1.3-3.5	1.8	44	54	GP
TP07-05	0-4.0	1.7	35	63	GP
TP07-06	2-4.5	2.5	45	53	GP
TP07-07	1-4.5	1.3	37	62	GP
TP07-08	0-4.0	1.5	47	52	GP
TP07-16	2.5-5.0	2	42.2	55.8	GP
TP07-17	0-5.0	2	76.5	21.5	SP
2007 Averages		1.8	47.5	50.7	GP
TP98-01	0-2.4	6	63.2	30.8	SPSM
TP98-02	0.3-4.5	3.2	35	61.8	GP
TP98-03	0.3-4.3	3.9	54.2	42	SP
TP98-04	0.5-4.0	5.9	56.2	37.9	SPSM
TP98-05	0.3-4.0	3	42.8	54.2	GP
TP98-06	0.3-4.0	4.1	45.7	50.1	GP
TP98-08	0.3-4.0	4.7	38.3	57	GP
1998 Averages		4.4	47.9	47.7	SP

Table 2 shows the estimated percent of oversize rock as noted in the field during exploration.

January 2024

Table 2: Oversize Field Estimates

2016

Classification	Average (%)	Range (%)
Boulders (>375mm)	0	0
Cobbles (150-375mm)	0.6	1
Cobbles (75-150mm)	1.6	1-2

Maximum rock size observed was 200mm.

2007 & 1998 (combined)

Classification	Average (%)	Range (%)
Boulders (>375mm)	00 	0
Cobbles (150-375mm)	1	1
Cobbles (75-150mm)	3.8	1-5

Maximum rock size observed was 200mm.

Material Durability: Table 3 shows the results of the durability tests as well as the specifications as required in the Standard Specifications for Highway Construction.

Table 3: Durability Test Results

Test Pit	Sand Equivalent (%)	Micro Deval (%)		Absorption		Relative Density	
		Coarse	Fine	Coarse	Fine	Coarse	Fine
2021							
TP16-09	67	13.3	15.1	1.56	2.68	2.592	2.534
TP16-10	74	11.2	19.4	1.35	2.21	2.598	2.541
TP16-11	81	11.8	15.3	1.42	2.02	2.616	2.536
2007							
07-01	70	6.7	16	1.57	2.15	2.605	2.543
07-02	74	9.1	15.4	1.46	1.82	2.597	2.553
BC MoTI Specifications							
Sand Equivalent	≥40 for base coarse and fine asphalt mix aggregate ≥20 for surfacing, sub-base and bridge end fill aggregates						
Micro Deval	≤30% for sub-base and bridge end fill aggregates ≤25% for surfacing & base course aggregates ≤18% for Class 1 Pavement asphalt mix aggregates ≤20% for Class 2 Pavement asphalt mix aggregates						
Absorption	<2.0% for coarse paving aggregates ≤1.0% for coarse and ≤1.5% for fine graded aggregate seals						
Relative Density	~2.65 for all aggregate products						

Material Suitability: Based on the 2016 and 2007 investigation results, the material is judged to be suitable for the following purposes:

Table 4: Suitability

	Pit Run	Crush
McTavish Pit Suitability Area	Bridge End Fill SGSB	25mm WGB Class 1 Asphalt Mix Aggregates Fine Graded Agg Seals

The samples tested meet the gradation, sand equivalent, and micro-deval specifications for base course, subbase course, bridge end fill and Class 1 asphalt mix aggregate. Based on the absorption results the samples meet the specification for fine graded aggregate seals.

Sulphate and Chloride Testing:

There has been no Sulphate and Chloride Testing done for the material in this pit.

Volume Estimates: Table 5 shows the volume estimates that can be expected for gravel from the proposed suitability area. This is based on the measured depths encountered during the subsurface investigation. The potential volumes of granular material were calculated by averaging the total thickness of granular material encountered in test pits and multiplying by the estimated surface area.

Table 5: Volume Estimates

Suitability Areas ~0.5ha	Topsoil	Overburden/Pit Floor	Granular Material
Average Layer Thickness (m)	0.0	0.3	4.0
Volume (m ³)	0.0	3,300	20,000

Pit Development Notes

- All development must be carried out in accordance with the Health, Safety, and reclamation Code for Mines in British Columbia, BC Ministry of Energy, Mines and Low Carbon Innovation (2022, or later edition), the Standard Specifications for Highway Construction, BC Ministry of Transportation and Infrastructure (2020, or later edition) and the Aggregate Operators Best Management Practices Handbook for BC.

- All trees, vegetation, and overburden are to be removed within 2m of the top of the pit faces. Topsoil, overburden, and aggregate cannot be removed within five meters of the reserve boundary.
- McTavish Pit has been extensively mined and the existing pit faces are nearing depletion. Production may require the movement of some or all of the existing stockpiles, selectively mining and blending, and/or excavating/rejecting unsuitable material in the pit floor to access native granular material.
- The processing area is recommended to be located on the pit floor as identified on the Pit Development Plan (near TP16-02), with mining proceeding in a south/southeastern and/or northern direction as indicated.
- Processed aggregate may be stockpiled north of the crusher set up or where space permits as indicated on the Pit Development Plan.
- No dumping of debris or petroleum products will be permitted, and the site must be left in a clean and safe condition.
- At the completion of the pit development operations, but prior to the depletion of the pit, the sides of the pit faces, waste piles, and overburden stockpiles must be trimmed to a 1.5H:1V slope. Active pit faces must be reshaped with native granular materials.
- Upon depletion of the pit, all disturbed areas are to be reclaimed. The minimum reclamation procedure should include re-sloping of the pit faces and waste piles to a 2H:1V slope, contouring the area for appropriate drainage, spreading of overburden followed by topsoil, and seeding.
- Should any of the above conditions conflict with the Health, Safety, and Reclamation Code for Mines in British Columbia, then the Code will prevail.

Closure

The findings of this report and the soil conditions noted above are inferred from the extrapolation of limited surface and subsurface data collected during the site investigation. It should be noted that different and possibly poorer soil conditions may exist between the test pit locations and volume estimates may vary from those reported in this report.

Prepared by:

Reviewed by:

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Laura Courtenay
Senior Aggregate Resource Specialist

Enclosures

Figures:

Figure 1 - Location Plan

Figure 2 - Legal Plan

Figure 3 – Pit Development Plan

Test Pit Summaries

Test Pit Logs (2016, 2007, 1998)

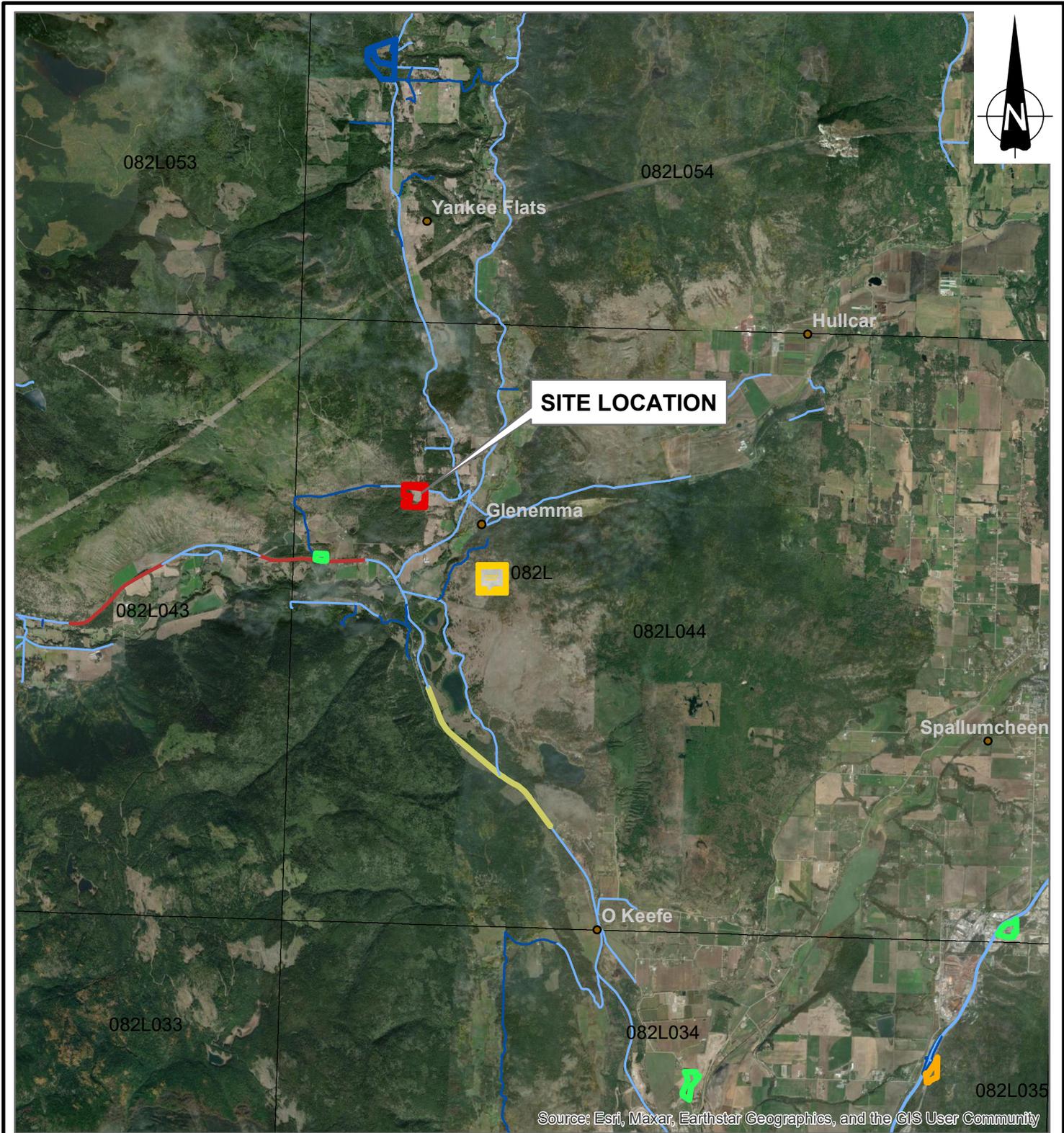
Wet Sieve Analysis Charts (2016, 2007, 1998)

Aggregate Gradation Charts (2016, 2007, 1998)

USC Legend

Photos

Figures

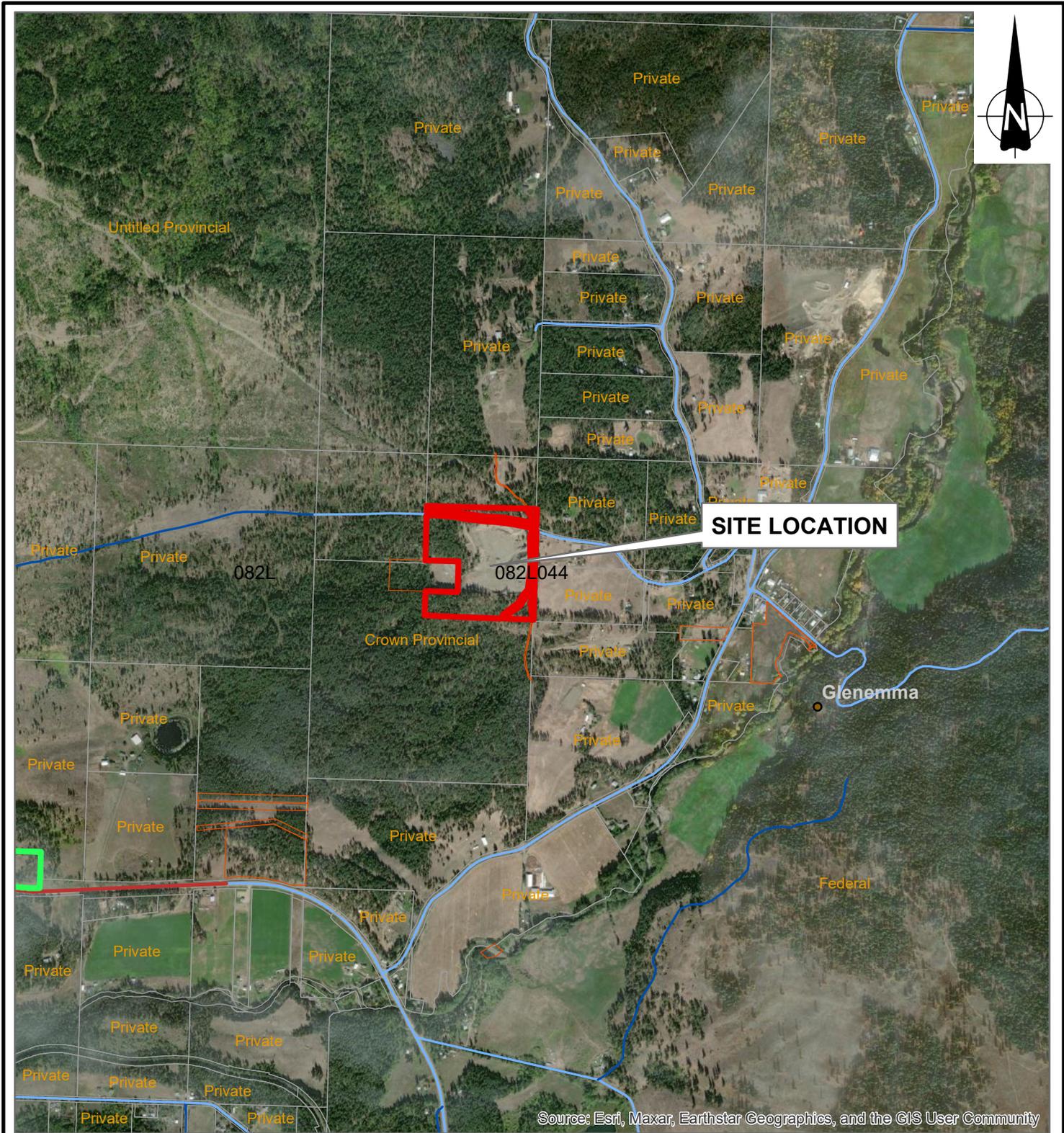



 Ministry of Transportation and Infrastructure
 Geotechnical and Materials Branch
 

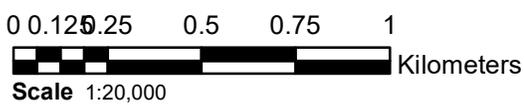
LOCATION PLAN (2023)
MCTAVISH PIT No. 0411
SA 13 - OKANAGAN SHUSWAP DISTRICT

DRAWN BY: SKINNIBU	PROJECTION: NAD 1983 UTM Zone 11N	SCALE: As Shown
CHECKED BY: A.Mitchell	DATUM: NAD 1983 UTM Zone 11N	DATE: 2023-12-13
FileName: GISTemplate_Gravel_Provincial_2023-03-16	Geotech Project No: 3-16	Reg: 2
		Drawing No: FIGURE 1

This drawing was originally produced in colour.



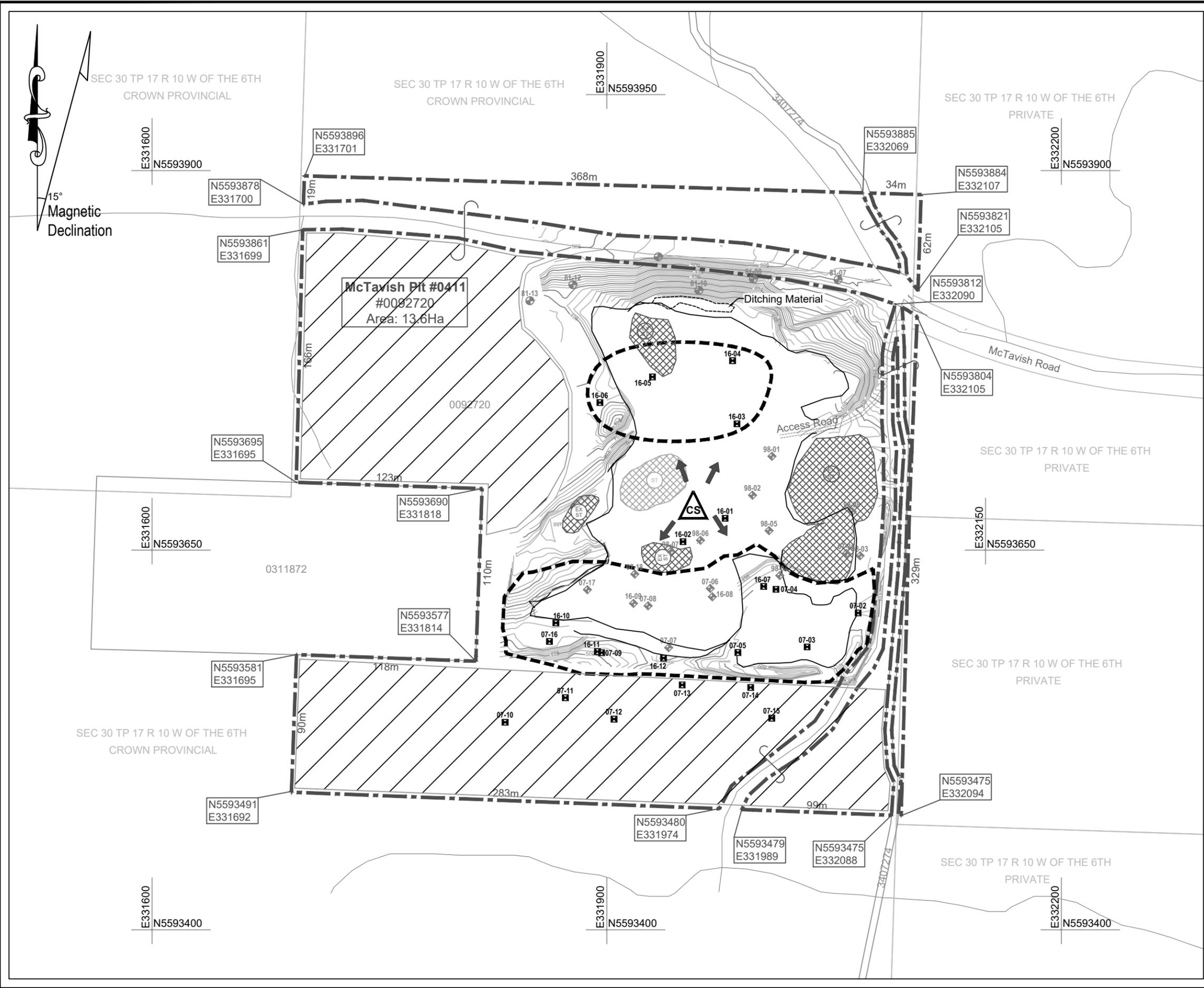
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



 Ministry of Transportation and Infrastructure Geotechnical and Materials Branch		
LEGALPLAN (2023) MCTAVISH PIT No. 0411 SA 13 - OKANAGAN SHUSWAP DISTRICT		
DRAWN BY: SKINNIBU	PROJECTION: NAD 1983 UTM Zone 11N	SCALE: As Shown
CHECKED BY: A.Mitchell	DATUM: NAD 1983 UTM Zone 11N	DATE: 2023-12-13
FileName: GISTemplate_Gravel_Provincial_2023-03-16	Geotech Project No: 2	Drawing No: FIGURE 2

This drawing was originally produced in colour.

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PIT DEVELOPMENT LEGEND

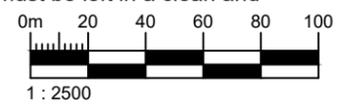
	NATURAL EMBANKMENT		TREELINE
	PIT FACE		CREEK
	TEST PIT		800m CONTOURS
	TEST HOLE		BUILDING
	MINED OUT TEST PIT		IRON PIN
	MINED OUT TEST HOLE		SWAMP
	PAVED ROAD		DEVELOPMENT ARROW
	DISTRICT LOT LINE		CRUSHER
	GRAVEL RESERVE BOUNDARY		ST- POTENTIAL STOCKPILE EX ST- EXISTING STOCKPILE
	SUITABILITY BOUNDARY		
	NO DISTURBANCE ZONE		

BASE NOTE:
 1) Contour Interval 0.5 metres
 2) Base Map derived from Pantera Pit Survey, Sept 1995.

LEGAL NOTE:
 1) District Lot Lines are derived from digital Crown Cadastral reference mapping supplied by CROWN LAND REGISTRY, Victoria

DRAWING NOTE:
 1) Some testpits and/or testholes may not be representative of current conditions due to development and excavation done after testing was conducted.

- PIT DEVELOPMENT NOTES:**
- Pit development must be carried out in accordance with the Health, Safety, and Reclamation Code for Mines in BC, the current Standard Specifications for Highway Construction, and the Aggregate Operators Best Management Practices Handbook for BC.
 - McTavish Pit has been extensively mined and the existing pit faces are nearing depletion. Production may require the movement of some or all of the existing stockpiles, selectively mining and blending, and/or excavating/rejecting unsuitable material in the pit floor to access native granular material.
 - Pit excavation must not take place to within a minimum distance of 2m from the edge of cleared & stripped areas.
 - When the contractor discontinues operations in the pit, all working pit faces and stockpiles must be trimmed to 1.5H to 1V slope. Working pit faces must be reshaped with native granular materials. All other permanent slopes must be re-sloped to no steeper than 2H to 1V.
 - No dumping of debris or petroleum products is permitted. The pit must be left in a clean and safe condition.



Ministry of Transportation and Infrastructure
 Southern Interior Region
 Geotechnical and Materials Branch

PIT DEVELOPMENT PLAN (2024)		
MCTAVISH PIT #0411		
OKANAGAN-SHUSWAP DISTRICT		
DRAWN BY: S.Ruiz	PROJECTION: UTM Zone 11	SCALE: AS SHOWN
CHECKED BY: S.Kinniburgh	DATUM: NAD83	DATE: 4 January 2024
FILE No. f3p_0411_2024.dwg	PROJECT No. -	REG. DRAWING No. SIR FIGURE 3

Test Pit Summaries

2016

AGGREGATE LOG													
PROJECT:		McTavish Pit				SAMPLED BY:				Samantha Kinniburgh			
PIT #:		0411				METHOD:				Excavator			
DISTRICT:		Okanagan Shuswap				DATE:				September 7 2016			
TH / TP	DEPTH		SAMPLE BAG No.	SOILS CLASS	ESTIMATED GRADUATION			ESTIMATED ROCK 75mm				SAND TYPE	REMARKS
	FROM	TO			g	s	F	MAX SIZE	75mm - 50mm	100mm - 75mm	>75mm		
TP 18-01	0	0.3	338	SP	30	69	1	50	0	0	0	M-C	SAND BEAM RUNNING DIAGONALLY
					21.6	75.4	3						
	0.3	1.5		SW									FROM NORTHWEST TO SOUTHWEST
	1.5	3.3	349	GP	60	39	1	500	5	2	1	M-C	
	3.3	5		SM-1	51.1	48.8	2.1						
TP 18-02	0	0.5		GP									
	0.5	0.8	329	SP	44	59	1	150	2	0	0	M-C	
					33.1	64.8	2.1						
	0.8	1.8		GP									
TP 18-03	0	1.5		SP									REJECT MATERIALS IN THIS LAYER
	1.5	1.8		GM-1									TILL AND CLAY PRESENT IN THIS LAYER
	1.8	5	334	GP	60	39	1	150	2	0	0	M	
					58.9	42.4	0.7						
TP 18-04	0	0.3		SP									DIRTY SAND
	0.3	1.5	325	GP	55	44	1	100	2	0	0	C	
					58.4	40.1	1.5						
	1.5	1.8		SP									SAND BAND AT THIS LEVEL
	1.8	5		GP									PEA GRAVEL IN HIGH BELOW 2M, SHALE SOME CEMENTED ROCK AND CALCITE
TP 18-05	0	0.2		SP									
	0.2	2		GP									COARSER THAN BELOW
	2	5	328	GP	50	49	1	100	1	0	0	M-C	PEA GRAVEL PRESENT, ONE CLAY BALL
					49.8	48.2	1.9						
TP 18-06	0	0.2		SP									
	0.2	1		GP	55	44	1	150	1	0	0	M-C	NO SAMPLE TAKEN
	1	5		SW	14	85	1					M-F	
TP 18-07	0	0.2		SP									
	0.2	1.5	191	SP	29	70	1	50	0	0	0	M-F	
					22.1	76	1.9						
	1.5	5		SM-2									
TP 18-08	0	1		GP	65	34	1					C	VERY COARSE
	1	3		SP									
	3	5	192	GP	53	46	1	100	2	0	0	C	SIMILAR TO TP18-04 AND TOP OF TP18-05 GRAVEL IS DIPPING TOWARDS THE S END OF PIT LOTS OF BLOUGHING
					43.3	58.2	0.5						
RECOMMEND BLENDING WITH BULLDOZER FOR PAVING													

PROJECT:		McTavish Pit				SAMPLED BY:		Samantha Kinniburgh					
PIT #:		0411				METHOD:		Excavator					
DISTRICT:		Okanagan Shuswap				DATE:		September 7 2016					
TH / TP		DEPTH		SAMPLE	SOILS CLASS	ESTIMATED GRADUATION			ESTIMATED ROCK 75mm			SAND TYPE	REMARKS
	FROM	TO	BAG No.		G	S	F	MAX SIZE	75mm-50mm	50mm-37.5mm	<37.5mm	F M C	
TP16-09	0	1.5	193	GP	55	43	2	175	2	1	0	M-C	DIRTY GRAVEL
	1.5	4		SP	48.5	51.1	2.4						VERY SANDY
	4	5		SM-4									
TP 16-10	0	1		SM-C1									PLASTIC CLAY
	1	4	195	GP	60	35	5	200	2	1	0	C	SOME CLAY, HIGHER FINES
					61	38.2	2.9						
	4	5	196	GP	63	36	1	200	2	1	0	C	CLEANER GRAVEL, SLOUGHING @ 3M
					49	49.1	1.9						CAN BLEND THIS PIT FACE
TP 16-11	0	2	194	GP	54	43	3	150	1	0	0	C	SMALL POCKET OF SAND 0.8-1.8M DOWN
					57.7	40.7	1.6						N NW CORNER
	2	5	18	GP	65	34	1	100	1	0	0	M	SLOUGHING @ 3M
					34.8	64.2	1						
TP16-12	0	0.1		OB									
	0.1	1		GP									
	1	2.5		SP									
	2.5	5	52142	GP	50	49	1	100	1	0	0	M-C	SANDY, SOME PEA GRAVEL
					52.3	47	0.7						
													LAB TESTED SUITABILITY AREA

2007

AGGREGATE LOG													
PROJECT:		McTavish Pit				SAMPLED BY:				Al McLeod			
PIT #:		0411				METHOD:				Excavator			
DISTRICT:						DATE:				Oct. 31/07			
TH / TP	DEPTH		SAMPLE	SOILS CLASS	ESTIMATED GRADUATION			ESTIMATED ROCK 75mm				SAND TYPE	REMARKS
	FROM	TO			BAG No.	G	S	F	MAX SIZE	75mm - 150mm	150mm - 375mm		
TP 07-01	0	0.8		SP	25	72	3	150	3				
	0.8	1.3		SP		92	3					F	
	1.3	3.5	#1	SP	45	53	2	150	5			F	
					44	53	2.3						LAB TESTED
	3.5	4.5		SP		95	5					F	P1
TP 07-02	0	0.5		GP	75	22	3	100					
	0.5	1.5		SP	3	95	2					F-M	
	1.5	3.5	52293	GP	70	29	1	150	5			M	
					54	44	1.8						LAB TESTED
	3.5	4.5		SP	30	69	1	100	2			M	P2
TP 07-03	0	1.5		SP	15	83	2	75	5			M-C	
	1.5	3		SP	40	58	2	150	5			M-C	
	3	5		SP		95	5					F-M	P3
TP 07-04	0	2		SP		95	5					M	
	2	4.5		SP	5	93	2	75				M-C	P4
TP 07-05	0	4	52484	GP	55	42	3	150	5				P5&6
					63	35	1.7						LAB TESTED - within Subhilly Area
TP 07-06	0	1.2		ML									
	1.2	2		SP	5	93	2						
	2	4.5	50397	SP	40	57	3	150	2			M	P7&8
					53	45	2.5						LAB TESTED - within Subhilly Area
TP 07-07	0	1		GP-GM	50	43	7	150	2			M	
	1	4.5	X 3826	GP	60	38	2					M-C	P9
					62	37	1.3						LAB TESTED - within Subhilly Area
TP 07-08	0	4	#2	GP	58	40	2	150				M	P10&11
					52	47	1.5						LAB TESTED - within Subhilly Area
TP 07-09	0	0.5		GP-GM	50	40	10	150	5			M	
	0.05	2		GP	57	40	3	150	5			M	within Subhilly Area
	2	4.5		GP	58	40	2	150	5			M-C	P12
TP 07-16	0	2.5	#8	GP	57	40	3	150	2			C	
	2.5	5	#9	GP	57	40	3	200	4	1		C	P21&22
				GP	55.8	42.2	2.0						LAB TESTED
TP 07-17	0	5	52486	SP	5	93	2	75				M-C	
				SP	21.5	78.5	2.0						LAB TESTED
TP 07-18	0	2		GP	57	40	2	150	2				within Subhilly Area
	2	5		SP	5	92	3						P23



1998

AGGREGATE LOG													
PROJECT:		McTavish Pit					SAMPLED BY:						
PIT #:		0411					METHOD:						
DISTRICT:							DATE:						
							1998						
TH / TP	DEPTH		SAMPLE BAG No.	SOILS CLASS	ESTIMATED GRADUATION			ESTIMATED ROCK 75mm				SAND TYPE F M C	REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm-150mm	150mm-275mm	>375mm		
TP 98-01	0	2.4		GP-GM	30.8	63.2	6.0						Lab Tested
TP 98-02	0.3	4.5		GP	61.8	35.0	3.2						Lab Tested within Substability Area
TP 98-03	0.3	4.3		SP	42.0	54.2	3.9						Lab Tested
TP 98-04	0.5	4		SP-SM	37.9	56.2	5.9						Lab Tested
TP 98-05	0.3	4		GP	54.2	42.8	3.0						Lab Tested within Substability Area
TP 98-06	0.3	4		GP	50.1	45.7	4.1						Lab Tested within Substability Area
TP 98-08	0.3	4		GP	57.0	38.3	4.7						Lab Tested

Wet Sieve Analysis Charts:

2016

PROJECT REPORT OF				PERCENT PASSING									
SIEVE ANALYSIS SUMMARIES													
Project:		AGGREGATE EXPLORATION			Project No.:								
Sample Source:		McTAVISH PIT No. 0411			Client:								
Material:		PIT RUN			Date: Sept 1 2016								
Sample Information			Percent Passing										
Test Pit	Depth (m)	Bag #	75	37.5	19	9.5	4.75	2.36	1.18	0.6	0.3	0.075	
16-01	0-0.3	338	100.0	98.6	97.4	90.4	78.4	55.5	30.2	14.6	7.1	3.0	
16-01-2	1.5-3.3	349	100.0	77.3	67.7	58.2	48.9	38.9	25.7	13.0	6.9	2.1	
16-02	0.5-0.8	329	100.0	87.8	82.3	76.7	68.9	49.2	28.1	13.4	6.2	2.1	
16-03	1.8-5.0	334	93.6	69.1	55.8	48.2	43.1	38.0	28.2	12.5	3.5	0.7	
16-04	0.3-1.5	325	95.6	85.1	76.7	61.5	41.6	20.8	8.7	5.2	3.3	1.5	
16-05	2.0-5.0	328	100.0	92.0	83.4	70.6	50.2	25.9	10.2	5.7	3.9	1.9	
16-07	0.2-1.5	191	100.0	100.0	94.0	88.0	77.9	58.3	34.8	20.6	7.8	1.9	
16-08	3.0-5.0	192	100.0	91.9	81.0	68.6	56.7	43.6	27.8	10.5	1.7	0.5	
16-09	0-1.5	193	100.0	94.9	81.1	68.0	53.5	41.8	30.4	17.0	6.1	2.4	
16-10	1.0-4.0	195	100.0	76.6	61.6	50.0	39.0	23.7	10.7	5.8	4.1	2.9	
16-10-2	4.0-5.0	196	97.6	84.6	71.6	62.3	51.0	30.6	12.3	5.5	3.4	1.9	
16-11	0-2.0	194	88.7	79.8	64.8	52.8	42.3	33.2	23.7	11.9	4.0	1.6	
16-11-2	2.0-5.0	16	100.0	97.1	89.5	76.8	65.2	51.1	35.0	16.7	3.8	1.0	
16-12	2.5-5.0	52142	100.0	82.5	71.9	58.2	47.7	39.3	29.9	14.0	3.1	0.7	

2007

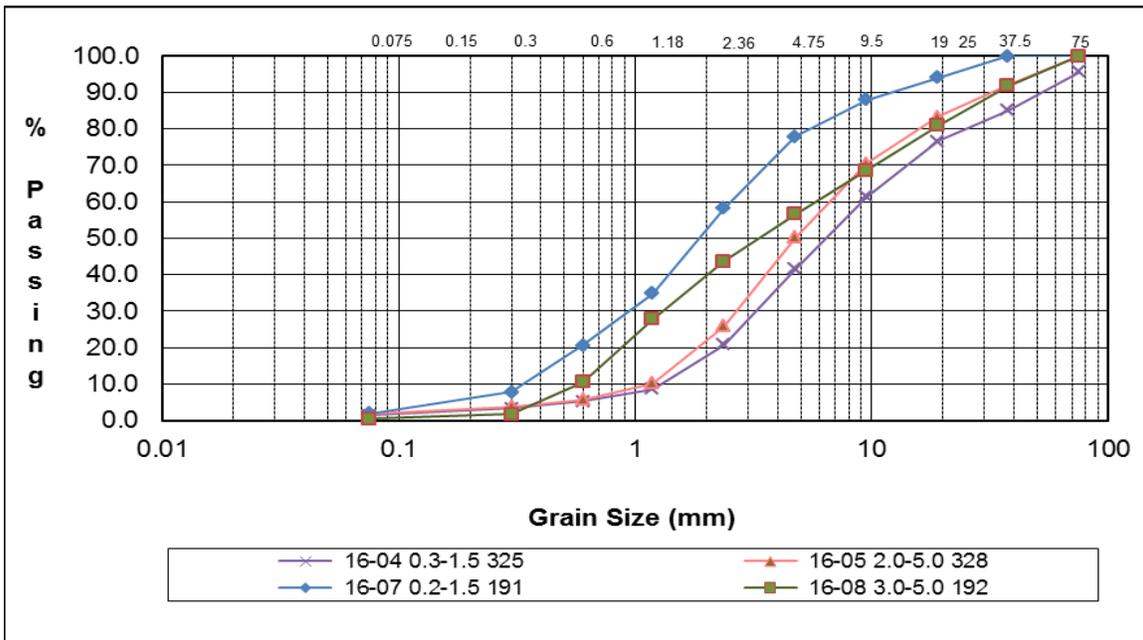
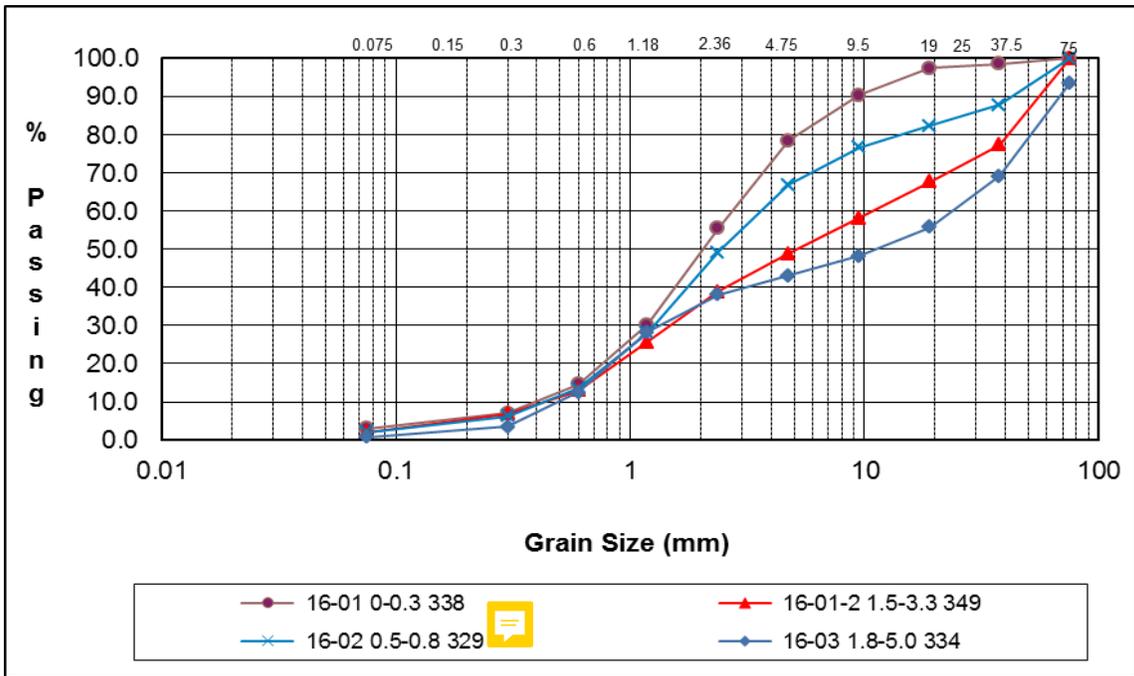
PROJECT REPORT OF			PERCENT PASSING									
SIEVE ANALYSIS SUMMARIES												
Project:	AGGREGATE EXPLORATION		Project No.:		242-08560-2010							
Sample Source:	McTAVISH PIT No. 0411		Client:		0							
Material:	PIT RUN		Date:		#####							
Sample Information			Percent Passing									
Test Pit	Depth (m)	Bag #	Pit Run Sieve Sizes (mm)									
			75	37.5	19	9.5	4.75	2.36	1.18	0.6	0.3	0.075
07-01	1.3-3.5	1	100.0	90.4	82.3	70.9	55.6	42.1	35.1	28.2	14.2	2.3
07-02	1.5-3.5	52293	100.0	86.6	69.5	56.9	45.6	35.6	26.1	13.7	4.4	1.8
07-05	0.0-4.0	52484	100.0	83.4	66.8	50.7	37.0	27.6	18.4	8.4	3.2	1.7
07-06	2.0-4.5	50397	100.0	94.9	76.2	61.0	47.5	37.0	27.5	13.9	4.8	2.5
07-07	1.0-4.5	3826	100.0	89.0	76.9	55.1	38.1	26.3	16.2	6.8	2.7	1.3
07-08	0.0-4.0	2	100.0	91.9	75.5	62.0	48.2	37.6	26.3	11.5	3.4	1.5
07-16	0.0-2.5	8	100.0	96.8	83.2	69.6	50.3	28.2	12.7	6.5	4.3	2.3
07-16	2.5-5.0	9	100.0	93.3	76.1	64.2	44.2	24.9	12.2	6.4	4.0	2.0
07-17	0.0-5.0	52486	100.0	100.0	96.8	90.3	78.5	52.7	27.2	12.4	5.3	2.0

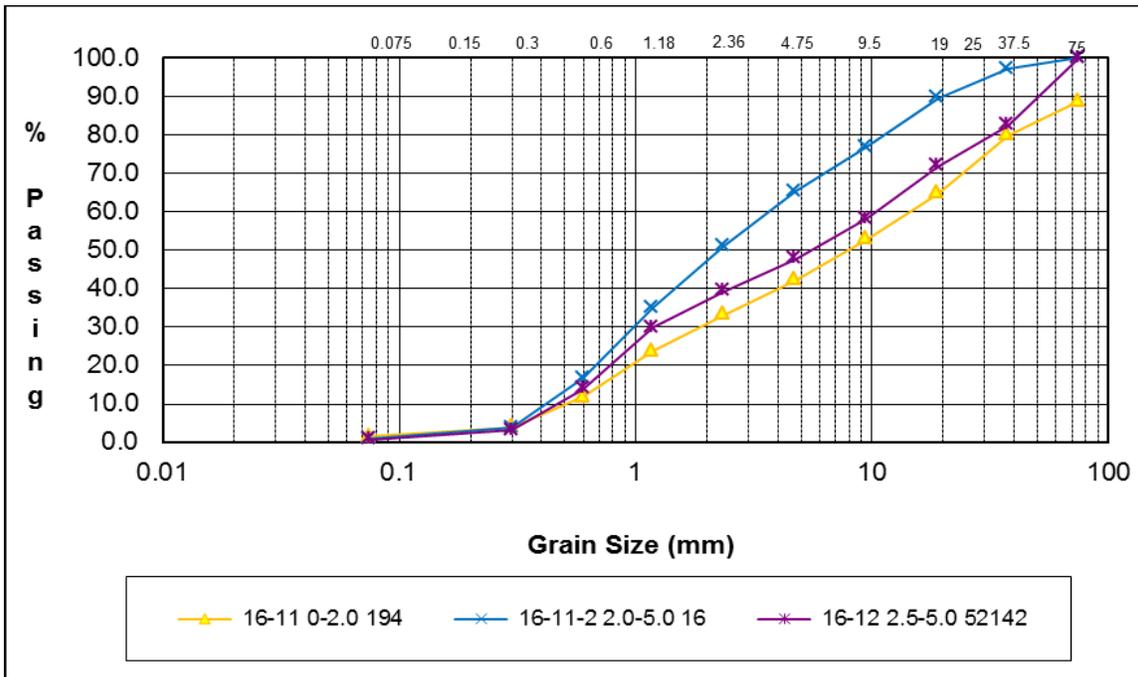
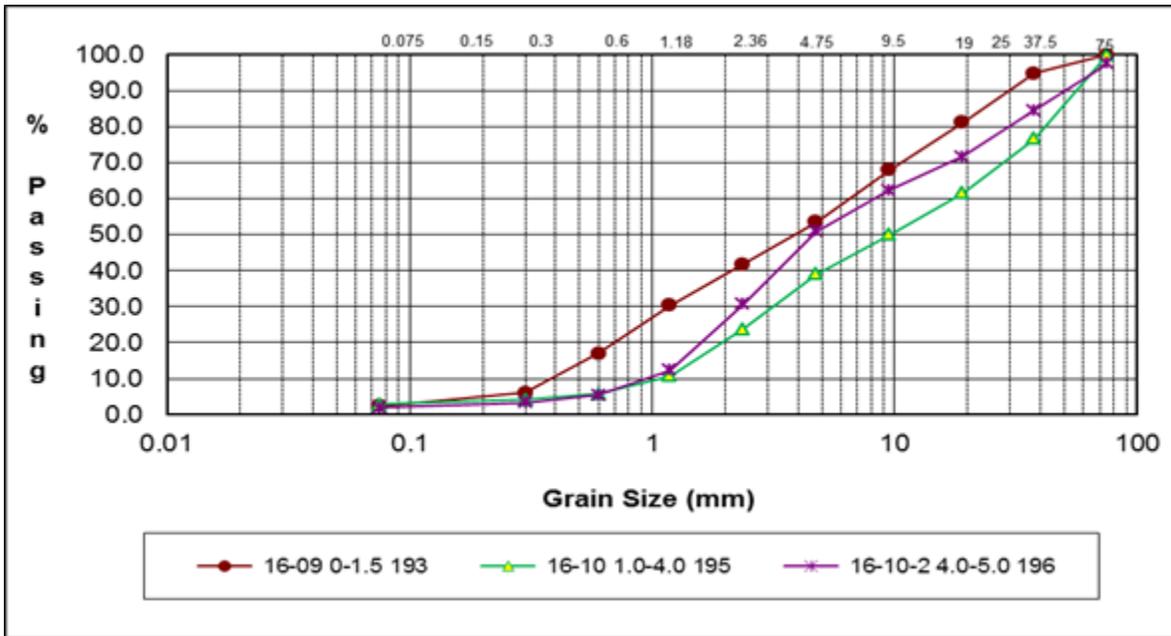
1998

PROJECT REPORT OF			PERCENT PASSING									
SIEVE ANALYSIS SUMMARIES												
Project:	AGGREGATE EXPLORATION		Project No.:		242-08560-2010							
Sample Source:	McTAVISH PIT No. 0411		Client:		0							
Material:	PIT RUN		Date:		#####							
Sample Information			Percent Passing									
Test Pit	Depth (m)	Bag #	Pit Run Sieve Sizes (mm)									
			75	37.5	19	9.5	4.75	2.36	1.18	0.6	0.3	0.075
98-1	0.0-2.4	38951										
98-2	0.3-7.5	38945	100.0	89.0	67.9	50.3	38.2	29.8	20.1	11.1	6.0	3.2
98-3	0.3-4.3	38932	100.0	93.2	88.8	74.4	58.0	46.3	34.5	19.6	7.9	3.9
98-4	0.5-4.0	38938										
98-5	0.3-4.0	38957	100.0	93.2	76.1	60.8	45.8	37.8	25.0	14.1	8.2	3.0
98-6	0.3-4.0	38929	100.0	95.2	82.1	63.8	49.9	39.3	26.1	14.1	7.9	4.1
98-8	0.3-4.0	38955	100.0	93.3	74.0	57.4	43.0	34.8	24.8	15.2	8.4	4.7

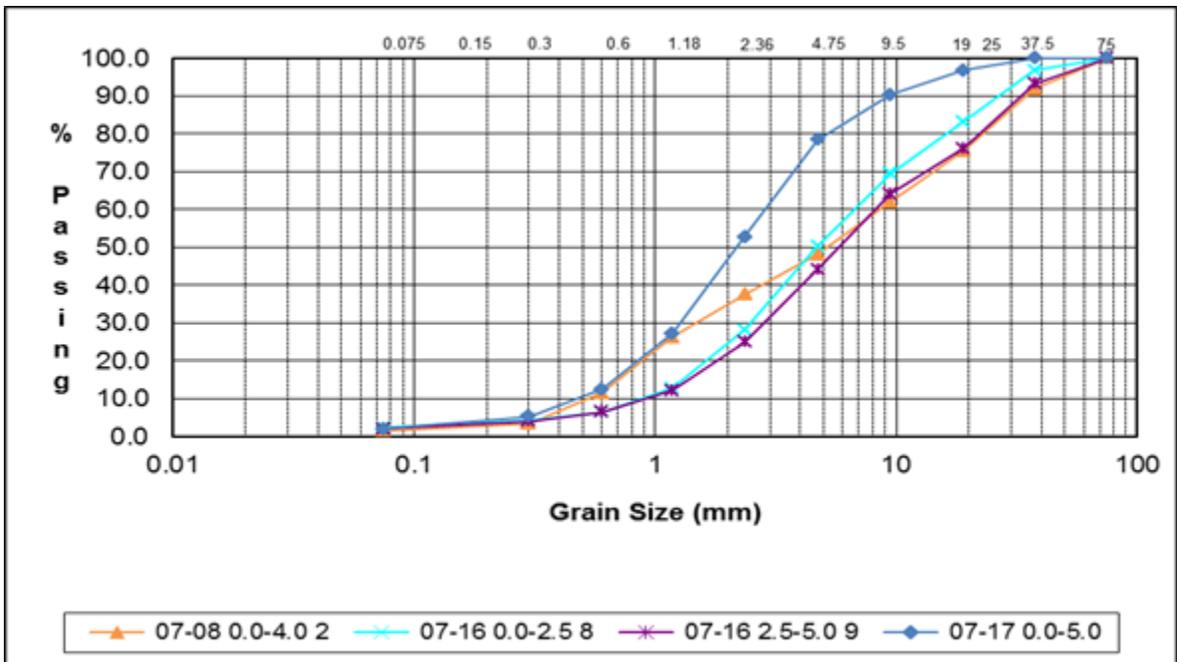
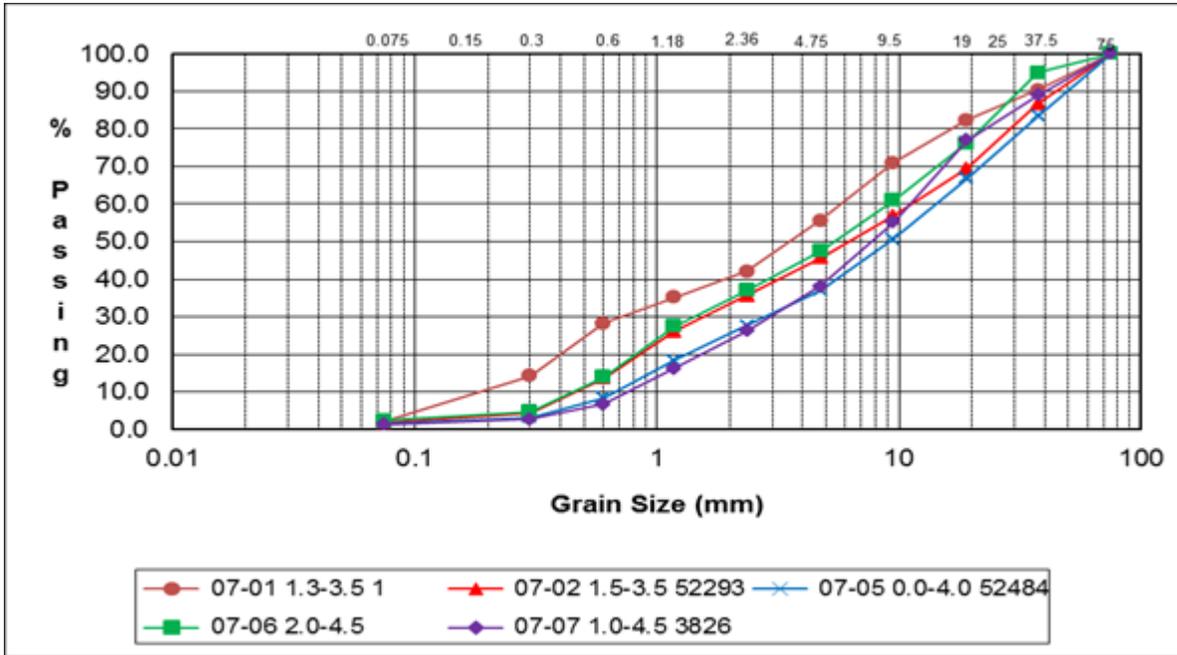
Aggregate Gradation Charts:

2016

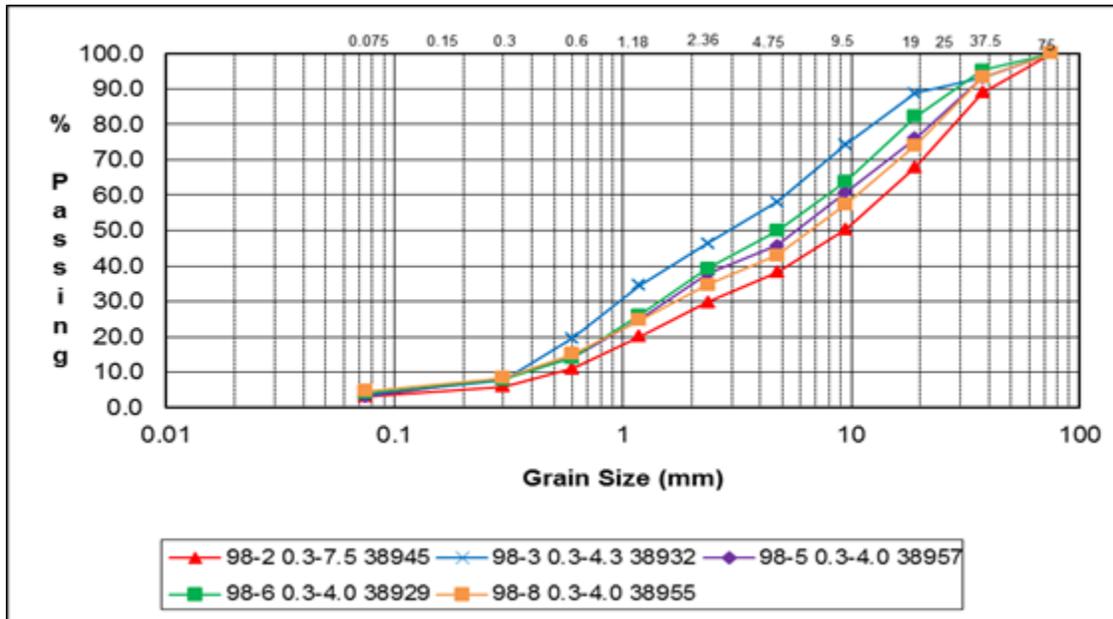




2007



1998



USC Legend

MATERIALS CLASSIFICATION LEGEND

MAJOR DIVISIONS		SYMBOL	SOIL TYPE									
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	WELL GRADED GRAVELS OR GRAVEL-SAND MIXTURES, < 5% FINES									
		GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, < 5% FINES									
		GM*	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES									
		GC*	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES									
	SAND AND SANDY SOILS	SW	WELL-GRADED SANDS OR GRAVELLY SANDS, < 5% FINES									
		SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, < 5% FINES									
		SM*	SILTY SANDS SAND-SILT MIXTURES									
		SC*	CLAYEY SANDS SAND-CLAY MIXTURES									
FINE GRAINED SOILS	SILTS AND CLAYS $w_L < 50$	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY									
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS									
		OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY									
	SILTS AND CLAYS $w_L > 50$	MH	INORGANIC SILTS, MICACEOUS OR DIATOM-ACEOUS FINE SANDY OR SILTY SOILS, PLASTIC SILTS									
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS									
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS									
ORGANIC SOILS	Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS										
TOPSOIL	TS	TOPSOIL WITH ROOTS, ETC.										
COBBLES	SB	ROCK FRAGMENTS AND COBBLES, PARTICLE SIZE 75mm TO 300mm										
LARGE BOULDERS	LB	BOULDERS, PARTICLE SIZE OVER 300mm										
BEDROCK	BR	BEDROCK										
FOR SOILS HAVING 5 - 12% PASSING .075 SIEVE, USE DUAL SYMBOL												
<table style="width: 100%; border: none;"> <tr> <td style="border: none;"> <table style="border: none;"> <tr> <td style="border: none;">*GM1; GC1; SM1; SC1; 12 - 20%</td> <td rowspan="4" style="border: none; vertical-align: middle; font-size: 3em;">}</td> <td rowspan="4" style="border: none; vertical-align: middle;">PASSING .075mm SIEVE</td> </tr> <tr> <td style="border: none;">GM2; GC2; SM2; SC2; 20 - 30%</td> </tr> <tr> <td style="border: none;">GM3; GC3; SM3; SC3; 30 - 40%</td> </tr> <tr> <td style="border: none;">GM4; GC4; SM4; SC4; 40 - 50%</td> </tr> </table> </td> <td colspan="2" style="border: none;"></td> </tr> </table>				<table style="border: none;"> <tr> <td style="border: none;">*GM1; GC1; SM1; SC1; 12 - 20%</td> <td rowspan="4" style="border: none; vertical-align: middle; font-size: 3em;">}</td> <td rowspan="4" style="border: none; vertical-align: middle;">PASSING .075mm SIEVE</td> </tr> <tr> <td style="border: none;">GM2; GC2; SM2; SC2; 20 - 30%</td> </tr> <tr> <td style="border: none;">GM3; GC3; SM3; SC3; 30 - 40%</td> </tr> <tr> <td style="border: none;">GM4; GC4; SM4; SC4; 40 - 50%</td> </tr> </table>	*GM1; GC1; SM1; SC1; 12 - 20%	}	PASSING .075mm SIEVE	GM2; GC2; SM2; SC2; 20 - 30%	GM3; GC3; SM3; SC3; 30 - 40%	GM4; GC4; SM4; SC4; 40 - 50%		
<table style="border: none;"> <tr> <td style="border: none;">*GM1; GC1; SM1; SC1; 12 - 20%</td> <td rowspan="4" style="border: none; vertical-align: middle; font-size: 3em;">}</td> <td rowspan="4" style="border: none; vertical-align: middle;">PASSING .075mm SIEVE</td> </tr> <tr> <td style="border: none;">GM2; GC2; SM2; SC2; 20 - 30%</td> </tr> <tr> <td style="border: none;">GM3; GC3; SM3; SC3; 30 - 40%</td> </tr> <tr> <td style="border: none;">GM4; GC4; SM4; SC4; 40 - 50%</td> </tr> </table>	*GM1; GC1; SM1; SC1; 12 - 20%	}	PASSING .075mm SIEVE	GM2; GC2; SM2; SC2; 20 - 30%	GM3; GC3; SM3; SC3; 30 - 40%			GM4; GC4; SM4; SC4; 40 - 50%				
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GM2; GC2; SM2; SC2; 20 - 30%												
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GM4; GC4; SM4; SC4; 40 - 50%												

REV. 90-04-26



PROVINCE of BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
Geotechnical & Materials Engineering

UNIFIED SOIL CLASSIFICATION LEGEND

Drawn: LU	Date: JULY'97	Scale:
File No.:	ACAD File: ACADSTDS 830205\SOIL-APP	

Photos



View of crusher set up area, June 2023.



View looking at northern suitability area in background (mining into pit floor), June 2023.



Looking south at southern suitability area in background, June 2023.



View looking east at southern suitability area, June 2023.



Looking east/northeast at southern suitability area, June 2023



TP07-05



TP 16-03



TP16-03 spoil piles. Photo on right is below 1.8 metres.

January 2024



TP 16-04, September 2016.



TP 16-04 spoil pile.



TP16-05, located in pit floor.



TP16-05 spoil pile



TP16-06, coarse aggregate near surface.



TP 16-10, September 2016.



TP 16-11, September 2016.