

TEST HOLE LOGS

EXPLANATION OF SYMBOLS AND TERMS

The symbols and terms used on the test hole logs to summarize the results of the field investigation and the laboratory testing are described on the following sheets.

Soils are classified and described according to their engineering properties and behaviour. The descriptions applied to the various soil units as shown on the logs follow the Unified Soil Classification system with slight modification to recognize inorganic clays to medium plasticity (CI). Such descriptions are judgmental in nature and may differ in detail from that actually encountered in the field. The descriptions noted in the logs from test holes are based solely on inspections of soil and rock samples recovered or cuttings observed. The actual nature of the materials between samples may vary.

Laboratory tests have been performed on the various samples noted, following standard testing procedures or protocol unless otherwise noted. The test results are intended to provide a general indication of some of the engineering properties of the material.

ABBREVIATIONS

w or MC	Moisture content (ASTM D2216)	PP	Pocket Penetrometer
W _p or PL	Plastic limit (ASTM D4318)	γ	Unit weight
W _L or LL	Liquid limit (ASTM D4318)	γ_d	Dry unit weight
I _p or PI	Plasticity Index	ρ	Density
NP	Non-plastic soil	ρ_d	Dry density
SH	Shelby tube sample	q _u	Unconfined compressive strength
AU	Auger sample	C _u	Undrained shear strength
B	Bulk Sample	SO ₄	Concentration of water-soluble sulphates
UD	Undisturbed Sample	TCR	Total Core Recovery
RC	Rock Core Sample	RQD	Rock Quality Index
SPT	Standard Penetration Test	SCR	Solid Core Recovery
VST	Vane Shear Test	FI	Fracture Index

SIZE RANGES OF SOIL COMPONENTS	
Component	Size Range mm (US Sieve)
Boulders	Over 300 (12 inch)
Cobbles	75 (3 inch) to 300 (12 inch)
Gravel:	
Coarse	19 (3/4 inch) to 75 (3 inch)
Fine	5 (#4) to 19 (3/4 inch)
Sand:	
Coarse	2 (#10) to 5 (#4)
Medium	0.4 (#40) to 2 (#10)
Fine	0.08 (#200) to 0.4 (#40)
Clay and Silt	Less than 0.08 (#200)

SECONDARY CONSTITUENTS	
Term	Percentage
and	35% - 50%
y/ey	20% - 35%
some	10% - 20%
trace	0 - 10%

CONSISTENCY OF FINE GRAINED SOILS			
Term	Undrained Shear Strength (kPa)	SPT N	Description
Very soft	< 12	< 2	Easily penetrated with fist
Soft	12 - 25	2 - 4	Easily penetrated with thumb
Firm	25 - 50	4 - 8	Moderate effort to penetrate with thumb
Stiff	50 - 100	8 - 15	Great effort to indent with thumb
Very Stiff	100 - 200	15 - 30	Easily indented with thumbnail
Hard	> 200	> 30	Effort required to indent with thumbnail

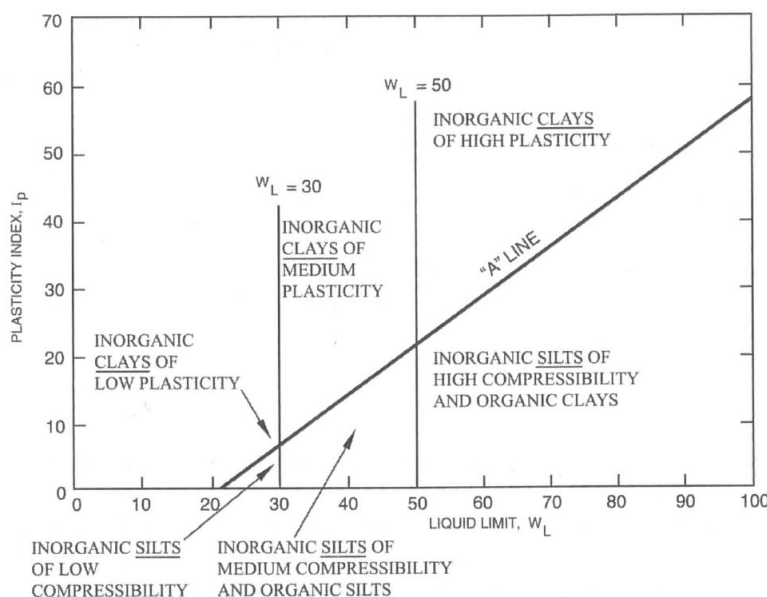
DENSITY OF COARSE GRAINED SOILS		
Term	SPT N	Approx. Relative Density (%)
Very loose	0 - 4	0 - 15
Loose	4 - 10	15 - 35
Compact	10 - 30	35 - 65
Dense	30 - 50	65 - 85
Very Dense	> 50	85 - 100

TEST HOLE LOGS

EXPLANATION OF SYMBOLS AND TERMS

UNIFIED SOIL CLASSIFICATION SYSTEM (MODIFIED)

MAJOR DIVISION			GROUP SYMBOL	TYPICAL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA	
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils	Strong colour or odor and fibrous texture	
COARSE-GRAINED SOILS MORE THAN HALF BY WEIGHT LARGER THAN 75 µm	GRAVELS MORE THAN HALF THE COARSE FRACTION LARGER THAN 4.75 mm	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well-graded gravels, gravel-sand mixtures	$C_u = D_{60}/D_{10} > 4$	$C_c = (D_{30})^2 / D_{10} \times D_{60}$ 1 to 3
			GP	Poorly graded gravels, gravel-sand mixtures	Not meeting all above requirements	
		GRAVELS WITH FINES (MORE THAN 12% FINES)	GM	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or $PI < 4$	
			GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits above "A" line or $PI > 7$	
	SANDS MORE THAN HALF THE COARSE FRACTION LARGER THAN 4.75 mm	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well-graded sands, gravelly sands	$C_u = D_{60}/D_{10} > 6$	$C_c = (D_{30})^2 / D_{10} \times D_{60}$ 1 to 3
			SP	Poorly graded sands or gravelly sands	Not meeting all above requirements	
		SANDS WITH FINES (MORE THAN 12% FINES)	SM	Silty sands, sand-silt mixtures	Atterberg limits below "A" line or $PI < 4$	
			SC	Clayey sands, sand-clay mixtures	Atterberg limits above "A" line or $PI > 7$	
FINE-GRAINED SOILS MORE THAN HALF BY WEIGHT SMALLER THAN 75 µm	SILTS BELOW "A" LINE ON PLASTICITY CHART; NEGLIGIBLE ORGANIC CONTENT		ML	Inorganic silts and very fine sands, rock flour, silty sands of slight plasticity	$LL < 50$	SEE PLASTICITY CHART BELOW
			MH	Inorganic silts, micaceous or diatomaceous, fine sandy or silty soils	$LL > 50$	
	CLAYS ABOVE "A" LINE ON PLASTICITY CHART; NEGLIGIBLE ORGANIC CONTENT		CL	Inorganic clays of low plasticity, gravelly, sandy, or silty clays	$LL < 30$	
			CI	Inorganic clays of medium plasticity, silty clays	$30 < LL < 50$	
			CH	Inorganic clays of high plasticity	$LL > 50$	
	ORGANIC SILTS AND CLAYS BELOW "A" LINE ON PLASTICITY CHART		OL	Organic silts and organic silty clays of low plasticity	$LL < 50$	
			OH	Organic clays of high plasticity	$LL > 50$	





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BOREHOLE No : **22BH106**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/23/2022	COMPLETED	03/23/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	778.84m N 5612599.300 E 414320.100
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some silt, trace to some fine grained sand, damp to moist, stiff, low to medium plastic, brown with oxidation specks	■	AU1	9.2	●			778
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark greyish brown, moist, high plastic, extremely weak, blocky, gypsum crystals suspect white sulphate inclusions	■	AU2	11.7	●			777
			▲	SPT1	31	■			
3		...3.1 m - becoming oxidation staining	■	AU3	16.1	●			776
			■	AU4	17.5	●	2.7 m - LL = 56.3% PL = 19.7% PI = 36.6%		
4		...3.7 m - trace yellowish oxidation staining	■	AU5	17.0	●	2.7 m - Sand = 1.0% Silt = 38.2% Clay = 60.8%		775
5			■	AU6	16.6	●			774
			▲	SPT3	54				
6		...5.5 m - becoming light brown and dark grey mottling ...5.8 m - some fine stratification	■	AU7	16.1	●			773
			■	AU8	15.0	●			
7		SILTSTONE, clayey, sandy, light grey to white, dry to damp, medium plastic, extremely weak, fissured ...6.7 m - becoming dark grey End of Borehole @7.0 m	■	AU9	11.0	●	6.5 m - SPT refusal; 50 blows for 5" 6.7 m - LL = 41.3% PL = 13.3% PI = 28.0% 6.7 m - Sand = 23.9% Silt = 44.1% Clay = 32.0%		772
8									771
9									770
									769

Notes:

Target depth of 10 m not achieved. No sloughing or seepage encountered. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

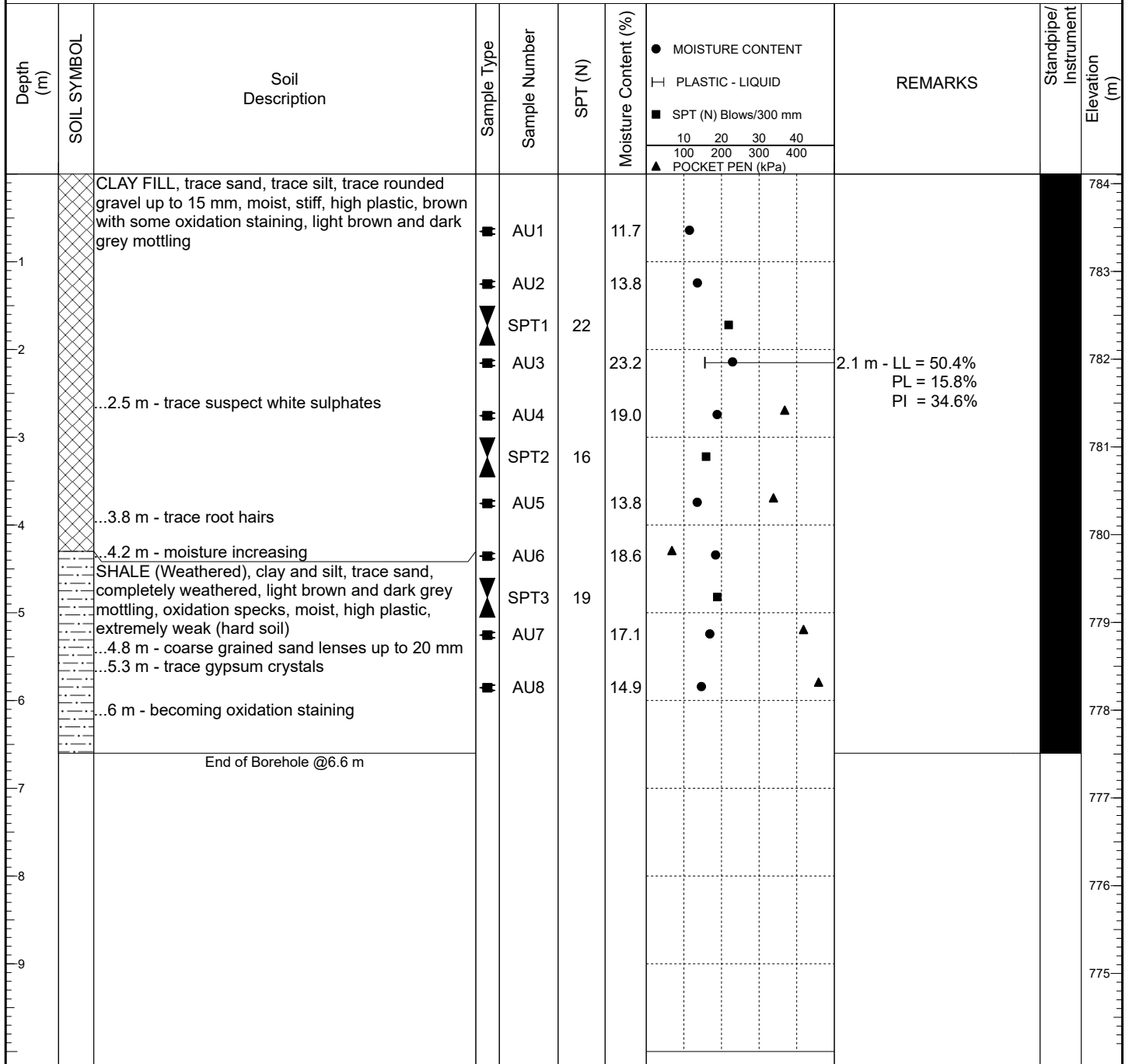


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BOREHOLE No : **22BH100**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	GROUND ELEVATION	784.11m N 5612602.400 E 413724.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 6.6 m achieved. No sloughing upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

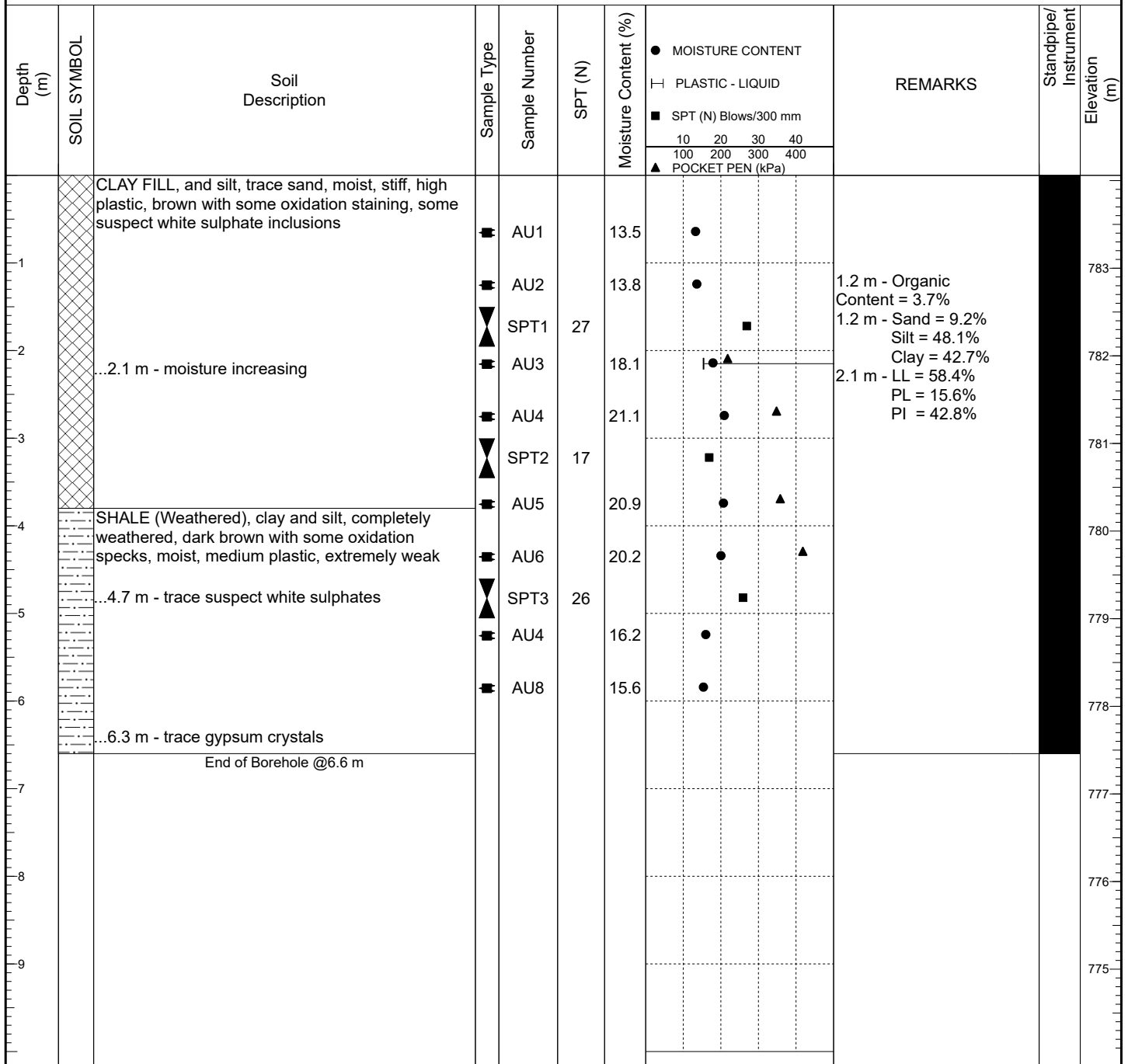


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BOREHOLE No : **22BH101**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	784.06m	N 5612601.300 E 413823.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Target depth of 6.6 m achieved. No seepage or sloughing observed. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

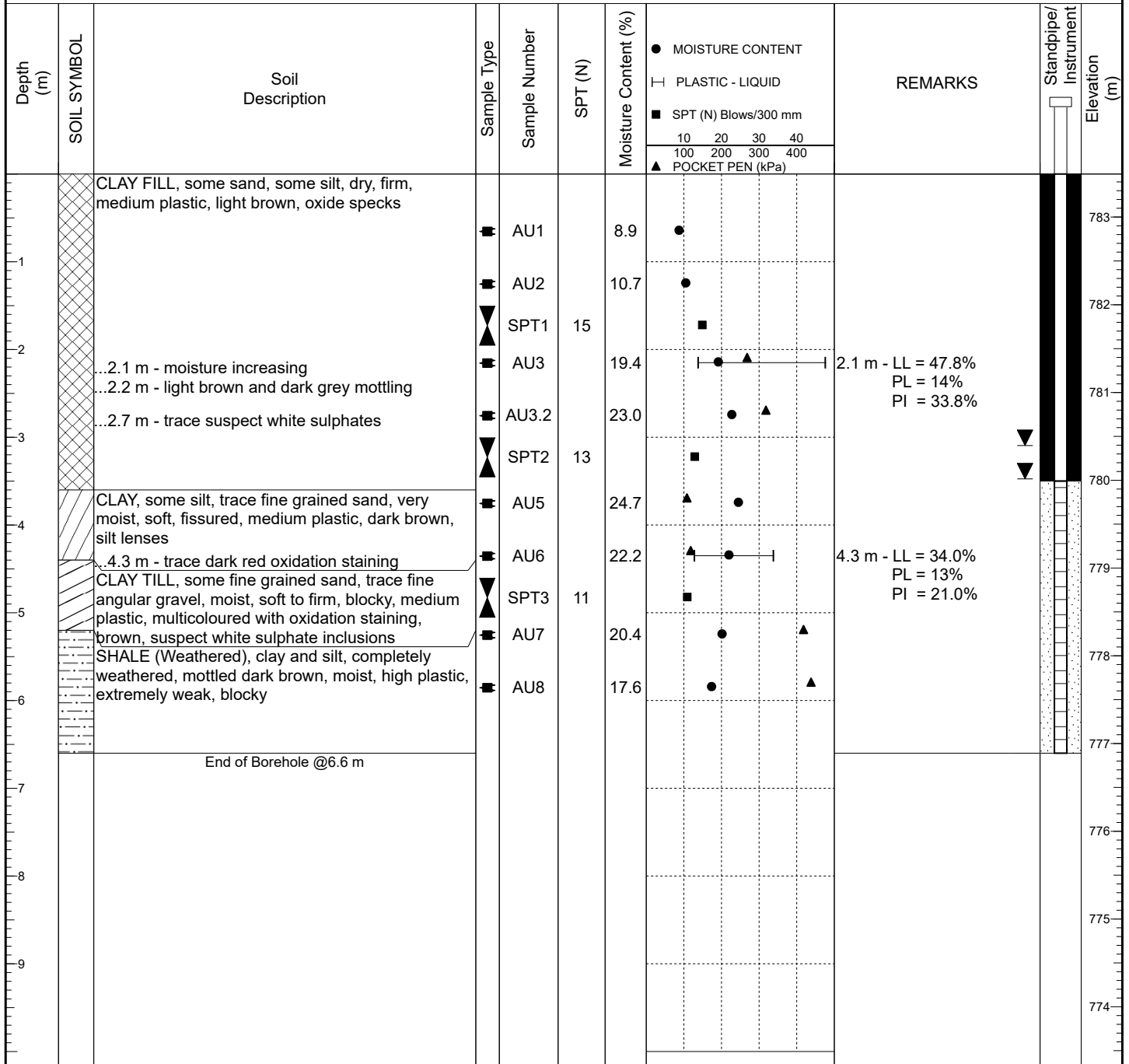


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BOREHOLE No : **22BH102**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/22/2022	COMPLETED	03/22/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	783.49m N 5612599.800 E 413922.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	780.48 m 3.01 m
		DATE GROUND WATER RECORDED	09/15/2022



Notes:

Target depth of 6.6 m achieved. No seepage or sloughing observed upon completion. 50 mm standpipe installed to 6.6 m. Borehole backfilled with bentonite chips. and sand.

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BOREHOLE No : **22BH103**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	GROUND ELEVATION	782.64m N 5612598.400 E 414021.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY FILL, some sand, trace silt, dry, stiff, medium plastic, light brown with red oxidation staining, trace suspect white sulphate inclusions	■	AU1		8.5			782
			■	AU2		9.8			
2		CLAY TILL, sandy, some silt, moist, very stiff, blocky, medium plastic, brown with oxidation specks, trace suspect white sulphate inclusions ...2 m - moisture increasing	▲	SPT1	29				781
			■	AU3		13.6			
3			■	AU4		13.6			780
		SHALE (Weathered), and silt, clayey, trace sand, completely weathered, dark brown with oxidation staining, moist, medium plastic, extremely weak, blocky trace suspect white sulphates ...3.8 m - brown and dark grey mottling	▲	SPT2	76				779
4			■	AU5		14.5			
			■	AU6		14.4		4.3 m - LL = 41.9% PL = 17.6% PI = 24.3%	778
5			▲	SPT3	70			4.3 m - Sand = 7.2% Silt = 59.4% Clay = 33.4%	777
6		...5.8 m - becoming greyish brown							776
7		End of Borehole @6.6 m							775
8									774
9									773

Notes:

Target depth of 6.6 m achieved. No seepage or sloughing observed. Borehole backfilled with bentonite chips.

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BOREHOLE No : **22BH104**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	GROUND ELEVATION	781.54m N 5612596.900 E 414119.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY FILL, and silt, some sand, trace gravel, damp, stiff, medium plastic, brown with oxidation staining, trace suspect white sulphate inclusions	■	AU1	9.4	●			781
			■	AU2	7.3	● ┤	1.2 m - LL = 38.7% PL = 13.5% PI = 25.2%		780
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark brown, moist, high plastic, extremely weak, blocky, some suspect white sulphate inclusions	▲	SPT1	22	■	1.2 m - Gravel = 12.1% 1.2 m - Sand = 17.8% Silt = 43.3% Clay = 26.8%		779
			■	AU3	13.4	●			
3			■	AU4	15.1	● ┤	2.7 m - EC: 7.8 dS/m 2.7 m - SAR: 9.8 2.7 m - pH: 4.4 2.7 m - LL = 52.3% PL = 19.9% PI = 32.4%		778
			▲	SPT2	35	■			777
4			■	AU5	15.8	●			
			■	AU6	15.8	●			
5		...4.8 m - 50 mm layer of light grey shale	▲	SPT3	58				776
		...5.3 m - becoming brown to light grey mottling	■	AU7	15.4	●			
6			■	AU8	15.9	●			775
		...6.2 m - some oxidation staining	▲	SPT4	78				
7		End of Borehole @6.6 m							774
8									773
9									772

Notes:

Target depth of 6.6 m achieved. No sloughing or seepage observed. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

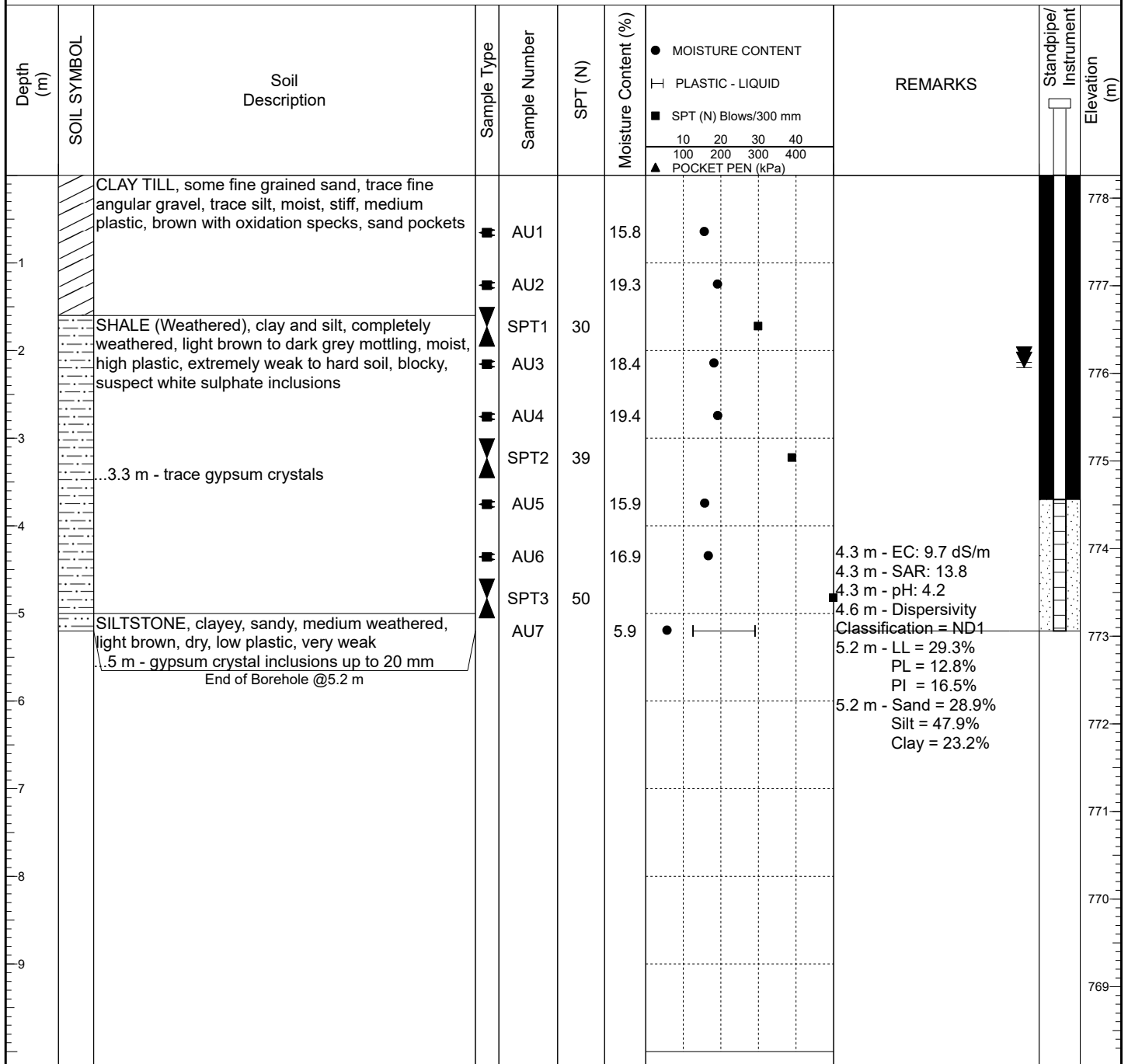


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BOREHOLE No : **22BH105**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/23/2022	COMPLETED	03/23/2022	GROUND ELEVATION	778.26m N 5612595.700 E 414220.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	776.21 m	2.05 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		



Notes:

Target depth of 10 m not achieved. No seepage or sloughing observed. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to 5.2 m.

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BOREHOLE No : **22BH107**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/23/2022	COMPLETED	03/23/2022	GROUND ELEVATION	779.44m N 5612597.900 E 414420.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some fine grained sand, trace subangular gravel up to 35 mm, moist, stiff, high plastic, oxide staining, sand pockets, suspect white sulphate inclusions	■	AU1	9.5	●			779
			■	AU2	11.1	●	1.2 m - LL = 52.0% PL = 16.1% PI = 35.9%		778
2		SHALE (Weathered), clay and silt, completely weathered, mottled, greyish brown with oxidation specks, moist, high plastic, extremely weak, blocky	▲	SPT1	56		1.2 m - Gravel = 3.2% 1.2 m - Sand = 10.1% Silt = 33.7% Clay = 53.0%		777
		...2 m - suspect rock in SPT1	■	AU3	15.2	●			777
3		...2.2 m - some gypsum crystals	■	AU4	15.2	●			776
			▲	SPT2	61				776
4		...3.7 m - becoming dark brown	■	AU5	15.9	●			775
		...3.8 m - trace to some suspect white sulphates	■	AU6	16.2	●			775
5			▲	SPT3	78				774
		...5.2 m - becoming brown with dark grey mottling	■	AU7	16.3	●			774
6			■	AU8	16.1	●			773
		...6.2 m - becoming dark grey, finely stratified	▲	SPT4	50		6.6 m - SPT refusal; 50 blows for 5"		773
7			■	AU9			6.7 m - EC: 9.9 dS/m		772
			■	AU10	17.1	●	6.7 m - SAR: 14.2		772
8			▲	SPT4	50		6.7 m - pH: 4.2		771
		End of Borehole @8.1 m					8.1 m - SPT refusal; 50 blows for 6"		771
9									770

Notes:

Target depth of 8.1 m achieved. No seepage or sloughing observed. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH108**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/23/2022	COMPLETED	03/23/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	779.03m N 5612595.831 E 414522.511
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	774.05 m 4.98 m
		DATE GROUND WATER RECORDED	10/12/2022

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument Elevation (m)
						● MOISTURE CONTENT ▬ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)		
1		CLAY TILL, some fine grained sand, some fine angular gravel up to 20 mm, trace silt, damp, stiff, low to medium plastic, brown with oxidation specks, suspect white sulphate inclusions	■	AU1	9.6	●		
			■	AU2	9.4	●		
2		SHALE (Weathered), clay and silt, completely weathered, dark brown with oxidation specks, moist, high plastic, extremely weak to hard soil, blocky, trace suspect white sulphate inclusions	■	AU3	16.2	●	2.1 m - EC: 8.3 dS/m 2.1 m - SAR: 11.1 2.1 m - pH: 4.8 2.1 m - LL = 52.1% PL = 19.6% PI = 32.5%	
3		...2.8 m - becoming greyish brown	■	AU4	16.1	●		
		...3.3 m - some gypsum crystals inclusions up to 10 mm	▲	SPT1	62		3 m - Dispersivity Classification = ND3 3.7 m - LL = 49.6% PL = 17.2% PI = 32.4%	
4			■	AU5	16.0	●		
			■	AU6	15.2	●		
5		BENTONITE (200 mm layer), moist, high plastic, soft, organic (see photo), trace gypsum crystals	▲	SPT3	39			
		SHALE (Weathered), clay and silt, completely weathered, dark brown with oxidation specks, moist, high plastic, extremely weak to hard soil, blocky, trace suspect white sulphate inclusions	■	AU7	36.0	●		
6			■	SH1				
			■	AU8	18.2	●		
7		...6.7 m - becoming brownish dark grey	▲	SPT4	89			
			■	AU9	17.9	●		
			■	AU10	17.0	●		
8		SHALE, silty, clayey, trace fine grained sand, highly weathered, light grey with oxidation specs, damp, medium to high plastic, extremely weak, finely stratified, marine	▲	SPT5	50			
9		End of Borehole @8.1 m						

Notes:

Target depth of 8.1 m achieved. No sloughing or seepage observed. Borehole backfilled with sand and bentonite chips. Standpipe installed to 8.1 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH108E**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/20/2022	COMPLETED	03/20/2022	GROUND ELEVATION	778.90m N 5612595.400 E 414568.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		TOPSOIL, silty, some sand, moist, loose, light brown, trace root hairs and organics							778
		GRAVEL, silty, trace sand, trace clay, sub-angular, well graded, moist, red and brown							
2		CLAY TILL, silty, some sand, moist, stiff, medium plastic, brown with oxidation mottling, suspect white sulphate inclusions							777
3		SHALE (Weathered), clay and silt, highly weathered, brown, with oxidation specks, moist, high plastic, very weak, blocky, gypsum crystals, suspect white sulphate inclusions							776
4									775
5									774
6		BENTONITE (100-150 mm layer)							773
		SHALE (Weathered), clay and silt, highly weathered, brown, mottled, moist, high plastic, extremely weak, blocky							
		End of Borehole @6.1 m							
7									772
8									771
9									770
									769

Notes:

Exploratory borehole in attempt to delineate lateral extent of bentonite Layer encounter in borehole 22BH108. Located approximately 50 m east of borehole 22BH108. Borehole backfilled with bentonite chips. No samples retrieved.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH108W**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/20/2022	COMPLETED	03/20/2022	GROUND ELEVATION	779.76m N 5612599.600 E 414472.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, damp, very soft, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions							779
2		...2 m - becoming very damp							778
3		SHALE (Weathered), clay and silt, highly weathered, mottled brown with some oxidation staining, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions							777
4		...3.7 m - trace oxide specks, greyish brown with oxidation specks							776
5									775
6		...5.4 m - brownish grey with oxide specks							774
7		End of Borehole @6.1 m							773
8									772
9									771
									770

Notes:

Exploratory borehole in attempt to delineate lateral extent of bentonite layer encountered in borehole 22BH108. Located approximately 50 m west of borehole 22BH108. Borehole backfilled with bentonite chips. No samples retrieved.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH109**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/23/2022	COMPLETED	03/23/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	778.63m N 5612595.100 E 414620.100
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some fine grained sand, trace subangular gravel up to 45 mm, dry, stiff, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	7.9	●			778
			■	AU2	7.8	●	1.2 m - LL = 46.4% PL = 15.5% PI = 30.9%		777
2		SHALE (Weathered), clay and silt, trace fine grained sand, completely weathered, light brown with dark grey mottling and oxidation staining, moist, high plastic, extremely weak, blocky	▲	SPT1	26				777
		...2.2 m - some suspect white sulphates	■	AU3	16.2	●			776
3		...2.7 m - some light brown to dark grey varving	■	AU4	16.7	●			776
		...3.1 m - trace yellowish inclusions	▲	SPT2	45		3 m - Dispersivity Classification = ND3		775
4			■	AU5			3.7 m - EC: 8.9 dS/m 3.7 m - SAR: 13.6 3.7 m - pH: 7.5		775
5			■	AU6	16.4	●			774
			▲	SPT3	50				774
6		...5.3 m - trace gypsum crystals inclusions	■	AU7	14.7	●			773
			■	AU8	15.0	●			773
7		SHALE, clay and silt, trace sand, medium weathered, light whitish grey, dry, high plastic, weak, fissured	▲	SPT4	50		6.6 m - SPT refusal; 50 blows for 4"		772
		End of Borehole @6.7 m	■	AU9	18.7	●	6.6 m - LL = 60.4% PL = 20% PI = 40.4% 6.6 m - Sand = 4.3% Silt = 41.1% Clay = 54.6% 6.7 m - Auger refusal		771
8									770
9									769

Notes:

Target depth of 9.0 m not achieved. No sloughing or seepage observed. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

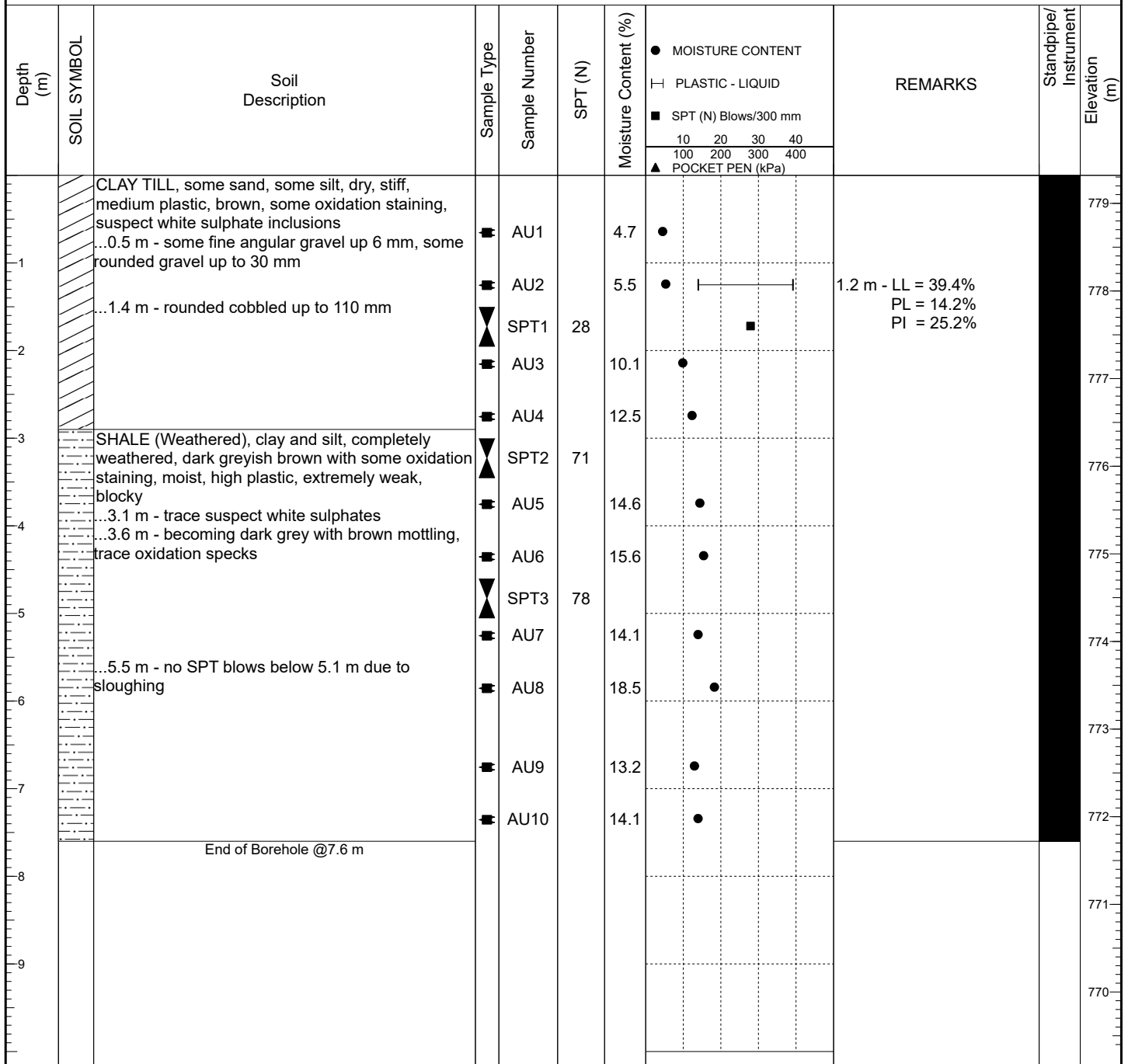


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BOREHOLE No : **22BH110**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/23/2022	COMPLETED	03/23/2022	GROUND ELEVATION	779.32m N 5612593.700 E 414720.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 8.1 m not achieved. Minor sloughing upon completion, no seepage observed.
Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH111**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	GROUND ELEVATION	779.60m N 5612592.300 E 414820.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some sand, some subrounded gravel, trace cobbles up to 150 mm, dry, stiff, low to medium plastic, brown, some oxidation staining, trace suspect white sulphate inclusions	■	AU1	6.3	●			779
2			■	AU2	7.3	●			778
3		...2.5 m - no SPT blows due to sloughing							777
4		SHALE (Weathered), clay and silt, completely weathered, dark brown with oxidation specks, moist, high plastic, extremely weak, blocky, trace suspect white sulphate inclusions	■	AU5	15.6	●			776
5			■	AU6	15.2	●	4.3 m - EC: 7.3 dS/m 4.3 m - SAR: 10.1 4.3 m - pH: 5.2 4.3 m - LL = 54.0% PL = 17.2% PI = 36.8%		775
6		End of Borehole @5.5 m							774
7									773
8									772
9									771
									770

Notes:

Target depth of 8.2 m not achieved. Substantial sloughing caused auger refusal at 5.5 m. No seepage encountered. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

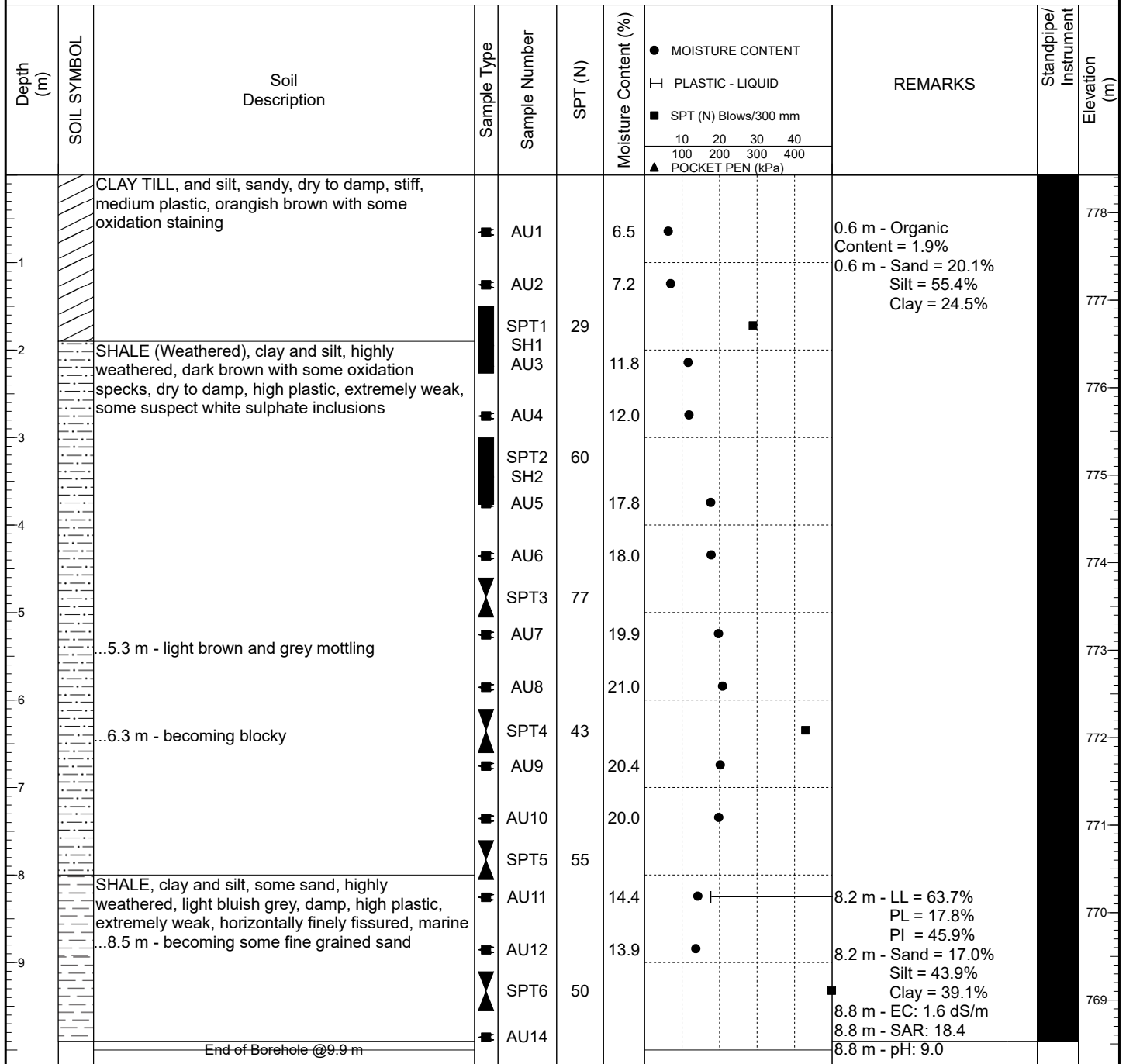


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BOREHOLE No : **22BH112**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	GROUND ELEVATION	778.43m N 5612590.900 E 414920.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 10.8 m not reached. Minor sloughing. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH112**

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CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 03/22/2022 COMPLETED 03/22/2022 GROUND ELEVATION 778.43m N 5612590.900 E 414920.100
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11							9.1 m - Dispersivity Classification = ND4		768
12									767
13									766
14									765
15									764
16									763
17									762
18									761
19									760
									759

Notes:

Target depth of 10.8 m not reached. Minor sloughing. Borehole backfilled with bentonite chips.

Logged By: C. BraunReviewed By: T. Curtis

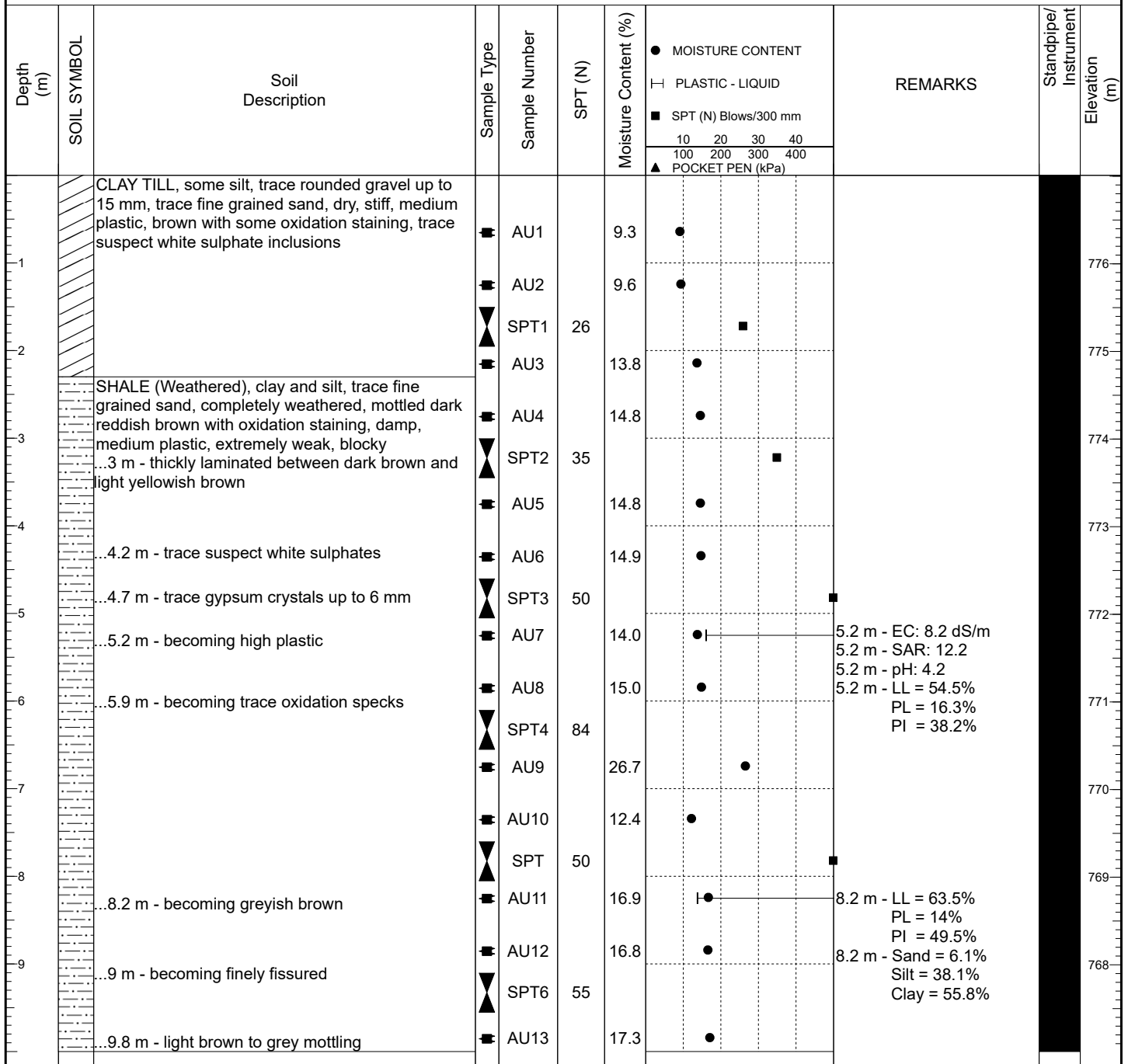


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BOREHOLE No : **22BH113**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	
		GROUND ELEVATION	777.01m	N 5612588.800 E 415020.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		



Notes:

Target depth of 12.7 m not achieved. Minor sloughing. No seepage. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH113**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/22/2022	COMPLETED	03/22/2022	
		GROUND ELEVATION	777.01m	N 5612588.800 E 415020.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE (Weathered), clay and silt, trace fine grained sand, completely weathered, mottled dark reddish brown with oxidation staining, damp, medium plastic, extremely weak, blocky	■	AU14	16.1	●			
		SHALE, some silt, trace fine grained sand, highly weathered, light bluish grey, damp, medium plastic, extremely weak, finely fissured	▲	SPT7	50				766
		End of Borehole @11.4 m		AU15	16.0	●	11.4 m - Auger refusal		
12									765
13									764
14									763
15									762
16									761
17									760
18									759
19									758

Notes:

Target depth of 12.7 m not achieved. Minor sloughing. No seepage. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

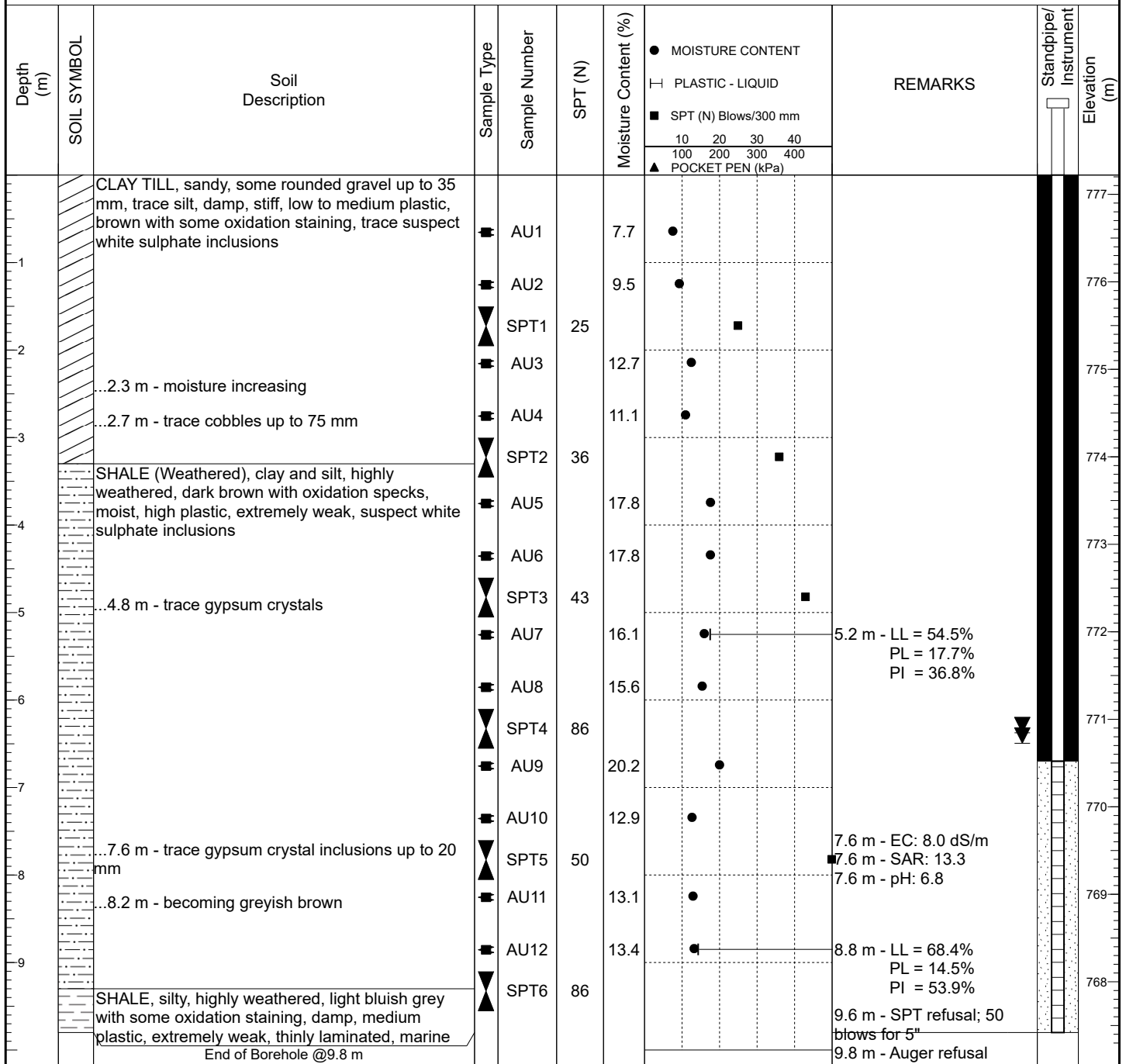


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BOREHOLE No : **22BH114**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/22/2022	COMPLETED	03/22/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	777.22m N 5612585.700 E 415119.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	770.81 m 6.41 m
		DATE GROUND WATER RECORDED	09/15/2022



Notes:

Target depth of 12.7 m not achieved. Minor sloughing upon completion. Borehole backfilled with bentonite chips. and sand. 50 mm slotted standpipe installed to a depth of 9.8 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH115**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/21/2022	COMPLETED	03/21/2022	GROUND ELEVATION	776.06m N 5612575.700 E 415219.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some fine grained sand, trace rounded gravel up to 20 mm, trace silt, dry, medium plastic, very stiff, brown with some oxidation staining, suspect white sulphate inclusions	■	AU1	6.2	●			
		...1.6 m - some sand and silt pockets	■	AU2	10.6	●			775
2			▲	SPT1	43	■			774
		SHALE (Weathered), clay and silt, highly weathered, dark brown mottled with oxidation staining, moist, high plastic, extremely weak, blocky	■	AU3	13.0	●			773
3		...2.6 m - trace suspect white sulphates	■	AU4	13.9	●			772
			▲	SPT2	65				771
4			■	AU5	13.6	●			770
		...5 m - trace gypsum crystals	■	AU6	14.0	●			769
5			▲	SPT3	51				768
6			■	AU7	12.8	●			767
			■	AU8	16.4	●			
7			▲	SPT4	50				
			■	AU9	15.4	●	6.6 m - SPT refusal; 50 blows for 5"		
8			■	AU10	18.5	●	7.3 m - LL = 62.8% PL = 17.3% PI = 45.5%		
		SHALE, silty, highly weathered, bluish grey with oxidation specks, moist, medium plastic, extremely weak, thinly laminated, marine	▲	SPT5	78				
9			■	AU11	15.8	●			
			■	AU12	17.7	●			
			▲	SPT6	50				
			■	AU13	13.7	●	9.6 m - SPT refusal; 50 blows for 3"		
		End of Borehole @9.9 m					9.9 m - Auger refusal		

Notes:

Target depth of 15.7 m not achieved. No seepage encountered. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

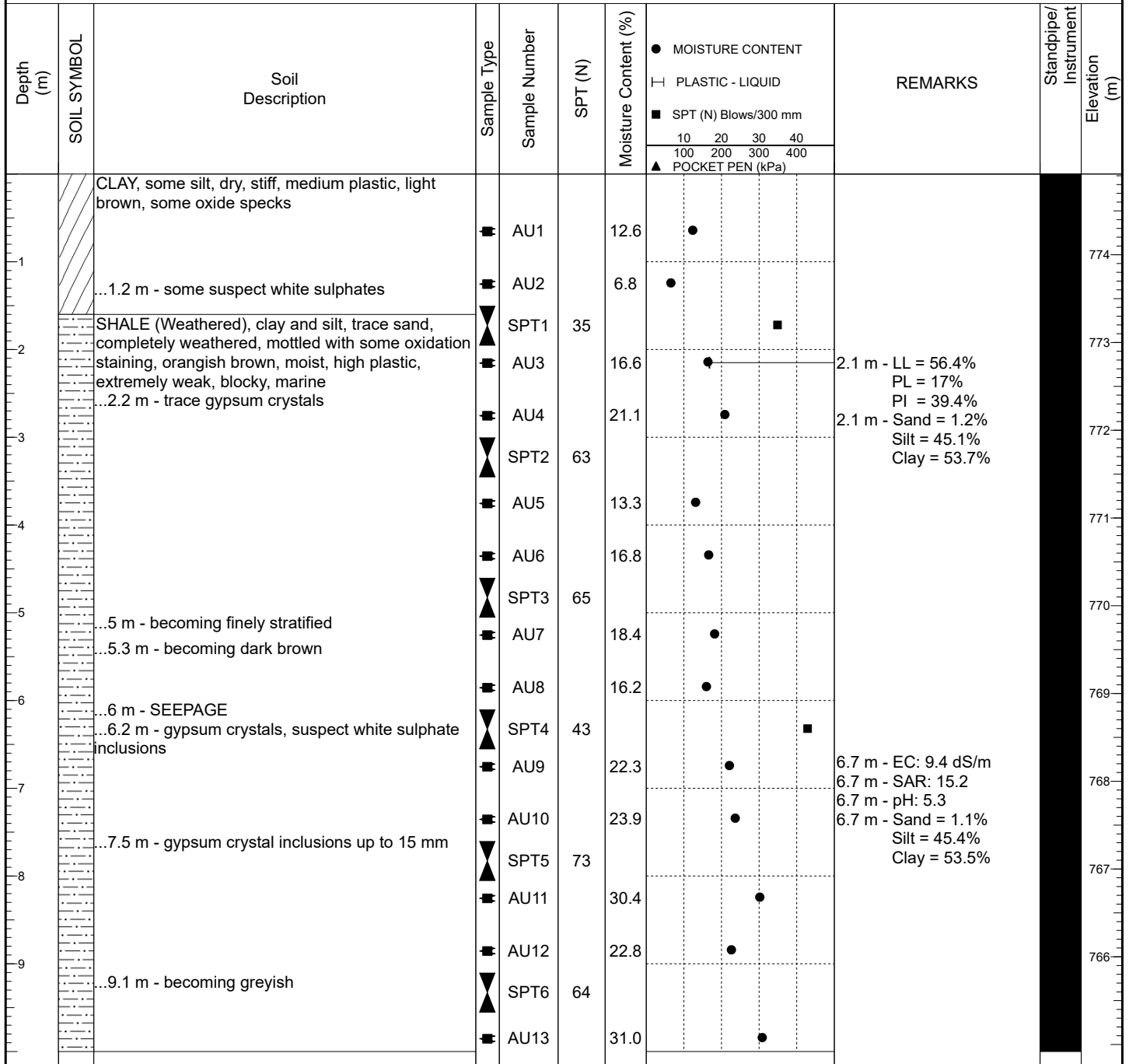


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BOREHOLE No : **22BH116**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/21/2022	COMPLETED	03/21/2022	GROUND ELEVATION	774.92m N 5612565.400 E 415321.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 18 m not achieved. Seepage observed at a depth of 6.0 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH116**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/21/2022	COMPLETED	03/21/2022	
		GROUND ELEVATION	774.92m	N 5612565.400 E 415321.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
11		SHALE (Weathered), clay and silt, trace sand, completely weathered, mottled with some oxidation staining, orangish brown, moist, high plastic, extremely weak, blocky, marine ... 10.7 m - becoming finely stratified	■	AU14	69	16.5			764
			▲	SPT7					
12		SHALE, silty, medium weathered, light bluish grey, damp, medium to high plastic, very weak, thinly laminated, marine	■	AU15		21.6			763
			■	AU16	50	27.6			763
			▲	SPT8					
13		End of Borehole @12.7 m					12.7 m - SPT refusal; 50 blows for 1"		762
14									761
15									760
16									759
17									758
18									757
19									756

Notes:

Target depth of 18 m not achieved. Seepage observed at a depth of 6.0 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

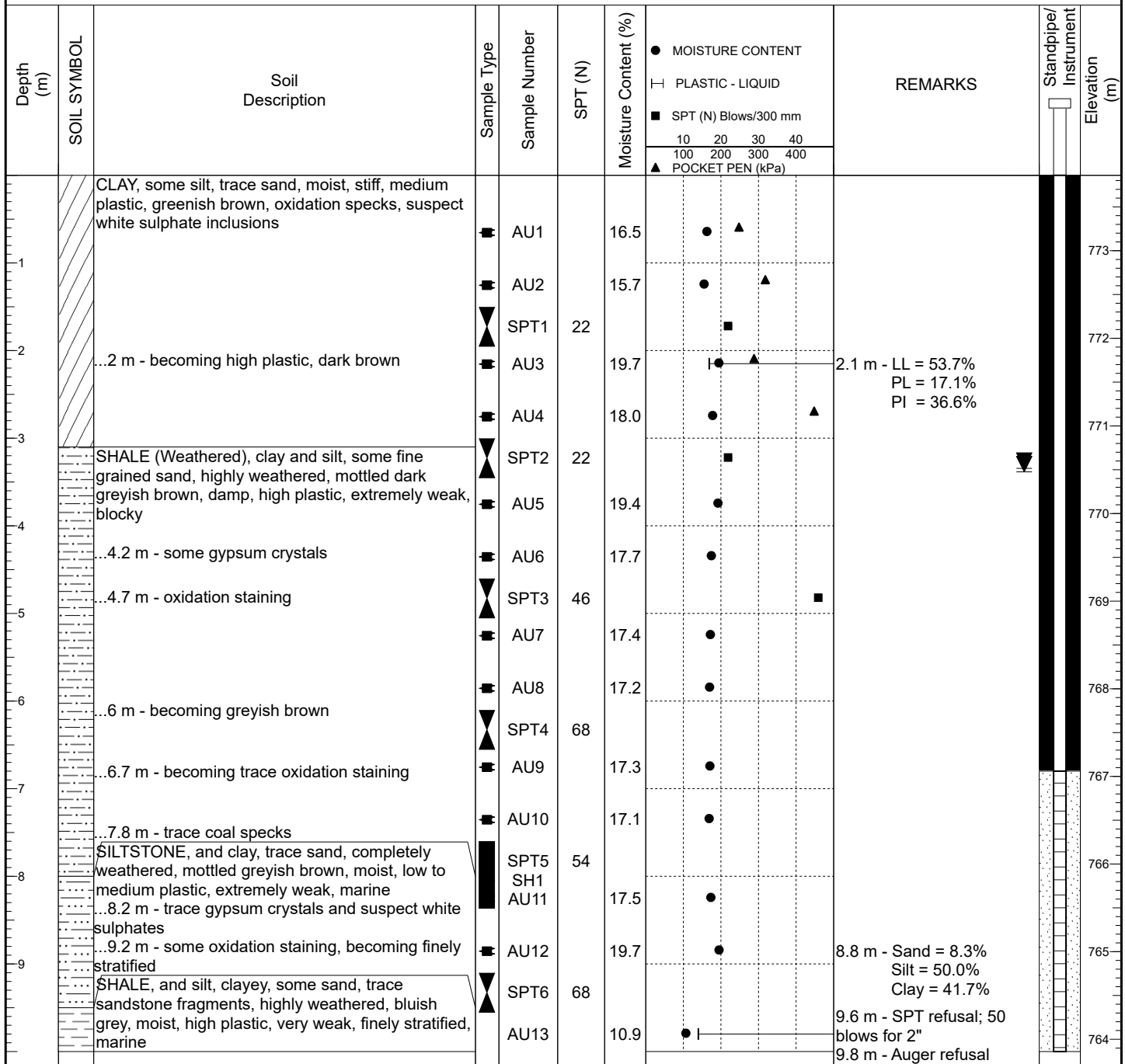


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BOREHOLE No : **22BH117**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/21/2022	COMPLETED	03/21/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	773.86m N 5612553.000 E 415419.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	770.60 m 3.26 m
		DATE GROUND WATER RECORDED	10/12/2022



Notes:

Target depth of 21 m not achieved. No seepage encountered. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm slotted standpipe installed to a depth of 10.1 m. Well protector installed.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH117**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/21/2022	COMPLETED	03/21/2022	GROUND ELEVATION	773.86m N 5612553.000 E 415419.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	770.60 m	3.26 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	10/12/2022		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, and silt, clayey, some sand, trace sandstone fragments, highly weathered, bluish grey, moist, high plastic, very weak, finely stratified, marine					9.8 m - LL = 79.2% PL = 14.2% PI = 65.0% 9.8 m - Sand = 22.3% Silt = 44.0% Clay = 33.7%		763
12		End of Borehole @10.1 m							762
13									761
14									760
15									759
16									758
17									757
18									756
19									755
									754

Notes:

Target depth of 21 m not achieved. No seepage encountered. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm slotted standpipe installed to a depth of 10.1 m. Well protector installed.

Logged By: C. Braun

Reviewed By: T. Curtis

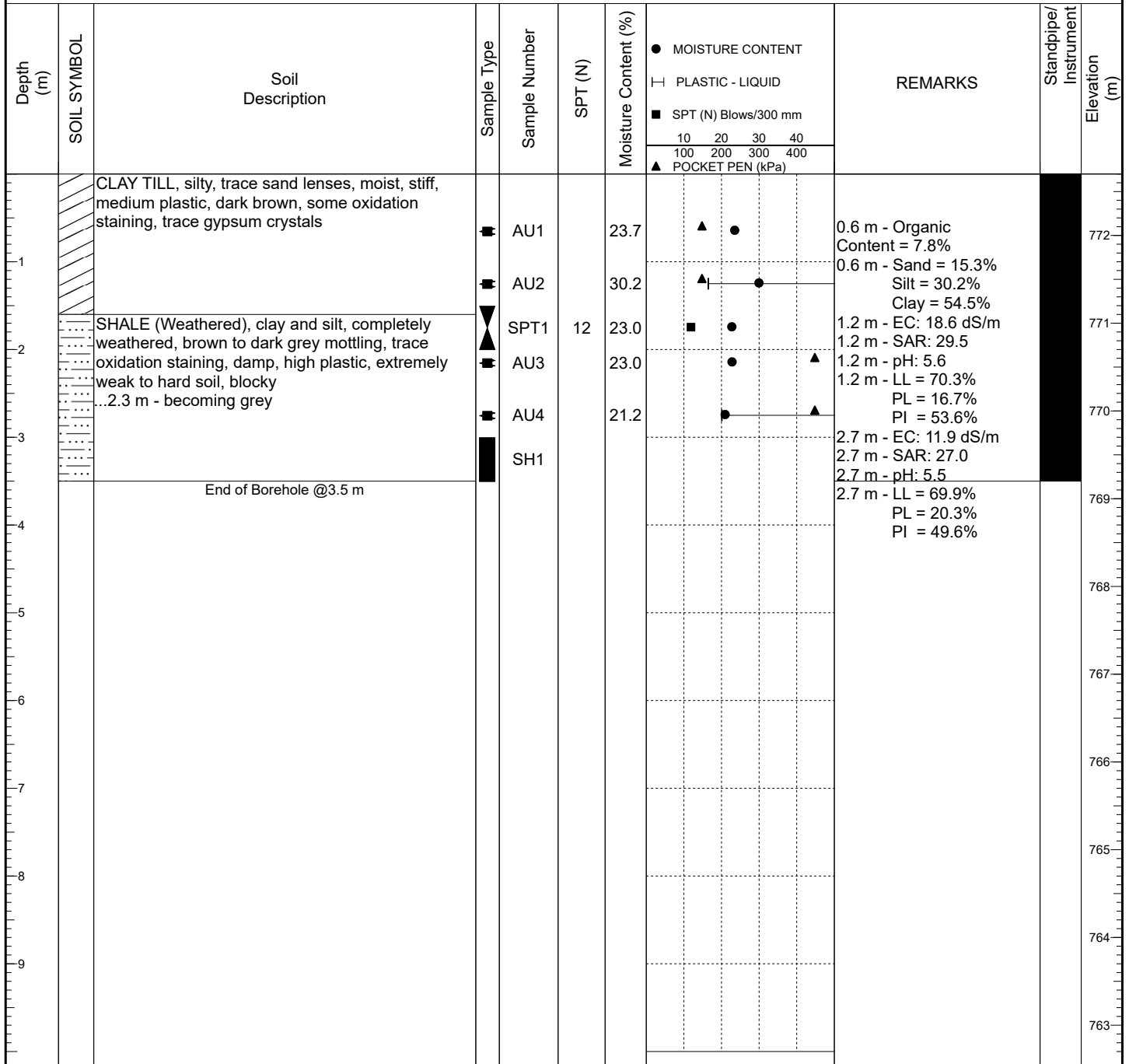


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BOREHOLE No : **22BH118**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	08/29/2022	COMPLETED	08/29/2022	GROUND ELEVATION	772.70m N 5612540.300 E 415502.200
DRILLING CONTRACTOR	Val's Drilling	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

No seepage or sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



an Englobe company

BOREHOLE No : **22BH119**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	08/30/2022	COMPLETED	08/30/2022	GROUND ELEVATION	770.84m N 5612543.642 E 415622.643
DRILLING CONTRACTOR	Val's Drilling	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
0	TOPSOIL	SHALE (Weathered), clay and silt, residual soil, completely weathered, grey, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions		AU1	16.7	●	0.6 m - EC: 6.5 dS/m 0.6 m - SAR: 20.6 0.6 m - pH: 6.8 0.6 m - LL = 76.5% PL = 19.5% PI = 57.0% 1.2 m - Sand = 1.0% Silt = 46.6% Clay = 52.4%		770
1		...1.5 m - becoming slightly damp, ground up		AU2	17.3	●			
2			SPT1	14	11.1	■			769
3			AU3		13.4	●			768
4			AU4		12.8	●			
5			SH1						
6			AU5		11.3	●	3.7 m - EC: 4.7 dS/m 3.7 m - SAR: 21.9 3.7 m - pH: 7.6 3.7 m - LL = 87.9% PL = 16.1% PI = 71.8%		767
7			AU6		13.3	●			
8			SPT2	41	14.4	■			766
9		End of Borehole @5.1 m							765
10									764
11									763
12									762
13									761

Notes:

No seepage or sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH120**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/21/2022	COMPLETED	03/21/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.78m N 5612538.200 E 415720.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, clayey, silty, well graded, fine grained, damp, loose, light brown, suspect white sulphate inclusions, oxide staining	■	AU1	6.5	●	0.6 m - Organic Content = 1.1%		770
		...0.8 m - becoming dark reddish					0.6 m - Sand = 56.1%		
2		CLAY Till, sandy, some silt, moist, trace rounded gravel up to 15 mm, moist, very stiff, low to medium plastic, multicoloured reddish brown, gypsum crystals oxide staining, suspect white sulphate inclusions	■	AU2	15.5	●	Silt = 20.6%		769
		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark brown, damp, high plastic, extremely weak, finely fissured	▲	SPT1	54	▲	Clay = 23.3%		
		...2.3 m - trace gypsum crystals	■	AU3	14.5	●			
3		...3.1 m - some suspect white sulphate inclusions up to 15 mm	■	AU4	14.3	●			768
		...3.7 m - some oxide specks	▲	SPT2	46	■			
4		...4.5 m - becoming some oxidation staining	■	AU5	18.6	●			767
		...5 m - becoming dark brown	■	AU6	18.9	●			766
5		...6 m - becoming some blocky structure	▲	SPT3	68				
		...6.7 m - SEEPAGE. Augered samples below.	■	AU7	19.5	●			765
6		...7.6 m - becoming very weak	■	AU8	20.2	●			764
			▲	SPT4	78		6.6 m - SPT refusal; 50 blows for 5"		
7			■	AU9	36.1	●			763
			■	AU10	36.9	●			762
8			▲	SPT5	61				
			■	AU11	27.8	●			761
9			■	AU12	23.1	●			
		SHALE, some silt, highly weathered, bluish grey, damp, high plastic, very weak, finely stratified, marine	▲	SPT6	86		9.8 m - EC: 8.9 dS/m		
			■	AU13	25.6	●	9.8 m - SAR: 41.0		

Notes:

Target depth of 27 m not achieved. Seepage encountered at 6.7 m. Minor sloughing upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH120**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/21/2022	COMPLETED	03/21/2022	GROUND ELEVATION	770.78m N 5612538.200 E 415720.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, some silt, highly weathered, bluish grey, damp, high plastic, very weak, finely stratified, marine	■	AU14	50	25.0	9.8 m - pH: 8.4 10.4 m - LL = 81.3% PL = 14.7% PI = 66.6% 10.4 m - Sand = 0.4% Silt = 62.7% Clay = 36.9% 10.7 m - Dispersivity Classification = D2 11.2 m - SPT / Auger refusal		760
		End of Borehole @11.2 m	▲	SPT7					759
12									758
13									757
14									756
15									755
16									754
17									753
18									752
19									751

Notes:

Target depth of 27 m not achieved. Seepage encountered at 6.7 m. Minor sloughing upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

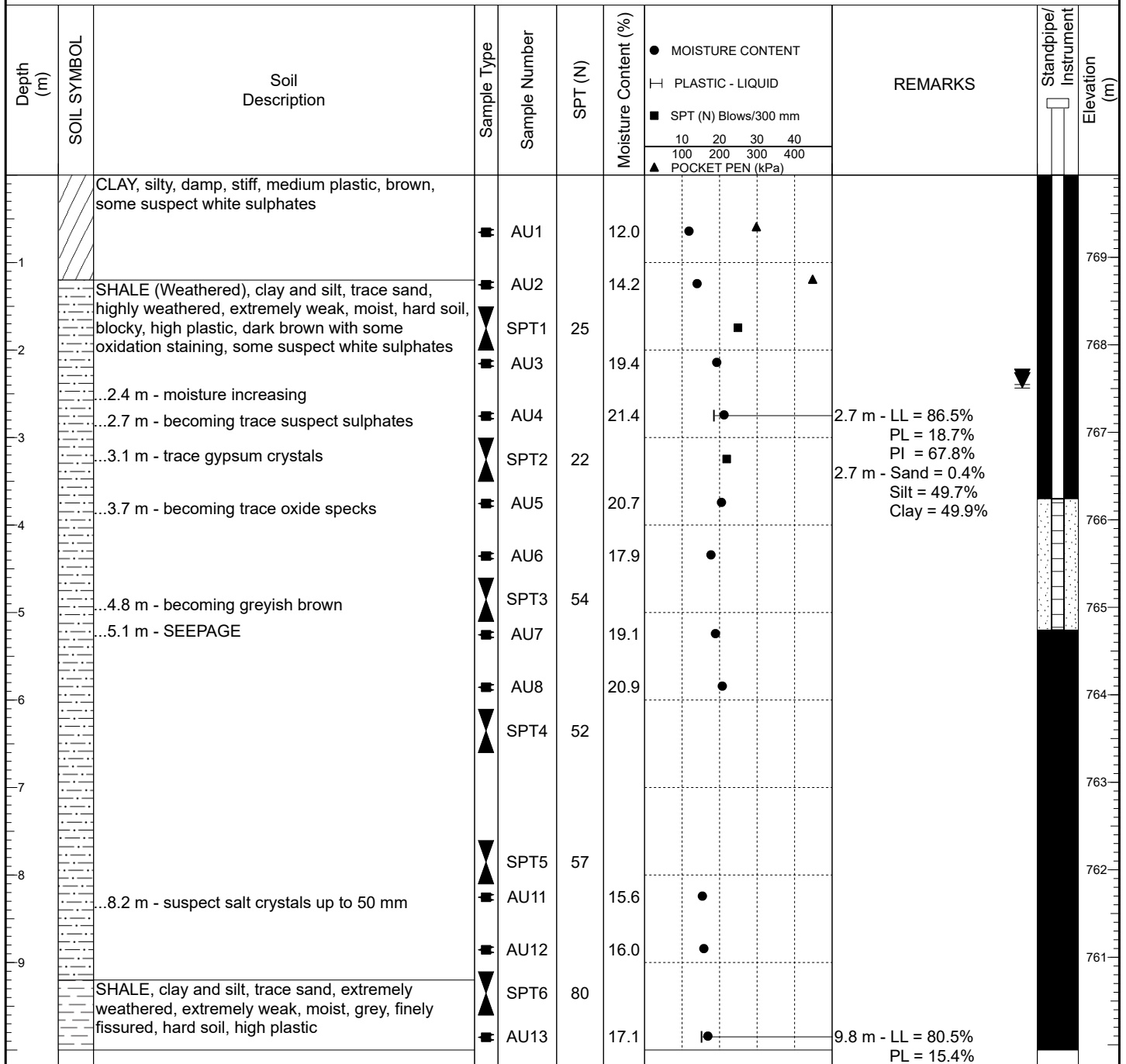


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BOREHOLE No : **22BH121**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/11/2022	COMPLETED	03/11/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	769.94m N 5612535.837 E 415820.014
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	767.63 m 2.31 m
		DATE GROUND WATER RECORDED	09/15/2022



Notes:

Target depth of 27 m not achieved. Artesian seepage encountered at a depth of 5.1 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to a depth of 5.2 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH121**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/11/2022	COMPLETED	03/11/2022	GROUND ELEVATION	769.94m N 5612535.837 E 415820.014
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	767.63 m	2.31 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, clay and silt, trace sand, extremely weathered, extremely weak, moist, grey, finely fissured, hard soil, high plastic End of Borehole @10.4 m	■	AU14	16.4	●	PI = 65.1% 9.8 m - Sand = 0.8% Silt = 54.1% Clay = 45.1% 10.4 m - Auger refusal		759
12									758
13									757
14									756
15									755
16									754
17									753
18									752
19									751

Notes:

Target depth of 27 m not achieved. Artesian seepage encountered at a depth of 5.1 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to a depth of 5.2 m.

Logged By: C. Braun

Reviewed By: T. Curtis

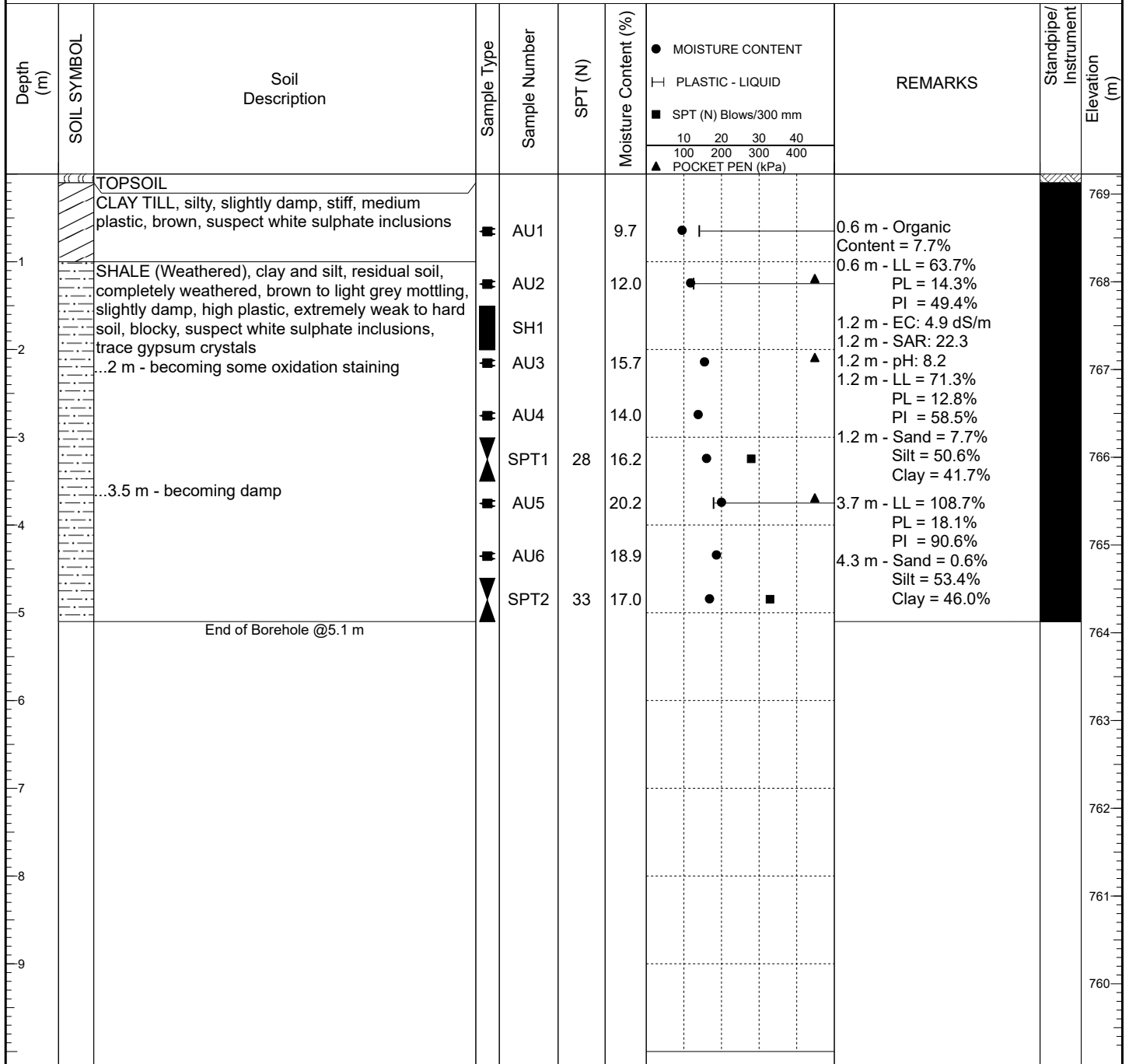


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BOREHOLE No : **22BH122**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	08/30/2022	COMPLETED	08/30/2022	
DRILLING CONTRACTOR	Val's Drilling	GROUND ELEVATION	769.23m	N 5612534.841 E 415922.009
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

No seepage or sloughing observed upon completion.

Logged By: C. Tams

Reviewed By: T. Curtis

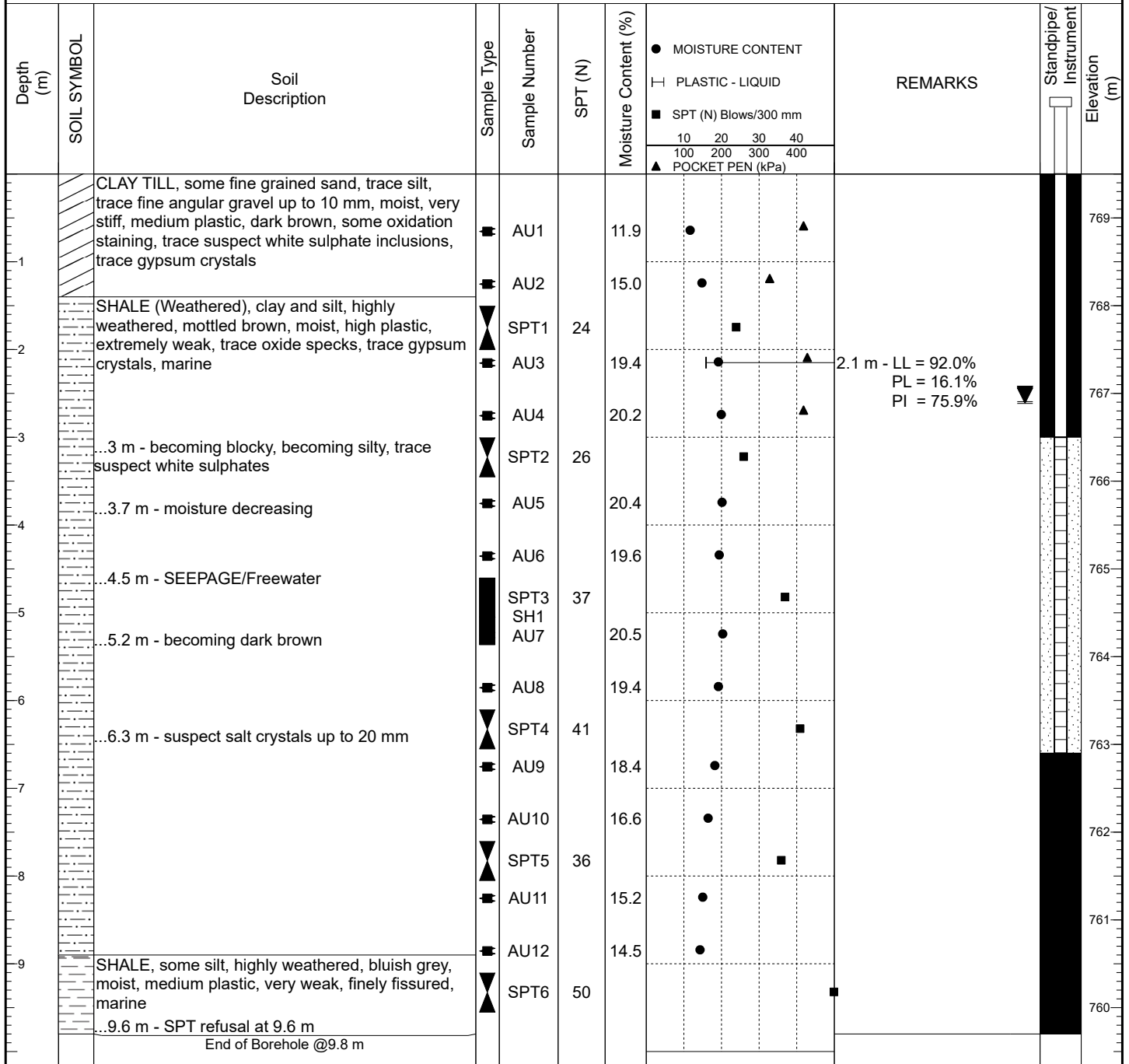


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BOREHOLE No : **22BH123**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/10/2022	COMPLETED	03/10/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	769.50m N 5612529.496 E 416019.889
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	766.99 m 2.51 m
		DATE GROUND WATER RECORDED	10/12/2022



Notes:

Target depth of 27 m not achieved. Seepage encountered at a depth of 4.5 m. Minor sloughing upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to a depth of 6.6 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH124**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/09/2022	COMPLETED	03/09/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.57m N 5612528.800 E 416119.900
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, trace fine grained sand, trace fine angular gravel, some silt, moist, stiff, high plastic, brown, some oxidation specks, suspect white sulphate inclusions	■	AU1	8.8	●			770
			■	AU2	9.9	●			
2		...1.6 m - becoming sandy, medium grained	▲	SPT1	13	■			769
		...2 m - moisture increasing	■	AU3	21.8	●	2.1 m - LL = 70.6% PL = 15.2% PI = 55.4%		768
3		SHALE (Weathered), clay and silt, completely weathered, mottled dark brown, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU4	21.1	●			768
		...3.2 m - trace gypsum crystals up to 10 mm	▲	SPT2	30	■			767
4			■	AU5	19.4	●			767
			■	AU6	17.5	●			766
5			▲	SPT3	57				766
6		...5.3 m - SEEPAGE at 5.3 m	■	AU8	35.0	●			765
			▲	SPT4	39	■			764
7		...6.7 m - some oxidation staining	■	AU9	17.3	●	6.7 m - Sand = 0.0% Silt = 58.5% Clay = 41.5%		764
			■	AU10	17.3	●			763
8		...7.5 m - grey shale inclusions	▲	SPT5	81				763
			■	AU11	17.7	●			762
9			■	AU12	11.6	●			762
		SHALE, silty, medium weathered, grey, damp, high plastic, extremely weak, thinly laminated, finely stratified, marine	▲	SPT6	85				761
			■	AU13	15.1	●	9.8 m - LL = 96.0% PL = 16.1%		761

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 5.3 m. No sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH124**

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CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 03/09/2022 COMPLETED 03/09/2022 GROUND ELEVATION 770.57m N 5612528.800 E 416119.900
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		End of Borehole @10.0 m					PI = 79.9%		760
12									759
13									758
14									757
15									756
16									755
17									754
18									753
19									752
									751

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 5.3 m. No sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. BraunReviewed By: T. Curtis

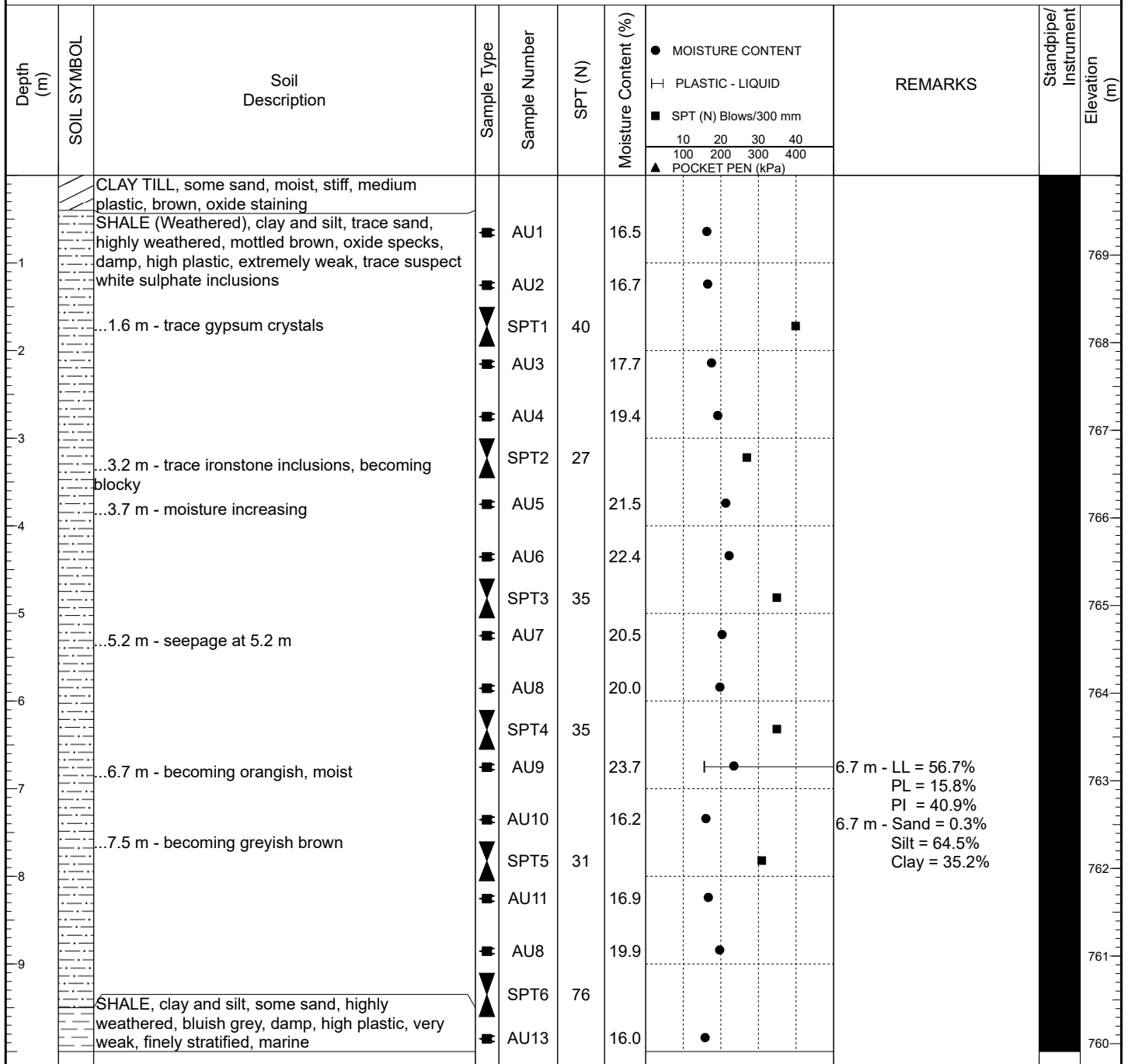


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BOREHOLE No : **22BH125**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/09/2022	COMPLETED	03/09/2022	GROUND ELEVATION
				769.91m N 5612526.500 E 416220.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		



Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 5.2 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH125**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/09/2022	COMPLETED	03/09/2022	GROUND ELEVATION	769.91m N 5612526.500 E 416220.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, clay and silt, some sand, highly weathered, bluish grey, damp, high plastic, very weak, finely stratified, marine	■	AU14	66	15.3	10.4 m - LL = 85.8% PL = 15% PI = 70.8% 10.4 m - Sand = 10.7% Silt = 44.5% Clay = 44.8%		759
		End of Borehole @11.2 m	▲	SPT7					758
12									757
13									756
14									755
15									754
16									753
17									752
18									751
19									750

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 5.2 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

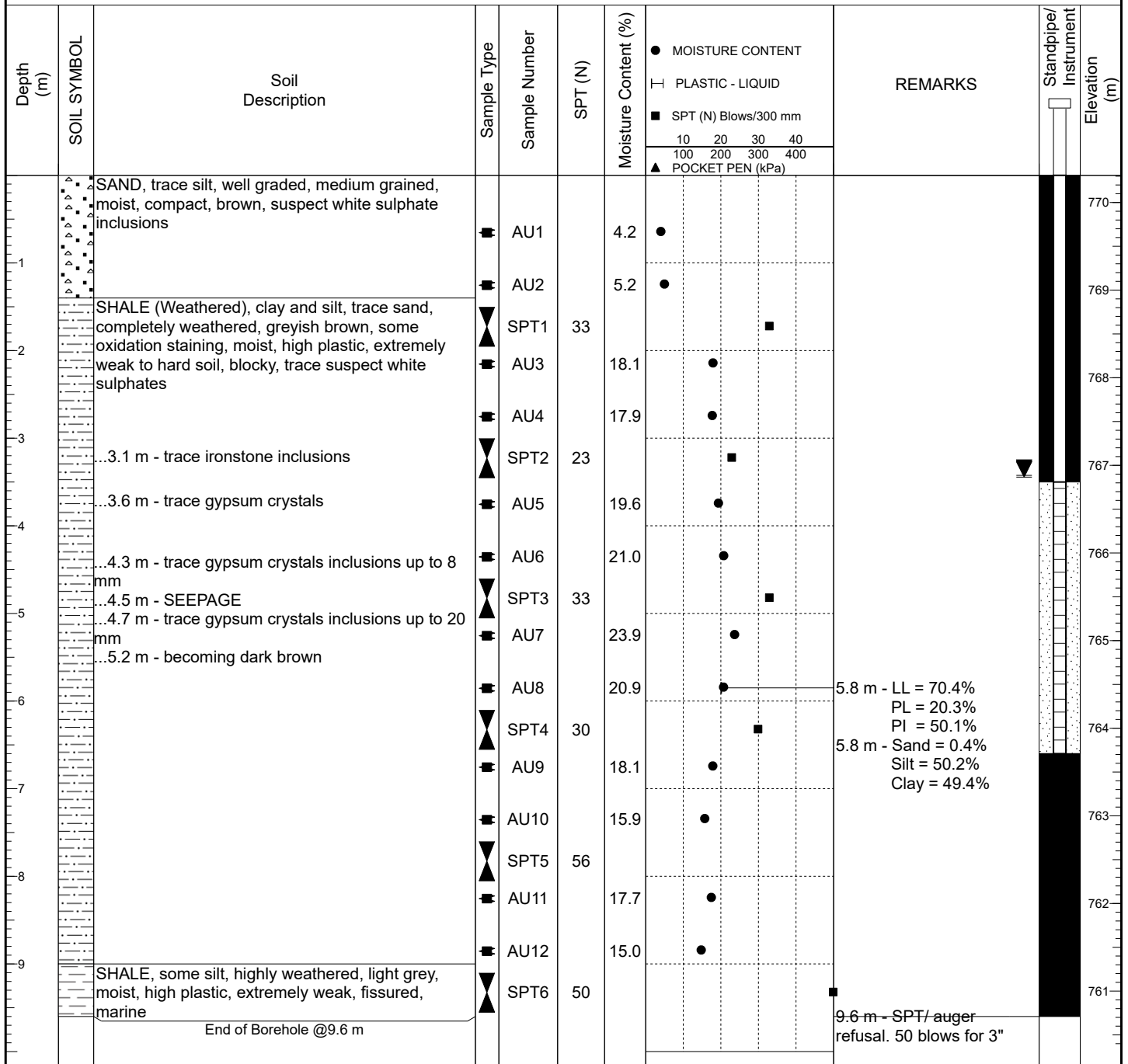


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BOREHOLE No : **22BH126**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/09/2022	COMPLETED	03/09/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.31m N 5612524.400 E 416320.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	766.95 m 3.36 m
		DATE GROUND WATER RECORDED	10/12/2022



Notes:

Target depth of 27 m not achieved. Seepage encountered at 4.5 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to 6.6 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH127**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/09/2022	COMPLETED	03/09/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.32m	N 5612510.400 E 416337.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND FILL, some silt, trace clay, well graded, fine grained, damp, loose, brown, coal specks	■	AU1	4.6	●			770
2		CLAY TILL, trace fine grained sand, trace subrounded gravel up to 30 mm, moist, stiff, medium plastic, brown with oxidation specks, suspect white sulphate inclusions	■	AU2	12.2	●			769
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, brown with oxidation specks, moist, medium to high plastic, extremely weak to hard soil, blocky, gypsum crystals and suspect white sulphate inclusions	▲	SPT1	20	■			768
3			■	AU3	11.7	●			768
3			■	AU4	26.8	●			767
4		...3.7 m - moisture increasing	▲	SPT2	44	■			767
4			■	AU5	20.4	●			766
5		...4.6 m - suspect ironstone inclusions	■	AU6	20.2	●			766
5			▲	SPT3	44	■			765
5		End of Borehole @5.2 m	■	AU7	19.8	●			765
6									764
7									763
8									762
9									761

Notes:

Target depth of 27 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH128**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/09/2022	COMPLETED	03/09/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.00m	N 5612534.400 E 416349.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some fine grained sand, some silt, damp, stiff, low to medium plastic, brown, with oxidation specks, suspect white sulphate inclusions	■	AU1	4.4	●			769
2		SHALE (Weathered), clay and silt, highly weathered, dark brown, with oxidation specks, moist, medium to high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU2	14.5	●			768
			▲	SPT1	36	■			
3			■	AU3	14.7	●			767
			■	AU4	15.5	●			767
			▲	SPT2	42	■			
4		End of Borehole @3.5 m					3.5 m - Auger refusal		766
5									765
6									764
7									763
8									762
9									761

Notes:

Target depth of 27 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH129**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/29/2022	COMPLETED	03/29/2022
GROUND ELEVATION	770.77m	N	5612507.400
GROUND WATER ELEVATION / DEPTH		E	416359.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	
DRILLING METHOD	6" SSA		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, moist, very stiff, medium plastic, brown, trace root hairs, trace gypsum crystals	■	AU1	18.2	●			770
2		SAND, silty, well graded, fine grained, moist, loose, brown, some oxidation staining	▲	AU2	15.1	●			769
3		CLAY, silty, trace sand, moist, hard, high plastic, brown, suspect white sulphate inclusions	■	AU3	14.9	●			768
4		SHALE (Weathered), clay and silt, completely weathered, brown, with oxidation staining, moist, high plastic, extremely weak, blocky	▲	AU4	15.8	●			767
5		...3.9 m - suspect trace white sulphates	■	AU5	20.9	●			766
6		...4 m - Artesian flow encountered at 6.7 m rose to 4 m upon completion	■	AU6	20.2	●			765
7		...4.6 m - trace quartz fragments, interbedded oxide laminations	▲	SPT3	41				764
8		...5.5 m - brown to greyish brown with slight oxide mottling	■	AU7	18.4	●			763
9		...6.1 m - trace gypsum crystals	■	AU8	22.2	●			762
10		...6.7 m - SEEPAGE, artesian flow	■	AU9	18.0	●			761
11		...7 m - greyish brown, trace oxidized sand	■	AU10	18.0	●			
12		...8.2 m - very moist	■	AU11	25.3	●			
13		SHALE, clayey, silty, highly weathered, grey, moist, high plastic, very weak, finely fissured, oxidation staining	▲	SPT6	50				
14			■	AU12	19.6	●			
15			■	AU13	16.3	●			

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 6.7 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH129**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/29/2022	COMPLETED	03/29/2022	GROUND ELEVATION	770.77m N 5612507.400 E 416359.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, clayey, silty, highly weathered, grey, moist, high plastic, very weak, finely fissured, oxidation staining	■	AU14		15.3			
			▲	SPT7	50				760
		End of Borehole @11.2 m							759
									758
									757
									756
									755
									754
									753
									752
									751

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 6.7 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

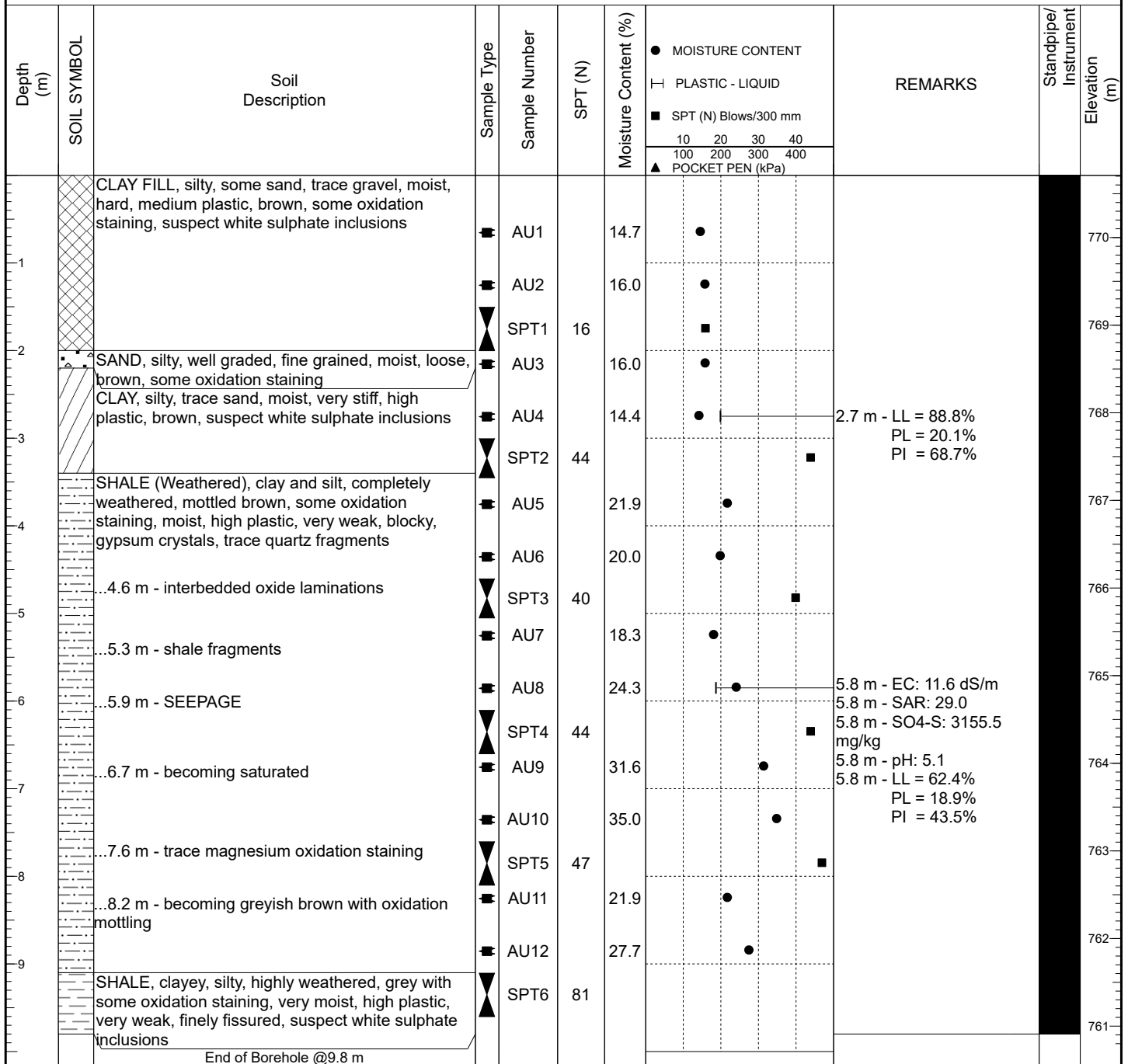


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BOREHOLE No : **22BH130**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/29/2022	COMPLETED	03/29/2022
GROUND ELEVATION	770.71m	N	5612534.400
GROUND WATER ELEVATION / DEPTH		E	416375.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	
DRILLING METHOD	6" SSA		



Notes:

Target depth of 27 m not achieved. Seepage observed at 5.9 m. Sloughing observed to a depth of 5.9 m upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

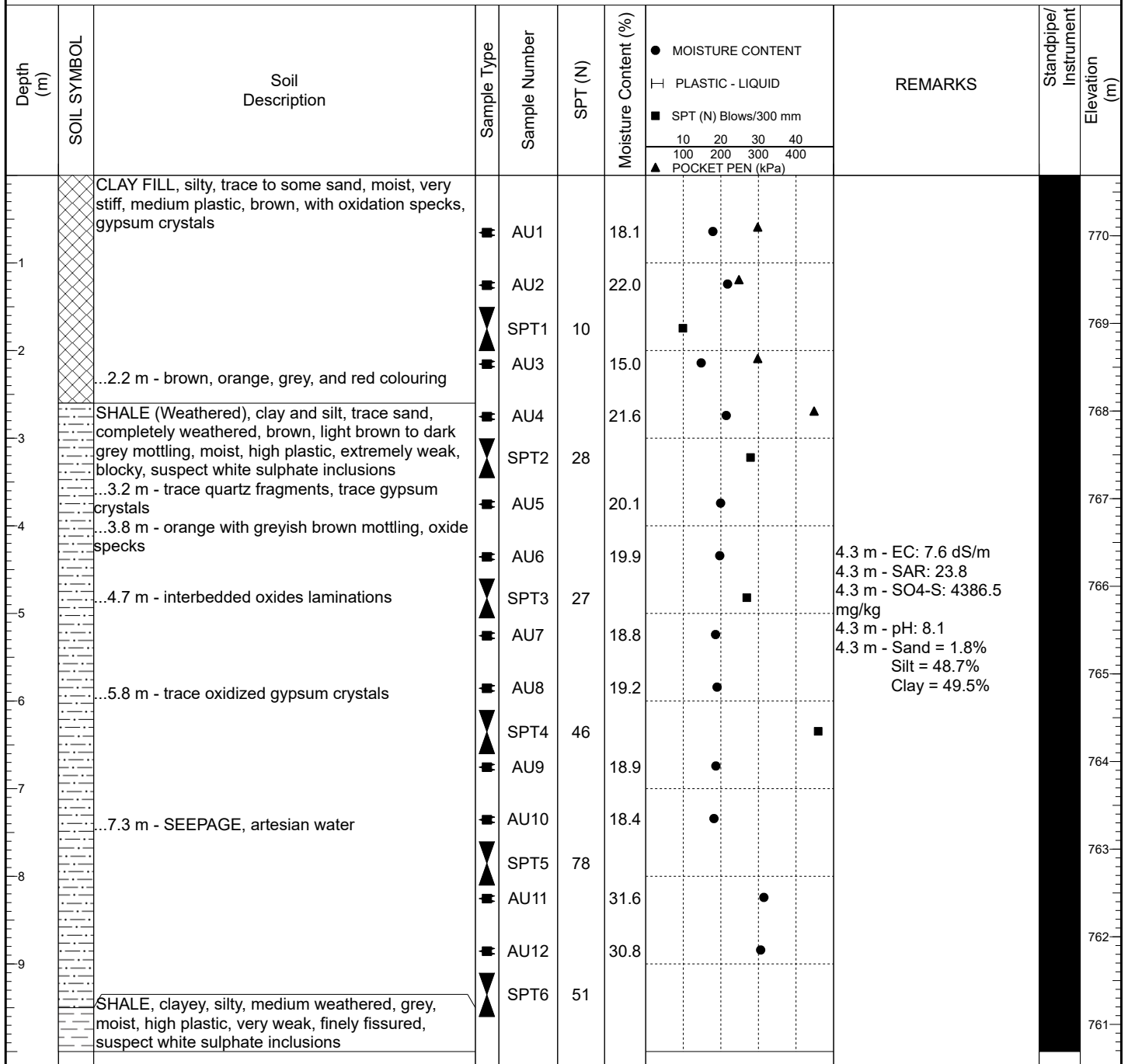


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BOREHOLE No : **22BH131**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/29/2022	COMPLETED	03/29/2022
GROUND ELEVATION	770.69m	N	5612505.400
GROUND WATER ELEVATION / DEPTH		E	416388.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	
DRILLING METHOD	6" SSA		



Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 7.3 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH131**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/29/2022	COMPLETED	03/29/2022
GROUND ELEVATION	770.69m	N	5612505.400
E	416388.000		
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, clayey, silty, medium weathered, grey, moist, high plastic, very weak, finely fissured, suspect white sulphate inclusions ...10.7 m - SPT attempted at 10.7 m, dropped to 11.3 m, stopped rods from falling further. Did not test how deep would have 'freefall'. ...11.3 m - augered to 12.2 m. Little to no resistance. Suspect resistance from sidewall of borehole. No sample retrieval.							760
12		SUSPECT VOID ...12.2 m - SPT attempted at 12.2 m. A-rods dropped to 15.4 m with no resistance.							759
13									758
14									757
15									756
16		SHALE, clayey, silty, medium weathered, grey, wet, high plastic, very weak, finely fissured End of Borehole @15.6 m							755
17									754
18									753
19									752
									751

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 7.3 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



an Englobe company

BOREHOLE No : **22BH131A**

PAGE 1 OF 2

CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 03/30/2022 COMPLETED 03/30/2022 GROUND ELEVATION 770.47m N 5612507.800 E 416388.300
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		REFER TO LOG 22BH131. Additional exploratory hole.							770
2									769
3									768
4									767
5									766
6									765
7									764
8									763
9									762
									761

Notes:

Additional probe hole to delineate and further investigate possible void.

Logged By: CB, JB, TC

Reviewed By: T. Curtis

CLIENT	Eastern Irrigation District		PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00		PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/30/2022	COMPLETED	03/30/2022	GROUND ELEVATION	770.47m N 5612507.800 E 416388.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.		GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)		
11		REFER TO LOG 22BH131. Additional exploratory hole.		SPT1	50		10.7 m - Auger probe to anticipated top depth of void. 11 m - Shelby tube sample failed to be retrieved/tube broke off. ■ 12.6 m - SPT refusal; 50 blows for 5 "	760
						759		
12						758		
13						757		
14						756		
15		End of Borehole @13.7 m						755
16						754		
17						753		
18						752		
19						751		

Notes:

Additional probe hole to delineate and further investigate possible void.

Logged By: CB, JB, TC

Reviewed By: T. Curtis



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BOREHOLE No : **22BH132**

PAGE 1 OF 2

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/30/2022	COMPLETED	03/30/2022
GROUND ELEVATION	769.98m	N	5612534.400
GROUND WATER ELEVATION / DEPTH		E	416401.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	
DRILLING METHOD	6" SSA		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ▬ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm ▲ POCKET PEN (kPa)			
1		CLAY FILL, silty, trace to some sand, moist, very stiff, medium to high plastic, brown, suspect white sulphate inclusions, trace oxidation specks	■	AU1	15.7				769
2		...2 m - trace gravel	■	AU2	18.9				768
			▲	SPT1	10				
3		SHALE (Weathered), clay and silt, trace sand, highly weathered, light brown to dark grey mottling, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU3	19.9				767
4		...3.1 m - suspect white sulphates up to 25 mm, trace oxidation mottling	■	AU4	21.0				766
		...3.9 m - trace grey mottling	▲	SPT2	45				
5		...4.6 m - trace gypsum crystals	■	AU5	19.3				765
6		...6.1 m - trace quartz fragments	■	AU6	18.9				764
7		...6.7 m - trace shale inclusions, brown with greyish brown mottling	■	AU7	19.4				763
8		...7.6 m - SEEPAGE, artesian flow, interbedded oxide laminations	■	AU8	17.8				762
			▲	SPT3	26				
9		...8.9 m - very moist	■	AU9	19.3				761
		SHALE, clayey, silty, highly weathered, grey, moist, high plastic, extremely weak, finely fissured, suspect white sulphate inclusions	■	AU10	18.7				
		...9.8 m - wet, grey with oxide mottling	■	AU11	15.1				
			▲	SPT4	52				
			■	AU12	17.7				
			▲	SPT5	74				
			■	AU13	26.9				
			▲	SPT6	50				

Notes:

Target depth of 27 m not achieved. Seepage encountered at a depth of 7.6 m. Sloughing observed to a depth of 10 m upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



an Englobe company

BOREHOLE No : **22BH132**

PAGE 2 OF 2

CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 03/30/2022 COMPLETED 03/30/2022 GROUND ELEVATION 769.98m N 5612534.400 E 416401.000
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, clayey, silty, highly weathered, grey, moist, high plastic, extremely weak, finely fissured, suspect white sulphate inclusions	■	AU14		27.4			
			▲	SPT7	50				759
12		End of Borehole @11.6 m							758
13									757
14									756
15									755
16									754
17									753
18									752
19									751

Notes:

Target depth of 27 m not achieved. Seepage encountered at a depth of 7.6 m. Sloughing observed to a depth of 10 m upon completion. Borehole backfilled with bentonite chips.

Logged By: J. BoydReviewed By: T. Curtis

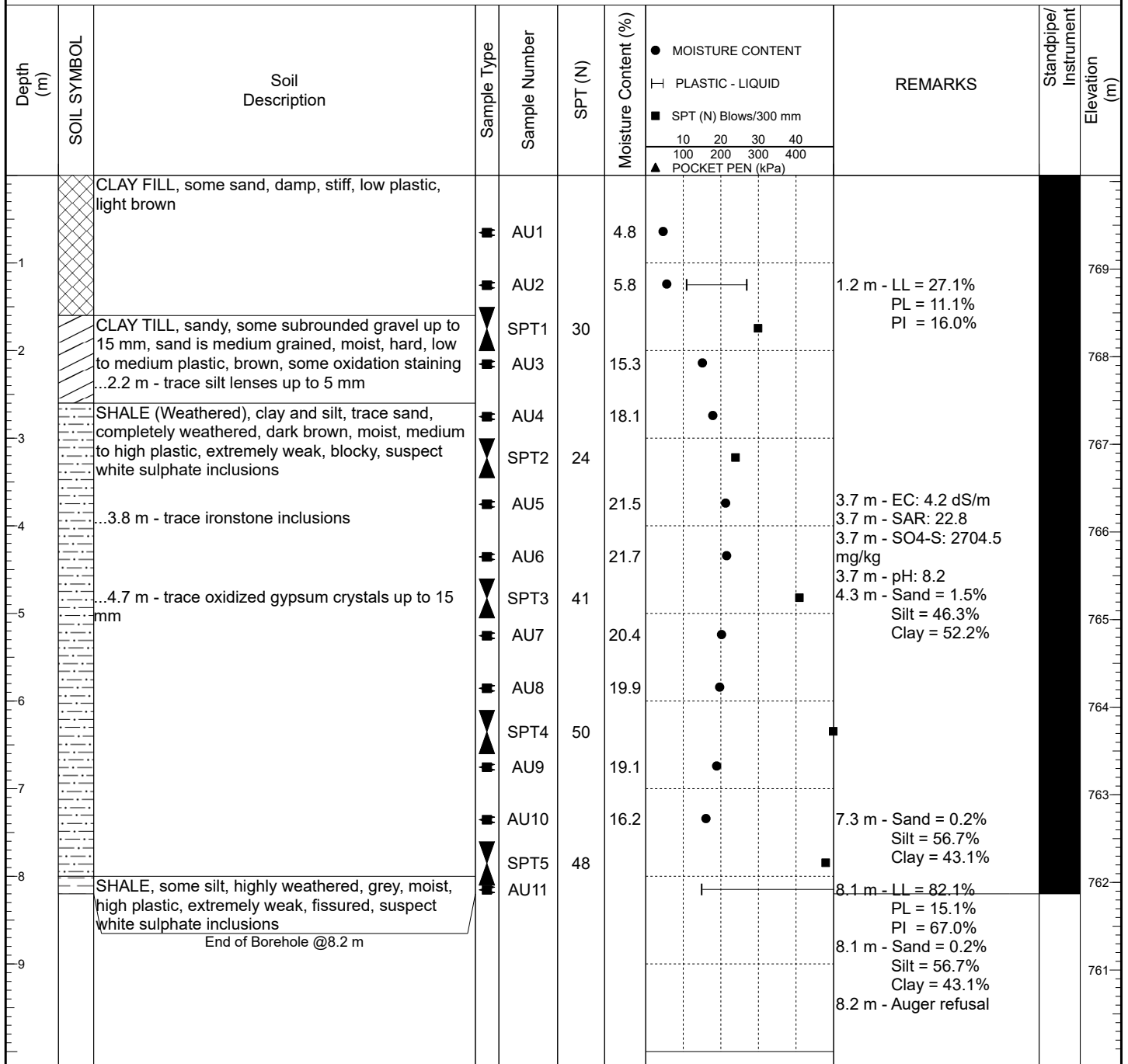


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BOREHOLE No : **22BH133**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/04/2022	COMPLETED	03/04/2022	GROUND ELEVATION	770.07m N 5612504.400 E 416411.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 27 m not achieved. No seepage encountered . Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

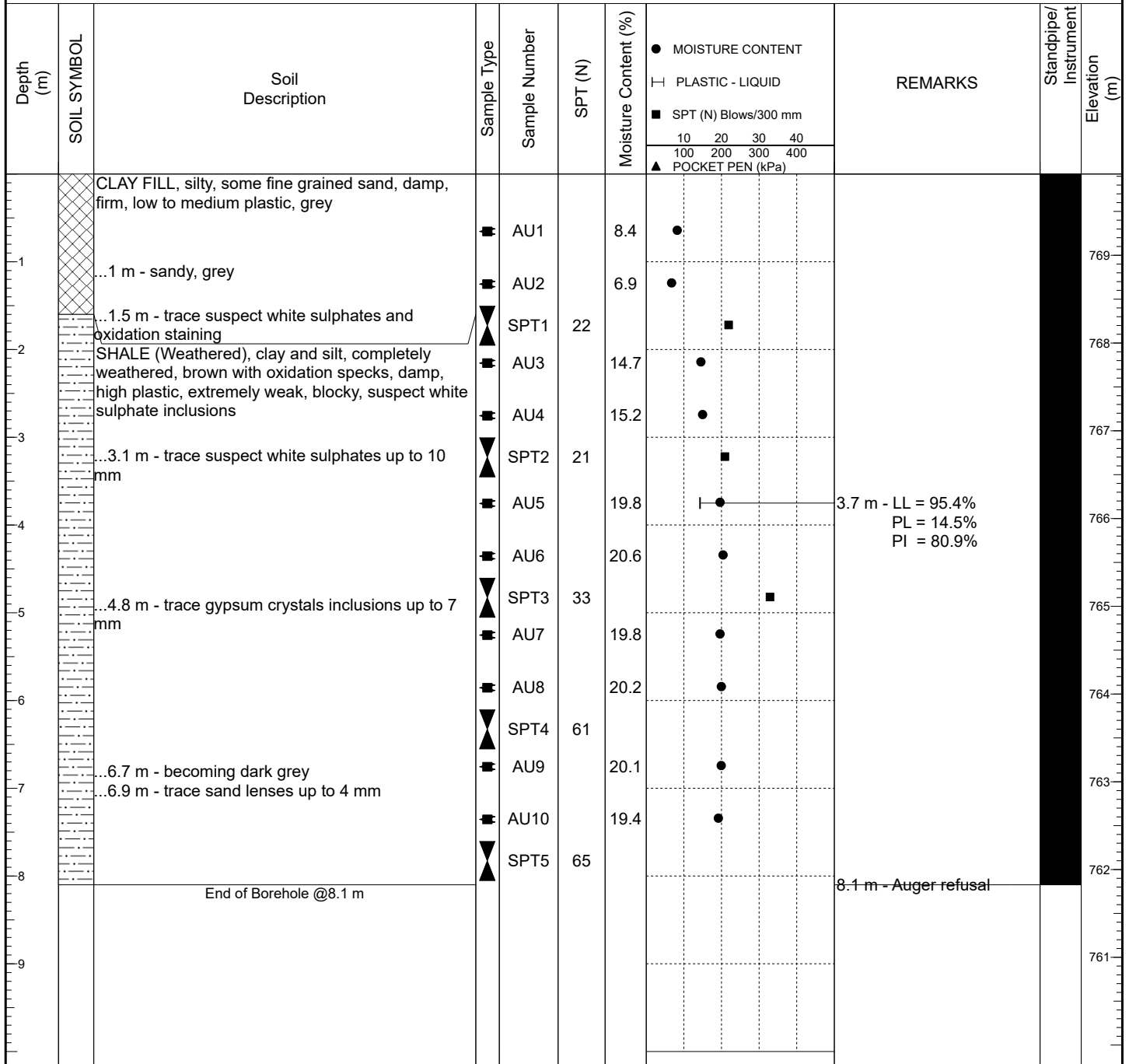


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BOREHOLE No : **22BH134**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/04/2022	COMPLETED	03/04/2022	GROUND ELEVATION	769.93m N 5612530.395 E 416423.877
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 27 m not achieved. No seepage encountered . Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

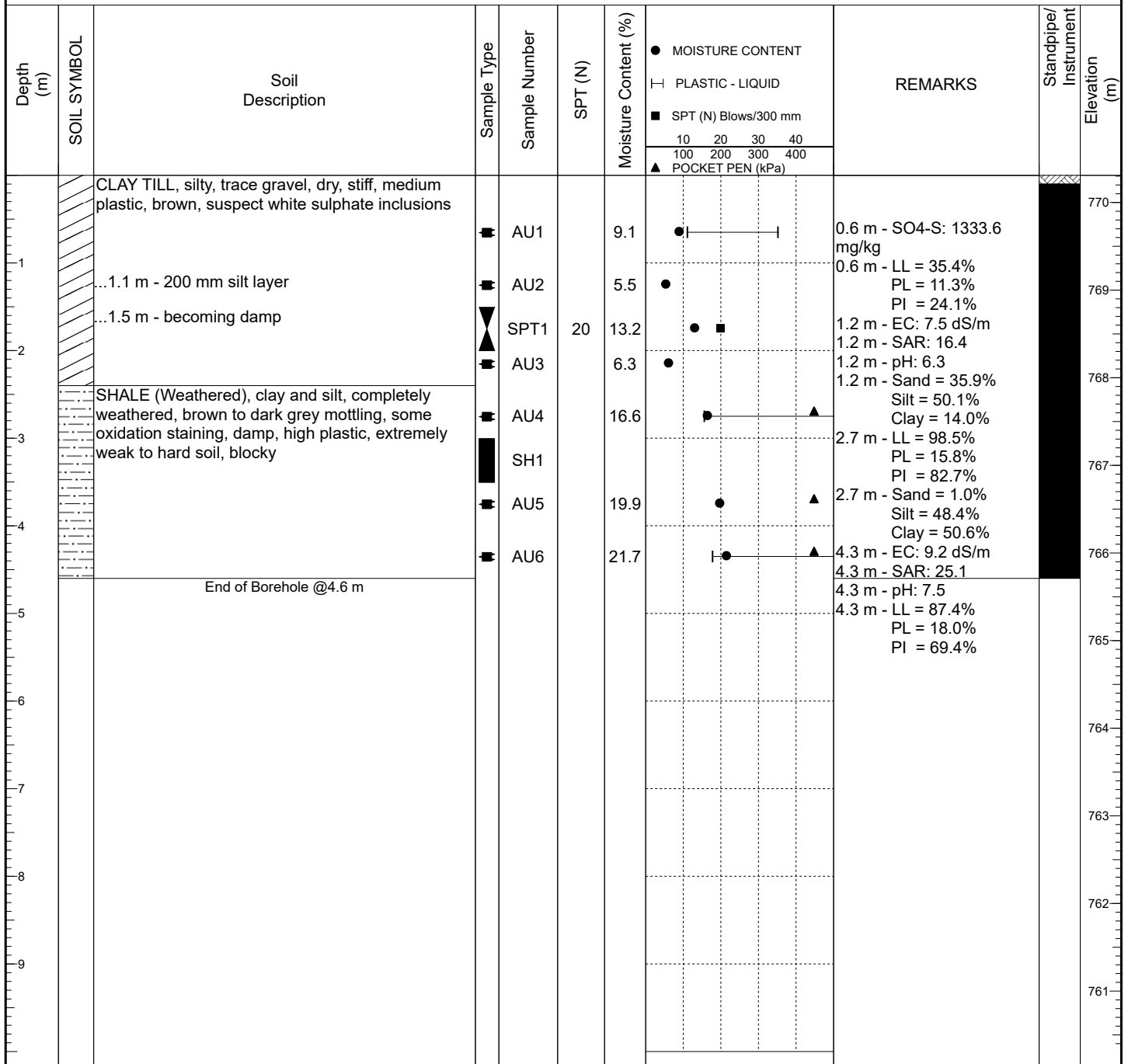


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BOREHOLE No : **22BH135**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	08/30/2022	COMPLETED	08/30/2022	
DRILLING CONTRACTOR	Val's Drilling	GROUND ELEVATION	770.31m	N 5612551.000 E 416422.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

No seepage or sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

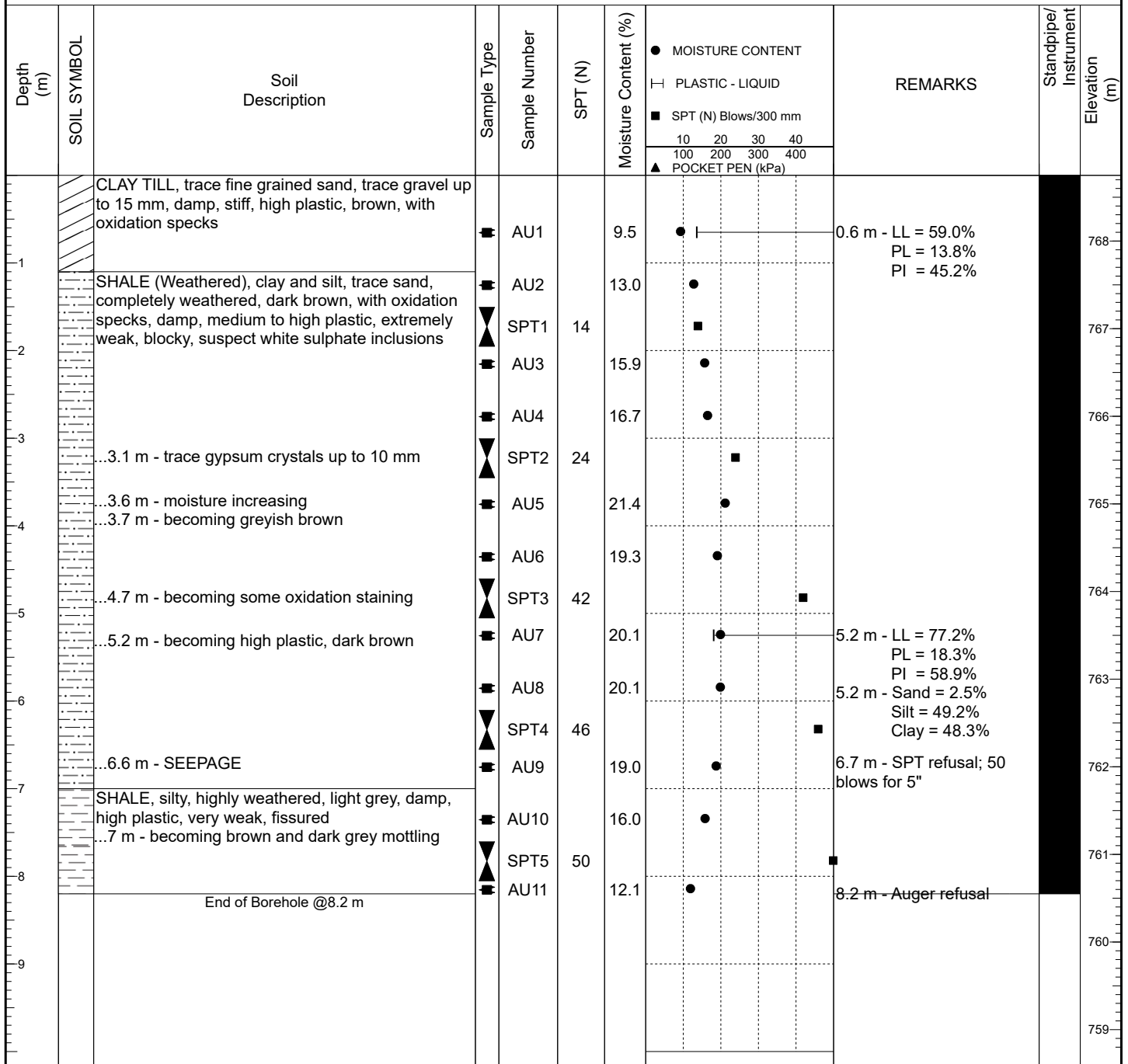


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BOREHOLE No : **22BH136**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/04/2022	COMPLETED	03/04/2022	GROUND ELEVATION	768.75m N 5612519.800 E 416520.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 27 m not achieved. Seepage encountered at a depth of 6.6 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

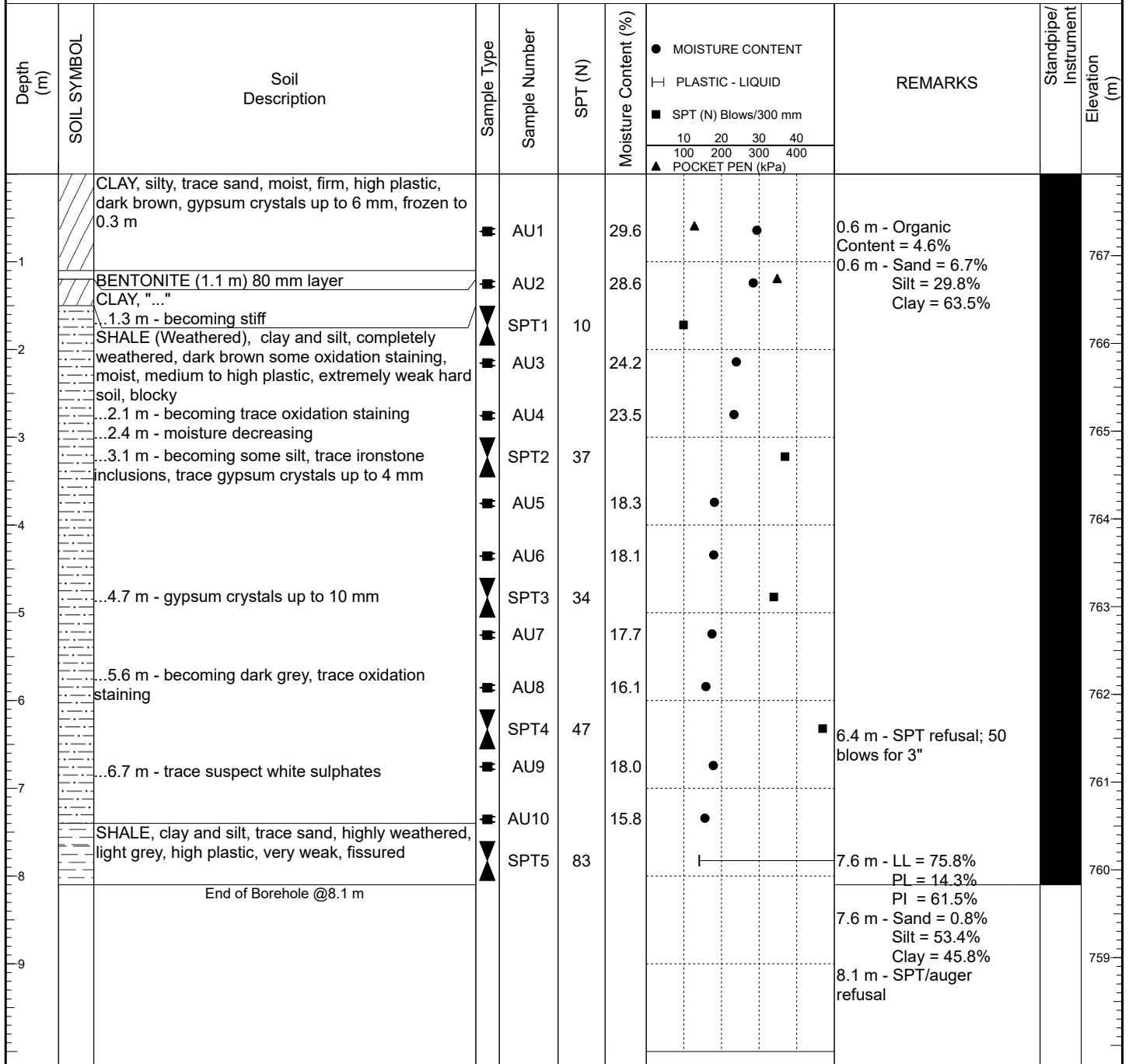


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BOREHOLE No : **22BH137**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/04/2022	COMPLETED	03/04/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	767.93m	N 5612516.200 E 416618.500
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Target depth of 33 m not achieved. No seepage encountered. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

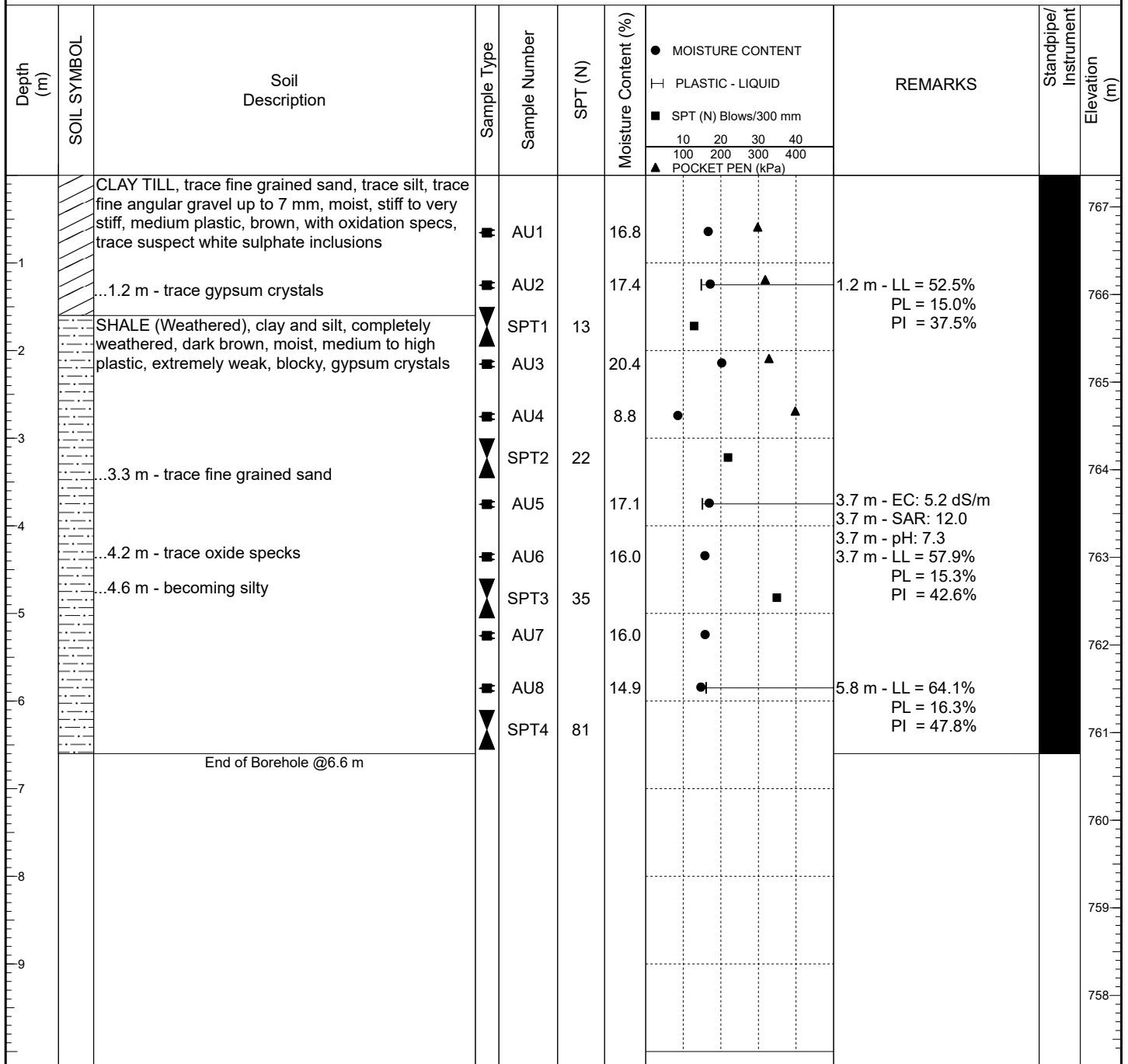


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BOREHOLE No : **22BH200**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/04/2022	COMPLETED	03/04/2022	GROUND ELEVATION
				767.36m N 5612453.900 E 416772.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		



Notes:

Target depth of 33 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

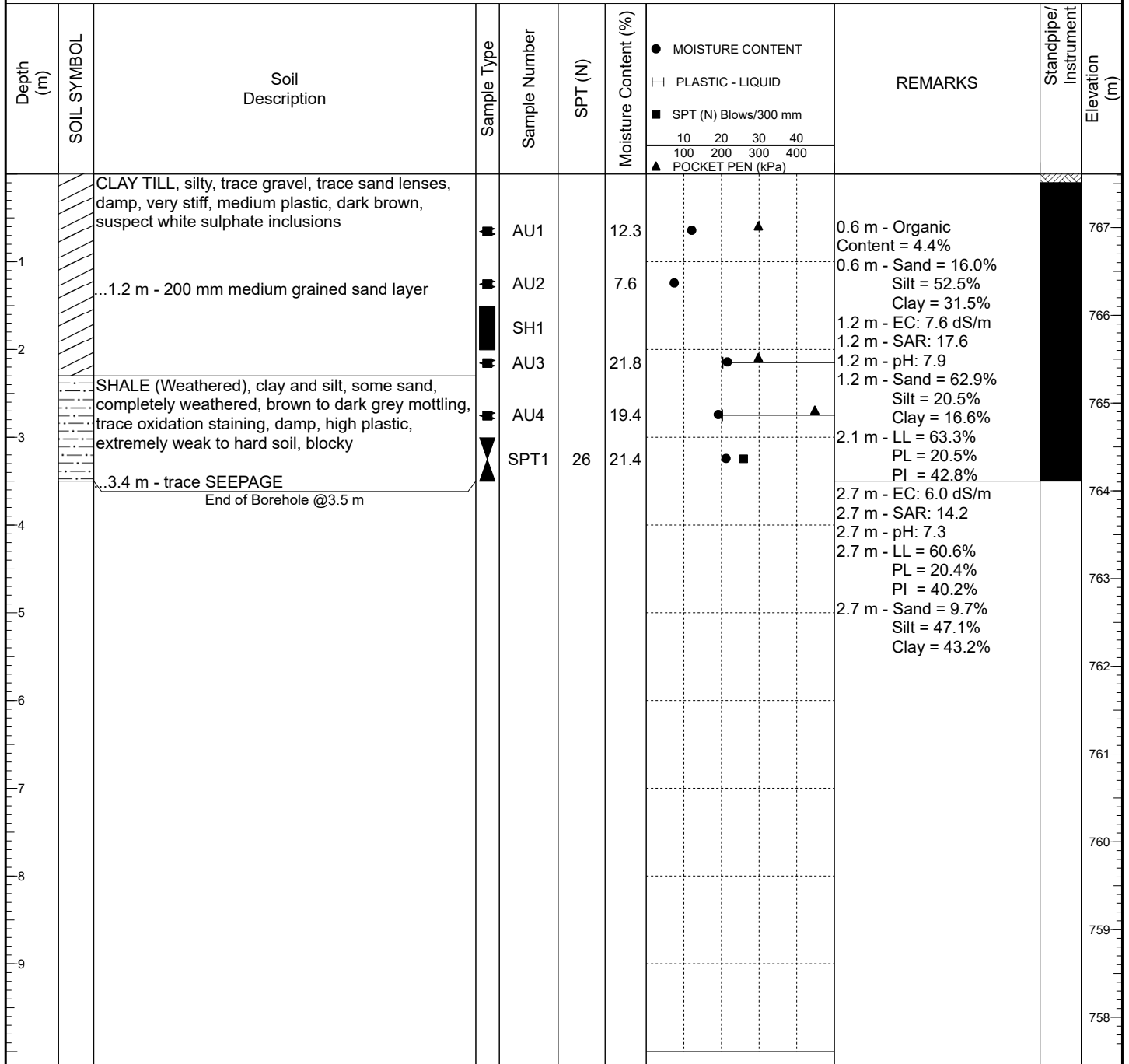


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BOREHOLE No : **22BH201**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	08/30/2022	COMPLETED	08/30/2022	GROUND ELEVATION	767.61m N 5612411.800 E 416809.800
DRILLING CONTRACTOR	Val's Drilling	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Trace seepage observed at a depth of 3.4 m. No sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

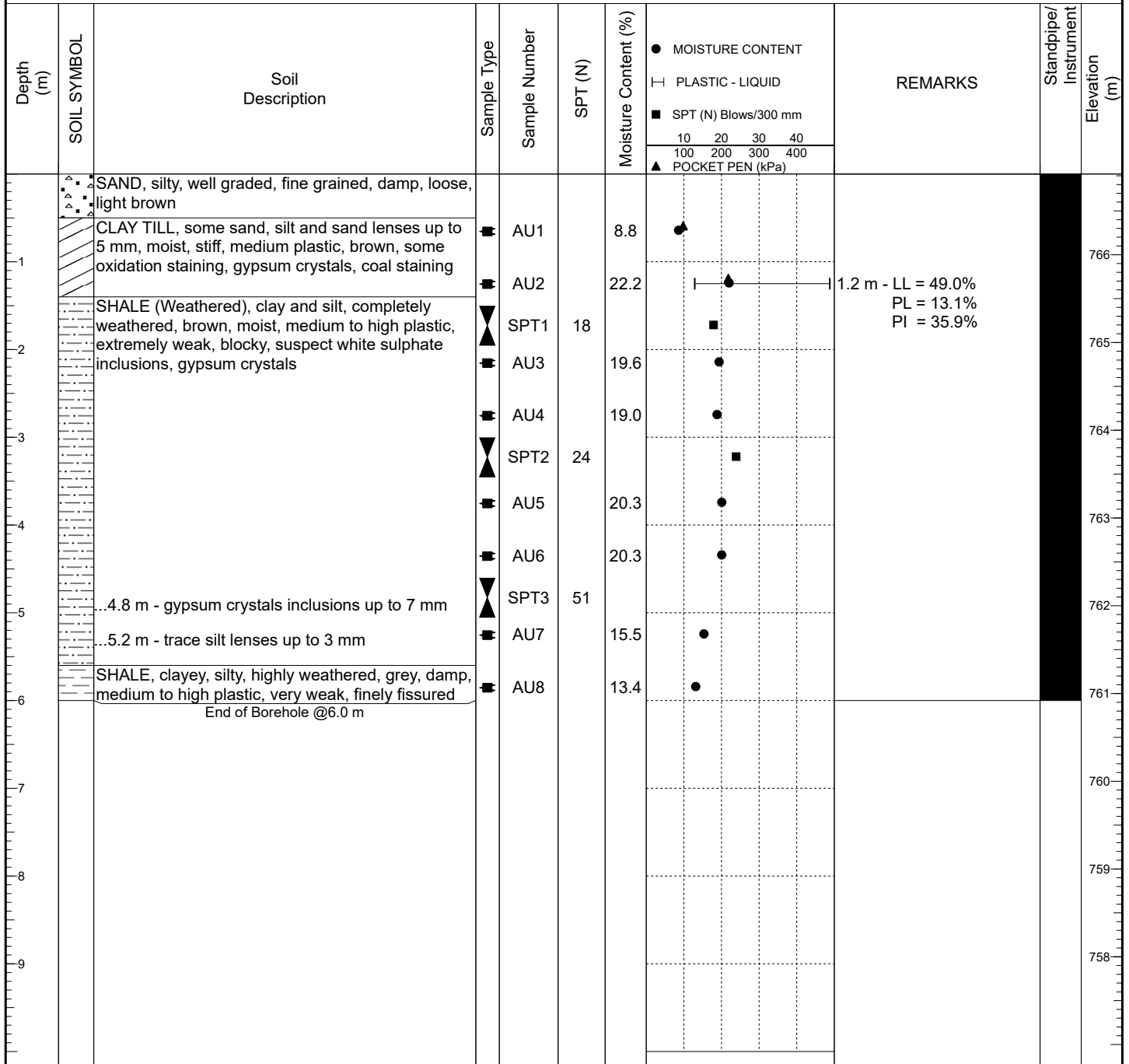


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BOREHOLE No : **22BH202**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	GROUND ELEVATION
				766.92m N 5612326.400 E 416866.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		



Notes:

Target depth of 33 m not achieved. No sloughing or seepage observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

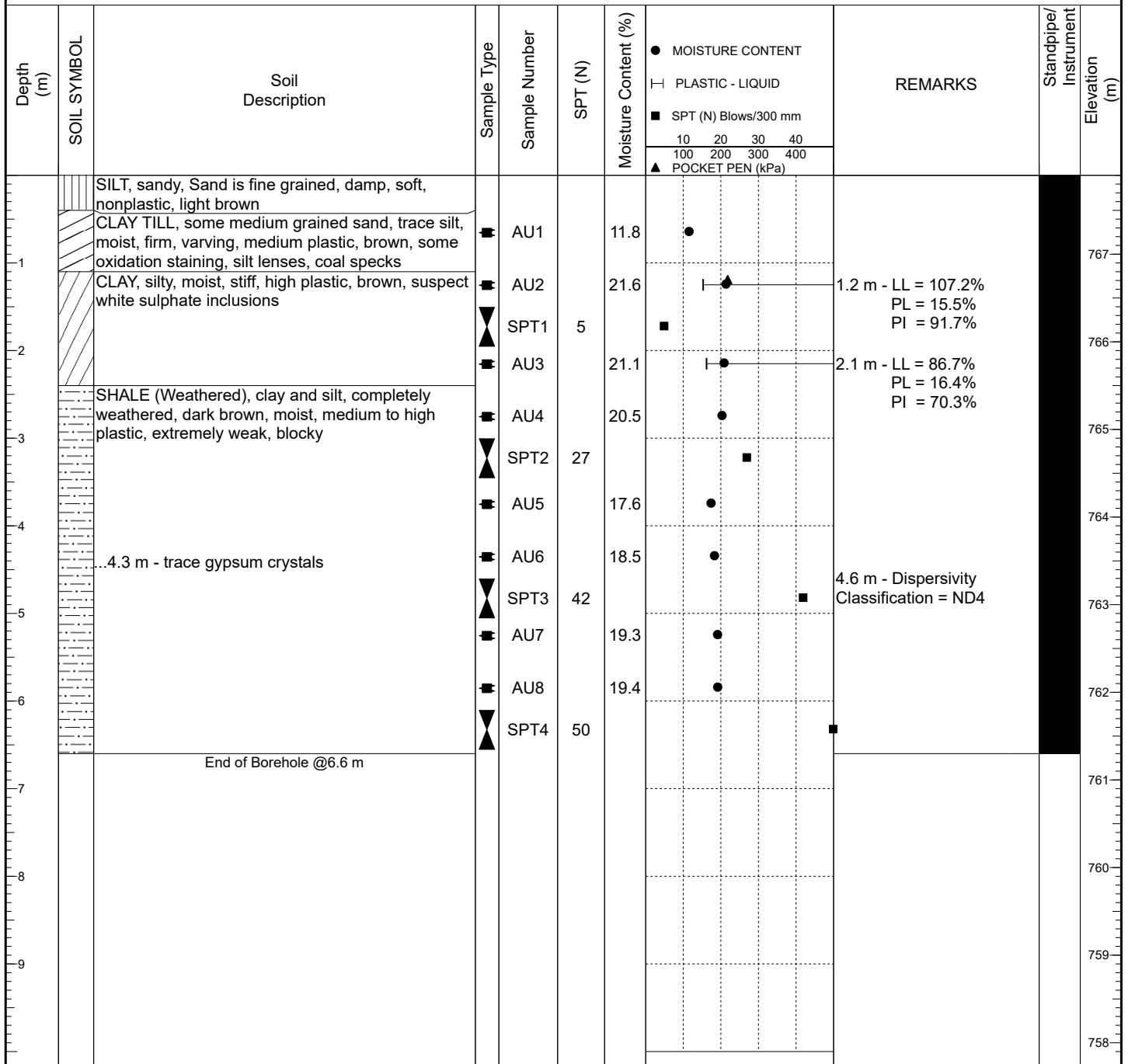


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BOREHOLE No : **22BH203**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	GROUND ELEVATION	767.90m N 5612207.600 E 416886.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 33 m not achieved. No sloughing or seepage observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

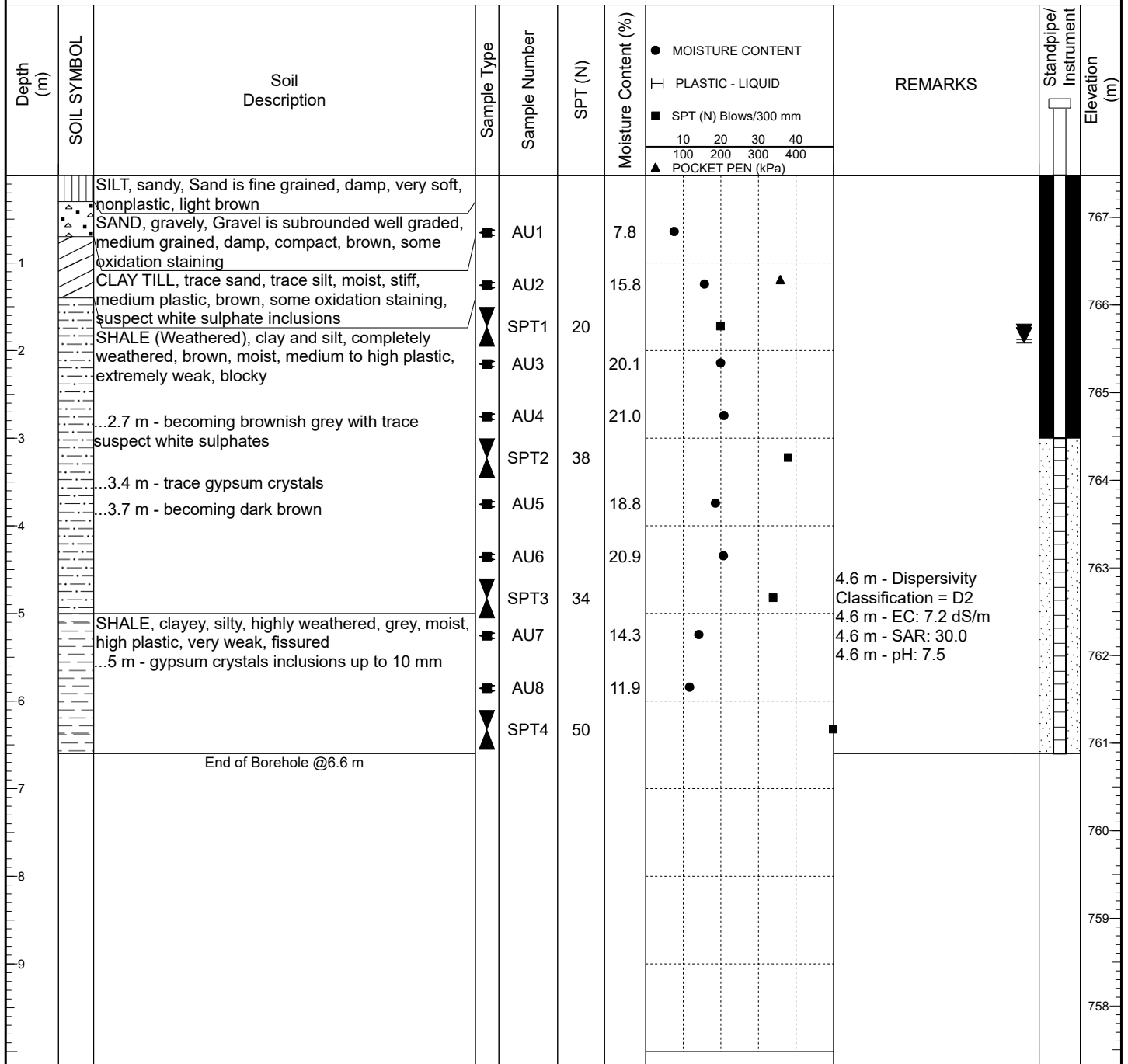


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BOREHOLE No : **22BH204**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	GROUND ELEVATION	767.48m N 5612108.000 E 416883.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	765.65 m	1.83 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	10/12/2022		



Notes:

Target depth of 33 m not achieved. No sloughing or seepage observed upon completion. 50 mm standpipe installed to a depth of 6.6 m. Borehole backfilled with sand within slotted area and capped with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

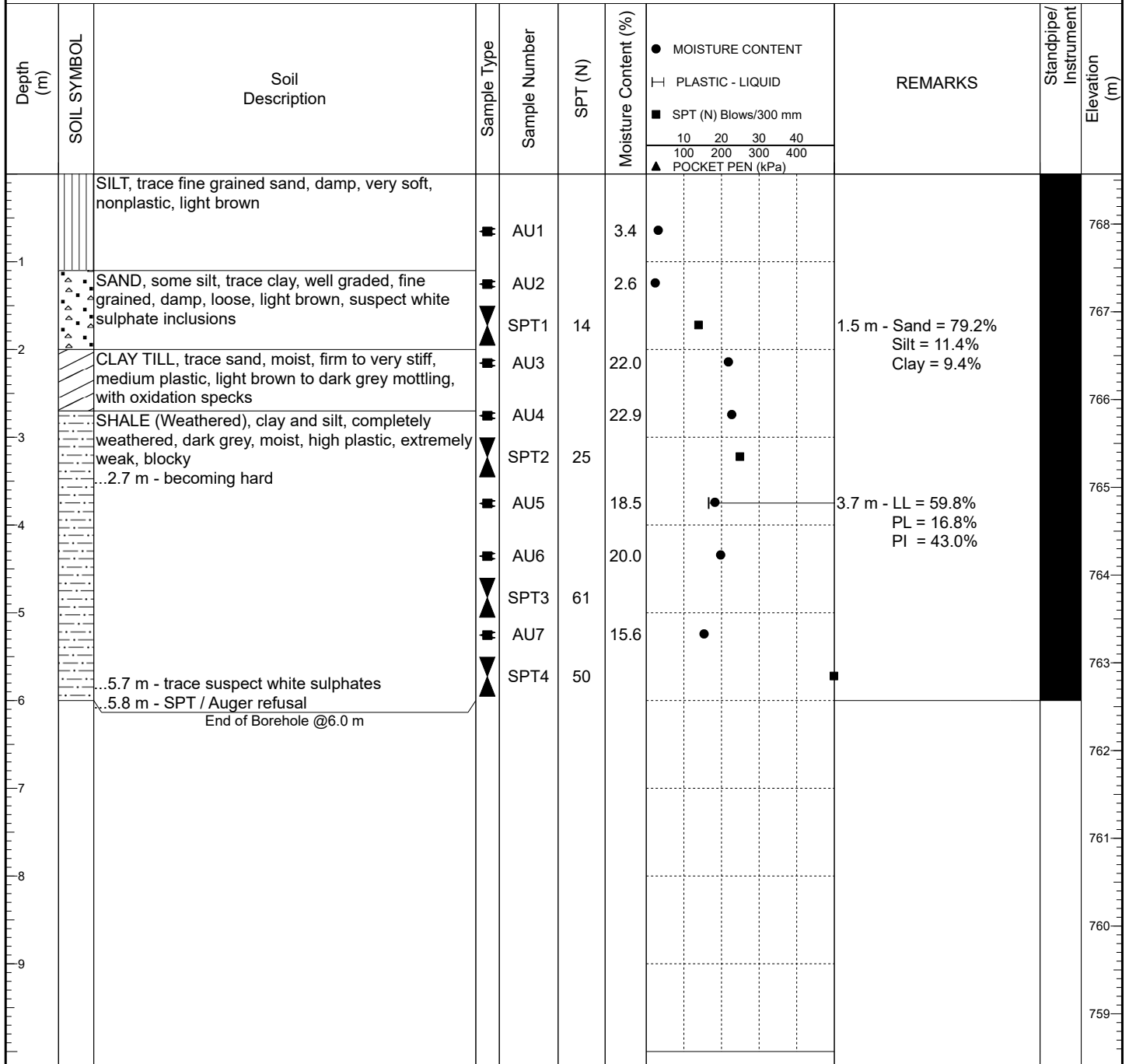


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BOREHOLE No : **22BH205**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.57m	N 5612008.000 E 416881.500
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Target depth of 30 m not achieved. No sloughing or seepage observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

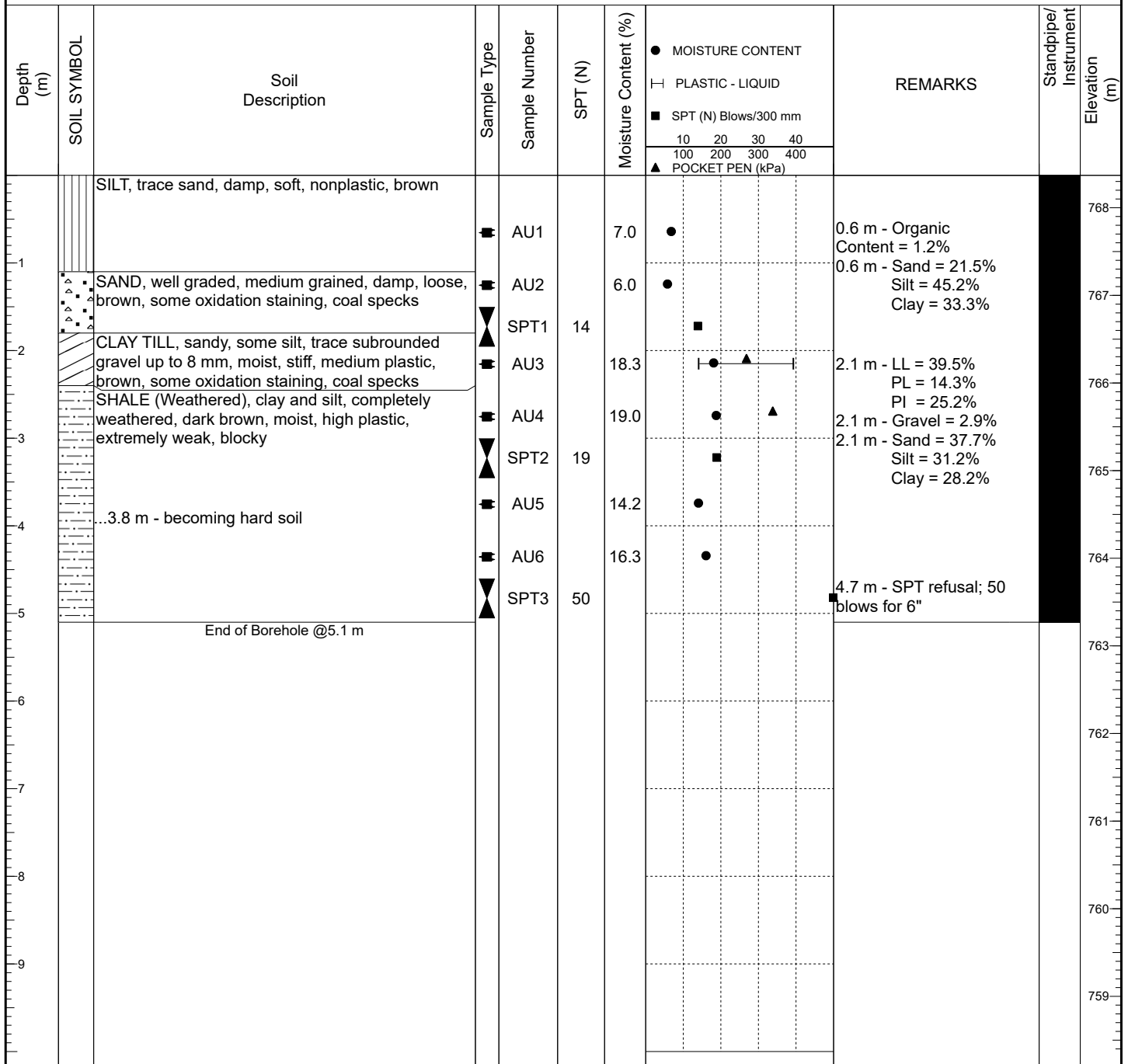


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BOREHOLE No : **22BH206**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.37m	N 5611908.000 E 416879.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Target depth of 30 m not achieved. No sloughing or seepage observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

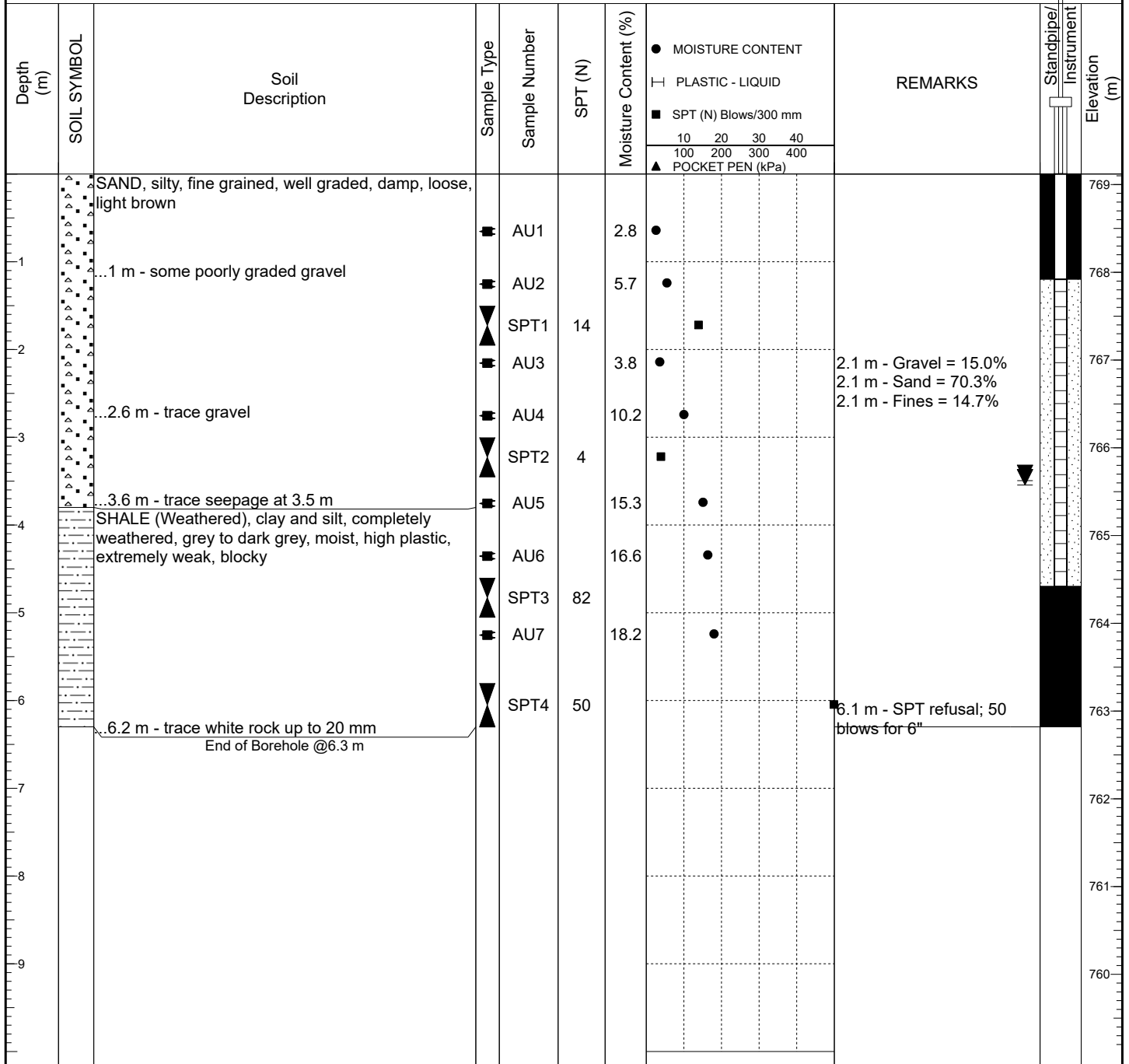


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BOREHOLE No : **22BH207**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	GROUND ELEVATION	769.12m N 5611808.000 E 416876.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	765.71 m	3.41 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		



Notes:

Target depth of 30 m not achieved. Sloughing observed to a depth of 3.6 m. Seepage observed at a depth of 3.5 m. 50 mm standpipe installed to a depth of 4.7 m. Backfilled with sand within slotted area and capped with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

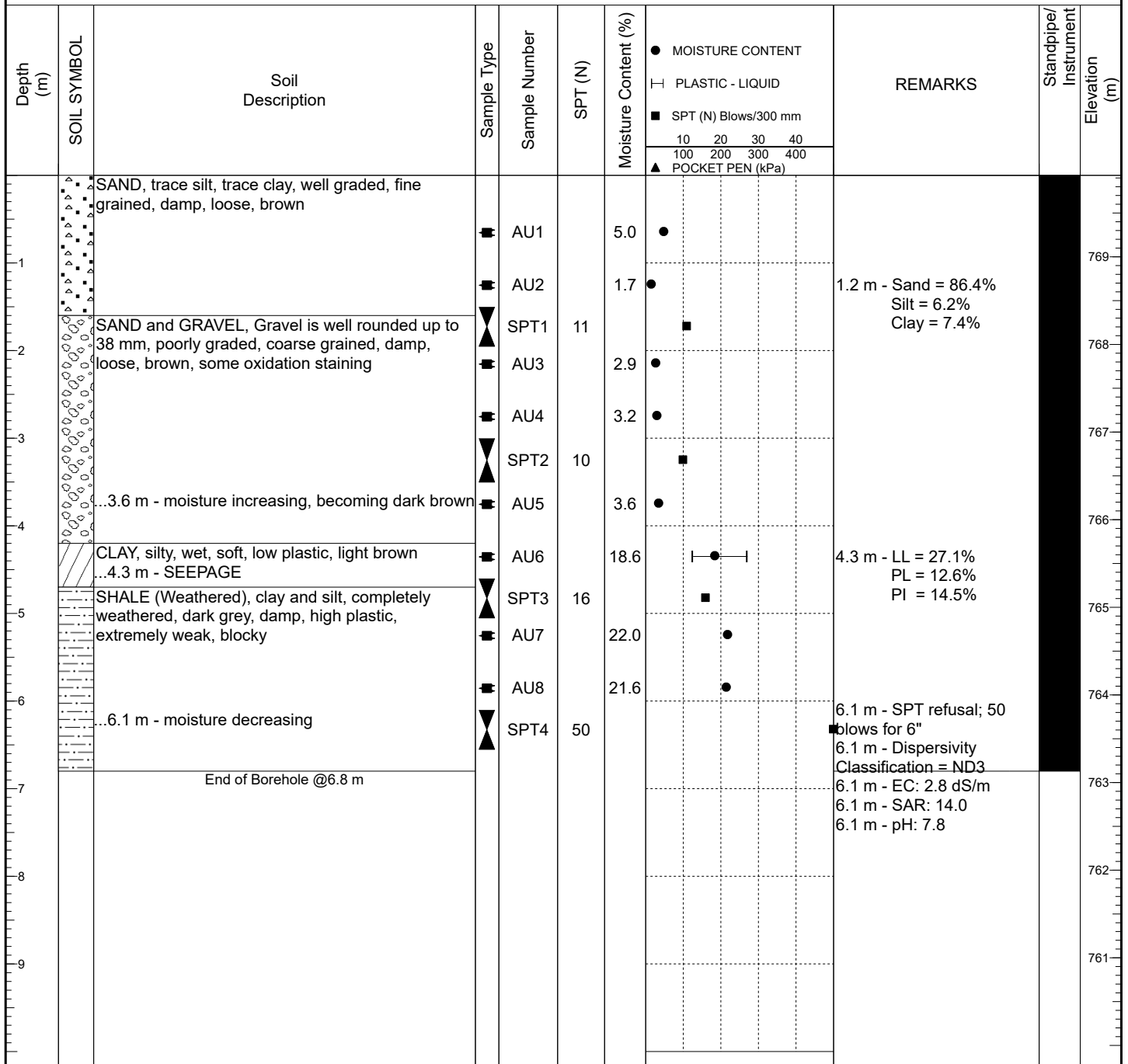


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BOREHOLE No : **22BH208**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/03/2022	COMPLETED	03/03/2022	
		GROUND ELEVATION	769.93m	N 5611708.000 E 416874.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		



Notes:

Target depth of 27 m not achieved. No sloughing observed upon completion. Seepage observed at a depth of 4.3 m. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH209**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/08/2022	COMPLETED	03/08/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	769.54m	N 5611608.000 E 416912.600
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY, silty, damp, soft, low plastic, brown	■	AU1	4.8	●			769
2		SAND, poorly graded, medium grained, moist, loose, brown, some oxidation staining	■	AU2	3.9	●	1.2 m - LL = 23.4% PL = 13% PI = 10.4%		768
			▲	SPT1	4	■			
3		...2.5 m - becoming trace gravel, well graded, subrounded up to 30 mm, moist, loose, brown	■	AU3	5.7	●			767
		...3.1 m - SEEPAGE	■	AU4	6.0	●	2.7 m - Sand = 84.7% 2.7 m - Fines = 15.3%		
		SHALE (Weathered), clay and silt, completely weathered, light brown to dark grey mottling, moist, medium to high plastic, extremely weak, blocky	▲	SPT2	11	■			766
4			■	AU5	18.3	●			765
5			■	AU6	16.5	●			764
			▲	SPT3	50		5.1 m - SPT refusal 5.2 m - Auger refusal		
		End of Borehole @5.2 m							763
6									762
7									761
8									760
9									

Notes:

Target depth of 27 m not achieved. Seepage observed at a depth of 3.1 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

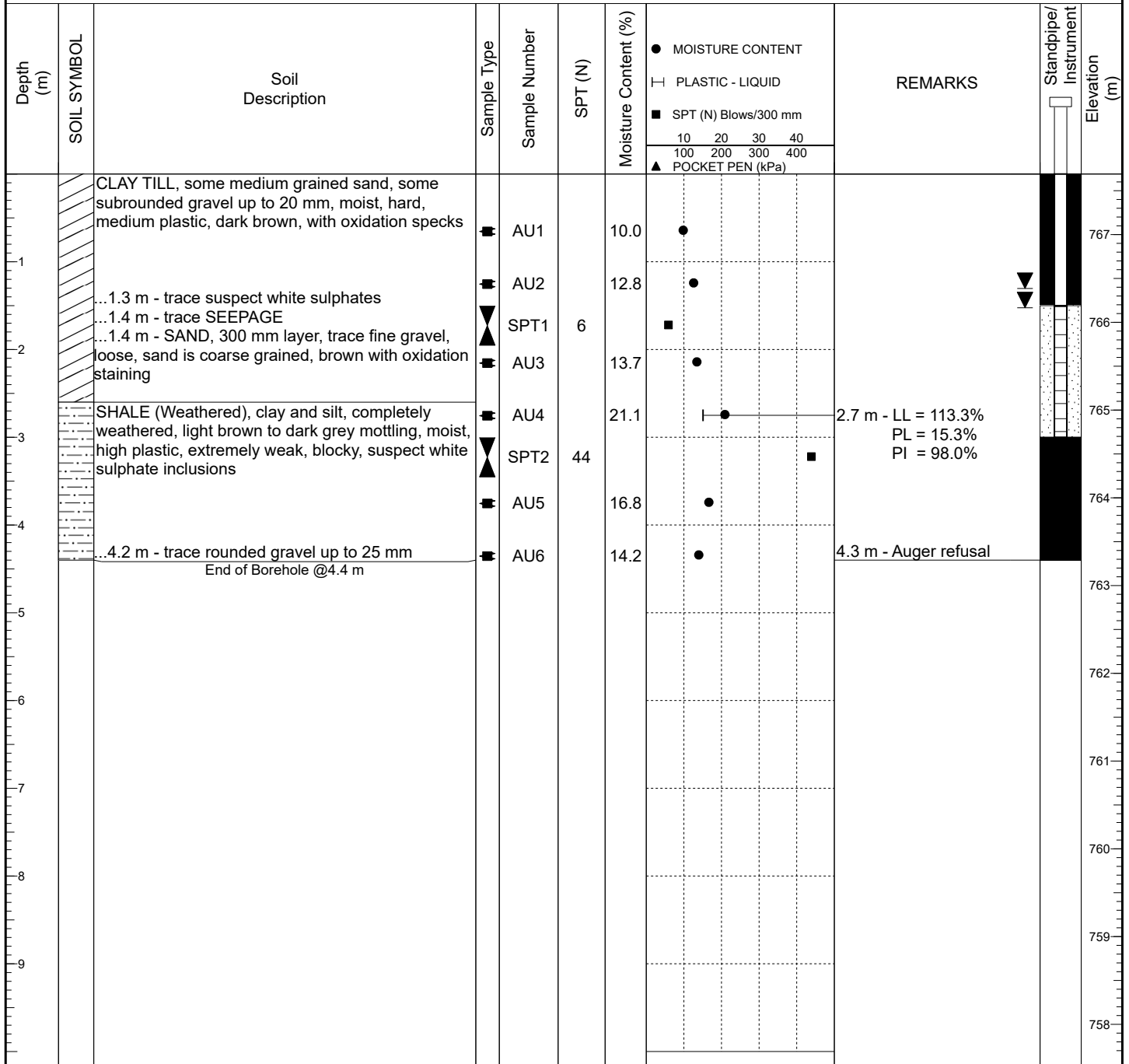


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BOREHOLE No : **22BH210**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/08/2022	COMPLETED	03/08/2022	GROUND ELEVATION	767.69m N 5611508.000 E 416869.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	766.47 m	1.22 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		



Notes:

Target depth of 33 m not achieved. Seepage observed at a depth of 1.4 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to a depth of 3.0 m

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH211**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/08/2022	COMPLETED	03/08/2022	GROUND ELEVATION	768.16m N 5611425.400 E 416867.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some fine grained sand, some subrounded gravel up to 35 mm, damp, firm, medium plastic, brown, some oxidation staining	■	AU1	5.1	●			768
			■	AU2	7.6	●			767
2		SHALE (Weathered), clay and silt, completely weathered, dark grey, moist, medium to high plastic, extremely weak, blocky	■	AU3	19.6	●	2.1 m - EC: 6.6 mg/kg 2.1 m - SAR: 16.0 2.1 m - pH: 8.1 2.1 m - LL = 73.4% PL = 19.9% PI = 53.5%		766
3		...2.6 m - becoming dark brown with grey mottling	■	AU4	18.0	●			765
			▲	SPT2	43				
4			■	AU5	20.4	●			764
5		...4.3 m - trace suspect ironstone ...4.6 m - trace gypsum crystals	■	AU6	19.7	●			
			▲	SPT3	38				
6		SHALE, silt and clay, highly weathered, grey, moist, high plastic, extremely weak, fissured	■	AU7	14.2	●	5.2 m - Sand = 0.4% Silt = 63.6% Clay = 36.0%		763
		...6.1 m - some oxidation staining	■	AU8	14.0	●			762
7		End of Borehole @6.6 m					6.6 m - SPT refusal		761
8									760
9									759

Notes:

Target depth of 30 m not achieved. Sloughing observed to a depth of 5.1 m upon completion.
Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

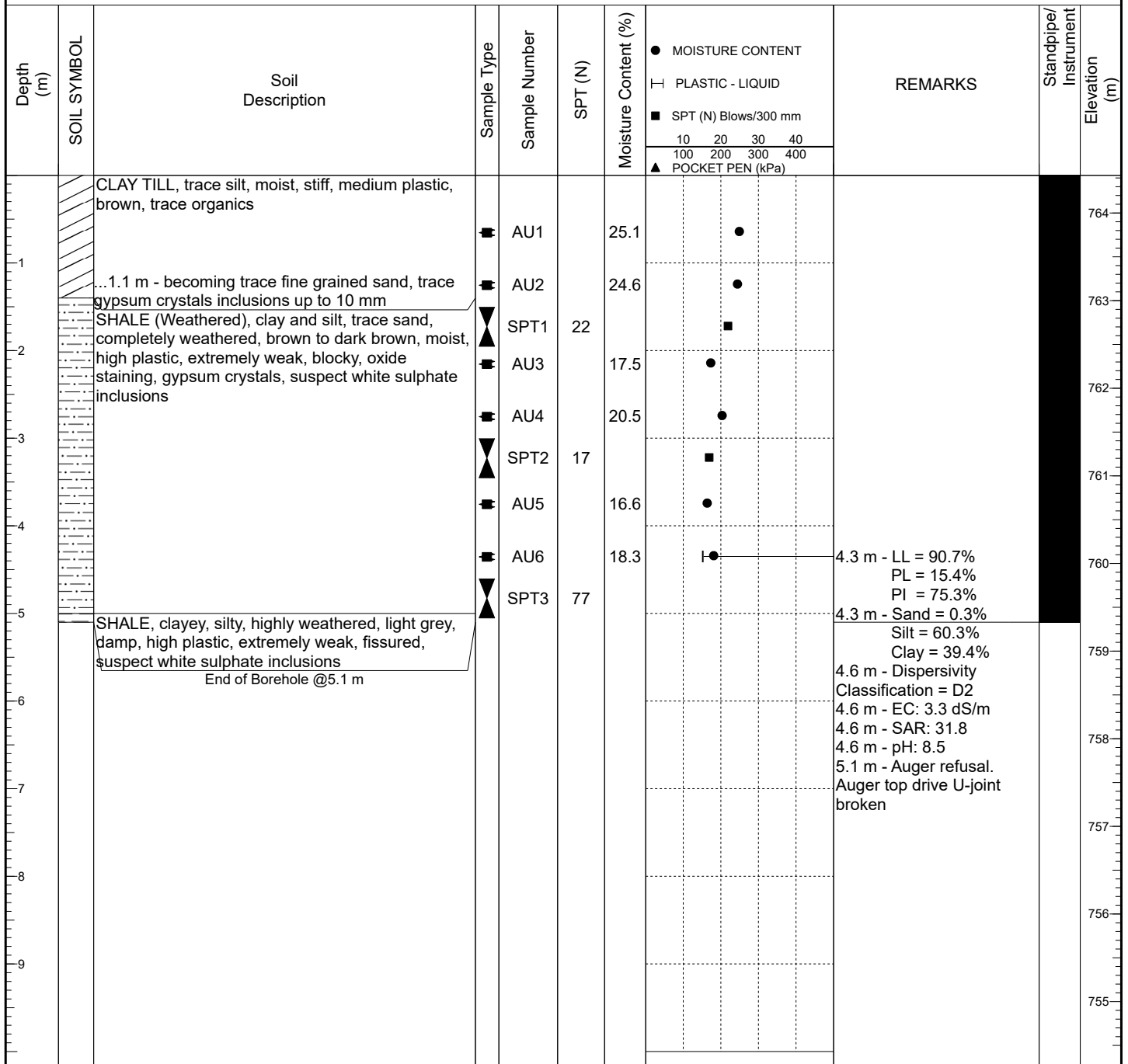


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BOREHOLE No : **22BH212**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/07/2022	COMPLETED	03/07/2022	GROUND ELEVATION	764.43m N 5611308.000 E 416864.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 39 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

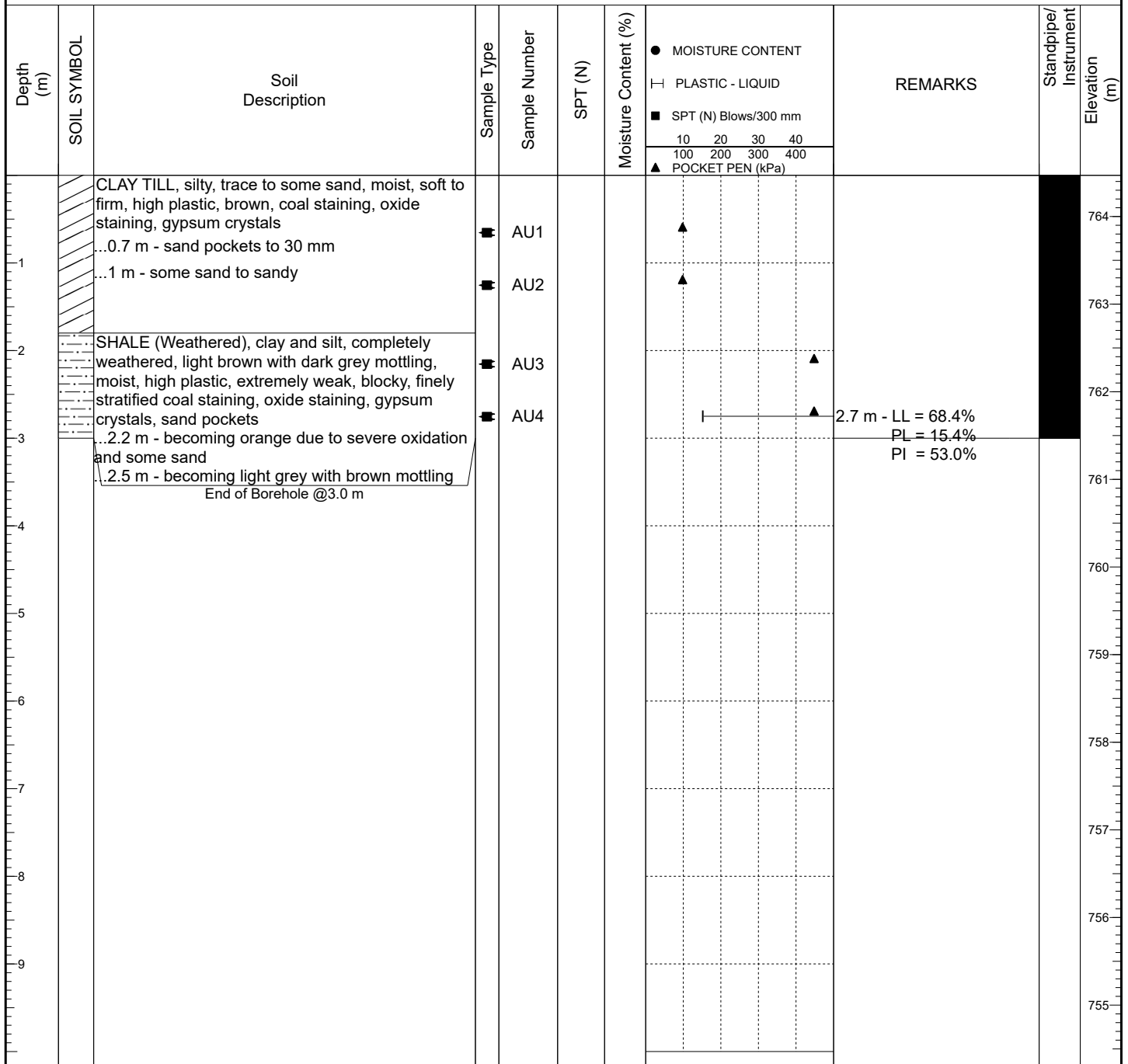


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BOREHOLE No : **22BH213**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/19/2022	COMPLETED	07/19/2022	GROUND ELEVATION	764.47m N 5611196.000 E 416863.600
DRILLING CONTRACTOR	Val's Drilling	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Wetland: Target depth of 39 m not achieved. No seepage observed upon completion. No sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

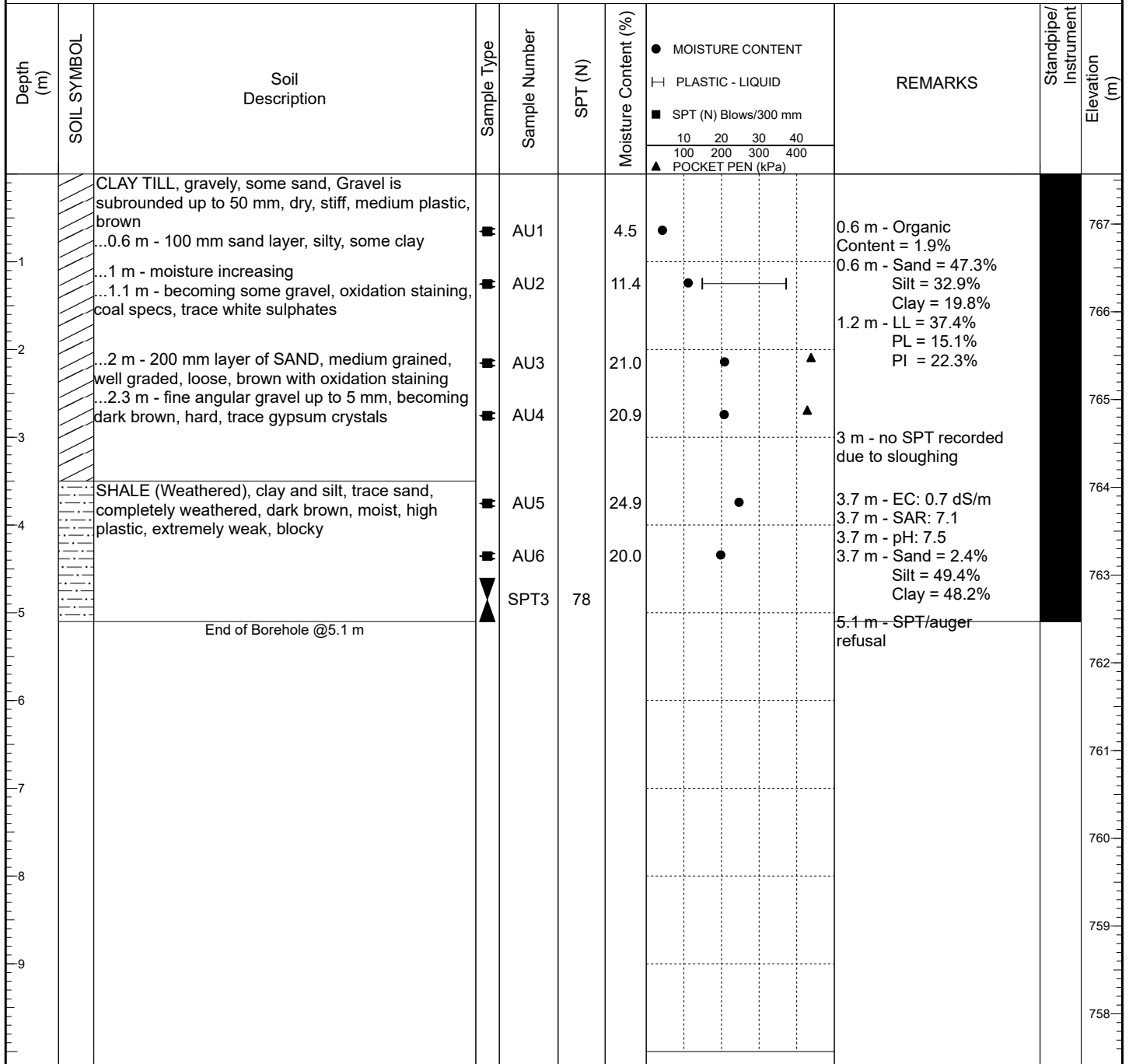


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BOREHOLE No : **22BH214**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/08/2022	COMPLETED	03/08/2022	GROUND ELEVATION	767.57m N 5611109.000 E 416859.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 33 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH215**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/08/2022	COMPLETED	03/08/2022	GROUND ELEVATION	766.80m N 5611008.000 E 416858.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sandy, trace subrounded gravel up to 40 mm, Sand is medium grained, damp, stiff, low to medium plastic, brown, some oxidation staining	■	AU1	5.4	●			766
1.2		1.2 m - becoming some gravel	■	AU2	13.3	●			
1.3		1.3 m - trace coal specks	▲	SPT1	6	■			
2		SAND, clayey, some silt, some subrounded gravel up to 10 mm, well graded, medium grained, moist, loose, brown, some oxidation staining	■	AU3	20.2	●	1.5 m - Gravel = 10.9% 1.5 m - Sand = 45.7% Silt = 19.1% Clay = 24.3%		765
3		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, moist, high plastic, extremely weak, blocky	■	AU4	16.8	●			764
3.5		End of Borehole @3.5 m	▲	SPT2	82		3 m - Sand = 0.3% Silt = 59.0% Clay = 40.7%		763
4							3.5 m - SPT/auger refusal		762
5									761
6									760
7									759
8									758
9									757

Notes:

Target depth of 33 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

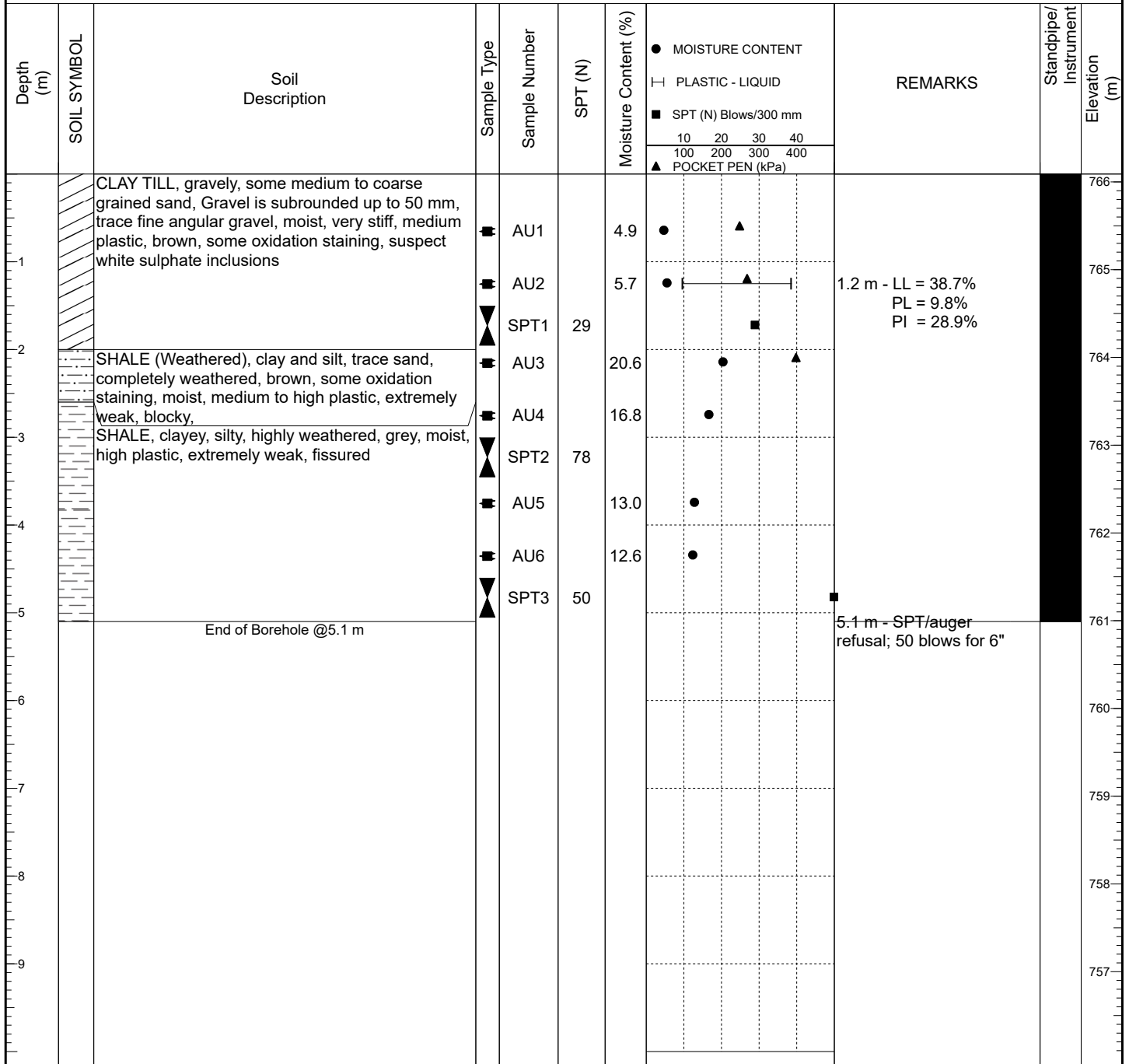


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BOREHOLE No : **22BH216**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/11/2022	COMPLETED	03/11/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	766.09m	N 5610908.000 E 416858.500
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Target depth of 36 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

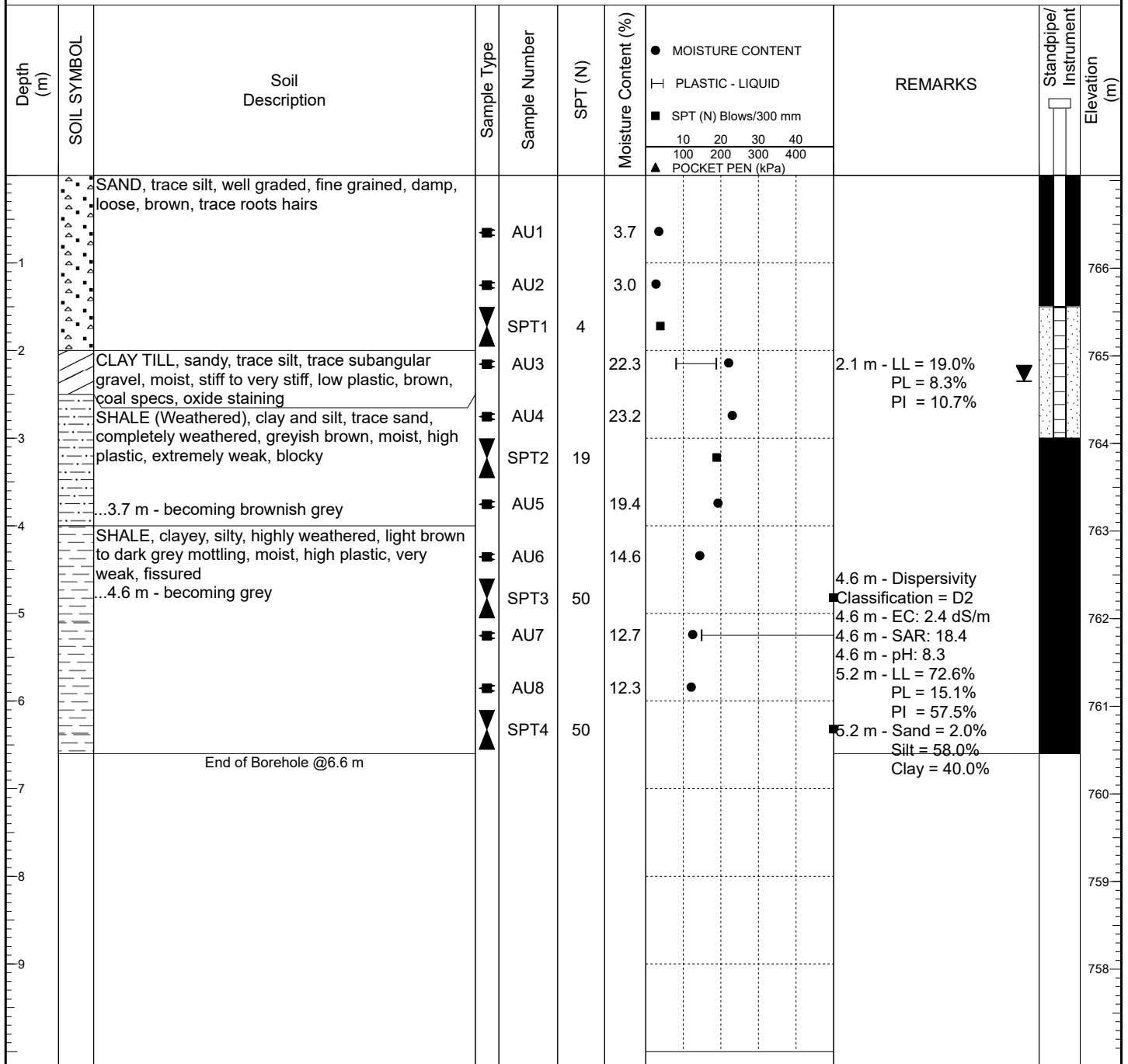


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BOREHOLE No : **22BH217**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/11/2022	COMPLETED	03/11/2022	GROUND ELEVATION	767.06m N 5610808.000 E 416858.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	764.80 m	2.26 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		



Notes:

Target depth of 33 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to a depth of 3.0 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH218**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/11/2022	COMPLETED	03/11/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	767.27m	N 5610709.000 E 416857.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY and SILT, trace sand, trace gravel, damp, soft, low to medium plastic, light brown, trace root hairs	■	AU1	7.2	●			767
2		SAND, clayey, some silt, well graded, fine grained, moist, loose, brown, some oxidation staining	■	AU2	5.6	●			766
2			▲	SPT1	12	■			
3		...2.3 m - wet ...2.5 m - SEEPAGE	■	AU3	13.3	●	2.1 m - Gravel = 0.2% 2.1 m - Sand = 59.5% Silt = 16.5% Clay = 23.8%		765
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, moist, high plastic, extremely weak, blocky	■	AU4	24.8	●	2.7 m - Sand = 11.2% Silt = 44.7% Clay = 44.1%		764
4		SHALE, clayey, silty, highly weathered, grey, moist, high plastic, extremely weak, fissured	▲	SPT2	25	■			763
5		End of Borehole @5.1 m	▲	SPT3	50				762
6									761
7									760
8									759
9									758

Notes:

Target depth of 33 m not achieved. Seepage observed at a depth of 2.5 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH219**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/11/2022	COMPLETED	03/11/2022	GROUND ELEVATION	767.74m N 5610609.000 E 416856.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY, sandy, silty, very moist, soft, low to medium plastic, brown, trace root hairs	■	AU1	3.5	●			767
		...1 m - trace to some silt	■	AU2	2.9	●			
2		SAND, some clay, well graded, fine grained, moist, loose, brown	▲	SPT1	3	■			766
		...2.1 m - organic staining	■	AU3	2.6	●			
		...2.5 m - becoming wet	■	AU4	15.9	●			765
		...2.7 m - SEEPAGE	▲	SPT2	23	■			
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, moist, high plastic, very weak, discontinuity	■	AU5	8.3	●			764
		...3.2 m - red laminations	■	AU6	13.8	●			
		SHALE, silt and clay, trace fine grained sand, highly weathered, grey, moist, high plastic, very weak, fissured	▲	SPT3	50	■			763
5		End of Borehole @5.2 m					3 m - Dispersivity Classification = ND4 3 m - EC: 1.4 dS/m 3 m - SAR: 13.5 3 m - pH: 8.5 3.7 m - LL = 75.4% PL = 18% PI = 57.4% 3.7 m - Sand = 9.2% Silt = 46.2% Clay = 44.6% 5.1 m - SPT refusal; 50 blows for 5"		762
6									761
7									760
8									759
9									758

Notes:

Target depth of 33 m not achieved. Seepage observed at a depth of 2.7 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH220**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/11/2022	COMPLETED	03/11/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	767.52m	N 5610509.000 E 416854.400
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sandy, trace silt, moist, stiff, low plastic, brown, with oxidation specks, suspect white sulphate inclusions	■	AU1	6.5	●	0.6 m - Organic Content = 1.8%		767
		SAND, silty, clayey, well graded, fine grained, moist, loose to compact, brown	■	AU2	8.7	●	0.6 m - Sand = 50.0%		
			▲	SPT1	7	■	Silt = 29.2%		766
2		...1.8 m - becoming wet	▲				Clay = 20.8%		
		...2 m - becoming medium grained	■	AU3	17.5	●			765
		...2.4 m - SEEPAGE, organic staining	■	AU4	17.4	●			
3		...2.9 m - trace gravel	▲	SPT2	8	■			764
		CLAY TILL, silty, some sand, wet, stiff, medium plastic, light brown to dark grey mottling, coal specks, oxide staining, suspect white sulphate inclusions	■	AU5	21.1	●	3.7 m - LL = 42.9%		
4		...3.6 m - becoming grey, firm, trace sand	■	AU6	13.6	●	PL = 12.2%		763
		SHALE (Weathered), clay and silt, completely weathered, light brown to dark grey mottling, moist, high plastic, extremely weak, blocky	▲	SPT3	50	■	PI = 30.7%		
5			■	AU7	14.9	●	3.7 m - Sand = 31.3%		763
							Silt = 39.4%		
							Clay = 29.3%		
							4.6 m - SPT refusal; 50 blows for 6"		762
		End of Borehole @5.4 m							
6									761
7									760
8									759
9									758

Notes:

Target depth of 33 m not achieved. Seepage observed at a depth of 2.4 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

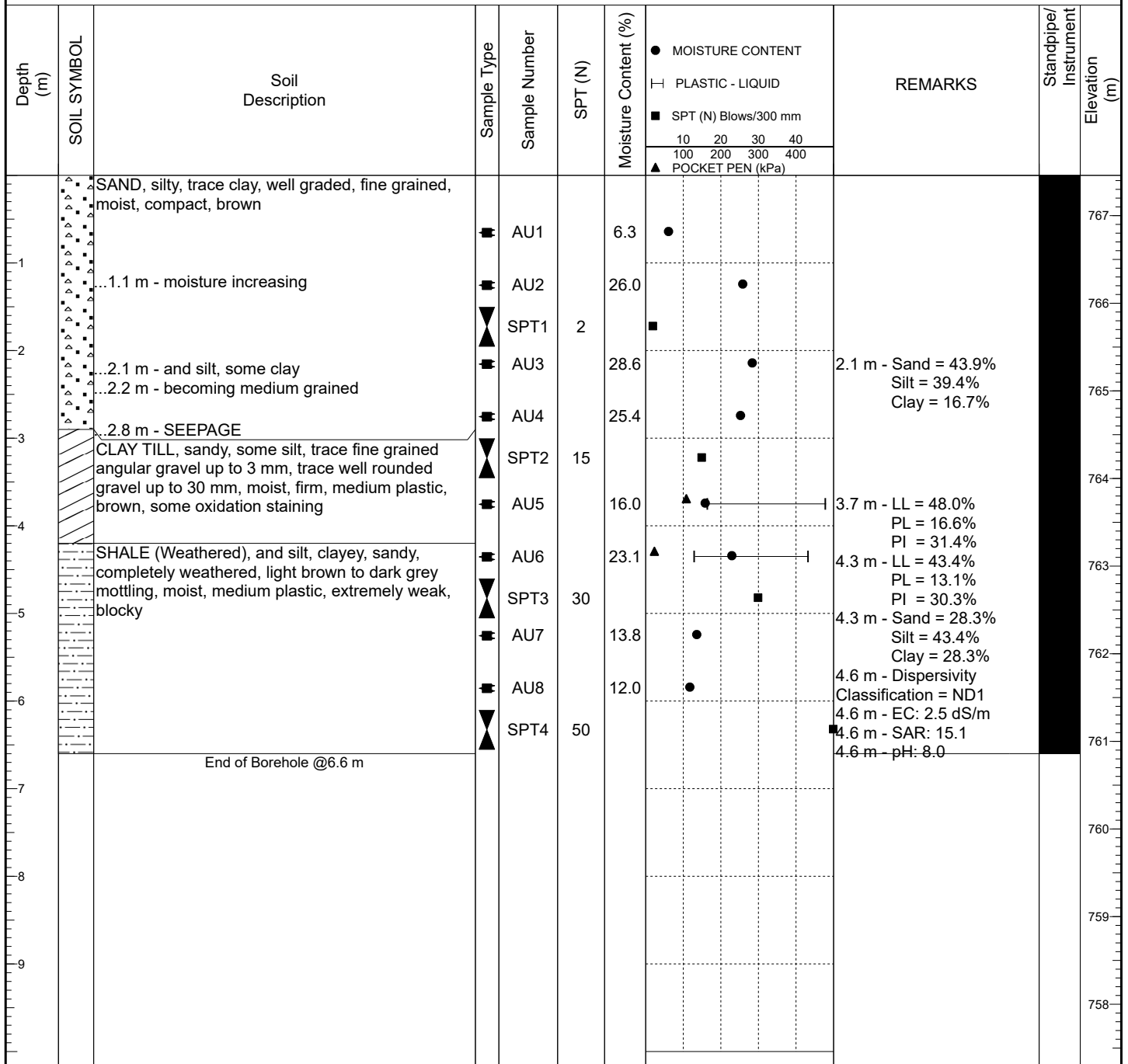


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BOREHOLE No : **22BH221**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/10/2022	COMPLETED	03/10/2022	GROUND ELEVATION	767.46m N 5610406.900 E 416852.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 33 m not achieved. Seepage observed at a depth of 2.8 m. Sloughing observed to a depth of 2.7 m upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH222**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/09/2022	COMPLETED	03/09/2022	GROUND ELEVATION	767.74m N 5610310.000 E 416849.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, silty, some clay, well graded, medium grained, moist, loose, brown	■	AU1	2.9	●			767
2		...1.5 m - moisture increasing	■	AU2	2.9	●			766
3		...2.1 m - trace seepage	■	AU3	3.2	●	2.1 m - Sand = 50.8% Silt = 32.5% Clay = 16.7%		765
4			■	AU4	5.9	●			764
5		SAND and GRAVEL, Sand is medium grained, Gravel is well rounded up to 40 mm, poorly graded, moist, loose, brown	■	AU5	22.6	●			763
6		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, high plastic, extremely weak, blocky	■	AU6	18.3	●	4.6 m - Dispersivity Classification = D2 4.6 m - EC: 2.5 dS/m 4.6 m - SAR: 13.3 4.6 m - pH: 7.7		762
7			■	AU7	16.5	●			761
8			■	AU8	14.9	●	5.8 m - LL = 54.3% PL = 14.6% PI = 39.7%		760
9		End of Borehole @6.6 m	■	SPT4	50	■	6.6 m - SPT refusal; 50 blows for 4"		759
									758

Notes:

Target depth of 33 m not achieved. Seepage observed at a depth of 2.1 m. Sloughing observed to a depth of 4.1 m upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH223**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/27/2022	COMPLETED	06/27/2022	GROUND ELEVATION	765.44m N 5610209.900 E 416846.200
DRILLING CONTRACTOR	Val's Drilling	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, trace rounded gravel up to 15 mm, moist, stiff, low plastic, brown some oxidation staining, suspect white sulphate inclusions, sand pockets	■	AU1					765
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark brown to greyish brown, moist, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU2					764
3			■	SH1					763
4			■	AU3					762
5			■	AU4					761
6			▲	SPT1	61				760
7		SHALE, clayey, silty, highly weathered, damp, medium plastic, extremely weak to hard soil	■	AU5					759
8			■	AU6					758
9		...4.8 m - SEEPAGE	▲	SPT2	62				757
		End of Borehole @5.1 m							756

Notes:

Wetland: Target depth of 36 m not achieved. Seepage observed at a depth of 4.8 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

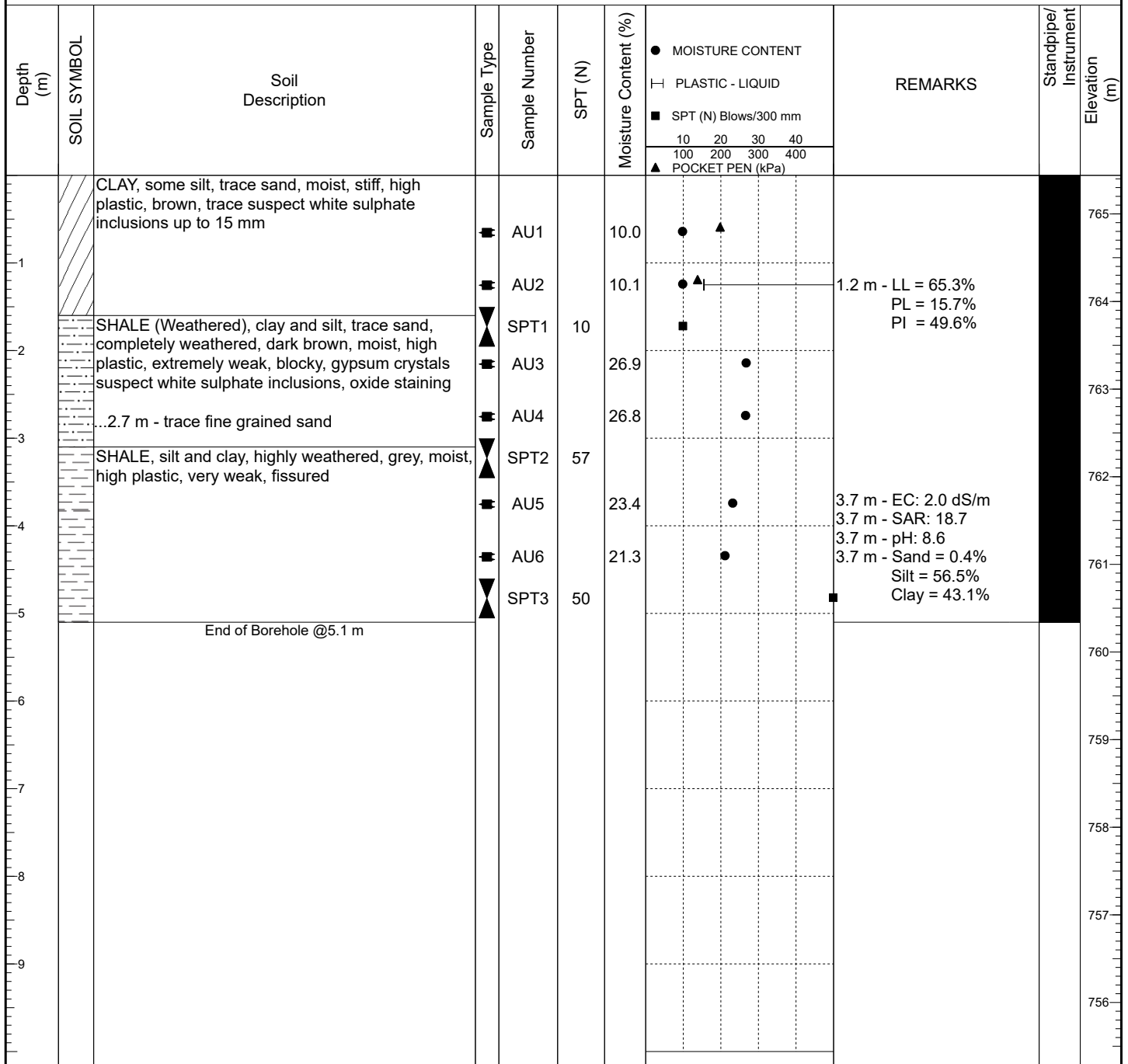


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BOREHOLE No : **22BH224**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/10/2022	COMPLETED	03/10/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	765.44m	N 5610110.000 E 416843.900
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Target depth of 36 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

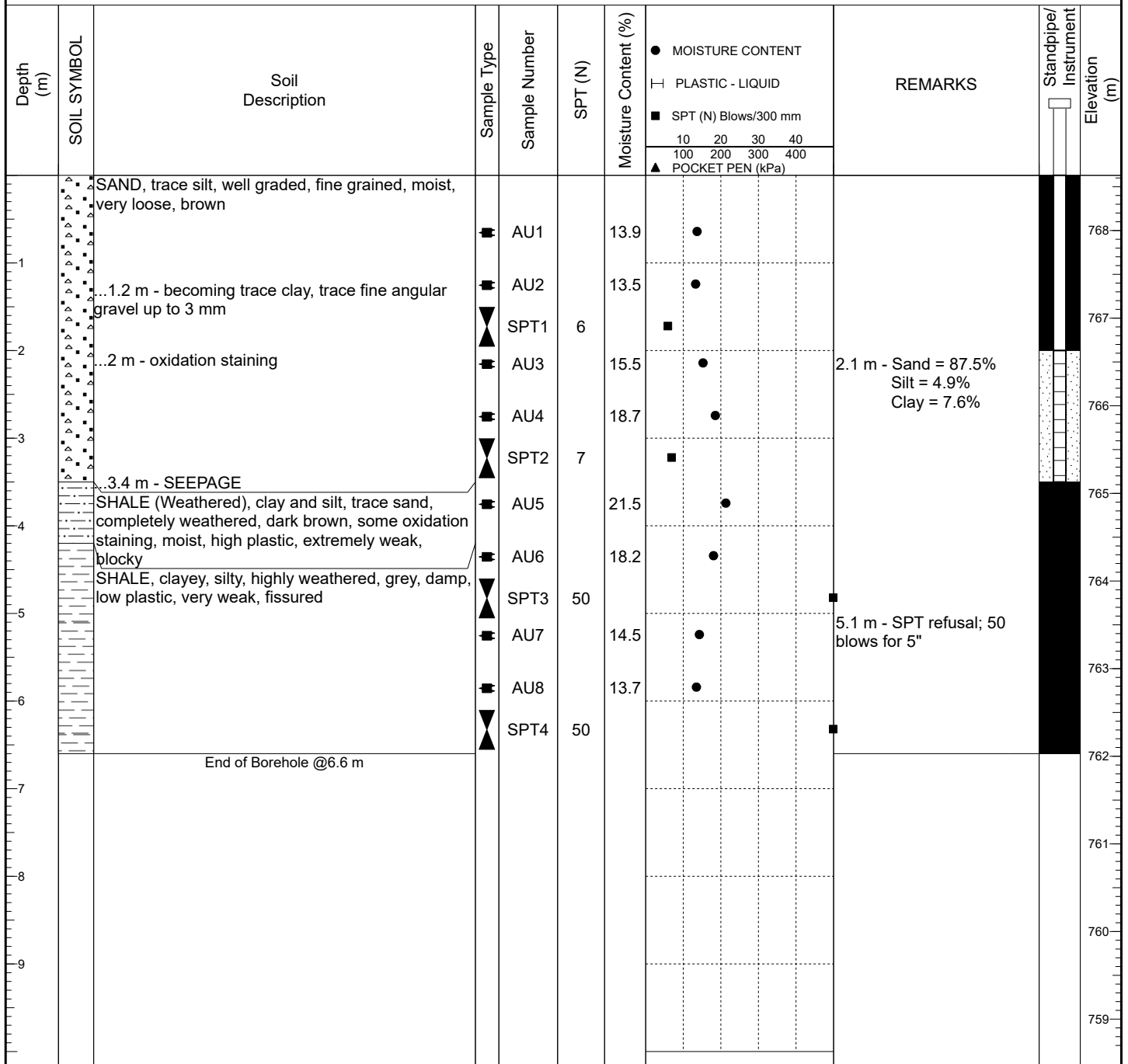


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BOREHOLE No : **22BH225**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/10/2022	COMPLETED	03/10/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.63m	N 5610010.000 E 416838.400
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED	09/15/2022	



Notes:

Target depth of 30 m not achieved. Seepage observed at a depth of 3.4 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to a depth of 6.6 m. Borehole measured dry on August 10, September 15, and October 12, 2022

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH226**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/10/2022	COMPLETED	03/10/2022	GROUND ELEVATION	767.06m N 5609910.100 E 416838.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), and silt, clayey, trace fine grained sand, completely weathered, dark brown, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU1		16.7	0.6 m - Organic Content = 3.0%		766
			■	AU2		17.4	0.6 m - Sand = 1.6%		
			▲	SPT1	20		Silt = 69.5%		
2		2.2 m - moisture increasing	■	AU3		19.5	Clay = 28.9%		765
			■	AU4		22.2			
3		3.1 m - oxidation staining	▲	SPT2	22		3 m - Dispersivity Classification = D2		764
			■	AU5		19.5	3 m - EC: 1.4 dS/m		
4		3.7 m - trace coal specks	■	AU6		21.4	3 m - SAR: 17.3		763
			▲	SPT3	27		3 m - pH: 7.2		
5			■	AU7		21.1	4.3 m - Organic Content = 6.3%		762
			▲	SPT4	50		4.3 m - LL = 67.5%		761
6		SHALE, clayey, silty, highly weathered, grey, moist, high plastic, very weak, fissured	■	AU8		15.7	PL = 22.0%		
			▲	SPT4	50		PI = 45.5%		
7		End of Borehole @6.6 m							760
8									759
9									758

Notes:

Target depth of 33 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

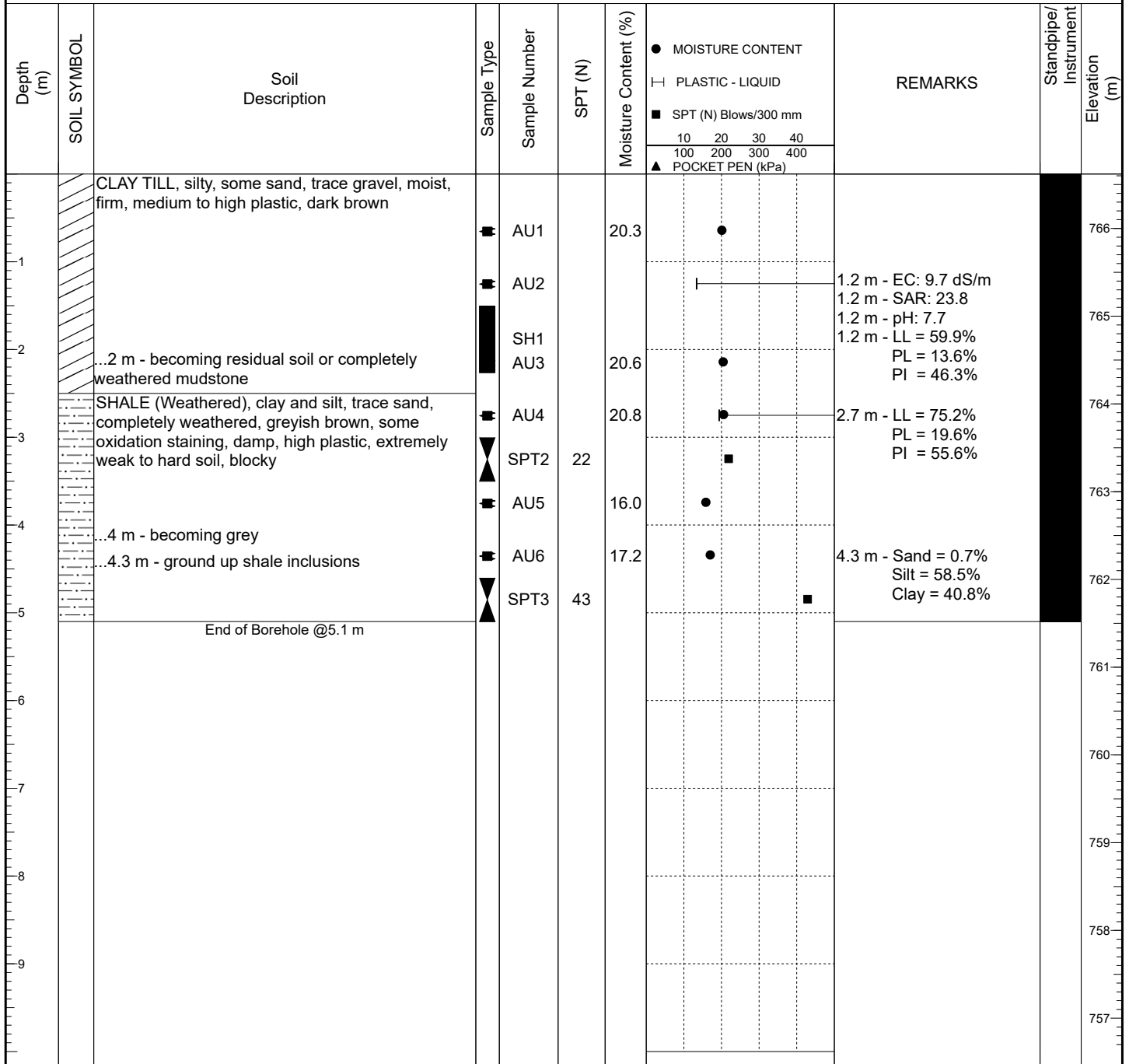


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BOREHOLE No : **22BH227**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/29/2022	COMPLETED	06/29/2022	
DRILLING CONTRACTOR	Val's Drilling	GROUND ELEVATION	766.62m	N 5609810.000 E 416838.200
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		



Notes:

Wetland: Target depth of 33 m not achieved. No seepage or sloughing observed upon completion.
Borehole backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

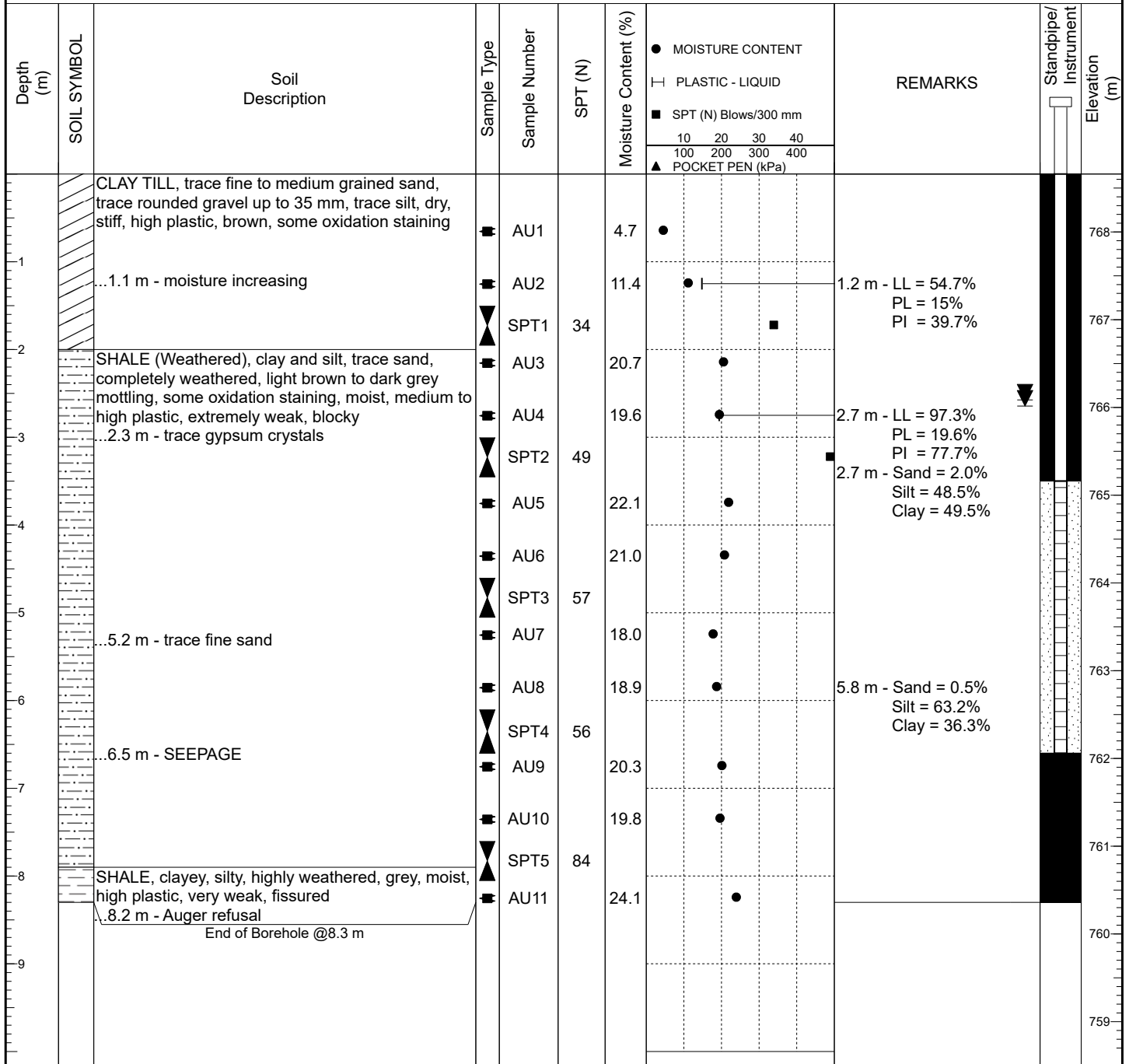


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BOREHOLE No : **22BH228**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/10/2022	COMPLETED	03/10/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.66m N 5609686.900 E 416829.300
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	766.10 m 2.56 m
		DATE GROUND WATER RECORDED	10/12/2022



Notes:

Target depth of 30 m not achieved. Seepage observed at a depth of 6.5 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm standpipe installed to depth of 6.6 m.

Logged By: C. Braun

Reviewed By: T. Curtis

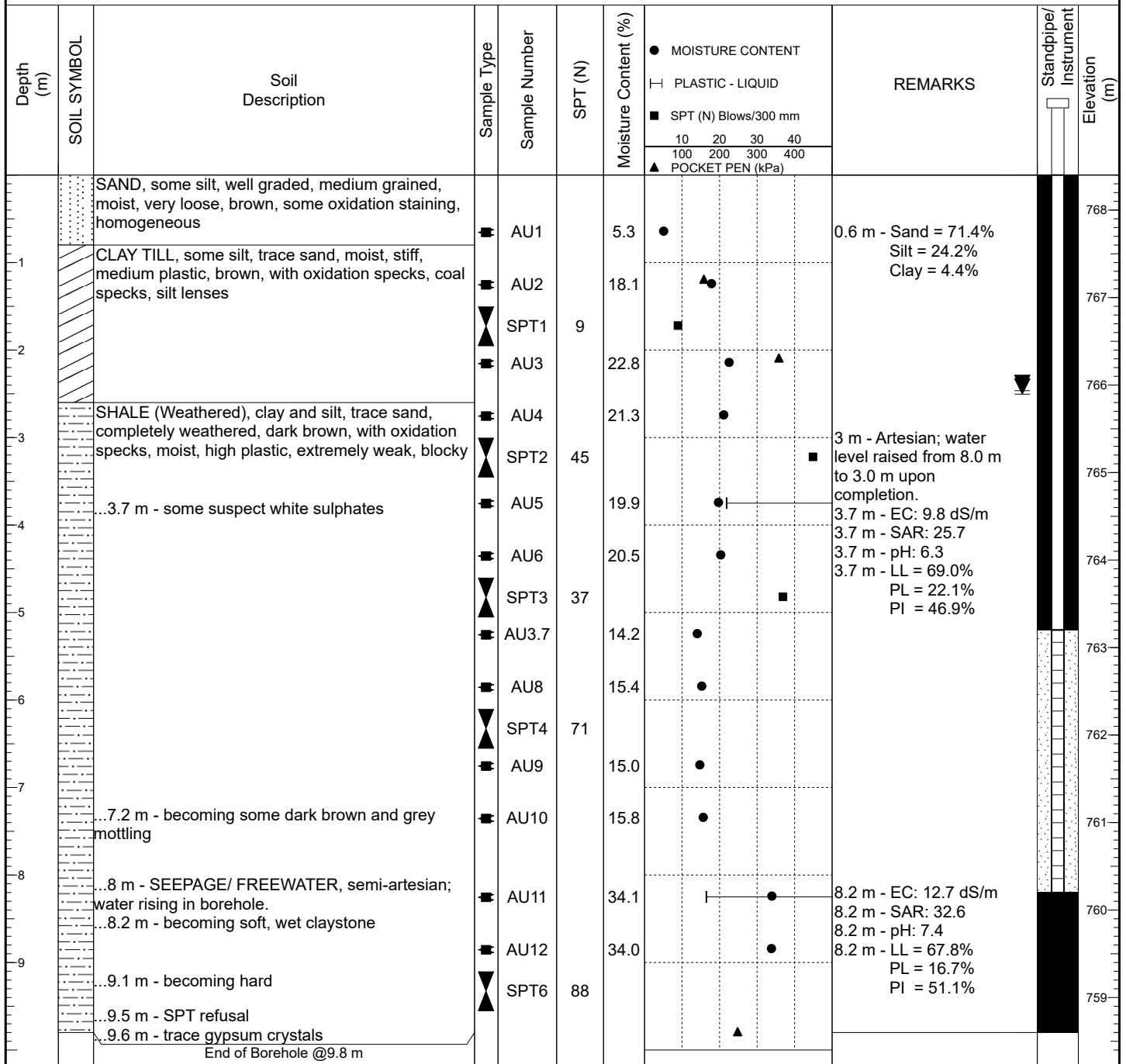


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BOREHOLE No : **22BH300**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/23/2022	COMPLETED	03/23/2022
GROUND ELEVATION	768.40m	N	5609577.900
GROUND ELEVATION	768.40m	E	416770.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	765.98 m 2.42 m
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	10/12/2022



Notes:

Target depth of 30 m not achieved. Artesian seepage observed at a depth of 8.0 m, water level measured at 3.0 m upon completion. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. 50 mm slotted standpipe installed to a depth of 8.2 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH301**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/24/2022	COMPLETED	03/24/2022	GROUND ELEVATION	769.22m N 5609508.100 E 416681.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sandy, silty, trace subrounded gravel up to 30 mm, dry, stiff, medium plastic, light brown, sand pockets, suspect white sulphate inclusions	■	AU1	5.3	●			769
			■	AU2	9.1	●	1.2 m - LL = 59.4% PL = 11.7% PI = 47.7%		768
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, mottled dark brown, trace oxidation staining, moist, medium to high plastic, extremely weak, blocky, some suspect white sulphates	▲	SPT1	27	■	1.2 m - Gravel = 0.4% 1.2 m - Sand = 34.8% Silt = 35.2% Clay = 29.6%		767
			■	AU3	19.5	●			
3			■	AU4	22.6	●			
		...3.3 m - becoming greyish brown	▲	SPT2	27	■	3 m - artesian water encountered at 8.3 m rose to 3.0 m upon completion.		766
4			■	AU5	22.1	●			
			■	AU6	19.7	●			765
5		...4.8 m - brown to dark grey mottling	▲	SPT3	38	■			
		...5.2 m - becoming fractured bedrock	■	AU7	19.9	●			764
6			■	AU8	17.8	●			
			▲	SPT4	50		6.3 m - SPT refusal; 50 blows for 5"		763
7		...6.8 m - moisture increasing	■	AU9	15.9	●			
			■	AU10	16.2	●			762
8		...8.3 m - SEEPAGE/FREEWATER	▲	SPT5	80				
		...8.8 m - trace oxidized gypsum crystals	■	AU11	38.0	●			761
9			■	AU12	38.8	●			
		End of Borehole @9.6 m	▲	SPT6	50		9.5 m - SPT refusal; 50 blows for 5"		760

Notes:

Design depth of 30 m not achieved. Seepage encountered at 8.3 m, rose to 3.0 m upon completion. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH302**

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CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 03/24/2022 COMPLETED 03/24/2022 GROUND ELEVATION 769.12m N 5609477.000 E 416585.600
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, gravely, some fine to medium grained sand, Gravel is subrounded up to 20 mm, dry, stiff, low to medium plastic, light brown End of Borehole @0.6 m					0.6 m - Auger refusal at 0.6 m. Attempted at relocated hole to same result. Recommended to ODEX hole through gravely cobble layer prior to coring.		769
2									768
3									767
4									766
5									765
6									764
7									763
8									762
9									761
									760

Notes:

Design depth of 27 m not achieved. Auger refusal at 0.6 m on gravely cobbles. Borehole backfilled with cuttings.

Logged By: C. BraunReviewed By: T. Curtis

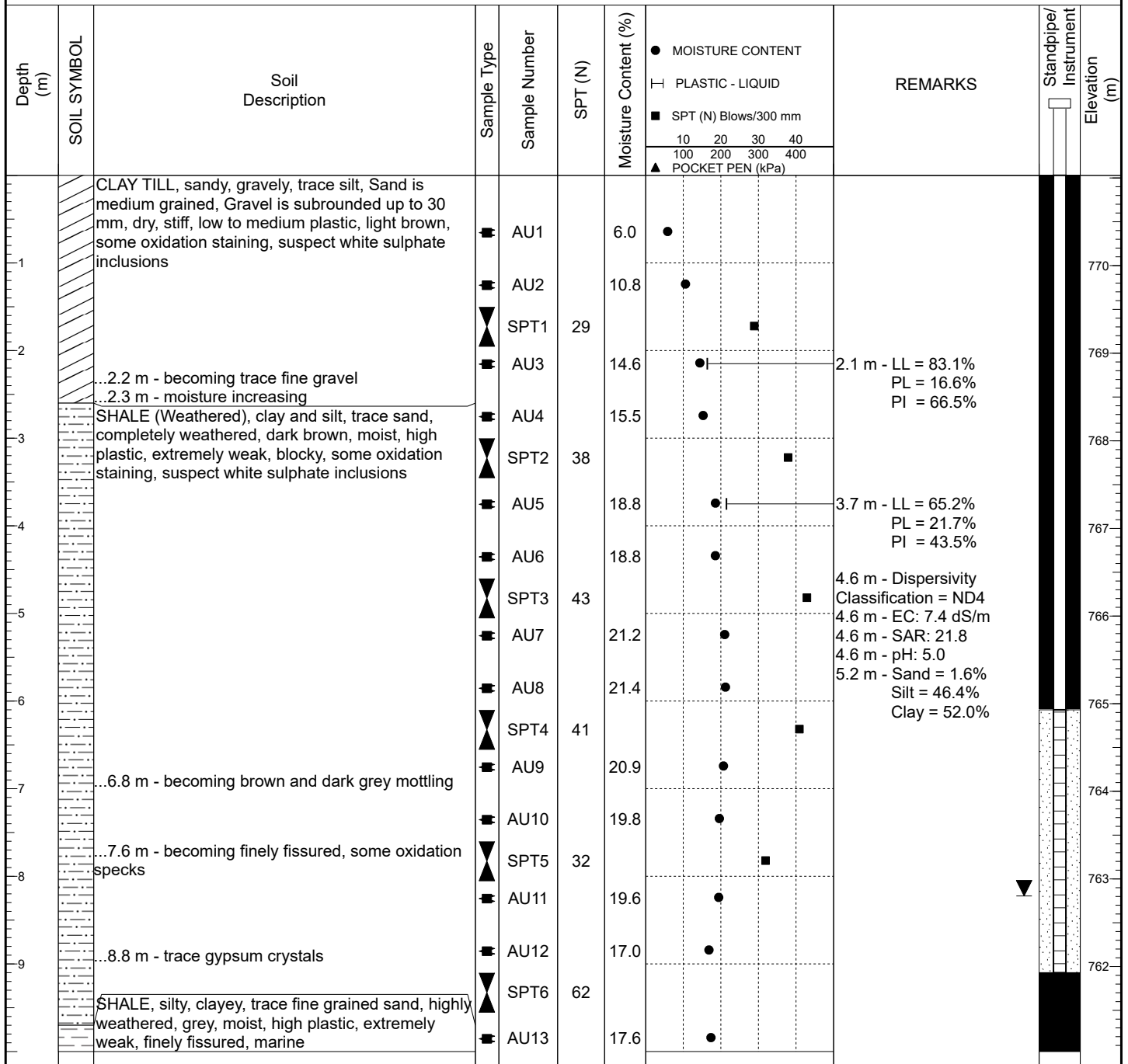


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BOREHOLE No : **22BH303**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/24/2022	COMPLETED	03/24/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	771.03m N 5609474.100 E 416493.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	762.89 m 8.14 m
		DATE GROUND WATER RECORDED	08/10/2022



Notes:

Target depth of 27 m not achieved. Seepage not encountered. Sloughing observed to a depth of 10.7 m upon completion. Borehole backfilled with sand and bentonite chips. Standpipe installed to a depth of 9.1 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH303**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/24/2022	COMPLETED	03/24/2022	GROUND ELEVATION	771.03m N 5609474.100 E 416493.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		762.89 m	8.14 m
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		08/10/2022	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
11		SHALE, silty, clayey, trace fine grained sand, highly weathered, grey, moist, high plastic, extremely weak, finely fissured, marine	■	AU14		18.2	●		
			▲	SPT7	88				760
			■	AU15		17.6	●		
12			■	AU16		17.6	●	12 m - Auger refusal	759
			▲	SPT8	50			12.6 m - SPT refusal; 50 blows for 3"	
13		End of Borehole @12.7 m							758
14									757
15									756
16									755
17									754
18									753
19									752

Notes:

Target depth of 27 m not achieved. Seepage not encountered. Sloughing observed to a depth of 10.7 m upon completion. Borehole backfilled with sand and bentonite chips. Standpipe installed to a depth of 9.1 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH304**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/24/2022	COMPLETED	03/24/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.34m N 5609474.400 E 416393.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clay and silt, trace sand, completely weathered, brown, some oxidation staining, moist, high plastic, extremely weak to hard soil, blocky	■	AU1	20.0	●	0.6 m - Organic Content = 2.9%		770
			■	AU2	17.7	●	0.6 m - Sand = 1.0%		769
		...1.6 m - trace gypsum crystals	▲	SPT1	27	■	Silt = 41.0%		769
			■	AU3	20.4	●	Clay = 58.0%		
			■	AU4	19.9	●	2.1 m - LL = 70.7%		768
			▲	SPT2	38	■	PL = 20.2%		
			■	AU5	21.0	●	PI = 50.5%		767
			▲	SPT3	32	■	2.7 m - EC: 2.8 dS/m		
		...5.1 m - becoming light brown to grey mottling	■	AU6	20.2	●	2.7 m - SAR: 21.4		766
			■	AU7	18.1	●	2.7 m - pH: 8.2		765
			▲	SPT4	68	■	4.6 m - Dispersivity Classification = D2		
			■	AU8	20.1	●			764
			■	AU9	13.8	●	6.1 m - EC: 5.9 dS/m		
			▲	SPT5	59	■	6.1 m - SAR: 31.3		763
			■	AU10	17.5	●	6.1 m - pH: 7.6		
			■	AU11	16.7	●	6.7 m - Sand = 0.4%		762
			▲	SPT6	50	■	Silt = 50.9%		
		SHALE, silty, clayey, highly weathered, grey, some oxidation specks, moist, high plastic, extremely weak, finely fissured, marine	■	AU12	17.2	●	Clay = 48.7%		761
		...9.1 m - SEEPAGE/FREEWATER	■	AU13	13.0	●	9.3 m - SPT refusal; 50 blows for 3"		
		End of Borehole @9.9 m					9.8 m - Auger refusal		

Notes:

Target depth of 27 m not achieved. Seepage encountered at 9.1 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH305**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/24/2022	COMPLETED	03/24/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	771.20m N 5609474.700 E 416293.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some fine grained sand, some silt, damp, stiff, medium plastic, brown, with oxidation specks, trace suspect white sulphate inclusions	■	AU1	16.0	●			771
			■	AU2	13.5	●			770
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brown, some oxidation staining, damp, medium to high plastic, extremely weak, blocky	▲	SPT1	32				
			■	AU3	14.8	●			769
3		...2.7 m - suspect bentonic shale	■	AU4	16.6	●	2.7 m - LL = 123.1% PL = 18.2% PI = 104.9%		768
			▲	SPT2	74				
4			■	AU5	20.2	●			767
5		...4.8 m - trace gypsum crystals	■	AU6	19.9	●	4.3 m - Water level raised from 6.1 m to 4.3 m upon completion.		
		...5.2 m - becoming brown and grey mottling	■	AU7	18.4	●			766
		...5.3 m - becoming finely stratified	■	AU8	18.2	●			
6		...6.2 m - SEEPAGE/FREEWATER	▲	SPT4	65				765
7			■	AU9	21.6	●			
			■	AU10	27.0	●	7.3 m - LL = 67.5% PL = 21.8% PI = 45.7%		764
8		...7.6 m - becoming greyish brown	▲	SPT5	75				
9			■	AU11					763
			■	AU12					
		SHALE, silty, clayey, highly weathered, dark grey, with some oxidation specks, moist, high plastic, extremely weak, fissured	▲	SPT6	71				762
			■	AU13	17.0	●			

Notes:

Target depth of 24 m not achieved. Seepage encountered at 6.1 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH305**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/24/2022	COMPLETED	03/24/2022	GROUND ELEVATION	771.20m N 5609474.700 E 416293.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
11		SHALE, silty, clayey, highly weathered, dark grey, with some oxidation specks, moist, high plastic, extremely weak, fissured ...10.4 m - trace suspect white sulphates	■	AU14	20.7	●			761
			▲	SPT7	50		10.9 m - SPT refusal		
		...11.3 m - becoming brown and grey mottling	■	AU15	20.7	└─	11.3 m - LL = 67.1% PL = 17.9% PI = 49.2%		760
12			■	AU16	22.2	●	11.3 m - Sand = 1.1% Silt = 56.2% Clay = 42.7%		759
			▲	SPT8	50		12.7 m - SPT/Auger refusal		
13		End of Borehole @12.7 m					12.96 m - SAR: 37.8		758
14									757
15									756
16									755
17									754
18									753
19									752

Notes:

Target depth of 24 m not achieved. Seepage encountered at 6.1 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

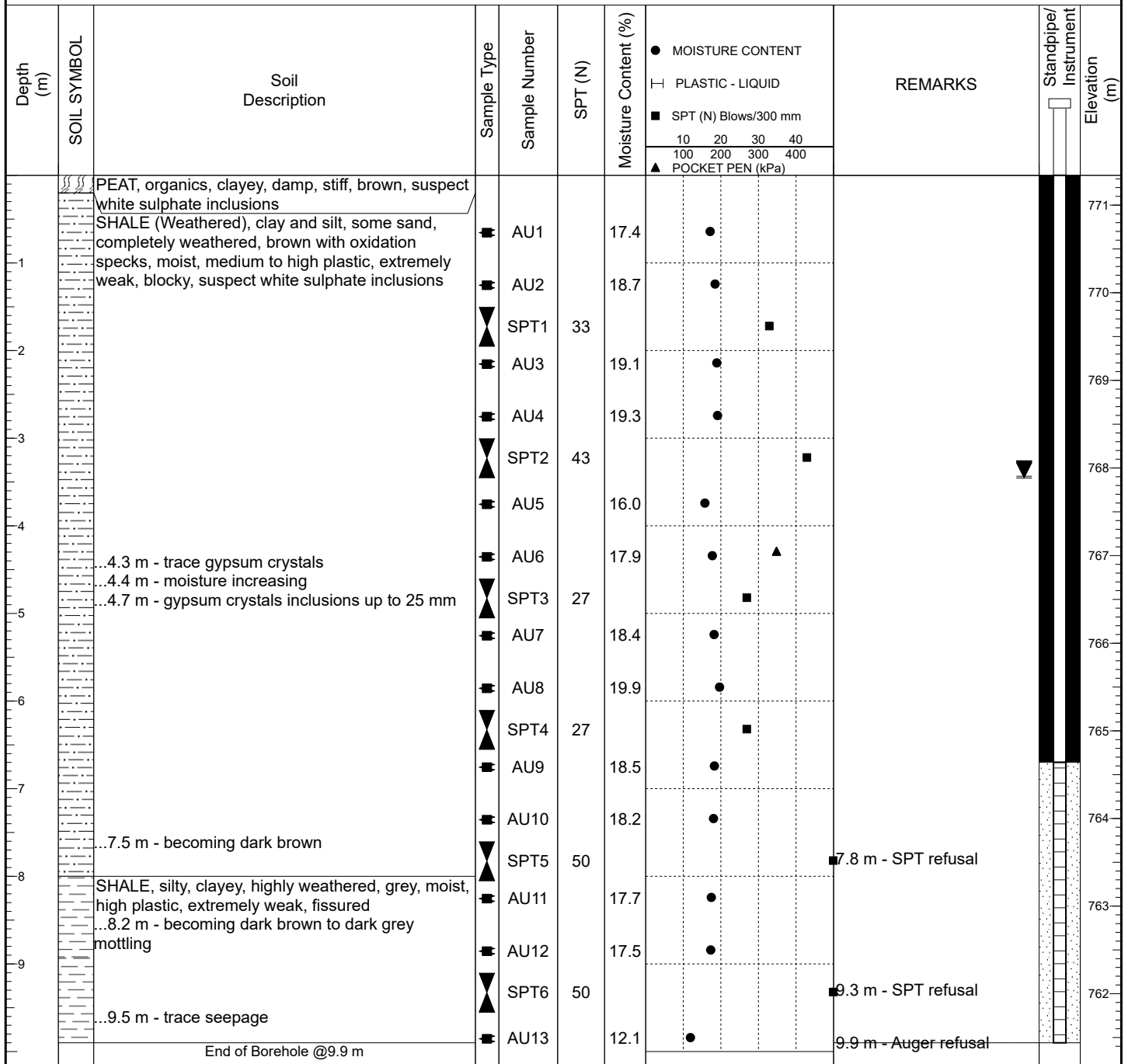


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BOREHOLE No : **22BH306**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	03/24/2022	COMPLETED	03/24/2022	
		GROUND ELEVATION	771.34m	N 5609475.000 E 416193.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	767.99 m	3.35 m
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022	



Notes:

Target depth of 24 m not achieved. Seepage encountered at 9.5 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. Standpipe installed to a depth of 9.9 m

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH307**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/25/2022	COMPLETED	03/25/2022	GROUND ELEVATION	771.77m N 5609474.800 E 416093.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY, silty, some sand, dry, stiff, medium plastic, brown, with oxidation specks, suspect white sulphate inclusions	■	AU1	13.8	●			771
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brown, with oxidation specks, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU2	15.2	●			770
			▲	SPT1	22	■			
3			■	AU3	16.2	●			769
			▲	SPT2	66				
4			■	AU4	15.9	●			768
			■	AU5	16.7	●			
5		...4.8 m - trace gypsum crystals	■	AU6	18.8	●			767
			▲	SPT3	44	■			
6			■	AU7	18.2	●			766
			■	AU8	20.0	●			
7		...6.2 m - becoming dark brown with oxidation staining	■	AU9	18.8	●			765
		...6.8 m - becoming brown and grey mottling	■	AU10	18.5	●	7.3 m - LL = 58.8% PL = 19.4% PI = 39.4%		764
		...7.7 m - SEEPAGE/FREEWATER	■	AU11	18.8	●	7.3 m - Sand = 1.0% Silt = 58.6% Clay = 40.4%		763
			■	AU12	20.1	●	7.6 m - Dispersivity Classification = ND3 7.6 m - EC: 5.6 dS/m 7.6 m - SAR: 26.6 7.6 m - pH: 5.8		
		SHALE, silty, clayey, highly weathered, grey, moist, high plastic, extremely weak, fissured	■	AU13	13.3	●			762

Notes:

Target depth of 24 m not achieved. Minor seepage encountered at 7.7 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH307**

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CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 03/25/2022 COMPLETED 03/25/2022 GROUND ELEVATION 771.77m N 5609474.800 E 416093.000
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, silty, clayey, highly weathered, grey, moist, high plastic, extremely weak, fissured	■	AU14		11.6			761
			▲	SPT7	50				
		End of Borehole @11.2 m					11.2 m - SPT and auger refusal		760
12									759
13									758
14									757
15									756
16									755
17									754
18									753
19									752

Notes:

Target depth of 24 m not achieved. Minor seepage encountered at 7.7 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. BraunReviewed By: T. Curtis



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BOREHOLE No : **22BH308**

PAGE 1 OF 2

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/25/2022	COMPLETED	03/25/2022
GROUND ELEVATION	772.16m	N	5609473.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	E	415993.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some medium grained sand, some subrounded gravel up to 35 mm, trace silt, damp, stiff, medium plastic, brown, some oxidation staining	■	AU1	5.5	●			772
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark brown some oxidation staining, moist, medium to high plastic, extremely weak, blocky, trace suspect white sulphates	■	AU2	12.7	●			771
			▲	SPT1	40				
			■	AU2.8	13.1	●			770
3			■	AU4	12.5	●			769
			▲	SPT2	70				
4			■	AU5	17.1	●			768
5			■	AU6	18.5	●			767
			▲	SPT3	39				
6			■	AU7	16.2	●			766
7			■	AU8	17.9	●			765
			▲	SPT4	48				
8			■	AU9	17.6	●			764
			■	AU10	17.8	●			763
9			▲	SPT5	50				
			■	AU11	25.5	●			
			■	AU12	26.3	●			
			▲	SPT6	50				
			■	AU13	21.2	●			

Notes:

Target depth of 24 m not achieved. Seepage encountered at 7.6 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH308**

PAGE 2 OF 2

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/25/2022	COMPLETED	03/25/2022	GROUND ELEVATION	772.16m N 5609473.300 E 415993.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
11		SHALE, silty, clayey, highly weathered, grey, moist, high plastic, extremely weak, finely fissured	■ AU14			16.4	PI = 66.0%		762
			▲ SPT7		50				
		End of Borehole @11.2 m					11.2 m - SPT refusal: 50 blows for 5"		761
12									760
13									759
14									758
15									757
16									756
17									755
18									754
19									753

Notes:

Target depth of 24 m not achieved. Seepage encountered at 7.6 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

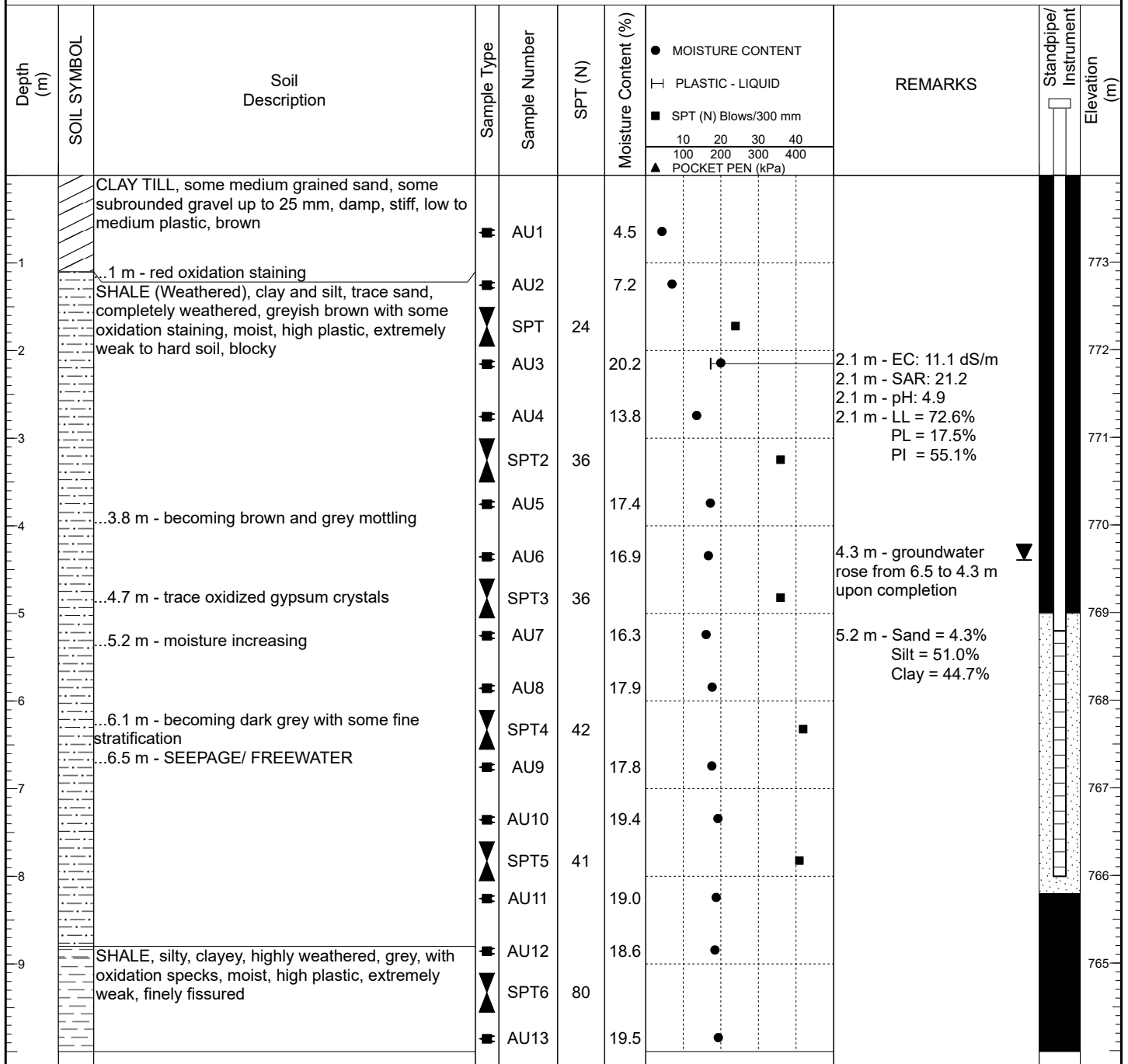


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BOREHOLE No : **22BH309**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/25/2022	COMPLETED	03/25/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	773.99m N 5609471.400 E 415893.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	769.68 m 4.31 m
		DATE GROUND WATER RECORDED	09/15/2022



Notes:

Target depth of 21 m not achieved. Seepage encountered at 6.5 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. Standpipe installed to a depth of 8.0 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH309**

PAGE 2 OF 2

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/25/2022	COMPLETED	03/25/2022	GROUND ELEVATION	773.99m N 5609471.400 E 415893.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	769.68 m	4.31 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
11		SHALE, silty, clayey, highly weathered, grey, with oxidation specks, moist, high plastic, extremely weak, finely fissured	■	AU14	50	24.3			
		End of Borehole @11.2 m	▲	SPT7			11.2 m - SPT and auger refusal		763
12									762
13									761
14									760
15									759
16									758
17									757
18									756
19									755

Notes:

Target depth of 21 m not achieved. Seepage encountered at 6.5 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. Standpipe installed to a depth of 8.0 m.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH310**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/25/2022	COMPLETED	03/25/2022
GROUND ELEVATION	772.61m	N	5609468.500
GROUND WATER ELEVATION / DEPTH		E	415793.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	
DRILLING METHOD	6" SSA		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY, (residual claystone), and silt, trace sand, moist, very stiff, homogeneous/massive, medium to high plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	19.7	●	0.6 m - Organic Content = 3.6%		772
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, moist, high plastic, extremely weak, blocky	■	AU2	19.6	●	0.6 m - Sand = 8.3%		771
			▲	SPT1	18	■	Silt = 37.0%		
			■	AU3	19.1	●	Clay = 54.7%		
3		...3.1 m - trace gypsum crystals	■	AU4	20.4	●			770
			▲	SPT2	26	■			
4		...3.7 m - some suspect white sulphates	■	AU5	19.8	●			769
			■	AU6	18.5	●			
5			▲	SPT3	41	■			768
			■	AU7	19.8	●			
6			■	AU8	18.4	●			767
		...6.2 m - becoming dark grey with some oxidation staining	▲	SPT4	49	■	6.1 m - Dispersivity Classification = ND3		
7		...6.7 m - trace fine sand lenses	■	AU9	11.4	●	6.1 m - EC: 6.6 dS/m		766
			■	AU10	15.8	●	6.1 m - SAR: 32.1		
		...7.2 m - moisture increasing	■	AU11	13.2	●	6.1 m - pH: 7.5		
8		SHALE, silty, clayey, highly weathered, grey, moist, high plastic, extremely weak, finely fissured	▲	SPT5	55	■	6.7 m - LL = 86.4%		765
			■	AU12	12.9	●	PL = 19.3%		
9			■	SPT6	50	■	PI = 67.1%		764
							6.7 m - Sand = 6.5%		
							Silt = 51.7%		
							Clay = 41.8%		
		End of Borehole @9.6 m					9.6 m - SPT / auger refusal; 50 blows for 2"		763

Notes:

Target depth of 21 m not achieved. No seepage encountered. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH311**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/28/2022	COMPLETED	03/28/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	773.46m N 5609466.100 E 415693.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, moist, hard, high plastic, brown with oxidation specks, trace root hairs	■	AU1		17.1	●		773
		BENTONITE (0.7 m), 150 mm layer							
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brown, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU2		17.7	●	1.2 m - LL = 135.5% PL = 26.3% PI = 109.2%	772
			▲	SPT1	25		■		
3		...2.4 m - trace gypsum crystals up to 10 mm	■	AU3		18.7	●		771
			■	AU4		18.8	●		
4		...3.4 m - trace oxidation staining	▲	SPT2	25		■		770
			■	AU5		19.9	●		
5		...4.6 m - trace shale fragments	▲	SPT3	37		■		769
			■	AU6		19.4	●		
6		...6.1 m - interbedded red oxidized laminations up to 200 mm	▲	SPT4	46		■		768
			■	AU7		19.1	●		
7		...6.9 m - grey mottling, trace shale inclusions	■	AU8		19.6	●		767
			■	AU9		15.5	●		
8		SHALE, clayey, silty, highly weathered, grey with trace red laminations, moist, high plastic, very weak, fissured	▲	SPT5	50		■		766
		...8.2 m - becoming firm/hard	■	AU10		16.2	●		
9			■	AU11		15.4	●		765
			▲	SPT6	50		■	9.1 m - SPT refusal	764
			■	AU12		16.1	●		
		End of Borehole @9.8 m	■	AU13		18.5	●		

Notes:

Target depth of 21 m not achieved. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH312**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/28/2022	COMPLETED	03/28/2022
GROUND ELEVATION	774.15m	N	5609463.400
GROUND WATER ELEVATION / DEPTH	771.43 m	E	415593.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	10/12/2022
DRILLING METHOD	6" SSA		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm ▲ POCKET PEN (kPa)		
1		CLAY TILL, silty, trace sand, moist, very stiff, medium plastic, brown, some oxidation staining, gypsum crystals, trace root hairs	■	AU1		14.2		774
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brown, some oxidation staining, moist, high plastic, extremely weak, blocky, oxide specks	■	AU2		18.0		773
		...1.6 m - trace interbedded red laminations	▲	SPT1	22			
		...2.1 m - orange and brown with suspect white sulphates	■	AU3		17.8		772
3		...3 m - red/orange, trace quartz fragments, trace gypsum crystals	■	AU4		17.4	2.7 m - LL = 54.4% PL = 17.7% PI = 36.7%	771
		...3.8 m - orange and red mottling	■	AU5		15.3		770
4		...4.6 m - interbedded orange laminations	■	AU6		13.8	4.3 m - EC: 5.7 dS/m 4.3 m - SAR: 12.5 4.3 m - pH: 5.5 4.3 m - Sand = 13.4% Silt = 51.3% Clay = 35.3%	769
5		...5.2 m - grey, orange, and brown laminated layers	■	AU7		17.5		
6		...5.5 m - brown and orange with grey shale inclusions	■	AU8		20.7		768
		SHALE, clayey, silty, highly weathered, grey, with oxidation specs, moist, high plastic, very weak, finely fissured	■	AU9		18.8	6.2 m - SPT refusal; 50 blows for 6"	767
7		...7.8 m - SEEPAGE	■	AU10		17.8		
8		End of Borehole @8.2 m	■	SPT5	50		8.1 m - SPT refusal; 50 blows for 3"	766
9								765

Notes:

Target depth of 18 m not achieved. Seepage encountered at 7.8 m. Minor sloughing observed upon completion. Borehole backfilled with sand and bentonite chips. Standpipe installed to a depth of 8.2 m.

Logged By: J. Boyd

Reviewed By: T. Curtis

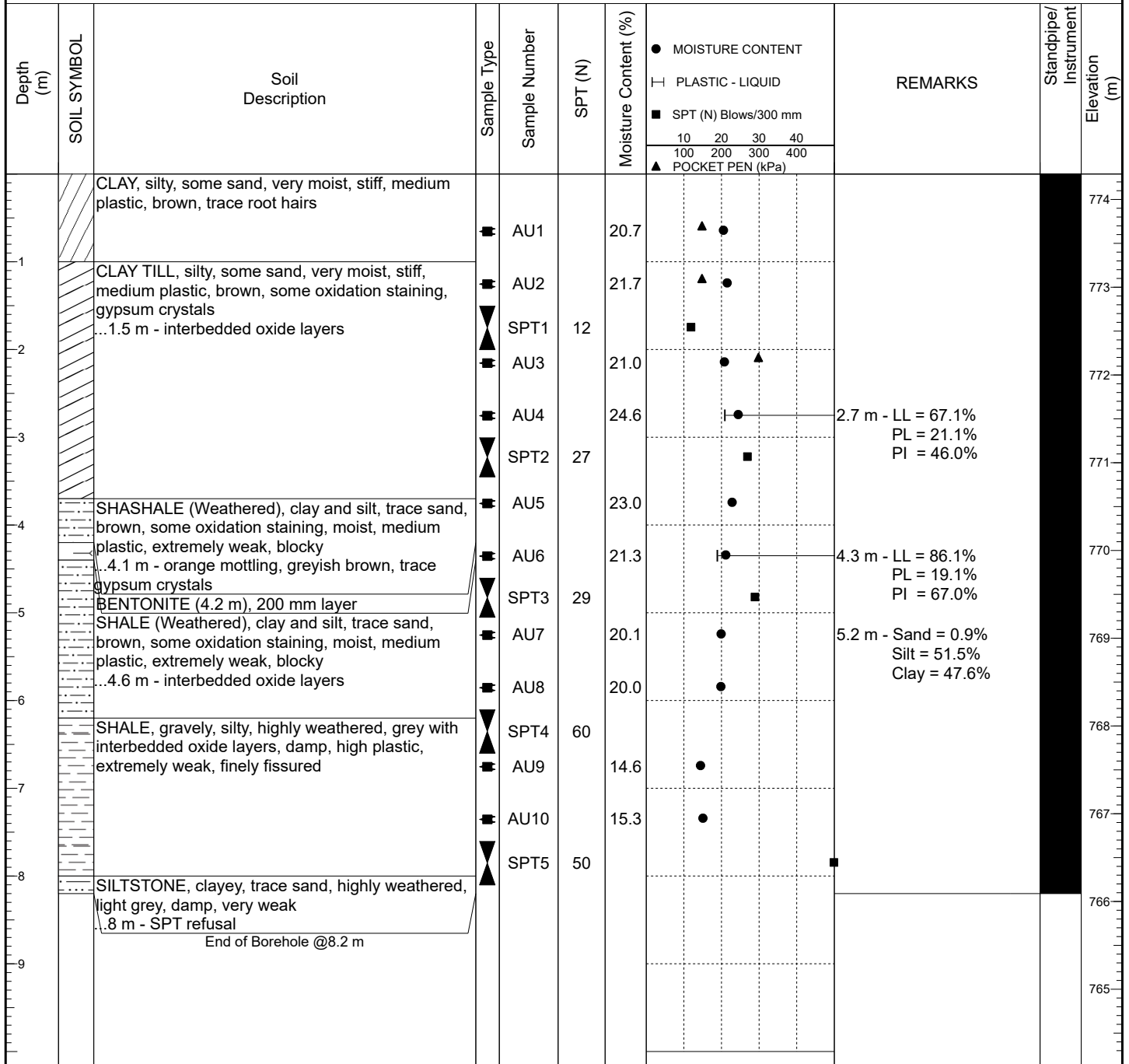


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BOREHOLE No : **22BH313**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/28/2022	COMPLETED	03/28/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.29m N 5609460.800 E 415493.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	



Notes:

Target depth of 18 m not achieved. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH314**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/28/2022	COMPLETED	03/28/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.34m N 5609458.200 E 415393.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clay and silt, trace sand, completely weathered, brown, some oxidation staining, very moist, high plastic, extremely weak, blocky, gypsum crystals	■	AU1	21.9	20			774
2		1.5 m - interbedded oxidation layers	■	AU2	21.3	20			773
3		2.2 m - brown with light brown and oxidation mottling, weak	■	AU3	24.8	20			772
4		3 m - interbedded sand laminations	■	AU4	21.9	20			771
5		4 m - trace shale inclusions	■	AU5	20.2	20			770
6		4.4 m - greyish brown with orange mottling	■	AU6	22.2	20			769
7		4.6 m - suspect white sulphates, greyish brown with oxidation staining	■	AU7	22.4	20			768
8		5.6 m - extremely weathered grey shale pockets up to 50 mm	■	AU8	19.9	20			767
9		SHALE, clayey, silty, highly weathered, grey, some oxidation staining, damp, high plastic, finely fissured	■	AU9					766
10		End of Borehole @6.7 m							765

Notes:

Target depth of 18 m not achieved. No seepage encountered. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

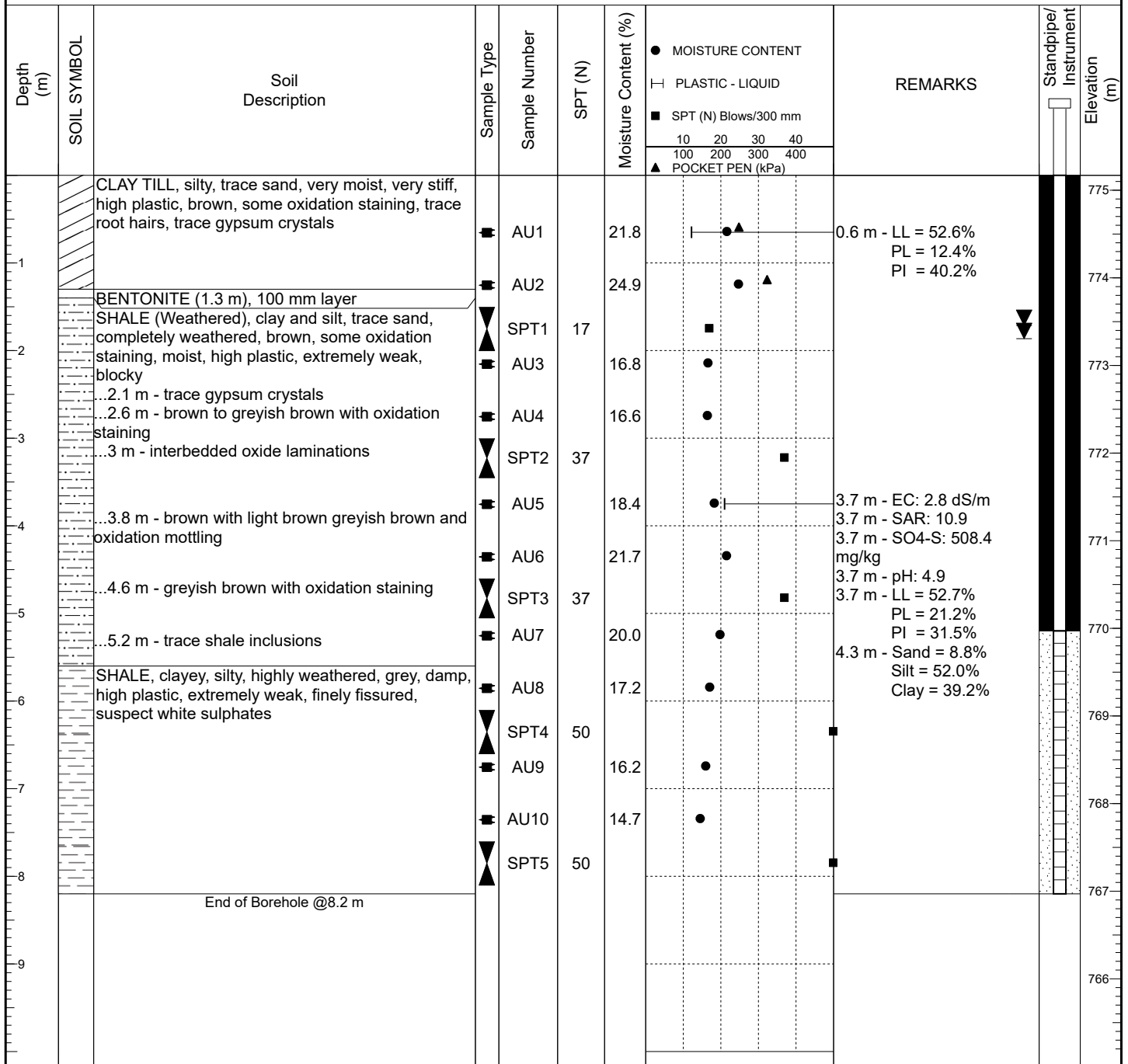


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BOREHOLE No : **22BH315**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/28/2022	COMPLETED	03/28/2022
GROUND ELEVATION	775.17m	N	5609456.400
GROUND WATER ELEVATION / DEPTH	773.54 m	E	415293.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	DATE GROUND WATER RECORDED	09/15/2022
DRILLING METHOD	6" SSA		



Notes:

Target depth of 18 m not achieved. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

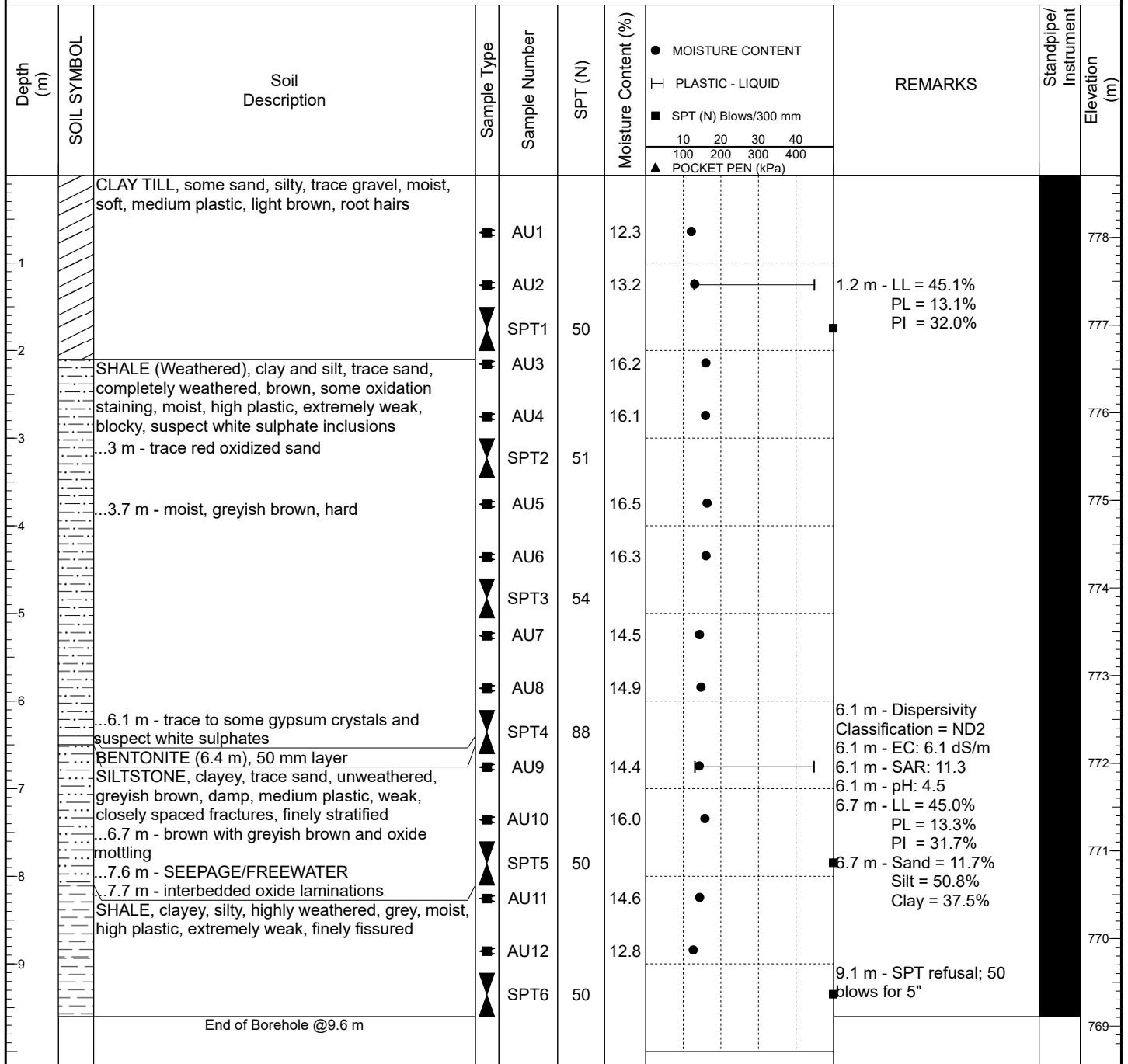


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BOREHOLE No : **22BH316**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/28/2022	COMPLETED	03/28/2022	GROUND ELEVATION	778.71m N 5609454.800 E 415193.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 9 m achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH317**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/14/2022	COMPLETED	07/14/2022	GROUND ELEVATION	775.01m N 5609454.200 E 415093.000
DRILLING CONTRACTOR	Val's Drilling	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, and silt, trace sand, very damp, stiff to very stiff, blocky, high plastic, light brown to dark grey mottling, coal staining, oxide staining, gypsum crystals, sand pockets	■	AU1			0.6 m - Organic Content = 4.0%		774
			■	AU2			0.6 m - Sand = 1.7%		
			▲	SPT1	19		Silt = 44.7%		
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, damp, extremely weak, blocky, coal staining, oxide staining, gypsum crystals	■	AU3			Clay = 53.6%		773
		...2.3 m - becoming very weak					PL = 17.5%		
		...2.5 m - becoming grey with brown mottling and oxide staining	■	AU4			PI = 40.7%		
3			▲	SPT2	38		1.2 m - Sand = 1.5%		772
			■	AU5			Silt = 51.5%		
4		...3.8 m - shale fragments to 10 mm, some gypsum crystals	■	AU6			Clay = 47.0%		771
		SHALE, clayey, silty, medium weathered, grey, damp, very weak to weak, finely stratified, oxide staining, gypsum crystals	▲	SPT3	70				770
5		End of Borehole @5.1 m							
6									769
7									768
8									767
9									766

Notes:

Target depth of 18 m not achieved. No seepage or sloughing upon completion. Backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

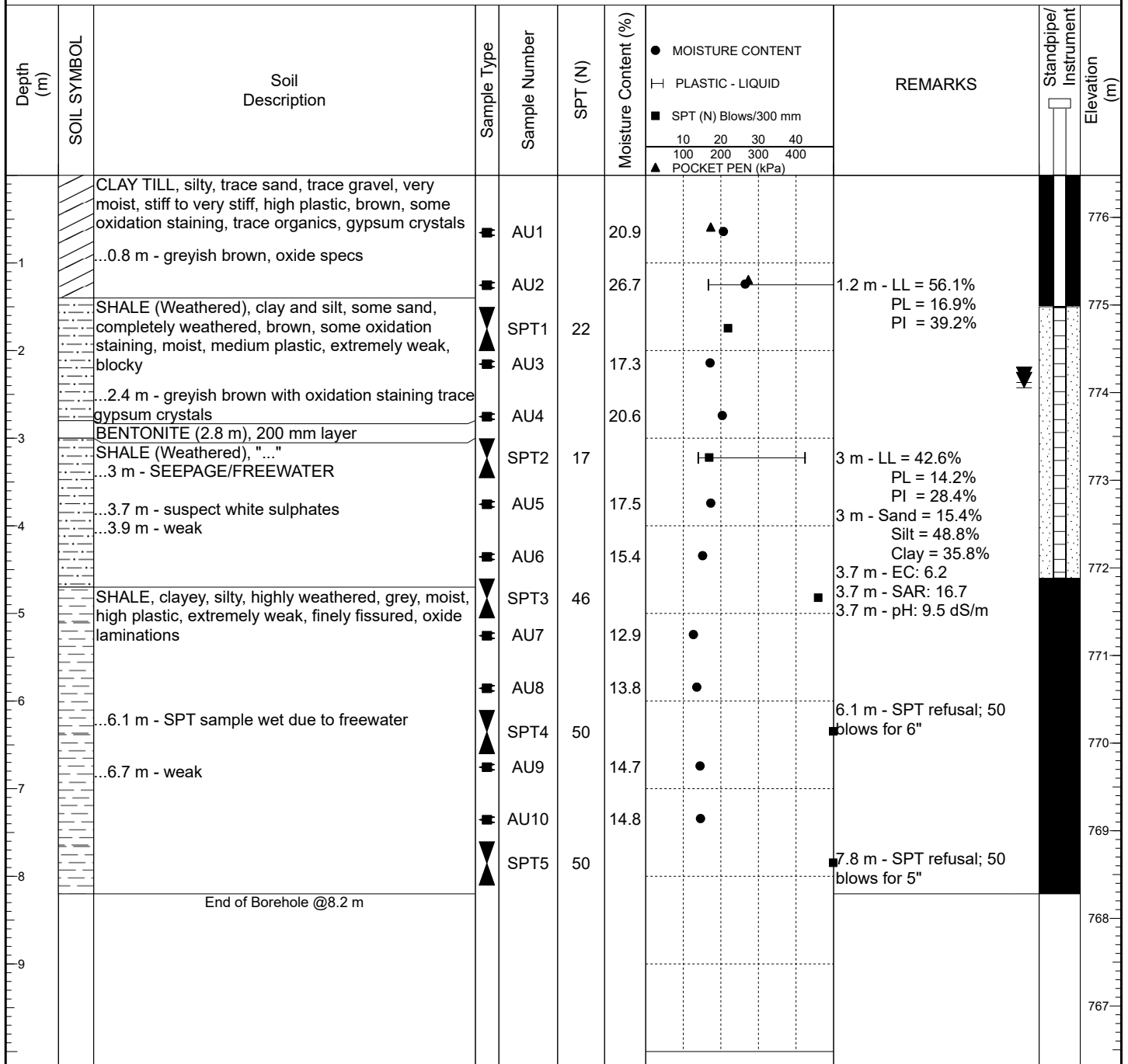


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BOREHOLE No : **22BH318**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	03/28/2022	COMPLETED	03/28/2022
GROUND ELEVATION	776.48m	N	5609453.300
GROUND ELEVATION		E	414993.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	774.14 m 2.34 m
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	10/12/2022



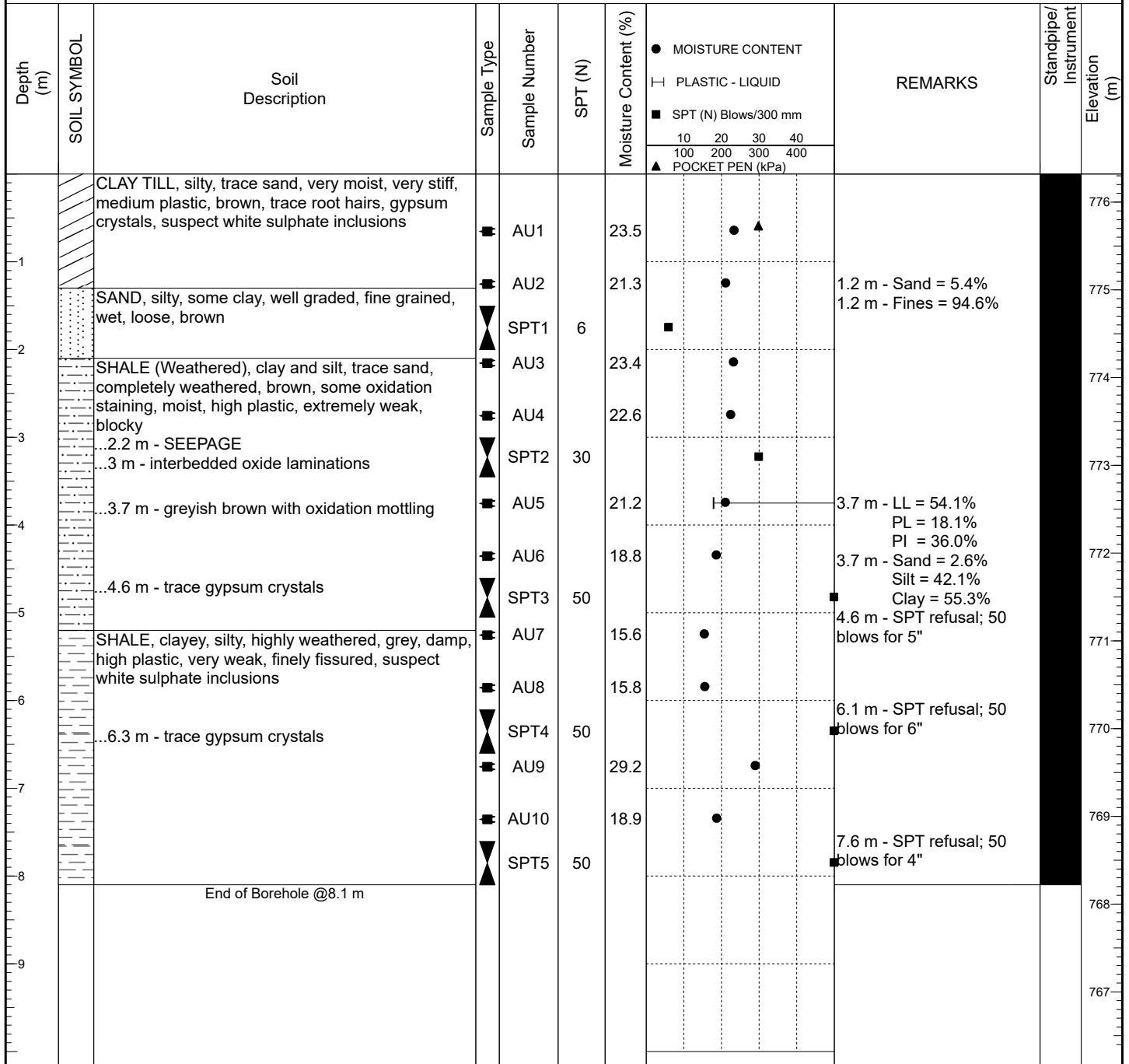


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BOREHOLE No : **22BH319**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/29/2022	COMPLETED	03/29/2022	GROUND ELEVATION	776.32m N 5609452.300 E 414893.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 15 m not achieved. Seepage encountered at 1.2 m. Sloughing observed to a depth of 1.5 m upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

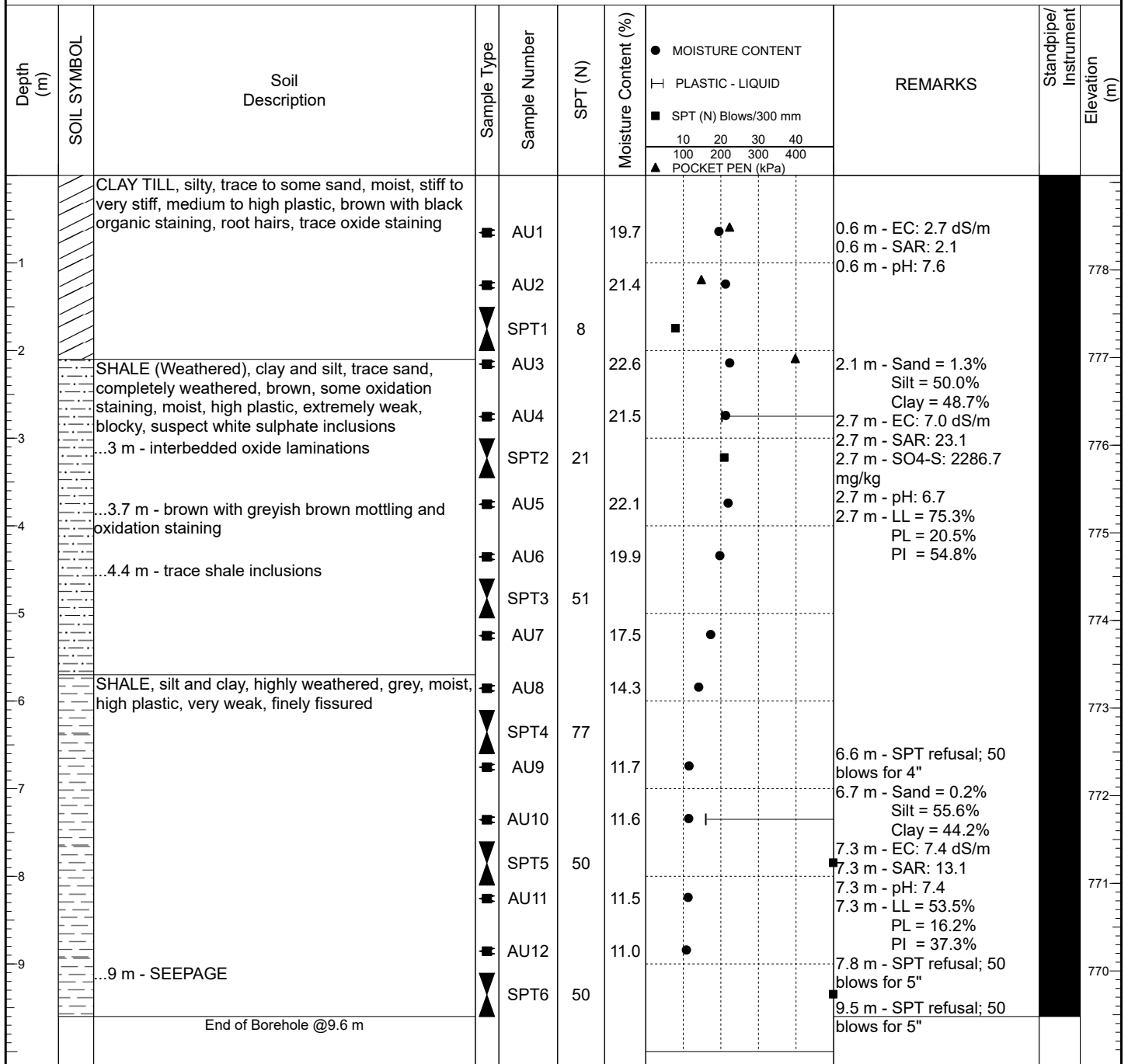


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BOREHOLE No : **22BH320**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/29/2022	COMPLETED	03/29/2022	GROUND ELEVATION	779.08m N 5609451.400 E 414793.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

Target depth of 9 m achieved. Seepage encountered at 9.1 m. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips.

Logged By: J. Boyd

Reviewed By: T. Curtis

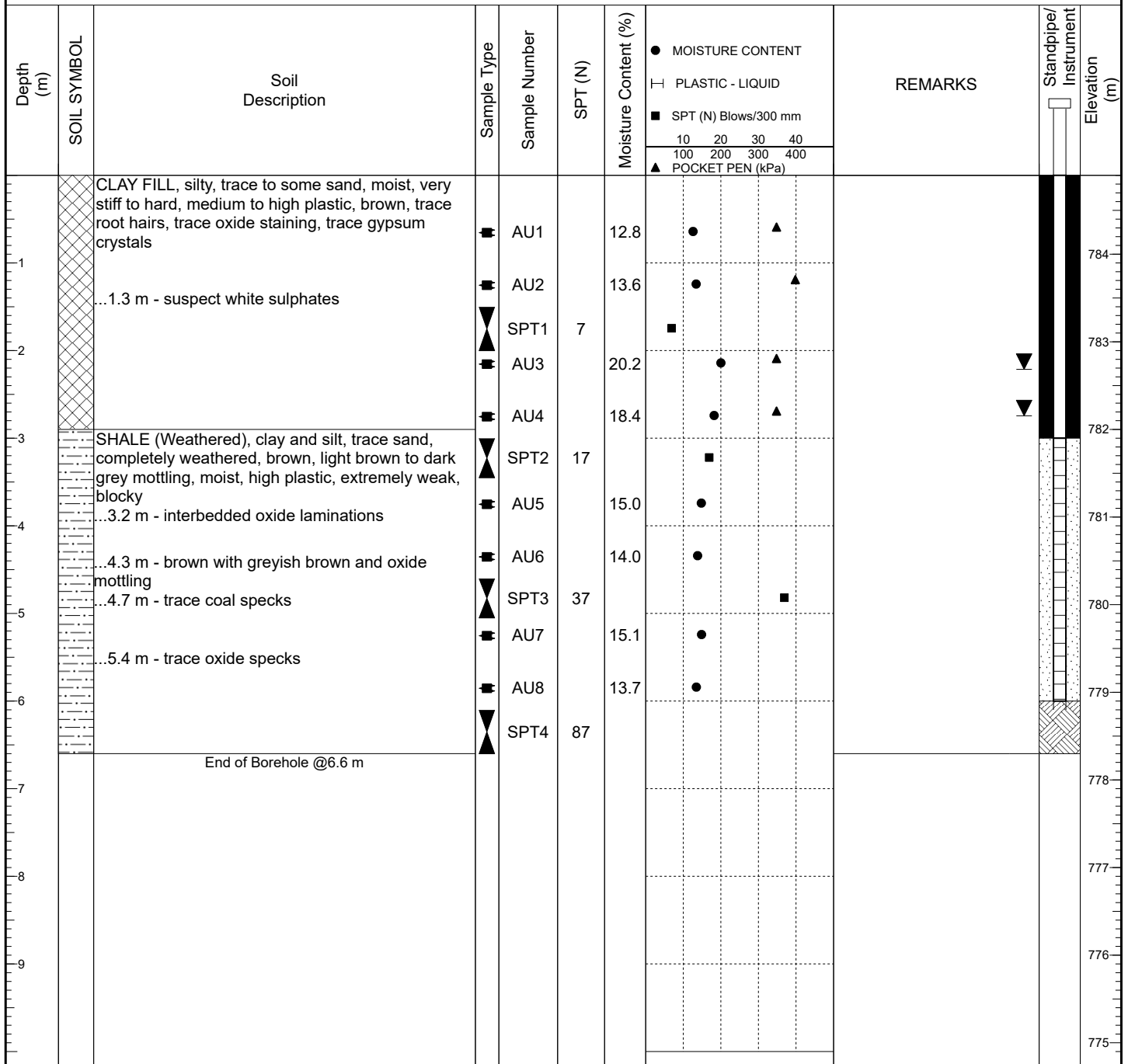


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BOREHOLE No : **22BH321**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	03/29/2022	COMPLETED	03/29/2022	GROUND ELEVATION	784.90m N 5609450.700 E 414720.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	782.77 m	2.13 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		



Notes:

Target depth of 6.6 m not achieved. Minor sloughing observed upon completion. Borehole backfilled with bentonite chips. Standpipe installed to a depth of 6.1 m.

Logged By: J. Boyd

Reviewed By: T. Curtis



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BOREHOLE No : **22BH402**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	774.63m N 5609515.100 E 415474.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	772.73 m	1.90 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	08/10/2022		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clay and silt, some sand, highly weathered, dark brown with oxidation specs, moist, high plastic, extremely weak to hard soil	■	AU1	18.5	●	1 m - Sand = 12.0% Silt = 43.9% Clay = 44.1%		774
2			■	D2					773
3			■	AU2	17.8	●	2.3 m - LL = 63.0% PL = 24% PI = 39.0%		772
4		...4 m - becoming very weak	■	AU3	16.7	●	2.3 m - Sand = 4.4% Silt = 52.5% Clay = 43.2%		771
5							2.5 m - LL = 56.6% PL = 22.3% PI = 34.3%		770
6		End of Borehole @6.1 m	■	AU4	15.2	●	4 m - Sand = 2.9% Silt = 54.9% Clay = 42.2%		769
7							5.5 m - LL = 74.6% PL = 21.7% PI = 52.9%		768
8									767
9									766
									765

Notes:

No seepage or sloughing observed upon completion. 25 slotted PVC pipe installed to a depth of 6.1 m. Backfilled sand and bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH403**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	774.57m N 5609524.500 E 415355.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some medium grained sand lenses, moist, firm, medium to high plastic, dark brown, some oxidation staining	■	AU1	14.3	●	1 m - Dispersivity Classification = ND3		774
2		SHALE (Weathered), clay and silt, some sand, highly weathered, dark brown to dark grey mottling, some oxidation staining, moist, high plastic, very weak	■	D1		┌─	1 m - EC: 8.8 dS/m		773
3			■	AU2	17.5	●	1 m - SAR: 20.2		772
4			■	AU3	19.0	●	1 m - pH: 6.8		771
5			■	AU4	16.7	●	1 m - Sand = 7.9% Silt = 39.5% Clay = 52.6%		770
6		End of Borehole @6.1 m					1.8 m - LL = 61.0% PL = 23% PI = 38.0%		769
7							1.8 m - Sand = 5.2% Silt = 52.1% Clay = 42.8%		768
8							2.5 m - LL = 57.5% PL = 18.9% PI = 38.6%		767
9							4 m - LL = 65.7% PL = 21.3% PI = 44.4%		766
							4 m - Sand = 3.3% Silt = 50.2% Clay = 46.5%		765

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH404**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	
		GROUND ELEVATION	777.26m	N 5609544.300 E 415224.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, completely weathered SHALE (Weathered), silty, dry, very soft, low to medium plastic, brownish grey, suspect white sulphate inclusions	■	AU1	13.3	●			777
2		SHALE (Weathered), clayey, trace silt, highly weathered, light brown to dark grey mottling, some oxidation staining, damp, medium plastic, extremely weak	■	AU2	12.6	●			776
3			■	AU4	10.7	●	2.5 m - Sand = 1.7% Silt = 57.1% Clay = 41.2%		775
4		BENTONITE (3.2 m), small seams SHALE (Weathered), "..."	■	AU3	13.2	●	3.2 m - LL = 84.4% PL = 23.2% PI = 61.2% 3.2 m - Sand = 20.9% Silt = 25.7% Clay = 53.4%		774
5			■	AU5	8.6	●	5.5 m - LL = 53.8% PL = 18% PI = 35.8%		773
6		End of Borehole @6.1 m							772
7									771
8									770
9									769
									768

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

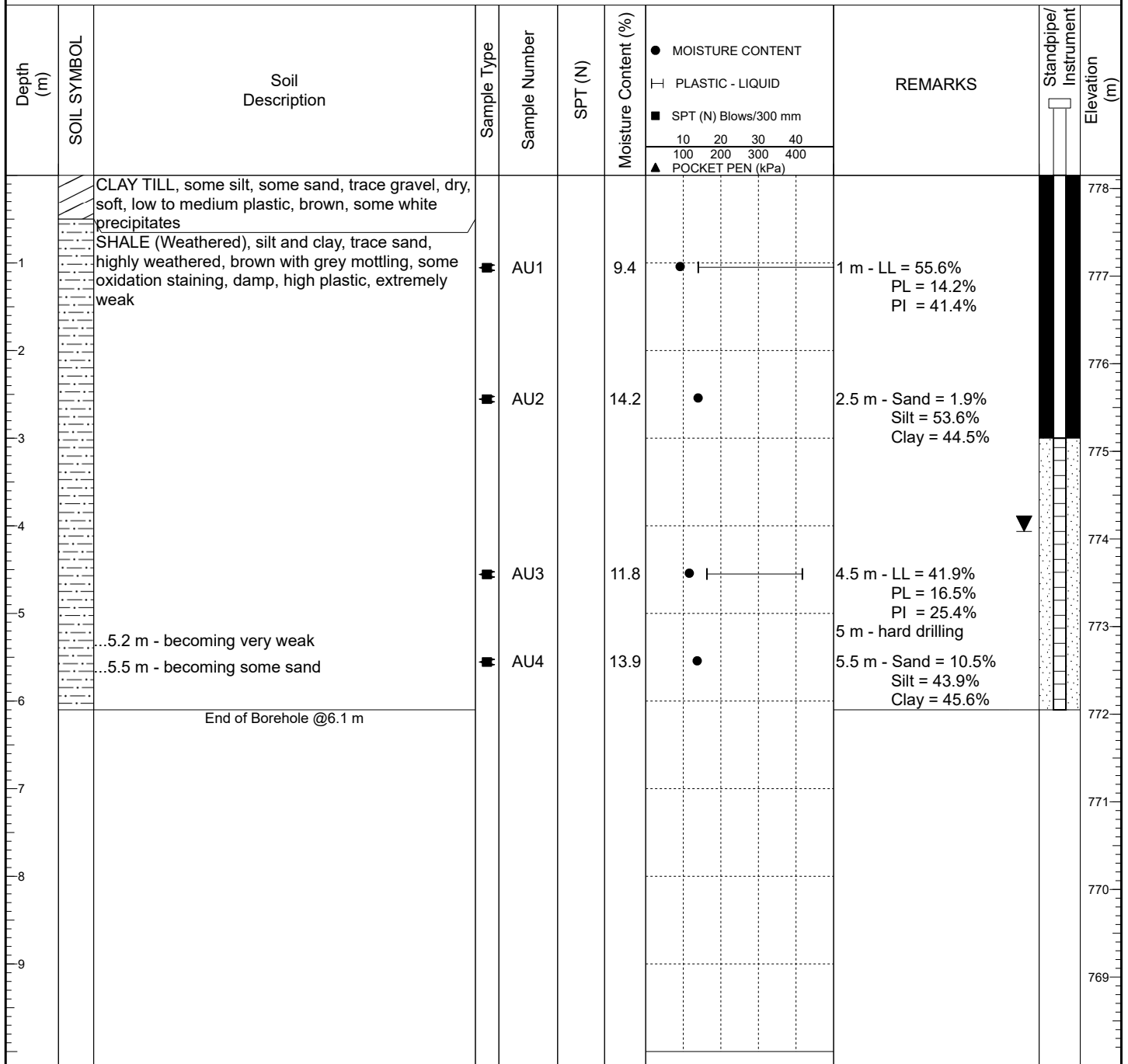


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BOREHOLE No : **22BH405**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	778.15m N 5609549.700 E 415130.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		774.17 m	3.98 m
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		09/15/2022	



Notes:

No seepage and minor sloughing observed upon completion. 25 mm slotted PVC pipe installed to a depth of 6.1 m. Backfilled with sand and bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis

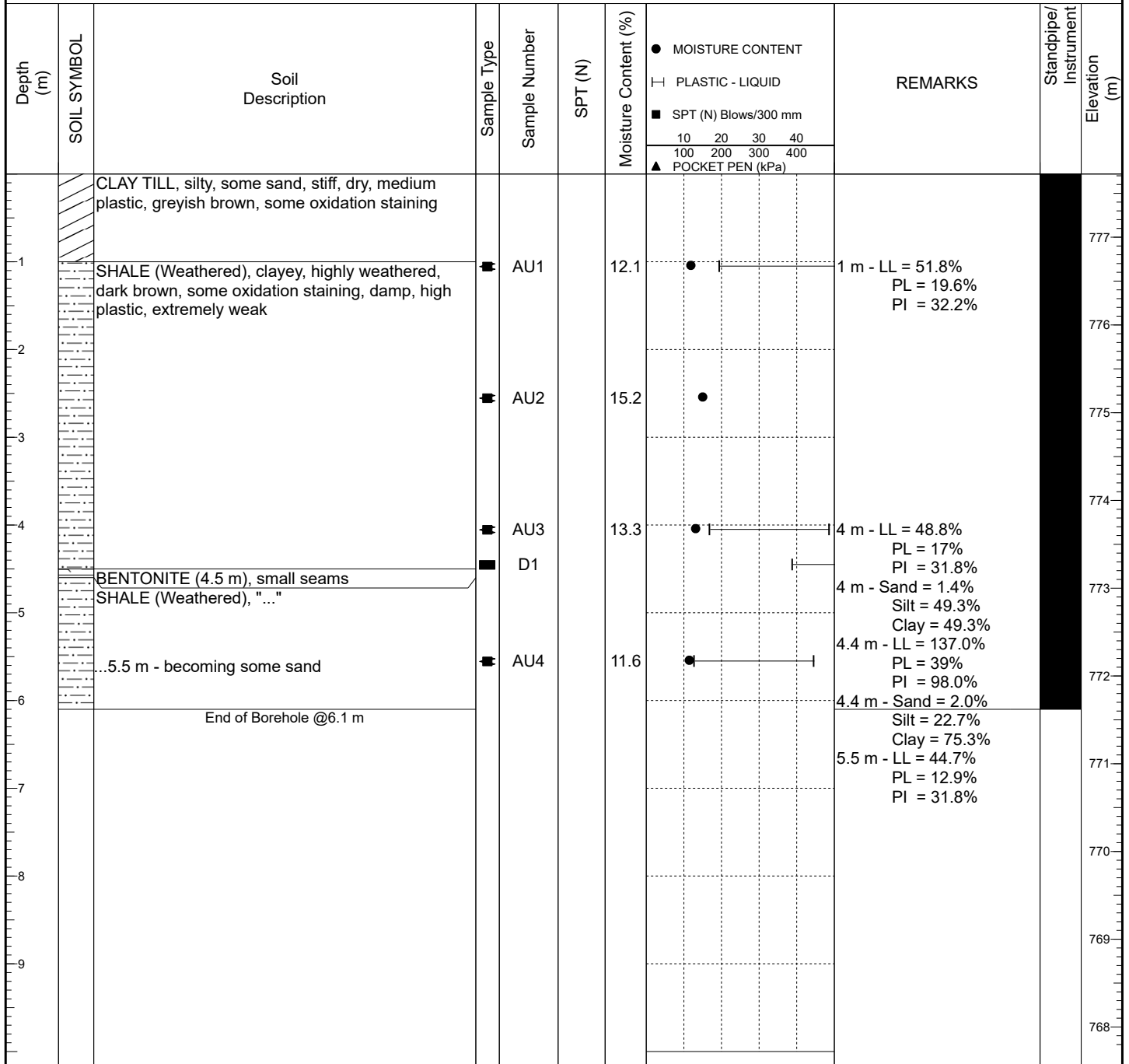


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BOREHOLE No : **22BH406**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	777.72m N 5609659.300 E 415145.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			



Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH407**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	778.03m N 5609688.400 E 415026.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, dry, soft, medium plastic, light brown	■	AU1	8.1	●	1 m - LL = 37.7% PL = 12.6% PI = 25.1%		777
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, dark brown, some oxidation staining, damp, high plastic, extremely weak, blocky	■	AU2	12.7	●	1 m - Sand = 11.7% Silt = 48.5% Clay = 39.8%		776
3							2.5 m - Sand = 0.9% Silt = 45.1% Clay = 54.0%		775
4			■	AU3	13.3	●			774
5		...5 m - becoming less weathered, lots of oxidation staining	■	AU4	12.4	●	5.5 m - LL = 55.1% PL = 18.2% PI = 36.9%		773
6		End of Borehole @6.1 m							772
7									771
8									770
9									769

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH408**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	778.50m N 5609725.100 E 414931.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some silt, some gravel, dry, soft, low to medium plastic, brown	■	AU1	4.5	●	1 m - LL = 31.5% PL = 12.6% PI = 18.9%		778
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, greyish brown, some oxidation staining, damp, medium plastic, extremely weak	■	AU2	14.1	●	2.5 m - Sand = 3.6% Silt = 48.4% Clay = 48.0%		777
3									776
4		...4 m - becoming some sand	■	AU3	19.7	●	4 m - LL = 43.1% PL = 15.8% PI = 27.3%		775
5		End of Borehole @4.3 m					4 m - Sand = 15.9% Silt = 48.9% Clay = 35.2% 4.3 m - Auger refusal		774
6									773
7									772
8									771
9									770
									769

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH409**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	778.36m N 5609818.200 E 414990.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clay and silt, trace sand, residual soil, greyish brown, some oxidation staining, damp, low plastic, extremely weak	■	AU1	13.4	●	1 m - Sand = 0.9% Silt = 37.4% Clay = 61.7%		778
2									777
3		SHALE (Weathered), clay and silt, trace sand, highly weathered, light brown to dark grey mottling, with oxidation specs, damp, high plastic, very weak	■	AU2	15.3	●	2.5 m - LL = 54.6% PL = 18% PI = 36.6% 2.5 m - Sand = 0.5% Silt = 43.7% Clay = 55.8%		776
4			■	AU3	15.0	●			775
5									774
6			■	AU4	12.3	●	5.5 m - LL = 51.7% PL = 18.6% PI = 33.1%		773
6		End of Borehole @6.1 m							772
7									771
8									770
9									769

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH410**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	778.32m N 5609875.400 E 414853.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, dry, soft, medium plastic, brown, trace root hairs							778
1		SHALE (Weathered), clay and silt, trace sand, trace gravel, highly weathered, light brown to dark grey mottling, trace oxidation staining, damp, medium plastic, extremely weak to hard soil	■	AU1	14.0	●	1.1 m - LL = 56.3% PL = 16.5% PI = 39.8%		777
2			■	AU2	17.3	●	1.1 m - Gravel = 0.2% 1.1 m - Sand = 8.1% Silt = 38.2% Clay = 53.5%		776
3							2.5 m - LL = 55.2% PL = 19.3% PI = 35.9%		775
4			■	AU3	17.0	●	4 m - Sand = 3.7% Silt = 46.8% Clay = 49.5%		774
5		End of Borehole @4.3 m					4.3 m - Auger refusal, very tight drilling		773
6									772
7									771
8									770
9									769

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH411**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	776.89m N 5609881.800 E 415068.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some silt, damp, stiff, high plastic, dark brown, trace oxidation staining	■	AU1	15.0	●	1 m - Dispersivity Classification = D2 1 m - LL = 54.1% PL = 19% PI = 35.1%		776
2		SHALE (Weathered), clay and silt, some sand, highly weathered, dark brown, with oxidation specs, damp, medium plastic, extremely weak, trace gypsum crystals	■	AU2	15.4	●	2.5 m - Dispersivity Classification = ND3 2.5 m - LL = 48.1% PL = 18% PI = 30.1%		775
3									774
4			■	AU3	12.9	●	4 m - Sand = 10.5% Silt = 51.6% Clay = 37.9%		773
5									772
5.5		...5.5 m - becoming high plastic	■	AU4	16.5	●	5.5 m - LL = 54.5% PL = 18% PI = 36.5%		771
6		End of Borehole @6.1 m					5.5 m - Sand = 9.6% Silt = 52.3% Clay = 38.1%		770
7									769
8									768
9									767

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH412**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	06/22/2022	COMPLETED	06/22/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	775.67m N 5609858.800 E 415200.600
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, residual SHALE (Weathered), damp, firm, medium plastic, dark brown, some oxidation staining							775
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, light brown to dark grey mottling, with oxidation specs, damp, high plastic, extremely weak to hard soil	■	AU1	15.8				774
3		...3 m - bentonite inclusions	■	AU2	20.8		2.5 m - LL = 56.2% PL = 19.2% PI = 37.0%		773
4		...4 m - becoming grey, medium plastic, some sand	■	AU3	11.2		4 m - LL = 45.2% PL = 15.5% PI = 29.7% 4 m - Sand = 13.6% Silt = 49.8% Clay = 36.6%		772
5									771
6		End of Borehole @6.1 m	■	AU4	11.4				770
7									769
8									768
9									767
									766

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

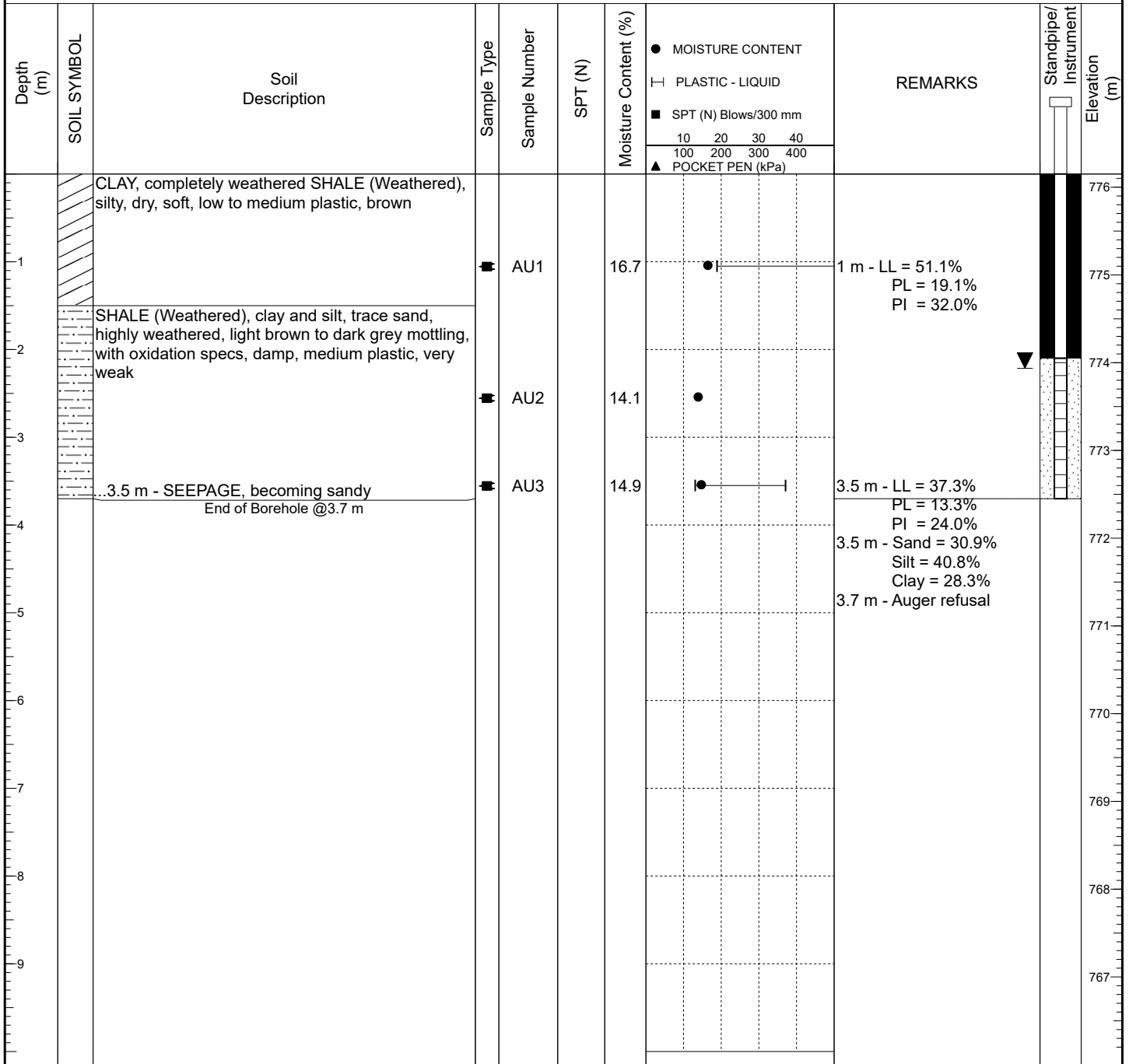


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BOREHOLE No : **22BH413**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	776.15m	N 5609941.400 E 415203.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	774.02 m	2.13 m
		DATE GROUND WATER RECORDED	09/15/2022	



Notes:

Seepage encountered at 3.6 m. 25 mm slotted PVC pipe installed to a depth of 3.7 m. Backfilled with sand and bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH414**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	777.08m	N 5609947.500 E 415064.600
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clay and silt, trace sand, some sand, completely weathered, brown, some oxidation staining, dry, high plastic, extremely weak, suspect white sulphate inclusions, trace bentonite seams	■	AU1	12.1	●	1 m - LL = 59.9% PL = 18.1% PI = 41.8% 1 m - Sand = 0.7% Silt = 36.8% Clay = 62.5%		776
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, light brown to dark grey mottling, with oxidation specs, damp, high plastic, very weak to hard soil, suspect white sulphate inclusions	■	AU2	14.2	●	2.5 m - LL = 55.6% PL = 21.6% PI = 34.0%		775
3									774
4			■	AU3	11.8	●	4 m - Sand = 4.0% Silt = 52.3% Clay = 43.7%		773
5			■	AU4	15.4	●	5.2 m - Auger refusal		772
		End of Borehole @5.2 m							
6									771
7									770
8									769
9									768

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

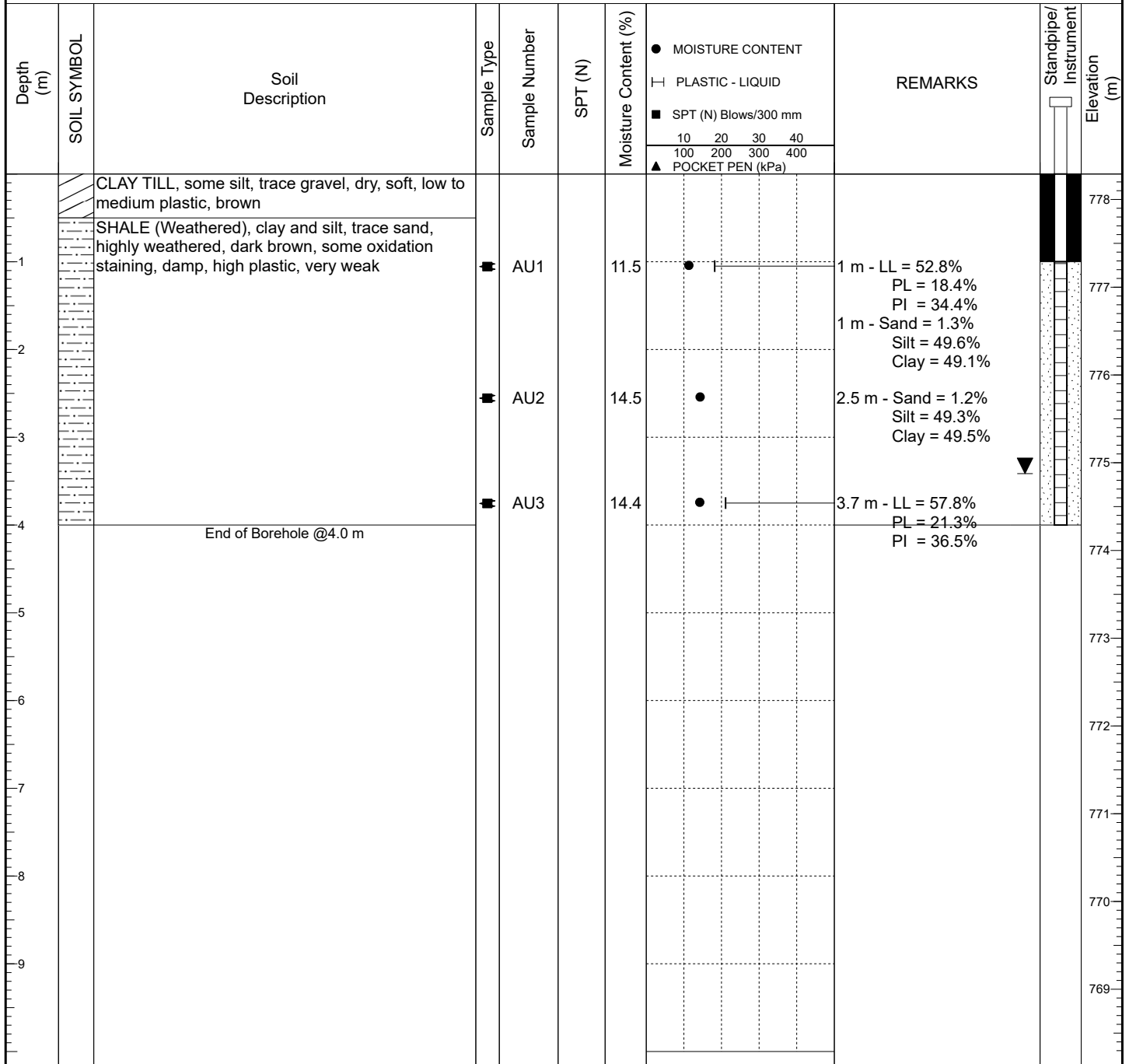


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BOREHOLE No : **22BH415**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	778.29m N 5609946.300 E 414951.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		774.96 m	3.33 m
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		09/15/2022	



Notes:

No seepage or sloughing observed upon completion. 25 mm standpipe installed to 4.0 m. Backfilled with sand and bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH416**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	780.40m N 5609979.500 E 414827.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace gravel, trace cobbles, dry, soft, low to medium plastic, brown	■	AU1	6.9	●	1 m - LL = 46.6% PL = 17.9% PI = 28.7%		780
2		...2 m - becoming residual mudstone					1 m - Gravel = 0.8% 1 m - Sand = 14.5% Silt = 42.0% Clay = 42.7%		779
3		SHALE (Weathered), clay and silt, trace sand, highly weathered, dark brown, some oxidation staining, damp, medium plastic, very weak to hard soil	■	AU2	13.3	●	2.5 m - LL = 57.0% PL = 20.2% PI = 36.8%		778
4			■	AU3	12.4	●	3.2 m - Sand = 5.9% Silt = 45.7% Clay = 48.4%		777
4			■	AU4	13.7	●	3.5 m - Auger refusal; changed auger bit and drilled to 4.6 m		776
5		End of Borehole @4.6 m					4 m - LL = 48.8% PL = 17.7% PI = 31.1%		775
6							4.6 m - Auger refusal		774
7									773
8									772
9									771

Notes:

No seepage or sloughing observed upon completion. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

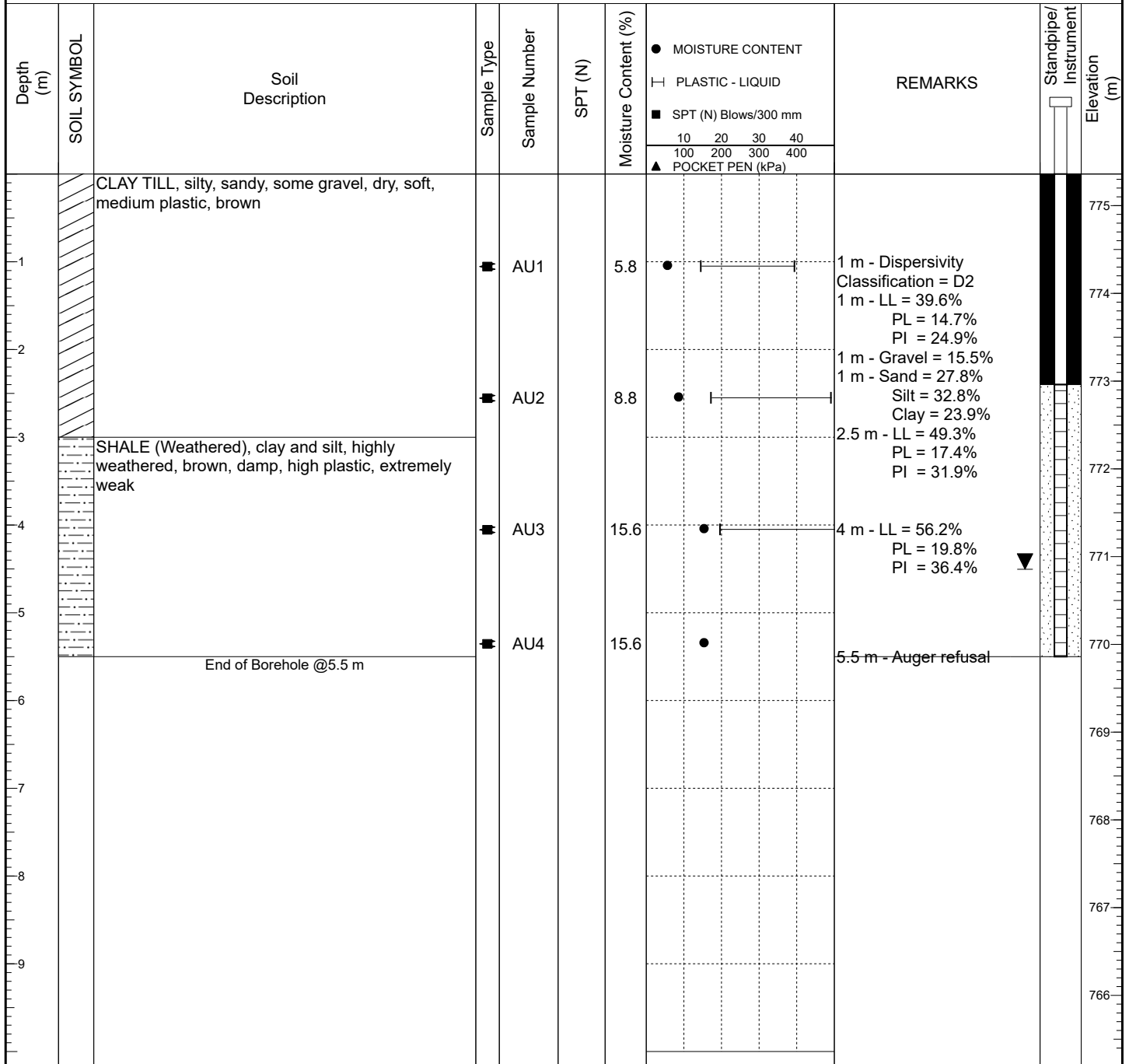


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BOREHOLE No : **22BH417**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	775.36m N 5612279.300 E 415285.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	770.94 m	4.42 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	09/15/2022		



Notes:

No seepage or sloughing observed. 25 mm PVC pipe installed to a depth of 5.5 m. Backfilled with sand and bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH418**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	775.41m N 5612305.900 E 415136.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace bedrock fragments, dry, stiff, high plastic, brown, with oxidation specs	■	AU1	7.7	●	1 m - LL = 55.1% PL = 16.6% PI = 38.5%		775
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, mottled dark greyish brown, moist, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU2	12.6	●	2.5 m - Sand = 5.6% Silt = 44.7% Clay = 49.7%		774
3									773
4			■	AU3	15.9	●	4 m - LL = 66.8% PL = 19.6% PI = 47.2%		772
5									771
6			■	AU4	14.0	●	5.5 m - Sand = 1.8% Silt = 45.0% Clay = 53.2%		770
6		End of Borehole @6.0 m							769
7									768
8									767
9									766

Notes:

Borrow search. Backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH419**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	GROUND ELEVATION	776.70m N 5612388.200 E 415247.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY and SILT, some sand, some gravel, dry, soft, medium plastic, brown, some oxidation staining	■	AU1	7.9	●	1 m - LL = 47.6% PL = 16% PI = 31.6%		776
2			■	AU2	13.0	●	1 m - Gravel = 12.2% 1 m - Sand = 10.2% Silt = 41.7% Clay = 35.9%		775
3		SHALE (Weathered), clay and silt, trace sand, highly weathered, light brown to dark grey mottling, damp, high plastic, extremely weak							774
4			■	AU3	11.4	●	4 m - Sand = 8.2% Silt = 50.6% Clay = 41.2%		773
5		...4.5 m - some cobbles							772
6			■	AU4	15.3	●	5.5 m - LL = 54.4% PL = 17.9% PI = 36.5%		771
7		End of Borehole @6.1 m							770
8									769
9									768
									767

Notes:

No seepage or sloughing observed.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH420**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	775.44m N 5612329.500 E 414979.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, bedrock fragments up to 40 mm, dry, firm, low plastic, light brown	■	AU1	5.2	●	1 m - LL = 29.4% PL = 12.4% PI = 17.0%		775
2		SHALE (Weathered), clayey, silty, some sand, completely weathered, dark brown, some oxidation staining, moist, medium plastic, extremely weak to hard soil, finely fissured, blocky, suspect white sulphate inclusions	■	AU2	13.6	●	2.5 m - Sand = 11.6% Silt = 46.6% Clay = 41.8%		774
3									773
4		...4 m - becoming high plastic	■	AU3	17.0	●	4 m - LL = 61.4% PL = 21.2% PI = 40.2%		772
5									771
6		...5.5 m - becoming trace sand	■	AU4	15.5	●	5.5 m - Sand = 1.7% Silt = 54.2% Clay = 44.1%		770
6		End of Borehole @5.9 m					5.9 m - Auger refusal		769
7									768
8									767
9									766

Notes:

Borrow search. Backfilled with bentonite chips.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH421**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	777.98m	N 5612443.600 E 415100.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)		
1		CLAY TILL, silty, some sand, trace gravel, moist, stiff, high plastic, and some oxidation staining, suspect white sulphate inclusions, coal specs	■	AU1	12.0	●	1 m - LL = 51.7% PL = 16.8% PI = 34.9%	777
2								776
3		SHALE (Weathered), clayey, silty, trace sand, highly weathered, mottled brown with dark grey, moist, high plastic, extremely weak to hard soil, blocky, oxide specs, suspect white sulphate inclusions	■	AU1	13.6	●	2.5 m - LL = 53.2% PL = 15.3% PI = 37.9%	775
4		4 m - becoming sandy, some clay, trace gravel, medium plastic	■	AU3	8.2	●	4 m - LL = 39.7% PL = 14.2% PI = 25.5% 4 m - Gravel = 0.3% 4 m - Sand = 34.7% Silt = 46.2% Clay = 18.8%	774
5								773
6		End of Borehole @6.0 m	■	AU4	10.8	●		772
7								771
8								770
9								769

Notes:

Borrow search. Backfilled with bentonite chips.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH422**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	777.55m N 5612400.100 E 414892.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clay and silt, some bedrock fragments, trace sand, dry, stiff, finely fissured, medium plastic, brown, some oxidation staining	■	AU1	7.2	●	1 m - Organic Content = 7.7%		777
2		1.6 m - moisture increasing					1 m - LL = 46.2%		776
3			■	AU2	11.4	●	1 m - Sand = 7.0%		775
4			■	AU3	9.8	●	Silt = 43.1%		774
5		End of Borehole @4.2 m					Clay = 49.9%		773
6							2.5 m - LL = 49.6%		772
7							PL = 20.2%		771
8							PI = 29.4%		770
9							2.5 m - Sand = 2.9%		769
							Silt = 46.8%		768
							Clay = 50.3%		
							3.5 m - Sand = 8.8%		
							Silt = 38.0%		
							Clay = 53.2%		
							4.2 m - Auger refusal		

Notes:

Borrow search. Backfilled with bentonite chips.

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BOREHOLE No : **22BH423**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/21/2022	COMPLETED	06/21/2022	
		GROUND ELEVATION	778.10m	N 5612450.000 E 414971.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY, some silt, trace gravel, damp, firm, medium plastic, brown with oxidation specs	■	AU1	7.8	●	1 m - LL = 45.3% PL = 14.5% PI = 30.8%		778
2			■	AU2	10.9	●	2.5 m - LL = 50.6% PL = 17.1% PI = 33.5%		777
3									776
4		SHALE (Weathered), clay and silt, trace sand, highly weathered, brown, damp, medium plastic, extremely weak	■	AU3	9.5	●	4 m - LL = 49.5% PL = 16.2% PI = 33.3% 4 m - Sand = 7.5% Silt = 43.6% Clay = 48.9%		775
5									774
6			■	AU4	8.3	●			773
6.1		End of Borehole @6.1 m							772
7									771
8									770
9									769

Notes:

Borrow search. Backfilled with bentonite chips.

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BOREHOLE No : **22BH424**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	778.48m	N 5612458.600 E 414859.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, some sand, Gravel is fine grained up 15 mm, dry, stiff, medium plastic, brown, some oxidation staining	■	AU1	6.0	●	1 m - LL = 45.0% PL = 17.1% PI = 27.9%		778
2		SHALE (Weathered), clay and silt, sandy, trace gravel, completely weathered, brown, some oxidation staining, moist, medium plastic, extremely weak to hard soil	■	AU2	8.1	●	1 m - Gravel = 18.3% 1 m - Sand = 16.7% Silt = 34.2% Clay = 30.8%		777
3							2.5 m - LL = 40.2% PL = 16.7% PI = 23.5%		776
4			■	AU3	14.6	●	2.5 m - Gravel = 0.7% 2.5 m - Sand = 29.1% Silt = 40.2% Clay = 30.0%		775
5		End of Borehole @4.6 m							774
6									773
7									772
8									771
9									770
									769

Notes:

Borrow search. Backfilled with bentonite chips.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH425**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	779.54m	N 5612462.500 E 414770.200
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, gravelly, some sand, some silt, Gravel is medium grained up to 60 mm, moist, dry, stiff, medium plastic, brown some oxidation staining, coal specs	■	AU1	8.7	●	1 m - LL = 43.6% PL = 14.8% PI = 28.8%		779
2									778
3		2.3 m - 75 mm layer of coal SHALE (Weathered), clay and silt, some sand, trace gravel, completely weathered, mottled brown with oxidation staining, moist, medium plastic, extremely weak to hard soil End of Borehole @3.0 m	■	AU2	11.4	●	2.5 m - LL = 48.0% PL = 16.2% PI = 31.8% 2.5 m - Gravel = 0.9% 2.5 m - Sand = 10.9% Silt = 44.6% Clay = 43.6% 3 m - Auger refusal		777
4									776
5									775
6									774
7									773
8									772
9									771
									770

Notes:

Borrow search. Backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH426**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	779.50m N 5612452.200 E 414667.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, gravelly, some sand, some silt, Gravel is medium to coarse grained, well rounded up to 60 mm, damp, firm, medium plastic, brown with oxidation staining	■	AU1	12.1	●	1 m - LL = 49.7% PL = 18.1% PI = 31.6%		779
2		...2 m - becoming sandy, trace gravel End of Borehole @2.2 m	■	AU2	6.7	●	1 m - Gravel = 58.8% 1 m - Sand = 5.1% Silt = 18.5% Clay = 17.6% 2 m - LL = 42.6% PL = 15.4% PI = 27.2% 2 m - Gravel = 3.3% 2 m - Sand = 21.3% Silt = 39.6% Clay = 35.8% 2.2 m - Auger refusal		778
3									777
4									776
5									775
6									774
7									773
8									772
9									771
									770

Notes:

Burrow search. Backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

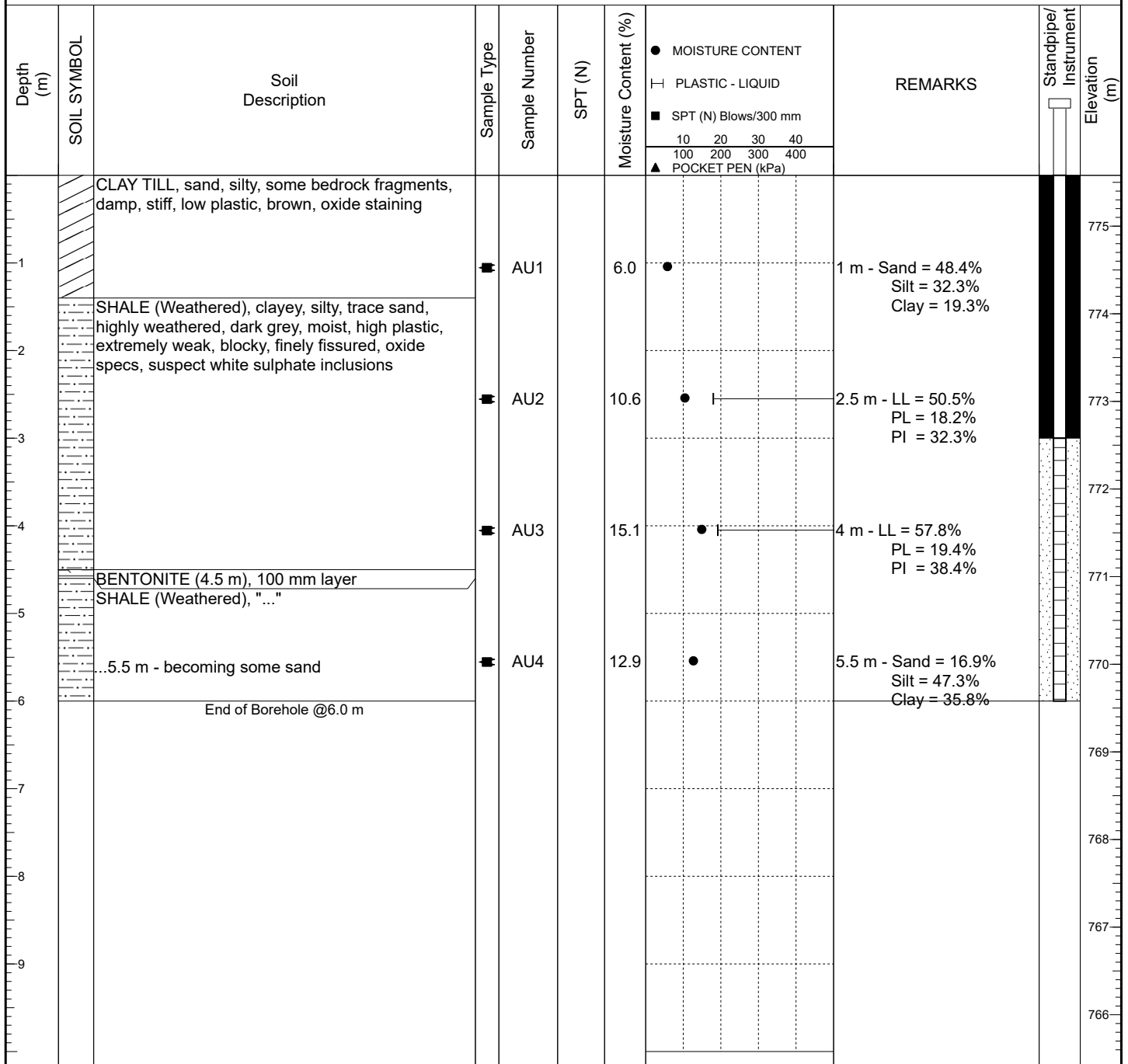


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BOREHOLE No : **22BH427**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	775.58m	N 5612356.800 E 414709.200
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED	09/15/2022	



Notes:

Borrow search. 25 mm standpipe installed to 6.0 m. Backfilled with sand and bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH428**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	774.54m N 5612385.100 E 414575.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), RESIDUAL, clay and silt, trace sand, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, finely fissured	■	AU1	9.5	●	1 m - LL = 50.3% PL = 14.5% PI = 35.8% 1 m - Sand = 7.7% Silt = 41.1% Clay = 51.2%		774
2		...2 m - moisture increasing ...2.2 m - suspect white sulphates	■	AU2	17.6	●	2.5 m - LL = 67.0% PL = 20.7% PI = 46.3%		773
3			■	AU3	12.9	●			772
4			■	AU4	15.5	●	5.5 m - Sand = 0.8% Silt = 53.8% Clay = 45.4%		771
5		...5 m - becoming dark grey							770
6		End of Borehole @6.0 m							769
7									768
8									767
9									766
									765

Notes:

Borrow search. 25 mm standpipe installed to 6.0 m. Backfilled with bentonite chips. Moved 5 m north.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH429**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	774.67m N 5612394.800 E 414478.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, dry, very stiff, medium plastic, brown	■	AU1	8.7	●	1 m - LL = 46.9% PL = 15.6% PI = 31.3%		774
2							1 m - Sand = 6.7% Silt = 45.8% Clay = 47.5%		773
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, damp, medium plastic, extremely weak to hard soil, blocky, finely fissured ...2.2 m - becoming orangish, oxidation staining	■	AU2	7.2	●	2.5 m - LL = 41.5% PL = 14.6% PI = 26.9%		772
4		End of Borehole @3.7 m	■	AU3	10.2	●	3.5 m - Sand = 10.4% Silt = 43.3% Clay = 46.3%		771
5							3.7 m - Auger refusal		770
6									769
7									768
8									767
9									766
									765

Notes:

Borrow search. Backfilled with sand and bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

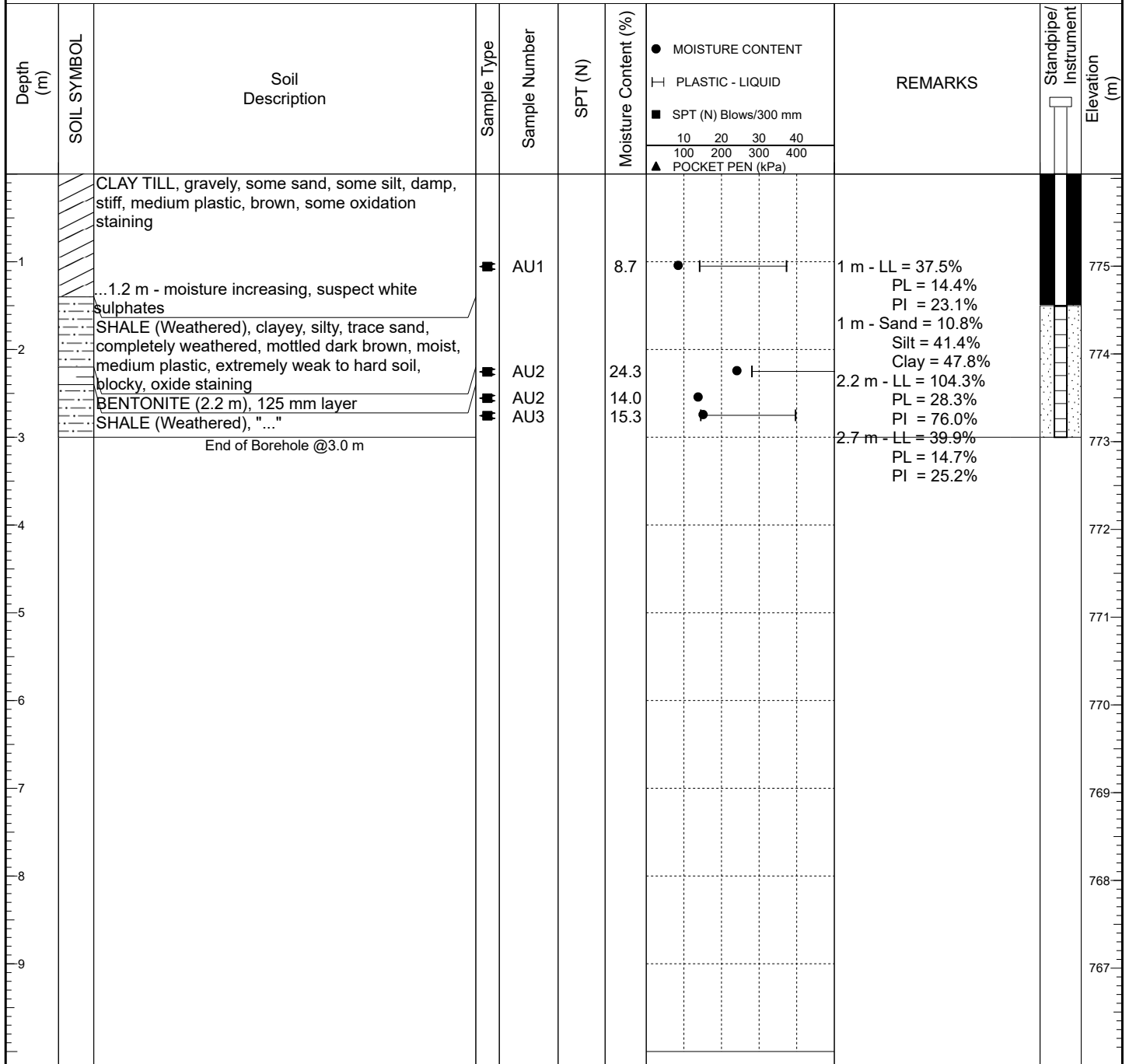


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BOREHOLE No : **22BH430**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	776.05m N 5612462.000 E 414464.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		09/15/2022	



Notes:

Borrow search. 25 mm standpipe installed to 3.0 m. Backfilled with sand and bentonite chips. Moved 10 m west

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH431**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	775.29m N 5612408.600 E 414336.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY, silt, some sand, some gravel, moist, soft, medium plastic, brown		AU1	6.3	●	1 m - LL = 37.9% PL = 14% PI = 23.9%		775
2		CLAY TILL, some gravel, trace sand, trace silt, Gravel is subangular up to 20 mm, moist, stiff, low to medium plastic, brown, suspect white sulphate inclusions		AU2	10.7	●	1 m - Sand = 18.1% Silt = 41.7% Clay = 40.2%		774
3		End of Borehole @3.0 m					2.5 m - Dispersivity Classification = ND3 2.5 m - LL = 51.9% PL = 17.4% PI = 34.5%		773
4							3 m - Auger refusal		772
5									771
6									770
7									769
8									768
9									767
									766

Notes:

Borrow search. Backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH432**

PAGE 1 OF 1

CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 06/20/2022 COMPLETED 06/20/2022 GROUND ELEVATION 775.70m N 5612465.900 E 414341.900
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, sandy, dry, firm, low plastic, light brown, trace suspect white sulphate inclusions	■	AU1	4.5	●	1 m - LL = 29.3% PL = 12.1% PI = 17.2%		775
2		SHALE (Weathered), clayey, silty, trace sand, completely weathered, dark brown, moist, high plastic, extremely weak to hard soil, blocky, oxide staining	■	AU2	13.6	●	1 m - Sand = 24.6% Silt = 45.6% Clay = 29.8%		774
3		End of Borehole @3.0 m					2.5 m - LL = 55.7% PL = 16.8% PI = 38.9%		773
4							2.5 m - Sand = 8.8% Silt = 42.2% Clay = 49.0%		772
5									771
6									770
7									769
8									768
9									767
									766

Notes:

Borrow search. Backfilled with bentonite chips.

Logged By: C. BraunReviewed By: T. Curtis

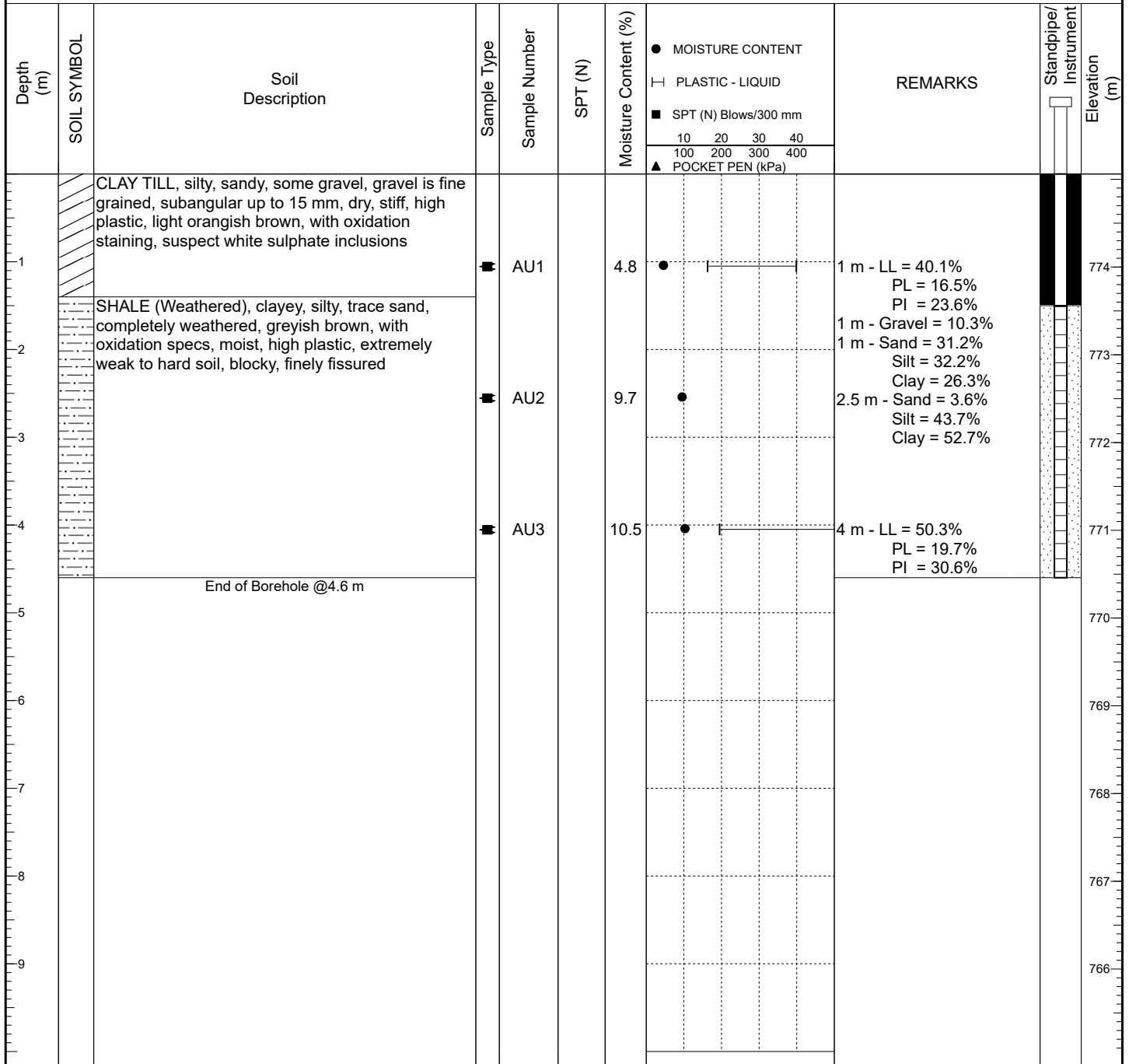


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BOREHOLE No : **22BH433**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	775.06m	N 5612426.600 E 414201.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED	09/15/2022	



Notes:

Borrow search. Backfilled with and bentonite chips. 25 mm standpipe to 3.0 m

Logged By: C. Braun

Reviewed By: T. Curtis



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BOREHOLE No : **22BH434**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/20/2022	COMPLETED	06/20/2022	GROUND ELEVATION	781.31m N 5612553.400 E 414904.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, some gravel, Sand is fine grained, Gravel is coarse well rounded up to 35 mm, dry, stiff, medium plastic, brown, some oxidation staining	■	AU1	4.5	●	1 m - LL = 44.8% PL = 19.2% PI = 25.6% 1 m - Gravel = 17.0% 1 m - Sand = 24.6% Silt = 29.3% Clay = 29.1%		781
2			■	AU2	4.6	●			780
3		...2.9 m - becoming fine grained gravel							779
4		...3.4 m - moisture increasing							778
5		...4.5 m - becoming very hard, suspect bedrock. End of Borehole @4.6 m	■	AU3	7.3	●	4 m - LL = 45.2% PL = 15.5% PI = 29.7% 4 m - Gravel = 4.3% 4 m - Sand = 43.4% Silt = 24.0% Clay = 28.3% 4.6 m - Auger refusal		777
6									776
7									775
8									774
9									773
									772

Notes:

Borrow search. Backfilled with bentonite chips.

Logged By: C. Braun

Reviewed By: T. Curtis

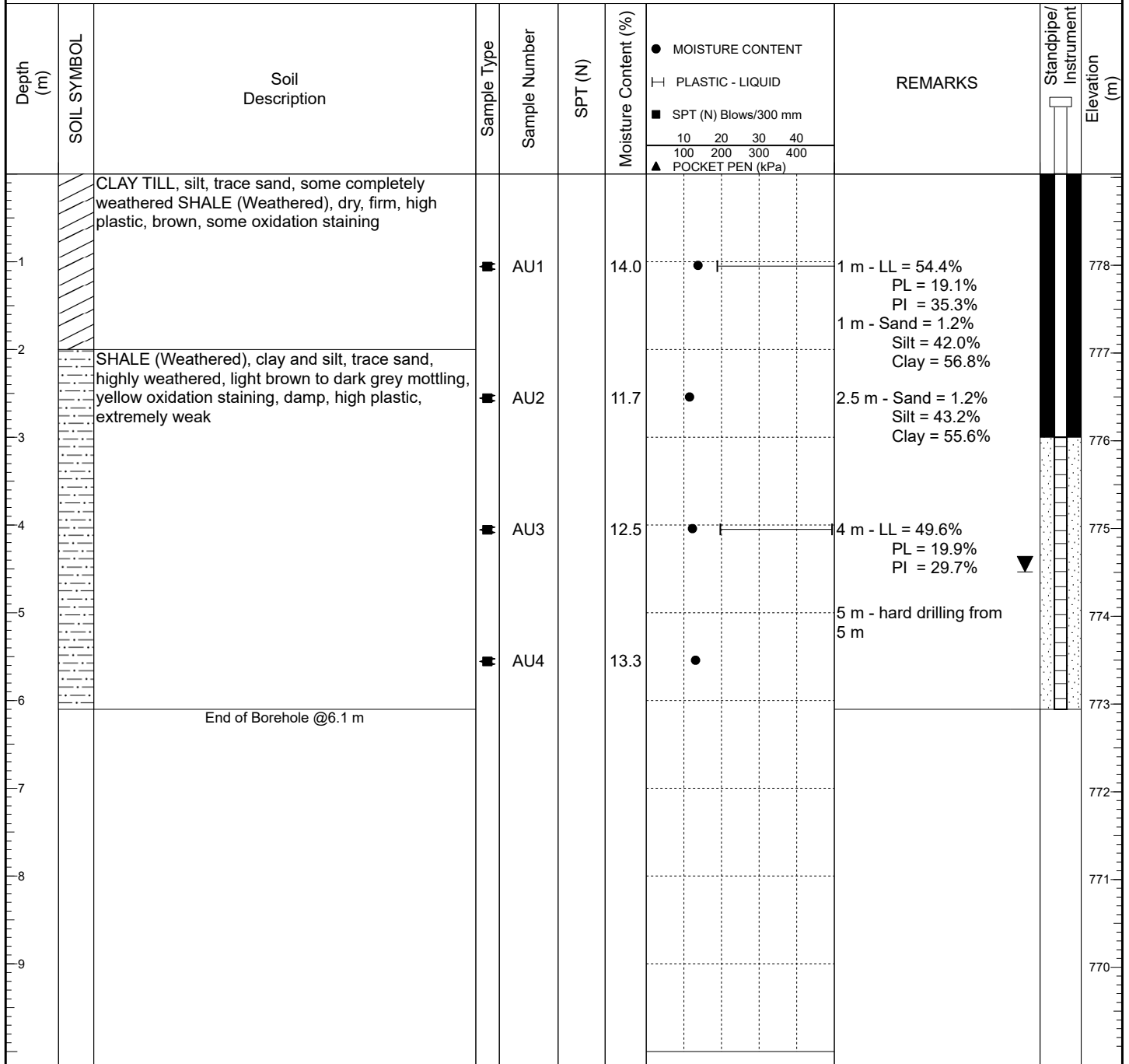


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BOREHOLE No : **22BH435**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	779.04m N 5610655.600 E 414876.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	774.59 m	4.45 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	08/10/2022		



Notes:

Borrow search. 25 mm standpipe installed to 6.0 m. Backfilled with sand and bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH435b**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	769.06m N 5612166.600 E 414626.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, moist, soft, high plastic, dark brown to grey, suspect white sulphate inclusions, trace gypsum crystals, suspect white sulphate inclusions	■	AU1	15.8	●	0.6 m - Organic Content = 5.4%		768
2		...2.1 m - some medium grained sand lenses	■	AU2	14.3	●	0.6 m - Sand = 9.3% Silt = 43.7% Clay = 47.0%		767
3		SHALE (Weathered), clayey, silty, completely weathered, light brown to dark grey mottling, some oxidation staining, moist, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	16.9	●	1.2 m - LL = 56.7% PL = 13.7% PI = 43.0%		766
4		...4 m - becoming grey	■	AU4	14.4	●			765
5		SHALE, silt and sand, clayey completely weathered, grey, damp, medium plastic, very weak, ground up	■	AU5	12.6	●	3.7 m - LL = 72.1% PL = 19% PI = 53.1%		764
6			■	AU6	12.9	●			763
7			■	AU7	11.0	●	5.2 m - Sand = 33.9% Silt = 39.7% Clay = 26.4%		762
8			■	AU8	8.0	●			761
9		End of Borehole @6.1 m							760

Notes:

NW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH436**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	06/22/2022	COMPLETED	06/22/2022	GROUND ELEVATION	778.15m N 5610428.900 E 414948.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, some gravel, completely weathered SHALE (Weathered), dry, firm, high plastic, brown, some oxidation staining, trace gypsum crystals	■	AU1	7.0	●	1 m - LL = 51.3% PL = 15.6% PI = 35.7%		778
2		End of Borehole @2.1 m	■	AU2	8.6	●	1 m - Gravel = 16.2% 1 m - Sand = 17.4% Silt = 30.4% Clay = 36.0% 2.1 m - Auger refusal		777
3									776
4									775
5									774
6									773
7									772
8									771
9									770
									769

Notes:

No seepage or sloughing observed upon completion. 25 mm standpipe installed to 6.1 m. Backfilled with sand and bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH436b**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	769.34m N 5612115.300 E 415199.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, moist, firm, high plastic, dark brown, suspect white sulphate inclusions, salt lenses, trace gypsum crystals	■	AU1	18.9	18.9	0.6 m - LL = 65.9% PL = 16.1% PI = 49.8%		769
2			■	AU2	19.0	19.0	1.2 m - Sand = 10.8% Silt = 35.4% Clay = 53.8%		768
3			■	AU3	19.2	19.2			767
4		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, moist, high plastic, extremely weak, suspect white sulphate inclusions	■	AU4	12.6	12.6			766
5		4.5 m - becoming grey shale End of Borehole @4.6 m	■	AU5	18.1	18.1	3.7 m - LL = 85.3% PL = 17.1% PI = 68.2%		765
6			■	AU6	5.0	5.0	3.7 m - Sand = 6.3% Silt = 47.0% Clay = 46.7%		764
7							4.6 m - Auger refusal		763
8									762
9									761
									760

Notes:

NW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



an Englobe company

BOREHOLE No : **22BH438**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/27/2022	COMPLETED	07/27/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.34m N 5612003.300 E 415264.900
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	08/10/2022

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, trace gravel, damp, firm, high plastic, brown to dark brown, suspect white sulphate inclusions, salt lenses	■	AU1	7.1	●	0.6 m - LL = 86.8% PL = 15.7% PI = 71.1%		768
			■	AU2	10.3	●	0.6 m - Gravel = 1.0% 0.6 m - Sand = 22.1% Silt = 27.1% Clay = 49.8%		767
2		SHALE (Weathered), silty, clayey, completely weathered, grey, some oxidation staining, moist, high plastic, extremely weak, thinly laminated, suspect white sulphate inclusions, salt lenses	■	AU3	13.7	●			766
3		...2.5 m - becoming some thinly bedded sandstone layers, with bentonite seams	■	AU4	7.6	●	2.7 m - LL = 102.6% PL = 20.3% PI = 82.3% 2.7 m - Sand = 8.3% Silt = 47.5% Clay = 44.2%		765
4			■	AU5	9.1	●			764
5			■	AU6	11.2	●			763
6			■	AU7	10.9	●			762
6		End of Borehole @6.1 m	■	AU8	14.8	●			759

Notes:

NW Borrow search. Completed as a well. 25 mm standpipe installed to 6.1 m. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH439**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/28/2022	COMPLETED	07/28/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	775.21m	N 5612272.100 E 415433.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, sandy, trace gravel, damp, firm to stiff, medium plastic, dark brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	10.5	●			775
1		...1 m - becoming moist	■	AU2	9.6	●	1.2 m - LL = 49.8% PL = 16% PI = 33.8%		774
2			■	AU3	12.8	●	1.2 m - Gravel = 4.1% 1.2 m - Sand = 22.5% Silt = 45.6% Clay = 27.8%		773
3			■	AU4	13.6	●			772
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak, blocky	■	AU5	16.0	●	3.7 m - LL = 60.9% PL = 21.3% PI = 39.6%		771
4			■	AU6	17.4	●	3.7 m - Sand = 2.8% Silt = 48.7% Clay = 48.5%		770
5			■	AU7	17.4	●			769
6		End of Borehole @6.1 m	■	AU8	17.6	●			768
7									767
8									766
9									

Notes:

NW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH440**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/28/2022	COMPLETED	07/28/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.76m N 5612264.500 E 415721.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, gravelly, some cobbles, damp, firm, medium plastic, brown, suspect white sulphate inclusions	■	AU1	7.9	●	0.6 m - Gravel = 39.0%		774
		...1 m - becoming some gravel	■	AU2	10.3	●	0.6 m - Sand = 16.6%		
		...1.1 m - becoming moist, some oxidation staining					Silt = 22.0%		773
2		...2 m - becoming trace gravel	■	AU3	14.3	●			
		...2.7 m - becoming high plastic	■	AU4	11.5	●	2.7 m - LL = 61.2%		772
							PL = 18.2%		
							PI = 43.0%		
4		SHALE (Weathered), clayey, silty, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU5	12.3	●			771
			■	AU6	10.8	●			770
5			■	AU7	12.7	●			
6		End of Borehole @6.1 m	■	AU8	13.0	●	5.8 m - LL = 69.8%		769
							PL = 22.9%		
							PI = 46.9%		
7									768
8									767
9									766
									765

Notes:

NW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH441**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/27/2022	COMPLETED	07/27/2022
GROUND ELEVATION	771.46m	N	5612271.400 E 416034.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, damp, firm, high plastic, dark brown, some oxidation staining, suspect white sulphate inclusions, trace gypsum crystals	■	AU1	10.8	●	0.6 m - Organic Content = 5.1%		771
2			■	AU2	14.1	●	0.6 m - Sand = 16.0% Silt = 25.9% Clay = 58.1%		770
3		SHALE (Weathered), clayey, silty, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU3	12.5	●	1.2 m - LL = 54.5% PL = 16.9% PI = 37.6%		769
4			■	AU4	13.6	●	2.1 m - LL = 57.9% PL = 16.4% PI = 41.5%		768
5			■	AU5	19.2	●			767
6			■	AU6	18.3	●			766
7			■	AU7	15.8	●	5.2 m - Sand = 3.3% Silt = 57.2% Clay = 39.5%		765
8			■	AU8	16.3	●			764
9		End of Borehole @6.1 m							763
									762

Notes:

NW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH442**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	769.09m N 5612266.000 E 416334.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, dry, firm, high plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	11.5	●	1 m - LL = 63.2% PL = 14.5% PI = 48.7% 1 m - Sand = 8.3% Silt = 50.1% Clay = 41.6%		769
2		...2.5 m - becoming trace sand	■	AU2	12.9	●	2.5 m - LL = 91.0% PL = 23% PI = 68.0% 2.5 m - Sand = 0.6% Silt = 55.1% Clay = 44.3%		768
3		SHALE (Weathered), clayey, silty, trace sand, completely weathered, brownish grey, with oxidation specs, damp, high plastic, extremely weak to hard soil	■	AU3	18.9	●	4 m - LL = 83.7% PL = 22.3% PI = 61.4%		767
4		...5.2 m - TRACE SEEPAGE	■	AU4	22.7	●	5.5 m - Sand = 1.3% Silt = 56.5% Clay = 42.2%		766
5		End of Borehole @6.1 m							765
6									764
7									763
8									762
9									761
									760

Notes:

NE Borrow search. Trace seepage encountered at a depth of 5.2 m. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH443**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	768.20m N 5612274.800 E 416630.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, some completely weathered SHALE (Weathered), trace gravel, damp, firm, high plastic, dark brown	■	AU1	22.8	1	1 m - LL = 77.0% PL = 17.6% PI = 59.4%		768
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, brownish grey, trace oxidation staining, damp to moist, high plastic, extremely weak to hard soil, blocky	■	AU2	21.3		1 m - Gravel = 0.4% 1 m - Sand = 15.1% Silt = 22.0% Clay = 62.5%		767
3		...3 m - hard drilling					2.5 m - Sand = 1.6% Silt = 50.6% Clay = 47.8%		766
4			■	AU3	18.8				765
5		...5 m - SEEPAGE							764
6		End of Borehole @6.1 m	■	AU4	23.0	1	5.5 m - LL = 60.7% PL = 15.7% PI = 45.0%		763
7									762
8									761
9									760
									759

Notes:

NE Borrow search. Backfilled with bentonite chips.

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BOREHOLE No : **22BH446**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	770.33m N 5611890.500 E 414881.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, moist, firm, medium to high plastic, brown, suspect white sulphate inclusions	■	AU1	17.1	●	0.6 m - Sand = 2.3% Silt = 47.4% Clay = 50.3%		770
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU2	16.6	●	1.2 m - LL = 69.8% PL = 18.6% PI = 51.2%		769
3			■	AU3	15.2	●			768
4			■	AU4	13.2	●	2.7 m - Sand = 5.5% Silt = 51.1% Clay = 43.4%		767
5		...3.7 m - trace bentonite seams	■	AU5	24.6	●	3.7 m - LL = 188.2% PL = 24.4% PI = 163.8%		766
6		4.3 m - becoming strong calcified shale End of Borehole @4.4 m	■	AU6	26.4	●	3.7 m - Sand = 3.2% Silt = 43.7% Clay = 53.1%		765
7							4.3 m - Auger refusal 4.3 m - Sand = 2.7% Silt = 56.9% Clay = 40.4%		764
8									763
9									762
									761

Notes:

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BOREHOLE No : **22BH448**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.51m	N 5611834.400 E 415249.200
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sand, silty, trace gravel, damp, firm, high plastic, brown, some oxidation staining, suspect white sulphate inclusions, trace gypsum crystals	■	AU1	9.6	●	0.6 m - Gravel = 4.8%		774
			■	AU2	9.1	● ┤	0.6 m - Sand = 35.4%		
							Silt = 30.0%		773
							Clay = 29.8%		
2			■	AU3	11.1	●	1.2 m - LL = 64.4%		
							PL = 16.8%		772
							PI = 47.6%		
3		...2.7 m - becoming some sand, no gravel	■	AU4	15.0	● ┤	2.7 m - LL = 50.1%		
							PL = 17.5%		771
							PI = 32.6%		
4			■	AU5	15.5	● ┤	2.7 m - Sand = 12.6%		
							Silt = 41.1%		770
							Clay = 46.3%		
5		SHALE (Weathered), clayey, silty, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak, suspect white sulphate inclusions	■	AU6	14.4	●	3.7 m - LL = 53.3%		
		...4 m - becoming some fine grained sand					PL = 19.6%		769
							PI = 33.7%		
6			■	AU7	16.4	●			
			■	AU8	13.2	●			
		End of Borehole @6.1 m							768
7									767
8									766
9									765

Notes:

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BOREHOLE No : **22BH449**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.32m	N 5611984.100 E 415375.200
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt. some sand, trace gravel, moist, stiff, high plastic, dark brown to grey, suspect white sulphate inclusions	■	AU1	16.0	●	0.6 m - LL = 79.9% PL = 19.7% PI = 60.2%		768
2			■	AU2	16.9	●	1.2 m - Sand = 12.8% Silt = 42.4% Clay = 44.8%		767
3		SHALE (Weathered), clayey, silty, completely weathered, grey, some oxidation staining, moist, high plastic, extremely weak, thinly laminated, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	14.3	●	2.1 m - LL = 92.4% PL = 16.6% PI = 75.8%		766
4			■	AU4	15.7	●			765
5			■	AU5	16.3	●	3.7 m - Sand = 1.0% Silt = 49.5% Clay = 49.5%		764
6			■	AU6	15.9	●			763
7			■	AU7	16.1	●			762
8			■	AU8	17.3	●			761
9		End of Borehole @6.1 m							760
									759

Notes:

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BOREHOLE No : **22BH450**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/28/2022	COMPLETED	07/28/2022	
		GROUND ELEVATION	774.34m	N 5612026.600 E 415725.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, trace cobbles, dry, firm, medium plastic, light brown to brown, suspect white sulphate inclusions	■	AU1	10.1	●	0.6 m - Gravel = 7.4%		774
2		...1.5 m - becoming damp	■	AU2	8.2	● ┤	0.6 m - Sand = 16.9%		773
3			■	AU3	6.7	●	Silt = 36.0%		772
4		SHALE (Weathered), clay and silt, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU4	14.9	●	Clay = 39.7%		771
5			■	AU5	18.2	●	1.2 m - LL = 47.2%		770
6			■	AU6	16.4	●	PL = 12.9%		769
7			■	AU7	17.7	●	PI = 34.3%		768
8			■	AU8	17.8	●	2.7 m - Gravel = 5.3%		767
9							2.7 m - Sand = 16.1%		766
							Silt = 37.6%		765
							Clay = 41.0%		
							3.7 m - LL = 63.5%		
							PL = 18.4%		
							PI = 45.1%		
		End of Borehole @6.1 m							

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	773.16m N 5612020.100 E 416008.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sandy, some gravel, dry, firm, medium plastic, light brown, suspect white sulphate inclusions	■	AU1	5.1	●	0.6 m - LL = 37.2% PL = 13.9% PI = 23.3%		773
			■	AU2	11.9	●	1.2 m - Gravel = 11.0% 1.2 m - Sand = 22.2% Silt = 31.3% Clay = 35.5%		772
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	16.0	●	2.1 m - LL = 75.1% PL = 18.8% PI = 56.3%		771
3		...3 m - becoming grey	■	AU4	16.0	●			770
4			■	AU5	17.3	●	3.7 m - Sand = 1.8% Silt = 47.4% Clay = 50.8%		769
5			■	AU6	16.8	●			768
6		...5.5 m - becoming high plastic	■	AU7	17.4	●			767
			■	AU8	25.3	●			766
		End of Borehole @6.1 m							765
7									764
8									
9									

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/28/2022	COMPLETED	07/28/2022	GROUND ELEVATION	771.43m N 5611949.700 E 416336.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1	CLAY AND GRAVEL, some cobbles, silty, damp, firm, low to medium plastic, brown, trace root hairs		■	AU1	6.6	●	1 m - Gravel = 29.5% 1 m - Sand = 33.7% Silt = 20.7% Clay = 16.1%		771
2		End of Borehole @1.5 m					1.5 m - Auger refusal due to suspect boulders		770
3									769
4									768
5									767
6									766
7									765
8									764
9									763
									762

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/28/2022	COMPLETED	07/28/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.76m N 5611941.900 E 416625.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, gravelly, some silt, trace clay, poorly graded, fine grained, sub-rounded, damp, loose, brown	■	AU1	4.3	●	0.6 m - LL = 23.9% PL = 12.1% PI = 11.8%		770
		...1 m - becoming some clay, low plastic	■	AU2	4.1	●	1.2 m - Gravel = 18.1% 1.2 m - Sand = 50.2% Silt = 11.1% Clay = 20.6%		769
2		CLAY TILL, silty, some gravel, trace sand, damp, stiff, medium plastic, brown to dark brown, some oxidation staining, suspect white sulphate inclusions	■	AU3	18.6	●	2.1 m - LL = 71.2% PL = 16.1% PI = 55.1%		768
		...2.5 m - becoming some completely weathered mudstone inclusions	■	AU4	17.1	●			768
3		SHALE (Weathered), silt and clay, trace sand, highly weathered, grey, some oxidation staining, moist, high plastic, extremely weak, thinly laminated	■	AU5	18.6	●	3.7 m - Sand = 5.9% Silt = 51.8% Clay = 42.3%		767
4		...4 m - becoming some ground up shale inclusions	■	AU6	15.7	●			766
5		SHALE, clayey, silty, highly weathered, grey, damp, medium to high plastic, very weak, ground up	■	AU7	14.8	●			765
6			■	AU8	14.0	●			765
		End of Borehole @6.1 m							764
7									763
8									762
9									761

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	775.14m N 5611525.100 E 414968.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, some completely weathered mudstone inclusions, some gravel, damp, stiff, high plastic, light brown to dark grey mottling, some oxidation staining, suspect white sulphate inclusions	■	AU1		8.9	1 m - Organic Content = 1.3%		775
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak, thinly laminated	■	AU2		14.1	1 m - LL = 53.6% PL = 16.1% PI = 37.5%		774
3							1 m - Gravel = 12.9% 1 m - Sand = 16.8% Silt = 30.6% Clay = 39.7%		773
4		...4 m - trace bentonite inclusions	■	AU3		16.6	2.5 m - Sand = 8.9% Silt = 44.7% Clay = 46.4%		772
5									771
6			■	AU4		18.7	5.5 m - LL = 70.7% PL = 20.1% PI = 50.6%		770
6		End of Borehole @6.1 m							769
7									768
8									767
9									766

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District		PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00		PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	773.41m N 5611704.900 E 415487.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.		GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA		DATE GROUND WATER RECORDED		

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Notes:

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BOREHOLE No : **22BH457**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	767.95m N 5611676.200 E 415733.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, trace gravel, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	9.7	●	0.6 m - LL = 49.2% PL = 12.9% PI = 36.3%		767
2		...2.1 m - trace suspect bentonite seams	■	AU2	7.7	●	1.2 m - Sand = 22.5% Silt = 48.2% Clay = 29.3%		766
3		...2.7 m - becoming some completely weathered mudstone	■	AU3	13.2	●	2.1 m - LL = 100.0% PL = 14.9% PI = 85.1%		765
4		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU4	15.0	●			764
5			■	AU5	14.8	●	3.7 m - Sand = 1.8% Silt = 55.4% Clay = 42.8%		763
6			■	AU6	14.1	●			762
7			■	AU7	16.2	●			761
8			■	AU8	17.9	●			760
9		End of Borehole @6.1 m							759

Notes:

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BOREHOLE No : **22BH458**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/27/2022	COMPLETED	07/27/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	771.37m N 5611668.700 E 416033.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, gravelly, silty, some cobbles, damp, stiff, low to medium plastic, brown, trace root hairs	■	AU1	6.0	●	0.6 m - Gravel = 17.3%		771
2		...1.5 m - becoming some to trace gravel	■	AU2	7.4	● ┤ ┤	0.6 m - Sand = 47.5%		770
3		...2 m - becoming medium plastic	■	AU3	17.2	●	Silt = 25.3%		769
4		...2.5 m - becoming some completely weathered mudstone inclusions	■	AU4	19.7	●	Clay = 9.9%		768
5		SHALE (Weathered), clayey, silty, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions, trace gypsum crystals	■	AU5	17.6	● ┤	1.2 m - LL = 33.9%		767
6		...4.5 m - becoming high plastic, bentonite seams throughout	■	AU6	18.4	●	PL = 17.2%		766
7			■	AU7	23.3	● ┤	PI = 16.7%		765
8			■	AU8	39.5	●	2.7 m - Sand = 1.9%		764
9							Silt = 50.1%		763
							Clay = 48.0%		762
		End of Borehole @6.1 m					3.7 m - LL = 67.2%		
							PL = 23.9%		
							PI = 43.3%		
							5.2 m - LL = 190.2%		
							PL = 20%		
							PI = 170.2%		

Notes:

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BOREHOLE No : **22BH459**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	771.92m N 5611673.400 E 416341.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		GRAVEL, silty, clayey, some sand, some cobbles, well graded, coarse grained, sub-rounded, damp, loose, grey and brown	■	AU1	6.4	●	0.6 m - LL = 46.0% PL = 18.8% PI = 27.2%		771
			■	AU2	4.7	●	1.2 m - Gravel = 29.2% 1.2 m - Sand = 26.0% Silt = 23.5% Clay = 21.3%		770
2		CLAY TILL, gravelly, silty, some sand, moist, stiff, medium plastic, brown, suspect white sulphate inclusions	■	AU3	4.7	●	2.1 m - LL = 43.6% PL = 13.2% PI = 30.4%		769
		...2.5 m - becoming some gravel	■	AU4	5.0	●			768
3		...3 m - becoming some oxidation staining, high plastic	■	AU5	13.8	●	3.7 m - LL = 57.0% PL = 15.1% PI = 41.9%		767
4			■	AU6	16.1	●	3.7 m - Gravel = 30.1% 3.7 m - Sand = 15.4% Silt = 27.8% Clay = 26.7%		766
5		SHALE, clayey, silty, completely weathered, grey, damp, medium plastic, very weak, ground up	■	AU7	13.0	●	5.2 m - Auger refusal		765
		End of Borehole @5.2 m							764
6									763
7									
8									
9									

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	768.49m N 5611660.000 E 416636.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, gravelly, some sand, some silt, some cobbles, moist, firm, high plastic, brown, trace root hairs	■	AU1	4.3	●	0.6 m - Gravel = 75.1%		768
			■	AU2	16.7	●	0.6 m - Sand = 15.3%		
							Silt = 5.1%		
							Clay = 4.5%		
2		SHALE, silt and clay, trace sand, completely weathered, grey, damp, high plastic, extremely weak, trace clay till inclusions	■	AU3	14.5	●	1.2 m - LL = 55.0%		767
			■	AU4	13.8	●	PL = 19.6%		
							PI = 35.4%		
							2.1 m - LL = 68.4%		766
							PL = 16.3%		
							PI = 52.1%		
3			■	AU5	14.0	●	2.7 m - Sand = 0.5%		765
							Silt = 52.4%		
							Clay = 47.1%		
4		End of Borehole @3.7 m					3.6 m - LL = 59.4%		
							PL = 17.9%		
							PI = 41.5%		
							3.7 m - Auger refusal		764
5									763
6									762
7									761
8									760
9									759

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	777.52m N 5611228.900 E 414956.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, some gravel, damp, stiff, medium plastic, light brown, some oxidation staining, trace gypsum crystals, suspect white sulphate inclusions	■	AU1	16.5	16.5	1 m - LL = 44.6% PL = 13.5% PI = 31.1% 1 m - Gravel = 7.3% 1 m - Sand = 26.7% Silt = 27.4% Clay = 38.6%		777
2									776
3		SHALE (Weathered), clayey, silty, completely weathered, dark brown to grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil	■	AU2	13.4	13.4	2.5 m - LL = 49.5% PL = 12.8% PI = 36.7%		775
4		...4 m - becoming some sand	■	AU3	11.2	11.2	4 m - Sand = 12.5% Silt = 48.2% Clay = 39.3%		774
5		...5 m - becoming high plastic							773
6		End of Borehole @6.1 m	■	AU4	5.8	5.8			772
7									771
8									770
9									769
									768

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	776.66m	N 5611233.300 E 415262.100
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SAND, some silt, trace clay, poorly graded, fine grained, sub-rounded, damp, loose, light brown							776
		...0.8 m - becoming clayey							
2		CLAY TILL, sand and silt, some gravel, some sand, damp, firm, medium plastic, brown to grey, suspect white sulphate inclusions	■	AU1	6.8	●	1 m - Sand = 39.1% Silt = 36.5% Clay = 24.4%		775
		...1.5 m - becoming trace sand							
3			■	AU2	11.7	■	2.5 m - LL = 43.2% PL = 13.1% PI = 30.1%		774
4		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU3	12.3	●	4 m - Sand = 13.4% Silt = 48.1% Clay = 38.5%		773
5									772
6			■	AU4	11.2	●			771
7		End of Borehole @6.1 m							770
8									769
9									768
									767

Notes:

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CLIENT Eastern Irrigation District PROJECT NAME Snake Lake Reservoir Expansion
 PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16
 DATE STARTED 07/27/2022 COMPLETED 07/27/2022 GROUND ELEVATION 768.64m N 5611377.800 E 415744.500
 DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH _____
 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED _____

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, sandy, gravelly, some cobbles, damp, stiff, high plastic, brown							768
1		End of Borehole @1.1 m	■	AU1	7.2	●	1 m - Auger refusal due to cobbles 1 m - LL = 54.8% PL = 14% PI = 40.8% 1 m - Sand = 30.7% Silt = 37.0% Clay = 32.3%		767
2									766
3									765
4									764
5									763
6									762
7									761
8									760
9									759

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	768.79m N 5611372.600 E 416025.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, trace gravel, dry to damp, firm, high plastic, light brown to brown, suspect white sulphate inclusions, trace coal staining	■	AU1	9.4	●	0.6 m - Organic Content = 1.7%		768
			■	AU2	12.2	● ┤	0.6 m - Sand = 13.4% Silt = 51.1% Clay = 35.5%		
2			■	AU3	14.2	●	1.2 m - LL = 82.0% PL = 16.8% PI = 65.2%		767
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions, trace gypsum crystals	■	AU4	13.7	●			766
4			■	AU5	16.8	●	3.7 m - LL = 93.5% PL = 18.1% PI = 75.4%		765
5			■	AU6	15.6	●	3.7 m - Sand = 0.5% Silt = 44.0% Clay = 55.5%		764
6			■	AU7	17.1	●			763
			■	AU8	18.4	●			763
7		End of Borehole @6.1 m							762
8									761
9									760
									759

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.10m N 5610905.300 E 414944.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, gravelly, dry, stiff, low to medium plastic, light brown, trace oxidation staining, trace gypsum crystals	■	AU1	3.9	●	1 m - LL = 44.9% PL = 16.5% PI = 28.4%		778
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, trace gypsum crystals	■	AU2	16.4	●	1 m - Gravel = 30.8% 1 m - Sand = 19.5% Silt = 21.7% Clay = 28.0%		777
3			■	AU3	18.9	●	2.5 m - LL = 54.7% PL = 21% PI = 33.7%		776
4			■	AU4	16.8	●	4 m - Sand = 1.5% Silt = 41.2% Clay = 57.3%		775
5									774
6		End of Borehole @6.1 m							773
7									772
8									771
9									770
									769

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	775.16m N 5610938.900 E 415253.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, some silt, trace clay, poorly graded, fine grained, sub-rounded, damp, very loose, light brown	■	AU1	13.3	●	1 m - LL = 45.8% PL = 13.6% PI = 32.2%		775
2		CLAY TILL, silt, some sand, some gravel, trace sand, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU2	19.1	┤	1 m - Sand = 14.6% Silt = 45.6% Clay = 39.8%		774
3		SHALE (Weathered), clayey, silty, highly weathered, grey, some oxidation staining, damp, high plastic, very weak, thinly laminated, suspect white sulphate inclusions	■	AU3	18.7	●	2.5 m - LL = 55.2% PL = 14.6% PI = 40.6%		773
4			■	AU4	20.3	●			772
5			■	AU5	15.4	●			771
6		SHALE, clay and silt, trace sand, completely weathered, grey, damp, medium plastic, very weak, ground up	■	AU6	18.6	●	5.8 m - Sand = 2.9% Silt = 48.5% Clay = 48.6%		770
		End of Borehole @6.1 m							769
7									768
8									767
9									766

Notes:

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CLIENT	Eastern Irrigation District		PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00		PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	777.15m N 5611070.800 E 415426.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.		GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA		DATE GROUND WATER RECORDED		

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	
		GROUND ELEVATION	774.21m	N 5611071.100 E 415735.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sand, silty, gravely, some cobbles, silty, dry, firm, low plastic, light brown	■	AU1	5.8	●	0.6 m - Gravel = 17.0%		774
			■	AU2	6.5	●	0.6 m - Sand = 50.3%		773
		End of Borehole @1.5 m					Silt = 20.6%		
							Clay = 12.1%		
							1.2 m - LL = 29.8%		
							PL = 13.7%		
							PI = 16.1%		
							1.5 m - Auger refusal due to cobbles		
									772
									771
									770
									769
									768
									767
									766
									765

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	773.36m	N 5611055.800 E 416022.300
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		GRAVEL, sandy, some silt, trace clay, well graded, medium grained, Rounded, dry, loose, grey to brown	■	AU1	9.7	●	0.6 m - Gravel = 51.2%		773
			■	AU2	4.2	●	0.6 m - Sand = 26.0%		772
2		CLAY TILL, silt, some sand, trace to some gravel, moist, firm, high plastic, dark brown, some oxidation staining, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	17.6	●	2.1 m - LL = 54.4%		771
			■	AU4	15.3	●	PL = 19.6%		
3							PI = 34.8%		
4			■	AU5	15.7	●	2.7 m - Gravel = 2.9%		770
			■	AU6	14.2	●	2.7 m - Sand = 18.2%		
5		SHALE (Weathered), clayey, silty, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, trace gypsum crystals	■	AU7	19.6	●	Silt = 38.2%		
			■	AU8	18.5	●	Clay = 40.7%		
6		End of Borehole @6.1 m					3.7 m - LL = 48.4%		769
							PL = 15.9%		
7							PI = 32.5%		768
8							5.2 m - LL = 69.2%		767
							PL = 22.3%		
9							PI = 46.9%		766
									765
									764

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	768.01m N 5611071.900 E 416313.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, some gravel, damp to moist, stiff, medium plastic, dark brown, suspect white sulphate inclusions	■	AU1	8.1	●	0.6 m - Gravel = 30.9%		767
2		...1.6 m - becoming trace gravel, high plastic	■	AU2	20.9	●	0.6 m - Sand = 32.1%		766
3			■	AU3	17.4	●	2.1 m - Dispersivity Classification = ND3		765
4		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to grey mottling, trace oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU4	18.4	●	2.1 m - LL = 71.0%		764
5			■	AU5	20.4	┤	PL = 21.6%		763
6			■	AU6	20.6	●	PI = 49.4%		762
7			■	AU7	17.5	●	3.7 m - LL = 61.8%		761
8							PL = 17.6%		760
9							PI = 44.2%		759
		...5.5 m - becoming some ground up shale inclusions					5.2 m - Sand = 1.3%		
		End of Borehole @5.8 m					Silt = 54.7%		
							Clay = 44.0%		
							5.8 m - Auger refusal		

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	GROUND ELEVATION	767.34m N 5611071.900 E 416626.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)				REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT						
						└─ PLASTIC - LIQUID						
						■ SPT (N) Blows/300 mm						
				10	20	30	40					
				100	200	300	400					
				▲ POCKET PEN (kPa)								
1		CLAY TILL, silty, some gravel, trace sand, moist, firm to stiff, high plastic, dark brown, suspect white sulphate inclusions	■	AU1	16.4		●		0.6 m - LL = 70.1% PL = 13.6% PI = 56.5%		767	
		...1 m - becoming trace gravel	■	AU2	18.1		●		1.2 m - Organic Content = 4.4%		766	
2			■	AU3	18.3		●		2.1 m - Sand = 2.5% Silt = 45.1% Clay = 52.4%		765	
3			■	AU4	24.1			●			764	
4		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU5	21.9			●			3.7 m - Sand = 2.1% Silt = 47.4% Clay = 50.5%	763
5			■	AU6	18.2			●				762
6		...5.6 m - becoming grey shale	■	AU7	14.9		●		5.2 m - LL = 79.0% PL = 16% PI = 63.0%			761
		End of Borehole @6.1 m	■	AU8	14.9		●					760
7											759	
8											758	
9												

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.51m N 5610638.100 E 414960.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace gravel, dry, stiff, medium plastic, light brown, some oxidation staining	■	AU1	7.3	●	1 m - LL = 49.1% PL = 18.5% PI = 30.6%		778
2		SHALE (Weathered), silt and clay, trace sand, trace gravel, trace cobbles, completely weathered, brownish grey, some oxidation staining, damp, high plastic, extremely weak to hard soil	■	AU2	14.1	●	2.5 m - LL = 53.3% PL = 20.3% PI = 33.0%		777
3		...3 m - becoming grey	■	AU3	16.4	●	3.4 m - Sand = 2.2% Silt = 52.5% Clay = 45.3%		776
4		End of Borehole @3.7 m					3.7 m - Auger refusal		775
5									774
6									773
7									772
8									771
9									770
									769

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	776.57m N 5610631.000 E 415258.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, some gravel up to 50 mm, dry, firm to stiff, medium plastic, light brown, trace oxidation staining, suspect white sulphate inclusions	■	AU1	4.7	●	1 m - LL = 37.8% PL = 13.2% PI = 24.6%		776
2		SHALE (Weathered), silt and clay, trace sand, trace gravel, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	14.9	●	2.5 m - Sand = 6.8% Silt = 46.9% Clay = 46.3%		775
3									774
4		...4 m - trace coal staining	■	AU3	18.4	●	4 m - LL = 69.3% PL = 22.1% PI = 47.2%		773
5		...4.5 m - becoming ground up shale inclusions							772
6		End of Borehole @5.8 m	■	AU4	21.4	●	5.5 m - Sand = 3.7% Silt = 52.1% Clay = 44.2% 5.8 m - Auger refusal		771
7									770
8									769
9									768
									767

Notes:

SW Borrow search. Backfilled with bentonite chips.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH477**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/26/2022	COMPLETED	07/26/2022
GROUND ELEVATION	775.77m	N	5610682.300 E 415430.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, gravelly, some sand, some cobbles, dry, firm, medium plastic, light brown	■	AU1	5.1	●	0.6 m - LL = 32.7% PL = 13.5% PI = 19.2%		775
2			■	AU2	5.1	●	1.2 m - Gravel = 39.5% 1.2 m - Sand = 14.1% Silt = 24.2% Clay = 22.2%		774
2		End of Borehole @2.2 m	■	AU3	3.0	●	2 m - Auger refusal due to cobbles		773
3									772
4									771
5									770
6									769
7									768
8									767
9									766

Notes:

SW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis

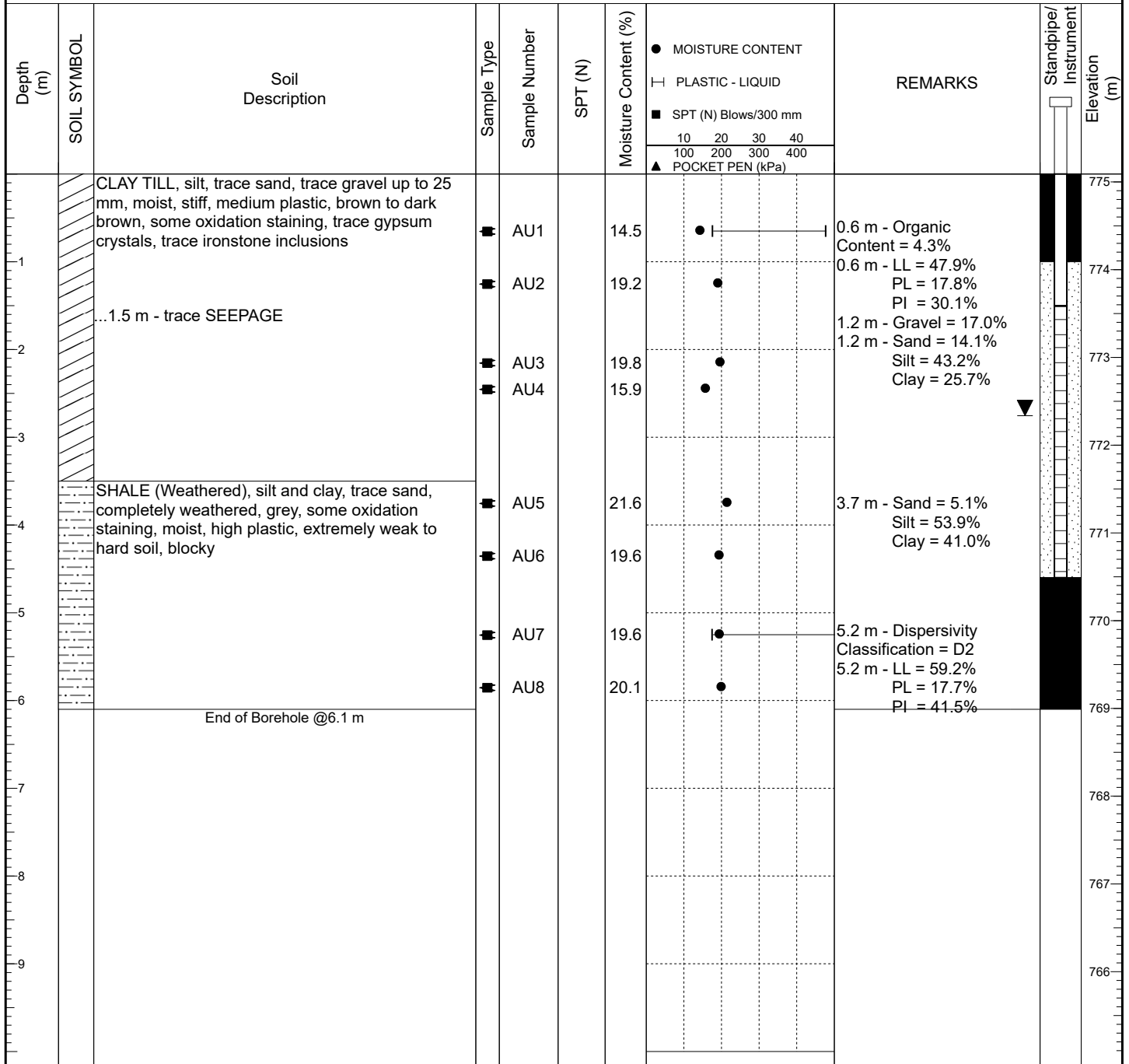


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BOREHOLE No : **22BH478**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	775.09m	N 5610666.200 E 415730.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	772.42 m	2.67 m
		DATE GROUND WATER RECORDED	08/10/2022	



Notes:

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BOREHOLE No : **22BH479**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	770.07m N 5610677.300 E 416030.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, clayey, silty, trace gravel, moist, loose, dark brown, trace root hairs	■	AU1	14.2	●	0.6 m - Sand = 45.3% Silt = 25.4% Clay = 29.3%		769
			■	AU2	14.1	● ┤	1.2 m - LL = 25.9% PL = 17.3% PI = 8.6%		
2		CLAY TILL, silt, trace sand, trace gravel, moist, stiff, high plastic, dark brown, some oxidation staining, suspect white sulphate inclusions	■	AU3	22.3	┤ ●	2.1 m - LL = 53.3% PL = 18.4% PI = 34.9%		768
3		SHALE (Weathered), clay and silt, completely weathered, grey, some oxidation staining, moist, high plastic, extremely weak, thinly laminated	■	AU4	25.4	●	2.7 m - Sand = 8.2% Silt = 47.6% Clay = 44.2%		767
4			■	AU5	21.8	●			766
			■	AU6	21.0	●	4.3 m - LL = 75.7% PL = 20.8% PI = 54.9%		
5		End of Borehole @5.0 m	■	AU7	37.6	●	5 m - Auger refusal		765
6									764
7									763
8									762
9									761

Notes:

SE Borrow search. Backfilled with bentonite chips.

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	770.16m N 5610673.000 E 416338.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace gravel, moist, stiff, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	10.5	●	0.6 m - LL = 43.4% PL = 11.5% PI = 31.9%		770
2			■	AU2	12.8	●	1.2 m - Gravel = 59.8% 1.2 m - Sand = 17.1% Silt = 10.9% Clay = 12.2%		769
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, medium to high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU3	20.2	●			768
4			■	AU4	19.2	●			767
5		...4.5 m - becoming grey	■	AU5	20.4	●			766
6			■	AU6	23.4	●	4.3 m - Sand = 2.0% Silt = 53.3% Clay = 44.7%		765
7			■	AU7	21.1	●			764
8			■	AU8	18.7	●			763
9		End of Borehole @6.1 m							762
									761

Notes:

SE Borrow search. Backfilled with bentonite chips.

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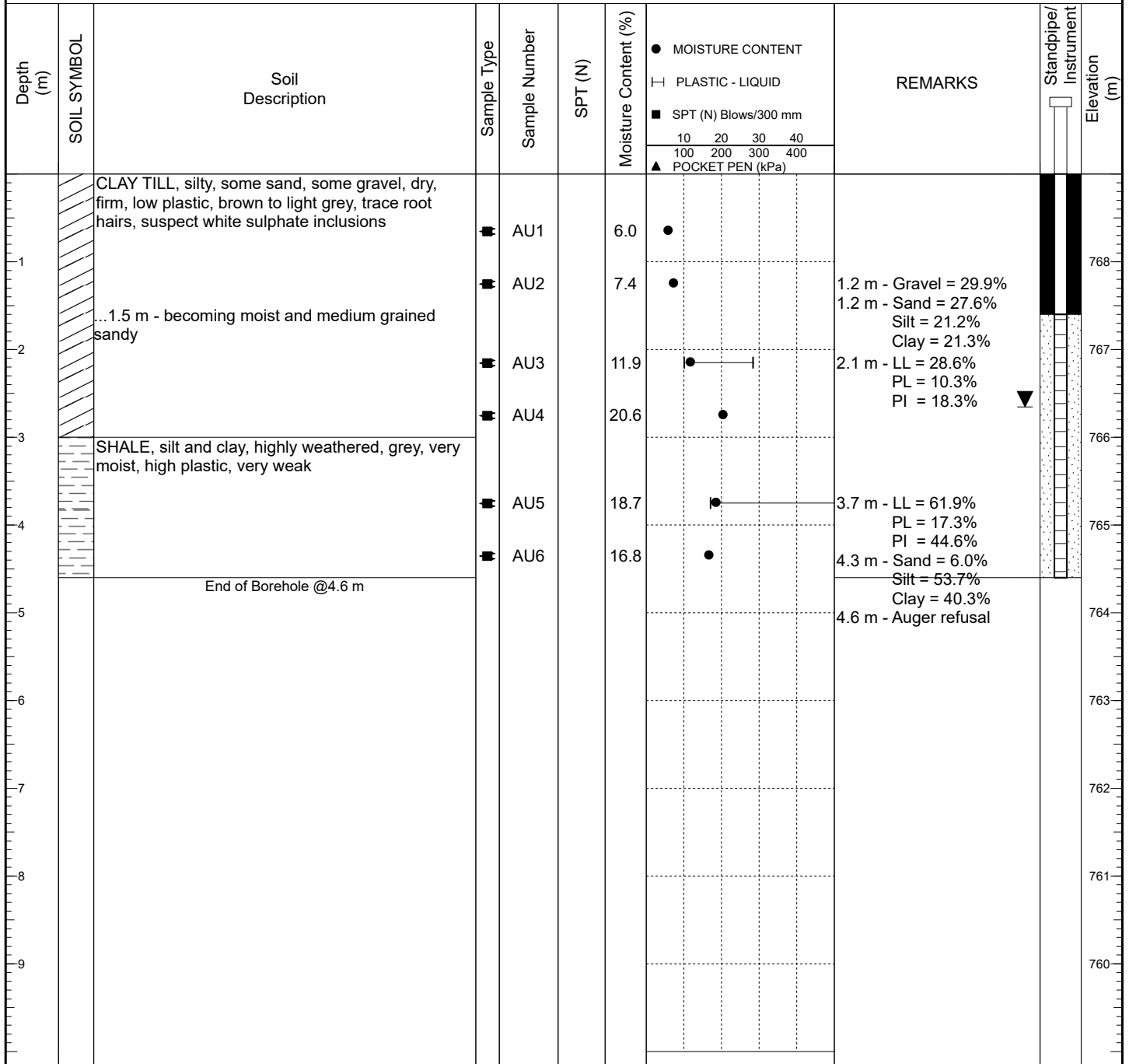


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BOREHOLE No : **22BH481**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	769.00m	N 5610678.600 E 416638.100
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	766.43 m	2.57 m
		DATE GROUND WATER RECORDED	09/15/2022	



Notes:

SE Borrow search. 25 mm standpipe installed to 4.6 m. Backfilled with sand and bentonite.

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BOREHOLE No : **22BH482**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	777.09m	N 5610332.000 E 414964.300
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, dry, firm, high plastic, brown, some oxidation staining	■	AU1	15.8	15.8	1 m - LL = 54.3% PL = 12.8% PI = 41.5%		777
2		SHALE (Weathered), silt and clay, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	21.2	21.2	2.5 m - Dispersivity Classification = ND3 2.5 m - LL = 51.6% PL = 21.4% PI = 30.2%		776
3									775
4			■	AU3	16.2	16.2			774
5									773
6		BENTONITE (5.3 m), 40 mm layer SHALE (Weathered), "..." ...5.5 m - becoming some sand	■	AU4	16.2	16.2	5.5 m - LL = 49.1% PL = 13.2% PI = 35.9%		772
7		End of Borehole @6.1 m					5.5 m - Sand = 14.7% Silt = 45.3% Clay = 40.0%		771
8									770
9									769
									768

Notes:

SW Borrow search. Backfilled with bentonite.

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	775.87m N 5610340.500 E 415249.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some completely weathered	■	AU1		16.8	1 m - Organic Content = 4.5%		775
2		SHALE (Weathered), damp, stiff, high plastic, dark brown, some oxidation staining, trace sand pockets					1 m - LL = 58.5%		774
3		SHALE (Weathered), silt and clay, some sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2		22.2	2.5 m - Dispersivity Classification = D2		773
4			■	AU3		20.9	2.5 m - LL = 61.9%		772
5		End of Borehole @4.3 m					PL = 19.4%		771
6							PI = 42.2%		770
7							4 m - Sand = 10.0%		769
8							Silt = 57.2%		768
9							Clay = 32.8%		767
							4.3 m - Auger refusal		766

Notes:

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BOREHOLE No : **22BH484**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/26/2022	COMPLETED	07/26/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.88m N 5610357.100 E 415436.300
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	770.92 m 3.96 m
		DATE GROUND WATER RECORDED	09/15/2022

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, trace sand, moist, firm, medium plastic, dark brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	14.6	●	0.6 m - Sand = 8.6% Silt = 24.7% Clay = 66.7%		774
2		SHALE (Weathered), clay and silt, completely weathered, dark brown to grey mottling, some oxidation staining, moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU2	20.6	●			773
3			■	AU3	18.0	●	2.1 m - LL = 56.9% PL = 17.7% PI = 39.2%		772
4			■	AU4	19.3	●			771
5		BENTONITE (4.1 m), 200 mm layer	■	AU5	14.9	●			770
6		SHALE (Weathered), "..."	■	AU6	12.4	●	4.3 m - LL = 51.2% PL = 13.9% PI = 37.3%		769
7		...5 m - becoming grey	■	AU7	16.9	●			768
8		SHALE, clayey, silty, completely weathered, grey, damp, medium plastic, very weak, ground up	■	AU8	15.3	●	5.8 m - Sand = 5.4% Silt = 51.9% Clay = 42.7%		767
9		End of Borehole @6.1 m							766
									765

Notes:

SW Borrow search. 25 mm standpipe installed to 6.1 m. Backfilled with sand and bentonite.

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BOREHOLE No : **22BH485**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	774.80m N 5610374.300 E 415732.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, gravelly, some cobbles, dry, stiff, medium plastic, light brown to brown, suspect white sulphate inclusions	■	AU1	6.7	●	0.6 m - EC: 3.4 dS/m 0.6 m - SAR: 10.6 0.6 m - pH: 8.2 0.6 m - Gravel = 4.9% 0.6 m - Sand = 46.5% Silt = 28.0% Clay = 20.6%		774
2			■	AU2	7.3	●			773
2		End of Borehole @2.1 m	■	AU3	8.7	●	1.2 m - LL = 40.6% PL = 15.5% PI = 25.1% 2.1 m - Auger refusal		772
3									771
4									770
5									769
6									768
7									767
8									766
9									765

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH486**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/26/2022	COMPLETED	07/26/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	772.63m N 5610375.500 E 416034.300
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, gravelly, some cobbles, dry, stiff, low to medium plastic, light brown to brown	■	AU1	6.8	●	0.6 m - LL = 29.4% PL = 12.7% PI = 16.7%		772
			■	AU2	6.8	●	1.2 m - EC: 1.1 dS/m 1.2 m - SAR: 4.9 1.2 m - pH: 7.8 1.5 m - Auger refusal		771
2		End of Borehole @1.5 m							770
3									769
4									768
5									767
6									766
7									765
8									764
9									763

Notes:

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BOREHOLE No : **22BH487**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.76m	N 5610377.900 E 416332.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, trace sand, damp, firm, high plastic, yellowish brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	9.8	●			770
2		...1.5 m - becoming gravelly with some cobbles	■	AU2	6.4	●	1.2 m - LL = 50.6% PL = 13.2% PI = 37.4%		769
2		End of Borehole @2.1 m	■	AU3	16.1	●	2.1 m - Auger refusal due to cobbles		768
3									767
4									766
5									765
6									764
7									763
8									762
9									761

Notes:

SE Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH488**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	768.97m N 5610376.500 E 416626.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, trace silt, trace clay, trace gravel, poorly graded, fine grained, sub-rounded, damp, loose, light brown	■	AU1	2.2	●	0.6 m - Gravel = 0.4%		768
2		...1.5 m - becoming medium grained, some clay	■	AU2	3.4	●	0.6 m - Sand = 83.5%		767
3		...2.5 m - becoming moist	■	AU3	8.7	●	Silt = 9.7%		766
4		...3.5 m - becoming clayey	■	AU4	15.8	●	Clay = 6.4%		765
5		CLAY TILL, silty, moist, firm, medium plastic, brown, some oxidation staining, trace gypsum crystals	■	AU5	14.5	●	1.2 m - Dispersivity Classification = ND4		764
6		SHALE, silt and clay, completely weathered, grey, damp, medium plastic, very weak	■	AU6	23.2	●	1.2 m - Organic Content = 0.6%		763
7		...6 m - some ironstone inclusions	■	AU7	14.3	●	2.1 m - Sand = 77.1%		762
8		End of Borehole @6.1 m	■	AU8	22.0	┤	Silt = 4.0%		761
9							Clay = 18.9%		760
							5.2 m - Sand = 12.9%		
							Silt = 56.4%		
							Clay = 30.7%		
							5.8 m - LL = 32.0%		
							PL = 11.8%		
							PI = 20.2%		

Notes:

SE Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH489**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/26/2022	COMPLETED	07/26/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.88m N 5610063.900 E 415427.500
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sand, silty, some gravel, trace sand, dry, firm, high plastic, light brown, suspect white sulphate inclusions	■	AU1	7.7	●	0.6 m - Gravel = 4.1%		774
		...1 m - becoming trace gravel, moist. dark brown	■	AU2	20.9	┤	0.6 m - Sand = 39.5%		
2		SHALE (Weathered), clay and silt, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU3	29.4	●	Silt = 23.1%		773
		BENTONITE (1.8 m), 200 mm layer	■	AU4	34.7	●	Clay = 33.3%		772
		SHALE (Weathered), "..."					1.2 m - LL = 59.2%		
			■	AU5	22.0	●	PL = 16.3%		771
			■	AU6	21.7	●	PI = 42.9%		
5			■	AU7	11.8	●	5.2 m - LL = 67.1%		770
			■	AU8	19.9	●	PL = 19.9%		769
		End of Borehole @6.1 m					PI = 47.2%		
7									768
8									767
9									766
									765

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH490**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	773.36m	N 5610062.600 E 415730.100
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, sandy, some completely weathered mudstone inclusions, moist, firm, medium plastic, dark brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	16.4	●	0.6 m - Sand = 10.5% Silt = 25.8% Clay = 63.7%		773
2		SHALE (Weathered), residual soil, clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions, trace gypsum crystals	■	AU2	15.8	●	1 m - EC: 13.0 dS/m 1 m - SAR: 32.6 1 m - pH: 8.5		772
3		...2.7 m - becoming trace sand	■	AU3	15.4	●	1.2 m - LL = 74.0% PL = 19.8% PI = 54.2%		771
4			■	AU4	18.7	●	1.2 m - Sand = 4.8% Silt = 40.5% Clay = 54.7%		770
5			■	AU5	15.8	●	2.1 m - Dispersivity Classification = ND4 2.1 m - LL = 79.0% PL = 22.9% PI = 56.1%		769
6		...5.6 m - becoming high plastic and silty with bentonite seams	■	AU6	21.5	●	2.7 m - Sand = 1.9% Silt = 47.1% Clay = 51.0%		768
7		End of Borehole @6.1 m	■	AU7	17.3	●	4.3 m - LL = 78.7% PL = 24.5% PI = 54.2%		767
8			■	AU8	40.3	●			766
9									765
									764

Notes:

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BOREHOLE No : **22BH491**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	771.54m	N 5610078.700 E 416036.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, gravelly, some sand, damp, firm, medium plastic, brown, trace gypsum crystals	■	AU1	10.0	●	0.6 m - Sand = 31.3% Silt = 41.8% Clay = 26.9%		771
			■	AU2	7.4	● ┤	1.2 m - LL = 40.0% PL = 14.6% PI = 25.4%		770
2		SHALE (Weathered), clay and silty, completely weathered, brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	21.7	●			769
3			■	AU4	22.0	●			768
4			■	AU5	19.8	●			767
5			■	AU6	20.1	●			766
6			■	AU7	19.3	●	5.2 m - LL = 62.8% PL = 19.5% PI = 43.3%		765
		End of Borehole @5.8 m	■	AU8	17.0	●	5.8 m - Auger refusal		764
7									763
8									762
9									

Notes:

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BOREHOLE No : **22BH492**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
		GROUND ELEVATION	769.55m	N 5610072.100 E 416341.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH		
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, clayey, silty, some gravel, poorly graded, medium grained, sub-rounded, damp, loose, brown	■	AU1	5.7	●	0.6 m - Sand = 58.8% Silt = 18.8% Clay = 22.4%		769
2		CLAY TILL, silty, gravelly, trace sand, moist, firm, medium plastic, yellowish brown, some oxidation staining, coal staining, suspect white sulphate inclusions	■	AU2	16.4	●	1.2 m - LL = 49.9% PL = 13.1% PI = 36.8%		768
			■	AU3	16.2	●			767
3		SHALE (Weathered), silt and clay, completely weathered, light brown to dark grey mottling, some oxidation staining, moist, high plastic, extremely weak to hard soil, blocky	■	AU4	24.9	●	2.7 m - Sand = 3.0% Silt = 54.1% Clay = 42.9%		766
4			■	AU5	20.9	●			765
5		...4.3 m - trace suspect bentonite seams	■	AU6	20.9	●	4.3 m - LL = 102.3% PL = 17.8% PI = 84.5%		764
6		SHALE, clayey, silty, completely weathered, grey, damp, medium plastic, very weak, ground up	■	AU7	16.2	●			763
			■	AU8	15.8	●			762
7		End of Borehole @6.1 m							761
8									760
9									

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	770.21m	N 5610085.800 E 416631.300
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, some silt, some clay, poorly graded, fine grained, sub-rounded, damp, very loose, light brown	■	AU1	3.6	●	0.6 m - Sand = 79.3% Silt = 6.8% Clay = 13.9%		770
		...1.2 m - silty, clayey, low plastic	■	AU2	3.7	● ─	1.2 m - LL = 17.3% PL = 13.5% PI = 3.8%		769
2		SAND AND CLAY TILL, silty, some gravel, poorly graded, medium grained, sub-rounded, damp, loose, brown, some oxidation staining, some coal staining, trace gypsum crystals	■	AU3	6.7	●	2.1 m - Gravel = 1.8% 2.1 m - Sand = 65.0% Silt = 14.3% Clay = 18.9%		768
			■	AU4	7.1	●			767
3		SHALE (Weathered), clayey, silty, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, medium to high plastic, extremely weak	■	AU5	13.1	●			766
			■	AU6	18.3	●			765
4		SHALE, clayey, some silt, highly weathered, grey, damp, medium plastic, very weak, ground up	■	AU7	17.5	●	5.2 m - LL = 100.4% PL = 16.9% PI = 83.5%		764
		...5.2 m - suspect trace bentonite seams	■	AU8	16.5	●			763
5		End of Borehole @6.1 m							762
6									761
7									
8									
9									

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.64m	N 5609761.800 E 415419.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, some completely weathered shale inclusions, trace gravel, moist, firm, high plastic, dark brown, some oxidation staining, suspect white sulphate inclusions, trace gypsum crystals	■	AU1	26.6	●	0.6 m - Sand = 12.5% Silt = 43.6% Clay = 43.9%		774
2			■	AU2	18.6	●	1.2 m - LL = 52.0% PL = 15.9% PI = 36.1%		773
3		SHALE (Weathered), silt and clay, some sand, completely weathered, grey with oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU3	16.4	●			772
4			■	AU4	16.0	●	2.7 m - Sand = 13.5% Silt = 45.7% Clay = 40.8%		771
5			■	AU5	19.5	●			770
6			■	AU6	19.3	●	4.3 m - LL = 58.3% PL = 20.5% PI = 37.8%		769
7			■	AU7	21.6	●			768
8			■	AU8	18.9	●			767
9		...5.8 m - becoming ground up shale End of Borehole @6.1 m							766
									765

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	773.35m N 5609780.700 E 415726.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
	TOPSOIL								
1		SHALE (Weathered), residual soil, clay and silt, trace sand, completely weathered, dark brown to grey mottling, some oxidation staining, moist, high plastic, extremely weak to hard soil, thinly laminated, suspect white sulphate inclusions	■	AU1	25.4	●	0.6 m - Sand = 4.1% Silt = 39.0% Clay = 56.9%		773
			■	AU2	24.0	┤	1.2 m - LL = 78.3% PL = 15.5% PI = 62.8%		772
2			■	AU3	23.9	●			771
3			■	AU4	20.9	●			770
4			■	AU5	22.5	●			769
5		...4.5 m - becoming some ground up shale inclusions, becoming medium plastic	■	AU6	20.6	●			768
6		...5.7 m - some bentonite inclusions	■	AU7	18.8	┤	5.2 m - LL = 42.6% PL = 24.7% PI = 17.9%		767
		End of Borehole @6.1 m	■	AU8	39.2	●			766
7									765
8									764
9									

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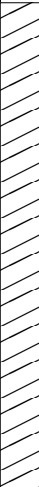


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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	771.90m N 5609767.200 E 416031.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)				REMARKS	Standpipe/ Instrument Elevation (m)	
						● MOISTURE CONTENT						
						┤ PLASTIC - LIQUID						
						■ SPT (N) Blows/300 mm						
						10	20	30	40			
						100	200	300	400			
						▲ POCKET PEN (kPa)						
1		CLAY TILL, silt, trace sand, dry, firm, high plastic, brown, suspect white sulphate inclusions		AU1	14.2		●				0.6 m - Sand = 2.0% Silt = 35.9% Clay = 62.1%	771
2			AU2	14.8		●		┤			1.2 m - LL = 70.2% PL = 22.1% PI = 48.1%	770
3			AU3	13.4		●						
4			AU4	14.4		●		┤			2.7 m - LL = 68.4% PL = 17.6% PI = 50.8%	769
5			AU5	12.6		●					2.7 m - Sand = 0.5% Silt = 47.4% Clay = 52.1%	768
6			AU6	14.7		●		┤			4.2 m - LL = 106.7% PL = 19.3% PI = 87.4%	767
7		4.2 m - trace suspect bentonite seams End of Borehole @4.3 m									4.3 m - Auger refusal	766
8												765
9												764
												763
												762

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	GROUND ELEVATION	770.36m N 5609784.100 E 416335.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, sandy, some gravel, dry, firm, high plastic, light brown to brown, suspect white sulphate inclusions	■	AU1	11.6	●	0.6 m - Sand = 30.1% Silt = 38.6% Clay = 31.3%		770
			■	AU2	14.4	●	1.2 m - LL = 81.0% PL = 15.8% PI = 65.2%		769
2		SHALE (Weathered), clay and silt, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	16.6	●			768
3			■	AU4	17.8	●			767
4			■	AU5	19.1	●			766
5			■	AU6	21.0	●			765
6		...5.9 m - becoming some ground up shale End of Borehole @6.1 m	■	AU7	17.1	●	5.2 m - LL = 68.5% PL = 18.4% PI = 50.1%		764
7									763
8									762
9									761

Notes:

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BOREHOLE No : **22BH498**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/26/2022	COMPLETED	07/26/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	768.34m	N 5609775.600 E 416635.100
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, sand, silty, some gravel, some cobbles, trace sand, damp, stiff, medium plastic, brown, suspect white sulphate inclusions	■	AU1	10.0	●	0.6 m - Gravel = 8.8%		768
		...1 m - becoming high plastic, no gravel, trace sand	■	AU2	16.0	●	0.6 m - Sand = 33.6%		
							Silt = 29.1%		767
							Clay = 28.5%		
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky	■	AU3	19.1	●	1.2 m - LL = 72.4%		766
			■	AU4	19.7	●	PL = 22.3%		
							PI = 50.1%		
3							2.7 m - Sand = 1.0%		765
							Silt = 43.6%		
							Clay = 55.4%		
4		...3.3 m - trace suspect bentonite seams	■	AU5	20.1	●	3.7 m - LL = 97.1%		764
			■	AU6	21.9	●	PL = 17.7%		
							PI = 79.4%		
5			■	AU7	18.7	●	3.7 m - Sand = 1.2%		763
			■	AU8	18.8	●	Silt = 42.0%		
							Clay = 56.8%		
							4.3 m - LL = 99.2%		762
							PL = 15.9%		
							PI = 83.3%		
6		End of Borehole @6.1 m							761
7									760
8									759
9									

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BOREHOLE No : **22BH505**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	783.13m N 5611636.700 E 414344.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, damp, firm, high plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	7.9	●	1 m - Dispersivity Classification = ND2 1 m - LL = 52.8% PL = 16.3% PI = 36.5%		783
2		...2.5 m - becoming some completely weathered mudstone	■	AU2	12.8	●	2.5 m - Gravel = 1.8% 2.5 m - Sand = 5.3% Silt = 44.4% Clay = 48.5%		782
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, medium plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU3	11.0	●	4 m - LL = 41.7% PL = 13.7% PI = 28.0% 4 m - Sand = 2.1% Silt = 54.1% Clay = 43.8%		781
4			■	AU4	13.9	●			780
5									779
6		End of Borehole @6.1 m							778
7									777
8									776
9									775
									774

Notes:

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BOREHOLE No : **22BH506**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	779.50m N 5611636.200 E 414440.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, trace gravel, dry, firm, medium plastic, brown, trace oxidation staining, suspect white sulphate inclusions	■	AU1	8.3	●	1 m - LL = 46.6% PL = 16.3% PI = 30.3%		779
2			■	AU2	12.7	●	2.5 m - Sand = 2.7% Silt = 63.1% Clay = 34.2%		778
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, light brown to dark grey mottling, some oxidation staining, dry, medium plastic, extremely weak to hard soil, ground up	■	AU3	12.9	●	4 m - LL = 42.8% PL = 22.8% PI = 20.0%		777
4			■	AU4	14.1	●	5 m - Sand = 5.1% Silt = 50.9% Clay = 44.0%		776
5		End of Borehole @5.2 m					5.2 m - Auger refusal		775
6									774
7									773
8									772
9									771
									770

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BOREHOLE No : **22BH511**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	782.69m N 5611509.800 E 414357.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, trace gravel, dry, firm, medium plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	10.3	●	1 m - Sand = 12.8% Silt = 43.8% Clay = 43.4%		782
2									781
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark brown to grey with oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU2	14.5	●	2.5 m - LL = 50.8% PL = 13.3% PI = 37.5%		780
4			■	AU3	16.0	●	4 m - LL = 48.0% PL = 19.4% PI = 28.6% 4 m - Sand = 3.6% Silt = 44.4% Clay = 52.0%		779
5									778
6			■	AU4	16.4	●	5.5 m - LL = 54.3% PL = 22.4% PI = 31.9%		777
6		End of Borehole @6.1 m							776
7									775
8									774
9									773

Notes:

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BOREHOLE No : **22BH512**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/25/2022	COMPLETED	07/25/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	781.01m N 5611551.800 E 414443.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SAND, some silt, trace clay, poorly graded, fine grained, sub-rounded, dry, loose, light brown							
1.3		CLAY TILL, silty, some sand, some completely weathered shale inclusions, dry, firm, medium plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	1.3	●			780
2									779
2.5		...3 m - becoming more weathered shale	■	AU2	10.9	●	2.5 m - Sand = 2.2% Silt = 58.6% Clay = 39.2%		778
3									777
4		SHALE (Weathered), silt and clay, some sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, medium plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU3	12.3	●	4 m - LL = 42.8% PL = 20.7% PI = 22.1%		776
5									775
5.5			■	AU4	13.5	●	5.5 m - Sand = 13.2% Silt = 57.0% Clay = 29.8%		774
6		End of Borehole @6.1 m							773
7									772
8									
9									

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	780.28m N 5611524.800 E 414547.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, dry, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	8.9	●	1 m - Gravel = 1.5% 1 m - Sand = 14.8% Silt = 46.1% Clay = 37.6%		780
2									779
3		SHALE (Weathered), clay and silt, dark brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, thinly laminated, suspect white sulphate inclusions	■	AU2	14.6	●	2.5 m - LL = 50.5% PL = 18.2% PI = 32.3%		778
4		...4 m - some bentonite seams	■	AU3	21.6	●	4 m - EC: 8.2 dS/m 4 m - SAR: 17.1 4 m - pH: 7.2 4 m - LL = 63.5% PL = 17.6% PI = 45.9%		777
5									776
6			■	AU4	13.4	●	4 m - Sand = 5.9% Silt = 61.4% Clay = 32.7% 5.5 m - LL = 48.1% PL = 17.2% PI = 30.9%		775
7		End of Borehole @6.1 m							774
8									773
9									772
									771

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	778.25m N 5611542.200 E 414652.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, clayey, silty, trace gravel, damp, firm, low to medium plastic, light brown	■	AU1	12.7	●	1 m - LL = 48.8% PL = 15.8% PI = 33.0%		778
2		SHALE (Weathered), clay and silt, trace silt, completely weathered, dark brown to grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, trace suspect white sulphate inclusions	■	AU2	16.0	●	2.5 m - Sand = 1.4% Silt = 47.5% Clay = 51.1%		777
3									776
4			■	AU3	14.1	●	4 m - LL = 50.2% PL = 17.7% PI = 32.5%		775
5		...5 m - becoming very weak, some sand	■	AU4	13.2	●	5.5 m - Sand = 11.0% Silt = 41.2% Clay = 47.8%		774
6		End of Borehole @6.1 m							773
7									772
8									771
9									770
									769

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	775.46m N 5611523.600 E 414758.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, damp, stiff, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	9.5	●			775
2		SHALE (Weathered), silt and clay, some sand, completely weathered, grey, some oxidation staining, damp, medium plastic, very weak, blocky, suspect white sulphate inclusions ...1.6 m - red ironstone staining	■	AU2	13.6	●	2.5 m - LL = 49.4% PL = 15.6% PI = 33.8%		774
3									773
4			■	AU3	13.9	●	4 m - LL = 46.6% PL = 15.2% PI = 31.4% 4 m - Sand = 10.9% Silt = 49.6% Clay = 39.5% 4.3 m - Auger refusal		772
5		End of Borehole @4.3 m							771
6									770
7									769
8									768
9									767
									766

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	772.12m N 5611541.300 E 414838.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace gravel, damp, stiff, high plastic, brown, some oxidation staining, red ironstone staining	■	AU1	19.5	●	1 m - LL = 55.4% PL = 22.3% PI = 33.1%		772
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak, thinly laminated, trace gypsum crystals, trace quartz crystals	■	AU2	17.7	●	2.5 m - LL = 50.7% PL = 17.3% PI = 33.4% 2.5 m - Sand = 5.6% Silt = 63.7% Clay = 30.7%		771
3		...3.5 m - becoming some ground up shale inclusions							770
4			■	AU3	20.9	●	4 m - LL = 65.6% PL = 21.1% PI = 44.5%		769
5		SHALE, silt and clay, some sand, completely weathered, grey, damp, medium plastic, very weak	■	AU4	14.8	●	5.5 m - Sand = 3.6% Silt = 57.6% Clay = 38.8%		768
6		End of Borehole @6.1 m							767
7									766
8									765
9									764
									763

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	782.36m N 5611409.600 E 414392.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, dry, firm, medium plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	4.7	●			782
2		...2 m - becoming damp, stiff, high plastic							781
3		...2.5 m - coal staining	■	AU2	14.5	● ┤	2.5 m - LL = 55.1% PL = 18.6% PI = 36.5%		780
4		SHALE (Weathered), clay and silt, some sand, completely weathered, light brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU3	15.1	● ┤	4 m - LL = 51.9% PL = 18.5% PI = 33.4% 4 m - Sand = 2.4% Silt = 48.8% Clay = 48.8%		779
5									778
6			■	AU4	16.4	● ┤	5.5 m - LL = 51.2% PL = 17.6% PI = 33.6%		777
7		End of Borehole @6.1 m							776
8									775
9									774
									773

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	782.78m N 5611425.700 E 414432.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty sandy, trace gravel, trace sand, dry to damp, stiff, medium plastic, light brown, some oxidation staining, suspect white sulphate inclusions, trace coal staining	■	AU1	11.5	●	1 m - LL = 44.2% PL = 16% PI = 28.2%		782
2			■	AU2	11.8	●	2.5 m - Gravel = 7.4% 2.5 m - Sand = 24.4% Silt = 30.6% Clay = 37.6%		781
3									780
4		SHALE (Weathered), silt and clay, some sand, completely weathered, brown to grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU3	13.5	●	4 m - LL = 49.1% PL = 16.7% PI = 32.4%		779
5									778
6		End of Borehole @5.6 m	■	AU4	12.6	●	5.5 m - Sand = 3.4% Silt = 60.5% Clay = 36.1% 5.6 m - Auger refusal		777
7									776
8									775
9									774
									773

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	779.48m N 5611439.700 E 414530.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SAND, some silt, poorly graded, fine grained, sub-rounded, damp, loose, light brown	■	AU1	12.0	●	1 m - Sand = 11.4% Silt = 46.8% Clay = 41.8%		779
2		CLAY TILL, silty, some sand, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■						778
3		SHALE (Weathered), silt and clay, some sand, completely weathered, grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil	■	AU2	13.0	● ┤	2.5 m - LL = 45.7% PL = 18.7% PI = 27.0%		777
4			■	AU3	12.8	● ┤	4 m - LL = 46.1% PL = 16.2% PI = 29.9%		776
5			■				4 m - Sand = 4.4% Silt = 60.2% Clay = 35.4%		775
6			■	AU4	14.4	● ┤	5.5 m - LL = 45.8% PL = 19.1% PI = 26.7%		774
6		End of Borehole @6.1 m							773
7									772
8									771
9									770

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.41m N 5611432.200 E 414639.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, some silt, trace clay, poorly graded, fine grained, sub-rounded, damp, loose, light brown	■	AU1	10.1	●	1 m - LL = 38.7% PL = 15.6% PI = 23.1%		781
2		CLAY TILL, silty, some sand, some gravel, some completely weathered mudstone inclusions, damp, firm, medium plastic, brown, some oxidation staining	■	AU2	13.8	●	2.5 m - LL = 51.7% PL = 17.3% PI = 34.4%		780
3		SHALE (Weathered), silt and clay, some sand, ironstone inclusions, highly weathered, grey, some oxidation staining, damp, medium plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU3	11.7	●	2.5 m - Gravel = 9.9% 2.5 m - Sand = 9.4% Silt = 39.0% Clay = 41.7%		779
4			■	AU4	13.2	●	4 m - LL = 43.0% PL = 13.8% PI = 29.2%		778
5									777
6		End of Borehole @6.1 m					5.5 m - Sand = 6.8% Silt = 49.0% Clay = 44.2%		776
7									775
8									774
9									773
									772

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	778.85m N 5611432.000 E 414747.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, silty, some clay, poorly graded, fine grained, sub-rounded, damp, very loose, light brown	■	AU1	3.9	●	1 m - Sand = 61.8% Silt = 24.7% Clay = 13.5%		778
2		CLAY TILL, silty, some sand, trace gravel, damp, stiff, medium plastic, brown, some oxidation staining	■	AU2	10.8	● ┤	2.5 m - LL = 45.6% PL = 15.3% PI = 30.3%		777
3		SHALE (Weathered), silt, clayey, sandy, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak, thinly laminated, trace gypsum crystals	■	AU3	14.0	● ┤	4 m - LL = 50.3% PL = 18.4% PI = 31.9% 4 m - Sand = 26.2% Silt = 40.0% Clay = 33.8%		776
4			■	AU4	13.9	● ┤	5.5 m - LL = 44.2% PL = 17.5% PI = 26.7%		775
5									774
6		End of Borehole @6.1 m							773
7									772
8									771
9									770
									769

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	776.23m N 5611428.500 E 414842.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, damp, firm to stiff, medium plastic, brown, trace gypsum crystals	■	AU1	13.4	●	1 m - LL = 49.1% PL = 17.4% PI = 31.7%		776
2		SHALE (Weathered), silt and clay, some sand, highly weathered, dark brown to grey, some oxidation staining, damp, medium plastic, very weak, trace gypsum crystals	■	AU2	12.5	●	2.5 m - Sand = 13.2% Silt = 50.6% Clay = 36.2%		775
3									774
4			■	AU3	16.7	●	4 m - LL = 46.5% PL = 20.6% PI = 25.9%		773
5		...4.5 m - fine grained sand lenses, trace sand							772
6			■	AU4	18.1	●	5.5 m - Sand = 3.1% Silt = 52.8% Clay = 44.1%		771
6		End of Borehole @6.1 m							770
7									769
8									768
9									767

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	780.53m N 5611331.900 E 414345.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, moist, firm, medium plastic, dark brown, trace oxidation staining, suspect white sulphate inclusions, trace gypsum crystals, trace salt lenses	■	AU1	14.6	●	1 m - Sand = 13.6% Silt = 29.7% Clay = 56.7%		780
2		SHALE (Weathered), clayey, silty, trace sand, completely weathered, dark brown to grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, trace gypsum crystals	■	AU2	15.3	●	2.5 m - LL = 54.1% PL = 19.2% PI = 34.9%		779
3									778
4			■	AU3	15.4	●	4 m - Sand = 3.8% Silt = 49.2% Clay = 47.0%		777
5		SHALE, clayey, some silt, completely weathered, grey, damp, high plastic, very weak	■	AU4	12.5	●	5.5 m - LL = 55.1% PL = 18.8% PI = 36.3%		776
6		End of Borehole @6.1 m							775
7									774
8									773
9									772
									771

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.97m N 5611337.400 E 414449.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, silty, trace clay, poorly graded, fine grained, sub-rounded, damp, loose, brown	■	AU1	9.4	●	1 m - LL = 51.0% PL = 16.3% PI = 34.7%		781
2		CLAY TILL, silt, some sand, some gravel, damp, firm, high plastic, brown, some oxidation staining, suspect white sulphate inclusions, trace coal staining	■	AU2	13.3	●	2.5 m - Gravel = 1.8% 2.5 m - Sand = 11.9% Silt = 40.9% Clay = 45.4%		780
3		SHALE (Weathered), clay and silt, some sand, completely weathered, brown to dark grey mottling, some oxidation staining, damp, high plastic, extremely weak, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	13.4	●	4 m - LL = 50.5% PL = 19.7% PI = 30.8%		779
4		...4.5 m - becoming very weak	■	AU4	14.6	●	5.5 m - Sand = 2.4% Silt = 48.7% Clay = 48.9%		778
5									777
6		End of Borehole @6.1 m							776
7									775
8									774
9									773

Notes:

SW Borrow. Backfilled with bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH525**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	779.75m N 5611328.400 E 414545.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, trace gravel, dry, firm, medium plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	14.6	●	1 m - Sand = 1.9% Silt = 80.9% Clay = 17.2%		779
2		SHALE (Weathered), silt and clay, trace sand, highly weathered, grey with oxidation staining, damp, medium plastic, extremely weak, thinly laminated, suspect white sulphate inclusions	■	AU2	13.3	● ┤	2.5 m - LL = 47.0% PL = 15.9% PI = 31.1%		778
3									777
4			■	AU3	14.9	● ┤	4 m - LL = 44.8% PL = 18.6% PI = 26.2% 4 m - Sand = 5.6% Silt = 64.5% Clay = 29.9%		776
5									775
6			■	AU4	11.9	● ┤	5.5 m - LL = 49.9% PL = 19.2% PI = 30.7%		774
7		End of Borehole @6.1 m							773
8									772
9									771
									770

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH526**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.05m N 5611348.200 E 414666.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SAND, some silt, poorly graded, fine grained, sub-rounded, damp, loose, light brown	■	AU1		11.9	1 m - LL = 42.4% PL = 16.7% PI = 25.7%		780
2		CLAY TILL with completely weathered shale, silty, some sand, some gravel, damp, stiff, medium to high plastic, dark brown to dark grey mottling, some oxidation staining	■	AU2		13.1	2.5 m - Dispersivity Classification = D2 2.5 m - Sand = 11.1% Silt = 41.0% Clay = 47.9%		779
3									778
4			■	AU3		12.9	4 m - LL = 48.6% PL = 16.7% PI = 31.9% 4 m - Sand = 4.3% Silt = 52.5% Clay = 43.2%		777
5		SHALE (Weathered), clayey, silty, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak, blocky							776
6		End of Borehole @6.1 m							775
7									774
8									773
9									772

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH527**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	780.89m N 5611322.200 E 414764.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		SAND, silty, some clay, poorly graded, fine grained, sub-rounded, dry, very loose, light brown	■	AU1	2.6	●	1 m - Sand = 68.9% Silt = 19.6% Clay = 11.5%		780
2		CLAY TILL, silty, some sand, trace gravel, damp, stiff, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU2	13.2	● ┤	2.5 m - LL = 49.3% PL = 16.9% PI = 32.4%		779
3									778
4			■	AU3	12.6	● ┤	4 m - EC: 3.3 dS/m 4 m - SAR: 4.0 4 m - pH: 7.4 4 m - LL = 42.0% PL = 15.9% PI = 26.1%		777
5									776
6		End of Borehole @5.8 m	■	AU4	13.5	● ┤	4 m - Sand = 4.0% Silt = 48.7% Clay = 47.3% 5.5 m - LL = 42.0% PL = 16.4% PI = 25.6% 5.8 m - Auger refusal due to calcified shale		775
7									774
8									773
9									772
									771

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH528**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	777.93m N 5611338.700 E 414849.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SAND, silty, poorly graded, fine grained, sub-rounded, dry, very loose, light brown	■	AU1	10.3	●	1 m - LL = 42.2% PL = 16.2% PI = 26.0%		777
2		CLAY TILL, silty, some sand, dry, medium plastic, brown, some oxidation staining							776
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky	■	AU2	14.5	●	2.5 m - Sand = 4.5% Silt = 51.8% Clay = 43.7%		775
4		End of Borehole @3.7 m	■	AU3	12.7	●	3.5 m - LL = 40.3% PL = 19.5% PI = 20.8% 3.7 m - Auger refusal due to calcified shale		774
5									773
6									772
7									771
8									770
9									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH529**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	780.23m N 5611246.700 E 414339.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, moist, firm, medium plastic, dark brown, suspect white sulphate inclusions	■	AU1	19.3	●	1 m - Sand = 10.6% Silt = 33.4% Clay = 56.0%		780
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	17.4	●	2.5 m - LL = 56.7% PL = 21.4% PI = 35.3%		779
3									778
4			■	AU3	17.4	●	4 m - LL = 55.2% PL = 19.6% PI = 35.6% 4 m - Sand = 4.9% Silt = 43.7% Clay = 51.4%		777
5		SHALE, clay and silt, trace sand, medium weathered, grey, damp, high plastic, very weak	■	AU4	12.4	●	5.5 m - LL = 57.3% PL = 21.8% PI = 35.5%		776
6		End of Borehole @6.1 m							775
7									774
8									773
9									772
									771

Notes:

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BOREHOLE No : **22BH530**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.01m N 5611240.000 E 414451.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, moist, firm, high plastic, dark brown, some oxidation staining, suspect white sulphate inclusions, trace coal staining, trace gypsum crystals	■	AU1	16.8	●	1 m - LL = 57.9% PL = 13.8% PI = 44.1%		780
2			■	AU2	17.7	●	2.5 m - Gravel = 3.7% 2.5 m - Sand = 18.5% Silt = 36.7% Clay = 41.1%		779
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, thinly laminated, suspect white sulphate inclusions	■	AU3	18.2	●	4 m - LL = 54.0% PL = 17.9% PI = 36.1%		778
4		...3.1 m - trace SEEPAGE	■	AU4	15.0	●	5.5 m - Sand = 1.4% Silt = 40.0% Clay = 58.6%		777
5									776
6		End of Borehole @6.1 m							775
7									774
8									773
9									772

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH531**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	780.41m N 5611243.300 E 414544.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, trace gravel, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	9.6	●	1 m - Sand = 10.1% Silt = 43.0% Clay = 46.9%		780
2		SHALE (Weathered), silt and clay, trace sand, highly weathered, dark brown to dark grey mottling, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky	■	AU2	13.7	●	2.5 m - LL = 47.1% PL = 19.7% PI = 27.4%		779
3									778
4			■	AU3	17.2	●	4 m - LL = 52.9% PL = 17% PI = 35.9% 4 m - Sand = 1.3% Silt = 49.8% Clay = 48.9%		777
5									776
6			■	AU4	15.9	●	5.5 m - LL = 48.7% PL = 16.2% PI = 32.5%		775
6		End of Borehole @6.1 m							774
7									773
8									772
9									771

Notes:

SW Borrow search. Backfilled with bentonite.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH532**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	778.63m N 5611253.200 E 414634.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	775.07 m	3.56 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	08/10/2022		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)		
1		CLAY TILL, silty, trace gravel, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	10.7	●	1 m - LL = 41.6% PL = 18.7% PI = 22.9%	778
2		SHALE (Weathered), silt, clayey, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU2	16.1	●	2.5 m - Sand = 2.7% Silt = 65.1% Clay = 32.2%	777
3								776
4			■	AU3	15.2	●	4 m - LL = 53.5% PL = 17.4% PI = 36.1%	775
5								774
6		End of Borehole @6.1 m	■	AU4	16.9	●		773
7								772
8								771
9								770
								769

Notes:

SW Borrow search. Standpipe installed to 6.1 m. Backfilled with sand and bentonite.

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BOREHOLE No : **22BH533**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	780.69m N 5611233.600 E 414752.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some completely weathered SHALE (Weathered), trace gravel, trace sand, dry, firm, medium plastic, light brown, some oxidation staining	■	AU1	10.7	●	1 m - EC: 5.8 dS/m 1 m - SAR: 6.0 1 m - pH: 7.7 1 m - LL = 45.6% PL = 15.1% PI = 30.5%		780
2									779
3		SHALE (Weathered), clay and silt, sandy, trace gravel, completely weathered, dark brown to grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, trace coal staining, suspect white sulphate inclusions	■	AU2	11.2	●	2.5 m - Gravel = 1.0% 2.5 m - Sand = 26.5% Silt = 35.9% Clay = 36.6%		778
4									777
5									776
6		BENTONITE (5.6 m), 100 mm layer SHALE (Weathered), "..."	■	AU4 AU5	13.7 38.0	●	5.6 m - LL = 107.9% PL = 31% PI = 76.9%		775
7		End of Borehole @6.1 m							774
8									773
9									772
									771

Notes:

SW Borrow search. Backfilled with bentonite.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH534**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	780.53m	N 5611229.100 E 414847.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, some gravel, some completely weathered shale, trace sand, dry, stiff, medium plastic, brown with oxidation specs	■	AU1	10.0	●	1 m - LL = 44.9% PL = 13.8% PI = 31.1%		780
2			■	AU2	12.0	●	2.5 m - Gravel = 7.1% 2.5 m - Sand = 10.6% Silt = 47.7% Clay = 34.6%		779
3									778
4		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, medium, extremely weak, thinly laminated, suspect white sulphate inclusions, trace gypsum crystals	■	AU3	11.2	●	4 m - LL = 46.1% PL = 15.1% PI = 31.0%		777
5			■	AU4	13.8	●	5.5 m - Sand = 3.1% Silt = 40.5% Clay = 56.4%		776
6		End of Borehole @6.1 m							775
7									774
8									773
9									772
									771

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH535**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.50m N 5611126.800 E 414348.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, trace gravel, damp, stiff, medium plastic, brown, trace oxidation staining	■	AU1	12.2	●	1 m - Sand = 3.6% Silt = 50.1% Clay = 46.3%		781
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU2	17.1	●	2.5 m - LL = 55.0% PL = 18.6% PI = 36.4%		780
3									779
4			■	AU3	17.3	●	4 m - LL = 52.4% PL = 17.2% PI = 35.2% 4 m - Sand = 2.3% Silt = 44.6% Clay = 53.1%		778
5									777
6			■	AU4	15.1	●	5.5 m - LL = 48.5% PL = 18.1% PI = 30.4%		776
6.1		End of Borehole @6.1 m							775
7									774
8									773
9									772

Notes:

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BOREHOLE No : **22BH536**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	780.95m N 5611135.300 E 414451.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, trace sand, damp to moist, firm, medium plastic, brownish red, some oxidation staining, suspect white sulphate inclusions, trace gypsum crystals	■	AU1	12.7	●	1 m - LL = 42.3% PL = 13.5% PI = 28.8%		780
2		...1.4 m - 900 mm layer of ironstone staining							779
3		SHALE (Weathered), silt and clay, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak, blocky, trace gypsum crystals	■	AU2	13.9	●			778
4			■	AU3	12.3	●	4 m - LL = 53.4% PL = 16.5% PI = 36.9%		777
5									776
6			■	AU4	16.6	●	5.5 m - Sand = 1.4% Silt = 50.6% Clay = 48.0%		775
7		End of Borehole @6.1 m							774
8									773
9									772

Notes:

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BOREHOLE No : **22BH537**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.36m N 5611133.500 E 414550.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, some gravel, dry, firm, medium plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	11.3	●	1 m - Sand = 4.9% Silt = 54.7% Clay = 40.4%		781
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, dark brown to grey with oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions	■	AU2	10.9	● ┤	2.5 m - LL = 46.7% PL = 16.7% PI = 30.0%		780
3									779
4			■	AU3	11.5	● ┤	4 m - LL = 42.0% PL = 20.8% PI = 21.2% 4 m - Sand = 2.3% Silt = 57.6% Clay = 40.1%		778
5		...4.5 m - becoming high plastic							777
6			■	AU4	24.2	┤ ●	5.5 m - LL = 50.4% PL = 19.3% PI = 31.1%		776
7		End of Borehole @6.1 m							775
8									774
9									773
									772

Notes:

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BOREHOLE No : **22BH539**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	779.52m N 5611142.500 E 414783.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, some gravel, dry, firm, medium plastic, light brown with oxidation specs, some gypsum crystals	■	AU1	8.5	●	1 m - Gravel = 4.1% 1 m - Sand = 21.2% Silt = 38.8% Clay = 35.9%		779
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, brown to dark grey mottling, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, trace coal staining, some gypsum crystals	■	AU2	12.8	● ┤	2.5 m - LL = 48.1% PL = 15.9% PI = 32.2%		778
3									777
4			■	AU3	12.9	● ┤	4 m - LL = 50.6% PL = 16.7% PI = 33.9% 4 m - Sand = 11.8% Silt = 45.5% Clay = 42.7%		776
5									775
6		...5.5 m - some white sulphate inclusions	■	AU4	17.2	● ┤	5.5 m - LL = 54.1% PL = 16.7% PI = 37.4%		774
7		End of Borehole @6.1 m							773
8									772
9									771
									770

Notes:

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BOREHOLE No : **22BH540**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	779.70m N 5611127.700 E 414844.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace gravel, dry, firm, medium plastic, light brown	■	AU1	8.6	●	1 m - LL = 45.4% PL = 16.3% PI = 29.1%		779
2		...1.5 m - becoming some completely weathered shale							778
3		SHALE (Weathered), clay and silt, some sand, trace gravel, completely weathered, dark brown to grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky, trace coal staining	■	AU2	12.8	●	2.5 m - Gravel = 4.3% 2.5 m - Sand = 13.5% Silt = 40.8% Clay = 41.4%		777
4			■	AU3	15.0	●	4 m - LL = 46.5% PL = 14.6% PI = 31.9%		776
5									775
6		...5.6 m - some fine grained sand lenses and quartz crystals	■	AU4	18.5	●	5.5 m - Sand = 18.6% Silt = 53.9% Clay = 27.5%		774
7		End of Borehole @6.1 m							773
8									772
9									771
									770

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.13m N 5611030.500 E 414350.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, trace gravel, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	16.6	●	1 m - Sand = 0.7% Silt = 44.2% Clay = 55.1%		781
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, moist, medium to high plastic, extremely weak, thinly laminated, suspect white sulphate inclusions	■	AU2	16.0	●	2.5 m - LL = 48.8% PL = 18.1% PI = 30.7%		780
3									779
4			■	AU3	17.6	●	4 m - LL = 52.1% PL = 19.0% PI = 33.1% 4 m - Sand = 2.9% Silt = 40.8% Clay = 56.3%		778
5									777
6		SHALE, clay, silty, completely weathered, grey, damp, high plastic, very weak	■	AU4	14.7	●	5.5 m - LL = 51.3% PL = 18.6% PI = 32.7%		776
7		End of Borehole @6.1 m							775
8									774
9									773
									772

Notes:

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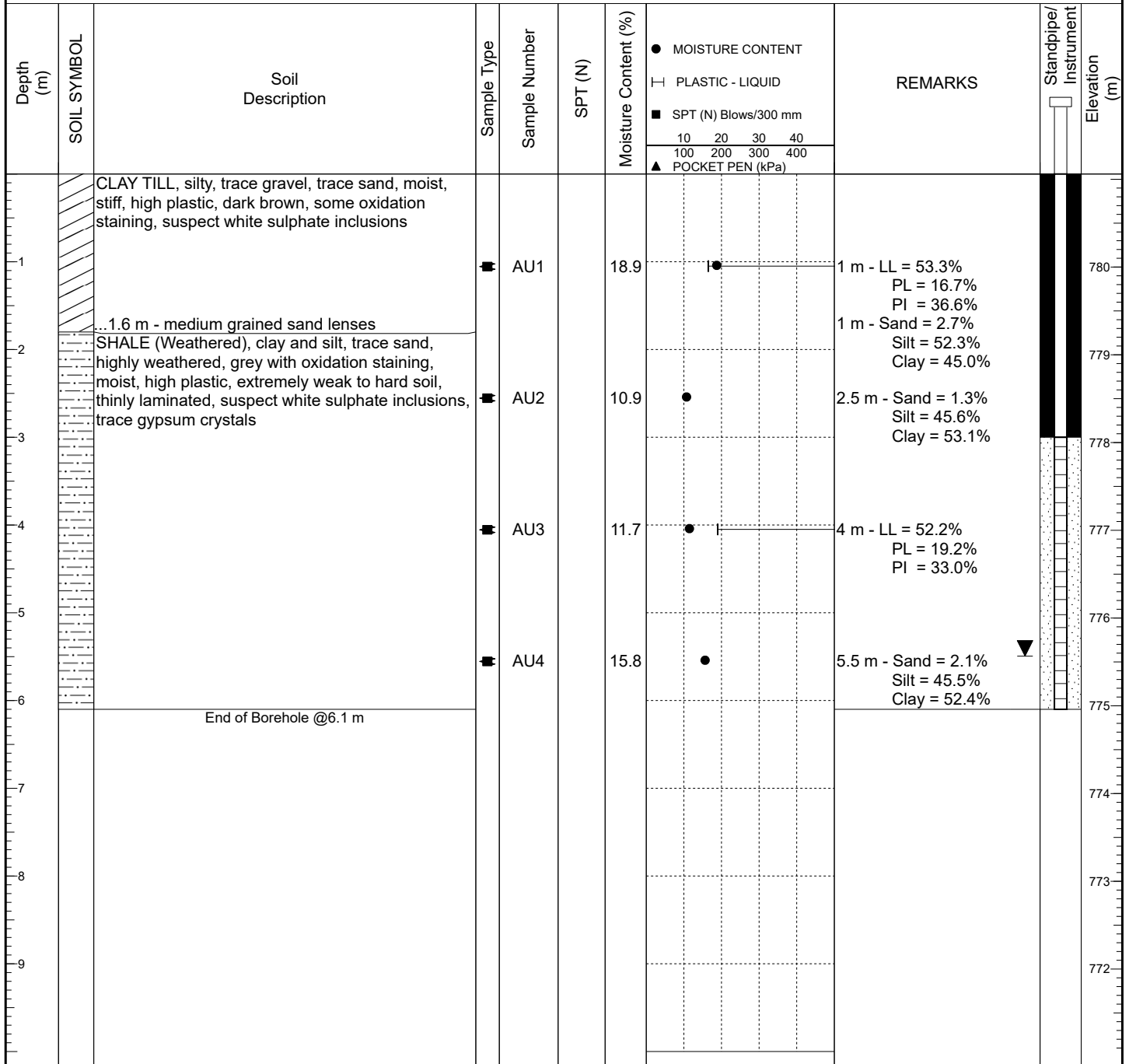


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BOREHOLE No : **22BH542**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.06m N 5611037.200 E 414455.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	775.65 m	5.41 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	08/10/2022		



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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/25/2022	COMPLETED	07/25/2022	GROUND ELEVATION	781.39m N 5611046.400 E 414538.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, some gravel, dry, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	10.0	●	1 m - Gravel = 11.0% 1 m - Sand = 16.3% Silt = 37.8% Clay = 34.9%		781
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, dark brown to grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, suspect white sulphate inclusions	■	AU2	14.8	■	2.5 m - LL = 47.5% PL = 13.8% PI = 33.7%		780
3									779
4			■	AU3	12.3	■	4 m - LL = 49.3% PL = 13.6% PI = 35.7% 4 m - Sand = 1.7% Silt = 54.2% Clay = 44.1%		778
5									777
6			■	AU4	12.9	●	5.5 m - LL = 44.1% PL = 15.5% PI = 28.6%		776
6		End of Borehole @6.1 m							775
7									774
8									773
9									772

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/21/2022	COMPLETED	07/21/2022	GROUND ELEVATION	778.22m N 5611038.200 E 414839.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, damp, stiff, medium plastic, brown, some oxidation staining, trace suspect white sulphate inclusions	■	AU1	10.1	●	1 m - LL = 36.7% PL = 13.2% PI = 23.5%		778
2		SHALE (Weathered), residual soil, clayey, silty, completely weathered, brown with grey mottling, some oxidation staining, damp, medium plastic, extremely weak to hard soil	■	AU2	16.1	●			777
3									776
4			■	AU3	19.4	●	4 m - LL = 44.9% PL = 18.8% PI = 26.1%		775
5									774
6		SHALE, silt and clay, trace sand, completely weathered, grey, trace brown mottling, damp, high plastic, extremely weak, blocky	■	AU4	18.4	●	5.5 m - Sand = 3.1% Silt = 58.2% Clay = 38.7%		773
6		End of Borehole @6.1 m							772
7									771
8									770
9									769

Notes:

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	780.40m N 5610939.400 E 414336.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace gravel, some fine grained sand lenses throughout, damp, stiff, medium plastic, dark brown, some oxidation staining	■	AU1	17.0	●	1 m - Sand = 5.8% Silt = 53.2% Clay = 41.0%		780
2		...2 m - becoming some completely weathered mudstone inclusions	■	AU2	14.3	●	2.5 m - LL = 45.4% PL = 18.4% PI = 27.0%		779
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, medium plastic, extremely weak, blocky	■	AU3	11.2	●	4 m - LL = 49.2% PL = 15.5% PI = 33.7%		778
4			■	AU4	18.3	●	4 m - Sand = 3.1% Silt = 51.2% Clay = 45.7%		777
5		...5 m - becoming moist ...5.2 m - SEEPAGE End of Borehole @5.3 m	■				5 m - LL = 47.9% PL = 17.1% PI = 30.8%		776
6							5.3 m - Auger refusal		775
7									774
8									773
9									772
									771

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	780.50m N 5610917.900 E 414430.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace to some rounded gravel, damp, stiff, high plastic, dark brown, some oxidation staining, trace red staining	■	AU1	17.9	●	1 m - LL = 60.0% PL = 17% PI = 43.0%		780
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	17.2	■	2.5 m - EC: 9.6 dS/m 2.5 m - SAR: 20.0 2.5 m - pH: 7.0 2.5 m - LL = 51.2% PL = 18.2% PI = 33.0%		778
3							2.5 m - Sand = 2.8% Silt = 48.5% Clay = 48.7%		777
4			■	AU3	18.0	●	4 m - LL = 51.8% PL = 18.3% PI = 33.5%		776
5									
6			■	AU4	15.3	●	5.5 m - Sand = 2.2% Silt = 44.3% Clay = 53.5%		775
6		End of Borehole @6.1 m							774
7									773
8									772
9									771

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BOREHOLE No : **22BH549**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	780.04m N 5610925.500 E 414536.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, sandy, some gravel up to 30 mm, dry, firm, medium plastic, light brown, some oxidation staining	■	AU1	6.2	●	1 m - Gravel = 4.3% 1 m - Sand = 28.0% Silt = 37.3% Clay = 30.4%		779
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, dark brown to grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	16.5	■	2.5 m - LL = 52.4% PL = 17.6% PI = 34.8%		778
3									777
4			■	AU3	17.3	■	4 m - LL = 48.8% PL = 14.6% PI = 34.2% 4 m - Sand = 2.9% Silt = 47.1% Clay = 50.0%		776
5		SHALE, clay, silty, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak, thinly laminated	■	AU4	11.2	●	5.5 m - LL = 56.4% PL = 18.7% PI = 37.7%		775
6		End of Borehole @6.1 m							774
7									773
8									772
9									771

Notes:

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PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	780.22m N 5610940.800 E 414641.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, completely weathered mudstone inclusions, some medium grained sand lenses, trace gravel, damp to moist, stiff, medium plastic, dark brown, grey specs, some oxidation staining, trace gypsum crystals	■	AU1	14.9	●	1 m - LL = 46.4% PL = 15.9% PI = 30.5%		780
2		...2 m - increasing mudstone inclusions	■	AU2	18.4	●	2.5 m - Sand = 4.8% Silt = 44.9% Clay = 50.3%		779
3									778
4		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, trace oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU3	20.3	└	4 m - LL = 52.9% PL = 17.4% PI = 35.5%		777
5									776
6			■	AU4	16.6	●	5.5 m - Sand = 2.2% Silt = 54.4% Clay = 43.4%		775
		End of Borehole @6.1 m							774
7									773
8									772
9									771

Notes:

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BOREHOLE No : **22BH551**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.05m N 5610940.300 E 414770.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some gravel, trace sand, damp, firm, medium plastic, brown, trace oxidation staining	■	AU1	18.4	●	1 m - Sand = 4.4% Silt = 42.6% Clay = 53.0%		778
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brownish grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky	■	AU2	18.2	●	2.5 m - LL = 45.6% PL = 15.2% PI = 30.4%		777
3									776
4			■	AU3	16.4	●	4 m - LL = 53.7% PL = 18.3% PI = 35.4%		775
5		...5 m - becoming grey, ground up shale inclusions					4 m - Sand = 5.5% Silt = 40.0% Clay = 54.5%		774
6			■	AU4	17.2	●	5.5 m - LL = 49.5% PL = 19.6% PI = 29.9%		773
		End of Borehole @6.1 m							
7									772
8									771
9									770

Notes:

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BOREHOLE No : **22BH552**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.54m N 5610931.900 E 414849.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, some gravel up to 30 mm, some completely weathered shale inclusions, trace larger cobbles, damp, firm to stiff, medium plastic, dark brown, some oxidation staining	■	AU1	9.3	●	1 m - LL = 32.4% PL = 12.9% PI = 19.5%		779
2			■	AU2	17.0	●	2.5 m - Gravel = 7.5% 2.5 m - Sand = 13.5% Silt = 42.6% Clay = 36.4%		777
3		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU3	16.9	●	4 m - LL = 53.4% PL = 18.4% PI = 35.0%		776
4			■	AU4	18.4	●	5.5 m - Sand = 2.1% Silt = 46.2% Clay = 51.7%		774
6		End of Borehole @6.1 m							773
7									772
8									771
9									770

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16
DATE STARTED	07/07/2022	COMPLETED	07/07/2022
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	779.99m N 5610840.100 E 414350.900
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	
		DATE GROUND WATER RECORDED	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace fine gravel, trace sand lenses, moist, stiff, medium to high plastic, dark brown, some oxidation staining	■	AU1	19.4	●	1 m - Sand = 6.5% Silt = 34.8% Clay = 58.7%		779
2			■	AU2	26.9	┤ ●	2.5 m - LL = 52.9% PL = 15.3% PI = 37.6%		778
3		SHALE, clay and silt, trace sand, highly weathered, grey with oxidation staining, damp, high plastic, extremely weak, thinly laminated					2.5 m - Sand = 13.0% Silt = 38.4% Clay = 48.6%		777
4			■	AU3	15.5	●			776
5									775
6		End of Borehole @6.1 m	■	AU4	17.4	●	5.5 m - LL = 62.2% PL = 19.0% PI = 43.2%		774
7									773
8									772
9									771

Notes:

SW Borrow search. Backfilled with bentonite.

Logged By: C. Tams

Reviewed By: T. Curtis



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BOREHOLE No : **22BH554**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.77m N 5610834.400 E 414445.200
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some completely weathered shale inclusions, silty, trace sand, damp, stiff, medium plastic, dark brown, some oxidation staining	■	AU1	17.8	●	1 m - LL = 52.7% PL = 17.5% PI = 35.2%		779
2		SHAILE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, thinly laminated, trace gypsum crystals	■	AU2	18.3	●	2.5 m - Sand = 2.3% Silt = 44.8% Clay = 52.9%		778
3									777
4			■	AU3	17.8	●	4 m - LL = 52.3% PL = 19.2% PI = 33.1%		776
5		...5 m - becoming ground up shale inclusions							775
6			■	AU4	16.1	●	5.5 m - Sand = 1.3% Silt = 46.1% Clay = 52.6%		774
		End of Borehole @6.1 m							773
7									772
8									771
9									770

Notes:

SW Borrow search. Backfilled with bentonite.

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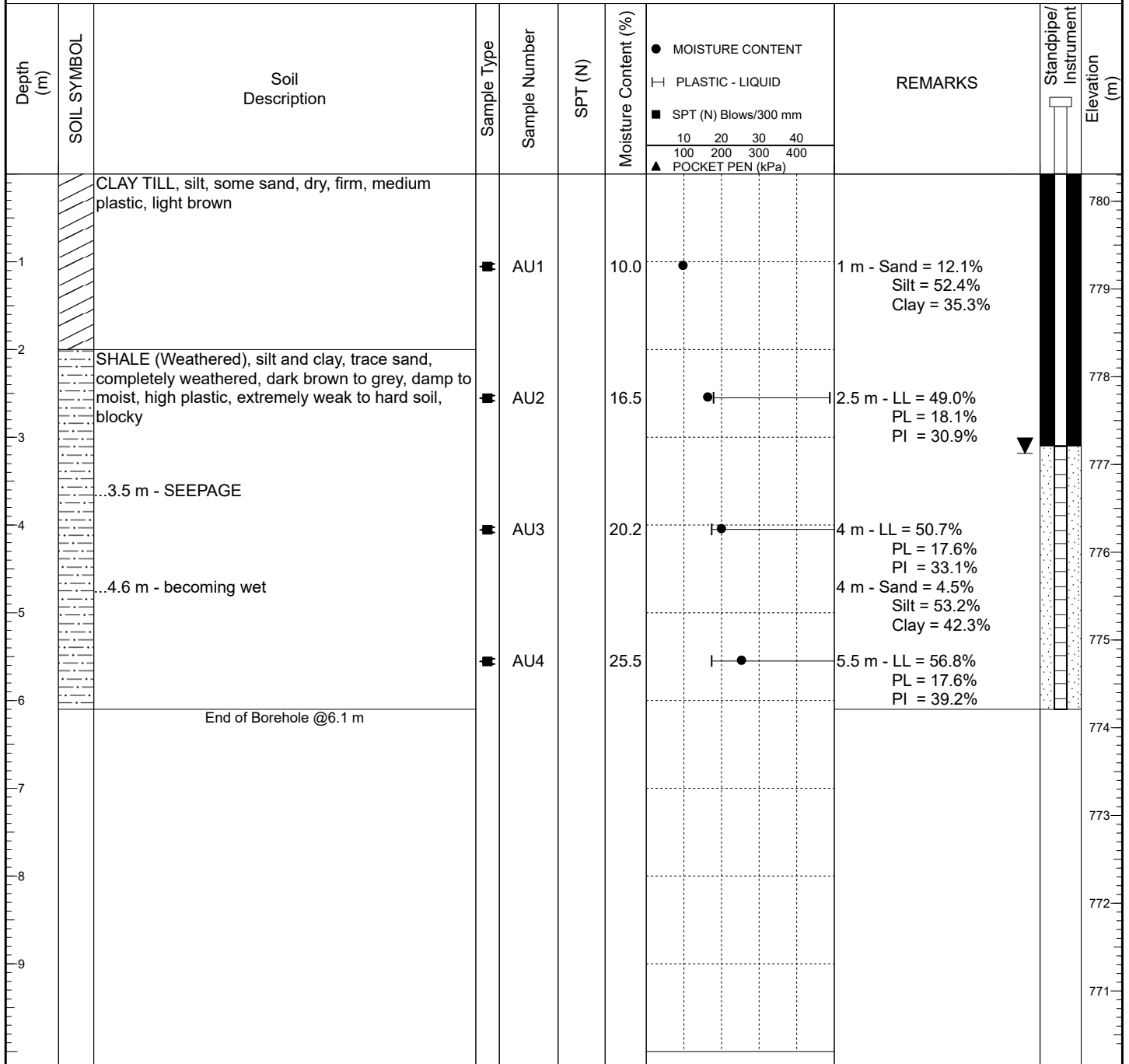


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BOREHOLE No : **22BH555**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	780.31m N 5610839.600 E 414538.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	777.21 m	3.10 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	08/10/2022		



Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH556**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.64m N 5610835.600 E 414643.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, sandy, moist, stiff, medium plastic, dark brown with light brown sand, trace oxide staining	■	AU1	17.2	17.2	1 m - LL = 40.5% PL = 11.9% PI = 28.6%		778
2		SHALE (Weathered), silt and clay, trace sand, highly weathered, grey, some oxidation staining, moist, high plastic, very weak, thinly laminated	■	AU2	17.0	17.0	2.5 m - Sand = 1.9% Silt = 50.3% Clay = 47.8%		777
3		...3.5 m - trace bentonite seams							776
4			■	AU3	19.5	19.5	4 m - Dispersivity Classification = D2 4 m - LL = 51.9% PL = 18.5% PI = 33.4%		775
5							4 m - Sand = 1.7% Silt = 44.3% Clay = 54.0%		774
6		SHALE, clay and silt, trace sand, completely weathered, grey, damp, medium plastic, extremely weak to hard soil, ground up	■	AU4	12.2	12.2	5.5 m - Sand = 0.7% Silt = 43.9% Clay = 55.4%		773
		End of Borehole @6.1 m							772
7									771
8									770
9									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH557**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.81m N 5610836.600 E 414744.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, some gravel up to 50 mm, damp, firm, medium plastic, brown							778
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak, finely fissured	■	AU1	18.9	●	1 m - Sand = 4.9% Silt = 43.2% Clay = 51.9%		777
3			■	AU2	18.8	●	2.5 m - LL = 55.7% PL = 16.9% PI = 38.8%		776
4			■	AU3	15.8	●	4 m - LL = 52.3% PL = 17.8% PI = 34.5%		775
5		SHALE, clayey, silty, completely weathered, grey, damp, high plastic, extremely weak, thinly laminated	■	AU4	12.0	●	4 m - Sand = 8.5% Silt = 38.7% Clay = 52.8%		774
6		End of Borehole @6.1 m					5.5 m - LL = 54.8% PL = 18.5% PI = 36.3%		773
7									772
8									771
9									770
									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH558**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.44m N 5610838.300 E 414837.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel up to 30 mm, trace sand, dry, stiff, high plastic, light brown, trace oxidation staining, trace coal staining	■	AU1	12.9	●	1 m - LL = 61.1% PL = 17.6% PI = 43.5%		779
2		...2.3 m - gravelly	■	AU2	8.6	●	2.5 m - Gravel = 9.2% 2.5 m - Sand = 39.0% Silt = 32.0% Clay = 19.8%		778
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil	■	AU3	15.1	●	4 m - LL = 52.3% PL = 18.6% PI = 33.7%		777
4		...4.5 m - becoming highly weathered	■	AU4	16.6	●	5.5 m - Sand = 1.6% Silt = 48.0% Clay = 50.4%		776
5									775
6		End of Borehole @6.1 m							774
7									773
8									772
9									771
									770

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH560**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.40m N 5610732.700 E 414453.700
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT — PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		SHALE (Weathered), clayey, silty, trace medium grained sand lenses, completely weathered to residual soil, dark brown to grey, some oxidation staining, moist, medium plastic, extremely weak to hard soil, blocky, suspect white sulphate inclusions, trace gypsum crystals	■	AU1	20.2	●	1 m - LL = 47.6% PL = 14.4% PI = 33.2%		779
2			■	AU2	20.9	●	1 m - Sand = 26.5% Silt = 21.1% Clay = 52.4%		778
3							2.5 m - Sand = 6.8% Silt = 56.3% Clay = 36.9%		777
4		...3.5 m - becoming grey, increasing oxidation staining, high plastic, trace sand	■	AU3	19.1	●	4 m - LL = 51.4% PL = 20% PI = 31.4%		776
5			■	AU4	17.8	●	5.5 m - Sand = 2.8% Silt = 48.3% Clay = 48.9%		775
6		6 m - ground up shale End of Borehole @6.1 m							774
7									773
8									772
9									771
									770

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH561**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.94m N 5610738.600 E 414552.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, trace gravel, dry, firm, medium plastic, light brown, some oxidation staining	■	AU1	9.8	●	1 m - Dispersivity Classification = ND4 1 m - LL = 42.5% PL = 17.1% PI = 25.4%		779
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky	■	AU2	19.6	●	2.5 m - Sand = 2.0% Silt = 51.1% Clay = 46.9%		778
3									777
4		3.8 m - TRACE SEEPAGE End of Borehole @3.9 m	■	AU3	19.5	■	3.7 m - LL = 36.6% PL = 18.5% PI = 18.1% 3.9 m - Auger refusal		776
5									775
6									774
7									773
8									772
9									771

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH562**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.47m N 5610738.800 E 414649.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel up to 30 mm, moist, stiff, medium to high plastic, dark brown, some oxidation staining	■	AU1	19.4	19.4	1 m - LL = 46.8% PL = 10.7% PI = 36.1%		778
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, brownish grey, some oxidation staining, damp, medium plastic, extremely weak to hard soil, blocky	■	AU2	16.7	16.7	2.5 m - Sand = 1.8% Silt = 53.2% Clay = 45.0%		777
3		...3 m - becoming grey							776
4			■	AU3	17.7	17.7	4 m - LL = 47.6% PL = 17.7% PI = 29.9%		775
5		...5 m - becoming grey	■	AU4	13.4	13.4	5 m - Sand = 3.5% Silt = 37.4% Clay = 59.1%		774
5.4		5.4 m - ground up shale							773
5.5		End of Borehole @5.5 m							773
6									772
7									771
8									770
9									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH563**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.74m N 5610733.100 E 414755.500
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		TOPSOIL - 300 mm							778
1		CLAY TILL, silty, some gravel up to 60 mm, fine grained sand lenses, damp, stiff, medium plastic, dark brown, some oxidation staining, yellow sand, suspect white sulphate inclusions	■	AU1	16.2	●	1 m - Gravel = 25.6% 1 m - Sand = 18.1% Silt = 30.8% Clay = 25.5%		777
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, brownish grey, trace oxidation staining, damp, high plastic, very weak to hard soil, blocky	■	AU2	16.6	●	2.5 m - LL = 54.5% PL = 19.4% PI = 35.1%		776
3									775
4			■	AU3	17.5	●	4 m - LL = 52.1% PL = 18.8% PI = 33.3% 4 m - Sand = 1.9% Silt = 47.2% Clay = 50.9%		774
5		...4.5 m - increasing oxidation staining							773
6			■	AU4	18.2	●	5.5 m - LL = 55.6% PL = 19.7% PI = 35.9%		772
6		End of Borehole @6.1 m							771
7									770
8									769
9									

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH564**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.95m N 5610735.000 E 414861.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace to some gravel up to 30 mm, dry, stiff, high plastic, light brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	7.6	●	1 m - LL = 50.4% PL = 18.2% PI = 32.2%		778
2									777
3		SHALE (Weathered), silt and clay, trace sand, completely weathered, brownish grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky ...3 m - becoming more ground up	■	AU2	17.4	●	2.5 m - Sand = 0.9% Silt = 51.2% Clay = 47.9%		776
4			■	AU3	15.2	●	4 m - LL = 51.8% PL = 18.2% PI = 33.6%		775
5									774
6		...5.2 m - becoming some sand	■	AU4	13.5	●	5.5 m - Sand = 11.2% Silt = 54.8% Clay = 34.0%		773
6		End of Borehole @5.8 m					5.8 m - Auger refusal		773
7									772
8									771
9									770

Notes:

SW Borrow search. Backfilled with bentonite.

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Reviewed By: T. Curtis



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BOREHOLE No : **22BH567**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	779.85m N 5610634.300 E 414557.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH	777.08 m	2.77 m	
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED	08/10/2022		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, trace gravel, dry, stiff, medium plastic, light brown, trace oxidation specs,	■	AU1	9.1	●	1 m - Gravel = 1.5% 1 m - Sand = 2.5% Silt = 49.5% Clay = 46.5%		779
2		SHALE (Weathered), silt and clay, trace sand, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	16.7	●	2.5 m - LL = 50.9% PL = 19% PI = 31.9%	▼	778
3		...3.5 m - becoming some sand	■	AU3	15.0	●	3.5 m - LL = 50.0% PL = 18.7% PI = 31.3%		777
4		...3.8 m - TRACE SEEPAGE End of Borehole @4.0 m					3.5 m - Sand = 11.7% Silt = 52.7% Clay = 35.6% 4 m - Auger refusal		776
5									775
6									774
7									773
8									772
9									771
									770

Notes:

SW Borrow search. Standpipe installed to 4.0 m. Backfilled with sand and bentonite.

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BOREHOLE No : **22BH568**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	778.18m	N 5610636.000 E 414653.600
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, moist, stiff, high plastic, brown, trace oxidation staining	■	AU1	24.6		1 m - LL = 62.6% PL = 14.3% PI = 48.3%		778
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brownish grey, some oxidation staining, moist, high plastic, extremely weak to hard soil, blocky	■	AU2	21.3		2.5 m - Sand = 2.6% Silt = 48.0% Clay = 49.4%		777
3		...2.1 m - SEEPAGE ...3 m - becoming grey							776
4			■	AU3	27.1		4 m - LL = 60.9% PL = 17.9% PI = 43.0%		775
5		SHALE, silt and clay, trace sand, highly weathered, grey, damp, high plastic, extremely weak, ground up	■	AU4	14.8		5.5 m - Sand = 0.4% Silt = 52.0% Clay = 47.6%		774
6		End of Borehole @6.1 m							773
7									772
8									771
9									770
									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH569**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	778.37m N 5610637.800 E 414750.100
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, trace sand, trace gravel, damp, firm to stiff, medium plastic, brown, some oxidation staining	■	AU1	11.7	●	1 m - LL = 47.5% PL = 19.3% PI = 28.2%		778
2		...2 m - ground up mudstone inclusions					1 m - Gravel = 1.0% 1 m - Sand = 7.2% Silt = 60.8% Clay = 22.3%		777
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	15.9	●	2.5 m - LL = 51.0% PL = 19.4% PI = 31.6%		776
4			■	AU3	16.2	●	4 m - LL = 50.5% PL = 19.3% PI = 31.2%		775
5		SHALE, clay and silt, trace sand, highly weathered, grey, damp, high plastic, extremely weak, ground up	■	AU4	11.8	●	4 m - Sand = 6.8% Silt = 49.2% Clay = 44.0%		774
6		End of Borehole @6.1 m					5.5 m - LL = 53.4% PL = 18% PI = 35.4%		773
7									772
8									771
9									770
									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH570**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/07/2022	COMPLETED	07/07/2022	GROUND ELEVATION	779.00m N 5610635.800 E 414843.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, dry, firm to stiff, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	10.1	●	1 m - LL = 41.6% PL = 12.6% PI = 29.0%		778
2		SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	17.7	●	2.5 m - Dispersivity Classification = ND3 2.5 m - LL = 64.3% PL = 20.9% PI = 43.4%		777
3							2.5 m - Sand = 0.8% Silt = 36.7% Clay = 62.5%		776
4			■	AU3	23.5	●	4 m - LL = 51.2% PL = 19.4% PI = 31.8%		775
5		...5 m - becoming more shale inclusions							774
6		End of Borehole @6.1 m	■	AU4	14.9	●	5.5 m - Sand = 4.0% Silt = 51.9% Clay = 44.1%		773
7									772
8									771
9									770

Notes:

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BOREHOLE No : **22BH573**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	778.92m N 5610544.900 E 414547.300
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa)			
1		CLAY, silty, trace sand, very moist, soft, medium plastic, brown	■	AU1	31.1	●	1 m - Sand = 3.5% Silt = 36.1% Clay = 60.4%		778
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brownish grey, some oxidation staining, moist, high plastic, extremely weak, blocky	■	AU2	19.5	┤	2.5 m - LL = 51.1% PL = 15.6% PI = 35.5%		777
3									776
4		...4 m - becoming grey	■	AU3	18.3	●	4 m - LL = 53.6% PL = 17.5% PI = 36.1% 4 m - Sand = 4.1% Silt = 43.3% Clay = 52.6%		775
5									774
6			■	AU4	18.9	●	5.5 m - LL = 55.6% PL = 18.6% PI = 37.0%		773
7		End of Borehole @6.1 m							772
8									771
9									770

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH574**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	778.50m N 5610532.600 E 414651.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, moist, stiff, medium to high plastic, brown, trace organics, trace bentonite inclusions	■	AU1	18.8	●	1 m - LL = 44.2% PL = 14.2% PI = 30.0%		778
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, moist, medium plastic, very weak to hard soil, thinly laminated	■	AU2	17.9	●	2.5 m - Sand = 2.1% Silt = 47.3% Clay = 50.6%		777
3		...0.8 m - 400 mm ironstone layer							776
4		...1.3 m - high plastic layer	■	AU3	16.2	●	4 m - LL = 51.4% PL = 18.7% PI = 32.7%		775
5			■	AU4	16.5	●	5.5 m - Sand = 1.2% Silt = 38.6% Clay = 60.2%		774
6		End of Borehole @5.8 m					5.8 m - Auger refusal		773
7									772
8									771
9									770
									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH575**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	777.87m	N 5610540.800 E 414744.800
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED		

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, some completely weathered shale inclusions, silty, moist, stiff, medium plastic, greyish brown, sand pockets							777
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU1	21.6	●	1 m - Sand = 3.5% Silt = 35.1% Clay = 61.4%		776
3			■	AU2	18.7	●	2.5 m - LL = 50.5% PL = 19.8% PI = 30.7%		775
4			■	AU3	12.7	●	4 m - LL = 47.5% PL = 17.4% PI = 30.1% 4 m - Sand = 4.2% Silt = 42.7% Clay = 53.1%		774
5									773
6		SHALE, clay and silt, trace sand, highly weathered, grey, damp, high plastic, extremely weak, thinly laminated	■	AU4	14.9	●	5.5 m - LL = 56.5% PL = 18.9% PI = 37.6%		772
7		End of Borehole @6.1 m							771
8									770
9									769
									768

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH576**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	778.62m N 5610538.300 E 414845.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, dry, firm, medium plastic, brown, some oxidation staining							778
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, brownish grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU1	11.7	●	1 m - LL = 53.6% PL = 16% PI = 37.6%		777
3			■	AU2	14.5	●	2.5 m - Sand = 1.0% Silt = 50.2% Clay = 48.8%		776
4		...3.8 m - trace bentonite inclusions from 3.8 m	■	AU3	18.2	●	4 m - LL = 51.5% PL = 20.5% PI = 31.0% 4 m - Sand = 2.9% Silt = 41.8% Clay = 55.3%		775
5			■	AU4	16.7	●	5.5 m - Sand = 4.1% Silt = 55.7% Clay = 40.2%		774
6		...5.6 m - ground up shale inclusions End of Borehole @5.8 m					5.8 m - Auger refusal		773
7									772
8									771
9									770
									769

Notes:

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BOREHOLE No : **22BH580**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	778.95m N 5610438.300 E 414646.800
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, some rounded gravel, up to 15 mm, damp, stiff, medium plastic, greyish brown, some oxidation staining, trace gypsum crystals, coal staining, trace bentonite seams	■	AU1	14.7	●	1 m - LL = 49.7% PL = 14.4% PI = 35.3%		778
2		1.4 m - 200 mm ironstone layer SHALE (Weathered), clay and silt, trace sand, highly weathered, grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky, trace gypsum crystals	■	AU2	18.4	●	2.5 m - Sand = 2.5% Silt = 45.7% Clay = 51.8%		777
3									776
4			■	AU3	16.2	●	4 m - LL = 52.9% PL = 20.1% PI = 32.8%		775
5		4.5 m - heavy oxidation staining	■	AU4	15.6	●	5 m - Sand = 2.1% Silt = 44.6% Clay = 53.3% 5.2 m - Auger refusal		774
6		End of Borehole @5.2 m							773
7									772
8									771
9									770

Notes:

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BOREHOLE No : **22BH581**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	777.68m N 5610434.300 E 414752.600
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, trace sand, some completely weathered shale inclusions, moist, stiff, medium plastic, dark brown, trace oxidation staining	■	AU1	17.8	●	1 m - Sand = 8.5% Silt = 20.8% Clay = 70.7%		777
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, brownish grey, some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky	■	AU2	17.6	●			776
3									775
4		...3.5 m - increasing oxidation staining	■	AU3	16.6	●	4 m - LL = 51.7% PL = 20.1% PI = 31.6% 4 m - Sand = 2.4% Silt = 49.1% Clay = 48.5%		774
5		...5 m - becoming grey							773
6		SHALE, clay and silt, highly weathered, grey, damp, high plastic, very weak, thinly laminated	■	AU4	14.5	●	5.5 m - LL = 55.8% PL = 17.1% PI = 38.7%		772
7		End of Borehole @6.1 m							771
8									770
9									769
									768

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH585**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	778.23m N 5610335.700 E 414655.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT └─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some gravel, some medium grained sand lenses, some completely weathered shale inclusions, moist, stiff, medium plastic, dark brown, some oxidation staining, trace gypsum crystals	■	AU1	21.2		1 m - Gravel = 6.8% 1 m - Sand = 23.7% Silt = 20.7% Clay = 48.8%		778
2		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, with oxidation specs, moist, high plastic, very weak to hard soil, trace gypsum crystals	■	AU2	20.5		2.5 m - LL = 53.8% PL = 20.8% PI = 33.0%		777
3									776
4		4 m - bentonite seams 4.2 m - becoming ground up shale End of Borehole @4.3 m	■	AU3	17.4		4 m - LL = 52.4% PL = 18.4% PI = 34.0% 4 m - Sand = 3.9% Silt = 50.0% Clay = 46.1% 4.3 m - Auger refusal		775
5									774
6									773
7									772
8									771
9									770
									769

Notes:

SW Borrow search. Backfilled with bentonite.

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BOREHOLE No : **22BH586**

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CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	GROUND ELEVATION	778.52m N 5610330.100 E 414743.400
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, some sand, trace gravel, dry to damp, firm, medium plastic, light brown, some oxidation staining	■	AU1	11.3	●	1 m - LL = 49.8% PL = 15% PI = 34.8%		778
2		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak	■	AU2	17.8	●	2.5 m - Sand = 1.7% Silt = 46.6% Clay = 51.7%		777
3									776
4			■	AU3	15.6	●	4 m - LL = 51.4% PL = 21.4% PI = 30.0%		775
5		End of Borehole @4.3 m					4.3 m - Auger refusal		774
6									773
7									772
8									771
9									770
									769

Notes:

SW Borrow search. Backfilled with bentonite.

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Reviewed By: T. Curtis

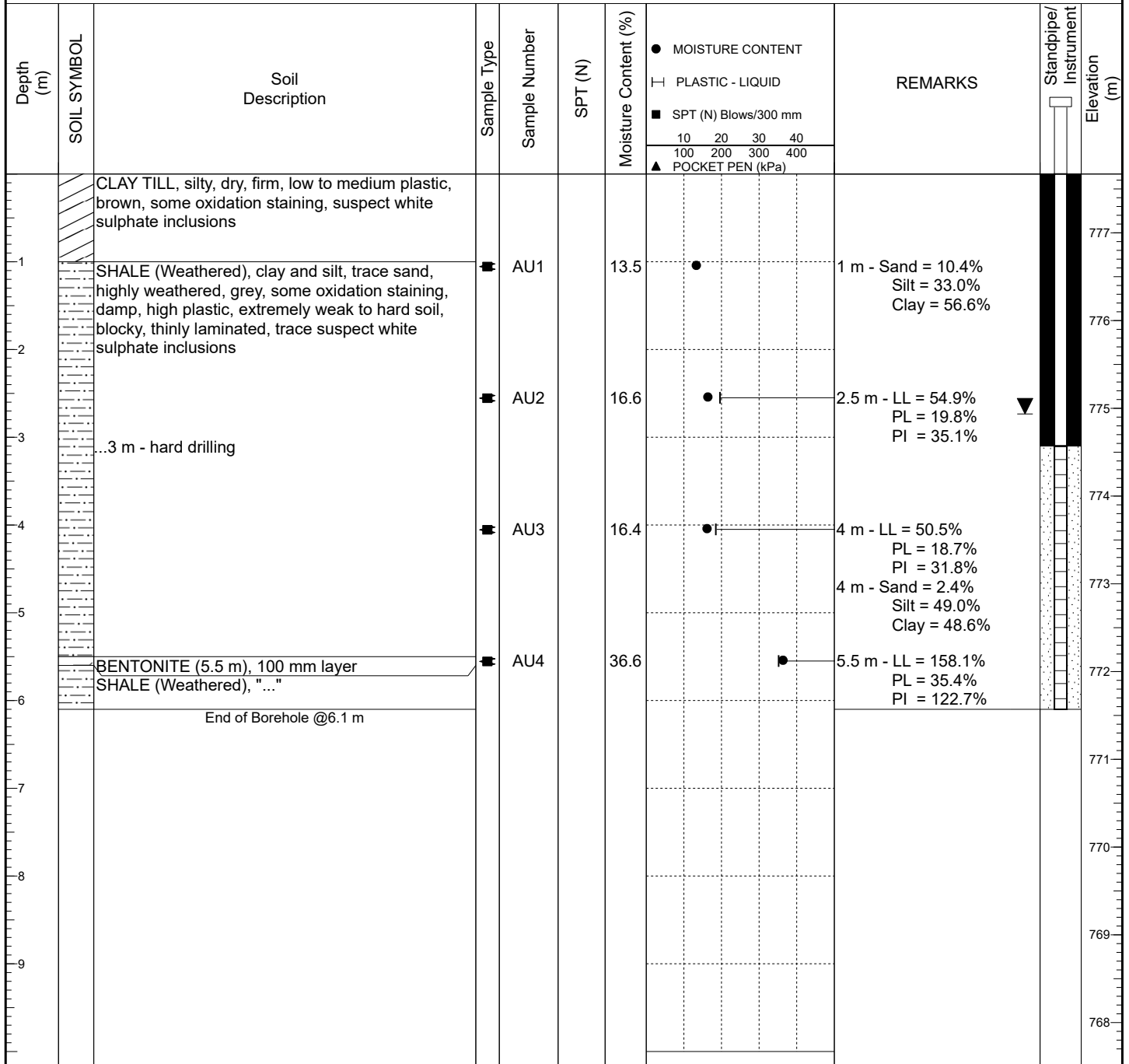


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BOREHOLE No : **22BH587**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/06/2022	COMPLETED	07/06/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	777.67m	N 5610330.100 E 414851.000
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH	775.02 m	2.65 m
		DATE GROUND WATER RECORDED	09/15/2022	



Notes:

SW Borrow search. 25 mm PVC standpipe installed to a depth of 6.1 m.

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BOREHOLE No : **22BH588**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion	
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/27/2022	COMPLETED	07/27/2022	
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND ELEVATION	774.42m	N 5612095.700 E 415843.700
DRILLING METHOD	6" SSA	GROUND WATER ELEVATION / DEPTH		
		DATE GROUND WATER RECORDED	09/15/2022	

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silty, gravelly, some cobbles, dry, firm, medium plastic, brown, suspect white sulphate inclusions	■	AU1	5.2	●	0.6 m - LL = 40.6% PL = 13.3% PI = 27.3%		774
		...1 m - becoming trace to some gravel, no cobbles	■	AU2	8.4	●	1.2 m - Gravel = 4.2% 1.2 m - Sand = 21.1% Silt = 42.4% Clay = 32.3%		773
2		...1.5 m - becoming damp, dark brown	■	AU3	11.0	●	2.1 m - LL = 49.9% PL = 13.2% PI = 36.7%		772
		...2 m - becoming some oxidation staining	■	AU4	12.5	●	2.7 m - Sand = 9.7% Silt = 50.6% Clay = 39.7%		771
3		SHALE (Weathered), clay and silt, trace sand, completely weathered, grey, some oxidation staining, damp, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU5	16.3	●			770
4			■	AU6	16.3	●			769
5			■	AU7	15.8	●			768
6			■	AU8	16.3	●			767
7		End of Borehole @6.1 m							766
8									765
9									

Notes:

NW Borrow search. Backfilled with bentonite chips.

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BOREHOLE No : **22BH589**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/28/2022	COMPLETED	07/28/2022	GROUND ELEVATION	774.99m N 5612106.700 E 415586.000
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┌─ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TILL, silt, some sand, trace gravel, damp, firm, medium plastic, brown, some oxidation staining, suspect white sulphate inclusions	■	AU1	12.9	●	0.6 m - Gravel = 2.1%		774
			■	AU2	12.9	●	0.6 m - Sand = 11.2%		
2							Silt = 43.3%		
			■	AU3	15.6	●	Clay = 43.4%		773
			■	AU4	16.6	●	1.2 m - LL = 44.9%		
3							PL = 14.2%		
			■	AU5	13.1	●	PI = 30.7%		
4			■	AU6	18.3	●	2.1 m - LL = 58.8%		772
			■	AU7	17.6	●	PL = 16.4%		
5			■	AU8	18.8	●	PI = 42.4%		771
							2.1 m - Sand = 3.0%		
6							Silt = 58.1%		770
							Clay = 38.9%		
							2.7 m - LL = 62.1%		769
							PL = 18%		
							PI = 44.1%		
7		End of Borehole @6.1 m							768
8									767
9									766

Notes:

NW Borrow search. Backfilled with bentonite chips.

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BOREHOLE No : **22BH590**

PAGE 1 OF 1

CLIENT	Eastern Irrigation District	PROJECT NAME	Snake Lake Reservoir Expansion		
PROJECT NUMBER	1560-193-00	PROJECT LOCATION	NE 1/4 32-19-16		
DATE STARTED	07/28/2022	COMPLETED	07/28/2022	GROUND ELEVATION	774.66m N 5612324.700 E 415580.900
DRILLING CONTRACTOR	Chilako Drilling Services Ltd.	GROUND WATER ELEVATION / DEPTH			
DRILLING METHOD	6" SSA	DATE GROUND WATER RECORDED			

Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	REMARKS	Standpipe/ Instrument	Elevation (m)
						● MOISTURE CONTENT ┤ PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 ▲ POCKET PEN (kPa)			
1		CLAY TIL, silt, some sand, some gravel, damp, firm to stiff, medium plastic, dark brown, some oxidation staining, suspect white sulphate inclusions, trace gypsum crystals	■	AU1	5.4	●	0.6 m - LL = 32.3% PL = 12.4% PI = 19.9%		774
		...1 m - becoming moist	■	AU2	12.1	●	1.2 m - Gravel = 9.1% 1.2 m - Sand = 18.6% Silt = 36.0% Clay = 36.3%		773
2		...1.5 m - becoming trace gravel	■	AU3	19.4	●	2.1 m - LL = 59.1% PL = 16% PI = 43.1%		772
		...2 m - becoming high plastic, trace sand	■	AU4	21.0	●	2.7 m - Sand = 6.2% Silt = 50.6% Clay = 43.2%		771
3			■	AU5	20.9	●			770
4		SHALE (Weathered), silt and clay, trace sand, highly weathered, grey, some oxidation staining, damp to moist, high plastic, extremely weak, blocky, suspect white sulphate inclusions	■	AU6	19.2	●			769
		...4.5 m - becoming no oxidation staining	■	AU7	18.1	●			768
5			■	AU8	16.6	●			767
6		End of Borehole @6.1 m							766
7									765
8									
9									

Notes:

NW Borrow search. Backfilled with bentonite chips.

Logged By: C. Tams

Reviewed By: T. Curtis