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

erii

w or MC	Moisture content (ASTM D2216)	PP	Pocket Penetrometer
$W_{\mbox{\tiny P}} \mbox{ or } \mbox{\rm PL}$	Plastic limit (ASTM D4318)	γ	Unit weight
W_{L} or LL	Liquid limit (ASTM D4318)	γd	Dry unit weight
I _P or PI	Plasticity Index	ρ	Density
NP	Non-plastic soil	ρd	Dry density
SH	Shelby tube sample	qu	Unconfined compressive strength
AU	Auger sample	Cu	Undrained shear strength
В	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: Image: Signal Si								
	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)						
1	Fine	0.08 (#200) to 0.4 (#40)						
	Clay and Silt	Less than 0.08 (#200)						

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

na Lta,

	CONSIS	TENCY OF FI	NE 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

DENSIT	Y OF COARSE G	RAINED 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

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EXPLANATION OF SYMBOLS AND TERMS

TEST HOLE LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM (MODIFIED)

	MAJOR DIVI	SION	GROUP SYMBOL	TYPICAL DESCRIPTION	LABORATORY C CRITI	LASSIFICATION ERIA				
	HIGHLY ORGANI	C SOILS	РТ	Peat and other highly organic soils	Strong colour or o text	colour or odor and fibrous texture				
4 75 µm	ALF THE TION .75 mm	CLEAN GRAVELS (LESS THAN 5%	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				
K THAN	AVELS AN H/ E FRAC HAN 4	FINES)	GP	Poorly graded gravels, gravel-sand mixtures	Not meeting all ab	ove requirements				
SOILS ARGER	GR NRE TH DARSE GER TH	GRAVELS WITH	GM	Silty gravels, gravel-sand-silt mixtures	Atterberg limits belo	w "A" line or PI < 4				
AINED GHT L	MC CC LAR	THAN 12% FINES)	GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits abo	ve "A" line or PI > 7				
ARSE-GR/ .F BY WEI	LF THE TION 75 mm	CLEAN SANDS (LESS THAN 5%	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				
CO,	NDS AN HA FRAC	FINES)	SP	Poorly graded sands or gravelly sands	Not meeting all above requirement					
ЗЕ ТНА	S/ RE TH. DARSE GER TH	SANDS WITH	SM	Silty sands, sand-silt mixtures	Atterberg limits below "A" line or P					
IOM	MO CC	THAN 12% FINES)	SC	Clayey sands, sand-clay mixtures	Atterberg limits abo	ve "A" line or PI > 7				
LLER	S BELOW "A" LIN	ILTS IE ON PLASTICITY	ML	Inorganic silts and very fine sands, rock flour, silty sands of slight plasticity	LL < 50					
r smal	CHART; NEGLI COI	GIBLE ORGANIC	МН	Inorganic silts, micaceous or diatomaceous, fine sandy or silty soils	LL > 50					
o soils veigh ⁻ µm	CI	LAYS	CL	Inorganic clays of low plasticity, gravelly, sandy, or silty clays	LL < 30					
AINEC F BY V AN 75	ABOVE "A" LIN CHART; NEGLI	E ON PLASTICITY GIBLE ORGANIC	CI	Inorganic clays of medium plasticity, silty clays	30 < LL < 50	SEE PLASTICITY CHART BELOW				
INE-GF N HAL TH/	CO	NTENT	СН	Inorganic clays of high plasticity	LL > 50					
F JRE THA	ORGANIC SI BELOW "A" LIN	LTS AND CLAYS IE ON PLASTICITY	OL	Organic silts and organic silty clays of low plasticity	LL < 50					
WC	S CHART		ОН	Organic clays of high plasticity	LL > 50					



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C		LIENT Eastern Irrigation Dis					_ PRO	DJECT	NAME Snake La	Snake Lake Reservoir Expansion				
F	PROJ	ECT NUMBER		1560-193-00			_ PRO	DJECT	LOCATION N	E 1/4 32-19-16				
C	DATE	STARTED	03/22/2022	_ COMPLETED)3/2	2/2022	_ GR	OUND	ELEVATION N	5612599.800 E 413	3922.000			
[RILL	ING CONTRACT	OR	Chilako Drilling Service	s Lto	d.	GR	OUND	WATER ELEVATION / DEPTH	780.48 m 3.	.01 m			
[RILL	ING METHOD		6" SSA			_ DAT	E GR	OUND WATER RECORDED	09/15/2022				
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT ⊢ PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (kPa) 	REMARKS	Elevation (m)			
-	>>	CLAY FILL, son medium plastic	ne sand, som . light brown.	e silt, dry, firm, oxide specks										
-	\bigotimes	·····	,		-	AU1		8.9			783-			
_1	\bigotimes													
	>>				=	AU2		10.7	•		782-			
-	\otimes				X	SPT1	15							
-2	\otimes	2.1 m - moistu	ure increasing		-	AU3		19.4	L● ▲ 2.1 m -	LL = 47.8%				
	\bigotimes	2.2 m - light b	rown and dar	k grey mottling						PL = 14% PI = 33.8%	781-			
-3	\otimes	2.7 m - trace s	suspect white	sulphates	=	AU3.2		23.0	• •	•				
	\bigotimes				X	SPT2	13			⊥ ▼				
_	$\widetilde{\gamma}$	CLAY, some silf	t, trace fine gr	ained sand, very	-	AU5		24.7		_ _	780			
-4		moist, soft, fissi silt lenses	ured, medium	plastic, dark brown,						•				
	Ц		dark red oxida	tion staining	╞═	AU6		22.2	4 .3 m -	LL = 34.0%	779-			
	\langle	CLAY TILL, son angular gravel,	ne fine graine moist, soft to	d sand, trace fine firm, blocky, medium	Y	SPT3	11			PI = 21.0%				
-5	\langle	plastic, multicol	oured with ox	idation staining,		AU7		20.4	•	-				
-		SHALE (Weath	ered), clay an	d silt, completely	-						778-			
-6	· · · · ·	extremely weak	tied dark brow k, blocky	vn, moist, nign plastic,	=	AU8		17.6	• •	•				
										•				
		E	End of Borehole	e @6.6 m	1									
7											-			
-											776-			
-8											-			
-											775			
-9											-			
											//4			
-														
		Notes:												
		Target depth of standpipe insta	6.6 m achiev lled to 6.6 m.	ed. No seepage or slou Borehole backfilled wit	ighi h be	ing obse entonite	rved u chips.	pon c and s	ompletion. 50 mm and.		Proup			
									Logged	еd Bv [.] <u>С.е</u>	Curtis			
16/11/2022										<u> </u>				



		NT		Eastern Irrigation District			_ PRO	DJECT	NAM	1E		5	Snake l	Lake Reservoir E	Expans	ion	
1	PROJ	IECT NUMBER		1560-193-00			_ PRO	DJECT	LOC	ATION	_			NE 1/4 32-19-1	6		
1	DATE	STARTED	03/23/2022	COMPLETED 0	03/2	3/2022	_ GRO	DUND	ELE\	/ATION	_ ۱	778.26m	N	5612595.700	E_	41422	0.000
1	ORILI	ING CONTRACT	OR	Chilako Drilling Service	s Lto	1.	GR0	DUND	WAT	ER ELE	EVATIO	ON / DEPT	н	776.21 m		2.05 1	<u>n</u>
1	ORILL	ING METHOD		6" SSA			DAT	E GR	DUNE	D WATE	ER RE	CORDED		09/15	5/2022		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M 	10ISTU PLASTIC PT (N) I 10 20 200 20 200KET	RE COM C - LIQU Blows/3 0 300 PEN (k	NTENT IID 00 mm <u>40</u> 0 400 Pa)		REMARKS		Standpipe/	Elevation (m)
-		CLAY TILL, sor angular gravel.	ne fine graine trace silt. moi	d sand, trace fine st. stiff. medium													778-
		plastic, brown v	with oxidation	specks, sand pockets	-	AU1		15.8		•							-
-1																	
-	\geq				=	AU2		19.3		•							777
Ē		SHALE (Weath	ered), clay an	d silt, completely	X	SPT1	30										-
<u>-</u> 2	·	weathered, ligh high plastic, ex	it brown to dai tremely weak	rk grey mottling, moist, to hard soil, blocky,		AU3		18.4		•							770
	· · ·	suspect white s	sulphate inclus	sions													//6
Ē,	· · — ·	-			æ	AU4		19.4		•							
	·				X	SPT2	39						1				775—
	·	3.3 m - trace	gypsum crysta	als		A. 1.5		45.0									-
-4	· _ · · ·					AU5		15.9		•							
	·				-	AU6		16.9		•			4.3 m	n - EC: 9.7 dS/r	m		774
-	·				V	0.070	50						4.3 m 4.3 m	n - SAR: 13.8 n - pH: 4.2			
5	·	SILTSTONE. c	lavev. sandv. r	medium weathered.		5013	50	50					4.6 m	n - Dispersivity	1		
-		light brown, dry	, low plastic, v	very weak	1	AU7		5.9					5.2 m	1 - LL = 29.3%			773-
-		. <u>t.o m - gypsun</u>	End of Borehole	e @5.2 m										PL = 12.8% PI = 16.5%			
6 -													5.2 m	n - Sand = 28.9 Silt = 47 9%	1%		772-
F -														Clay = 23.29	%		
-7																	-
																	771-
-																	
8																	-
																	770
																	-
-9																	769
-																	
Ē																	
		Notes:															
		Target depth of sand and bento	[:] 10 m not ach onite chips. 50	ieved. No seepage or s mm standpipe installe	slou d to	ghing ol 5.2 m.	oserve	d. Boi	ehol	e bacł	kfilled	with	Logg	ed By:	(<u>C. Brai</u>	ın
16/11/2022	!												Revie	ewed By:		T. Curt	is
L																	



CLIENT	Eastern Irrigation Distric	t		_ PRO	OJECT	NAME	Snake Lake Reservoir Expan	sion
PROJECT NUM	BER1560-193-00			_ PRO	OJECT		NE 1/4 32-19-16	
DATE STARTED	03/23/2022 COMPLETED	03/23/	/2022	_ GR	OUND	ELEVATION779.03r	n N 5612595.831 E	414522.511
DRILLING CONT	RACTOR Chilako Drilling Service	es Ltd.		GR	OUND	WATER ELEVATION / DEP	TH774.05 m	4.98 m
DRILLING METH	10D 6" SSA			DAT	E GR	OUND WATER RECORDED	10/12/202	2
Depth (m) SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (kPa) 	REMARKS	Standpipe/ Instrument Elevation (m)
CLAY TIL angular of low to me specks, s	L, some fine grained sand, some fine ravel up to 20 mm, trace silt, damp, stiff, edium plastic, brown with oxidation suspect white sulphate inclusions	-	AU1 AU2		9.6 9.4	•		778
SHALE (weathere blocky, tr 	Weathered), clay and silt, completely d, dark brown with oxidation specks, h plastic, extremely weak to hard soil, ace suspect white sulphate inclusions becoming greyish brown	± ± ▼	AU3 AU4	62	16.2 16.1	•	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% PL = 32.5%	776
-4	some gypsum crystals inclusions up to 10		AU5 AU6	02	16.0 15.2	•	3 m - Dispersivity Classification = ND3 3.7 m - LL = 49.6% PL = 17.2% PI = 32.4%	775
5 BENTON soft, orga SHALE (ITE (200 mm layer), moist, high plastic, nic (see photo), trace gypsum crystals Weathered), clay and silt, completely d, dark brown with oxidation specks,		SPT3 AU7 SH1 AU8	39	36.0	•		774
6 in the second	In plastic, extremely weak to hard soil, ace suspect white sulphate inclusions	X	SPT4	89	17.0			773-
	becoming brownish dark grey	=	AU10		17.0	•		772-
BHALE, s weathere medium t \$tratified,	silty, clayey, trace fine grained sand, highly d, light grey with oxidation specs, damp, o high plastic, extremely weak, finely marine End of Borehole @8.1 m		SPT5	50			-	771-
							_	
Notes: Target de and bent	pth of 8.1 m achieved. No sloughing or se onite chips. Standpipe installed to 8.1 m.	eepag	e obsei	rved. I	Boreh	ole backfilled with sand	Logged By: Reviewed By:	C. Braun T. Curtis



	CLIENT Eastern Irrigation Dis		Eastern Irrigation District	rict			PROJECT NAME					Snake Lake Reservoir Expansion							
	PROJ	IECT NUMBER		1560-193-00			_ PRO	OJECT	LOC	ATION	_			N	E 1/4 32-19-1	6			
	DATE	STARTED	03/22/2022	_ COMPLETED	03/2	2/2022	_ GR	OUND	ELEV	ATION	Ι.	777	7.22m	_ N_5	612585.700	_ E _	41511	9.80	0
	DRILI	LING CONTRACT	OR	Chilako Drilling Service	s Lto	1.	GR	OUND	WATE	ER ELE	EVATI	ON / [DEPTH		770.81 m		6.41	m	
	DRILI	LING METHOD		6" SSA			DAT	TE GRO	DUNE) wate	ER RE	CORI	DED	DED09/15/2022					
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ S 11 ▲ P	10ISTU PLASTIC PT (N) I 10 2 00 20 00 20 00 20	RE CO C - LIQ Blows/3 00 30 7 PEN (UID 300 mn 0 40 00 40 kPa)	Г n 0 00		REMARKS		Standpipe/		Elevation (m)
- - - - - - - - - - -		CLAY TILL, sar mm, trace silt, o brown with som white sulphate	ndy, some rour damp, stiff, low ne oxidation st inclusions	nded gravel up to 35 / to medium plastic, aining, trace suspect	-	AU1		7.7	•								I	7	777
Ē					=	AU2		9.5										7	776
-	2				X	SPT1	25				-								111
2 -						AU3		12.7		•									775
-		2.3 m - moistı	ure increasing																
3		2.7 m - trace	cobbles up to	75 mm	=	AU4		11.1		•									
	2	SHALE (Meath	ered) clav an	d silt biably	X	SPT2	36											7	774-
	· · · · · · · · · · · · · · · · · · ·	weathered, dar moist, high plas	k brown with c stic, extremely	widation specks, weak, suspect white	=	AU5		17.8		•									
	·		0113		-	AU6		17.8		•								7	773-
-	·				Y	SPT3	43												
5 	·	4.8 m - trace	gypsum crysta	lls				16 1						2 m -	11 - 54 5%			-	772-
-	·	-			-	707		10.1		•				.2 111 -	PL = 17.7%				
6	·				=	AU8		15.6		٠					PI = 36.8%	1			
	· ·	-			Y	SPT4	86									Ţ	F 🛛	7	771
-	·	- - -				AU9		20.2								-	=		1.1
-7	· _ · ·							-											770
-	·	-			₽	AU10		12.9		•			7	6 m		-			-70
L,	· · · · ·	7.6 m - trace mm	gypsum crysta	I inclusions up to 20		SPT5	50						•7	.6 m -	SAR: 13.3				1111
-0		8.2 m - becon	ning grevish b	rown		AU11		13.1	[•			7	.6 m -	рН: 6.8			1	769-
	·																		1.1.1
-9	· _ · ·				=	AU12		13.4		•			8	.8 m -	LL = 68.4% PL = 14.5%				
-		SHALE, silty, hi	ghly weathere	ed, light bluish grey	X	SPT6	86								PI = 53.9%			7	768-
		with some oxid	ation staining, ely weak, thinly	damp, medium y laminated, marine									9 b	.6 m - lows f e	SPT refusal	l; 50			
		Notoci	End of Borehole	@9.8 m									9	.8 m -	Auger refus	al			
		Target depth of bentonite chips	12.7 m not ac . and sand. 50	hieved. Minor sloughi) mm slotted standpip	ng u e ins	pon con talled to	npletio a dep	on. Boi oth of 9	rehol 9.8 m	e bacl ı.	kfilled	l with	I	ogged	Bv:	C), Bra	un	
	_												F	Review	ed By:		<u>Г. C</u> ur	tis	
16/11/202	2														,				



.	CLIEI	NT	Eastern Irrigation District			PROJECT NAME						S	Snake Lake Reservoir Expansion				
	PRO	JECT NUMBER		1560-193-00			_ PR	OJECT	LOC	ATION	_			NE 1/4 32-19-16			
1	DATE	STARTED	03/21/2022	COMPLETED 0	3/2	1/2022	_ GR	OUND	ELEV	ATION	1	773	3.86m	N 5612553.000 E	4154	19.7	00
	DRILI	LING CONTRACT	OR	Chilako Drilling Services	: Ltc	l	GR	OUND	WATE	ER ELI	EVATI	ON / [DEPTI	H 770.60 m	3.26	6 m	
	DRILI	LING METHOD		6" SSA			_ DAT	TE GR	DUNE	WATE	ER RE	COR	DED	10/12/202	2		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ S 11 ▲ P	IOISTU PLASTIO PT (N) 0 20 00 20 00 20 00 20	RE CC C - LIG Blows/ 0 30 7 PEN	0NTEN 101D 300 mr 0 4 00 40 (kPa)	T n 0 00	REMARKS	Standpipe/	Instrument	Elevation (m)
- - - - - - - - -		CLAY, some sil plastic, greenis white sulphate	lt, trace sand, i sh brown, oxida inclusions	noist, stiff, medium ation specks, suspect	-	AU1		16.5		•	•						773
					-= 	AU2		15.7		•		A					
-2		2 m - becomi	ng high plastic	, dark brown	Ă	SPT1	22	19 7		H				2 1 m - 11 = 53 7%			772
					_			18.0		•				PL = 17.1% PI = 36.6%			
-3		SHALE (Weath	nered), clay an	d silt, some fine	Ţ	SPT2	22	10.0							_		771
	· · · · · · · · · · · · · · · · · · ·	grained sand, ł greyish brown, blocky	highlý weather damp, high pl	ed, mottled dark astic, extremely weak,	-	AU5		19.4		e					Ŧ		770-
	· · · · · · · · · · · · · · · · · · ·	4.2 m - some	gypsum cryst	als	-	AU6		17.7		•							
-	··		tion staining		X	SPT3	46										769-
	· · · · ·				-	AU7		17.4		•							
6	·	6 m - becomi	ng greyish bro	wn	= ▼	AU8	68	17.2		•							768-
<u>-</u> -	· · · · · ·							17.2									111
7	·	6.7 m - becor	ming trace oxic	lation staining	-	AU40		47.4									767
	· ·	7.8 m - trace SILTSTONE, a weathered, mo	coal specks nd clay, trace ottled greyish b	sand, completely rown, moist, low to		SPT5 SH1	54			•							766
	· · · · · ·	8.2 m - trace	gypsum crysta	als and suspect white		AU11		17.5		•							
-9	 	stratified SHALE, and si	t, clayey, som	e sand, trace	== ▼	AU12	69	19.7		•	•			8.8 m - Sand = 8.3% Silt = 50.0% Clav = 41 7%			765
- - - -		sandstone frag grey, moist, hig marine	ments, highly h plastic, very	weathered, bluish weak, finely stratified,		AU13	00	10.9		•				9.6 m - SPT refusal; 50 blows for 2" 9.8 m - Auger refusal			764
		Notes:												1	1		
16/11/2022	2	Target depth of completion. Bo a depth of 10.1	f 21 m not ach prehole backfill m. Well prote	eved. No seepage enc ed with sand and bento ctor installed.	our	tered. N ∋ chips.	/linor s 50 mn	slough n slott	ing o ed sta	bserv andpi	ed up pe in:	oon stalle	d to	Logged By: Reviewed By:	<u>C. Bra</u> <u>T. Cu</u>	aun rtis	

					or	nnar						BC	DR	EHOLE No :	22B	H1	17
					501	праг	iy								P7	AGE Z	UF Z
	CLIEN	NT		Eastern Irrigation Distric	t		PRO	OJECT	NA	ME	_		S	Snake Lake Reservoir	Expansion	1	
	PROJ	IECT NUMBER		1560-193-00			PRO	OJECT	LO	CATION	1 _			NE 1/4 32-19-	-16		
	DATE	STARTED	03/21/2022	_ COMPLETED	03/2	1/2022	GR	OUND	ELE	VATIO	Ν	773	.86m	N 5612553.000	E _ 41	15419.7	700
	DRILL	LING CONTRAC	TOR	Chilako Drilling Servic	es Lto	1.	GR	OUND	WAT	FER EL	EVATIO	D / NC	EPT	H 770.60 m	3	8.26 m	
		LING METHOD		6" SSA		1	DA1		OUN	D WAT	ER RE	CORE	DED	10/	12/2022	N	
Depth (m)	SOIL SYMBOL		Soil Descriptio	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● - ■	MOISTU PLASTI SPT (N) <u>10 2</u> 100 20 POCKE	JRE CO IC - LIQI Blows/3 20 30 00 30 T PEN (1	NTENT JID 600 mm 0 40 80 40 80 40	- 1) 0	REMARK	S	Standpipe/ Instrument	Elevation (m)
		SHALE, and s sandstone frag grey, moist, hig marine	ilt, clayey, somo gments, highly gh plastic, very End of Borehole	e sand, trace weathered, bluish weak, finely stratified @10.1 m	i,						<u></u>	(Pa)		9.8 m - LL = 79.29 PL = 14.29 PI = 65.09 9.8 m - Sand = 22 Silt = 44.00 Clay = 33.	6 6 .3% % 7%		763
																	762
-13																	761
-14																	760
15																	759
-16																	750
-17																	/5/
-18																	756
-19																	755
_ 		Neter												-			754
16/11/2022	2	Notes: Target depth o completion. Bo a depth of 10.	f 21 m not achi orehole backfille 1 m. Well prote	eved. No seepage en ed with sand and ber ctor installed.	tonite	ntered. I e chips.	Vinor s 50 mn	slough n slott	ning ted s	observ tandpi	ved up ipe ins	on tallec	l to	Logged By: Reviewed By:	<u> </u>	Braun Curtis	I



(NT		Eastern Irrigation District			_ PRO	OJECT	NAM	E	_	:	Snake La	ake Reservoir E	xpansio	n	
F	PROJ	ECT NUMBER		1560-193-00			_ PRO	OJECT	LOC	ATION	I _		١	NE 1/4 32-19-16	6		
[DATE	STARTED	03/11/2022	COMPLETED	03/1	1/2022	_ GR	OUND	ELEV	ATIO	N	769.94n	nN	5612535.837	E _4	15820	.014
[ORILL	ING CONTRACT	OR	Chilako Drilling Service	s Lto	d.	GR	OUND	WATE	ER EL	EVATI	ION / DEPT	н	767.63 m		2.31 m	<u> </u>
[ORILL	ING METHOD		6" SSA			DAT	E GRO	DUNE	WAT	ER RE	ECORDED		09/15	/2022		
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ S 1 1 ▲ P	IOISTU PLASTI PT (N) 00 2 00 2 0CKE	IRE CC C - LIG Blows/ 20 30 00 30 F PEN	ONTENT QUID 300 mm 30 40 00 400 (kPa)	_	REMARKS		Standpipe/	Elevation (m)
-	$\langle \rangle$	CLAY, silty, dar	np, stiff, medi white sulphate	um plastic, brown,													-
	///				-	AU1		12.0		•		•					-
- 1	///																769-
-	<u> </u>	SHALE (Weath	iered), clay ar	nd silt, trace sand,	=	AU2		14.2		•							-
-	·	highly weather blocky high pla	ed, extremely astic dark bro	weak, moist, hard soil, wn with some	Ţ	SPT1	25										-
2	·	oxidation staini	ng, some sus	pect white sulphates				10 /									768-
	· <u>··</u> ·	2.4 m - moist	ure increasing		-	A03		19.4							T		-
-	· · · · ·	2.4 m - moist 2.7 m - becor	ning trace sus	pect sulphates	-	AU4		21.4		ŀ	•		2.7 m -	- LL = 86.5%			-
-3		31m-trace	avnsum cryst	als	▼	ODTO.	22							PL = 18.7% PI = 67.8%			767—
-	· · · · ·		gypourn oryot			5012	22				-		2.7 m -	- Sand = 0.4%	Ď		_
_	· <u>··</u> ·	3.7 m - becor	ning trace oxi	de specks	=	AU5		20.7			•			Silt = 49.7% Clay = 49.9%	6		766-
-4	· · · ·																. 700-
-	·					AU6		17.9		•							
-	· <u>·</u> ··	4.8 m - becor	ning greyish b	rown	X	SPT3	54										765-
	·	5.1 m - SEEF	AGE			AU7		19.1		•							
	·																
6	· <u>···</u> ·				=	AU8		20.9			•						764-
_	· <u>··</u> ·					SPT4	52										-
	···																-
-7	·																763-
-	·																-
	· ·				Y	SPT5	57										
-8	·					A1 144		15.6		•							762—
-	·	8.2 m - suspe	ect salt crystal	s up to 50 mm		AUTI		15.0		•							-
	· ·				-	AU12		16.0		•							761-
-9	···		ad cilt traca c	and extremely	▼	0.070											-
-		weathered, ext	remely weak,	moist, grey, finely		SP16	80										-
-		fissured, hard s	soil, high plast	ic	=	AU13		17.1		•			9.8 m -	- LL = 80.5%			_
		Notes:												PL = 15.4%			
		Target depth of	27 m not ach	ieved. Artesian seepad	ie e	ncounte	red at	a dep	th of	5.1 m	n. Min	ior					
		sloughing obse	erved upon co	mpletion. Borehole ba	ckfil	led with	sand a	and be	enton	ite ch	ips. 5	50 mm	Logged	d By:	C.	Brau	n
16/11/2022		stanupipe insta	ιιεά το α αθρί	1 01 3.2 111.									Review	ved By:	T.	Curtis	s
	•																



PAGE 2 0F 2

C		IT		Eastern Irrigation Distri	ct		_ PR	OJECT	NAME	Snake Lake Reservoir E	Expansio	n	
F	PROJ	ECT NUMBER		1560-193-00			_ PR	OJECT		NE 1/4 32-19-1	6		
[DATE	STARTED	03/11/2022	COMPLETED	03/1	1/2022	_ GR	OUND	ELEVATION 769.94r	m N 5612535.837	E_4	15820.0)14
[ORILL	ING CONTRACT	OR	Chilako Drilling Servio	ces Lto	d.	GR	OUND	WATER ELEVATION / DEP	TH 767.63 m		2.31 m	
Γ	DRILL	ING METHOD		6" SSA			_ DA	TE GR	OUND WATER RECORDED	09/1	5/2022		
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (kPa) 	REMARKS		Standpipe/ Instrument	Elevation (m)
-		SHALE, clay an weathered. ext	nd silt, trace s remelv weak.	and, extremely moist, grey, finely	-	AU14		16.4	•	PI = 65.1% 9.8 m - Sand = 0.89	6		
		fissured, hard s	soil, high plast	ic	ᆀ¯	AU14		10.4		Silt = 54.1%			
_ 11		E	nd of Borehole	@10.4 m						Clay = 45.1 10.4 m - Auger refu	% sal		759-
-													-
-													
-12													758-
-													
-13													757-
													-
													756-
-													
—15													755-
-													-
-													
-16													754-
_													
-													
_17													753
													-
- 10													752-
-													
-19													751-
													-
-										_			
		Notes:			-								
		Target depth of sloughing obse	27 m not ach erved upon co	ieved. Artesian seep mpletion. Borehole b	age e ackfil	ncounter led with s	red at sand	a dep and be	th of 5.1 m. Minor entonite chips. 50 mm	Logged By:	C.	Braun	
16/11/2022		stanupipe msta	ineu io a uepli	1 UI J.Z III.						Reviewed By:	T.	Curtis	



	CLIE	NT		Eastern Irrigation District			_ PR	OJECT	NAM	1E	-		S	Snake	Lake Reservoir	Expans	ion		_
	PRO	JECT NUMBER		1560-193-00			_ PR	OJECT	LOC	ATION	1				NE 1/4 32-19-	16			_
1	DATE	STARTED	03/10/2022	COMPLETED	03/1	0/2022	GR	OUND	ELE\	/ATIO	N	76	9.50m	N	5612529.496	_ E _	41601	9.889	_
	DRIL	LING CONTRACT	OR	Chilako Drilling Service	s Lto	ł.	GR	OUND	WAT	ER EL	EVAT	ion /	DEPT	н	766.99 m		2.51	m	_
1	DRIL	LING METHOD		6" SSA			DA	TE GRO	DUNE) wat	ER R	ECOF	RDED		10/1	12/2022			_
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M 	AOISTU PLAST SPT (N) 10 2 200CKE	JRE CO IC - LIC Blows/ 20 3 T PEN	ONTEN QUID /300 m 30 4 (kPa)	IT m 40 00		REMARKS	5	Standpipe/	Elevation	(m)
- - - - - - - - - - - -		CLAY TILL, so trace fine angu stiff, medium p staining, trace trace gypsum o	me fine graine lar gravel up t lastic, dark bro suspect white crystals	d sand, trace silt, o 10 mm, moist, very wn, some oxidation sulphate inclusions,	æ	AU1		11.9		•			A					769	
	\leq		arad) alay an	d oilt highly	=	AU2		15.0		•		A						760	
F		weathered, mo	ttled brown, m	oist, high plastic,	Y	SPT1	24				•							/00	
-2	·	extremely wea	k, trace oxide : e	specks, trace gypsum		AU3		19.4		н				2.1 r	n - LL = 92.0%	, D			
-	· _ · ·														PL = 16.1% PI = 75.9%		Z	767	,
-3	·····				=	AU4		20.2			•		A						
	··	3 m - becomi suspect white s	ng blocky, bec sulphates	oming silty, trace	X	SPT2	26				•							766	- -
	·	3.7 m - moist	ure decreasino)	=	AU5		20.4			•								
-4		•				AU 6		10.0											
	·	4.5 m - SEEF	AGE/Freewat	er		AU6	27	19.6				_						765	;
5 			ning dark brov	'n		SH1 AU7	57	20.5			•							764	
	·				-	AU8		19.4											
6 	· <u>···</u> ·				V	SDTA	11												-
-		6.3 m - suspe	ect salt crystals	s up to 20 mm		4110		10.4					Γ					763	}
-7		-				AU9		18.4											
-	·	•			=	AU10		16.6		•								762	
-	· ·	•			Y	SPT5	36											102	-
-8	···	•- 				Δ1111		15.2		•									-
-	·	- - -			-	Aon		10.2										761	
-9		SHALE some	silt highly we	athered bluish arev	=	AU12		14.5		•									
		moist, medium	plastic, very v	eak, finely fissured,	Y	SPT6	50												
-		marine 9.6 m - SPT r	efusal at 9.6 n	1														760)—
-			End of Borehole	@9.8 m						1	:	1	1						-
		Notes:																	
		Target depth of completion. Bo	f 27 m not ach orehole backfil	eved. Seepage encou led with sand and ben	ntei oni	red at a te chips.	depth 50 m	of 4.5 m star	m. N Idpip	/linor e inst	sloug alled	hing to a	upon	Logo	jed By:	(C. Bra	un	
16/11/2022	2	uepin of 6.6 m												Revi	ewed By:		Г. Cur	tis	_
																			_



	CLIEI	NT		Eastern Irrigation District			_ PR	OJECT	NAM	E		5	Snake La	ake Reservoir	Expans	ion		
	PRO	IECT NUMBER		1560-193-00			_ PR	OJECT	LOCA	ATION			1	NE 1/4 32-19-	16			
	DATE	STARTED	03/09/2022	_ COMPLETED	03/0	9/2022	GR	OUND	ELEV	ATION		770.31m	N	5612524.400	_ E _	4163	20.00	0
l	DRILI	LING CONTRACTO	OR	Chilako Drilling Service	s Lto	ł.	GR	OUND	WATE	RELE	VATIO	N / DEPT	н	766.95 m		3.36	m	
l	DRILI	LING METHOD		6" SSA			DA	TE GRO	DUND	WATE	R REC	ORDED		10/1	12/2022			
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H P ■ SF 10 ▲ P0	OISTUF LASTIC PT (N) E 0 20 00 20 DCKET	RE CON - LIQU Blows/30 0 300 PEN (kl	TENT ID 0 mm <u>40</u> 2a)		REMARKS	6	Standpipe/		Elevation (m)
		SAND, trace sil moist, compact	t, well graded , brown, susp	, medium grained, ect white sulphate														770-
-		inclusions	•	·	-	AU1		4.2	•									111
E 1																		1.1.1
-	<u>_</u>	SHALE (Weath	ered), clav ar	d silt. trace sand.		AU2		5.2	•									769
		completely wea	thered, greyis	sh brown, some	X	SPT1	33				1	•						
	· _ · ·	weak to hard so	pil, blocky, tra	ce suspect white	=	AU3		18.1		٠								768-
-	· _ · · ·	sulphates				AI 14		17 9		•								
-3								17.0										1.1.1
-	·	3.1 m - trace i	ronstone incli	JSIONS	Å	SPT2	23				•				=		1	767-
	· · · ·	3.6 m - trace ç	gypsum crysta	als	-	AU5		19.6		•								
-4	·	-						21.0								-		766-
	·	4.3 m - trace o mm	gypsum crysta	als inclusions up to 8		A06		21.0										
-5	· <u>··</u> ·	4.5 m - SEEP	AGE avpsum crysta	als inclusions up to 20	X	SPT3	33					•				-		1.1
-		mm 5 2 m - becom	and dark brow	wp	-	AU7		23.9			•							765
-	·		ing dark brow	VII	-	AU8		20.9					58m	-11 = 70.4%	'n	-		1.1.1
6 -	·	-				0.0074								PL = 20.3%	, 0 2			
E -]				SP14	30						5.8 m ·	- Sand = 0.4	°%			'64 - -
-7					=	AU9		18.1		•				Slit = 50.2% Clay = 49.4	% 1%			.
E	·				-	AU10		15.9		•								763
Ē	· · · ·				Y	SPT5	56											111
8	·					AU111		177										111
	· _ · ·	-				AUTI		17.7										762
-	·				-	AU12		15.0		•								
Ĕ		SHALE, some s moist, high plas	silt, highly wea stic, extremely	athered, light grey, v weak, fissured,	Y	SPT6	50						•					761—
-	<u> </u>	marine	End of Borehole	@9.6 m									9.6 m	- SPT/ auge	r			111
È													reiusa	i. SU DIOWS TO	UI 3			-
		Notes:																
		Target depth of completion. Bor	27 m not ach ehole backfill	ieved. Seepage encou ed with sand and bent	nter onite	ed at 4. e chips	5 m. N 50 mn	/linor s n stan	lough dpipe	ning ol insta	bserve lled to	ed upon 6.6 m.	10075	d Dv:	,	- D		
		,				-F 21			1 1 9				Review	u by. ved By:		J. Bra	iun rtis	—
16/11/2022	2													. 34 Dy.		ວິນ		



CLIE	ENT		Eastern Irrigation District			_ PRO	DJECT	NAME	S	nake Lake Reservoir Expa	ansion	
PRO	JECT NUMBER		1560-193-00			_ PRO	DJECT	LOCATION		NE 1/4 32-19-16		
DAT	E STARTED	03/03/2022		03/0	3/2022	_ GRO	DUND	ELEVATION	767.48m	N 5612108.000 E	416883.	.900
DRIL	LLING CONTRACT	TOR	Chilako Drilling Service	s Lto	ł.	GR(DUND	WATER ELEVAT	ION / DEPTH	1765.65 m	1.83 m	I
DRIL	LLING METHOD		6" SSA			_ DAT	E GRO	OUND WATER R	ECORDED	10/12/20	22	
Depth (m) SOIL SYMBOL	SIIT sandy S	Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CO PLASTIC - LIC SPT (N) Blows, 10 20 3 100 200 3 POCKET PEN 	DNTENT QUID /300 mm 30 40 /00 400 (kPa)	REMARKS	Standpipe/	Elevation (m)
	nonplastic, ligh	nt brown										767
	SAND, gravely	, Gravel is sub d damp com	prounded well graded,	▰	AU1		7.8	•				/6/
	oxidation stain	ing										-
	medium plastic	ce sand, trace c, brown, some	e silt, moist, stiff, e oxidation staining,		AU2		15.8	•	•			766-
	SHALE (West	sulphate inclu pered) clav ar	sions		SPT1	20		•			y	
	weathered, bro	own, moist, me	edium to high plastic,		AU3		20.1	•			-	
	···extremely wea	K, DIOCKY										765
	2.7 m - beco	ming brownish	grey with trace	=	AU4		21.0	•				
-3	-suspect white s	sulphates		Y	SPT2	38						
		gypsum cryst	als									764-
	3.7 m - beco	ming dark brov	wn	=	AU5		18.8	•				
					ALI6		20.0					
					A06		20.9			4.6 m - Dispersivity		763
-5				X	SPT3	34				Classification = D^2		
	- SHALE, clayey ⊒high plastic. ve	/, silty, highly v erv weak. fissu	veathered, grey, moist, red	-	AU7		14.3	•		4.6 m - SAR: 30.0		
	5 m - gypsun	n crystals inclu	isions up to 10 mm							4.6 m - pH: 7.5		762-
6	 _			=	AU8		11.9	•				
				X	SPT4	50			•	I		704
	-	End of Borehole	e @6.6 m									/61-
7												
-												760-
												-
-8												
												759
-9												
												758-
	Notes:											<u> </u>
	Target depth o	f 33 m not ach	ieved. No sloughing or	see	epage ol	oserve	d upo	n completion. 5	50 mm			
	standpipe insta with bentonite	alled to a depti chips.	n ot 6.6 m. Borehole ba	ickfi	lled with	sand	within	slotted area ar	nd capped	Logged By:	C. Braur	<u>1</u>
16/11/2022		-								Reviewed By:	T. Curtis	3



(NT		Eastern Irrigation District			PR	OJECT	NAME	S	nake L	ake Reservoir Ex	pansio	on		
F	PROJ	IECT NUMBER		1560-193-00			PR	OJECT	LOCATION			NE 1/4 32-19-16				
ſ	DATE	STARTED	03/03/2022	COMPLETED	03/0	3/2022	GR	OUND	ELEVATION	769.12m	N	5611808.000	E	41687	6.50)0
[ORILI	ING CONTRACT	OR	Chilako Drilling Service	s Lto	d.	GR	OUND	WATER ELEV	ATION / DEPTH	Η	765.71 m		3.41	m	
ſ	DRILI	ING METHOD		6" SSA			DA	TE GR	OUND WATER	RECORDED		09/15/	2022			
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE PLASTIC - SPT (N) Blo 10 20 100 200 POCKET P 	CONTENT LIQUID ws/300 mm 30 40 300 400 EN (kPa)		REMARKS		Standpipe/		Elevation (m)
-		SAND, silty, fin Iiaht brown	e grained, we	ll graded, damp, loose,												769-
- - - - - - - - - - - - - - - - - - -	44 44 44	1 m - some p	oorly graded g	jravel	*	AU1 AU2		2.8 5.7	•							768-
-		•			Y	SPT1	14									-
-2						ΔΠ3		3.8	•		2.1 m	- Gravel = 15 (1%			-
-		• >			-			0.0			2.1 m	- Sand = 70.3%	6			-
		2.6 m - trace	gravel		=	AU4		10.2	•		2.1 m	- Filles - 14.7	/0			-
					X	SPT2	4		•							766
-		3.6 m - trace	seepage at 3.	5 m		AU 5		15.3	•				4			-
-4		SHALE (Weath	nered), clay an	d silt, completely	1			10.0								765-
-	· · · ·	extremely wea	k, blocky	, moist, mgn plastic,	=	AU6		16.6	•							-
-	· · · ·				Y	SPT3	82									-
5 	· ·					AU7		18.2	•							764-
	·															-
	· · · · · ·	6.2 m - trace	white rock up End of Borehole	to 20 mm 9@6.3 m	X	SPT4	50				6.1 m blows	- SPT refusal; for 6"	50			763
-																-
-																-
																761-
-																-
-9																760-
-																-
																-
_										i 1						
16/11/2022		Notes: Target depth o depth of 3.5 m area and capp	f 30 m not ach . 50 mm stand ed with bentor	ieved. Sloughing obse pipe installed to a depi ite chips.	rveo th o	d to a de f 4.7 m.	pth of Backfi	3.6 m illed w	i. Seepage ol ith sand with	bserved at a in slotted	Logge Revie	ed By:	<u>С</u> Т	<u>. Bra</u>	un tis	
L., 11/2022																



C		ΙT		Eastern Irrigation District			_ PRO	DJECT	NAN	ИE	_		Sna	ake La	ike Reservoir	Expans	ion	
F	PROJ	ECT NUMBER		1560-193-00			_ PRO	DJECT	LOC	CATIO	N _			1	NE 1/4 32-19-	·16		
0	DATE	STARTED	03/08/2022	COMPLETED (03/08	8/2022	_ GRO	DUND	ELE	VATIO	N	767.6	69m	_ N _	5611508.000	_ E _	416869	.000
0	DRILL	ING CONTRACT	OR	Chilako Drilling Services	s Lto	1.	GR0	DUND	WAT	ER EI	EVATI	ON / DE	PTH		766.47 m		1.22 m	<u> </u>
0	RILL	ING METHOD		6" SSA			DAT	E GR	OUN	D WAT	ER RE	CORD	ED		09/	15/2022		
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOIST PLAST SPT (N 10 20 POCKE	URE CC IC - LIQ) Blows/: 20 3 200 30 :T PEN (0NTENT 101D 300 mm 0 40 100 400 (kPa)			REMARK	S	Standpipe/	Elevation (m)
		CLAY TILL, sor subrounded gra medium plastic	ne medium gi avel up to 20 i , dark brown,	ained sand, some mm, moist, hard, with oxidation specks	-	AU1		10.0		•								767
		1.3 m - trace s 1.4 m - trace s 1.4 m - SAND loose, sand is c staining	sulphates er, trace fine gravel, I, brown with oxidation	= X =	AU2 SPT1 AU3	6	12.8 13.7	•	•	-					-		766	
-3		SHALE (Weath weathered, ligh high plastic, ext sulphate inclusi	d silt, completely rk grey mottling, moist, blocky, suspect white	Ŧ	AU4 SPT2	44	21.1		+	•		2.	.7 m ·	LL = 113.3 PL = 15.39 PI = 98.09	% 6 6		765	
-4	: : : : : :	4.2 m - trace I	rounded grave End of Borehole	el up to 25 mm e @4.4 m	-	AU6		14.2		•			 <u>4</u> .	.3 m ·	· Auger refu	sal		763
-5																		
6											-							762
7																		761
																		760
9																		759-
																		758
		Notes:																1
16/11/2022		Target depth of observed upon installed to a de	33 m not ach completion. E epth of 3.0 m	ieved. Seepage observ Borehole backfilled with	/ed sar	at a dep าd and b	oth of 1 penton	.4 m. ite chi	Min ps.	or slo 50 mr	ughing n stan	g dpipe	Lo	ogge eviev	d By: ved By:		C. Brau T. Curtis	n



	CLIE	NT		Eastern Irrigation District			_ PR	OJECT	NAMESn	ake Lake Reservoir Expansi	on
	PROJ	JECT NUMBER		1560-193-00			_ PR	OJECT		NE 1/4 32-19-16	
l	DATE	STARTED	03/11/2022	COMPLETED	03/1	1/2022	_ GR	OUND	ELEVATION 767.06m	N 5610808.000 E	416858.200
	DRILI	LING CONTRACT	OR	Chilako Drilling Service	s Lto	d.	GR	OUND	WATER ELEVATION / DEPTH	764.80 m	2.26 m
	DRILI	LING METHOD		6" SSA			_ DA	TE GR	OUND WATER RECORDED	09/15/2022	
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (kPa) 	REMARKS	Elevation (m)
-		SAND, trace si loose, brown, t	lt, well graded race roots hair	, fine grained, damp, s							
- - - 		~			=	AU1		3.7	•		
		•			=	AU2		3.0	•		/66
-					X	SPT1	4		•		
-2		CLAY TILL, sar gravel, moist, s	ndy, trace silt, stiff to very stiff	trace subangular , low plastic, brown,	-	AU3		22.3	₽	.1 m - LL = 19.0% PL = 8.3%	Z 765-
-		coal specs, oxi SHALE (Weath	de staining iered), clay an	d silt, trace sand,	-	AU4		23.2	•	PI = 10.7%	
-3	·	completely wea plastic, extreme	athered, greyis ely weak, bloc	sh brown, moist, high ky	X	SPT2	19		•		764
-	·	3.7 m - becor	nina brownish	arev		AU5		19.4	•		
-4		SHALE, clayey	, silty, highly w	veathered, light brown		A.U.C		110			763—
-		weak, fissured	nina arev	ligit plastic, very	V	AUO	50	14.0	4	.6 m - Dispersivity	
5 5			inig groy			SP13	50	10.7	4	.6 m - EC: 2.4 dS/m	762-
-						AU7		12.7	4	.6 m - SAR: 18.4 6 m - pH: 8.3	
-6		-			=	AU8		12.3	•	PL = 15.1%	761—
-		 			X	SPT4	50		•5	2 m - 57.5% 2 m - Sand = 2.0%	-
			End of Borehole	e @6.6 m	1					Clay = 40.0%	
—7 											760-
-											
8											759-
-											
-											
-9											758-
-											
-											
		Notes [.]									
		Target depth of with sand and l	33 m not ach	ieved. Minor sloughing s. 50 mm standpipe ing	ob: stall	served u ed to a c	pon c lepth	omple of 3.0	tion. Borehole backfilled	oggod Byr	Drown
									L	oggea ву: <u>С</u> Reviewed Bv: 1	. Braun . Curtis
16/11/2022	2										



	CLIEN	T		Eastern Irrigation District			_ PRO	DJECT	NAM	E		S	nake La	ake Reservoi	r Expan	sion		
	PROJ	IECT NUMBER		1560-193-00			_ PRO	DJECT	LOC	ATION			1	NE 1/4 32-19	-16			
1	DATE	STARTED	03/10/2022	COMPLETED	03/1	0/2022	_ GRO	DUND	ELEV	ATION	ı _;	768.63m	N	5610010.000) E _	4168	38.4	00
	DRILL	ING CONTRACT	OR	Chilako Drilling Service	s Lto	ł.	GR	DUND	WATE	ER ELE	EVATION	/ DEPTH	Η					
	DRILL	ING METHOD		6" SSA			_ DAT	E GRO	DUND	WATE	ER RECO	ORDED		09/	15/2022	2		
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ SI 11 ▲ P	10ISTUF PLASTIC PT (N) E 10 20 00 20 <u>0CKET</u>	RE CONTI C - LIQUID Blows/300 0 30 0 300 PEN (kPa	ENT mm 40 400		REMARK	S	□ Standbibe/	Instrument	Elevation (m)
-		SAND, trace si verv loose, bro	lt, well gradec wn	, fine grained, moist,														1.1
-					-	AU1		13.9		•								768-
1										·····								
-		1.2 m - becor	ning trace cla	y, trace fine angular	=	AU2		13.5		•								111
		gravel up to 3 n	nm		X	SPT1	6		-									767-
-2		2 m - oxidatio	on staining			AU3		15.5		•			2.1 m ·	- Sand = 87	.5%			1 - 1
-														Silt = 4.9%	, 0 0/			
					=	AU4		18.7		•				Clay = 7.6	70			766
-3		•			Y	SPT2	7											. .
-	<u> </u>	3.4 m - SEEF	AGE		 ▲	0											_	765
Ē,	· <u>·</u> ··	SHALE (Weath	nered), clay ar athered_dark	nd silt, trace sand, brown_some oxidation	=	AU5		21.5			•							105
-4	·····	staining, moist,	high plastic,	extremely weak,				10.2										
-		рюску SHALE, clayey	, silty, highly v	veathered, grey, damp,		A00		10.2										764—
-5		low plastic, ver	y weak, fissur	ed	X	SPT3	50											
					-	AU7		14.5		•			5.1 m blows	- SPT refus for 5"	al; 50			
-																		763-
-6					=	AU8		13.7		•								111
-					X	SPT4	50					•						111
-	·		End of Borehole	e @6.6 m	┤╴													762-
7																		
-																		
Ē																		761
-8																		
-																		760-
- -																		
Ę																		
																		759—
E																		
	1	Notes:																
16/11/2022	2	Target depth of observed upon installed to a de 2022	f 30 m not ach completion. I epth of 6.6 m.	ieved. Seepage obsen 3orehole backfilled with Borehole measured d	ved i sai ry o	at a dep nd and b n Augus	oth of 3 penton at 10, S	8.4 m. ite chi Septer	Mino ps. 5 nber	or sloug 0 mm 15, an	ghing standpi nd Octol	pe ber 12,	Logge Reviev	d By: wed By:		<u>C. Bra</u> T. Cu	aun Irtis	



	CLIEN	ΝT		Eastern Irrigation District			_ PRO	OJECT	NAM	E	_		Sn	ake La	ake Reservoir E	Expans	ion	
	PROJECT NUMBER			1560-193-00			_ PRO	OJECT	LOC	ATION	_			1	NE 1/4 32-19-1	6		
	DATE	STARTED	03/10/2022	COMPLETED 0)3/1(0/2022	_ GRO	OUND	ELEV	ATION	۱ .	768.	66m	_ N _	5609686.900	E _	41682	9.300
	DRILL	ING CONTRACT	OR	Chilako Drilling Services	s Lto	1.	GR0	OUND	WATE	ER ELE	EVATI	ON / D	EPTH		766.10 m		2.56	m
	DRILL	ING METHOD		6" SSA			DAT	E GR	OUND) WATE	ER RE	CORD	ED		10/12	2/2022		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ Si 11 ▲ P	IOISTU PLASTIC PT (N) I 10 <u>2</u> 00 20 OCKET	RE CO C - LIQ Blows/3 0 30 7 PEN (NTENT UID 300 mm 0 40 kPa))		REMARKS		Standpipe/	Elevation (m)
-		CLAY TILL, trac	ce fine to medi	um grained sand,														-
-		stiff, high plasti	c, brown, som	e oxidation staining	-	AU1		47	•									768-
- - 1						7.01												
		1.1 m - moist	ure increasing		=	AU2		11.4		• ⊢				.2 m ·	- LL = 54.7%			-
-					Y	SPT1	34								PL = 15% PI = 39.7%			767-
2		SHALE (Weath	iered), clay an	d silt, trace sand,		AU3		20.7			•							
Ē	· · ·	completely wea	athered, light b	rown to dark grey		1.00		20.1								1	,	
	· · · · ·	high plastic, ex	tremely weak,	blocky	=	AU4		19.6		•			2	2.7 m ·	- LL = 97.3%	1	•	766-
-3	· _ · ·	2.3 m - trace	gypsum crysta	lls	Y	SPT2	49								PL = 19.6% PI = 77.7%			-
-	·												2	2.7 m ∙	- Sand = 2.0% Silt = 48.5%	6		765-
-4	· _ · · - ·				=	AU5		22.1			•				Clay = 49.5	%		/03
Ē					-	AU6		21 0			•							
-	· · ·				T	,		21.0										764-
5	·				Å	SPT3	57											
-	· · · · ·	5.2 m - trace	fine sand		-	AU7		18.0		•								
-	·				-	AU 8		18.9					5	8 m .	. Sand = 0.5%	6		763-
6 6	·				-	700		10.5						.0	Silt = 63.2%			-
-	·	65 m - SEEP	ACE		Å	SPT4	56								Clay = 36.35	/0		
		0.5 m - SEEF	AOL		-	AU9		20.3		•								762-
	·				_	AL 110		10.8										-
-	· _ · ·				-	7010		13.0										761-
-8		SHALE, clayey	, silty, highly w	eathered, grey, moist,	Å	SPT5	84											
-		high plastic, ve	ry weak, fissur refusal	red /	=	AU11		24.1			•		-					-
-		. <u>(.0.2 m 7/ugor</u>	End of Borehole	@8.3 m														760-
-9																		-
-																		
																		759-
		Notoci										i						
		Target depth of	30 m not achi	eved Seepage observ	/ed	at a der	oth of P	3.5 m	Mino	n slou	ahing	r						
		observed upon	completion. B	orehole backfilled with	sar	nd and b	penton	ite chi	ips. 5	0 mm	stan	, dpipe	L	ogge	d By:	(C. Brau	un
16/11/2024	2	installed to dep	DUN OT 6.6 M.										F	Reviev	ved By:	-	T. Curt	is
10/11/2022	-																	



(NT		Eastern Irrigation District			_ PR	OJECT		ΛE	_		S	nake L	ake Reservoir Ex	pansic	n	
F	PROJ	ECT NUMBER		1560-193-00			_ PR	OJECT			_ ۱				NE 1/4 32-19-16			
[DATE	STARTED	03/23/2022	2 COMPLETED	03/2	3/2022	_ GR	OUND	ELE	VATIO	N	768	3.40m	N	5609577.900	E_4	16770.2	200
[DRILI	ING CONTRACT	OR	Chilako Drilling Service	s Lto	d.	GR	OUND	WAT	ER EL	EVATI	ION / E	DEPTH	ł	765.98 m		2.42 m	
[DRILI	ING METHOD		6" SSA			DA	re gro	OUN	D WAT	ER RE	ECOR	DED		10/12/2	2022		
Depth (m)	SOIL SYMBOL		S Desci	oil ription	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTU PLASTI SPT (N) <u>10 2</u> 100 2 POCKE	JRE CC IC - LIG Blows/ 20 3 00 3(T PEN	DNTEN ⁻ QUID 300 mn 30 <u>4</u> 00 40 (kPa)	Г n 0 00		REMARKS		Standpipe/ Instrument	Elevation (m)
-		SAND, some si	ilt, well gra	ded, medium grained,														
_		homogeneous	se, brown,	some oxidation staming,		A111		53						0 6 m	Sand - 71 /1%			768-
-	\sim	CLAY TILL, sor	ne silt, trac	e sand, moist, stiff,	┤┺			5.5	-					0.0 111	Silt = 24.2%)		-
-		medium plastic	, brown, w	ith oxidation specks, coal	=	AU2		18.1		40					Clay = 4.4%			
-		specks, silt lens	565		V	0074												767
-2						SPI1	9											
_					₽	AU3		22.8			•	•				-	;	766
-	\leq	SHALE (Weath	ered) clay	and silt_trace sand				21.2								-		/00
-3	· · · · ·	completely wea	athered, da	rk brown, with oxidation		A04		21.5			-			3 m - /	Artesian; water			
	·	specks, moist, l	high plastic	c, extremely weak, blocky	X	SPT2	45							level r	aised from 8.0 i	m		765-
-	· <u>··</u> ·	0.7				AU 5		10 0			• I			compl	etion.			
-4	·····	3.7 m - some	suspect w	hite sulphates	-			10.0			-			3.7 m 3 7 m	- EC: 9.8 dS/m			
_	<u> </u>				-	AU6		20.5			•			3.7 m	- pH: 6.3			764—
	·					0072	27					_		3.7 m	- LL = 69.0% PL = 22.1%			
	· <u>·</u> ··					5813	31								PI = 46.9%			-
-	···				=	AU3.7		14.2		•								763-
-	·					AL 18		15.4		•								-
-6	·							10.4										
-	· · ·				X	SPT4	71											762-
-	· · · · ·				=	AU9		15.0		•								
—7 -	·																	
-	· <u>··</u> ·	7.2 m - becon mottling	ning some	dark brown and grey	=	AU10		15.8		•								761-
	·····																	
-8	<u></u> .	8 m - SEEPA	GE/ FREE	WATER, semi-artesian;	-	AU11		34.1		F		•		8.2 m	- EC: 12.7 dS/n	n		
-	·	8.2 m - becon	ning soft, v	vet claystone		_		-						8.2 m 8 2 m	- SAR: 32.6			760
	· <u>·</u> ··				=	AU12		34.0				•		8.2 m	- LL = 67.8%			
-	·····	9.1 m - becon	ning hard		Y	SPT6	88								PL = 16.7% PL = 51.1%			
		9.5 m - SPT r	efusal															759— -
	·· —·	9.6 m - trace (gypsum cr	ystals hole @9.8 m	1						•							
		Notes:							_									
		Target depth of	30 m not a	achieved. Artesian seepag	je o	bserved	at a d	epth o	of 8.) m, w	ater l	evel						
		measured at 3.	0 m upon o	completion. Minor sloughi	ng c	bserved	l upon	comp		n. Boi denth	rehole	e 2 m		Logge	ed By:	C.	Braun	
16/11/2022	!				stariup	ipe ins	, an c u	100	uepu	. 01 0.	<u>د</u> ۱۱۱.		Revie	wed By:	T.	Curtis		



(NT	. <u> </u>	Eastern Irrigation District			_ PR	OJECT	NAN	1E			Snake L	ake Reservoir	Expans	ion	
1	PROJ	IECT NUMBER		1560-193-00			_ PR	DJECT	LOC	ATION				NE 1/4 32-19	-16		
1	DATE	STARTED	03/24/2022	_ COMPLETED)3/24	4/2022	_ GR	OUND	ELE	/ATION		771.03	<u>n</u> N_	5609474.100)_E_	416493	3.000
[[ORILL	ING CONTRACT	OR	Chilako Drilling Services	s Lto	1.	GR	OUND	WAT	ER ELE	VATIO	N / DEP	ГН	762.89 m		8.14 r	n
1	DRILL	ING METHOD		6" SSA			DA1	E GRO	JUNI) WATE	R REC	ORDED		08/	10/2022		
Depth (m)	SOIL SYMBOL		Soil Descriptio	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTUF PLASTIC SPT (N) B 10 20 100 200 POCKET	RE CON - LIQUI Blows/30 0 300 PEN (kF	TENT D 0 mm <u>40</u> 2a)	_	REMARK	S	Standpipe/	Elevation (m)
		CLAY TILL, sar medium graine mm, dry, stiff, lo some oxidation inclusions 2.2 m - becon 2.3 m - moisti SHALE (Weath completely wea plastic, extreme staining, suspe 6.8 m - becon 7.6 m - becon specks 8.8 m - trace	ndy, gravely, tra- id, Gravel is su ow to medium a staining, susp ning trace fine <u>ure increasing</u> ered), clay an- athered, dark b ely weak, block- ely weak, block- ely weak, block- ely weak, block- ely weak, block- ely weak, block- gypsum crysta	ace silt, Sand is brounded up to 30 plastic, light brown, lect white sulphate gravel d silt, trace sand, rown, moist, high cy, some oxidation ate inclusions d dark grey mottling ured, some oxidation		AU1 AU2 SPT1 AU3 AU4 SPT2 AU5 AU5 AU5 AU5 AU5 AU5 AU5 AU5 AU1 AU9 AU10 SPT5 AU11 AU12 SPT6	29 38 43 41 32	6.0 10.8 14.6 15.5 18.8 18.8 21.2 21.4 20.9 19.8 19.6 17.0						- LL = 83.19 PL = 16.69 PI = 66.59 PL = 21.79 PL = 21.79 PI = 43.59 - Dispersivit fication = NI - EC: 7.4 d5 - SAR: 21.8 - PH: 5.0 - Sand = 1.6 Silt = 46.4 Clay = 52.	% % % % 2 9 0 4 5 7 3 % 0 %		770 769 768 767 766 765 765 765 764 763
- - - - -		SHALE, silty, cl weathered, gre weak, finely fise	layey, trace fin ey, moist, high j sured, marine	e grained sand, highly blastic, extremely	Å	AU13	62	17.6		•							-
16/11/2022		Notes: Target depth of 10.7 m upon co depth of 9.1 m.	f 27 m not achi ompletion. Bore	eved. Seepage not en shole backfilled with sa	cou and	ntered. and ber	Slougl Itonite	ning ol chips	bser . Sta	ved to a indpipe	a dept instal	h of led to a	Logge Review	d By: wed By:	(<u>C. Brau</u> T. Curti	ins



PAGE 2 0F 2

C		νT		Eastern Irrigation District			_ PRO	OJECT	NAN	ΛE	-		S	nake L	ake Reservoir E.	xpansio	n	
F	PROJ	ECT NUMBER		1560-193-00			_ PRO	OJECT	LOC	CATION	۱ _				NE 1/4 32-19-16	6		
[DATE	STARTED	03/24/2022		03/2	4/2022	_ GR	OUND	ELE	VATIO	N	771	.03m	N	5609474.100	E _4	16493.0	000
[DRILL	ING CONTRACT	OR	Chilako Drilling Service	s Lto	d.	GR	OUND	WAT	ER EL	EVAT	ION / E)EPTH	H	762.89 m		8.14 m	
[DRILL	ING METHOD		6" SSA			_ DAT	re GR	OUN	d wat	ER RI	ECORI	DED		08/10	/2022		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTU PLASTI SPT (N) <u>10 2</u> POCKE	JRE CC IC - LIC Blows/ 20 3 7 PEN	0NTENT 201D 300 mm 30 40 00 40 (kPa)	- 1 <u>)</u> 0		REMARKS		Standpipe/ Instrument	Elevation (m)
- - - - - - - - - - - - - - - - - - -		SHALE, silty, c weathered, gre weak, finely fis	layey, trace fir ey, moist, high sured, marine	ne grained sand, highly plastic, extremely	= Y	AU14 SPT7	88	18.2		•	•							760
						AU15		17.6		•								/60
					=	AU16		17.6		•				12 m	- Auger refusa	I		759-
		- 	End of Borehole	@12.7 m	X	SPT8	50							1 <u>2.6 r</u> 50 blc	<u>m - SPT refusa</u> ows for 3"	l;		-
																		758-
																		757-
-																		-
15																		756-
																		755-
-																		-
17																		754-
																		753-
-																		-
																		752
-																		-
-																		-
		Notes:			<u> </u>												1	
		Target depth of 10.7 m upon co depth of 9.1 m	Farget 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 t												ed By:	C.	Braun	
16/11/2022			- 											Revie	wed By:	Τ.	Curtis	



C	LIEN	ΝT		Eastern Irrigation District			_ PRO	DJECT	NAM	E	_		Sna	ake Lake	Reservoir E	Expans	ion		
F	PROJ	ECT NUMBER		1560-193-00			_ PRO	DJECT	LOC	ATION	_			NE	1/4 32-19-1	6			
C	DATE	STARTED	03/24/2022	COMPLETED 0)3/2	4/2022	_ GRO	DUND	ELEV	ATION	I _	771.	34m	N_560	9475.000	E_	4161	93.00	0
0	RILL	ING CONTRACT	OR	Chilako Drilling Services	s Lto	l.	GR0	DUND	WATE	ER ELE	EVATIO	ON / DI	EPTH	76	7.99 m		3.35	m	
0	RILL	ING METHOD		6" SSA	-		_ DAT	E GRO	DUND	WATE	ER RE	CORD	ED		09/15	5/2022			
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ SI 11 ▲ P	OISTUI PLASTIC PT (N) E 0 20 00 20 00CKET	RE COI C - LIQI Blows/3 0 30 0 30 7 PEN (I	NTENT JID 000 mm 0 400 kPa))	R	EMARKS		Standpipe/	Elevation	Elevanori (m)
-	<u>}}}<u>})</u>}))))) </u>	PEAT, organics white sulphate	, clayey, dam inclusions	o, stiff, brown, suspect /														7	771-
		SHALE (Weath	ered), clay an	d silt, some sand,	-	AU1		17.4		•									
-1	· <u>···</u> ·	specks, moist, i	medium to hig	h plastic, extremely															111
		weak, blocky, s	uspect white s	suipnate inclusions	-	AU2		18.7		•								7	70-
					X	SPT1	33					•							
-2	· <u>··</u> ·				=	AU3		19.1		٠								-	760
	<u></u> .					A114		10.2										,	
-3	· <u>··</u> ·				T	AU4		19.3		•									.
	· <u>···</u> ·				X	SPT2	43					I	•			٩ =		7	′68–
				-	AU5		16.0		•									_	
-4	· · · · ·											•							
-		4.3 m - trace (4 4 m - moist	gypsum crysta ure increasing	als	-==	AU6		17.9		•								7	'67—
		4.7 m - gypsu	m crystals inc	lusions up to 25 mm	X	SPT3	27												
	· · · ·				-	AU7		18.4		•								7	766-
						A I 10		10.0											=
-6	· <u>··</u> ·					AU6		19.9											-
					X	SPT4	27				•							7	′65
	· · · ·				=	AU9		18.5		•									-
	. <u></u> .				-	AU10		18.2		•								7	- 764
-		7.5 m - becon	ning dark brov	vn	V	0.075	-0						-	0 - 0					
-8	· <u>·</u> ·	SHALE. siltv. cl	avev. highly w	veathered. arev. moist.	Å	SP15	50						·····	.0 111 - 51	PTTelusal				
_		high plastic, exi	tremely weak,	fissured	-	AU11		17.7		•								7	'63- -
		mottling		in to daily groy	-	AU12		17.5		•									1.1.1
-9	_				▼	SDTA	50						9	3 m - SI	PT refusal				760
		9.5 m - trace :	seepage			51 10	50						T	.0 111 01	- Torabai				02
-			End of Borehole	e @9.9 m	=	AU13		12.1		•			9	.9 m - A ı	uger refus	al			. .
		Notes:			L	L		1											
		Target depth of	24 m not ach	ieved. Seepage encou	nter	ed at 9.	5 m. N	linor s	lough	ning o	bserv	red up	on						
		m		eu with sand and dento	л 1110	- criips.	Stand	pipe ir	ารเลแต	- น เป ส	a uep		י.ש L	ogged B	y:	(C. Bra	un 	—
16/11/2022													R	eviewed	ву:		I. Cu	tis	



	CLIE	NT		Eastern Irrigation District			_ PRO	DJECT	NAME	Snake L	ake Reservoir E	xpans	ion	
	PROJ	IECT NUMBER		1560-193-00			_ PRO	DJECT			NE 1/4 32-19-16	6		
	DATE	STARTED	03/25/2022	_ COMPLETEDC)3/2	5/2022	_ GR	OUND	ELEVATION 773.99m	<u>N</u>	5609471.400	E _	415893.	.000
	DRILI	LING CONTRACT	OR	Chilako Drilling Services	s Lto	Ι.	GR	OUND	WATER ELEVATION / DEPT	н	769.68 m		4.31 m	
	DRILI	LING METHOD		6" SSA			_ DAT	E GR	OUND WATER RECORDED		09/15	/2022		
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (kPa) 	-	REMARKS		Standpipe/ Instrument	Elevation (m)
-		Subrounded gra	ne medium gr avel up to 25 i	nm, damp, stiff, low to										
-		medium plastic	, brown		-	AU1		4.5	•					-
-1	\geq	1 m - red oxid	lation staining											773-
	·	SHALE (Weath	iered), clay ar	id silt, trace sand,	-	AU2		7.2	•					
Ē	<u> </u>	oxidation staini	ng, moist, hig	h plastic, extremely	X	SPT	24							=
2 	· · · ·	weak to hard so	oil, blocky		=	AU3		20.2	I.●	2.1 m	- EC: 11.1 dS/	'n		772
Ē		-								2.1 m 2.1 m	- SAR: 21.2 - pH: 4.9			-
-3	·	-			-	AU4		13.8	•	2.1 m	- LL = 72.6% PL = 17.5%			771-
	·				X	SPT2	36		•		PI = 55.1%			-
-	·	-				AU5		17 4	•					-
-4		3.8 m - becon	ning brown ar	nd grey mottling		,								770
-		-			-	AU6		16.9	•	4.3 m	- groundwater	. <u>.</u>	◩▋▋	_
-	· · · · ·	4.7 m - trace	oxidized gyps	um crystals	Y	SPT3	36			upon	completion			
—5 -	· _ · · ·					AU7		16.3	•	5.2 m	- Sand = 4.3%			769
Ē		5.2 m - moisu	ure increasing							0.2	Silt = 51.0%	/		
- 6	·	-			=	AU8		17.9	•		Clay - 44.7%	0		768-
	· _ · ·	6.1 m - becon	ning dark grey	with some fine	Y	SPT4	42							
Ē		6.5 m - SEEP	AGE/ FREEW	/ATER		AU9		17.8	•					
-7	·													767-
É	·				▰	AU10		19.4	•					
		-			Y	SPT5	41							
-8					-	AU11		19.0	•					766-
-9		SHALE, silty, c	layey, highly v	veathered, grey, with	=	AU12		18.6	•					765
-		oxidation speck weak, finely fise	ks, moist, high sured	i plastic, extremely	Y	SPT6	80							-
Ē		-				A1 14 2		10 5						
-						AUIS		19.5						<u> </u>
		Notes:												
		Target depth of completion. Bo	21 m not ach rehole backfill	leved. Seepage encour ed with sand and bento	nter onite	ed at 6. e chips.	5 m. N Stand	1inor s pipe ir	sloughing observed upon nstalled to a depth of 8.0	Loga	ed By:	<i>,</i>	? Brau	n
		m.				•				Revie	wed Bv:	-	T. Curtis	<u>'</u>
16/11/2022	2													

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	CLIEI	NT	Eastern Irrigation Distric	t		_ PR	OJECT	NAN	1E	_		Sn	ake Lake Reservoir E	kpansio	on		
1	PRO	JECT NUMBER		1560-193-00			_ PR	OJECT	LOC	ATION	_			NE 1/4 32-19-16	i		
I	DATE	STARTED	03/25/2022	COMPLETED	03/2	5/2022	GR	OUND	ELE	VATION	1	773.9	9m	N 5609471.400	E _4	15893.0	000
I	DRILI	LING CONTRACT	ror	Chilako Drilling Service	es Lte	d.	GR	OUND	WAT	ER ELI	EVATI	ON / DE	PTH	769.68 m		4.31 m	
1	ORILI	LING METHOD		6" SSA	_		DAT	TE GR		D WATI	ER RE	ECORDE	D	09/15	2022		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTU PLASTIC SPT (N) 10 2 100 20 POCKET	RE CC C - LIQ Blows/ 0 30 7 PEN (ONTENT 201D 300 mm 30 40 20 400 (kPa)		REMARKS		Standpipe/ Instrument	Elevation (m)
-		SHALE, silty, c oxidation spec	layey, highly w ks, moist, high	veathered, grey, with plastic, extremely		Δ1.11.1		2/ 3			•						
-		weak, finely fis	sured			AU14		24.3			•						
-11		_			X	SPT7	50							1.0 m CDT and			763-
Ē			End of Borehole	@11.2 m									a	uger refusal			1.1
																	111
—12 E																	762
-																	
-13																	761-
-																	111
-																	
-14																	760-
-																	1.1
-15 -																	759— -
-																	
-																	758-
																	100
-																	.
17																	757
E																	
-																	11
—18 -																	756-
Ē																	
E 10																	765
- 19																	/ 55-
Ē																	
	1	Notes:			_	1	I	1	<u> </u>								
		Target depth o	f 21 m not achi	ieved. Seepage enco	unte	red at 6.	5 m. N	linor s	sloug	hing o	bser	ved upo	n				
		completion. Bo m.	orehole backfill	ed with sand and ben	tonit	e chips.	Stand	pipe ir	nstal	led to	a dep	oth of 8	0 L	ogged By:	С	. Braun	
16/11/2022	!												R	Reviewed By:	T.	Curtis	



		NT	Eastern Irrigation District			_ PRO	OJECT	NAM	1E	_		Sı	nake L	ake Reservoir I	Expans	sion		
F	PROJ	JECT NUMBER		1560-193-00			_ PRO	OJECT	LOC	ATION	_				NE 1/4 32-19-1	6		
ı	DATE	STARTED	03/28/2022		03/2	8/2022	_ GRO	OUND	ELE	/ATION	-	774	.15m	_ N _	5609463.400	E_	415593	.000
[DRILI	LING CONTRACT	OR	Chilako Drilling Service	s Lto	ł.	GR0	OUND	WAT	ER ELE	EVATIO	DN / D	EPTH	I	771.43 m		2.72 m	<u> </u>
۱ ۱	DRILI	LING METHOD		6" SSA			DAT	re gro	DUNE) WATE	ER RE	CORE	DED		10/1	2/2022		
Depth (m)	SOIL SYMBOL		Soil Descrip	tion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTUF PLASTIC SPT (N) E 10 20 200 20 200 KET	RE COI C - LIQU Blows/3 D 30 0 30 PEN (H	NTENT JID 00 mm) 40 0 40 (Pa))) 0		REMARKS		Standpipe/	Elevation (m)
-	/	CLAY TILL, silt	/, trace sand . brown. som	, moist, very stiff, le oxidation staining.														774-
		gypsum crystal	s, trace root	hairs	-	AU1		14.2		•	•							-
-1	2																	773
-		completely wea	ered), clay a ithered, brow	nd sill, trace sand, n, some oxidation		AU2		18.0		•								-
	<u></u> .	staining, moist, blocky, oxide s	high plastic, becks	extremely weak,	X	SPT1	22				•							-
-	·	1.6 m - trace i 2.1 m - orang sulphates	nterbedded e and brown	red laminations with suspect white	-	AU3		17.8		•								772
	· · · ·				-	AU4		17.4		•				2.7 m	- LL = 54.4%		¥ 🛛	-
		3 m - red/orange, trace quartz fragments, trace gypsum crystals			X	SPT2	38								PL = 17.7% PI = 36.7%			771-
	· · · ·					AU5		15.3		•								-
-	· · · · ·	46 m - interb	edded orang	e laminations	=	AU6		13.8		•			4	4.3 m 4.3 m	- EC: 5.7 dS/ - SAR: 12.5	m		770
5	· ·		outou orang		X	SPT3	64							4.3 m	- Sand = 13.4	1%		700
	· · · · ·	5.2 m - grey, o 5.5 m - brown	orange, and l and orange	brown laminated layers with grev shale	=	AU7		17.5		•					Silt = 51.3% Clay = 35.3	%		/69-
6	· <u>···</u> ·	inclusions	5	5 7	=	AU8		20.7		•				6 0 m	SDT rofued	. 50		768
					X	SPT4	62						l	blows	for 6"	, 50		
7		SHALE, clayey oxidation spece	, silty, highly s, moist, high	weathered, grey, with plastic, very weak,	-	AU9		18.8		•								767-
-	_					AU10		17.8		•								
-8		7.8 m - SEEP	AGE			SPT5	50							8.1 m	- SPT refued	. 50		
			End of Boreho	le @8.2 m										blows	for 3"	, 50		
-9																		765—
-																		-
		Notes:							<u> </u>									
		Target depth of completion. Bo	hieved. Seepage encou lled with sand and bent	intei onite	ed at 7. e chips.	8 m. N Stand	1inor s pipe ir	loug istal	hing o led to a	bserv a dep	ed up	oon 8.2 _I	Logge	d By:		J. Boyc	1	
16/11/2022														Revie	wed By:		T. Curti	<u>s</u>



C		NT		Eastern Irrigation Distric	t		PR0	OJECT	NAME		_		Sna	ake La	ake Reservoii	Expan	sion		
F	PROJ	IECT NUMBER		1560-193-00			_ PRO	OJECT	LOCAT	ION	_			1	NE 1/4 32-19	-16			
[DATE	STARTED	03/28/2022	COMPLETED	03/2	8/2022	GR	OUND	ELEVA	TION	_	775.1	7m	_ N _	5609456.400)_E_	4152	93.0	00
[DRILL	ING CONTRACT	OR	Chilako Drilling Service	es Lto	d.	GR	OUND	WATER	R ELE\	VATIC	DN / DE	PTH		773.54 m		1.63	m	
[DRILL	LING METHOD		6" SSA			DA1	E GR	DUND V	VATEF	R RE	CORDE	Đ		09/	15/2022	2		
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOI ⊢ PL/ SPT 10 POO 	ISTURI ASTIC - (N) Bio 200 200 CKET F	E CON - LIQU ows/3 300 2EN (k	NTENT JID 00 mm 0 40 0 400 (Pa)			REMARK	S	□ Standpipe/		Elevation (m)
		CLAY TILL, silt high plastic, bro root hairs, trace	y, trace sand, own, some ox e gypsum crys	very moist, very stiff, idation staining, trace stals	Ŧ	AU1		21.8	ŀ		•		0	.6 m ·	- LL = 52.6%	6			775
1		BENTONITE (1	.3 m), 100 m	m layer		AU2		24.9			•	•			PI = 40.29	%			774-
-2		SHALE (Weath completely wea staining, moist,	nd silt, trace sand, n, some oxidation extremely weak,		SPT1 AU3	17	16.8		•							¥		773—	
-		2.1 m - trace 2.6 m - brown	als own with oxidation	-	AU4		16.6		•									-	
		3 m - interbec	minations	X	SPT2	37												772	
-4	· · · · ·	3.8 m - brown oxidation mottlii	with light bro	own greyish brown and		AU5		18.4		●⊢			3 3 3	.7 m ⋅ .7 m ⋅ .7 m ⋅	- EC: 2.8 ds - SAR: 10.9 - SO4-S: 50	6/m 18.4			771
- - - - -	· · · ·	4.6 m - greyis	h brown with	oxidation staining	X	SPT3	37	21.7		•			3 3	.7 m ⋅ .7 m ⋅ .7 m ⋅	- pH: 4.9 - LL = 52.7%	6			-
	· · · · ·	5.2 m - trace	shale inclusio	ns	-	AU7		20.0		٠			4	.3 m ·	PI = 31.59 Sand = 8.8 Silt = 52.0	% 3% %			770
-6		high plastic, ex	tremely weak ulphates	, finely fissured,	' = ▼	AU8	50	17.2		•					Clay = 39.	2%			769-
						AU9	50	16.2		•			Ī						-
					-	AU10		14.7		•									768
			End of Borehol	e @8.2 m	┥Ă	SPT5	50											-	767
9																			766
-																			
		Notes:																	
		Target depth of	18 m not ach	nieved. Borehole backf	illed	with ber	ntonite	chips					L	ogge	d By:		J. Bo	yd	
16/11/2022									R	eviev	veu by:		1. UU	uS					



PROJECT NUMBER	193-00 TED <u>03/2</u> rilling Services Lt	28/2022	PRO				NE 1/4 32-19-16	
DATE STARTED <u>03/28/2022</u> COMPLE DRILLING CONTRACTOR Chilako D	TED 03/2	28/2022	GR					
DRILLING CONTRACTOR Chilako D	rilling Services Lt			COND	ELEVATION	776.48m	N 5609453.300 E	414993.000
		td.	GR	OUND	WATER ELEVATION	I / DEPTH	774.14 m	2.34 m
DRILLING METHOD	6" SSA		DAT	TE GRO	OUND WATER REC	ORDED	10/12/2022	
Soil Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONT PLASTIC - LIQUIE SPT (N) Blows/300 10 20 30 100 200 300 POCKET PEN (KP) 	ENT)) mm 40 400 a)	REMARKS	Standpipe/ Instrument Elevation (m)
CLAY TILL, silty, trace sand, trace grave moist, stiff to very stiff, high plastic, brow oxidation staining, trace organics, gypsu 0.8 m - greyish brown, oxide specs SHALE (Weathered), clay and silt, some completely weathered, brown, some oxi staining, moist, medium plastic, extreme blocky	el, very vn, some um crystals e sand, idation ely weak, taining trace	AU1 AU2 SPT1 AU3	22	20.9 26.7 17.3		1	.2 m - LL = 56.1% PL = 16.9% PI = 39.2%	776
gypsum crystals BENTONITE (2.8 m), 200 mm layer SHALE (Weathered), "" SHALE (Weathered), ""	grey, moist, ured, oxide	 AU4 SPT2 AU5 AU6 SPT3 AU7 AU8 SPT4 	17 46 50	20.6 17.5 15.4 12.9 13.8	•		m - LL = 42.6% PL = 14.2% PI = 28.4% m - Sand = 15.4% Silt = 48.8% Clay = 35.8% .7 m - EC: 6.2 .7 m - SAR: 16.7 .7 m - pH: 9.5 dS/m .1 m - SPT refusal; 50 lows for 6"	773
76.7 m - weak	= - X	AU9 AU10 SPT5	50	14.7 14.8	•		.8 m - SPT refusal; 50 lows for 5"	769
End of Borehole @8.2 m								768
Notes: Target depth of 18 m not achieved. See completion. Borehole backfilled with ber	page encounte ntonite chips. S	ered at 3.0 Standpipe	0 m. N e instal	/linor s lled to	loughing observed a depth of 8.2 m.	d upon L R	ogged By:	J. Boyd



C		νT		_ PRO	OJECT	NAN	ΛE	_	5	Snake	Lake Reservoir E	xpans	ion				
F	PROJ	ECT NUMBER		1560-193-00				OJECT	LOC	ATION	ı _			NE 1/4 32-19-1	6		
[DATE	STARTED	03/29/2022	COMPLETED	03/2	9/2022	_ GRO	OUND	ELE	VATIO	N _	784.90m	N	5609450.700	Ε_	414720	.100
0	DRILL	ING CONTRACT	OR	Chilako Drilling Service	es Lto	1.	GR	OUND	WAT	ER EL	EVATIO	ON / DEPT	н	782.77 m		2.13 m	L
[RILL	ING METHOD		6" SSA			_ DAT	E GR	DUNI	D WAT	ER RE	CORDED		09/15	5/2022		
Depth (m)	SOIL SYMBOL		Soil Descripti	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTU PLASTI SPT (N) <u>10 2</u> 100 2 POCKE	JRE COI C - LIQI Blows/3 20 30 00 30 T PEN (I	NTENT JID 00 mm) 40 0 400 (Pa)		REMARKS		Standpipe/	Elevation (m)
- - - - - - - - - - - - - - - - - - -		CLAY FILL, silt stiff to hard, me root hairs, trace crystals	y, trace to son edium to high e oxide stainin	ne sand, moist, very plastic, brown, trace ig, trace gypsum	-	AU1 AU2		12.8 13.6		•		A					784
F	\bigotimes	1.5 m - suspe	ot white supr	lates	Y	SPT1	7										-
_2	\bigotimes						,	20.2				A			,	,	783-
-	\bigotimes				-	700		20.2							-		
-3	\approx	SHALE (Weath	ered) clav ar	nd silt_trace sand		AU4		18.4		•		A			_		782-
-	completely weathered, brown, light brown to da					SPT2	17			•							
-		blocky 3.2 m - interb	aminations	=	AU5		15.0		•							781-	
-4		4.3 m - brown	with grovish	brown and oxide	-	AU6		14.0		•							in d
-		mottling			Ţ	SPT3	37										
-5		4.7 111 - 11806	coal specks				07	15 1		•							. 780-
		5.4 m - trace	oxide specks		-	101				-							
-6					=	AU8		13.7		•							779
-					X	SPT4	87										
			End of Borehole	e @6.6 m													778-
_/																	-
-																	-
-8																	777-
_																	
																	776-
-9]				-
-																	
-																	775
		Notes:															•
		Target depth of with bentonite of	served 6.1 m.	upon c	comple	etion	. Bore	hole b	oackfilled	Logg	ed By:		J. Boyd				
16/11/2022													I VE VIE	Gwea Dy.			,



GROUND WATER ELEVATION / DEPTH 772.73 m 1.90 m DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 08/10/2022 Standpipe/ Instrument % Sample Number SOIL SYMBOL Moisture Content Sample Type MOISTURE CONTENT Elevation (m) SPT (N) Depth (m) Soil H PLASTIC - LIQUID REMARKS Description SPT (N) Blows/300 mm 10 20 30 100 200 300 POCKET PEN (kPa) 400 SHALE (Weathered), clay and silt, some sand, highly weathered, dark brown with oxidation specs, moist, high plastic, extremely weak to hard soil 774 AU1 18.5 1 m - Sand = 12.0% -Silt = 43.9% Clay = 44.1% 773 2.3 m - LL = 63.0% D2 17.8 -AU2 • PL = 24% 772 PI = 39.0% 2.3 m - Sand = 4.4% Silt = 52.5% Clay = 43.2% 2.5 m - LL = 56.6% 771 PL = 22.3% AU3 16.7 -PI = 34.3% ..4 m - becoming very weak 4 m - Sand = 2.9% Silt = 54.9% 770 Clay = 42.2% -5 AU4 15.2 5.5 m - LL = 74.6% -• 769 PL = 21.7% PI = 52.9% -6 End of Borehole @6.1 m 768 -7 767 -8 766 -9 765 Notes: No seepage or sloughing observed upon completion. 25 slotted PVC pipe installed to a depth of 6.1 m. Backfilled sand and bentonite.

16/11/2022

BOREHOLE No : 22BH402

Snake Lake Reservoir Expansion

NE 1/4 32-19-16

N 5609515.100 E 415474.100

PAGE 1 OF 1

C. Tams

T. Curtis

Logged By: Reviewed By:



c		١T		Eastern Irrigation District			_ PR(OJECT	NAME	Snake Lake Reservoir Exp	ansion
F	ROJ	ECT NUMBER		1560-193-00			_ PR(OJECT		NE 1/4 32-19-16	
C	DATE	STARTED	06/22/2022	COMPLETED)6/2	2/2022	_ GR	OUND	ELEVATION778.15r	n <u> </u>	415130.900
C	RILL	ING CONTRACT	OR	Chilako Drilling Services	s Lto	l.	_GR	OUND	WATER ELEVATION / DEP	TH774.17 m	3.98 m
C	RILL	ING METHOD		6" SSA			_ DAT	E GR	OUND WATER RECORDED	09/15/20)22
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (KPa) 	REMARKS	Standpipe/ Instrument Elevation (m)
-1		CLAY TILL, so soft, low to me precipitates SHALE (Weath highly weather oxidation staini weak	me silt, some s dium plastic, b hered), silt and ed, brown with ng, damp, higi ning very wea ning very wea ning some sar End of Borehole	k md k md k md k md k md k md k md k m m k m m k m m k m m k m m k m m k m m k m		AU1 AU2 AU3 AU4		9.4 14.2 11.8 13.9	POCKET PEN (kPa)	1 m - LL = 55.6% PL = 14.2% PI = 41.4% 2.5 m - Sand = 1.9% Silt = 53.6% Clay = 44.5% 4.5 m - \text{LL} = 41.9% PL = 16.5% PI = 25.4% 5 m - hard drilling 5.5 m - Sand = 10.5% Silt = 43.9% Clay = 45.6%	▼ 778- 777- 777- 771- 770- 769- 769-
- - - -		Notes:								_	
		No seepade ar	nd minor sloua	hing observed upon co	amo	letion. 2!	5 mm	slotte	d PVC pipe installed to a		
		depth of 6.1 m.	Backfilled wit	h sand and bentonite.	Р				,,	Logged By:	C. Tams
16/11/2022										Reviewed By:	T. Curtis



C		IT	Eastern Irrigation District			_ PR	OJECT	NAM	1E	_		Sr	nake La	ake Reservoir E	Expans	ion		
F	PROJ	ECT NUMBER		1560-193-00			_ PR	OJECT	LOC	ATION	_			١	NE 1/4 32-19-1	6		
[DATE	STARTED	06/22/2022	COMPLETED)6/22	2/2022	_ GR	OUND	ELE	/ATION	1 _	776	.15m	_ N _	5609941.400	E_	415203	.800
[DRILL	ING CONTRACT	OR	Chilako Drilling Service	s Ltd		GR	OUND	WAT	ER ELI	EVATIO	ON / E)EPTH		774.02 m		2.13 m	l
	DRILL	ING METHOD		6" SSA			_ DA	TE GRO) wati	ER RE	CORI	DED		09/1	5/2022	15	
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● N 	10ISTU PLASTI SPT (N) 10 20 20 20 20CKE1	RE CO C - LIQI Blows/3 0 30 00 30 _ PEN (I	NTENT JID 600 mm <u>) 4(</u> 0 40 kPa)	- 1 2 0		REMARKS		Standpipe/	Elevation (m)
-1		CLAY, complete silty, dry, soft, lo SHALE (Weath highly weathere with oxidation s weak	SHALE (Weathered), plastic, brown d silt, trace sand, to dark grey mottling, nedium plastic, very <u>ng sandy</u> @3.7 m		AU1 AU2 AU3		16.7 14.1 14.9		•				3.5 m - 3.5 m - 3.7 m -	L = 51.1% PL = 19.1% PI = 32.0% PI = 32.0% PL = 13.3% PI = 24.0% Sand = 30.5 Silt = 40.8% Clay = 28.3' Auger refus	9% % al		776 777 777 777 777 777 777 777 777 777	
		Notes:											1				1	
16/11/2022		Seepage encou with sand and b	untered at 3.6 pentonite.	m. 25 mm slotted PVC	; pip	e install	ed to	a dept	h of	3.7 m	. Back	filled	L	₋oggeo Reviev	d By: ved By:		C. Tams I. Curtis	<u> </u>



C		NT		Eastern Irrigation District			_ PRC	DJECT	NAM	1E	_		S	nake La	ake Reservoir E	Expans	sion	
F	PROJ	ECT NUMBER		1560-193-00			_ PRC	DJECT	LOC	ATION	_ ۱				NE 1/4 32-19-1	6		
[DATE	STARTED	06/21/2022	COMPLETED	06/2 ⁻	1/2022	_ GRO	DUND	ELE	/ATIO	N	778.	29m	_ N_	5609946.300	Ε_	41495	1.600
[ORILL	ING CONTRACT	OR	Chilako Drilling Service	s Lto	1.	GR0	DUND	WAT	ER EL	EVATI	ON / D	EPTH	ł	774.96 m		3.33	m
[DRILL	ING METHOD		6" SSA			_ DAT	E GR	JUNE	D WAT	ER RE	CORD	ED		09/1	5/2022		
Depth (m)	SOIL SYMBOL		Soil Descripti	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTU PLASTI SPT (N) <u>10 2</u> POCKE	JRE CC IC - LIQ Blows// 20 3 00 30 T PEN 1	NTENT UID 300 mm <u>0 40</u> 00 400 (kPa))		REMARKS		Standpipe/	Elevation (m)
-	/	CLAY TILL, sor	ne silt, trace g brown	gravel, dry, soft, low to														778-
-1		SHALE (Weath highly weather staining, damp	ered), clay ar ed, dark brown , high plastic,	nd silt, trace sand, n, some oxidation very weak	#	AU1 AU2		11.5 14.5		•				1 m - l 1 m - s 2.5 m	LL = 52.8% PL = 18.4% PI = 34.4% Sand = 1.3% Silt = 49.6% Clay = 49.1' - Sand = 1.29 Silt = 49.3% Clay = 49.5	%		777–
																	⊻ ∣:∣	775-
-14			e @4.0 m		AU3		14.4		•				3.7 m	- LL = 57.8% <u>PL = 21.3%</u> PI = 36.5%			774– 7773– 7772– 7771– 7770– 769–	
		Notes:																
		No seepage or with sand and I	sloughing ob pentonite.	served upon completio	n. 2	5 mm sta	andpip	be inst	allec	l to 4.	0 m. I	Backfil	led	Logge	d By:	,	<u>C. Tar</u> T. Cur	ns
16/11/2022															NGU Dy.		i. Uul	



CLIENT				Eastern Irrigation District PROJ					PROJECT NAME					Snake Lake Reservoir Expansion					
PROJECT NUMBER				1560-193-00	3-00 PROJECT LOCATION NE				NE 1/4 32-19-1)-16									
D,	DATE STARTED 06/21/2022 COMPLETED			COMPLETED	06/2)6/21/2022 GROUND ELEVATION 775.					775.36m	<u>N</u>	5612279.300	E _	415285.	900			
D	DRILLING CONTRACTOR Chilako Drilling Services				es Lto	1.	GR	_GROUND WATER ELEVATION / DEP						770.94 m		4.42 m			
D	RILL	ING METHOD		6" SSA			_ DA	TE GR	OUNI	D WAT	ER RE	CORDED		09/15	/2022				
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTL PLASTI SPT (N) <u>10 2</u> 200CKE	IRE CO C - LIQI Blows/3 20 30 7 PEN (NTENT UID 300 mm 0 40 0 400 kPa)	-	REMARKS		Standpipe/	Elevation (m)		
1		CLAY TILL, silt medium plastic	y, sandy, some , brown ered), clay an wn, damp, hig End of Borehole	e gravel, dry, soft, d silt, highly h plastic, extremely @5.5 m		AU1 AU2 AU3 AU4		5.8 8.8 15.6		•			1 m - Class 1 m - 1 m - 2.5 m 4 m -	Dispersivity fication = D2 LL = 39.6% PL = 14.7% PI = 24.9% Gravel = 15.57 Sand = 27.8% Silt = 32.8% Clay = 23.99 - LL = 49.3% PL = 17.4% PI = 31.9% LL = 56.2% PL = 19.8% PI = 36.4% - Auger refuse	% 6		7775 7774 7773 7772 7771 7770 769 769 768 768		
													-				-		
		Notes:	eloughing	enved 25 mm DV/C -	vine i	netallad	to a d	onth a	of F F	m D	okfill	ad with							
		sand and bento	onite.	erveu. 23 min PVC [whe ii	ISIGIIEU	เบลต	epuic	л <u>э</u> .э	нн. Da			Loaae	ed Bv:	(C. Tams	;		
													Revie	wed Bv:	-	T. Curtis	;		
16/11/2022																			



CLIENT	г		Eastern Irrigation Distric	t		_ PR	OJECT	NAME	S	Snake Lake Reservoir Expansion				
PROJECT NUMBER 1560-193-00					_ PR	OJECT			NE 1/4 32-19-16					
DATE STARTED COMPLETED				06/20	0/2022	_ GR	OUND	ELEVATION	775.58m	N_5612356.800 E	414709.200			
DRILLING CONTRACTOR Chilako Drilling Services					1.	GR	OUND	WATER ELEVATI	ON / DEPTH	ł				
DRILLII	NG METHOD		6" SSA			DA	TE GR	OUND WATER RE	CORDED	09/15/202	2			
Depth (m) SOIL SYMBOL	Soil Description			Sample Type	Sample Number	SPT (N)	(%) H PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 PCCKET PEN (KPa)			REMARKS	Standpipe/ Instrument Elevation (m)			
	CLAY TILL, sar Jamp, stiff, low SHALE (Weath highly weather extremely weather specs, suspect	nd, silty, some plastic, brown nered), clayey, ed, dark grey, <, blocky, finel white sulphat	bedrock fragments, n, oxide staining silty, trace sand, moist, high plastic, y fissured, oxide e inclusions	#	AU1		6.0	•		1 m - Sand = 48.4% Silt = 32.3% Clay = 19.3%	775			
-3				-	AU2		10.6	•		2.5 m - LL = 50.5% PL = 18.2% PI = 32.3%	773-			
4	3ENTONITE (4 SHALE (Weath	1.5 m), 100 mr iered), ""	n layer	-	AU3		15.1	•••		4 m - LL = 57.8% PL = 19.4% PI = 38.4%	771–			
	5.5 m - becon	ning some sar End of Borehole	nd @6.0 m	#	AU4		12.9	•		5.5 m - Sand = 16.9% Silt = 47.3% Clay = 35.8%	770			
											769 768 767 766			
	Notes:	25 mm stand	nine installed to 6.0 ~	Ba	okfillod	with a	and or	d hentonito obi						
Borrow search. 25 mm standpipe instaned to 6.0 m. Backlined with sand and bentonite chips. Logged By: C. Braun 16/11/2022 Reviewed By: T. Curtis														



CLIENT Eastern Irrigation District			t			PROJECT NAME						Snake Lake Reservoir Expansion							
PROJECT NUMBER1560-193-00						PROJECT LOCATION						NE 1/4 32-19-16							
DATE STARTED06/20/2022 COMPLETED0					06/20	0/2022	2 GROUND ELEVATION 776.0						05m	n N 5612462.000 E 414464.200			00		
DRILLING CONTRACTOR Chilako Drilling Services						s Ltd. GROUND WATER ELEVA						ON / D	EPTH	ł					
	DRILL	ING METHOD		6" SSA			_ DA	TE GR) WAT	ER RE	CORD	ED			09/15/202	22		
Depth (m)	SOIL SYMBOL	Soil Description				Sample Number	SPT (N)	(C) (S) (NOISTURE CONTENT H PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (KP2))	REMARKS			- Otorialand		Elevation (m)	
-1		CLAY TILL, gra stiff, medium pl staining 1.2 m - moistu sulphates SHALE (Weath completely wea medium plastic blocky, oxide st BENTONITE (2 SHALE (Weath	vely, some sa astic, brown, s ure increasing ered), clayey, athered, mottle , extremely we aining 2.2 m), 125 mr ered), "" End of Borehole	nd, some silt, damp, some oxidation , suspect white silty, trace sand, ed dark brown, moist, eak to hard soil, <u>n layer</u> @3.0 m		AU1 AU2 AU3		8.7 24.3 14.0 15.3						1 m - L 1 m - S 2.2 m - 2.7 m -	L = 37.5 PL = 14 PI = 23 Sand = 10 Silt = 41 Clay = 4 LL = 10 PL = 28 PI = 76 LL = 39 PL = 14 PI = 25	% .4% .1% 0.8% .4% .3% .3% .0% 9% .2%			7775 7774 7773 7772 7771 7770 7769 768 768
-										i									
16/11/2022		Notes: Borrow search. 10 m west	. Ba	ckfilled v	vith s	and ar	id be	ntonit	e chip	os. Mo	ved	Loggeo Review	d By: ved By:		<u>С. В</u> Т. С	raun urtis			



PROLECT NUMBER 1580-158.00 PROJECT LOCATION N. 1912426000 E 41201700 DATE STARTED COMPLETED 06202022 OROUND ELEVATION 77.5 cm 912426000 E 414201700 DRILING CONTRACTOR COMUND ELEVATION 07.5 cm 912426000 E 414201700 DRILING CONTRACTOR COMUND CERTER DATE GROUND WATER RECORDED 00152022 00152022 Embody Solil Description 90 group 90 group </th <th colspan="3">CLIENT</th> <th></th> <th>Eastern Irrigation District</th> <th></th> <th></th> <th>_ PR</th> <th>nake Lake Reservoir Expa</th> <th colspan="3">pansion</th>	CLIENT				Eastern Irrigation District			_ PR	nake Lake Reservoir Expa	pansion				
DE STARTED 0.0202022 COMPLETED 0.0215022 0	PROJECT NUMBER				PROJECT LOCATION						NE 1/4 32-19-16	9-16		
Dellung Contractor Chilako Delling Services Let. ORKUMS WATER RECORDED Outsign of the control o	DATE STARTED06/20/2022 COMPLETED06				06/20	0/2022	GR	OUND	ELEVATION	775.06m	N5612426.600 E	414201.700		
DRILLING METHOD	[DRILLING CONTRACTOR Chilako Drilling Services					l.	GR	OUND	WATER ELEVATION	N / DEPTH	l		
Soil Soil Description Image: Soil Point of the source contrent REMARKS Image: Soil of the source contrent Image: Soil Description Image: Soil Description Image: Soil Open of the source contrent REMARKS Image: Soil Open of the source contrent Image: Soil Description Image: Soil Open of the source contrent Image: Soil Open of the source contrent REMARKS Image: Soil Open of the source contrent Image: Soil Open of the source contrent Image: Soil Open of the source contrent Image: Soil Open of the source contrent Image: Soil Open of the source contrent Image: Soil Open of the source contrent of the source contren		DRILL	LING METHOD		6" SSA			_ DA	TE GR	OUND WATER REC	ORDED	09/15/202	22	
CLAY ILL, silly, sandy, some gravel, gravel is the gravel is the gravel substructure to 15 mm, dravel inclusions inclusions inclusions and the substructure inclusions inclusions inclusions and the substructure inclusions inclusions in the substructure inc	Depth (m)	SOIL SYMBOL	Soil F Description			Sample Type	Sample Number	SPT (N)	(C) WOISTURE CONTENT H PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 400 POCKET PEN (kPa)			REMARKS	Elevation (m)	
Notes: Borrow search. Backfilled with and bentonite chips. 25 mm standpipe to 3.0 m 16/11/2022	-1		CLAY TILL, silt grained, suban plastic, light ora staining, suspe SHALE (Weath completely wea oxidation spec: weak to hard s	y, sandy, some gular up to 15 angish brown, act white sulpha nered), clayey, athered, greyis s, moist, high p oil, blocky, fine	e gravel, gravel is fine mm, dry, stiff, high with oxidation ate inclusions silty, trace sand, h brown, with plastic, extremely ly fissured		AU1 AU2 AU3		4.89.710.5			1 m - LL = 40.1% PL = 16.5% PI = 23.6% 1 m - Gravel = 10.3% 1 m - Sand = 31.2% Clay = 26.3% 2.5 m - Sand = 3.6% Silt = 43.7% Clay = 52.7% 4 m - LL = 50.3% PL = 19.7% PI = 30.6%	774– 7773– 7773– 7772– 7771– 7770– 769– 769– 768– 768– 766–	
Notes: Borrow search. Backfilled with and bentonite chips. 25 mm standpipe to 3.0 m Logged By: <u>C. Braun</u> Reviewed By: <u>T. Curtis</u>	-													
Borrow search. Backfilled with and bentonite chips. 25 mm standpipe to 3.0 m Logged By: C. Braun 16/11/2022 Reviewed By: T. Curtis			Notes:								1			
Logged By: C. Braun 16/11/2022 Reviewed By: T. Curtis			Borrow search	. Backfilled wit	h and bentonite chips	. 25	mm sta	ndpipe	e to 3.	0 m				
16/11/2022 Reviewed By: <u>T. Curtis</u>											L	∟ogged By:	C. Braun	
	16/11/2022										F	Reviewed By:	I. Curtis	


	CLIEN	NT		Eastern Irrigation District			_ PRO	DJECT	NAME	Snake Lake Reservoir Expan	sion
	PROJ	IECT NUMBER		1560-193-00			_ PRC	DJECT		NE 1/4 32-19-16	
1	DATE	STARTED	06/22/2022	COMPLETED	06/22	2/2022	_ GR0	DUND	ELEVATION 779.04m	N 5610655.600 E	414876.600
1	DRILI	ING CONTRACT	OR	Chilako Drilling Service	s Lto	l.	_GR0	DUND	WATER ELEVATION / DEPT	H774.59 m	4.45 m
1	DRILI	ING METHOD		6" SSA			_ DAT	E GR	OUND WATER RECORDED	08/10/2022	2
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (KPa) 	REMARKS	Standpipe/ Instrument Elevation (m)
		CLAY TILL, silt weathered SH/ plastic, brown, SHALE (Weath highly weather yellow oxidation extremely weather extremely weather stremely weather	, trace sand, s ALE (Weathere some oxidatio ed, light brown n staining, dan c	ome completely ed), dry, firm, high n staining d silt, trace sand, to dark grey mottling, np, high plastic, @6.1 m		AU1 AU2 AU3 AU4		14.0 11.7 12.5 13.3		1 m - LL = 54.4% PL = 19.1% PI = 35.3% 1 m - Sand = 1.2% Silt = 42.0% Clay = 56.8% 2.5 m - Sand = 1.2% Silt = 43.2% Clay = 55.6% 4 m - LL = 49.6% PL = 19.9% PI = 29.7% 5 m - hard drilling from 5 m	▼
E_										-	
	1	Notes:						I	1	1	
Borrow search. 25 mm standpipe installed to 6.0						ckfilled w	/ith sa	ind an	d bentonite chips.	Logged By: Reviewed By:	<u>C. Tams</u> T. Curtis
16/11/2022	2									·	



	CLIEI	NT		Eastern Irrigation District				nsion						
1	PRO	IECT NUMBER		1560-193-00			_ PRO	OJECT	LOCATION		NE 1/4 32-19-16			
ı	DATE	STARTED	07/27/2022	COMPLETED 0)7/27	7/2022	_ GR	OUND	ELEVATION	768.34m	N 5612003.300 E	415264.90)0	
ı	DRILI	LING CONTRACT	OR	Chilako Drilling Service	s Lto	1.	GR	OUND	WATER ELEVATI	ON / DEPTH	ł			
1	DRILI	LING METHOD		6" SSA				E GR	OUND WATER RE	ECORDED	08/10/202	22		
Depth (m)	SOIL SYMBOL		Soil Descripti	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CO PLASTIC - LIQ SPT (N) Blows/3 10 20 3 100 200 30 POCKET PEN (UNTENT UID 300 mm 0 40 300 400 (kPa)	REMARKS	Standpipe/ Instrument	Elevation (m)	
		SHALE (Weath weathered, gre high plastic, ex suspect white s	astic, prown to dark prown, suspect white te inclusions, salt lenses (Weathered), silty, clayey, completely gred, grey, some oxidation staining, moist, astic, extremely weak, thinly laminated, at white sulphate inclusions, salt lenses n - becoming some thinly bedded sandston with bentonite seams					7.1 10.3 13.7	•		0.6 m - LL = 86.8% PL = 15.7% PI = 71.1% 0.6 m - Gravel = 1.0% 0.6 m - Sand = 22.1% Silt = 27.1% Clay = 49.8%	7 7 7	768	
		2.5 m - becor layers, with ber	ning some thu	* * *	AU4 AU5 AU6 AU7 AU8		7.6 9.1 11.2 10.9 14.8	•		2.7 m - LL = 102.6% PL = 20.3% PI = 82.3% 2.7 m - Sand = 8.3% Silt = 47.5% Clay = 44.2%	7	765		
			End of Borehole	9 @6.1 m								7	762	
Notes: NW Borrow search. Completed as a well. 25 mm standpipe installed to bentonite chips.									m. Backfilled wi	ith	Logged By: Reviewed By:	C. Tams T. Curtis		



C		IT		Eastern Irrigation Distric	t		_ PRC	nake Lake Reservoir Expans	ion			
F	PROJ	ECT NUMBER		1560-193-00			_ PRC	DJECT			NE 1/4 32-19-16	
[DATE	STARTED	07/26/2022	_ COMPLETED	07/26	6/2022	_ GRO	DUND	ELEVATION77	75.09m	N_5610666.200 E	415730.800
[DRILL	ING CONTRACT	OR	Chilako Drilling Service	es Ltd	Ι.	GR0	DUND	WATER ELEVATION /	DEPTH	772.42 m	2.67 m
[DRILL	ING METHOD		6" SSA			_ DAT	E GRO	OUND WATER RECOP	RDED	08/10/2022	
Depth (m)	SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTEN PLASTIC - LIQUID SPT (N) Blows/300 m 10 20 30 100 200 300 4 POCKET PEN (kPa) 	NT Im 40	REMARKS	Standpipe/ Instrument Elevation
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		SHALE (Weathered), silt and clay, trace sand, completely weathered, grey, some oxidation staining, trace sand, completely weathered, grey, some oxidation staining, moist, high plastic, extremely weak to hard soil, blocky End of Borehole @6.1 m				AU1 AU2 AU3 AU4 AU5 AU6 AU7 AU8		14.5 19.2 19.8 15.9 21.6 19.6 20.1).6 m - Organic Content = 4.3% PL = 17.8% PI = 30.1% 1.2 m - Gravel = 17.0% 1.2 m - Sand = 14.1% Silt = 43.2% Clay = 25.7% 3.7 m - Sand = 5.1% Silt = 53.9% Clay = 41.0% 5.2 m - Dispersivity Classification = D2 5.2 m - LL = 59.2% PL = 17.7% PI = 41.5% 	 ▼ 775- 774- 773- 777- 777- 777- 777- 777- 777- 777- 770- 769- 768-
												767-
	Notes:											
16/11/2022		SW Borrow sea	arch. Backfille	d with bentonite chips.						L	_ogged By:(Reviewed By:	C. Tams T. Curtis



PROJECT NUMBER 1660-193-00 PROJECT LOCATION NE 1/4 32-19-16 DATE STARTED 07/26/2022 COMPLETED 07/26/2022 GROUND ELEVATION 769.00m N 5610678.600 E 416638. DRILLING CONTRACTOR Chilako Dnilling Services Ltd. GROUND WATER RECORDED 09/15/2022 09/15/2022 DRILLING METHOD 6° SSA DATE GROUND WATER RECORDED 09/15/2022 000000000000000000000000000000000000	
DATE STARTED 07/26/2022 COMPLETED 07/26/2022 GROUND ELEVATION 769.00m N 5610678.600 E 416638. DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH 766.43 m 2.57 m DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Description 0	
DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH 766.43 m 2.57 m DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Contraction of the second secon	100
DRILLING METHOD 6'SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Contract of the second secon	
undergenergy Soil Description adv full and the substance of the	
CLAY TILL, silty, some sand, some gravel, dry, firm, low plastic, brown to light grey, trace root hairs, suspect white sulphate inclusions ■ AU1 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU2 AU3 AU4 AU3 AU4 AU3 AU4 AU5	Elevation (m)
-6 -7 -7 -9	768 766 765 764 763 762 761 761 760
SE Borrow search. 25 mm standpipe installed to 4.6 m. Backfilled with sand and bentonite.	
Logged By: <u>C. Tams</u>	
16/11/2022 Reviewed By: 1. Curtis	



C		NT		Eastern Irrigation Distric	t		PROJECT NAME Snake Lake Reservoir Expans						
F	PROJ	IECT NUMBER		1560-193-00			_ PR	OJECT		NE 1/4 32-19-16			
[DATE	STARTED	07/26/2022	_ COMPLETED	07/2	6/2022	_ GR	OUND	ELEVATION 774.88n	N 5610357.100 E	415436.300		
[DRILL	ING CONTRACT	OR	Chilako Drilling Service	es Lto	1.	GR	OUND	WATER ELEVATION / DEPT	H 770.92 m	3.96 m		
[DRILL	ING METHOD		6" SSA			DA	re GR	OUND WATER RECORDED	09/15/2022	2		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (kPa) 	REMARKS	Standpipe/ Instrument Elevation (m)		
		SHALE (Weath	y, some grave lastic, dark bri- ct white sulph nered), clay ar	I, trace sand, moist, own, some oxidation ate inclusions d silt, completely	*	AU1 AU2		14.6 20.6	•	0.6 m - Sand = 8.6% Silt = 24.7% Clay = 66.7%	774–		
3	· · · · ·	weathered, dar oxidation staini weak, blocky, s	K brown to gre ng, moist, hig suspect white s	ay mottling, some n plastic, extremely sulphate inclusions	- -	AU3 AU4		18.0 19.3	•	2.1 m - LL = 56.9% PL = 17.7% PI = 39.2%	772-		
-4		BENTONITE (4 SHALE (Weath	4.1 m), 200 mi hered), ""	- - - -	AU5 AU6		14.9 12.4	•	-4.3 m - LL = 51.2% PL = 13.9% PI = 37.3%	▼ 771			
5		5 m - becomi	ng grey	toly woothorod, gray	#	AU7		16.9	•		770–		
		damp, medium	ng grey , silty, completely weathered, grey, plastic, very weak, ground up End of Borehole @6.1 m			AU8		15.3	•	5.8 m - Sand = 5.4% Silt = 51.9% Clay = 42.7%	769-		
/											767-		
9											766		
		Notes:								-	765		
		SW Borrow sea	arch. 25 mm s	tandpipe installed to 6	6.1 m	. Backfil	led wi	th san	d and bentonite.	Logged By:	<u>C. Tams</u> T. Curtis		
16/11/2022										,			



C	LIEN	ΙT		Eastern Irrigation District		PROJECT NAME						Sn	ake La	ke Reserv	oir Expa	insion			
F	ROJ	ECT NUMBER		1560-193-00				OJECT	LOC	ATION	I _			Ν	IE 1/4 32-	19-16			
C	ATE	STARTED	07/25/2022	COMPLETED)7/25	5/2022	_ GR0	OUND	ELE	VATIO	١.	778.6	3m	N_	5611253.2	00 E	41	4634.	600
C	RILL	ING CONTRACT	OR	Chilako Drilling Service	s Ltd	l	GR0	OUND	WAT	ER EL	EVATI	ON / DE	PTH		775.07 m		3	.56 m	
C	RILL	ING METHOD		6" SSA			_ DAT	E GR	DUNI	D WAT	ER RE	CORDE	D		0	8/10/20	22		
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)		MOISTL PLASTI SPT (N) <u>10 2</u> 200CKE	IRE CO C - LIQ Blows/3 20 30 7 PEN (NTENT UID 300 mm <u>0 400</u> kPa)			REMAR	KS		Standpipe/	Elevation (m)
_1		CLAY TILL, silty plastic, brown, white sulphate SHALE (Weath completely wea staining, damp, hard soil, block	y, trace gravel some oxidatic inclusions ered), silt, cla thered, grey, high plastic, y, suspect wh	, damp, firm, medium n staining, suspect yey, trace sand, some oxidation extremely weak to ite sulphate inclusions	-	AU1		10.7		•			1	m - L	L = 41.69 PL = 18. PI = 22.	% 7% 9%			778
-3						AUZ		10.1						.5 111 -	Sand - 2 Silt = 65 Clay = 3	.1% 2.2%	¥		776
-4					æ	AU3		15.2		●F			4	m - L	L = 53.5% PL = 17. PI = 36.	% 4% 1%			774
6	· · · · · · · · · · · · · · · · · · ·		End of Borehole	9 @6.1 m	-	AU4		16.9		•									773-
																			771
																			770
- - - - - - - -																			769
		Notes: SW Borrow sea	arch. Standpip	e installed to 6.1 m. Ba	ackfi	illed with	sand	and b	ento	onite.			L	oqaea	l By:		C.	Tams	
16/11/2022													R	leview	ed By:		Ţ. (Curtis	



OEIEITT	Eastern Irrigation District	t		_ PROJE	CT NAME	Snake Lake Reservoir Expansion	on
PROJECT NUMBER	1560-193-00			_ PROJE	CT LOCATION	NE 1/4 32-19-16	
DATE STARTED	07/25/2022 COMPLETED	07/25/2	022		ID ELEVATION 781.06	m N 5611037.200 E 4	414455.100
DRILLING CONTRA	CTOR Chilako Drilling Service	es Ltd.		_GROUN	ID WATER ELEVATION / DEP	TH775.65 m	5.41 m
DRILLING METHOD	6" SSA			DATE O	ROUND WATER RECORDED	08/10/2022	
Depth (m) SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	 MOISTURE CONTENT H PLASTIC - LIQUID ■ SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 ▲ POCKET PEN (KPa) 	REMARKS	Standpipe/ Instrument Elevation (m)
CLAY TILL, stiff, high pla staining, sus -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	silty, trace gravel, trace sand, moist, stic, dark brown, some oxidation pect white sulphate inclusions dium grained sand lenses athered), clay and silt, trace sand, ered, grey with oxidation staining, blastic, extremely weak to hard soil, ted, suspect white sulphate inclusions, n crystals		AU1 AU2 AU3	18 10 11	. • POCKET PEN (kPa)	 1 m - LL = 53.3% PL = 16.7% PI = 36.6% 1 m - Sand = 2.7% Silt = 52.3% Clay = 45.0% 2.5 m - Sand = 1.3% Silt = 45.6% Clay = 53.1% 4 m - LL = 52.2% PL = 19.2% PI = 33.0% 5.5 m - Sand = 2.1% Silt = 45.5% Clay = 52.4% 	780– 7789– 7779– 7776– 7776– 7776– 7776– 7776– 7776– 7774– 7774–
						-	
Notes:							
SW Borrow s	search. Backfilled with bentonite.					Logged By: C	. Tams
16/11/2022				Reviewed By: T	Curtis		



с	LIEN	ΝT		Eastern Irrigation District			PROJECT NAME Snake Lake Reservoir Expansion							
Р	ROJ	ECT NUMBER		1560-193-00			_ PRC	JECT	LOCATION		NE 1/4 32	-19-16		
D	ATE	STARTED	07/07/2022	COMPLETED	07/07	7/2022	_ GRO	DUND	ELEVATION	780.31m	N 5610839.	.600 E	4145	38.900
D	RILL	ING CONTRACT	OR	Chilako Drilling Service	s Ltd	l.	GR0	DUND	WATER ELE	VATION / DEPTH	H777.21 n	n	3.10) m
D	RILL	ING METHOD		6" SSA			DAT	E GRO	DUND WATE	R RECORDED		08/10/202	22	
Depth (m)	SOIL SYMBOL		Soil Descripti	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTUR PLASTIC SPT (N) Bi 10 20 100 200 POCKET I 	E CONTENT - LIQUID lows/300 mm 30 40) 300 400 PEN (kPa)	REMA	RKS	Standpipe/	Elevation (m)
		CLAY TILL, silt plastic, light bro SHALE (Weath completely wea moist, high plas blocky 3.5 m - SEEF 4.6 m - becor	, some sand, o own hered), silt and athered, dark h stic, extremely PAGE ning wet	dry, firm, medium clay, trace sand, prown to grey, damp to weak to hard soil,		AU1 AU2 AU3 AU4		10.0 16.5 20.2 25.5		PEN (KPa)	1 m - Sand = 1 Silt = 5: Clay = 2.5 m - LL = 49 PL = 18 PI = 30 4 m - LL = 50.7 PL = 17 PI = 33 4 m - Sand = 4 Silt = 5: Clay = 5.5 m - LL = 56 PL = 17 PI = 39	2.1% 2.4% 35.3% 35.3% 0.0% 3.1% 0.9% 7.6% 3.2% 42.3% 5.8% 7.6% 0.2%		780 779 777 777 777 777 777 777 777 777 77
		Notes:												
16/11/2022		SW Borrow sea	d with bentonite.							Logged By: Reviewed By:		C. Ta T. Cu	ms	



C		νT		Eastern Irrigation District			_ PRO	DJECT	NAME	Snake Lake Reservoir Expa	nsion
F	PROJ	ECT NUMBER		1560-193-00			_ PRO	DJECT		NE 1/4 32-19-16	
[DATE	STARTED	07/06/2022		07/06	6/2022	_ GRO	DUND	ELEVATION 779.85r	n N 5610634.300 E	414557.100
[DRILL	ING CONTRACT	OR	Chilako Drilling Service	s Ltd	l.	GR0	DUND	WATER ELEVATION / DEP	TH 777.08 m	2.77 m
	DRILL	ING METHOD		6" SSA			_ DAT	E GRO	OUND WATER RECORDED	08/10/20	22
Depth (m)	SOIL SYMBOL		Soil Descriptio	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (kPa) 	REMARKS	Elevation (m)
-1		SHALE (Weathered), silt and clay, trace sand, gre some oxidation staining, damp, high plastic, extremely weak to hard soil, blocky 3.5 m - becoming some sand 3.8 m - TRACE SEEPAGE End of Borehole @4.0 m				AU1 AU2 AU3		9.1		1 m - Gravel = 1.5% 1 m - Sand = 2.5% Silt = 49.5% Clay = 46.5% 2.5 m - LL = 50.9% PL = 19% PI = 31.9% 3.5 m - LL = 50.0% PL = 18.7% PI = 31.3% 3.5 m - Sand = 11.7% Silt = 52.7% Clay = 35.6% 4 m - Auger refusal	▼ 7779- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7778- 7776- 7774- 7773- 7772- 7771-
<u> </u>										-	770-
		Notes:									
10/11/2017		SW Borrow sea	rch. Standpip	e installed to 4.0 m. Ba	ackfi	illed with	i sand	and b	pentonite.	Logged By: Reviewed By:	C. Tams T. Curtis
10/11/2022										-	



PROJECT NUMBER 1560-193-00 PROJECT LOCATION NE 1/4 32-19-16 DATE STARTED 07/06/2022 COMPLETED 07/06/2022 GROUND ELEVATION 777.67m N 5610330.100 E 41- DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH 775.02 m 2. DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Contract Cont	Asstruction Canadopper (a) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c
DATE STARTED 07/06/2022 COMPLETED 07/06/2022 GROUND ELEVATION 777.67m N 5610330.100 E 41- DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH 775.02 m 2 DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Contract of the second	4851.000 65 m Unstrument Instrument (a) 777-
DRILLING CONTRACTOR Chilako Drilling Services Ltd. GROUND WATER ELEVATION / DEPTH 775.02 m 2. DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Contraction of the second contreconterion	Standbipe/
DRILLING METHOD 6" SSA DATE GROUND WATER RECORDED 09/15/2022 Image: Content of the second state in the second state is the second state in the second state is the second state in the second state is the second state	Standpipe/ Instrument Elevation
Hamiltonian	242 Candpipe/ Instrument Elevation
CLAY TILL, silty, dry, firm, low to medium plastic, brown, some oxidation staining, suspect white sulphate inclusions SHALE (Weathered), clay and silt, trace sand, AU1 13.5 I m - Sand = 10.4%	777-
Image: Single state of the	775-
	769- 768-
Notes: SW Borrow search. 25 mm PVC standpipe installed to a depth of 6.1 m. Logged By: <u>C.</u> Reviewed By: <u>T. C</u>	<u>lams</u> Curtis



CLIE	INT		Eastern Irrigation District			_ PRO	JECT	NAME	S	nake Lake Reservoir Expa	nsion	
PRO	JECT NUMBER		1560-193-00			_ PRO	JECT	LOCATION		NE 1/4 32-19-16		
DATI	E STARTED	07/27/2022	_ COMPLETED)7/2	7/2022	_ GRC	DUND	ELEVATION	774.42m	N_5612095.700 E	415843	8.700
DRIL	LING CONTRACT	OR	Chilako Drilling Service	s Lto	1.	GRC	DUND	WATER ELEVAT	ION / DEPTH	۱		
DRIL	LING METHOD		6" SSA			DAT	E GRO	OUND WATER R	ECORDED	09/15/202	22	
Depth (m) SOIL SYMBOL		Soil Descript	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CO PLASTIC - LIC SPT (N) Blows/ 10 20 3 100 200 3 POCKET PEN 	DNTENT QUID /300 mm 30 40 00 400 (kPa)	REMARKS	Standpipe/	Elevation (m)
	CLAY TILL, silt medium plastic inclusions	y, gravelly, so , brown, susp ng trace to so ning damp, da ng some oxid rered), clay ar athered, grey, , high plastic, ; white sulpha	me cobbles, dry, firm, lect white sulphate me gravel, no cobbles ark brown ation staining nd silt, trace sand, some oxidation extremely weak, te inclusions		AU1 AU2 AU3 AU4 AU5 AU6 AU7 AU8		5.2 8.4 11.0 12.5 16.3 15.8 16.3			0.6 m - LL = 40.6% PL = 13.3% PI = 27.3% 1.2 m - Gravel = 4.2% Clay = 32.3% 2.1 m - LL = 49.9% PL = 13.2% PI = 36.7% 2.7 m - Sand = 9.7% Silt = 50.6% Clay = 39.7%		774 773 777 771 777 769 768 766 766
											[
16/11/2022	Notes: NW Borrow sea	arch. Backfille	ed with bentonite chips.							Logged By: Reviewed By:	C. Tam T. Curti	s



	CLIE	NT	I	Eastern Irr	igatio	on Distri	ct		F	PROJ	ECT I	NAME	Ξ			Sna	ake Lake	e Reservoir E	xpans	ion		
	PROJ	ECT NUMBER		1560	-193	8-00			F	PROJ	ECT I	LOCA	TION				NE	1/4 32-19-1	6			
	DATE	STARTED	06/10/2022		ETEI	D	06/11/2	2022	<u> </u>	GROL	JND E	ELEVA	ATION		772.3	7m	N_56	12553.698	Ε_	41551	2.170	0
	DRILI	ING CONTRACT	OR	١	/al's	Drilling			0	GROL	JND V	VATE	R ELE	VATIO	N / DE	PTH	7	69.91 m		2.46	m	
	CORI	NG TYPE	HQ3	DIAMETE	R (m	nm)	61		C	DATE	GRO	UND	WATE	R REC	ORDE	D		08/10)/2022			
Depth (m)	SOIL SYMBOL	D	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N <u>10</u> 50 1 POCKI	URE CO IC - LIQ I) Blows 20 3 100 15 ET PEN	ONTEN UID /300 mm <u>0 40</u> 50 200 (kPa)	۲ ۱ ۱		REMARKS	5	Standpipe/	Elevation	(m)
-1-1		OVERBURDEN 3.1 m. REFER	N, drilled by 6" TO 22BH118 L	SSA to .OG															<u> </u>	Z	77	772 771 770
3 4 4		SHALE (Weathered), clay and silt, race sand, highly weathered, dark banded brown, some oxidation staining, moist, high plastic, very weak, blocky, finely stratified, medi spaced oxidized fractures, some gypsum crystal inclusions		l silt, dark n ery medium me		RC1 UD1 UD2 RC2	3.10 - 4.62	1	58 69 58 53	20			F				3.3 m - 3.8 m - Classif 3.8 m - 3.8 m -	LL = 73.2% PL = 17.7% PI = 55.5% Dispersivit ication = D2 EC: 1.8 dS SAR: 29.9	6 6 7 9 2 8/m		70 70	69 69
5 							6.14		67 48								3.8 M -	рп: 8.4		I	70	'67
6 		BENTONITE (6 bentonic shale, silt, trace sand SHALE (Weath 6.3 m - 20 mr	5.2 m), 50 mm l , high plastic, cl lered), "" n layer of stron	layer of lay and	-	RC3 UD4 UD3	6.14 - 7.66	3	86 100 80	6			 	-			6 m - L 6.2 m -	L = 160.2% PL = 16.4% PI = 143.8 Sand = 3.0 Silt = 45.0 Clay = 52.0	5 6 8 7 9 7 8 7 8 7 8 7 8		7	'66'''
- - - - - - - - - - - -	· · · · · · · · · · · · · · · · · ·	sandstone				RC4	7.66 - 9.18	4	90 100 91	4							6.6 m -	Silt = 53.8 Clay = 25.9 EC: 5.5 dS	% 9% \$/m		7	65
		SHALE, clay ar unweathered, g moderately stro 9.2 m - becon 9.3 m - 43° fra 9.6 m - 55° fra	nd silt, trace sa grey, moist, higl ong, finely fissu ning very stron- acture acture	nd, h plastic, red g		UD5 UD6 RC5	9.18 - 10.70	5	84 100 91	1				-			o.o m - 6.6 m - 8.6 m - Classif	SAR: 22.4 pH: 7.9 Dispersivit ication = NI	y 03		70	63
Notes: Target depth of 24 m achieved. Corehole completed a a well and backfilled with sand and bentonite chips.									Mon epth T 0.00 6.30	itorir op	ng Ins Dept	talla th Bo 6.30 7.80	tion P ttom	ipe W Pipe PL SLC	ork e Type _AIN DTTED		ogged l eviewe	Зу: <u>С.</u> d Ву:	Brau T. (n / J. I Curtis	Boyd	<u>1</u>



	CLIEN	ΝT		Eastern Irriga	ation Distr	ict		P	PROJ	ЕСТ І	NAME			Sn	ake L	ake Reservoir E	Expans	ion	
	PROJ	ECT NUMBER		1560-1	93-00			P	PROJ	ECTI	LOCA	TION				NE 1/4 32-19-1	6		
	DATE	STARTED	06/10/2022	_ COMPLET	ED	06/11/	2022		BROL	JND E	ELEVA	TION	_	772.37m	_ N _	5612553.698	Ε_	415512.	170
	DRILL	ING CONTRACT	TOR	Val	's Drilling			0	BROL	JND V	VATE	R ELE	IOITAV	N / DEPTH		769.91 m		2.46 m	
	CORI	NG TYPE	HQ3	DIAMETER	(mm)	61		C	DATE	GRO	UND	WATE	R REC	ORDED		08/10)/2022		
Depth (m)	SOIL SYMBOL	[Soil Description	Samula Tuna	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTI PLASTI SPT (N) 10 2 50 11 POCKE	URE CC C - LIQI Blows/ 0 30 00 15 T PEN	NTENT JID 300 mm) 40 0 200 (kPa)		REMARKS	3	Standpipe/ Instrument	Elevation (m)
		11.7 m - 69°	fracture	-	RC6 UD7	10.70 - 12.22	6	93 100 89	3			 F-			11.3	m - LL = 102 PL = 17.29 PI = 84.89	.0% %		762
		12.0 m - 57° 12.5 m - 76° 12.9 m - 55°	fracture fracture fracture		RC7	12.22 - 13.74	7	97 100 87	5										760
- - - - - - - - - - - - - - - - - - -		13.4 m - 47° 14.0 m - 65°	fracture fracture		RC8	13.74 - 15.26	8	95 100 91	3										759
- - - - - - - - - - - - - - - - - - -		14.4 m - 53° 14.9 m - 75 r calcified shale, ammonites 15.6 m - 31°	fracture nm layer of sus very strong, so fracture	spect ome	UD8 RC9	15.26 16.78	9	93 100 86	3						14.6 7.8%	m - Sand = Silt = 59.9 Clay = 32.	% 3%		758
- - - - - - - - - - - - - - - - - - -		16.1 m - 56° 16.6 m - 55°	fracture fracture		RC10	16.78 - 18.30	10	100 100 95	1										756
- - - - - - - - - - - - - - - - - - -		17.7 m - 52° 18.5 m - 52°	fracture fracture		RC11	18.30 - 19.82	11	100 100 97	1										754
		Notes			RC12 UD9	19.82	12	93	2			+			20 m	ı - LL = 92.7%)		753
16/11/202	2	Target depth o a well and bac	f 24 m achieve kfilled with san	d. Corehole d and bento	complet onite chip	ed as s.	D	Moni epth To 0.00 6.30	itorin op	ig Ins Dept	stallat th Bo 6.30 7.80	tion Pi ttom	pe Wo Pipe PL SLO	ork Type AIN TTED F	.ogge Reviev	d By: wed By:	Brau	<u>n / J. Bo</u> Curtis	oyd



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	CLIEN	ΙT		Eastern Irri	gati	on Distri	ct		F	PROJ	ECT	NAME	Ξ			Sna	ake Lake Reserv	/oir Expar	ision		
	PROJ	ECT NUMBER		1560-	-193	3-00			F	PROJ	ECT I		TION	_			NE 1/4 32-	19-16			
	DATE	STARTED	06/10/2022	COMPLE	TE	D _	06/11/2	2022		GROL	JND E	ELEV	ATION	_	772.3	37m	N 5612553.0	698 E	415	512.1	70
	DRILL	ING CONTRACT	OR	V	′al's	Drilling			0	ROL	JND V	VATE	R ELE	VATIO	N / DE	PTH	769.91 m		2.4	16 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRO	UND	WATE	R REC	CORDI	ED		08/10/202	2		
Depth (m)	SOIL SYMBOL	D	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKE	URE C IC - LIC) Blows 20 3 00 1 ET PEN	ONTEN 2UID /300 mi 30 4 50 20 (kPa)	n 0 00	REMA	RKS	Ctandairo/	otariupuper Instrument	Elevation (m)
-					H		- 21 34		93 86								PL = 1 PL = 7	6.4% 6.3%			750
-21		20.7 m - 50m seam infill mate fracture 20.9 m - 69° f 21.6 m - 65° f 22.3 m - 24° f	m weak section rial starting wit racture racture racture	n of h an 80°		RC13	21.34 21.34 - 22.86	13	100 100 90	2							P1 - /	0.3%			752
-23		24.2 m - 90° f	racture, bentor	nite		RC14	22.86 24.38	14	99 99 97	1											749
-25		fragment		/																	747
																					746
27 																					745
																					744-
- 29 																					743-
<u> </u>																					
16/11/2022	2	Notes: Target depth of a well and back	24 m achieved	d. Coreho d and ben	le c ton	complet ite chip	ed as s.	D	Mon epth T 0.00 6.30	itorir op	ng Ins Dept	talla h Bc 6.30 7.80	tion P ottom	ipe W Pipe Pl SLC	′ork e Type _AIN DTTEI	e D R	ogged By: eviewed By:	<u>C. Bra</u> T.	<u>un / J</u> Curt	l. Boy is	/d

0	CLIEN	ΙT	East	ern Irrig	gatio	on Distri	ct		P	ROJ	ECTN	NAME				Snake Lake Reservoir Expa	ansion	
1	PROJ	ECT NUMBER		1560-	-193-	-00	00/02/		P	ROJ			TION		770 47-	NE 1/4 32-19-16	416328	000
			06/03/2022 CC	JMPLE	: I EU)	06/03/2	2022	G					_ مىتە/	//0.1/h	N = 3612319.800 E	5 81 m	. <u>000</u> າ
			3" x 4 5/8' DIA		R (mi	m)	76 בום.	;	ט ח		GRO		WATER			08/10/20	22	<u> </u>
			<u> </u>			,		,	5									<u>:</u>
(m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%		MOISTU PLASTI SPT (N) <u>10 2</u> 50 10 POCKE	JRE C C - LIC Blows 0 3 00 1 T PEN	ONTENT 201D /300 mm 30 40 50 200 (kPa)	REMARKS	Standpipe Instrumer	Elevation
		OVERBURDEI 4.5 m. REFER	N, drilled by 6" SSA TO 22BH126 LOG	A to									POCKE	<u>I PEN</u>	<u>(KPa)</u>			770
,																		769
																		768
																		767
5	· · · · · · · · · · · · · · · · · · ·	SHALE (Weath highly weather grey mottling, r	nered), clay and silt ed, light brown to d moist, high plastic,	t, lark very		RC1	4.47 - 6.22	1	0 100 0									766
3	· · · · · · · · · · · · · · · · · · ·	laminations, th fractured 4.8 m - weak	inly laminated, high to moderately stroi	ng													¥	
	· _ · · ·					RC2	6.22 - 7.77	2	0 98 34									764
	· · · · · · · · · · · · · · · · · · ·	7.2 m - weak oxidation lamin	, closely spaced ations			PC3	7 77 -	Q	76							7 m - EC: 9.9 dS/m 7 m - SAR: 29.0 7 m - pH: 7.2		763
	· · · · · · · · · · · · · · · · · · ·						9.26	9	98 78									762
		SHALE, clay a medium weath plastic, weak, f 9.3 m - shallc	nd silt, trace sand, ered, grey, damp, f înely stratified, mar owly inclined fractur	nigh rine res		UD1 RC4	9.26 - 10.85	4	80 100 81							8.61 m - Dispersivity Classification = ND4 8.61 m - Jar Slake Index: 1.0 9.3 m - Loss of drilling fluid		761
		Notos:																
		Target depth of	f 27 m achieved. Co	orehol	le ba	ackfille	d with		Moni	torin	g Ins	tallat	tion Pi	pe W	ork			
		bentonite chips	S.							-4	Dehr	00 11	uoni	i-ihe	s iyhe			

										CORE	HOLE No : 22	CH126
		an Eng	globe	com	pa	any						PAGE 2 0F 3
	CLIENT	Eastern Irri	gation Distr	ict		F	PROJ	ECTI	NAME	Sn	iake Lake Reservoir Expans	ion
	PROJECT NUMBER	1560-	193-00			F	PROJ	ECT I	OCATION		NE 1/4 32-19-16	
	DATE STARTED	06/03/2022 COMPLE	TED	06/03/	2022	<u> </u>	GROL	JND E	LEVATION	770.17m	N_5612519.800 E_	416328.000
	DRILLING CONTRAC	CTOR Chilako D	rilling Servi	ices Ltd.			GROL	JND V	VATER ELEVA	TION / DEPTH	764.36 m	5.81 m
	CORING TYPE	3" x 4 5/8' DIAMETE	R (mm)	76	3	0	DATE	GRO	UND WATER F	RECORDED	08/10/2022	
								(nt
Depth (m)	SOIL SYMBOL	Soil Description	Sample Type Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m	Moisture Content (%	 MOISTUR ⊢ PLASTIC - ■ SPT (N) BI 10 200 50 100 ▲ POCKET F 	E CONTENT LIQUID ows/300 mm <u>30 40</u> 150 200 PEN (kPa)	REMARKS	Standpip Instrumer Elevation (m)
- - - - - - - - - - - - - - - - - - -			RC5	10.85 - 12.32	5	90 100 82					circulation, loss of 500L of fluid	760-
-12	12.3 m - slig	ghtly inclined fracturing	RC6	12.32 - 13.87	6	87 101 91						758
- - - - - - - - - - - - - - - - - - -			RC7	13.87 - 15.37	7	97 101 89						756
			⊥ UD2 RC8	15.37 - 16.92	8	94 102 95						755
- - - - - - - - - - - - - - - - - - -	BENTONITE 	(16.6 m), 300 mm layer ay and silt, high plastic clayey, trace sand, , light grey, damp, high strong, finely fissured ong ry fractured, weak to	RC9 RC10	16.92 - 17.15 17.15 - 18.42	9 10	61 100 83 93 100 93					16.6 m - LL = 141.4% PL = 23.7% PI = 117.7% 16.6 m - Sand = 0.0% Silt = 44.4% Clay = 55.6% 17.2 m Sand =	753-
- - - - - - - - - - - - - - - - - - -	moderately st fracturing BENTONITE SHALE, clay light grey, dan strong, finely	trong, slightly inclined (18.1 m), 5 mm layer and silt, unweathered, mp, high plastic, very fissured, finely stratified	RC11 RC12	18.42	11	84 102 94					0.3% Silt = 69.0% Clay = 30.7% 18 m - LL = 102.5% PL = 17.1% PI = 85.4%	752
F	Notari]	
	Notes: Target depth bentonite chij	of 27 m achieved. Coreho ps.	le backfille	ed with	D	Mon epth T 0.00 16.70	itorir op	ng Ins Dept	tallation Pipe h Bottom F 16.70 18.00 S	Work Pipe Type PLAIN SLOTTED	.ogged By:J.	<u>Boyd</u>
16/11/202	2									r		20100

														CO	RE	HOLE No :	220	:H1	26
	V		an Er	ıgl	obe	com	npa	any									P	AGE 3	0F
	CLIEN	IT	Eastern I	rriga	tion Distr	ict		F	PROJ	ECT	NAM	E	_		Sn	ake Lake Reservoir I	Expansio	n	
	PROJ	ECT NUMBER	156	60-19	93-00			F	PROJ	ECTI		ATION	_			NE 1/4 32-19-1	16		
	DATE	STARTED	06/03/2022 COMP	LETI	ED	06/03/	2022	2 (GROL	JND E	ELEV	ATION	_	770.1	7m	N 5612519.800	_ E4	16328.0)00
	DRILL	ING CONTRACT	OR Chilako	Drill	ing Servi	ces Ltd.		0	GROL	JND V	VATE	RELE	VATIC	DN / DE	PTH	764.36 m		5.81 m	
		NG TYPE	<u>3" x 4 5/8'</u> DIAME	TER ((mm)	76	5	[GRO		WATE	R RE	CORDE	ED	08/1	0/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKE	URE C IC - LIC) Blows 20 : 20 : 20 : 21 PEN	ONTEN QUID s/300 mi <u>30 4</u> 50 20 I (kPa)	T n <u>)</u>	REMARK:	S	Standpipe, Instrument	Elevation
						19.98		95 100											750
						21.44		88											
1					003														749
		21.5 m - stroi	ng to very strong,		RC13	21.44	13	92 100											
2		calcified shale 21.8 m - wea	(suspect) k to moderately strong		UD4	21.80	14	86 98					ļ			21.99 m - LL = 80	0.0%		
						-		98								PL = 20.3 PI = 59.7	% %		748
						23.02		00								21.99 m - UCS =			
3		23.0 m - stroi	ng		RC15	23.02	15	105											747
		23.4 m - wea	k			24.49		103											
4																			
4		04.0																	746
		24.3 m - stroi 24 6 m - wea	ng k to moderately strong		RC16	24.49	16	93 101											
5						27.24		91											
																			745
6																			744
7																			
																			743
8																			740
																			742
9																			741
		Notes:						Mon	itorir	na Ine	stalla	ition P	ine \^	/ork					L
		Target depth of	f 27 m achieved. Coreł	ed with	D	epth T	op	Dept	th Bo	ottom	Pip	e Type	Э						
		pentonite chips	S.					0.00			16.7	0	P		, L	.ogged By:	J. B	oyd	
44/000	2							10.70			10.00	5	010		F	Reviewed By:	T. C	urtis	



(ΝT		on Distri	ict		F	PROJ	ECT	NAME	-			Sna	ake Lake Reservoir Expans	ion			
	PROJ	IECT NUMBER		1560	-193	3-00			F	PROJ	ECT L		TION	_			NE 1/4 32-19-16		
	DATE	STARTED	06/10/2022	COMPL	ETEI	D	06/13/	2022	2 0	ROL	JND E	ELEVA	TION	_	770.	05m	N_5612521.800 E	416417.0	600
l (DRILI	LING CONTRACT	OR	Chilako E	Drillir	ng Servi	ces Ltd.		Ģ	ROL	JND V	VATE	R ELE\	/ATIC	N / D	EPTH	767.21 m	2.84 m	
	CORI	NG TYPE	2 3/4" x 4 5/8"	DIAMETE	ER (m	nm)	75	5	C	DATE	GRO	UND	WATEF	R REG	CORD	ED	10/12/2022		
																		nt e/	
Depth (m)	SOIL SYMBOL	D	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m	Moisture Content (%	● ⊢ ■	MOISTL PLASTIC SPT (N) <u>10 2</u> 50 10 POCKE	JRE C C - LIC Blows 0 (100 1 T PEN	ONTE QUID \$/300 m <u>30 2</u> 50 2 I (kPa)	NT 1m <u>40</u> 00	REMARKS	Standpip Instrume	Elevation (m)
-			N, drilled by 6"	SSA to															
-1		4.4 m. REFER SHALE (Weath medium weath dark grey mottl very weak, thin 4.6 m - crumt	TO 22BH134 hered), silty, cla ered, light brow ing, moist, hig ly laminated bled core bled core	ayey, wn to h plastic,		RC1	4.47 - 6.25	1	0 71 17	20							Ĩ	Ĕ	769– 768– 766– 766–
		6.2 m - crumb	bled core			RC2	6.25 - 7.76	2	0 81 32	20									764
7 		7.0 m - 60° fra 7.4 m - 67° fra 7.8 m - weak 7.8 m - crumb 8.0 m - bento 8.1 m - and si medium plastic ayer	acture acture to moderately oled core nite inclusions ilt, clayey, sand , very oxidized	strong dy, orange		RC3 UD1	7.76 - 9.28	3	32 100 47	20			F				8.1 m - LL = 46.6% PL = 17% PI = 29.6% 8.1 m - Sand = 29.7%		763
		SHALE, clay ar slightly weather plastic, weak, fi 8.8 m - 58° fra 9.2 m - 83° fra	nd silf, trace sa red, grey, dam inely stratified, acture acture	and, p, high marine		RC4	9.28 - 10.90	4	0 35 6	4							Silt = 49.8% Clay = 20.5% 9.3 m - Core loss due improper bit sizing.		761
		Notes:			<u> </u>				Mon	itorir	ng Ins	stalla	tion Pi	pe W	/ork				
16/11/2022	2	Target depth of bentonite chips	27 m achieve	d. Corehc	ole b	ackfille	ed with	D	epth T 0.00 7.60	op	Dept	h Bo 7.60 9.10	ttom	Pip P SLC	e Typ LAIN DTTE	D D R	ogged By: <u>J. Boyd</u> eviewed By: <u>T. (</u>	<u>/ C. Tan</u> Curtis	<u>ns</u>

an **Englobe** company

	CLIEN	NT		on Distri	ct		P	ROJ	ECTI	NAM	E	_		Sr	nake La	ake Reserv	voir Ex	pansic	'n			
	PROJ	ECT NUMBER		1560-	-193	3-00			P	ROJ	ECTI		ATION	_			1	NE 1/4 32-	19-16			
	DATE	STARTED	06/10/2022		TE	D	06/13/2	2022	G	ROU	JND E	ELEV	ATION		77().05m	_ N _	5612521.8	300	E _4	16417.6	600
	DRILL	ING CONTRACT	OR	Chilako D	rillir	ng Servi	ces Ltd.		G	ROU	JND V	VATE		VATI	ON / [DEPTH		767.21 m	I		2.84 m	
	CORI	NG TYPE	2 3/4" x 4 5/8"	DIAMETE	R (n	nm)	75		D	ATE	GRO	UND	WATE	R RE	COR	DED			10/12/	2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 POCK	TURE (TIC - LI I) Blow 20 100 ET PE	CONTE QUID vs/300 <u>30</u> 150 N (kPa	ENT mm 40 200	_	REMA	RKS		Standpipe/ Instrument	Elevation (m)
		10.3 m - 7° fr 200mm long 10.9 m - mod	acture approxir erately strong t	nately to strong		RC5	10.90 - 12.30	5	100 100 89	3							Bit si subs	ze chang equent ru	ied fo Ins.	r		759
						RC6	12.30 - 13.85	6	100 100 93	2							-13 m	- LL = 84	4.4%			758
- - - - - - - - - - - - - - - - - - -					RC7	13.85 - 15.35	7	97 100 92	3							13 m	PL = 1 PI = 6 - Sand = Silt = { Clay =	5.8% i8.6% = 0.8% 57.8% : 41.4	% %		756	
15 16 						RC8	15.35 - 16.89	8	65 100 92	7							15.3 to 3" m	5 m - Swi core bit a	tched at 15.3	35		755
		17.1 m - 26° [.] 17.8 m - 23° [.]	UD4 RC9	16.89 - 18.34	9	66 100 92	6							16.5 Class 16.69 m 16.69 16.69	m - Dispe sification 5 m - EC: 5 m - SAF 5 m - pH:	ersivit = ND 1.7 c ₹: 19. 8.7	y 3 IS/ 2		753-			
		19.3 m - neai	· vertical fractur	es		RC10	18.34 - 19.89	10	75 100 90	5												752
Ę						DC14	10.90	11	00	F												
					11	KC11	19.89	11	50	5			:	:	:	:						
		Notes:		Moni	torin	ıg Ins	stalla	ition F	ipe ۱	Nork												
		Target depth of bentonite chips	d with	D	epth To	эр	Dept	h Bo	ottom	Pi	be Ty	pe										
	bentonne chips.											7.60 9.10)	F SI			ogge	d By: _	J. <u>E</u>	3oyd /	C. Tan	ns
16/11/2022	2											F	Reviev	ved By: _		Т. С	urtis					

	CLIEN	IT		Eastern Irrig	gati	on Distri	ict		P	ROJ	ECT	NAM	Ξ		:	Snake La	ake Reservoir Expan	sion	
	PROJ	ECT NUMBER		1560-	-193	3-00			P	ROJ	ECT	LOCA	TION				NE 1/4 32-19-16		
	DATE	STARTED _	06/10/2022		TE	D	06/13/	2022		ROL	JND E	ELEV	ATION	_	770.05m	<u>N</u>	5612521.800 E	416417	.600
	DRILL	ING CONTRAC	TOR	Chilako D	rillir	ng Servio	ces Ltd.		0	ROL	JND \	NATE	RELE	VATIO	N / DEPT	н	767.21 m	2.84 m	۱
	CORII	NG TYPE	2 3/4" x 4 5/8"	DIAMETE	R (n	nm)	75	5	C	ATE	GRC	UND	WATE	R REC	ORDED		10/12/2022	2	
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE CC C - LIQ) Blows 20 3 00 15 21 PEN	DNTENT UID /300 mm 0 40 50 200 (kPa)		REMARKS	Standpipe/ Instrument	Elevation (m)
-							- 21 44		100 92										-
						UD5 RC12	21.44	12	72 100	5			ł			20.93	3 m - LL = 69.3% PL = 18.5% PI = 50.8%		749-
22 		22.5 m - 31°	fracture			RC13	22.71	13	87	3									748
-23		22.6 m - 24°	fracture			UD6	24.49		100 97										747
25		25.0 m bas	oming moders	tob.		RC14	24.49 _ 26.02	14	89 100 96	3									745-
		strong		atery		UD7										25.7 0 1%	m - Sand =		
						RC15	26.02 - 27.56	15	82 100 95	3							Silt = 47.7% Clay = 52.2%		744
27																			743-
-28																			742
																			741
	1	Notes:					L		Mon	itorir	na Ing	stalla	tion P	ine \//	ork				
		Target depth of bentonite chip	of 27 m achieve s.	ed. Coreho	le t	oackfille	ed with	D	epth To 0.00 7.60	op	Dep	th Bo 7.60 9.10	ottom	Pipe PL SLC	AIN	Logge	d By: <u>J. Boy</u>	<u>d / C. Ta</u>	ims

Reviewed By:

T. Curtis

16/11/2022

	CLIEN	νT	I	Eastern Irri	gatio	on Distri	ct		F	ROJI	ECTN	NAME				Sna	ake Lak	e Reservoir Expar	ision		
l	PROJ	ECT NUMBER		1560	-193	3-00			F	ROJI	ECTL		TION				NE	E 1/4 32-19-16	4445	40.4	
l	DATE	STARTED	08/29/2022		ETE	D	08/29/	2022	<u> </u>	ROU	IND E	LEVA	ATION		779.1	3m	N_5	612608.840 E	4145	18.9	370
			OR	V	/al's	Drilling			0	ROU		VATE	R ELEV		N/DE	PTH	/	74.25 m	4.88	m	
	JORI	NG TYPE	HQ3	_ DIAMETE	R (m	1m)	61		L	AIE	GRO		WAIER	REC	CORDE	D		10/12/202	2	t	
(m)	SOIL SYMBOL	C	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTU PLASTIC SPT (N) <u>10 20</u> 50 10 POCKE	IRE C(C - LIC Blows 0 3 0 1 1 7 PEN	ONTEN ⁻ QUID 5/300 mm 30 40 50 200	Г 1 0 0		REMARKS	Standpipe	Instrumen	Elevation
		OVERBURDE	N												(779
1 2		1.5 m - 60 mr	n of core loss			SH1															778
ŀ		SHALE (Weath highly weather oxidation staini extremely weal spaced fracture gypsum crystal	ered), clay and ed, grey, some ng, damp, high k, extremely clo es, blocky, som s	d silt, i plastic, osely ie		RC1	3.00 - 4.52	1	0 100 80	20			F				3.1 m 3.1 m	- LL = 58.0% PL = 15.9% PI = 42.1% - Sand = 3.5% Silt = 45.1% Clay = 51.4%			776 77{
ō		5.0.0001				RC2	4.52 - 6.04	2	0 100 91	20									¥		774
5		5.2 m - 39º fra BENTONITE (5 5.4 m - 120 m shale SHALE (Weath 5.7 m - 68º oo SHALE, clay an highly weather	acture 5.4 m), 30 mm Im layer of cen Rered), "" kidized fracture Ind silt, trace sa ed, grey, some	layer nented ind,		RC3	6.04 - 7.56	3	0 100 74	20			F			-1	5.4 m 5.4 m 6.2 m	- LL = 43.0% PL = 15.8% PI = 27.2% - Sand = 11.1% Silt = 55.5% Clay = 33.4% - LL = 45.5% PL = 16.7%			773
3		extremely weal spaced fracture layers, thinly la crystals 7.6 m - clay ri 200 mm	ng, damp, ngn k, extremely clo es, weakly cem minated, trace ubble in fractur	ented gypsum es for		RC4	7.56 - 9.08	4	0 100 65	11							6.2 m 10.9%	PI = 28.8% - Sand = Silt = 55.3% Clay = 33.8%			772
)		7.7 m - becor 8.4 m - becor fractures 8.7 m - 5 mm 9.0 m - becor	ning dark grey ning unoxidized quartz lense ning unweathe	d red		RC5	9.08 - 10.60	5	39 96 76	7											770

 Notes:
 Monitoring Installation Pipe Work

 Target depth of 15 m achieved. Corehole completed as a well and backfilled with sand and bentonite chips.
 Monitoring Installation Pipe Work

 16/11/2022
 0.00
 5.80
 PLAIN

 16/11/2022
 T. Curtis



0	CLIEN	IT		Eastern Irri	gati	on Distri	ict		F	PROJ	ECTI	NAM	E			Sna	ake Lake Reservoir E	xpansi	on	
F	PROJ	ECT NUMBER		1560-	-193	3-00			F	PROJ	ECT I		ATION				NE 1/4 32-19-10	6		
	DATE	STARTED	08/29/2022		TE	D	08/29/	2022	20	ROL	JND E	ELEV	ATION	_	779.13	Зm	N 5612608.840	E	414518.9	970
	RILL	ING CONTRACT	OR	V	al's	Drilling			0	GROL	JND V	VATE	ER ELE	VATIC	N / DEF	РΤΗ	774.25 m		4.88 m	
C	ORI	NG TYPE	HQ3	DIAMETE	R (n	חm)	61		E	DATE	GRO	UNE	WATE	R REC	CORDE	D	10/12	/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE C IC - LIC) Blows 20 3 00 1 ET PEN	ONTENT 2UID 5/300 mm 30 40 50 200 1 (kPa))	REMARKS	i	Standpipe/ Instrument	Elevation (m)
-11		11.0 m - becc spaced fracture 11.1 m - becc 11.1 m - some layers for 100 n 11.3 m - becc 11.6 m - 120 12.3 m - becc	oming moderate se oming very wea e thin calcified nm oming very silty mm calcified sl oming weak	ely widely ak shale / hale layer		RC6 RC7	10.60 12.12 12.12 13.64	6	59 98 79 87 100 95	5				I			11.3 m - LL = 149. PL = 19.3% PI = 129.9	2% 6 1%		769
-14		13.6 m - 470 layer 14.1 m - becc laminated calcit mm 14.5 m - 200 fractured area	mm extremely oming some thi fied shale layer mm mechanica	weak inly rs for 110 ally		RC8	13.64	8	59 100 86	7							14.1 m - LL = 78.0 PL = 20.09 PI = 58.09	% 6		766 765 764 763 763
																				761
		Notes:			Mon	itorir	ig Ins	stalla	ation P	ipe W	/ork									
16/11/2022		Target depth of a well and back	ed as s.	D	epth T 0.00 5.80	ор	Dept	th B 5.80 7.30	ottom))	Pip Pi SLC	e Type LAIN DTTED	L	ogged By: eviewed By:	С. 1 Т. С	īams ∶urtis					



	CLIE	NT	E	Eastern Irr	igati	on Distr	ct		F	PROJ	ECT N	NAN	IE			Sna	ake Lak	e Reservoir E	Expans	ion		
	PRO	JECT NUMBER		1560	-19	3-00			F	PROJ	ECT L	_OC	ATION				NE	E 1/4 32-19-1	6			
	DATE	E STARTED	08/29/2022	COMPLI	ETE	D _	08/30/	2022		GRO	JND E	ELE\	ATION	_	772.1	2m	N_5	612587.880	E_	415	502.9	81
	DRIL	LING CONTRACT	OR	١	/al's	Drilling			0	GRO	JND V	VAT	ER ELE	VATIC	N / DE	PTH	7	70.11 m		2.0	1 m	
	COR	ING TYPE	HQ3		R (r	nm)	61	I	C	DATE	GRO	UNE) WATE	R RE	CORDE	D		10/12	2/2022			
Depth (m)	SOIL SYMBOL	D	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 POCK	TURE C TIC - LIC I) Blows 20 (100 1 ET PEN	ONTEN QUID s/300 mr <u>30 4(</u> 50 20 I (kPa)	T n D 0		REMARKS	3	- Standnine/		Elevation (m)
-		CLAY TILL, silt	y, trace to some	e sand,													0 m - 6	6" SSA to 3	m.			772-
		brown, trace gy	/psum crystals		-	AU1					31.1				•							_
-1																						-
-		1			=	AU2					31.4				•							771
		1				SH1																-
-2						4112													1	¥		
Ē	\geq	weathered mud	=	A03					26.6			•								//0		
-		SHALE (Weath	l silt,	-	AU4					22.1			•								-	
3	· · · · ·	grey, trace oxid		RC1	3.00 -	1	0	20												769-		
-	·	high plastic, ex			4.52		100 64								3.2 m	- LL = 73.39 PL = 19.89	% %			-		
Ē	·	3.0 m - becon	ning extremely	closely													2 0 m	PI = 53.59	% 4 0/			-
-4		 spaced fracture staining in joints 	es with oxidatior s	n													3.2 m	Silt = 44.3	+% %			768—
_		4.3 m - 5 mm			PC2	1 52	2	0	20								Clay = 48.	3%			-	
È	· · · · ·	4 7 m - trace			1102	6.04	2	77	20												-	
5 	· · · ·	4.8 m - 50 mr	n slightly calcifi	ed shale					25													767-
Ē		layer																				-
	·	⊒5.5 m - 100 m ⊟fractured area	im mechanicali	У																		-
6 -	· <u>··</u> ·		nm of core loss			RC3	6.04 -	3	0	20												766-
_	·	- -					1.00		55					<u> </u>			6.5 m	- LL = 115.9	%			-
-		-																PL = 19.79 PL = 96.29	% %			-
	·	82 m - becon	ning dark grev														7.2 m	- Sand = 2.3	3%			765-
-	·	8.5 m - becon	ning unweather	red		RC4	7.56 -	4	7	20								Silt = 59.6 Clav = 38	% 1%			_
-8	··	8.8 m - becon 9.0 m - 60 mr	ning very weak n of core loss				9.08		96 59									0.0.) 001			Ξ	-
Ē		9.1 m - becon	ning weak	kly					00													764
-		cemented layer	S																			-
-9	· · · ·	SHALE, clay ar	nd silt, trace sai prev. trace oxida	nd, ation		DC5	0.00	5	24	0												
		staining, damp	, high plastic, w	eak,		105	10.60		100	9				H			9.2 m	- LL = 110.9	1% %			/63
Ē		laminated	aceu naciures,	umny					67									PI = 92.39	%			-
F	<u> </u>	9.8 m - becon	ning unoxidized	ł						-		-										-
		Notes:							Mon	itorir	ng Ins	stalla	ation F	Pipe W	/ork							
		Target depth of	15 m achieved	d. Coreho	ole o	complet	ed as	D	epth T	ор	Dept	hΒ	ottom	Pip	е Туре	•						
					101	nie omp			0.00 6.60			6.6 8.1	0	P SLC	lain Otted		ogged	Ву:	<u> </u>	Tam	S	
16/11/2022	2															R	eviewe	ed By:	T. (Curti	s	



	CLIEN	NT		Eastern Irri	gati	on Distri	ct		F	PROJ	ECT	NAM	IE			Sna	ake Lake	Reservoir E	Expansio	on	
	PROJ	JECT NUMBER		1560	-193	3-00			F	PROJ	ECT	LOC	ATION	_			NE	1/4 32-19-1	6		
	DATE	STARTED	08/29/2022		TE	D	08/30/	2022	20	BROL	JND E	ELEV	ATION	_	772.2	12m	N_56	12587.880	E_4	15502.	981
	DRILI	LING CONTRACT	OR	V	′al's	Drilling			0	BROL	JND \	NATE	ER ELE	VATIC	DN / DE	PTH	77	70.11 m		2.01 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61	1	C	DATE	GRO	UND	WATE	R RE	CORDI	ED		10/12	2/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE C IC - LIC) Blows 20 (00 1 <u>ET PEN</u>	ONTEN QUID s/300 m 30 4 50 20 V (kPa)	IT m 0)0		REMARKS	5	Standpipe/ Instrument	Elevation (m)
		10.5 m - 54° 10.6 m - 300 rubble 11.0 m - becc spaced fracture	fracture mm of mechar oming moderate es	nical ely widely		RC6	10.60 - 12.12	6	52 91 63	5											762
12 13		12.0 m - 140 12.6 m - 180 12.6 m - som calcified shale	mm of core los mm strong lay e thinly lamina	er ted		RC7	12.12 - 13.64	7	92 100 84	3				-			12.6 m 12.6 m	- LL = 38.3 PL = 15.19 PI = 23.29 - Sand =	3% % %		760
		13.1 m - 59	rracture e shell inclusion	n		RC8	13.64 - 15.16	8	91 100 91	3							47.5%	Silt = 38.2' Clay = 14.	% 3%		758
16 17																					756
																					754
																					753
16/11/202	2	Notes: Target depth of a well and back	f 15 m achieve kfilled with san	d. Coreho d and ben	le c ton	complet ite chip	ed as s.	D	Mon epth T 0.00 6.60	itorir op	ng Ins Dept	stalla th Bo 6.60 8.10	ation P ottom))	ipe W Pip P SLC	/ork e Type LAIN DTTEI	e D R	ogged E eviewe	3y: d By:	<u> </u>	ams urtis	



	CLIEN	NT	E	Eastern Irri	igati	on Distri	ct		F	PROJ	ECTN	NAME	Sr	ake Lake Re	servoir Expan	sion		
	PROJ	JECT NUMBER		1560	-193	3-00			F	PROJ	ECT L	OCATION		NE 1/4	32-19-16			
	DATE	STARTED	08/30/2022	COMPLE	ETE	D	08/30/	2022	20	GROL	JND E	LEVATION	769.89m	N 56125	575.001 E	41611	13.37	3
	DRILI	LING CONTRAC	ror	١	/al's	Drilling			0	GROL	JND V	VATER ELE	VATION / DEPTH	767.1	1 m	2.78	m	
	CORI	NG TYPE	HQ3	DIAMETE	ER (n	nm)	61	1	C	DATE	GRO	UND WATER	R RECORDED	·	10/12/2022	2		
Depth (m)	SOIL SYMBOL	ſ	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOISTU H PLASTI SPT (N) 10 2 50 10 POCKE 	URE CONTENT C - LIQUID Blows/300 mm 0 30 40 00 150 200 T PEN (kPa)	RE	MARKS	Standpipe/		Elevation (m)
-		CLAY TILL, sil	ty, trace fine gra s_damp_bard_b	nined Diab										0 m - 6" S	SA to 3 m.			=
		plastic, grey, s inclusions SHALE (Weat completely we grey mottling, damp, high pla	nered), clay and athered, brown some oxidation istic, extremely	lphate I silt, to dark staining, weak to	*	AU1 AU2 SH1					9.8 19.9	•		0.6 m - LL PL 1.2 m - LL PL PL	= 80.8% = 14.0% = 66.8% = 121.2% = 18.0% = 103.2%		-	769
-2 2 		hard soil, block spaced fractur sulphate inclus 1.8 m - beco	ky, extremely clo es, suspect whit sions ming trace gyps	osely te sum	=	AU3					16.9	•		2.1 m - Sa Sili Cla	nd = 0.9% t = 56.2% ay = 42.9%			768
		crystals 3.0 m - beco in joints 3.2 m - beco weathered	ming oxidation s	staining y		RC1	3.00 - 4.52	1	0 89 18	20	16.2	•				Y		767
		4.4 m - 170 r	nm of core loss			RC2	4.52 - 6.04	2	0 91 23	20								765
		5.9 m - 130 r 6.0 m - 400 r	nm of core loss nm of mechanic	al rubble:		RC3	6.04 - 7.56	3	0 89 49	20				6.2 m - Sa Sili Cla	nd = 0.1% t = 52.0% ay = 47.9%			764
		7.2 m - beco very weak 7.4 m - 160 r 8.1 m - 45° fi SHALE claves	ming slightly we nm of core loss racture / silty_slightly	athered,		RC4	7.56 - 9.08	4	21 100 63	6				8 2 m 11	- 86 6%			762-
- - - - - - - - - - - - - - - - - - -		weathered, gre staining, damp closely spaced laminated 9.1 m - beco weakly cement 10.0 m - beco unoxidized	on veak, y meter ered,		RC5	9.08 - 10.60	5	83 91 89	2				8.5 m - CL PL 8.5 m - Sa Sili	- 00.0% = 17.8% = 68.8% ind = 0.9% t = 65.9% ay = 33.2%			761	
	1	Notes:			L		L		Mon	itorir	ng Ins	tallation Pi	pe Work					
16/11/2022	Target depth of 15 m achieved. Corehole completed a well and backfilled with sand and bentonite chips.									op	Dept	h Bottom 7.00 8.50	Pipe Type PLAIN SLOTTED	.ogged By: Reviewed B	C. y:T.	<u>Tams</u> Curtis		



	CLIEN	NT	I	Eastern Irriga	ation Dist	rict		F	PROJ	ECT	NAME			Sn	ake La	ke Reservo	oir Expan	sion	
	PROJ	ECT NUMBER		1560-1	93-00			F	PROJ	ECT		FION			N	IE 1/4 32-1	9-16		
	DATE	STARTED _	08/30/2022		ED _	08/30/	2022	20	GROL	JND E	ELEVA	TION		769.89m	_ N_5	5612575.0	01 E _	416113	3.373
	DRILL	ING CONTRAC	TOR	Val	's Drilling			0	GROL	JND V	VATEF	R ELE\	/ATION	I / DEPTH		767.11 m		2.78 r	n
	CORI	NG TYPE	HQ3	DIAMETER	(mm)	6	1	C	DATE	GRO		NATEF	REC	ORDED		1	0/12/2022	2	
Depth (m)	SOIL SYMBOL		Soil Description	Samula Tima	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTIC SPT (N) 10 2 50 10	JRE CO C - LIQU Blows/3 0 30	NTENT JID 300 mm 40 200		REMAF	RKS	Standpipe/	Elevation (m)
										~		POCKE	T PEN (kPa)	10.2 r	n - LL = 7	0.3%		-
- - - - - - - - - - - - - - - - - - -		10.5 m - 130 10.6 m - bec widely spaced	mm of core los oming moderate fractures	s ely	RC6	10.60 - 12.12	6	88 100 98	3							PL = 21 PI = 48	1.4% 3.9%		759
					RC7	12.12 - 13.64	7	95 100 95	2										758
		13.2 m - 35° 14.3 m - 29°	fracture		RC8	13.64 - 15.16	8	105 106 102	3										757
15		14.8 m - bec strong	oming moderate	ely															755
- - 																			754
- - - - - - - -																			753-
																			752
- - - - - - - - - - - - - - -																751			
E						-												750-	
16/11/202	2	Notes: Target depth c a well and bac	of 15 m achieved kfilled with sand	d. Corehole d and bento	ted as os.	D	Mon epth T 0.00 7.00	iitorir op	ng Ins Dept	tallati h Bot 7.00 8.50	ion Pi tom	pe Wo Pipe PL SLO	ork Type AIN ITED F	ogged Review	l By: ved By:	<u>С.</u> Т.	Tams Curtis		



(1T		Eastern Irri	gatio	on Distri	ct		P	ROJ	ECT N	IAME	Ξ			Sna	ake Lake Res	servoir Ex	xpansi	on		
F	PROJ	ECT NUMBER		1560	-193	-00			P	ROJ	ECT L	.OCA	TION				NE 1/4 3	32-19-16	i			
[DATE	STARTED	06/12/2022		ETEC	D	06/12/2	2022	<u> </u>	ROL	JND E	LEV	ATION	_	767.67	7m	N_561241	18.468	Е	4168 ⁻	0.383	3
[RILL	ING CONTRACT	OR	V	/al's	Drilling			G	ROL	JND V	VATE	RELE	VATIO	N / DEF	РΤΗ	765.58	3 m		2.09	m	
C	ORI	NG TYPE	HQ3	DIAMETE	R (m	ım)	61		D	ATE	GRO	UND	WATE	R REC	ORDE	D		08/10/	/2022			
Depth (m)	SOIL SYMBOL	D	Soil Description	_	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	JRE CC C - LIQ) Blows/ 20 3 00 15 T PEN	DNTENT UID /300 mm 0 40 50 200 (kPa)		REM	MARKS		Standpipe/	Elevation	(m)
-1-1		OVERBURDEN LOG. SHALE (Weath trace sand, hig mottled, moist, weak, blocky, c 3.2 m - extrer	N. REFER TO ; hered), clay and hly weathered, medium plasti ixidized fractur nely closely sp	RC1	3.00 - 4.52	1	0 79 13	20							3 m - All fra angles relat core axis. 3.5 m - LL = PL = PI	icture tive to = 48.3% = 15.5% = 32.8%		Ζ	76 76 76	667		
-5		fractures 5.0 m - 150 m fractured siltsto oxide staining 5.2 m - becon greyish brown, inclusions	nm layer of ver ne, black mag ning less fractu trace gypsum (RC2 UD1 RC3	4.52 - 6.04 6.04 - 7.56	2	70 100 76 67 92	8								- 32.070	,		76 76	63 63 62	
		6.5 m - 63° fra <u>\.6.6 m - 73° fra</u> SHALE, silt and grey, moist, me moderately stro widely spaced 8.3 m - 68° fra 8.6 m - 42° fra		RC4 UD2	7.56 - 9.08	4	94 93 93	2			+			I	7 m - LL = { PL = PI = 7 m - Sand Silt Clay 7.3 m - San Silt	56.7% = 18.4% = 38.3% = 0.6% y = 38.7 y = 38.7 d = 0.1 = 66.2% y = 33.7	, , , % %		76	61		
9		9.0 m - 69° fra 9.5 m - 66° fra 9.7 m - 56° fra	9.08 - 10.60	5	100 100 92	3								,	-		75	58-				
16/11/2022		Notes: Target depth of a well and back	33 m achieved	ed as s.	D	Moni epth To 0.00 11.80	op	ng Ins Dept 1 1	talla h Bc 11.80 3.30	tion Pi ottom))	pe W Pipe PL SLO	ork Type AIN TTED	La	ogged By: eviewed By	/:	<u> </u>	<u>Braur</u> Curtis					



	CLIE	NT		Eastern Irriga	ation Dis	trict		F	PROJ	ECTI	NAM	E		Sr	nake L	ake Reservoir	Expans	sion	
	PRO	JECT NUMBER		1560-1	93-00			F	PROJ	ECT I	LOC	ATION				NE 1/4 32-19-	16		
	DATE	STARTED	06/12/2022		ED .	06/12	/2022	20	BROL	JND E	ELEV	ATION		767.67m	_ N _	5612418.468	_ E _	416810.	383
	DRIL	LING CONTRACT	TOR	Va	l's Drillir	g		0	BROL	JND V	NATE	ER ELE	VATIO	N / DEPTH	l	765.58 m		2.09 m	
	COR	ING TYPE	HQ3	DIAMETER	(mm) _	6	1	C	DATE	GRO	UND	WATE	R REC	ORDED		08/1	0/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description	Control Time	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	JRE CC C - LIQI Blows/20 30 30 15 T PEN	NTENT JID 300 mm) 40 0 200 (kPa)	_	REMARK	S	Standpipe/ Instrument	Elevation (m)
		10.1 m - beco	oming very stro	ng															
-		10.3 m - 79	Iracture		RC	6 10.60	6	88	3										757—
11		10.8 m - 57°	fracture			12.12		100											
-		11 3 m - 57° 1	fracture																
E		11.7 m 36°	fracturo																756-
-12			Inaclure		RC	12 12	7	93	3										
Ē		-				-		100											
-		12.5 m - 53° 12 7 m - 71°	fracture	-	UD	3 13.64		92							12.7	m - Sand =			755-
-13		13.0 m - 71°	fracture												0.2%	6 Silt = 61.4	1%		
Ē	===	13.3 m - 68°	fracture													Clay = 38	.4%		-
-		BENTONITE (13.7 m), 150 m	m layer	RC	3 13.64	8	95 95	1				⊢		13.7	m - LL = 125	5.8%		754-
-14 		SHALE, silt an	d clay, unweath	nered,	UD4	15.16		95								PL = 24.4 PI = 101.	% 4%		
-		moderately str	ong, finely fissu	ired,											14.3	m - Sand =			
-		widely spaced	fractures, mari	ne v strong											0.17	silt = 67.3	3%		753—
—15 -		suspect calcific	ation, becomin	g widely	RC	15.16	9	94	1							Clay = 32	.6%		1
		spaced fracture	es			16.68		94 01											
-		15.6 m - 90 n 15.8 m - 22°	nm weak layer			10.00													752—
-16		15.9 m - 200	mm weak laye	r															
-		16.3 m - beco	oming strong				10	100	2										754
-		-			RC1	- 10.08	10	106	2										/51-
Ē			fracture			18.20		100											
_		17.6 m - bec	oming very stro	ng															750-
-18		17.9 m - 74°	fracture	ing l															-
-					RC1	1 18.20	11	100	1										-
-		18.4 m - 19 4 inclusions	- many gypsur	m crystal		19.72		97											749-
-19																			
Ē	Ē		fracture																-
Ē	Ē				2 19.72	12	87	3										748	
F					4		-				-				-				-
		Notes:						Mon	itorir	ng Ins	stalla	ation Pi	pe Wo	ork	-				·
		Target depth of a well and back	f 33 m achieved kfilled with sand	d. Corehole	e compl	eted as ips	D	epth T	ор	Dept	th Bo	ottom	Pipe	Туре					
				0.00 11.80			11.8 13.3	0 0	PL SLO	AIN I TTED	_ogge	ed By:	<u> </u>	Braun					
16/11/202	2										I	Revie	wed By:	Τ.	Curtis				



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	CLIE	NT	E	Eastern Irrigat	ion Distri	ct		P	ROJ	ECTN	NAME	Ē			Sna	ike Lak	e Reservoir	Expans	sion		
	PRO.	JECT NUMBER		1560-19	3-00			P	PROJ	ECT L		TION				N	E 1/4 32-19-	-16			_
	DATE	STARTED	06/12/2022	COMPLETE	D	06/12/	2022	0	BROL	JND E	ELEV	ATION	_	767.6	7m	N_5	612418.468	E_E_	41681	0.383	_
	DRIL	LING CONTRACT	OR	Val's	Drilling			0	GROL	IND V	VATE	RELE	VATIO	N / DE	PTH	7	765.58 m		2.09	m	_
	COR	ING TYPE	HQ3	DIAMETER (r	nm)	61		C	DATE	GRO	UND	WATE	R REC	ORDE	D		08/	10/2022	2		
Depth (m)	SOIL SYMBOL	C	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE CC IC - LIQ) Blows, 20 3 00 15 <u>T PEN</u>	ONTEN 201D /300 mn 60 40 50 200 (kPa)	ר ו ו		REMARK	(S	Standpipe/	Instrument Elevation	(m)
Ē		20.1 m - 48°	fracture			- 21 24		100 92													
21		20.6 m - beco 20.7 m - para mm apart 21.5 m - 73° strong 21.8 m - 16° 21.9 m - 74°	oming weak Illel 81° fracture fracture, becom fracture fracture	s 100 ing	RC13	21.24	13	83 100 89	3							21.5 n	n - LL = 65 PL = 20.0 PI = 45.6	.6%)% 5%		74 [:] 74:	6
-23		22.2 m - 77°	fracture	-	RC14 UD5	22.76 - 24.28	14	98 100 95	1											74: 74:	5 5 4
-24		23.9 m - 300 24.2 m - 72° 25.1 m - 83°	mm weaker lay fracture fracture	er	RC15	24.28 - 25.80	15	90 92 84	1											74:	3
		26.3 m - 57° 26.5 m - 26°	fracture fracture		RC16	25.80 - 27.32	16	74 91 64	3											74:	2
27 		26.9 m - beco 27.0 m - 7° fr 27.3 m - 27.8 27.8 m - 28.7	oming weak acture a m - strong laye m - weak layer	er	RC17	27.32 - 28.84	17	84 94 84	1											74	0
		28.2 m - 29° 29.0 m - becc 29.1 m - 83° 29.6 m - 82° moderately stro	fracture oming very stror fracture fracture, 100 mi ong layer	ng m	RC18	28.84 - 30.36	18	100 100 84	1											73	9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Notes:				Mon	itorin	ıg Ins	stalla	tion P	ipe W	'ork									
16/11/2022	2	Target depth o a well and bac	f 33 m achieved kfilled with sand	complet hite chip	ed as s.	D	epth To 0.00 11.80	ор	Dept 1 1	h Bo 11.80 13.30	ottom))	Pipe PL SLC	e Type _AIN DTTEC	Lo	ogged eviewe	By: ed By:	<u>С.</u> Т.	<u>Braun</u> Curtis		_	



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(CLIE	ΝT		Eastern Irriga	tion Distr	ict		P	'ROJ	ECT	NAM	IE		5	Snake	Lake Reservoir E	xpansio	on	
1	PROJ	IECT NUMBER		1560-19	93-00			P	'ROJ	ECT I	LOC	ATION				NE 1/4 32-19-16	i		
	DATE	STARTED	06/12/2022	COMPLET	ED	06/12/	2022	<u>?</u> G	BROL	JND E	ELEV	/ATION		767.67m	N	5612418.468	Е́	16810 .	383
1	DRILI	LING CONTRACT	ror	Val	s Drilling				BROL	JND V	VATI	ER ELE	VATIO	N / DEPT	н	765.58 m		2.09 m	
(CORI	NG TYPE	HQ3	DIAMETER	(mm)	6	1	C	DATE	GRO	UNE) WATER	R REC	ORDED		08/10/	/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description	Samole Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	JRE CC C - LIQI Blows/ 10 30 15 T PEN	DNTENT UID 300 mm 0 40 50 200 (kPa)		REMARKS		Standpipe/ Instrument	Elevation (m)
		31.0 m - 53° .	fracture		RC19 UD6 RC20	30.36 31.88 31.88 33.40	19	100 100 96 100 100 95	2				T PEN	(<u>kPa</u>)		.4 m - LL = 61.8° PL = 17.3% PI = 44.5% .4 m - Sand = 3% Silt = 59.7% Clay = 39.7	% ; ; ; %		737 736 736 737 737 737 737 737 737 737
_												:		_				-	
16/11/2022	2	Notes: Target depth of a well and bac	f 33 m achieved kfilled with sand	ted as os.	D	Moni epth To 0.00 11.80	itorin op	ng Ins Dept	stalla th B 11.8 13.3	ation Pi ottom 0 0	pe We Pipe PL SLO	ork Type AIN TTED	Logo Revi	ged By: iewed By:	<u>C. E</u> T. C	traun Surtis			

	CLIEN	т		Eastern Irr	igati	on Distri	ict		P	PROJ	ECTN	NAM	E	Sn:	ake Lake Reservoir Expans	sion	
	PROJ	ECT NUMBER		1560)-193	3-00			P	PROJ	ECTL	-00/	ATION		NE 1/4 32-19-16		
	DATE	STARTED	06/20/2022		ETE	D	06/20/	2022	20	BROL	JND E	ELEV	ATION	769.53m	N_5611608.000 E_	416912.6	00
	ORILL	ING CONTRACT	TOR	١	/al's	Drilling			0	BROL	JND V	VATE	ER ELEVA	TION / DEPTH	767.98 m	1.55 m	
	CORI	NG TYPE	HQ3		ER (n	nm)	6	1	C	DATE	GRO	UND	WATER F	RECORDED	08/10/2022		
Uepth (m)	SOIL SYMBOL		Soil Description	22012000	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTURI PLASTIC - SPT (N) Bi 10 20 50 100 POCKET F	E CONTENT LIQUID ows/300 mm <u>30 40</u> 150 200 PEN (kPa)	REMARKS	Standpipe/	Elevation
1 2 3 4 5 6 7 8 8 9		SHALE, clay a slightly weathe plastic, modera spaced fractur 4.5 m - inclin 5.8 m - 120 r 6.7 m - 50 m 7.9 m - 81° fr 7.9 m - 81° fr 8.1 m - 76° fr 9.1 m - stron 9.8 m - 68° fr	Ind silt, trace s ared, grey, moi ately strong, cl e, finely stratifi ed fracturing nm fractured se m fracture se racture racture racture g g	and, ist, high losely ied section		RC1 RC2 RC3 UD1 RC4	4.50 - 6.02 6.02 - 7.54 7.54 - 9.06 9.06 - 10.58	1 2 3 4	57 95 53 83 98 82 105 100 101 101 101 97	10 7 3 3					6.3 m - LL = 92.4% PL = 20.8% PI = 71.6% 6.3 m - EC: 2.6 dS/m 6.3 m - SAR: 22.4 6.3 m - pH: 8.5		76 76 76 76 76 76 76 76 76 76 76 76 76 7

Notes: Monitoring Installation Pipe Work Target depth of 27 m achieved. Corehole completed as a well and backfilled with sand and bentonite chips. Depth Top Depth Bottom Pipe Type 0.00 5.00 5.00 6.50 PLAIN Logged By: J. Boyd SLOTTED T. Curtis Reviewed By:

Γ

22002200



PROJECT NUMBER 1560-193-00 PROJECT LOCATION	NE 1/4 32-19-16
	N 5611608 000 F 416012 600
DATE STARTED	NE410912.000
DRILLING CONTRACTOR Val's Drilling GROUND WATER ELEVATION / DEPT	H767.98 m1.55 m
CORING TYPE HQ3 DIAMETER (mm) 61 DATE GROUND WATER RECORDED	08/10/2022
Content Soil Soil Soil Soil Soil Soil Soil Soil Soil Soil Soil Description Bescription Sample Number Number Moisture Content (%) Moisture Content (%) Moisture Content (%) Mumber	REWAKKS Standpipe/ Instrument (m)
RC5 10.58 5 95 2 - 12.10 92	
UD2 	
fractured RC7 13.62 7 101 3	
UD3 14.3 m - 60° fracture UD3 RC8 15.14 8 24 0	
	15.6 m - Sand = 0.5% Silt = 62.4%
RC9 16.66 9 46 1 - 74 - 74 - 74	Clay = 37.1%
infill 	752-
	18.2 m - Dispersivity Classification = ND3 18.2 m - EC: 1.1 dS/ m
UD5 RC11 19.70 11 101 1	18.2 m - SAR: 16.5 18.2 m - pH: 8.6
Notes:	
Target depth of 27 m achieved. Corehole completed as Depth Top Depth Bottom Pipe Type	
a well and backfilled with sand and bentonite chips.	Logged By:J. Boyd
16/11/2022	Reviewed By:T. Curtis



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	CLIEN	NT		Eastern Irrig	gatio	on Distri	ct		F	PROJ	IECT	NAM	E	_		S	nake Lak	e Reservoir	Expans	ion	
	PROJ	ECT NUMBER		1560-	193	3-00			F	PROJ	IECT	LOC	ATION	_			Ν	E 1/4 32-19	-16		
	DATE	STARTED	06/20/2022	COMPLE	TE	D	06/20/	2022	20	GROU	JND E	ELEV	ATION	_	769	9.53m	N_5	611608.000)_E_	416912.	600
	DRILL	ING CONTRACT	OR	Va	al's	Drilling			0	GROU	JND \	NATE	ER ELE	VATIO) / N	DEPTH	۲	′67.98 m		1.55 m	
	CORI	NG TYPE	HQ3	DIAMETER	R (m	nm)	61	l	C	DATE	GRC	UNE	WATE	R RE	COR	DED		08/	10/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE C IC - LIC) Blows 20 1 21 PEN	CONTE QUID s/300 <u>30</u> 150 N (kPa	ENT mm 40 200	_	REMAR	ĸs	Standpipe/ Instrument	Elevation (m)
 21		20.4 m - 79° 1	fracture			DO10	- 21.22	10	101 99					F			-20.5 n	n - LL = 85 PL = 19.9 PI = 65.3	.2% 9% 3%		749
						UD6	21.22	12	100 100 100	U											748-
		23.2 m - 83° 1	fracture			RC13	22.74 - 24.26	13	97 97 95	2											747
-24		23.9 m - horiz slight weak infil 24.5 m - 60° 24.5 m - 220 24.7 m - horiz by 10 mm of we	zontal fracture v Il fracture mm Siltstone la zontal fracture f eak infill	with ayer followed		RC14 UD7	24.26 - 25.78	14	100 100 95	2							24.45 28.8%	m - Sand Silt = 44. Clay = 26	= 6% 5.6%		745
		26.1 m - 81° 1	fracture			UD8 RC15	25.78 - 27.30	15	104 104 101	2											744
		27.1 m - 79° 1	fracture			UD9															742-
																					741-
- - - - - - -																	_				740
	1	Notes:							Mon	itorir	ng Ins	stall	ation P	ipe V	Vork						·
16/11/2022	2	Target depth of a well and bacl	complet ite chip	ed as s.	D	epth T 0.00 5.00	op	Dep	th B 5.00 6.50	ottom))	Pip P SL(e Ty LAIN OTTI	pe I ED	Logged Review	By: ed By:	J. T.	Boyd Curtis				



	CLIE	NT	I	Eastern Irri	gatio	on Distri	ct		F	PROJ	ECTI	NAME	Ξ			Sna	ake Lal	ke Reservoir E	Expans	ion		
	PROJ	IECT NUMBER		1560	-193	3-00			F	PROJ	ECT I	LOCA	TION	_			N	E 1/4 32-19-1	6			
	DATE	STARTED	07/19/2022		ETEI	D	07/20/	2022	2(GROL	JND E	ELEV	ATION	_	765.0	4m	N_5	611187.600	E_	4168	63.90	00
	DRILI	LING CONTRACT	OR	١	/al's	Drilling			0	GROL	JND V	VATE	RELE	VATIO	N/DE	PTH		764.21 m		0.83	5 m	
		NG TYPE	HQ3	DIAMETE	R (m	חm)	61		[GRO		WATE	RREC	CORDE	D		10/1	2/2022		t	
Depth (m)	SOIL SYMBOL	D	Soil escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKI	URE C IC - LIC I) Blows 20 3 100 1 ET PEN	ONTEN ⁻ QUID //300 mn 8 <u>0 40</u> 50 200 (kPa)	Г 1 1 0		REMARKS	6	Standpipe		Elevation (m)
-			N. REFER TO 2	22BH213																		
-1-1-2		\$HALE (Weath trace sand, high brown to dark g high plastic, ex finely stratified, gypsum crystal 3.6 m - becon \$HALE, clay ar medium weathe plastic, very we closely spaced stratified, slight 4.3 m - becon 4.3 m - becon weak to modera 4.8 m - 85° fra 5.2 m - 100 m	ered), clay and hly weathered, grey mottling, d tremely weak, oxide staining s ning shale nd silt, trace sa ered, grey, dan eak to weak, ve fracture, finely oxide staining ning weak om crumbled co ning slighty we ately strong acture	d silt, light amp, blocky, , nd, np, high ery ore athered,		RC1 RC2	3.00 - 4.52 4.52 - 6.04	1	14 100 33 76 100 68	20							5 m -	11 = 75.8%	Y	¥		764
		5.4 m - becon moderately stro 5.4 m - 68° fra 5.6 m - 55° fra 6.0 m - becon to strong 6.1 m - 62° fra	red, l ly strong		RC3	6.04 - 7.56	3	100 100 98	2							5 m -	PL = 19.8% PI = 56.0% Sand = 0.7% Silt = 62.0 Clay = 37.	% % % 3%			759	
		6.3 m - 88° fra 6.8 m - 76° fra 7.0 m - becon moderately stro 7.8 m - 70° fra 8.0 m - 87° fra 8.2 m - becon 8.7 m - 40° fra 9.0 m - 82° fra 9.0 m - 18° fra 9.1 m - severa to 9.7 m	y strong racturing		RC4	7.56 - 9.08	4	95 100 88	3				·			6.82 r Class 6.86 r 6.86 r 1.4%	n - Dispersiv fication = N n - LL = 79.0 PL = 23% PI = 56.00 n - Sand = Silt = 78.3 Clay = 20.	vity D4 D% % 3%			758	
- - - - - - - -									100 100 89	2												
		Notes:			Mon	itorir	ng Ins	stalla	tion P	ipe W	/ork					- 1						
16/11/202:	2	Target depth of a well and back	omplet ite chip	ed as s.	D	epth T 0.00 7.50	ор	Dept	h Bc 7.50 9.00	ottom	Pipe Pl SLC	e Type LAIN DTTEC	La R	ogged eview	By: ed By:	J. T. (Boyd Curtis	5				



	CLIEI	NT	Eastern Irriga	ation Di	strict		F	PROJ	ECT	NAME			Sr	nake La	ke Reservoir	Expans	ion	
	PRO	IECT NUMBER	1560-1	93-00			F	PROJ	ECTI	LOCA	TION			1	NE 1/4 32-19-	16		
	DATE	STARTED 07/19/	2022 COMPLET	ED	07/20	/2022	20	GROL	JND E	ELEVA	TION	_	765.04m	_ N _	5611187.600	_ E _	416863	.900
	DRILI	LING CONTRACTOR	Val	l's Drillii	ıg		0	GROL	JND V	NATE	R ELE	IOITAV	N / DEPTH		764.21 m		0.83 m	l
	CORI	NG TYPE HQ	03 DIAMETER	(mm)	6	1	C	DATE	GRO	UND	WATEI	R REC	ORDED		10/*	12/2022		
Depth (m)	SOIL SYMBOL	Soil Descript	ion G	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTI PLASTI SPT (N) <u>10 2</u> 50 11 POCKE	URE CC C - LIQI Blows/ 20 30 50 15	DNTENT JID 300 mm) 40 0 200 (kPa)		REMARK	S	Standpipe/ Instrument	Elevation (m)
_		10.0 m - 74° fracture)		>						F			10.3	m - 11 = 92	5%		
- - - - - - - - - - - - - - - - - - -		10.7 m - becoming s 10.7 m - 55° fracture 11.2 m - 79° fracture	trong	RC	5 10.60 - 12.12	6	100 100 96	2							PL = 17.3 PI = 17.3 PI = 75.2	3% 2%		754
- - - - - - - - -		11.7 m - 89° fracture		RC	7 12.12	7	93 99 93	3										753-
-13		12.8 m - 79° fracture 13.1 m - 85° fracture																752-
- - - - - - - - - - - - -		13.2 m - 50° fracture 13.3 m - 86° fracture 13.4 m - interbeddec 13.4 m - 50° fracture 13.8 m - 70° fracture 14.4 m - 88° fracture	e d shells e	RC	3 13.64 15.16	8	100 100 98	3							50.00			751
-		14.6 m - 89° fracture	-		5									m	om - EC: 3.6	8 05/		750
		15.0 m - 87° fracture 15.3 m - 84° fracture 15.6 m - 86° fracture		RC	9 15.16 - 16.68	9	97 100 93	3						14.65 14.65 14.65 1459	5 m - SAR: 3 5 m - pH: 8.2 5 m - UCS = kPa	33.2 2		750
		16.1 m - 68° fracture 16.4 m - 84° fracture))	PC	0 16 68	10	102	2										749
- 17 		16.4 m - 41° fracture 16.7 m - moderately 17.1 m - 70 mm calc	e strong to strong ified shale		18.20		103 103 101	2										748
		17.6 m - 83° fracture	•	UD	4						⊢			17.77	' m - LL = 7'	1.3%		
		18.0 m - 77° fracture 18.4 m - 89° fracture		RC	1 18.20	11	96 96	2							PL = 15.9 PI = 55.4	-% !%		747
- - 		18.5 m - becoming s 19.0 m - 84° fracture 19.2 m - 85° fracture	trong		19.72		95											746—
Ē		-		RC1	2 19.72	12	100	2										
F		Notes:					<u> </u>											1
		Target depth of 39 m a a well and backfilled w	achieved. Corehole vith sand and bento	e comp onite cl	eted as nips.	D	Mon epth T 0.00	op	ng Ins Dept	stalla th Bo 7.50	tion Pi ttom	pe Wo Pipe PL	ork Type AIN	ogge	d By:	J.	Boyd	
16/11/202	2						1.50			9.00		SLO	IIED	Reviev	ved By:	Т. (Curtis	



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	CLIEN	NT		Eastern Irriga	ation Distr	ict		F	PROJ	ECTI	NAME		Sn	ake La	ake Reservoir E	xpansi	on	
	PROJ	IECT NUMBER		1560-1	93-00			F	PROJ	ECT I	LOCATION			1	NE 1/4 32-19-16	<u>}</u>		
	DATE	STARTED	07/19/2022		ED	07/20/	2022		BROL	JND E	ELEVATION	N _	765.04m	_ N _	5611187.600	E	416863.9	900
	DRILL	LING CONTRACT	OR	Val	's Drilling			0	BROL	JND V	VATER EL	EVATIC	N / DEPTH		764.21 m		0.83 m	
	CORI	NG TYPE	HQ3	DIAMETER	(mm)	6′	1	C	DATE	GRO	UND WAT	ER REC	CORDED		10/12	/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description	Comula Timo	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOIS H PLAS ■ SPT (10 50 POCH 	TURE C TIC - LIC (N) Blows 20 3 100 1 KET PEN	ONTENT QUID 5/300 mm 30 40 50 200 1 (kPa)		REMARKS	;	Standpipe/ Instrument	Elevation (m)
-		20.2 m 97°	fractura			- 21 24		100 99										-
F	==	20.6 m - horiz	zontal fracture			21.24		00										-
-																		
		-			RC13	21.24	13	103	2]				744
F		-				22 76		103										-
-22		21.7 m - 86°	fracture			22.70		100										742
Ē		22.0 m - 65° ⁻	fracture											22 3/	1 m - Sand =			743-
-		-												0.3%	, in - Oand –			-
-		-			RC14	22.76	14	90 90	2]	Silt = 47.99	% 20/2		
-23		23.0 m - 86°	fracture			24.28		88]	Clay – 51.0) /0		742
F		23.4 m - 88°	fracture															-
Ē		-																
-24	E-	24.0 m - 72°	fracture		DOIE	04.00	45	101	1					1				741-
Ē		-			RC15	24.28	15	104	1									
Ē		24.7 m - 89°	fracture			25.80		103										
-25		-												1				740
E		-																
Ē		-			UD6	25.80	16	100	2									-
-26		-			RC16	-		100	2					-				739-
Ē						27.32		97										
Ē		-																
27		26.9 m - 54°	fracture											-				738-
E		27.0 m - 81°	fracture		RC17	27.32	17	107	1									
Ē						-		107										
-28		27.9 m - 75°	fracture		UD7	20.04		100										737-
E		-																=
		-																
-29				RC18	28.84	18	101	0									736-	
Ē				30.36		101										, 30		
Ē		-																
E		-																
		Notes:							L				(<u> </u>
		Target depth of	f 39 m achieved	d. Corehole	complet	ted as		IVION enth T		ig Ins Dent	h Bottom	Pipe W	OTK e Type					ĺ
		a well and bac	kfilled with sand	d and bento	nite chip	os.	F	0.00	~~	Dopi	7.50	PI	LAIN	ogae	d Bv:	.11	Bovd	
											9.00	SLC		Review	ved Bv:	<u>т</u> с	Curtis	
16/11/2022	2						L					1						


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	CLIE	NT	E	ct		F	PROJ	ECT I	NAM	E	_		Sn	ake Lak	ke Rese	rvoir E	xpansi	ion				
	PROJ	ECT NUMBER		1560-	193	3-00			F	PROJ	ECT I	LOC	ATION	_			N	E 1/4 3	<u>2-19-1€</u>	3		
	DATE	STARTED	07/19/2022	COMPLE	TEI	D	07/20/	2022	20	GROL	JND E	ELEV	ATION		765	.04m	N_5	611187	.600	Е	41686	3.900
	DRILI	ING CONTRACT	OR	Va	al's	Drilling			0	GROL	JND V	NATE		EVATIO	ON / C	EPTH	7	764.21	m		0.83	m
	CORI	NG TYPE	HQ3	DIAMETER	R (m	nm)	61			DATE	GRO	UND	WATE	ER RE	COR	DED			10/12	/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIS PLAS SPT (1 10 50 POCK	TURE (TIC - LI N) Blow <u>20</u> 100 <u>ET PEI</u>	CONTE QUID s/300 r <u>30</u> 150 x N (kPa	NT nm 40 200		REM	ARKS	,	Standpipe/	Instrument Elevation (m)
						RC19	30.36	19	100 100 99	1												734
-32		31.9 m - becc strong to strong 32.8 m - 87° 1	oming moderate] fracture	ely		UD8	33.40	20	103 103 103							-	32.75	m - LL	. = 65.	6%		733-
-33		33.2 m - becc	oming strong			RC21	33.40 - 34.92	21	101 101 99	1						-		PL = PI =	14.3% 51.3%	0 6		732
34 35 36						RC22 UD9	34.92 36.44	22	93 93 91	1							35.75 0.3%	m - Sa	and =			731
		36.1 m - 46° 1 36.5 m - becc strong	fracture oming strong to	very		RC23	36.44 - 37.96	23	100 100 100	0								Silt = Clay	57.9% = 41.8	% 3%		728
						RC24	37.96 - 39.48	24	100 100 98	1												727-
		39.0 m - 45° 1	fracture			UD10							F				39.26	m - LL PL = PI =	. = 67. 13.4% 54.5%	9% ; %		726
16/11/202	2	Notes: Target depth of a well and back	f 39 m achieved «filled with sand	I. Corehold I and bent	e c	complet ite chip	ed as s.	D	Mon epth T 0.00 7.50	itorir op	ng Ins Dept	stalla th Bo 7.50 9.00	ation F ottom))	Pipe V Pip F SL	Vork be Typ PLAIN OTTE	be ED R	ogged	By: ed By:		J. I T. (Boyd Curtis	

															COR	E⊦	IOLE No :	22C	;H2	213
	V		E	an En g	glo	obe	com	npa	any									P	AGE 5	5 0F \$
	CLIEN	т		Eastern Irri	igati	on Distr	ict		P	ROJ	ECTN	NAME	Ξ		:	Snak	e Lake Reservoir Ex	pansio	n	
	PROJE	ECT NUMBER		1560)-193	3-00			P	ROJ	ECTL		TION				NE 1/4 32-19-16			
	DATE	STARTED	07/19/2022		ETE	D _	07/20/	2022	<u>2</u> G	ROL	JND E	LEV	ATION	_	765.04n	n	N 5611187.600	E _4	16863.	.900
	DRILLI	ING CONTRAC	CTOR	١	/al's	Drilling			G	ROL	JND V	VATE	RELE	VATIO	N / DEPT	н_	764.21 m	(0.83 m	I
	CORIN	IG TYPE	HQ3	DIAMETE	ER (n	nm)	6	1	D	ATE	GRO	UND	WATE	R REC	ORDED		10/12/	2022		
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE C(C - LIG) Blows 20 3 00 1 ET PEN	ONTENT 201D /300 mm 60 40 50 200 (kPa)		REMARKS		Standpipe/ Instrument	Elevation
-41 -42 -43 -44 -45 -46 -47 -47 -48 -49		Notes: Target depth of 39 a well and backfille														3	9.26 m - UCS = 179 kPa			724 723 722 721 720 719 718 717 717
		Notes:						<u> </u>		. ·		A	<i>u</i> . =		le al	1				
	-	Target depth	of 39 m achiev	ed. Coreho	ole c	complet	ted as		Moni	torir	ng Ins	talla	tion P	ipe W	ork					
	ä	a well and ba	ckfilled with sa	nd and ber	nton	ite chip	S.		0.00	-hr	Dept	7.50	nom	Pipe	_AIN		aged By:	I P.	ovd	
									7.50			9.00		SLC	DTTED	20(<u> </u>	<u></u>	
16/11/2022	2															Re	viewed RA:	1. CL	irtis	

	CLIEN	ΙT	I	Eastern Irri	igati	on Distri	ct		P	ROJ	ECT	NAME	1		Ś	Snake La	ake Reservoir Exp	ansion	
	PROJ	ECT NUMBER		1560	-193	3-00			P	ROJ	ECTL	LOCA	TION	_			NE 1/4 32-19-16		
	DATE	STARTED	07/12/2022		ETE	D	07/12/	2022	G	ROL	IND E	ELEVA	ATION	_	767.63m	<u> </u>	5611105.500 E	4168	58.240
	DRILL			Chilako E	Drillir	ng Servi	ces Ltd.		0	BROL	IND V	VATE			N / DEPT	н	765.02 m	2.01	m
	CORI	NG TYPE	2 3/4" x 4 5/8"		R (n	חm)	76	5 1		DATE	GRO	UND	WATE	RREC	CORDED		08/10/20)22	
Uepth (m)	SOIL SYMBOL	C	Soil escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) <u>10 2</u> 50 10	URE C C - LIC) Blows 20 3 00 1	ONTENT QUID /300 mm 30 40 50 200 (kPa)		REMARKS	Standpipe	Flevation
		OVERBURDE	N. REFER TO 2	22BH214							-		POCKE	I PEN	(кРа)				
1		LOG.																	7 7
2																		¥	7
																			7
4																			
5																			/
3		SHALE, clay a	nd silt, trace sa	ind,		RC1	6.10 - 7.62	1	17 81	20									7
,		oxidation staini extremely weal fractures, thinly	ered, grey, son ng, damp, high k, closely space / laminated	i plastic, ed					22							—7 m ·	- LL = 59.4% PL = 14%		7
		7.3 m - 290 n	nm of core loss			RC2	7.62 - 9.32	2	0 11	1						7.62 piece	PI = 45.4% m - Sideways e of core in		7
> >		7.9 11 - 1.30 1							5							corin the r up a	ig bit. 1.36 m of un was ground nd washed away	/	7
,		9.3 m - no reo	covery			RC3	9.32 - 10.06	3	0 0 0							9.32 was	m - entire run lost		7
		Notes:							N 4	te al.	a 10		Har D	ne M	lork				
									Mon	itorin	g ins	stalla	tion Pi	ipe W	ork				



	CLIE	NT	E	Eastern Irri	gat	ion Distri	ict		F	PROJ	IECT I	NAM	IE			Snake	e Lake Reservoir Exp	ansior	ı	
	PROJ	IECT NUMBER		1560	-19	3-00			F	PROJ	IECT I	LOC	ATION				NE 1/4 32-19-16			
	DATE	STARTED	07/12/2022	COMPLE	ETE	D	07/12/	2022		GROU	JND E	ELEV	ATION		767.63n	<u>1</u>	<u>5611105.500</u> E	41	6858.2	240
	DRILI	LING CONTRACT	OR	Chilako D	rilli	ng Servi	ces Ltd.		0	GROU	JND V	VATE	ER ELE	VATIO	N / DEP1	н _	765.02 m	2	2.61 m	
	CORI	NG TYPE	2 3/4" x 4 5/8"	DIAMETE	R (I	mm)	76	6	C	DATE	GRO	UNE	WATE	R REC	ORDED		08/10/20	022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE CO IC - LIQ) Blows 20 3 00 1! ET PEN	ONTENT 201D /300 mm 30 40 50 200 (kPa)		REMARKS		Standpipe/ Instrument	Elevation (m)
_		10.0 m - becc	oming unweathe	ered, no		RC4	10.06	4	100	4			I			10	.1 m - LL = 71.7%		E	. .
_		10.1 m - 200	mm of slough				- 10.85		140								PL = 18.4% PI = 53.3%			757-
-		recovered from	Run 3			RC5	10.85	5	96	4						10	.1 m - Sand = 7%		$ \Box $	-
		10.0 111 - 00 1	indeture				- 12 42		97 92							0.1	Silt = 59.8%		F	
-																	Clay = 39.5%	þ	Θ	756-
-12																				-
-		12.0 m - 50° 1	fracture																	
_		-				RC6	12.42	6	100	2										755-
		-					13.95		98											
_																				754-
-14		13.9 m - beco	oming verv wea	k to		RC7	13.95	7	89	3						14	m - LL = 77.9%			
		weak					-		102								PL = 17.9%			
-	==						10.42		30								PI = 60.0%			753—
- 		14.7 m - 40° 1	fracture																	
_		15.2 m - 35° 1	fracture			BCO	15 12	0	00	1										-
-							-		121	'										752-
-16							16.41		99											
-		BENTONITE (16.3 m). 100 mr	m laver		RC9	16.41	9	80	2			1			-16	.3 m - LL = 55.1%			
-		SHALE, clay a	nd silt, trace sa	nd,			-		86	-							PL = 18.6% PL = 36.5%			751-
-17		medium weath	ered, grey, som ng, damp, high	plastic,			18.50		75							16	.3 m - Sand =			
-		extremely weal	k, closely space	ed												0.2	Silt = 64.2%			
Ē		inactures, triminy	lammateu													16	Clay = 35.6%	þ		750-
		-														m	.5 11 - 20. 2.5 46/			
_						RC10	18 50	10	100	1						16	.3 m - SAR: 26.4 3 m - pH: 8.3			
_		-					-		100	1						18	.06 m - Switched			749-
-19		-					19.94		98							to	76.2 mm core			1 - 1
-																				
Ē		19.9 m - herr	ming week			DOM		14												748—
			ming weak			KU11				1					· · ·					
		Notes: Target depth of	ed ae		Mon	itorir	ng Ins	stalla	ation P	ipe W	ork									
		a well and bac	.cu as IS.	D	epth T 0.00	op	Dept	th B 10.1	ottom 0	Pipe Pl	a iype _AIN	1.00	and By:	с т-	me					
						10.10			11.6	0	SLC	DTTED	LUG	yeu by	<u>с. Ia</u> т.с.	uus rtie				
16/11/2022	2															nev	еweu by	1. 00	115	



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С		IT		Eastern Irrig	jatio	on Distri	ct		P	ROJ	ECT	NAM	E		S	nake	Lake Reservoir E	xpansio	on	
Р	ROJ	ECT NUMBER		1560-	193	8-00			P	ROJ	ЕСТΙ	_OC/	ATION				NE 1/4 32-19-16	6		
D	ATE	STARTED	07/12/2022	COMPLE	TEI	D	07/12/2	2022	G	ROL	JND E	LEV	ATION		767.63m		5611105.500	E	16858.2	240
D	RILL	ING CONTRACT	OR	Chilako Dr	illin	ng Servio	ces Ltd.		G	ROL	JND V	VATE	R ELE	VATION	I / DEPTH	1	765.02 m		2.61 m	
С	ORI	NG TYPE	2 3/4" x 4 5/8"	DIAMETER	R (m	nm)	76	6	D	ATE	GRO	UND	WATE	R REC	ORDED		08/10	/2022		
				-															∍/ ht	
Depth (m)	SOIL SYMBOL	Ľ	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	URE CO C - LIQU) Blows/3 20 30 00 15 27 PEN (NTENT JID 300 mm) 40 0 200 (kPa)	_	REMARKS	i	Standpipe Instrumer	Elevation (m)
							19.94		98											. .
		20.6 m - 70°	fracture				- 21.52		100 98											747-
-21	_																			
-22		21.5 m - 20 n layer	nm moderately	strong		RC12	21.52 - 23.07	12	97 100 99	1										746
-23				RC13	23.07	13	77	2										745		
-24		04.0		- 24.59		78 76											744			
		24.0 m - 55 24.6 m - 180 fractured area	mm mechanica	RC14	24.59	14	77 100	3										743		
		25.2 m - 45° 25.4 m - 60°	fracture fracture				26.04		83											742-
-26						RC15	26.04 - 27.59	15	97 100 97	1										741—
-27		26.8 m - 60° [·]	fracture													26	.8 m - LL = 58.2 PL = 14.6% PI = 43.6%	% 6 6		
-28						RC16	27.59 - 29.12	16	100 100 99	1										740
-29		28.8 m - 75°	fracture			RC17	29.12	17	100	1										739
		29.7 m - 70°	fracture				- 30.69		100 98							_				738-
		Notes:							Moni	itorin	n Inc	talls	ation Pi	ine Wr	ork	_			1	L
	Target depth of 33 m achieved. Corehole completed									op	Dept	h Bo	ottom	Pipe	Туре					
	a well and backfilled with sand and bentonite chips.								0.00			10.1	0	PL	AIN	Log	ged By:	C. 1	ams	
16/11/2022									10.10			0.11	0	SLU	IIED	Rev	iewed By:	T. C	urtis	

	CLIEN	т _	Easte	rn Irrig	ation D	strict		P	ROJ	ECT N	IAME				Snak	ke Lake Reservoir Expa	Insion
	PROJI	ECT NUMBER		1560-1	93-00			P	ROJ	ECT L	OCA	TION				NE 1/4 32-19-16	
	DATE	STARTED 0	7/12/2022 CO	MPLET	ED	07/1	2/2022	2 G	ROL	JND E	LEVA	TION		767.6	3m	N 5611105.500 E	416858.24
	DRILL	ING CONTRACTOR	R Chil	ako Dri	lling Se	rvices Lto	1.	G	ROL	JND W	/ATEI	R ELE	VATIO	N / DEI	PTH _	765.02 m	2.61 m
	CORIN	NG TYPE 2:	3/4" x 4 5/8" DIA	METER	(mm)		76	D	DATE	GRO	JND	WATER	R REC	ORDE	D _	08/10/20	22
c	BOL				ype mher	ţ	ber		(m/#) ×	tent (%)	•	MOISTI	JRE C	ONTENT			andpipe
(m) (m)	IL SYM	Des	Soil cription	F		(m)	un Num	TCR SCR	Ire Inde	Ire Cont		PLASTI	C - LIG Blows	UID /300 mm	1	REMARKS	Sterner Sterner
	So			ć	San	L CC	ਸ਼ਿ		actu	oistu		10 2	0 3	0 40			
						_			ц	Ĕ		50 10 POCKE	00 11 TPEN	50 200 (kPa))		
		30.1 m - 60° fra	cture														
					RC	18 30.6	9 18	100	1								
31						33 1	2	100									
						00.1											
32																	
		32.6 m - 45° fra	cture														
33					II.												
84												-					
F																	
5																	
36														 			
-																	
7																	
38																	
9																	
					-	_	_		-		 	1		<u> </u>			

Reviewed By:

T. Curtis



16/11/2022

	OLILI	NT		Eastern Irr	igati	on Distr	ct		P	PROJ	IECT I	NAME	Ξ	_		Sna	ike Lake Reservoir Expar	nsion	
	PROJ	ECT NUMBER		1560	-193	3-00			P	PROJ	IECT I		TION				NE 1/4 32-19-16		
	DATE	STARTED	06/24/2022		ETE	D	06/25/	2022	20	GRO	JND E	ELEVA	ATION	_	767.9	9m	N 5610303.452 E	416849	.554
	DRILL	ING CONTRACT	OR	١	/al's	Drilling			0	BROU	JND V	VATE	R ELE	VATIC	N / DE	PTH	766.92 m	1.07 n	n
	CORI	NG TYPE	HQ3		R (n	nm)	61		C	DATE	GRO	UND	WATE	R REC	CORDE	D	08/10/202	2	
(m)	SOIL SYMBOL		Soil Description	22012222	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE C C - LIG) Blows 20 3 00 1 <u>T PEN</u>	ONTEN QUID 6/300 mn 30 40 50 20 1 (kPa)	Г n) О	REMARKS	Standpipe/	Elevation
		OVERBURDEI LOG.	N. REFER TO	22BH222														¥	76
																			70
																			7
,		SHALE, silt an weathered, gre weak, medium stratified	d clay, slightly ey, damp, high spaced fractu	plastic, res, finely		RC1	6.20 - 7.72	1	95 99 96	4									70
		6.5 m - horizo 6.5 m - horizo 6.8 m - 60° fr 7.6 m - horizo 7.6 m - weak 8.0 m - 89° fr 8.2 m - 76° fr	ontal fracture ontal fracture acture ontal fracture to moderately acture acture	strong		UD1 RC2	7.72 - 9.24	2	90 90 88	2				μ			7.2 m - LL = 61.1% PL = 26.2% PI = 34.9% 8.1 m - Sand = 0.5% Silt = 68.2% Clay = 31.3%		7(
		8.7 m - horizo 9.5 m - 85° fr	ontal fracture acture acture			RC3	9.24 - 10.76	3	99 99 95	3						8 8 1 8	8.1 m - EC: 2.0 dS/m 8.1 m - SAR: 22.6 8.1 m - SO4-S: 220.7 mg/kg 8.1 m - pH: 8.5		7

16/11/2022



	CLIE	NT		Eastern Irri	gati	ion Distri	ct		P	ROJ	ECT N	MAN	E			Sn	ake La	ake Reserv	oir Expar	sion		_
	PROJ	IECT NUMBER		1560	-19	3-00			P	ROJ	ECT L	.00/	ATION				1	NE 1/4 32-1	9-16			
	DATE	STARTED	06/24/2022		ETE	D	06/25/	2022	20	ROL	JND E	LEV	ATION	_	767.9	99m	_ N _	5610303.4	52 E	4168	49.554	_
	DRILI	ING CONTRACT	OR	V	/al's	Drilling			0	ROL	JND V	VATE	R ELE	VATIO	N / DE	PTH		766.92 m		1.0	7 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (r	nm)	61		C	ATE	GRO	UND	WATE	R REC	ORDE	ED		0	8/10/202	2		
Depth (m)	SOIL SYMBOL	D	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10	URE C(IC - LIC) Blows 20 3 100 11	ONTEN QUID /300 mi 30 4/ 50 20	IT m 0 00		REMAR	RKS	Standpipe/	Instrument Elevation	(m)
		10.5 m - 80° f 10.8 m - mod 10.9 m - horiz 11.2 m - 70 m section	fracture erately strong contal fracture im slightly fract	ture		UD2 RC4	10.76	4	93 99 92	3							-				75	7
13		12.4 m - mod 12.5 m - 67° f 12.7 m - 88° f	erately strong t fracture fracture	UD3	12.28 - 13.80	5	103 103 101	3							12.5 0.3%	m - Sand Silt = 6 Clay =	= 5.3% 34.4%		75	5		
		13.2 m - 200 shale 13.4 m - horiz	mm section of contal fracture		RC6	13.80 - 15.32	6	101 101 98	1				-							754	4-1	
15 16		15.3 m - 55° f mm of weak infi shell fragments 15.7 m - horiz	fracture followe ill, trace interbe contal fracture	ed by 10 edded		RC7	15.32 - 16.84	7	78 78 77	1											75:	2
 17 		16.5 m - 340 17.0 m - 48° f 17.3 m - 68° f	mm of core los fracture fracture	RC8	16.84 - 18.36	8	92 92 84	3							47.7	7 89 11 -	72.00/		75	1		
		17.7 m - 54° f 18.2 m - 120 f 18.4 m - 100 f	rracture mm of core los mm fractured s	section		RC9	18.36 - 19.88	9	96 103 94	2				Г 				PL = 19 PI = 54	9.2% 4.6%		750 74:	
- - - - - -		19.3 m - horiz	zontal fracture			RC10	19.88	10	99	2												
16/11/2022	2	Notes: Target depth of a well and back	33 m achieved	d. Coreho d and ben	le d itor	complet iite chip	ed as s.	D	Moni epth To 0.00 11.90	itorin op	ng Ins Dept 1 1	talla h Bo 11.9 13.1	ation P ottom 0 0	ipe W Pipe Pl SLC	′ork e Type _AIN DTTEI	e D R	.ogge Reviev	d By: _ ved By: _	J. Boy T.	<u>d / C.</u> Curtis	<u>Tams</u>	



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	CLIEN	١T	E	Eastern Irri	gati	ion Distr	ict		F	PROJ	ECT	NAM	IE		Sr	nake L	ake Reservoir I	Expansi	on	
	PROJ	JECT NUMBER		1560	-19	3-00			F	PROJ	ECT I	LOC	ATION				NE 1/4 32-19-1	6		
	DATE	STARTED	06/24/2022	COMPLE	ΞTE	D	06/25/	2022	20	GROL	JND E	ELEV	ATION		767.99m	_ N _	5610303.452	_ E	416849.	554
	DRILI	LING CONTRACT		V	/al's	Drilling				GROL	JND V	VATE	ER ELE	VATIO	N / DEPTH	l	766.92 m		1.07 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (r	nm)	61		C	DATE	GRO	UNE	WATE	R REC	ORDED		08/1	0/2022		
		1									<u>_</u>								nt e/	
	30L				,be	nber	÷	ber		u/#) >	ent (9	•	MOIST	URE CO	ONTENT				ndpip trume	_ ح
(m)	ΥM	_	Soil		le T)	Nur	n) Dep	Iumk	RQD	(apu	Cont	н	PLASTI	C - LIQ	UID		REMARK	S	Sta	n)
	IL S		Description		amp	nple	un (un V	SCR	ar	lre (SPT (N) Blows/	300 mm					Elev (t
	So				ဟိ	Sar		Ē		ractı	oistu		10 2	20 3	0 40					
									00	Ē	ž		POCKE	TPEN	(kPa)					
							- 21.40		99 97											-
E		20.4 m - 63° 20.6 m - horiz	fracture zontal fracture																	_
-21																-				747—
-		-				DC11	21 40	11	00	2										-
E		-				KUII	21.40	11	105	2										-
-22		-				UD5	22.92		93							- 22 m	n - UCS = 178	31		746-
Ē		-														kPa				-
E		22.4 m - 55°	fracture																	-
-23		inclusion	sible sandstone			RC12	22.92	12	76	2										745-
Ē		-					- 24 44		80											-
-		-					27.77		12											
-24		-														-				744—
-		24.1 m - 300	mm core loss																	-
Ē		24.6 m hori	zontal fractura			RC13	24.44	13	76	3										
							25.96		70											743—
			zontal fracture																	
		-				RC14	25.96	14	98	2						-26 m	n - LL = 64.2%	6		742—
Ē		-				UD6	-		100								PL = 15%	o /		-
E		26.6 m - mod	lerately strong l	aver			27.40										PI = 49.2	%		-
-27		20.0 m - mou	lerately strong is	ayei										ļ		-				741-
E			oming sandy, fir	ne																
-		grained				RC15	27.48	15	87 87	1										-
-28		-					29.00		87					ļ						740-
		-														28.3	m - Gravel =			
Ē		-														0.1%	m - Sand -			
-29	=	28.8 m - 200	mm core loss	RC16	29.00	16	96	1						18.4	% %			739-		
E							-	-	99								Silt = 49.4 Clay = 32	% 1%		
F							30.52		00							28.3	m - EC: 3.0 o	dS/		-
È												_				m 28.3	m - SAR [.] 24	9		
	I	Notes:			L				Mon	itorin			ation Pi	ine W/	ork		0,			I
		Target depth of	ed as	D	epth T	op	Dept	th B	ottom	Pipe	Туре									
		a well and bac	kfilled with sand	and ben	ton	nite chip	IS.		0.00	·		11.9	0	PL	AIN	_ogge	d By:	Boyd	/ C. Tar	ns
10/1/ / 200-									11.90			13.1	υ	SLO	IIED	Revie	wed By:	<u>т.</u> С	urtis	
10/11/2022	<u>-</u>																			



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	CLIEN	NT	E	Eastern Irriga	tion Dis	trict		F	PROJ	ECT	NAM	E			Sna	ake Lake Reservoir Expa	ansion
I	PROJ	ECT NUMBER		1560-1	93-00			F	PROJ	ECT L		ATION	_			NE 1/4 32-19-16	
1	DATE	STARTED	06/24/2022		ED _	06/25/	/2022	20	GROL	JND E	ELEV	ATION	_	767.9	9m	N 5610303.452 E	416849.554
1	DRILL	ING CONTRACT	OR	Val	's Drillin	g		(GROL	JND V	VATE	RELE	VATIO	N / DE	PTH	766.92 m	1.07 m
(CORI	NG TYPE	HQ3	DIAMETER	(mm) _	6	1	[DATE	GRO	UND	WATE	R REC	ORDE	ED	08/10/20	22
Depth (m)	SOIL SYMBOL	C	Soil Description	Samne Tvne	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE CO C - LIG) Blows 20 3 00 11 T PEN	ONTEN UID /300 mr :0 4/ 50 20 (kPa)	T n <u>D</u>	REMARKS	Standpipe/ Instrument Elevation (m)
-		20.2 - 55%	fun als													28.3 m - pH: 8.6	
31		30.3 m - 55° 30.5 m - hori: 30.6 m - hori:	fracture zontal fracture zontal fracture	-	RC1	30.52 - 32.04	17	82 96 66	3								737-
		31.6 m - 78° 31.8 m - 48°	fracture fracture		RC1	3 32.04 - 33.56	18	93 100 95	3								736-
		32.8 m - 51°	fracture													735-	
																	734-
35 																	733-
																	732-
37																	731-
																	730-
39 																	729-
-																	
16/11/2022	2	Notes: Target depth o a well and bac	f 33 m achieved kfilled with sand	d. Corehole d and bento	compl nite ch	eted as ips.	D	Mon epth T 0.00 11.90	itorir op	ng Ins Dept	stalla h Bo 11.90 13.10	ation P ottom 0 0	ipe W Pipe Pl SLC	ork Type AIN TTE	e D R	ogged By: <u>J. Bo</u> eviewed By:	yd / C. Tams T. Curtis

(CLIEN	NT	Eastern I	rrigat	ion Distr	ict		F	PROJ	ECTN	MAN	1E	Sn	ake Lake Re	servoir Expan	sion	
1	PROJ	ECT NUMBER	156	<u>60-19</u> гтг	<u>3-00</u>	06/20/	2022	F	PROJ				766 71 m	NE 1/4	32-19-16	11683	5 4 0 0
ı I			COMPI	Val's	Drilling	06/30/	2022	<u> </u>	GROU	1ND E		ATION ER ELEVΔT		N 765.0	0 m	1.71	m
(NG TYPE	HQ3 DIAMET	TER (I	mm)	61	1	`	DATE	GRO	UND	D WATER R	ECORDED		08/10/2022	2	
Uepth (m)	SOIL SYMBOL		Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTURE PLASTIC - SPT (N) Bio 10 20 50 100 POCKET P	E CONTENT LIQUID wws/300 mm 30 40 150 200 EN (kPa)	RE	MARKS	Standpipe/	Elevation
1 2 3 4		SHALE (Wea trace sand, hi brownish brow	thered), clay and silt, ghly weathered, wn, some oxidation		RC1	4.53 - 6.05	1	55 100 57	7							•	76 76 76 76 76
6		SHALE, clay medium weat plastic, extrer spaced fractu	and silt, trace sand, hered, grey, damp, high nely weak, very closely res, finely fissured	_	RC2	6.05 - 7.57	2	0 72 28	20					5.5 m - LL PL 5.5 m - Sa Silt Cla	= 89.3% = 24.7% = 64.6% nd = 0.2% = 63.1% y = 36.7%		76
1		7.2 m - 420	mm of core loss		RC3	7.57 - 9.09	3	48 100	10								75

	9	9.0 m - becoming slightly weathered 9.1 m - becoming very weak with closely spaced fractures		RC4	9.09 - 10.61	4	81 100 89	5						8.4 m - CL = 7 PL = 7 8.4 m - Sand Silt = Clay =	15.9% 52.8% = 3.0% 60.8% = 36.2%		758-
		Notes:		4	L		Mon	itori	ng Ins	tallation P	Pipe V	Vork					1
		Target depth of 33 m achieved. Coreho	ole l	backfille	ed with	D	epth T	ор	Dept	h Bottom	Pip	е Туре	Э				
		bentonite chips.					0.00		2	20.50	P	PLAIN	L	ogged By:	C. Tams /	/ C. B	raun
							20.50		2	22.00	SL	OTTEE) R	Reviewed By:	Т. С	urtis	
16	/11/2022					L											



	CLIEI	NT		on Distri	ct		P	ROJ	ECT	NAM	E	_		Sn	ake La	ake Reservoir	Expans	ion			
	PRO	JECT NUMBER		3-00			P	ROJ	ECT I		ATION	_			1	NE 1/4 32-19-	16				
	DATE	STARTED	06/29/2022	_ COMPLE	TE	D	06/30/2	2022	<u> </u>	BROL	JND E	LEV	ATION	_ ۱	766.	71m	_ N _	5609808.700	_ E _	416835.	400
	DRIL	LING CONTRACT		Va	al's	Drilling			G	ROL	JND V	VATE	R ELI	EVATIO	DN / D	EPTH		765.00 m		1.71 m	
	CORI	ING TYPE	HQ3		R (m	חm)	61		D	DATE	GRO	UND	WAT	ER RE	CORD	ED		08/	10/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIS PLAS SPT (I 10 50 POCK	TURE (TIC - LI N) Blow <u>20</u> 100 (ET PEI	CONTEI QUID s/300 m <u>30 4</u> 150 2 V (kPa)	NT Im 4 <u>0</u> 00		REMARK	S	Standpipe/ Instrument	Elevation (m)
11		10.6 m - beco widely spaced 11.0 m - beco fresh rock	oming moderat fractures oming unweath	ely ered/		RC5 UD2	10.61 - 12.13	5	97 100 96	3											756
12 		12.1 m - beco	oming weak			RC6	12.13 - 13.65	6	90 100 95	4											754
14		13.9 m - 100 area with weak	mm highly frac infill	ctured		RC7	13.65 - 15.17	7	70 100 86	3							14.5	m - LL = 73 PL = 179	.6%		753
				RC8	15.17 - 16.69	8	95 100 99	3								PI = 56.6	3%		751		
 17 17				_	RC9 UD3	16.69 - 18.21	9	91 100 97	2				I			•17 m	- LL = 72.2 PL = 17.9 PI = 54.3	% 9% 3%		750	
18 18 19	⁸								84 96 86	3											748
- - - - - -		19.7 m - 60 n	nm of core loss	3		RC11 UD4	19.73	11	73	6											747—
16/11/202:	Notes: Target depth of 33 m achieved. Corehole backfilled w bentonite chips.									itorin op	ng Ins Dept	stalla h Bo 20.50 22.00	ation F ottom 0 0	Pipe V Pip F SL	Vork e Typ PLAIN OTTE	e D F	ogge Reviev	d By: ved By:	2. <u>Tams</u> T. (/ C. Bra Curtis	aun



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	CLIEI	NT	Eastern	Irriga	tion Distr	ict		F	PROJ	ECTI	NAM	E			Sna	ake Lake Rese	ərvoir Expa	insion		
	PRO	JECT NUMBER	15	93-00			F	PROJ	ECTI	LOC	ATION				NE 1/4 3	2-19-16				
	DATE	STARTED	06/29/2022 COM	PLETE	ED	06/30/	2022	20	BROL	JND E	ELEV	ATION		766.7	1m	N_5609808	3.700 E	41	6835.4	100
	DRILI	LING CONTRACT	OR	Val's	s Drilling				BROL	JND V	VATE	ER ELE	VATIO	N / DE	PTH	765.00	m	1	.71 m	
	CORI	NG TYPE	HQ3 DIAME	TER (mm)	6	1	E	DATE	GRO	UND	WATE	RREC	CORDE	D		08/10/20	22		
Depth (m)	SOIL SYMBOL	C	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 POCKI	URE CI IC - LIC I) Blows 20 3 100 1: ET PEN	ONTEN QUID 5/300 mn 30 40 50 20 I (kPa)	T n) 0	REM	ARKS		Standpipe/ Instrument	Elevation (m)
- - - - - -		20.3 m - 200 very weak infill	mm of highly fracture	ł,		- 21.25		100 78												746
-21		21.0 m - beco fractures	oming widely spaced		RC12	21.25 - 22.77	12	83 96 79	3											745
23		22.1 m - 300 layer	mm calcified shale		RC13	22.77 - 24.29	13	76 81 76	1											744
24 24		24.0 m - 24.7 shale layer	⁷ m - strong calcified		RC14	24.29	14	110	0											743
25 25 		25.0 m - 75 n	nm of fractured core			- 25.81		115 110												742
26 26 		25.8 m - beco 25.9 m - 30 n	oming strong nm layer of strong sha mm layer of alternatin	le	RC15	25.81 - 27.33	15	85 85 85	1											741
- 27 		layers of strong shale 26.9 m - becc 27.2 m - 120 27.4 m - alter shale to weak/	mm layer of alternation oming strong mm layer of weak sha nating layers of strong	le	RC16	27.33 - 28.85	16	120 120 120	1							27.4 m - LL PL = PI =	= 63.4% 22.2% : 41.2%			740
-28		28.1 m - horiz fracture 28.3 m - 42° 28.4 m - 29.2	fracture with soft infill		RC17	28.85 - 30.37	17	94 94 94	1							27.4 m - Sar 0.7% Silt = Clay	nd = : 58.2% = 41.1%			738
- - 		Notes:												<u> </u>						737
16/11/202:	2	Target depth of bentonite chips	f 33 m achieved. Core s.	hole	backfille	ed with	D	Mon epth T 0.00 20.50	itorir op	ng Ins Dept	stalla th Bo 20.5 22.0	ation P ottom 0 0	Pipe W Pipe Pl SLC	/ork e Type LAIN DTTED	e La R	ogged By: eviewed By:		<u>ms / (</u> Γ. Cui	<u>). Bra</u> rtis	<u>un</u>



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	CLIEN	ЛТ	E	Eastern Irrig	gati	on Distri	ct		F	PROJ	ECT	NAM	E		5	Snake	e Lake Reservoir	Expans	ion	
1	PROJ	ECT NUMBER		1560-	-193	3-00			F	PROJ	IECT	LOC	ATION				NE 1/4 32-19-	16		
	DATE	STARTED	06/29/2022	COMPLE	TE	D	06/30/2	2022	2(GROI	JND E	ELEV	ATION		766.71m	<u> </u>	N 5609808.700	_ E _	416835.	400
	DRILL	ING CONTRACT	OR	V	al's	Drilling			(GROI	JND \	VATE	ER ELE	VATIO	N / DEPT	н _	765.00 m		1.71 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61	I	[DATE	GRO	UND	WATE	R REC	ORDED		08/2	0/2022		
Depth (m)	SOIL SYMBOL	С	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE CC C - LIQI) Blows/ 20 30 00 15 T PEN	DNTENT UID 300 mm 0 40 50 200 (kPa)		REMARK	S	Standpipe/ Instrument	Elevation (m)
		30.4 m - 20° 30.7 m - 225 31.2 m - 35° 31.4 m - bori	fracture mm layer of we with weak infill	ak shale		RC18	30.37 - 31.89	18	101 107 80	2										736
		fracture with sc	oft infill	4		RC19	31.89 - 33.41	19	93 93 93	1										735
																				733
 																				732
- - 																				731
37																				730
																				729
- 																				728
-		Netes																		727—
16/11/2022	2	Notes: Target depth of bentonite chips	f 33 m achieved S.	I. Corehol	le b	oackfille	ed with	D	Mon epth T 0.00 20.50	itorir op	ng Ins Dep	stalla th Bo 20.5 22.0	ation P ottom 0 0	Pipe Wo Pipe PL SLO	ork Type AIN TTED	Logo Rev	ged By: <u>C</u> iewed By:	. <u>Tams</u> T. (/ C. Bra Curtis	aun



	CLIEN	NT		Eastern Irr	igati	ion Distr	ict		F	PRO		IAM	E			Sna	ake Lak	ke Res	servoir l	Expans	sion		
1	PROJ	JECT NUMBER		1560)-19	3-00			F	PRO	IECT L	.004	ATION				Ν	E 1/4 :	32-19-1	6			
1	DATE	STARTED	08/30/2022	COMPL	ETE	D	08/31/	2022	<u> </u>	GRO	JND E	LEV	ATION		767.30)m	_ N_5	61217	79.983	_ E _	4169	37.8	36
1	DRILI	LING CONTRACT	OR	Ň	/al's	Drilling			0	GRO	UND W	VATE	RELE	VATIO	N / DEF	ΡTΗ		765.43	3 m		1.87	'n	
	CORI	NG TYPE	HQ3		ER (r	mm)	61	1	C	DATE	GRO	UND	WATE	R REC	ORDE	D			09/1	5/2022			
Depth (m)	SOIL SYMBOL	D	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE CO IC - LIQ) Blows, 20 3 00 15 ET PEN	ONTENT UID /300 mm <u>0 40</u> 50 200 (kPa)			REM	MARK	8	Standpipe/	Instrument	Elevation (m)
-		CLAY TILL, silty	y, trace to som dium plastic, b	ne sand, prown.													0 m - (6" SS	A to 3	m.			767—
-		suspect white s	sulphate inclus	sions	-	AU1					17.6		•)									-
- 		1.0 m - becon dark brown	ning very silty,	firm,	-	AU2 SH1					21.4			•									766-
-2		1]2.0 m - becon	ning trace gyp	sum		AU3					26.4			•						•	₹∎		-
-		crystals		.1 . 114										-									765-
	··	trace sand, con	ered), clay an npletely weath	ia siit, nered,	=	AU4					23.0			•									-
3 	· _ · ·	brown to dark g	grey mottling, s ng. damp. higi	RC1	3.00 - 4.52	1	7 82	20				I			3.2 m	- LL =	= 72.2	%			764-		
-	·	extremely weak	k, blocky, trace	e gypsum			17									PL : PI :	= 20.5 [°] = 51 7°	% %			104 -		
-4	·	Crystals	ning extremely	y closely												3.2 m	- Sar	d = 0.	4%			-	
-	·	spaced fracture	es nina hiahly we	athered													Silt Clay	= 55.5 y = 44.	% .1%			763—	
-	· <u>··</u> ··	4.2 m - 270 m	im of core loss	s	RC2	4.52 -	2	7	20													-	
_ 5	· <u>·</u> ··				0.04		33														-		
-		-																			762-		
-		SHALE, clay ar								ŀ			5.7 m	- LL =	= 83.9	%			-				
-6		slightly weather	red, grey, dry, ak, closely sp	high aced		RC3	6.04 -	3	86	3								PL : PI :	= 19.5 [.] = 64 4 [.]	% %			-
-		fractures, thinly	laminated, ur	noxidized			7.56		96 79								5.9 m	- Sar	d = 0.	3%			761-
-		5.8 m - 160 m 6.0 m - becon	ning weak,	a core														Clay	= 69.1 y = 30.	% .6%			-
7 		unweathered	nina some der	rimeter																			
-		weakly cemente	ed layers			RC4	7.56 -	4	83	3													/60
-		7.5 m - 60 mn 7.6 m - mech;	9.08		100					-			7.8 m	- LL =	= 71.9	%			-				
-8		7.8 m - 40 mn			04									PL: PI:	= 20.0 [.] = 51.9 [.]	% %			759-				
-		8.5 m - 76° fra																	-				
-9		-	0.00	_		2													-				
		9.0 m - 120 m	nm of crumble	d core		RCS	10.60	5	99	3													758
		-			74														-				
<u> </u>																			_ 1				
		Notes:			Mon	itori	ng Ins	talla	ition P	ipe W	ork												
		ed as s.	D	epth T	ор	Dept	hBc	ottom	Pipe	Э Туре	_		_		-	_							
	a well and backfilled with sand and bentonite chips.										-	7.60		SLC	TTED		ogged	By:		<u> </u>	Tame	\$	
16/11/2022	2															_ R	eview	ed By	/:	<u> </u>	Curtis	5	



	CLIENT	East	ern Irriga	tion Distr	ict		P	ROJ	ECT	NAM	E			Sna	ake Lake Reservoir Expan	sion	
	PROJECT NUMBER		1560-19	93-00			P	ROJ	ECT	LOC	ATION				NE 1/4 32-19-16		
	DATE STARTED	08/30/2022 CO	OMPLETE	ED	08/31/	2022	G	ROL	JND E	ELEV	ATION		767.30	Dm	N_5612179.983_E	416937.83	36
	DRILLING CONTRAC	TOR	Val's	s Drilling			G	ROL	JND \	NATE	R ELE	VATIO	N / DEI	ΡΤΗ	765.43 m	1.87 m	
	CORING TYPE	HQ3 DI	AMETER (mm)	61		D	ATE	GRO	UND	WATE	R REC	ORDE	D	09/15/2022	2	
Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE CC C - LIQ) Blows/ 20 31 20 15 21 PEN	DNTENT UID /300 mm <u>0 40</u> 50 200 (kPa)	I	REMARKS	Standpipe/ Instrument	Elevation (m)
-	10.1 m - 47°	fracture														-	757—
	10.6 m - 20 10.6 m - bec widely spaced 10.8 m - 74° 11.0 m - 65°	mm of core loss coming moderately fractures fracture fracture		RC6	10.60 - 12.12	6	95 101 88	3				 			10.9 m - LL = 125.4% PL = 21.0% PI = 104.4%	7	756
		fracture		RC7	12.12 - 13.64	7	93 102 94	3								7	755-
—13 — — — — 14 —		fracture ⁹ fracture es shell inclusions fracture		RC8	13.64 - 15.16	8	89 94 92	2								-	754
15 16	BENTONITE (mm of core loss (15.4 m), 170 mm th ms coming moderately	iin	RC9	15.16 - 16.68	9	80 100 84	3								7	752-1
 17	SILTSTONE SILTSTONE, i implicit grey, dan moderately str fractures, thin 16.5 m - mer	fracture and Clay, unweathe np, high plastic, rong, medium space ly laminated chanically fractured	red, ed area	RC10	16.68 - 18.20	10	89 180 96	1							17.4 m - Sand = 0.0%	-	751
18 18 		fracture coming widely space tical fracture	d	RC11	18.20 - 19.72	11	98 98 98	1							Silt = 63.0% Clay = 37.0%	7	749-
	 	mm of core loss		RC12	19.72	12	53	1									/48
	Notes:						Moni	itorir	ng Ins	stalla	tion P	pe W	ork				
	larget depth of a well and bac	of 20 m achieved. C ckfilled with sand an	orehole d bentoi	complet nite chip	ed as s.	D	epth To 0.00 6.10	op 🗌	Dep	th Bo 6.10 7.60	ottom	Pipe PL SLO	e Type AIN OTTED	L	ogged By: <u>C.</u>	<u>Tams</u>	
16/11/2022	2					L									. <u> </u>	Suitis	

(Eastern Ir	rigati	on Distr	ict		P	ROJ	ECTN		S	nake Lake Reservoi	r Expansio	on	
F			156 COMPI	0-193	<u>3-00</u>	09/21/	2022	P				767.20m	NE 1/4 32-19	-16	116937	836
L		08/30/2022			Drilling	08/31/	2022	<u> </u>					N 765.43 m	<u> </u>	1 87 m	550
L (EP (n	Drining om)	6,	1	ی م						/15/2022	1.07 11	
							• 					RECORDED	03/	13/2022	t s	
uepun (m)	SOIL SYMBOL	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOISTUF PLASTIC SPT (N) E 10 20 50 100 POCKET 	RE CONTENT - LIQUID Blows/300 mm <u>30 40</u> 0 150 200 PEN (RPa)	REMARI	٨S	Standpipe Instrumen	Elevation
21		50 mm of crumb 10 mm of core lo	led core oss			21.24		80 55					-20.4 m - LL = 66 PL = 15. PI = 50.	5.1% 8% 3%		747
2																745
																74
Ļ																744
;																74:
																742
5																74 [.]
,																740
В																739
Э																738
													_			
	Notes:					_	-	Moni	itorir	ng Ins	stallation Pip	e Work			·	
	Target depth	n of 20 m achiev	ed. Coreh	ole c	ite obi	ted as	D	epth To	ор	Dept	h Bottom	Pipe Type				
	a well and D			nun		55.		0.00			6.10		Logged By:	C. 1	ams	
							1	0.10	1		1.00	SLUTIED				



(CLIEI	NT	East	ern Irr	igati	on Distr	ict		F	PROJ		NAME	E		S	Snake I	_ake Re	servoir E	Expans	ion		
F	PRO	JECT NUMBER		1560)-193	3-00			F	PROJ	IECT L		TION				NE 1/4	32-19-1	6			
[DATE	STARTED	08/31/2022 CO	OMPLI	ETE	D _	08/31/	2022	2 0	GRO	JND E	ELEVA	TION		768.39m	N	56114	59.935	E_	4169	940.8	74
[DRILI	LING CONTRACT	OR	١	/al's	Drilling			0	GROI	JND V	VATE	R ELE	VATION	N / DEPT	н	765.9	0 m		2.49	9 m	
(CORI	NG TYPE	HQ3 DI	AMETE	ER (n	nm)	61	1	C	DATE	GRO	UND	WATE	R REC	ORDED			09/1	5/2022			
Depth (m)	SOIL SYMBOL	C	Soil bescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N <u>10 2</u> 50 1 POCKE	JRE CC C - LIQI Blows/3 20 30 00 15 T PEN (NTENT JID 300 mm) 40 0 200 (kPa)	_	RE	MARKS	6	Standpipe/	Instrument	Elevation (m)
-	000	GRAVEL, silty, cobbles. well a	some clay infill, tra raded up to 50 mm	ace 1.												0 m	- 6" S	SA to 3	m.			769
 1	000000000000000000000000000000000000000	coarse grained compact, brow	, sub-angular, dry, n	.,	*	AU1 AU2					6.1 7.0	•				0.6 56.0 0.6 27.	m - Gra 3% m - Sa 7%	avel = nd =				100
-			v some gravel up	to 15													Silt Cla	t = 9.2%	%			767—
-2		mm, trace sand	d, damp, stiff, medi	ium		AU3					17.0		•				m - 11	= 63 19	%			-
-		sulphate inclus	ions, trace gypsun	n							17.0						PL PI	$= 16.8^{\circ}$ = 46.3^{\circ}	%	-		766
	· · · · · ·	SHALE (Weath	ered), clayey, silty	AU4					18.8		•					40.0		T		-		
-3	· _ · · ·	completely wea	oxidation staining,	RC1	3.30 -	1	0	20												705		
-	·	damp, high pla hard soil, block	stic, extremely wea y, trace gypsum		4.82		58 9					H		-3.6	m - LL	= 69.29	%			/65		
-4		crystals 3.3 m - becor	ning extremely clos												PL PI	= 22.6°	% %			-		
-		spaced fracture	es ed silt slightly											3.6	m - Sa Sill	nd = 0.: t = 51.5	2% %			764		
		weathered, gre	y, damp, high plas		RC2	4.82 -	2	16	20						4 9	Cla m - L I	ay = 48.	3% %		_	-	
5 		fractures, thinly	<i>i</i> laminated, trace				6.34		86 28								PL	$= 20.0^{\circ}$	%			
		oxidation staini	ng 1m of core loss													5.3	m - Sa	= 50.0 nd = 0.	% 1%			763
6		4.8 m - very c throughout run	rumbled core														Cla	t = 57.2 ay = 42.	% 7%			-
-		5.9 m - becor	ning unoxidized			RC3	6.34 -	3	61	5												762-
		6.3 m - becor	ning unweathered				7.86		100 62													-
—7 		6.9 m - 100 n	nm of crumbled co	re																		-
-		7.5 m - 38° fr	acture																			761
8		7.9 m - becor	ning moderately w	idely		RC4	7.86 -	4	82 88	1							m - 11	- 78 /0	0/6			-
-		spaced fracture 8.2 m - 47° fr		0.00		81							0.1	PL	$= 16.2^{\circ}$	%			760			
		-												PI	= 62.2	%			-			
-9		0.2 m 190 m																=				
		ə.z iii - 100 li				RC5	9.38 - 10.90	5	76 100	3												759-
-									64			_				_						-
	I	Notes:							Mon	itorir	ng Ins	talla	tion Pi	pe Wo	ork							
	Target depth of 15 m achieved. Corehole completed a a well and backfilled with sand and bentonite chips.									ор	Dept	h Bo	ttom	Pipe	Туре							
						omp			0.00 4.90			4.90 6.40		PL SLO	AIN TTED	Logg	ed By:		<u> </u>	Tame	s	
16/11/2022	2															Revie	ewed B	y:	T.	Curtis	S	



	CLIEN	NT		Eastern Irri	gati	on Distri	ict		F	PROJ	ECTI	NAM	IE			Sna	ake Lak	e Reservoir E	Expans	ion	
	PROJ	ECT NUMBER		1560-	-193	3-00			F	PROJ	ECT I	LOC	ATION				N	E 1/4 32-19-1	6		
	DATE	STARTED	08/31/2022		TE	D	08/31/	2022	20	GROL	JND E	ELEV	/ATION	_	768.3	9m	N_5	611459.935	E_	416940	.874
	DRILL	ING CONTRACT	OR	V	al's	Drilling			0	GROL	JND V	VATE	ER ELE	VATIO	N / DEI	PTH	7	′65.90 m		2.49 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRO	UNE) WATE	R REC	ORDE	D		09/1	5/2022	1	
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTI PLASTI SPT (N 10 2 50 1 POCKE	URE CO C - LIC) Blows 20 3 00 1 T PEN	ONTENT UID /300 mm 60 40 50 200 (KPa)	Г]		REMARKS	3	Standpipe/ Instrument	Elevation (m)
		10.0 m - 100 10.1 m - becc 10.2 m - 39° t 10.5 m - 28° t 10.9 m - becc decimeter weal 11.0 m - crum	mm of crumble oming weak fracture fracture oming centimet kly cemented la ibled core	ed core er to ayers		RC6	10.90 - 12.42	6	66 100 66	3											758
12 13 		12.1 m - 36° 1 12.9 m - horiz 13.2 m - 48° 1	fracture zontal fracture fracture			RC7	12.42 - 13.94	7	75 100 70	3											756
- - - - - - - - - - - - - - - - - - -		13.9 m - trace 14.3 m - becc moderately stro	e bentonite sea oming some thi ong layers	ım n		RC8	13.94 - 15.46	8	73 103 78	3				 			13.9 m	n - LL = 91.2 PL = 20.99 PI = 70.39	2% % %		754
		14.6 m - 21 ⁻ 1																			753-
																					752
																					751
																					750
																					749
<u>├</u>	1	Notes:							Mon	itorir			ation Di	ine M	lork						<u> </u>
16/11/202	2	Target depth of a well and bacl	f 15 m achieved kfilled with sand	d. Coreho d and ben	le c ton	complet ite chip	ed as s.	D	epth T 0.00 4.90	op	Dept	th B 4.90 6.40	ottom 0 0	Pipe Pipe Pl SLC	Type AIN TTED	Lo R	ogged eviewe	By: ed By:	<u>C.</u> T. (<u>Tams</u> Curtis	



	CLIEI	NT	E	Eastern Irr	igati	on Distr	ict		F	PROJ		JAM	E	_		Sna	ke Lake	e Reservoir	Expar	ision		
	PRO	JECT NUMBER		1560	-193	3-00			F	PROJ	IECT L	.004	ATION				NE	1/4 32-19	-16			
1	DATE	STARTED	09/01/2022	COMPLI	ETE	D _	09/02/	2022	<u> </u>	GROU	JND E	LEV	ATION		766.75	m	N_56	10778.957	<u> </u>	416	912.	982
	DRIL	LING CONTRACT	OR	١	/al's	Drilling			0	GRO	JND V	VATE	R ELE	VATIO	N / DEP	тн	70	64.77 m		1.9	8 m	
	CORI	ING TYPE	HQ3		R (n	nm)	61	1	C	DATE	GRO	UND	WATE	R REC	ORDE	. כ		10/	12/202	2		
Depth (m)	SOIL SYMBOL	D	Soil rescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE CC IC - LIQI) Blows/ 20 30 00 15 ET PEN	DNTENT UID 300 mm <u>0 40</u> 0 200 (kPa)			REMAR	Ś	Ctondaino		Elevation (m)
-		SAND, silty, po	orly graded, fin	е												0) m - 6	" SSA to 3	3.3			
-		compact, light l	orown		-	AU1					3.5).6 m -	Sand =				-
-1		•									0.0						71.9%	Silt - 16	20/			766
		•			-	AU2					3.1	•						Clay = 11	5 % I.8%			-
_		CLAY TILL, silt	y, trace gravel u	up to 20																		
-2		mm, trace sand	l lenses, damp	, stiff,		A 1 10													40/	¥		/05
-	\leq	oxidation staini	ng, suspect wh	lite	■	AU3					16.9		•				2.1 m -	LL = 57.4 PL = 16.2	1% 2%			-
E	· _ · ·	sulphate inclus	ions ered) clav and	AI 14					22.0							PI = 41.2	2%			704		
-3	· · · · ·	completely wea	athered, brown	SH1					23.0			•								/64		
Ē	· <u>··</u> ·	grey mottling, s	some oxidation		RC1	3.30 -	1	0	20												-	
_	· <u>··</u> ·	hard soil, block	y			4.82		63							_3	3.6 m -	LL = 67.0)%			700	
-4		3.3 m - 560 m 3 9 m - 130 m				9									PL = 22.3	3% 7%			763			
		SHALE, silt, cla	ayey to and clay	y,												3	3.6 m -	Sand = 1	.5%			
E	===	plastic, extreme	ered, grey, dan elv weak, extre	np, high melv														Silt = 60 .	6% 7 9%			
-5		closely spaced	fractures, think	y		RC2	4.82 -	2	39	20						4	1.1 m -	LL = 58.3	3%			762—
		laminated, uno	xidized bled core				0.34		57									PL = 21.2	2% 1%			
-		4.8 m - 150 m	nm of slough															FI = 57.	1 70			
Ē	===	5.0 m - 200 m	nm of mechanic	al rubble												5	5.9 m -	Sand = 3	8.8%			761—
		5.9 m - 160 m -shale	im of strong ca	Icilied		DC 2	6.24	2		2								Silt = 64 .	1%			
-		6.1 m - suspe	ect white sulpha	ate		RUS	7.86	3	100	3								Clay – 32	2.1%			
È,		inclusions	ning unweather	red, verv					86													760-
Ē		weak, closely s	paced fractures	5																		-
-		6.6 m - 112° f 7.4 m - vertica	racture al fracture with	weak																		
-		clay infill				RC4	7.86 -	4	73	4						7	79m-	Sand = () 3%			759-
8		7.7 m - vertica	al fracture ning some cent	timeter to			9.38		100							····		Silt = 69.	2%			
-		decimeter weak	kly cemented la	iyers					/0									Clay = 30	0.5%			
		8.1 m - 63° fra -	acture																			758-
-9		8.9 m - 39° fra	acture anical rubble																		Ĥ.	
-						RC5	9.38 -	5	89	3												
-		99 m - 104° f	racture				10.90		89													757-
													i		:							-
		Notes:	20 m achieves	1 Caroba		omole	od co		Mon	itorir	ng Ins	talla	tion P	ipe W	ork							
		a well and back	∠o m achieved filled with sand	and ber	nton	ite chip	eu as Is.	D	epth To	ор	Dept	h Bo	ottom	Pipe	туре	┥.		-	~	Ŧ		
						•			7.60		1	9.10	,)	SLO	TTED	Lo	gged I	∃y:	C	. 1am	S	
16/11/2022	2															Re	eviewe	a By:	T.	Curt	s	



	CLIENT	Eas	tern Irriga	tion Distr	ict		P	ROJ	ECTI	NAME	Sna	ake Lake Reservoir Expansio	n
1	PROJECT NUMBER		1560-1	93-00			P	ROJ	ECT I	LOCATION		NE 1/4 32-19-16	
۱ I	DATE STARTED	09/01/2022 C	OMPLET	ED	09/02/	2022	20	ROL	JND E	ELEVATION	766.75m	N 5610778.957 E 4	16912.982
۱ I	DRILLING CONTRAC	TOR	Val	's Drilling			0	ROL	JND V	VATER ELE	EVATION / DEPTH	764.77 m	1.98 m
	CORING TYPE	HQ3 DI	IAMETER	(mm)	61	1	C	ATE	GRO	UND WATE	ER RECORDED	10/12/2022	
Depth (m)	SOIL SYMBOL	Soil Description	Samnle Tyne	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOIS[™] ⊢ PLAS[™] SPT (t) 10 50 POCK 	TURE CONTENT TIC - LIQUID N) Blows/300 mm 20 30 40 100 150 200 (ET PEN (kPa)	REMARKS	Standpipe/ Instrument Elevation (m)
- - - - - - - - - - - - - - - - - - -	10.0 m - 122 10.6 m - 118 10.9 m - 160 	2° fracture 3° fracture) mm of mechanica fracture	I	RC6	10.90 - 12.42	6	84 101 86	2					756
12 13	11.8 m - 74° 11.9 m - 107 12.5 m - 135 12.9 m - 122	fracture ° fracture ° fracture ° fracture		RC7	12.42 - 13.94	7	90 100 84	3					754
- - - - - - - - - - - - - - - - - - -		^{o°} fracture S [°] fracture tical fracture followe	ed by	RC8	13.94 - 15.46	8	82 100 81	3					753
15 16	- crumbled core 14.8 m - 80 - layer 15.0 m - 42° - BENTONITE - weak layer - SHALE, silt, c	mm moderately stro fracture (15.4 m), 140 mm s layey, unweathered	ong seam, I,	RC9	15.46 - 16.98	9	82 101 93	3				15.5 m - LL = 296.0% PL = 36.9% PI = 259.1%	751
	light grey, dan moderately str 15.8 m - ver 16.6 m - ver shell inclusion 16.8 m - ver 16.8 m - ver	np, high plastic, rong, finely fissured tical fracture tical fracture with tra- s tical fracture with tra- s mm of alough	l ace ace	RC10	16.98 - 18.50	10	82 100 82	4					750
	17.6 m - 100 17.6 m - 106 17.8 m - 76° 17.9 m - 50 18.4 m - 73° 19.2 m - 132 19.6 m - ver clay infill 19.7 m - 162	fracture fracture mm of crumbled co fracture 2° fracture tical fracture with w 2° fracture	re eak	RC11	18.50 - 20.02	11	93 107 89	3					748
	19.8 m - 151												
16/11/2022	Notes: Target depth o a well and bao	of 20 m achieved. C ckfilled with sand ar	Corehole nd bento	complet nite chip	ed as s.	D	Moni epth To 0.00 7.60	itorir op	ng Ins Dept	stallation F th Bottom 7.60 9.10	Pipe Work Pipe Type PLAIN SLOTTED R	ogged By: <u> </u>	ams

									CORE	HOLE No :	22CH23
		PE	an Englo	be com	npa	ny					PAGE 3 0F
	CLIENT		Eastern Irrigatio	n District		PR	JECT	NAME	Sr	nake Lake Reservoir	Expansion
	PROJECT NUM	BER	1560-193-	00		PR	JECT	OCATION		NE 1/4 32-19-	16
	DATE STARTED	09/01/2022	COMPLETED	09/02/	2022	 GR(DUND E	LEVATION	766.75m	N 5610778.957	E 416912.982
	DRILLING CON		Val's D	rillina	-	GR			TION / DEPTH		– – – – – – – – – – – – – – – – – – –
		HQ3	DIAMETER (mr	n) 61	1		E GRO		RECORDED	10/1	2/2022
Depth (m)	SOIL SYMBOL	Soil Description	Sample Type	Sample Number Run Depth (m)	Run Number	RQD TCR SCR	Moisture Content (%)	 MOISTUF ⊢ PLASTIC ■ SPT (N) B 10 20 50 100 ▲ POCKET 	E CONTENT - LIQUID lows/300 mm 30 40 150 200 PEN (kPa)	REMARK	S Standpipe Instrumen Elevation
-											
01											74
-21											
-											
22											74
-22											
											74
-23											
-											
											74
-24											
-											
											74
-25											
-											
											74
-26											
											74
-27											
-											
											73
-28											
-											
-											73
-29											
-											
											73
-											
	Notes:					Monito	ring Ins	stallation Pip	e Work		
	Target de	epth of 20 m achieved backfilled with set	ed. Corehole co	mpleted as	De	pth Top	Dep	h Bottom	Pipe Type		
				o onpo.		0.00 7.60		7.60 9.10		ogged By:	C. Tams
	•									Reviewed By:	T. Curtis



	CLIEI	NT		Eastern Irri	igati	on Distr	ict		F	PRO		MAN	E			Sna	ake La	ake Reservoir	Expan	sion		
	PRO	IECT NUMBER		1560	-193	3-00			F	PRO	JECT L	.00/	ATION					NE 1/4 32-19-1	6			
	DATE	STARTED	09/06/2022		ETE	D _	09/06/	2022	20	GRO	UND E	LEV	ATION	_	766.0	04m	_ N _	5609873.977	E_	4168	399.4	,90
	DRILI	LING CONTRACT	OR	١	/al's	Drilling			0	GRO	UND V	VATE	R ELE	VATIC	DN / DE	EPTH		765.37 m		0.6	7 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRO	UND	WATE	R REC	CORDI	ED		10/1	2/2022	2		
Depth (m)	SOIL SYMBOL	D	Soil escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE C C - LIG) Blows 20 3 00 1 ET PEN	ONTEN QUID \$/300 m 30 4 50 20 I (kPa)	IT m 0 20		REMARK	6	Standnine/	Instrument	Elevation (m)
- - - - -		CLAY TILL, silt moist, stiff, med dark brown, tra	y, trace sand le dium to high pla ce gypsum cry	enses, astic, ⁄stals	æ	AU1					26.4			•			0 m · m.	- 6" SSA to 3	.35	¥		
1 		SHALE (Weath	ered), clay and	d silt,	-	AU2 SH1					22.4			•								765
2 	· · · · · · · · · · · · · · · · · · ·	trace sand, higi to dark grey mo staining, damp, weak to hard so	hly weathered, ottling, some ox high plastic, e oil, blocky, trac	brown xidation extremely e	=	AU3					31.0				•							764
- 3 		gypsum crystal	s um of core loss		-	RC1	3.35 -	1	0	20	22.0			•			3 m · back	- Bridge whe filling.	ı			763-
- - - 	·	4.0 m - becon	ning extremely	closely			4.87		55 14								4 m ·	· LL = 71.6% PL = 15.9	%			762
- - - - - - - - - - - - - - - - - - -		spaced fracture	S			RC2	4.87 - 6.39	2	87 104	4								PI = 55.7	%			761
		SHALE, silt, cla slightly weather oxidation staini very weak, clos thinly laminated	ayey to and cla red, grey, trace ng, damp, high sely spaced fra	y, e n plastic, ictures,					90								5.3 r	n - LL = 86.4 PL = 19.3 PI = 67.1	% % %			760-
- - - - - - - - 7		5.3 m - 50 mr extremely weak 6.0 m - becon unoxidized	n of crumbled o clay infill ning unweathe	core with red,		RC3	6.39 - 7.91	3	88 100 91	4							6.9 r	n - Sand = 0.	2%			759-
		6.6 m - becon decimeter weak 6.9 m - 62° fra 7.3 m - 71° fra	ning some cen (ly cemented la acture acture	timeter to ayers		RC4	7.91 -	4	89	3								Clay = 34	3%			758
		7.4 m - 79° fra 7.9 m - becon spaced fracture 8.2 m - 110° f	acture ning moderatel s racture	ly widely			9.43		100 88													1
9 		9.3 m - vertica 9.4 m - 60 mr 9.5 m - becon 9.6 m - 103° f	al fracture n of crumbled o ning weak racture	core		RC5	9.43 - 10.95	5	90 100 89	2												757
	-	Notes:							Mon	itori	ng Ins	talla	ation Pi	ipe W	/ork					I		
		Target depth of a well and back	20 m achieved filled with sand	d. Coreho d and ber	le c iton	complet ite chip	ed as s.	D	epth T	ор	Dept 1	h Bo	ottom 0	Pip	e Typ	e L	ogge	d By:	C.	Tam	S	
16/11/202:	2								15.20		1	10.8	U	SLC	JIIE	R	evie	ved By:	Τ.	Curti	<u>s</u>	



	CLIEI	NT		Eastern Irrig	gati	on Distri	ct		F	PROJ	ECT	NAM	1E	_		Sna	ake La	ake Reser	voir E	xpans	ion	
	PRO	JECT NUMBER		1560-	-193	3-00			F	PROJ	ECT	LOC	ATIO	N _				NE 1/4 32	-19-16	6		
	DATE	STARTED	09/06/2022		TE	D	09/06/	2022	20	GROL	JND E	ELE\	/ATIO	N	766	.04m	_ N _	5609873.	.977	Ε	416899	.490
	DRIL	LING CONTRACT	OR	V	al's	Drilling			0	GROL	JND \	NAT	ER EL	EVAT		EPTH		765.37 m	1		0.67 m	1
	COR	ING TYPE	HQ3	DIAMETE	R (n	nm)	61	1	C	DATE	GRO	UNE	D WAT	FER RE	ECORI	DED			10/12	2/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIS PLAS SPT 10 50 POC	STURE STIC - L (N) Blov 20 100 :KET PE	CONTE IQUID ws/300 r <u>30</u> 150 EN (kPa	NT nm 40 200		REMA	ARKS	;	Standpipe/ Instrument	Elevation (m)
		10.3 m - 70° 11.5 m - verti	fracture cal fracture			RC6	10.95 - 12.47	6	89 96 86	2												755
-12		12.0 m - 46° 12.4 m - 60 n 12.9 m - verti	fracture nm of core loss ical fracture	3		RC7	12.47 - 13.99	7	93 103 95	3												754
14 14 		13.5 m - 70° 13.6 m - 30 n shale followed core \ <u>.14.1 m - mec</u> BENTONITE (fracture nm of slightly c by 40 mm of cr <u>hanical rubble</u> 14.2 m), 40 mn	alcified rumbled		RC8 D1	13.99 - 15.51	8	85 100 86	4					F		14.2	m - LL = PL = 3 PI = 2	236. 34.3% 201.7	0% % '%		752
15 16		aminated sear 14.3 m - 70 n layer SHALE, "" 15.0 m - verti 15.4 m - mec 15.5 m - 210	ns nm moderately cal fracture hanically dama mm of core los	strong		RC9	15.51 - 17.03	9	58 86 66	3												751
		15.9 m - 120 rubble 16.7 m - 121 17.4 m - 100 17.8 m - 110	mm of mechar [°] fracture [°] fracture [°] fracture	nical		RC10	17.03 - 18.55	10	90 100 83	3							16.5 0.1%	m - Sano Silt = Clay =	d = 62.6% = 37.3	% 3%		749
		18.3 m - mec 19.3 m - becc moderately stro 19.4 m - 57° 19.6 m - 66°	hanically fractu oming some thi ong layers fracture fracture	ured area		RC11	18.55 - 20.07	11	95 100 92	2				F			19.3	m - LL = PL = ^ PI = 4	60.0 16.4% 43.6%	% 6 6		748
16/11/202	2	Notes: Target depth of a well and bac	f 20 m achieve kfilled with san	d. Coreho d and ben	le c ton	complet ite chip	ed as s.	D	Mon epth T 0.00 15.20	itorir op	ng Ins Dep	th B 15.2 16.8	ation ottom 20 30	Pipe ' n Pi SL	Work pe Tyj PLAIN OTTE	De ED R	ogge Reviev	d By: wed By:		<u>С.</u> Т. (Tams Curtis	

					9.0		CON	ιpt	лту								·	AGE (5 01
	CLIEN	NT		Eastern Irr	rigatio	on Distr	ict		P	ROJ	ECT N	JAM	E			Snake Lake Reserv	oir Expansio	n	
	PROJ	ECT NUMBER		1560	0-193	8-00			P	ROJ	ECTL	.004	ATION	_		NE 1/4 32-	19-16		
	DATE	STARTED _	09/06/2022	COMPL	ETEI	D _	09/06/	2022	2 G	ROL	IND E	LEV	ATION	_	766.04r	N 5609873.9	977 E _4	16899.	.490
	DRILL	ING CONTRAC	TOR	١	Val's	Drilling			G	ROL	IND V	VATE	RELE	VATIC	ON / DEPT	H765.37 m		0.67 m	J
	CORII	NG TYPE	HQ3		ER (m	nm)	61	1	D	ATE	GRO	UND	WATE	R RE	CORDED		10/12/2022		
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKE	URE C IC - LIC) Blows 20 1 20 1 21 PEN	CONTENT QUID s/300 mm 30 40 150 200 v (kPa)	REMA	RKS	Standpipe/ Instrument	Elevation
-																			
-21																			74
-22																			74
-23																			74
-24																			74:
-25																			
20																			74
-26																			74
-27																			73
-28																			73
-																			
-29																			73
-																			
-		Notes:																	
		Target depth	of 20 m achiev	ted as		Moni	torir	g Ins	talla	tion P	ipe V	Vork							
		a well and ba	ckfilled with sa	os.		0.00	4	Dept 1	5.20	0	Pip P	LAIN	l oaged By:	СТ	ams				
									15.20		1	6.8	0	SLO	OTTED	- 33 23	0.1		

(CLIEN	ΙT	Eas	tern Irrig	gatic	on Distri	ct		P	ROJ	ECTI	NAME	1			Sna	ake Lake Reservoir Expar	ision	
F	PROJ	ECT NUMBER		1560-	193	-00			P	ROJ	ECT I	OCA	TION	_			NE 1/4 32-19-16		
[DATE	STARTED	07/05/2022 C	OMPLE	TEC)	07/06/	2022	G	ROL	JND E	LEVA	ATION	_	769.34	m	N 5609512.400 E	416686.	.400
[ORILL	ING CONTRAC	ror	Va	al's I	Drilling			G	ROL	JND V	VATE	R ELE	VATIO	N / DEP	TΗ	766.27 m	3.07 m	1
(CORII	NG TYPE	<u>HQ3</u> D	IAMETER	ר (m	m)	61		D	ATE	GRO		WATE	R REC	CORDE)	10/12/202	2	
Depth (m)	SOIL SYMBOL	ſ	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N <u>10 2</u> 50 1 POCKE	URE C C - LIC) Blows 20 3 00 1: T PEN	ONTENT QUID /300 mm 80 40 50 200 (kPa)		REMARKS	Standpipe/	Elevation
		OVERBURDE	N. REFER TO 22E	3H301	+						_		PUCKE	PEN	(кра)				
1		LOG.																	769 768
2																			767
5																		Y	766
5						SH1												Π	765
6																		Π	764
7																			763
3		SHALE (Weat trace sand, hig brownish grey	nered), clay and si hly weathered, some oxidation	lt,		RC1	7.60 - 9.12	1	40 93 53	7							8 m - LL = 76.7%		762
Э	· · · · · ·	staining, damp weak to hard s 8.0 m - 35° fi	o, high plastic, extra soil, blocky racture	emely		RC2	9 12 -	2	32	٩							PL = 13.8% PI = 60.9% 8 m - EC: 4.3 dS/m 8 m - SAR: 30.1 8 m - pH: 7.9		761
	· · · · · · · · · · · · · · · · · · ·	9.1 m - beco shale	ming some very w	eak		1.02	10.64	2	100 57	9							8.6 m - Dispersivity Classification = D2		760
		Notes:					L		Moni	torin	a laa	tollo	tion D	100 14	lork			I	



	CLIEN	ΝT		Eastern Irri	igati	on Distri	ct		P	ROJ	ECTI	NAM	E		Sr	nake Lake Reservoir Expai	nsion
	PROJ	IECT NUMBER		1560	-19	3-00			P	ROJ	ECTI	LOC	ATION			NE 1/4 32-19-16	
	DATE	STARTED	07/05/2022		ETE	D	07/06/	2022	2 G	ROL	JND E	ELEV	ATION		769.34m	N_5609512.400 E	416686.400
	DRILL		OR	١	/al's	Drilling			G	ROL	JND V	NATE	ER ELE	VATION	I / DEPTH	766.27 m	3.07 m
	CORI	NG TYPE	HQ3		R (r	nm)	61		D	ATE	GRO	UND	WATE	R RECO	ORDED	10/12/202	22
Depth (m)	SOIL SYMBOL	D	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE CO C - LIQU) Blows/3 20 30 00 150 T PEN (NTENT JID 300 mm 40 5 200 kPa)	REMARKS	Standpipe/ Instrument Elevation (m)
- - - - - - - - - - - - - - - - - - -		10.9 m - 150 fractured area SHALE, clay ar medium weath	mm mechanic nd silt, trace sa ered, grey, sor	cally and, me		RC3	10.64 - 12.16	3	48 100 57	5						-	759
-12		oxidation stainii very weak, thin spaced fracture crystals 12.1 m - becc weathered to ur 12.2 m - becc	ng, damp, hig ly laminated, i es, trace gypsi oming slightly nweathered oming widely s	RC4 UD1	12.16 - 13.68	4	99 100 92	3							757		
- - - - - - - - - - - - - - - - - - -		fractures 13.6 m - beco staining 13.7 m - some decimeter weak 13.8 m - becc weak	13.68 - 15.20	5	88 100 97	4						14.37 m - Sand = 0.2% Silt = 60.8%	755				
				RC6	15.20 - 16.72	6	81 100 91	4						Clay = 39.0%	754-		
		BENTONITE (1 16.2 m - 60 m layer SHALE, clay ar medium weathe oxidation staini very weak, thin spaced fracture	16.72 - 18.24	7	103 103 101	2						-16.1 m - LL = 128.5% PL = 20.9% PI = 107.6% 16.1 m - EC: 1.5 dS/ m 16.1 m - SAR: 21.6 16.1 m - pH: 9.3	753-				
		17.2 m - 81° f 17.6 m - 81° f 18.2 m - 87° f 18.6 m - 76° f	18.24 - 19.76	8	101 101 99	2						18.2 m - Sand = 0.1% Silt = 59.1% Clay = 40.8%	751				
-		19.4 m - 81° f	19.76	9	99	2						19.76 m - Sand = -0.8%	750				
16/11/2022	<u>1</u> 2	Notes: Target depth of a well and back	30 m achieve	ed. Coreho nd and ber	le d	complet ite chip	ed as s.	D	Moni epth To 0.00 15.35	itorin op	ng Ins Dept	stalla th Bo 15.3 16.8	ation P ottom 5 5	ipe Wo Pipe PL/ SLO	ork Type AIN I TTED	Logged By: <u>C. Tar</u> Reviewed By: <u>T</u>	<u>ns / J. Boyd</u>



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	CLIEN	NT	E	Eastern Irrig	ation Dis	trict		F	PROJ	ECT	NAM	E			Sna	ake La	ke Reservoir Ex	oansio	on	
	PROJ	IECT NUMBER		1560-1	93-00			F	PROJ	ECT	LOCA	ATION				Ν	IE 1/4 32-19-16			
	DATE	STARTED	07/05/2022	COMPLET	ED .	07/06	/2022	20	GROL	JND E	ELEV	ATION		769.34	1m	N_	5609512.400	Ξ	16686.4	400
	DRILI	ING CONTRACT	OR	Va	l's Drillin	g		0	GROL	JND \	NATE	R ELE	VATIO	N / DEF	РΤΗ		766.27 m		3.07 m	
	CORI	NG TYPE	HQ3	DIAMETER	(mm) _	6	1	C	DATE	GRC	UND	WATE	R REC	ORDE	D		10/12/2	2022		
Depth (m)	SOIL SYMBOL	C	Soil Description	L T	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	URE CC C - LIQI) Blows/ 20 30 00 15 T PEN	ONTENT UID 300 mm <u>0 40</u> 50 200 (kPa)			REMARKS		Standpipe/ Instrument	Elevation (m)
-						21 28		99 96									Silt = 64.6% Clay = 34.6%	6		749-
21		20.6 m - 85° f 20.7 m - horiz 20.9 m - 25 n 21.0 m - horiz	fracture zontal fracture nm sandy shale zontal fracture	section	RC1	21.20	10	103 103 102	1							20.9 20.9 0.8%	n - LL = 63.5% PL = 14.5% PI = 49.0% n - Sand = Silt = 64.6% Clay = 34.6%	6		749
23		22.4 m - inter 22.5 m - mod 22.7 m - horiz 23.0 m - horiz	bedded shells lerately strong zontal fracture zontal fracture		UD: RC1	1 22.80 - 24.32	11	101 101 98	2											746
-24		23.7 m - 66° 1 24.1 m - horiz 24.6 m - horiz 24.8 m - horiz	fracture zontal fracture zontal fracture zontal fracture		RC1	2 24.32 25.84	12	103 103 101	2											745
					UD6 RC1	25.84 27.36	13	100 100 99	1											744
27 			RC1	4 27.36 28.88	14	100 100 99	1							28 m	- LL = 62.0% PL = 18.2%			742		
29 29 		29.3 m - horiz	zontal fracture		RC1	5 28.88	15	104 104 103	1								PI = 43.8%			740
	•	Notes:				Mon	itorir	ng Ins	stalla	ition Pi	ipe W	ork								
16/11/2022	2	Target depth of a well and back	f 30 m achieved kfilled with sand	I. Corehole I and bento	e compl onite ch	eted as ips.	D	epth T 0.00 15.35	op 5	Dep	th Bo 15.3 16.8	ottom 5 5	Pipe PL SLO	e Type AIN TTED	L. R	oggeo eview	I By: <u>C. 1</u> ved By:	āms T. C	/ J. Bo	yd

				_	_										COR	EHOLE No): 22	CH3	30'
			9	an Eng	glo	obe	com	npa	any									PAGE	4 0F
	CLIENT			Eastern Irri	igati	on Distr	ict		P	ROJ	ECTN	AME		_		Snake Lake Reser	voir Expar	nsion	
I	PROJEC	T NUMBER		1560	-193	3-00			P	ROJ	ECTL	OCA	TION	_		NE 1/4 32	-19-16		
I	DATE ST	TARTED	07/05/2022		ETEI	D _	07/06/	2022	20	BROL	IND E	LEVA	TION	_	769.34r	n N 5609512.	.400 E	416686	.400
I	DRILLIN	G CONTRA	CTOR	V	/al's	Drilling			0	ROL	IND V	VATE	R ELE	VATIC	N / DEP	TH766.27 n	<u>ו</u>	3.07 m	1
(CORING	TYPE	HQ3	DIAMETE	R (m	nm)	6	1	C	DATE	GRO	UND	WATE	R RE	CORDED		10/12/202	.2	
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N <u>10 2</u> 50 1 POCKE	URE C IC - LIC) Blows 20 : 20 : <u>20 :</u> <u>21 PEN</u>	ONTENT QUID 5/300 mm 30 40 50 200 I (kPa)	REM4	\RKS	Standpipe/ Instrument	Elevation
-31 -32 -33 -34 -35																			 73
-37 -38																			7
39																			7:
																			7:
	N	otes:							Mart		a 1 = -	tolle	tion D	ine 14	lark]			
	Ta	arget depth well and ba	of 30 m achiev ackfilled with sa	red. Coreho Ind and ben	le c iton	comple ite chip	ted as os.	D	epth To 0.00 15.35	op	g ins Dept 1	h Bo 15.35 16.85	ttom	Pip Pip P SLC	e Type LAIN DTTED	Logged By: Reviewed By:	<u> </u>	<u>ns / J. Bc</u> . Curtis	<u>oyd</u>

(CLIEN	IT		Eastern Irr	igati	on Distr	ict		P	ROJ	ECTN	NAME	Ξ			Sna	ake Lake Reservoir Expans	ion	
I	PROJ	ECT NUMBER		1560)-193	3-00			P	ROJ	ECTL	OCA	TION				NE 1/4 32-19-16		
I	DATE	STARTED	07/08/2022		ETE	D	07/08/	2022	G	ROL	IND E	LEVA	ATION	_	771.35	im	N 5609472.900 E	416292	.500
I	DRILL	ING CONTRACT	OR	١	/al's	Drilling			G	ROL	IND V	VATE	R ELE	VATIC	N / DEF	PTH			
	CORII	NG TYPE	HQ3	DIAMETE	ER (n	nm)	61		D	ATE	GRO	UND	WATE	R REC	CORDE	<u>с</u>	09/15/2022	1	
(m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	JRE C C - LIG Blows 0 3 00 1 T PEN	ONTENT QUID 5/300 mm <u>30 40</u> 50 200		REMARKS	Standpipe/	Elevation
		OVERBURDEN	N. REFER TO 2	22BH305															
		LOG.																	771
																			770
																			76
																			70
						<u>с</u> µ1								· · · J			3 m - 11 - 110 0%		
						5111										ľ	PL = 24%		76
																	PI = 95.0% 3 m - Sand = 1.2%		700
																	Silt = 63.3%		
																	Clay = 35.5%		76
	<u></u> .	SHALE (Weath	nered), and silt,	, clayey,		RC1	4.54 -	1	14	17									101
	· _ · · ·	trace sand, hig	hly weathered,	, grey			6.06		100 53										
	·····	plastic, extreme	ely weak, very	closely															76
		spaced fracture	es, thinly lamin	ated,								1							
	·	sado gypouni (RCO	6.06	2	0	7									
	·	6.1 m - extrer	mely fractured	run		πυ2	7.58	2	76	1		1					6.2 m - Dispersivity		764
									13								6.21 m - Sand =		
															ļļ.		0.1%		
	· · · ·	7.2 m - 370 m	nm of core loss	6													Clay = 31.7%		764
	<u> </u>	76m-hiahly	ractured run			RC3	7.58 -	3	31	7							6.21 m - Dispersivity		
		7.8 m - 55° fra	acture				9.10		92 30								Classification – Dz		
																			763
	· <u>·</u> ·																		
	· · · ·	0.0 m 120 m	m of core loop				0.40		50										
		9.0 111 - 120 11		>			10.62	4	100	4							0.40 - 50.0%		762
	· <u>··</u> ·				H	UD1			68								9.46 m - LL = 52.0% PL = 20%		
	<u></u>											<u> </u>				\square	PI = 32.0%		
	I	Notes:							Moni	torir	a Ins	talla	tion Pi	pe W	/ork	┑┛			
		Target depth of	24 m achieve	d. Coreho	ole c	omplet	ed as	D	epth To	op	Dept	h Bo	ottom	Pip	е Туре	-			
		a well and back	ktilled with sand	d and ber	nton	ite chip	IS.		0.00		. 1	18.20		P		Lo	ogged By: <u> </u>	Tams	
									10.20		1	19.70	ן י	SLC	UIED	P		Curtie	



		NT		Eastern Irri	gati	on Distri	ct		F	PROJ	ECT	NAM	E	_	Ş	Snake L	ake Reserv	oir Expar	sion		
1	PROJ	IECT NUMBER		1560	-193	3-00			F	PROJ	ECT	LOC	ATION	_			NE 1/4 32-	19-16			
	DATE	STARTED	07/08/2022		ΞTE	D	07/08/	2022		BROL	JND E	ELEV	ATION	_	771.35m	<u> </u>	5609472.9	900 E	416	6292.5	500
1	DRILI	ING CONTRACT	OR	V	/al's	Drilling			0	GROL	JND \	NATE	ER ELE	VATIC	N / DEPT	н					
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRO	UND	WATE	R REC	CORDED		(09/15/202	.2		
Depth (m)	SOIL SYMBOL	D	Soil escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 POCK	TURE C TIC - LIC I) Blows 20 3 100 1 ET PEN	ONTENT QUID 5/300 mm 30 40 50 200 I (kPa)		REMA	RKS		Standpipe/ Instrument	Elevation (m)
		10.2 m - 43° f SHALE, clay ar slightly weather oxidation stainin extremely weak closely spaced 11.1 m - 72° f	racture nd silt, trace sa red, grey, som ng, damp, higf c, thinly lamina fractures racture	and, e n plastic, ted,		RC5	10.62 - 12.14	5	63 100 72	5						9.46	i m - Sand % Silt = 6 Clay =	= 33.5% 29.6%			761
		12.1 m - 240 ı weathered clay 12.5 m - beco unweathered	mm of comple infill ming very wea	tely ak and		RC6 UD2	12.14 - 13.66	6	82 100 88	5							95 m - LL =	- 89.0%			759
- 10		12.6 m - beco decimeter weak 12.9 m - quar 13.6 m - beco staining 13.7 m - beco moderately wide	ming centimet dy cemented la tz crystals ming no oxida ming weak wit ely spaced frac	er to ayers tion th ctures		RC7	13.66 - 15.18	7	104 104 101	3						12.9 m 12.9 12.9 12.9 m	PL = 1 PI = 7 95 m - EC: 95 m - SAF 95 m - PH: 96 m - EC:	5.3% 3.7% 2.8 dS/ R: 35.0 8.8 3.0 dS/			758
15 15 16						UD3 RC8	15.18 - 16.70	8	86 100 89	4				-		12.9 14.9	96 m - pH: 96 m - LL = PL = 1 PI = 7	8.5 - 85.9% 5.4% 0.5%			
- - - - - - - - - - - - - - - - - - -		16.7 m - beco fractures	ming widely s	paced		RC9	16.70 - 18.22	9	88 100 88	3											755
		BENTONITE (1 SHALE, and sil slightly weather oxidation stainin extremely weak closely spaced	8.2 m), 160 m t, clayey, trace red, grey, som ng, damp, high c, thinly lamina fractures	m layer e sand, e n plastic, ted,		RC10 UD4	18.22 - 19.74	10	86 100 93	2				F		 302 18.2 0.29	2 m - LL = .0% PL = 2 PI = 2 22 m - San %	- 7.4% 74.6% d = 20.5%			753
		19.7 m - beco strong	ming moderat	ely		RC11	19.74	11	100	1							Clay =	79.3%		Ц	-
16/11/2022		Notes: Target depth of a well and back	24 m achieve filled with san	d. Coreho d and ben	le c ton	complet ite chip	ed as s.	D	Mon epth T 0.00 18.20	itorin	ng Ins Dept	stalla th Bo 18.2 19.7	ation F ottom 0 0	Pipe W Pipe Pl SLC	/ork e Type LAIN DTTED	Logge Revie	ed By: _ wed By: _	C	<u>. Tar</u>	ns tis	



PAGE 3 0F 3

N 5609472.900 E 416292.500 Standpipe/ Instrument Elevation (m) 751 750--22 Clay = 23.7% 749 RC13 22.78 .22.7 m - 100 mm of core loss 13 96 1 UD5 100 23 24.30 98 748--24 747 -25 746--26 745 -27 744 -28 743 29 742· Notes: Monitoring Installation Pipe Work Target depth of 24 m achieved. Corehole completed as Depth Top Depth Bottom Pipe Type a well and backfilled with sand and bentonite chips. 0.00 18.20 PLAIN C. Tams Logged By: 18.20 19.70 SLOTTED Reviewed By: T. Curtis 16/11/2022



CLIENT	Eastern Ir	on Distri	ct		P	ROJ	ECT N	JAME				Sna	ake Lak	ke Reservoir E	xpansi	on			
PROJECT NUMBER	156	3-00			P	ROJ	ECT L	.OCA	TION				Ν	E 1/4 32-19-1	6				
DATE STARTED	07/11/2022 COMPL	ETE	D	07/12/	2022	2G	ROL	JND E	LEVA	TION	_	772.	77m	N_5	609466.800	E _	41580	0.70	0
DRILLING CONTRAC	TOR	Val's	Drilling			0	ROL	JND W	VATE	R ELE	VATIC	N / DE	EPTH	7	770.70 m		2.07	m	
CORING TYPE	HQ3 DIAMET	ER (n	nm)	61		C	ATE	GRO	UND	WATEI	R REC	CORD	ED		10/12	2/2022			
Depth (m) SOIL SYMBOL	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 11 POCKE	URE C C - LIG) Blows 20 <u>3</u> 00 1 ET PEN	ONTEN QUID 5/300 m 30 4 50 2(I (kPa)	IT m 0 00		REMARKS	3	Standpipe/	Elevation	(m)
OVERBURDE LOG. SHALE (Weat trace sand, hig moist, high pla extremely clos finely stratified staining, gypsi 4.8 m - 70 m 5.2 m - beco 5.2 m - 80 m 5.5 m - 35 m 5.5 m - 35 m 5.9 m - 45° f 6.2 m - 240 n 6.7 m - beco 6.7 m - beco 6.8 m - 70 m 8.1 m - 88° f 8.1 m - 88° f 8.2 m - beco widely to widel 8.2 m - beco widely to widel 8.2 m - beco 9.3 m - 89° f 9.3 m - 89° f 9.3 m - 89° f 9.3 m - 88° f	N. REFER TO 22BH310 hered), clay and silt, ghly weathered, brown, astic, extremely weak, sely spaced fractures, d, coal staining, oxide um crystals im crumbled core im crumbled core im crumbled core im crumbled core mm section that is weak and silt, trace sand, ared, grey, damp, high reak, closely spaced by stratified, oxide im crumbled core racture im possible sandstone ming weak, moderately by spaced fracture ontal fracture ing unweathered racture ontal fracture ing unweathered racture ontal fracture ing fracture ontal fracture ing tracture ontal fracture ing tracture ontal fracture ing tracture ontal fracture ing tracture		SH1 RC1 RC2 UD1 RC3 RC4	4.52 - 6.04 6.04 - 7.56 9.08 9.08 - 10.60	1 2 3 4	74 102 72 80 100 79 95 100 90 94 100 99	7 6 4 4							3 m - 1 3 m - 3	LL = 62.0% PL = 14% PI = 48.09 Sand = 0.9% Silt = 54.8' Clay = 44.3	% % 3%		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	772 7772 7770 769 768 766 766 766 766
Notes: Target depth c a well and bac	of 21 m achieved. Coreh	ole c	complet ite chip	ed as s.	D	Moni epth To 0.00 6.98	itorin op	ig Ins Depti	tallat h Bo 6.98 8.50	tion Pi ttom	ipe W Pipo Pl SLC	/ork e Typ LAIN DTTEI	e D R	ogged eview	By:	J. I T. (Boyd Curtis		



	CLIEN	т	Eastern Irriga	ation Distr	ict		F	PROJ	ECTI	NAME	Sna	ake Lake Reservoir Expans	ion
	PROJE		1560-1	93-00			F	PROJ	ECTI	LOCATION		NE 1/4 32-19-16	
	DATE S	STARTED 07/11/2022	COMPLET	ED	07/12/	2022	20	GROL	JND E	ELEVATION	772.77m	N_5609466.800 E_	415800.700
	DRILLI	NG CONTRACTOR	Val	's Drilling			0	GROL	JND V	VATER ELE	VATION / DEPTH	770.70 m	2.07 m
	CORIN	IG TYPE HQ3	DIAMETER	(mm)	6′	1	C	DATE	GRO	UND WATE	R RECORDED	10/12/2022	
Depth (m)	SOIL SYMBOL	Soil Description	Samula Tune	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOISTI H PLASTI SPT (N 10 2 50 1 POCKE 	URE CONTENT C - LIQUID) Blows/300 mm 20 30 40 00 150 200 ET PEN (kPa)	REMARKS	Standpipe/ Instrument Elevation (m)
		10.5 m - 84° fracture 10.6 m - becoming weak noderately strong 11.1 m - becoming widely videly spaced fractures 11.2 m - horizontal fractur	to [,] to very re –	RC5 UD2	10.60 - 12.12	5	94 94 93	2				11.62 m - LL = 89.4% PL = 17.9%	762
		11.9 m - 85° fracture 12.6 m - becoming mode strong to strong	rately	RC6	12.12 - 13.64	6	103 103 101	2				PI = 71.5%	760
- - - - - - - - - - - - - - - - - - -		12.6 m - 88° fracture 12.8 m - 86° fracture 13.5 m - 73° fracture 13.8 m - 87° fracture		RC7	13.64 - 15.16	7	103 103 101	2					759
- - - - - - - - - - - - - - - - - - -		15.0 m - 60° fracture 15.9 m - borizontal fractu	re	UD3 RC8	15.16 - 16.68	8	99 99 98	2				14.8 m - LL = 84.1% PL = 14.4% PI = 69.7% 14.8 m - Sand = 0.5% Silt = 74.3%	758
- - - - - - - - - - - - - - - - - - -		16.4 m - 87° fracture 17.2 m - weak to modera	tely strong	RC9	16.68 - 18.20	9	100 100 99	1				Clay = 25.2%	756
		17.7 m - 85° fracture 17.8 m - moderately stror	ng	RC10	18.20 - 19.72	10	105 105 105	0					755
- - - - - - - -		19.4 m - strong 19.8 m - moderately stror	ng to strong	UD4 RC11	19.72	11	93	1				19.56 m - UCS = 3225 kPa	753-
16/11/202	2 2	Notes: Target depth of 21 m achie a well and backfilled with s	ved. Corehole and and bento	complet onite chip	ted as os.	D	Mon epth T 0.00 6.98	itorir op	ig Ins Dept	th Bottom 6.98 8.50	ipe Work Pipe Type PLAIN SLOTTED	ogged By:J. eviewed By:T.	Boyd Curtis

		APP -		n Fn	ale	he	com	n	anv						CO	RE	HOLE No :	22C		6 10
					git		CON	ιþα	ану									F.	AGE 3	
		IT		Eastern Irri	igati	on Distri	ct		P	ROJ	ECTI	NAME				Sn	ake Lake Reservoir E	xpansio	n	
	PROJ			1560	-193	3-00			P	ROJ	ECTI		TION				NE 1/4 32-19-16	- 4	15000 -	
			(/11/2022		= I EI	D	07/12/	2022	<u> </u>	ROU					<u>//2./</u>	/m	_ N _ 5009400.800	E _4	2 07 m	100
			HO2		ars 		61		6								10/12		2.07 111	
			ΠQ3						L		GRU		VVAIE			U	10/12	2022	<u>+</u>	
Depth (m)	SOIL SYMBOL	s Desc	Soil cription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N <u>10 2</u> 50 1 POCKE	URE CO IC - LIC) Blows 20 3 00 1 ET PEN	ONTEN [™] 20ID /300 mn 60 40 50 200 (kPa)	Г 1 0	REMARKS		Standpipe Instrumen	Elevation
					Π		-		93 92											
- -21		20.4 m - horizon	tal fracture			UD5	21.24		92					<u> </u>			20.83 m - EC: 1.5	dS/		752
-22		<u>21.1 m - 110 mm - 110 mm</u>	o core loss	/													20.84 m - LL = 87:1 PL = 20.7% PI = 66.9% 20.84 m - SAR: 14 20.84 m - pH: 9.2	3% .3		751
-23																				750
-																				
-24																				749
-25																				748
-26																				747
																				746
-27																				
-28																				745
																				744
-29																				
-																	-			743
	1	Notes:							Mon	itorir	na Ins	talla	tion P	ipe W	ork		1		1	<u> </u>
		Target depth of 21 a well and backfille	m achieve ed with san	d. Coreho d and ben	ole c nton	complet ite chip	ed as s.	D	epth To 0.00	op	Dept	h Bo 6.98	ttom	Pipe	e Type _AIN	2	ogged By	JB	ovd	
									6.98			8.50		SLC	DTTED) -	Reviewed Bv [.]	T C:	urtis	



(NT	I	on Distri	ct		F	PROJ	ECT	NAME	Ξ			Sna	ike Lake Reservoi	r Expan	sion				
I	PROJ	ECT NUMBER		1560)-193	8-00			F	PROJ	ECT L		TION				NE 1/4 32-19	-16			
1	DATE	STARTED	07/13/2022	COMPLI	ETEI	D	07/13/	2022	2 0	ROL	JND E	ELEV	ATION		774.02	m	N 5609465.50) E	4154	88.00	00
1	ORILL		OR	- \	/al's	Drilling			Ģ	ROL	JND V	VATE	RELE	VATIO	N / DEP	тн	771.70 m		2.32	2 m	
(CORI	NG TYPE	HQ3	DIAMETE	ER (m	nm)	61		C	DATE	GRO	UND	WATE	R REC)	08	10/2022	2		
																			e/	ut i	
Depth (m)	SOIL SYMBOL	D	Soil escription		Sample Type	ample Number	Run Depth (m)	Run Number	RQD TCR SCR	icture Index (#/m	sture Content (%	● ⊢	MOIST PLAST SPT (N	URE CC IC - LIQ) Blows/ 20 31	ONTENT UID '300 mm 0 40		REMAR	٨S	Standpip	Instrume	Elevation (m)
						0)				Fra	Moi		50 1 POCKE	00 15 ET PEN	50 200 (kPa)						
		OVERBURDEN 22CH313 LOG.	I. REFER TO																		773-
-2		\$HALE, clay ar completely wea brown mottling, extremely weak stratified, oxide crystals, trace s	nd silt, trace sa athered, grey w moist, high pla k, blocky, finely staining, gyps sand to sandsto	nd, rith astic, um one		SH1													¥		772
		pockets 4.9 m - 130 m 5.0 m - 130 m weathered, extr weak sandstone	im crumbled co im light brown, emely weak to e layer with oxi	ore highly very de		UIII															770
		staining 5.2 m - 50 mn 5.3 m - becon extremely weak	n crumbled cor ning highly wea to very weak,	e athered,		RC1	4.53 - 6.05	1	20 100 38	16							5 m - Sand = 1.	1%			769-
		fractures 5.6 m - 110 m 5.7 m - 100 m 6.1 m - 700 m	m crumbled co m crumbled co m crumbled co	ore ore ore		BC2	6 05 -	2	13	20							Silt = 42 Clay = 5 5 m - Dispersivi Classification =	.8% 6.1% .y D2			768-
- - - - - - - - - - - - -		6.3 m - becon moderately stro 7.0 m - becon slightly weather	ning weak to ng ning moderatel ed,moderately	y to strong		1102	7.57	2	99 23	20				1			5 m - EC. 3.5 d 5 m - SAR: 21.1 5 m - pH: 7.6	/////			
		7.1 m - 60 mn \$ILTSTONE, cl weathered, ban grey, damp, hig laminated, susp	e lightly dark k, thinly ntonitic		RC3	7.57 - 9.09	3	80 97 74	6							PL = 27. PI = 39.	° 2% 8%			766	
		SILTSTONE, " 8.3 m - 50 mn section 8.4 m - becon	" n calcified silts ning strong, slig	tone aht		D1	0.00	4	05	0				I		8	8.3 m - LL = 175 PL = 20. PI = 154 8.3 m - Sand =	5.5% 8% 1.7%			765
		inclined medium 8.6 m - becom 9.3 m - 84° fra 9.6 m - 81° fra	n spaced fractuning finely strat acture acture	ures tified		RU4	10.61	4	95 100 97	3							25.4% Silt = 39 Clay = 3	.8% 4.8%			
	1	Notes:			Mon	itorir	ig Ins	talla	tion P	ipe W	ork	7									
16/11/2022	!	Target depth of a well and back	18 m achieved filled with sand	d. Coreho d and ber	ole c nton	omplet ite chip	ed as s.	D	epth T 0.00 8.28	op	Dept	h Bc 8.28 9.50	ottom	Pipe PL SLO	e Type AIN TTED	Lo	ogged By: eviewed By:	<u>J.</u> T.	Boyc Curtis	l 3	


	CLIEN	IT	E	Eastern Irrig	ation D	strict			PRO	JECT	NAME	Ξ			Sna	ike Lake Reservoir Ex	xpansi	ion	
1	PROJ	ECT NUMBER		1560-1	93-00				PRO	JECT	LOCA	TION				NE 1/4 32-19-16	;		
	DATE	STARTED	07/13/2022		ED	07/1	3/202	2	GRO	UND I	ELEV	ATION	_	774.02r	n	N 5609465.500	E _	415488.	000
	ORILL	ING CONTRACT	OR	Va	l's Drilli	ng			GRO	UND	WATE	RELE	VATION	N/DEP	TH	771.70 m	·	2.32 m	
	CORI	NG TYPE	HQ3	DIAMETER	(mm)		61		DATE	GRC	DUND	WATE	R REC	ORDED		08/10/	/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description	F 	Sample Number	Run Depth (m)	Run Number	RQI TCF SCF	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) <u>10 2</u> 50 10 POCKE	URE CC IC - LIQU) Blows/: 20 30 00 15 ET PEN (UNTENT JID 300 mm) 40 0 200 (kPa)		REMARKS		Standpipe/ Instrument	Elevation (m)
	· · · · · · · · · · · · · · · · · · ·	10.0 m - hori: 10.1 m - 72°	zontal fracture fracture	orod	RC	5 10.6	1 5	99	2										-
- 		grey, damp, hig widely spaced fractures, finely	y sitty, unweating th plastic, stron to very widely s y stratified	ered, g, spaced		- 12.1	3	99 96					I			11.2 m - LL = 101.2 PL = 21.1% PI = 80.1%	2%		763
- 		12.0 m - 84° 12.1 m - 78°	fracture fracture		RC	6 12.1 - 13.6	3 6 5	95 100 99	2							11.2 m - EC: 1.2 ds m 11.2 m - SAR: 21.4 11.2 m - pH: 8.6	5/		762
- 		12.7 m - 87°	fracture		RC	7 13.6	5 7	98	3										761
- 14 		13.6 m - 83° 13.7 m - 68° 13.9 m - 88° 14.0 m - beco strong	fracture fracture fracture oming strong to	very		- 15.1	7	98 95											760
- 		14.7 m - 83° 15.0 m - 70° 15.3 m - horiz	fracture fracture zontal fracture		RC	8 15.1 - 16.6	7 8 9	101 101 99	2			······				15.7 m - LL = 75.9 ⁰	%		759
		16.4 m - 83°	fracture													PL = 14.7% PI = 61.2%	þ		758
- - - - - - - - - - - - - - - - - - -		17.2 m - 88° 17.3 m - 72° 17.6 m - horiz	fracture fracture zontal fracture		RU	18.2	1	93 99 97	2										757
																			755
 		Notos																	
16/11/2022	1	Notes: Target depth o a well and bac	f 18 m achieved kfilled with sand	d. Corehole and bento	e comp onite c	leted as hips.		Mo Depth 0.00 8.28	nitorii Top 3	ng In: Dep	stalla th Bc 8.28 9.50	tion Pi	ipe Wo Pipe PL SLO	ork Type AIN TTED	Lo	ogged By: eviewed By:	J. I T. (<u>Boyd</u> Curtis	



(CLIEN	11	Eas	ct		P	PROJ	ECT N	JAME				Sna	ake Lake Reser	voir E	xpansi	on					
I	PROJ	ECT NUMBER		1560	-193	-00			P	ROJ	ECT L	.OCA	TION				NE 1/4 32	-19-16	6			
[DATE	STARTED	07/15/2022 0		TEC	C	07/15/2	2022	G	ROL	JND E	LEVA	TION		776.	27m	N 5609451.	900	Е	4148	96.90	00
1	ORILL		OR	V	/al's	 Drillina			G	ROL	JND V	VATEI	R ELE	- VATIC	N / DE	ЕРТН	775.21 n	 ו		1.06	6 m	
			ноз г		R (m	um)	61		~									08/10				
						····/			U									00/10	12022	<u> </u>	t	
Depth (m)	SOIL SYMBOL	D	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N <u>10 2</u> 50 1 POCKE	URE C C - LIC) Blows 20 <u>3</u> 00 1 ET PEN	ONTEN QUID s/300 m <u>30 4</u> 50 2i I (kPa)	NT m 6 <u>0</u> 00	REM4	ARKS	3	Standpipe/		Elevation (m)
_		OVERBURDEN	J. REFER TO																			776-
		SHALE, clay ar slightly weather medium plastic spaced finely s 4.6 m - 90 mr 4.9 m - becon weak, unoxidize BENTONITE (5 SILTSTONE, a grained sand, s brown to grey, I moderately strc 5.8 m - 78° fr 6.0 m - becon moderately strc	nd silt, some sand red, grey, moist, , very weak, med tratified, oxide sta n crumbled core ning unweathered ad 5.5 m), 20 mm lay nd clay, some find slightly weathered medium plastic, ong acture ning weak to ning weak to	d, lium aining d, /er e d, light		SH1 RC1	4.52 - 6.04	1	92 100 92	4							5.5 m - LL = 4 PI = =	1 3.89	6	Ζ		776
		6.1 m - 84° fra 6.6 m - 70 mn crumbled core 6.7 m - becon 6.9 m - 86° fra 7.3 m - becon to strong	acture n mechanically ning moderately s acture ning moderately s	strong		RC2	6.04 - 7.56	2	99 99 97	2			F				PI = 2 5.5 m - Sand Silt = Clay = 6.04 m - EC: m 6.04 m - SAR	29.3% = 11. 50.8% = 37.3 8.8 d	% .9% % 3% IS/ 5		I	770
		.7.4 m - 72° fra SHALE, clay ar slightly weather medium plastic spaced finely s	acture nd silt, some sand red, grey, moist, , very weak, med tratified, oxide sta	d, lium aining		RC3	7.56 - 9.08	3	100 100 99	2							6.04 m - pH: 6.2 m - LL = 4 PL = 7 PI = 7	7.4 14.5% 16.8% 27.7%	6 6 6			768
9 		7.8 m - 84° fra 8.0 m - 83° fra 8.1 m - 82° fra 8.6 m - high p 9.0 m - becon 9.6 m - 87° fra 9.9 m - 83° fra	acture acture alastic ning strong acture acture			RC4	9.08 - 10.60	4	100 100 97	2			F				8.6 m - LL = 9 PL = 1 PI = 1	93.7% 17.4% 76.3%	6 /6 /6			767
		Notes:							Moni	itorin	ıg Ins	tallat	ion Pi	ipe W	/ork							
16/11/2022	1	Target depth of a well and back	15 m achieved. ((filled with sand a	Coreho and ben	le c itoni	omplet te chip	ed as s.	D	epth To 0.00 13.00	ор	Dept 1 1	h Bo 3.00 4.50	ttom	Pip P SLC	e Typ LAIN DTTE	e D R	ogged By: eviewed By:		J. I T. (<u>Boyd</u> Curtis	3	



(CLIEM	νT		Eastern Irri	gati	ion Distri	ict		F	۶ROJ	IECT	NAM	IE		Sn	ake Lake	Reservoir E	Expans	sion	
F	PROJ	ECT NUMBER		1560	-193	3-00			F	'ROJ	IECT	LOC	ATION			NE	1/4 32-19-1	6		
[DATE	STARTED	07/15/2022		ETE	.D	07/15/	2022	<u>2</u> ¢	BROL	JND E	ELEV	/ATION	776	.27m	_ N_56	09451.900	_ E _	414896	.900
[DRILL	LING CONTRACT	FOR	V	/al's	Drilling			0	€ROL	JND \	NATI	ER ELEV	ATION / C)EPTH	77	75.21 m		1.06 m	1
(CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61	1	C	DATE	GRO	UNE) WATER	RECOR	DED		08/10	0/2022	<u>!</u>	
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTIC SPT (N) <u>10 20</u> 50 10 POCKE	RE CONTE - LIQUID Blows/300 r <u>) 30</u> 0 150 <u>T PEN (kPa</u>	:NT mm 40 200		REMARKS	3	Standpipe/ Instrument	Elevation (m)
		10.0 m - 60 n moderately stro 10.4 m - 67° 10.7 m - beco spaced fracture 10.8 m - 88°	nm unweathere ong, grey siltsto fracture oming very wid es fracture	ed, one layer iely		RC5	10.60 - 12.12	5	99 99 96	2							_			766
-12		11.8 m - 00 12.0 m - 68° SILTSTONE, c unweathered,	fracture fracture ayey, trace sa grey, damp, hig	and, gh widely		RC6	12.12 - 13.64	6	94 99 97	3						12.12 n m 12.12 n 12.12 n	n - EC: 1.9 n - SAR: 2(n - pH: 9.5	dS/ 0.4		764
-13 -14 -15 -16 -17 -17 -18 		plastic, strong i spaced fracture to finely stratific 12.4 m - 80° f 12.9 m - para apart 12.9 m - becc weak to modera 13.3 m - 90 n 13.4 m - 140 13.4 m - 140 13.5 m - becc strong 13.6 m - inter 13.9 m - 88° 14.2 m - 85° 14.2 m - 85° 14.2 m - 86° SHALE, clay a unweathered, g plastic, strong,	widely widely laminated es 80 mm bentonitic, itstone t siltstone o very and, gh d		RC7	13.64	7	100 100 99	2						12.12 m 13.2 m 8.8% 13.64 n 4187 kF 13.9 m 13.9 m 13.9 m 14.4 m	- pn. 9.5 - Sand = Silt = 63.8 Clay = 27. 1 - UCS = 2a - EC: 1.0 c - SAR: 15. - pH: 8.9 - LL = 96.4 PL = 18.59 PI = 77.99	% 4% 1S/ 6 1% %		763 762 761 760 759 758	
		Target depth o	of 15 m achieve	ed. Coreho	le c	complet	ted as	D	Mon epth T	itorir op	ng Ins Dep	stalla th B	ation Pip ottom	be Work Pipe Ty	pe					
		a well and bac	kfilled with san	id and ben	ton	ite chip	S.		0.00			13.0 14.5	0	PLAIN		ogged E	Зу:	J.	Boyd	
16/11/2022	2									R	leviewe	d By:	<u> </u>	Curtis						



company

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COREHOLE No : 22CH320

	CLIE	NT		Eastern Irrig	gatio	on Distri	ct		F	PROJ	IECT I	NAM	E			Sna	ake La	ake Reservoi	r Expan	sion		
	PRO	JECT NUMBER		1560-	-193	3-00			F	PROJ	IECT I	_00	ATION				1	NE 1/4 32-19	-16			
	DATE	E STARTED	09/06/2022	COMPLE	TEI	D	09/07/2	2022		GROU	JND E	ELEV	ATION	_	771.49	9m	_ N _	5609434.12	7_E_	4162	204.7	701
	DRIL	LING CONTRACT	OR	V	al's	Drilling			0	GROU	JND V	VATE	ER ELE	VATIO	N / DEF	ΡΤΗ		769.72 m		1.7	7 m	
	COR	ING TYPE	HQ3	DIAMETE	R (m	nm)	61		C	DATE	GRO	UNE	WATE	R REC	CORDE	D		10	12/2022	2		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE CO IC - LIQ) Blows 20 3 00 1 T PEN	ONTENT QUID 5/300 mm 30 40 50 200 ((kPa)	- I	_	REMARI	٨S	Standnine/	Instrument	Elevation (m)
- - - - - - - - - - - - - - - - - - -		TOPSOIL SHALE (Weath trace sand, cor brown to grey r staining, damp weak to hard s	nered), clay and npletely weathe nottling, trace o , high plastic, e oil, blocky, extra	d silt, ered, oxidation xtremely emely	-	AU1 AU2					16.1 17.6		•				0 m - 0.6 m	n - LL = 75. PL = 18. PI = 56.	3 m. 1% 5% 6%			771-
- - 2 2	· · · · · · · · · · · · · · · · · · ·	closely spaced white sulphate	fractures, susp inclusions	pect	ŧ	AU3					17.2		•							¥		770-
		3.0 m - 400 n	nm of slough	lation	-	AU4 RC1 SH1	3.00 - 4.52	1	0 100 72	20	17.2		•									769
4 4 5		staining 3.8 m - becor crystals BENTONITE, 1 \$hale, silt, light SHALE (Weath 4.9 m - becor	ning trace gyps 190 mm of bent brown hered), "" ning dry			RC2	4.52 - 6.04	2	0 103 80	20			F				4.2 m	n - LL = 107 PL = 18. PI = 89.	7.0% 0% 0%	Y		767
- - - - - - - - - - - - - - - - - - -						RC3	6.04 - 7.56	3	0 100 82	20												766
7 8		\$HALE, clay ar weathered, gre extremely weal spaced fracture oxidation staini 8.0 m - trace 9.0 m - 100 n	nd silt, medium ey, damp, high p k, extremely clo es, thinly lamina ing in joints gypsum crystal nm of core loss	blastic, bsely ated, ls		RC4	7.56 - 9.08	4	0 93 27	20							7.7 m	n - LL = 69. PL = 20. PI = 48.	5% 6% 9%			764
		9.1 m - 120 n 9.6 m - 132° 9.6 m - becor 9.8 m - 17° fr white sulphate 9.9 m - horizo suspect white s	nm of slough fracture ning very weak acture with sus inclusions ontal fracture w sulphate inclusio	pect ith ons		RC5	9.08 - 10.60	5	12 93 28	20							8.5 п	Silt = 58 Clay = 4	.7% 1.2%			762
	1	Notes:		L					Mon	itorir	ng Ins	stalla	ation Pi	ipe W	/ork	7						
16/11/202	2	Target depth of a well and back	f 25 m achieved kfilled with sand	d. Corehol d and ben	le c ton	omplet ite chip	ed as s.	D	epth T 0.00 7.60	op	Dept	h B 7.60 9.10	ottom))	Pipe Pl SLC	e Type LAIN DTTED	L.	ogge eviev	d By: ved By:	<u>С.</u> Т.	<u>. Tam</u> Curti	<u>s</u>	



	CLIEI	NT	ict		F	PROJ	ECTI	NAM	E			Sna	ake La	ake Reservoir	Expans	sion					
	PRO	JECT NUMBER		1560	-193	3-00			F	PROJ	ECT I		ATION	_			1	NE 1/4 32-19-	16		
	DATE	STARTED	09/06/2022		ΞTE	D	09/07/	2022		BROL	JND E	ELEV	ATION	_	771.4	19m	_ N _	5609434.127	_ E _	416204	.701
	DRILI	LING CONTRACT	OR	V	/al's	Drilling			0	BROL	JND V	VATE	ER ELE	VATIC	N / DE	PTH		769.72 m		1.77 m	
	CORI	ING TYPE	HQ3	_ DIAMETE	R (n	nm)	61		C	DATE	GRO	UND	WATE	R RE	CORD	ED	-	10/1	12/2022		
Depth (m)	SOIL SYMBOL	С	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKI	TURE C TIC - LIC I) Blows 20 (100 1 ET PEN	ONTEN QUID 5/300 m 30 4 50 2(I (kPa)	IT m 0 00		REMARK	S	Standpipe/ Instrument	Elevation (m)
11		10.1 m - near with suspect wh 10.3 m - becc weak 10.5 m - 110 10.6 m - becc fractures	horizontal frac hite sulphate ir oming unweath mm of core los oming closely s	ctures nclusions nered, ss spaced		RC6	10.60 - 12.12	6	82 100 86	5											761
		12.0 m - becc 12.1 m - 120 shale 12.2 m - susp inclusions	oming unoxidiz mm of strong o bect white sulp	ed calcified hate		RC7	12.12 - 13.64	7	16 64 19	20			ŀ				12.3	m - LL = 65. PL = 17.6 PI = 48.2	8% % ?%		759-
14		12.6 m - 380 13.1 m - 540 13.6 m - becc widely spaced f 13.7 m - becc to decimeter we 14.2 m - verti	mm of crumble mm of core los oming moderat fractures oming some ce eakly cemente ical fracture fracture	ed core ss tely entimeter d layers		RC8	13.64 - 15.16	8	89 90 89	2											758
		15.0 m - 150 15.4 m - 82° 1	mm of core los	SS		RC9	15.16 - 16.68	9	99 100 99	1											756
		16.1 m - verti 16.9 m - 57° 1 17.5 m - verti	cal fracture fracture ical fracture			RC10	16.68 - 18.20	10	89 92 88	1											755
18 18 19		18.1 m - 120 18.7 m - 104°	SS		RC11	18.20 - 19.72	11	86 100 86	3											753-	
- - - - - -		19.4 m - 140 shale 19.6 m - sub-	calcified tures		RC12	19.72	12	24	3							20 m	- Sand = 0.	3%		752	
		Notes:							Mon	itorir	ıg Ins	stalla	ation P	'ipe W	/ork						
		Target depth of a well and back	f 25 m achieve kfilled with san	d. Coreho d and ben	le c ton	complet ite chip	ed as s.	D	epth T 0.00 7.60	ор	Dept	th Bo 7.60 9.10	ottom))	Pip P SLC	e Typ LAIN DTTEI	e Lu	ogge	d By:	C.	Tams	
16/11/2022	2															R	eviev	ved By:	Τ.	Curtis	



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	CLIE	NT		Eastern Irriç	gati	on Distri	ict		F	PRO	JECT I	NAN	1E		Sn	ake L	.ake Reservoir E	xpans	ion	
n I	PROJ	JECT NUMBER		1560-	193	3-00			F	PRO	JECT I	LOC	ATION				NE 1/4 32-19-1	6		
n I	DATE	STARTED	09/06/2022		TE	D	09/07/	2022	<u>. </u>	GROI	UND E	ELE\	/ATION	_	771.49m	_ N	5609434.127	E_	416204	.701
1	DRILI	LING CONTRACT	гоr	Va	al's	Drilling			0	GRO	UND V	NAT	ER ELE	VATIO	N / DEPTH		769.72 m		1.77 m	1
(CORI	ING TYPE	HQ3		R (m	nm)	61	<u> </u>	C	DATE	GRO	UNE	O WATE	R REC	ORDED		10/12	2/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	JRE CC C - LIQ) Blows/ 20 3 00 15 T PEN	DNTENT UID 300 mm 0 40 10 200 (kPa)		REMARKS	;	Standpipe/ Instrument	Elevation (m)
Ē		20.1 m - beco	oming moderat	iely	Π		-		71						· · · _		Silt = 52.19	%		1
F		strong 20 5 m - 200	mm of crumble	ed core			21.24		52								Ciay - 47.5)/0		751-
E		20.8 m - 440	mm of core los	ss]
						RC13	21.24	13	99	2										
-		21.4 m - 75°	fracture				-		101											750-
-22		21.8 m - verti widely spaced	ical fracture, be fractures	ecoming			22.10		100											
-				ļ																749-
È						RC14	22.76	14	99	1										
23 -		22.9 m - verti	ical fracture				- 24.28		99							1				3
Ę		-		1																748-
Ē		-		1																
-24 24				1		2045	a t a a													
-						RC15	24.28	15	103	1										747—
Ē	E	-		1			25.80		92											=
-25		-																		
E.		25.2 m - 54°	fracture																	746-
E		-																		
-26																				-
F																				746
-																				/45'
-27																				-
-																				744
-28																				-
E																				-
-																				743-
-29																				-
F																				
-																				742-
-										<u> </u>										-
	<u> </u>	Notes:		<u>L</u>					Man			- 4 - 11	- 4'- m Di	··· - \//						
		Target depth of	f 25 m achieve	d. Corehol	e c	complet	ed as	D	epth T		ng ins Dept	stalla th B	ottom	pe vv Pipe	ork Type					
		a well and bac	kfilled with san	d and bent	lon	ite chip	IS.	<u> </u>	0.00			7.6	0	PL	AIN	ogge	ed By:	C.	Tams	
									7.60			9.1	0	SLO	TTED	Revie	wed Bv:	Т. (Curtis	
16/11/2022	2												<u>,</u>							



	CLIEN	лт	E	astern Irri	gati	on Distri	ct		F	ROJ	ECT N	IAME	Ξ		5	Snake	Lake F	Reservoir	Expans	sion		
	PROJ	ECT NUMBER		1560	-193	3-00			F	ROJ	ECT L	.OCA	TION				NE 1	/4 32-19-	16			
1	DATE	STARTED	09/08/2022	COMPLE	TE	D	09/08/2	2022		ROI	JND E	LEVA	ATION		773.03m	N	560	9430.825	Е	4157	706.8	61
	DRILL		OR	\ \	/al's	Drilling				ROI	JND W	/ATE	R ELE	VATIO	N / DEPT	H	770	.89 m		2.1	4 m	
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		г		GROI		WATEI	R REC				10/	12/2022			
					(.										01.020						t :	
Depth (m)	SOIL SYMBOL	D	Soil escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTU PLASTI SPT (N) <u>10 2</u> 50 10 POCKE	URE CC C - LIQ) Blows/ 20 3 00 15 T PEN	DNTENT UID /300 mm 0 40 50 200 (kPa)	_	R	EMARK	S	Standnine	Instrumen	Elevation (m)
-		CLAY TILL, silty	y, moist, very sti	iff,												0 n	n - 6" :	SSA to 3	3.1			
-		oxidation stainii	ng, suspect whi	te	_	AU1					24.0											
_		sulphate inclusi	ions, trace gyps	um	-						24.0			•								
1 		crystais			-	AU2					25.2			•								772
						SH1					20.2			Ū								1.1
		SHALE (Weath	ered), clay and	silt,																		
-2	·	mottling, some	oxidation stainii	ng,	-	AU3					20.6		h	•		2.1	m - L	L = 85.3	3%	V		771-
_	·	damp, high plas	stic, extremely v	veak to													P	PL = 18.1	1%			
_	·····	hard soil, block	y, extremely clo	sely	-	AU4					20.3						г	1 - 07.2	270			
-3	<u> </u>	sulphate inclusi	ions, trace gyps	um		RC1	3 10 -	1	0	20												770-
_	·	crystals	SEEDACE			1.01	4.62	•	101	20												
_	· <u>··</u> ·		SEEPAGE						89													
-4	· · · · ·																					760
-																						/09
_	· <u>··</u> ··					RC2	1 62 -	2	0	20												1.1
_	· <u> </u>					1102	6.14	2	66	20												
—5 	· <u>··</u> ·								74												_	768
-														—		-55	5 m - I	1 = 60.0)%			
_																0.0	P	PL = 22.5	5%			-
-6	·					RC3	6 14 -	3	0	20							P ∣m - S	인 = 37.5 Sand = 0	5% 5%			767-
-	· <u>··</u> ··					1100	7.66	Ŭ	103	20						0.1	S	Silt = 52.9	9%			
-	·····	6.6 m - becom	ning some light	brown					74								C	Clay = 46	6.6%		4	
7	· <u>···</u> ·	mottling SHALE clay ar	nd silt_trace sar	d)																		766-
	·····	slightly weather	red, grey, damp	, high																		
_		plastic, very we	ak, closely spa	ced		RC4	7.66 -	4	91	2												
		staining in joints	S	alion			9.18		103							7.8	3 m - L	L = 118.	.5%			705
_		7.7 m - becon	ning unweather	ed,					94								F	PL = 19.4 Pl = 99.1	+70 1%			/05-
-		moderately wide	ely spaced fract	ures,																		1
_		8.8 m - 60° fra	acture followed	by 90																		
—9 —		mm of extremel	y weak clay infi	II		RC5	9.18 -	5	78	3												764—
_		9.6 m - vertica	al fracture				10.70	-	97													11
-		9.8 m - suspe	ct white sulphat					89														
_		Inclusions								:												
		Notes:			Mon	itorir	ng Ins	talla	tion Pi	pe W	ork											
		Target depth of	ed as	D	epth T	ор	Dept	h Bo	ottom	Pipe	е Туре											
		a weil and Dack	umeu with sand	anu per	ion	ne chip	э.		0.00			5.20		PL		Logo	ged By	/:	С.	Tam	s	
16/11/2022	,								5.20		(0.70		SLU	UIEU	Revi	ewed	Ву:	Τ.	Curti	s	
10/11/2022	-																					



	CLIEN	ΙT	E	astern Irrig	gatio	on Distri	ct		P	ROJ	IECT I	MAN	E			Sna	ake Lake Reservoir Ex	cpansio	n	
1	PROJ	ECT NUMBER		1560-	193	3-00			P	ROJ	IECT L	.00/	ATION				NE 1/4 32-19-16			
	DATE	STARTED	09/08/2022	COMPLE	TEI	D	09/08/2	2022	20	RO	JND E	LEV	ATION	_	773.0	3m	N 5609430.825	E_4	15706.8	361
	DRILL	ING CONTRACT	OR	Va	al's	Drilling			0	ROI	JND V	VATE	ER ELE	VATIO	N/DE	PTH	770.89 m		2.14 m	
	CORI	NG TYPE	HQ3	DIAMETER	R (m	nm)	61		D	ATE	GRO	UND	WATE	R REC	ORDE	D	10/12/	2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE CO IC - LIG I) Blows 20 3 100 1: <u>ET PEN</u>	ONTEN QUID /300 mr 30 40 50 20 (kPa)	Г n) О	REMARKS		Standpipe/ Instrument	Elevation (m)
-		10.2 m - verti	cal fracture																	
11		10.7 m - 40 n 10.8 m - 25° 1	nm of core loss fracture			RC6	10.70 - 12.22	6	84 101 84	2										762
_		11.4 m - trace	shell inclusion											⊢			11.7 m - LL = 80.0%	6		
12		11.8 m - horiz	contal fracture			D07	10.00	-	00	2							PL = 24.4% PI = 55.6%	•		761-
_			-	1	100	2														
_		12.9 m boo	13.74		99															
-13		13.0 m - 97° 1											13.1 m - Sand =			760-				
-													0.3% Silt = 70.7%	, D						
			13.74 -	8	98	1							Clay = 29.0	%		750				
- '-			15.26		98											/ 59				
_		14.6 m - 77° 1	fracture																	
																758-				
_		15.1 m - 79° t mm of calcified														111				
-																				
- 																				757-
-																				
-																				-
—17 -																				756-
-																				
- 18												 								755
																				/ 55
_																				
																				754—
_																				
-																				
-					-		-								-					
		Notes:			Mon	itorir	ng Ins	talla	ation P	ipe W	/ork									
		Target depth of a well and back	ed as s.	D	epth To	ор	Dept	h Bo	ottom	Pipe	е Туре	•								
						e omp			0.00 5.20			5.20 6.70)	PL SLC	LAIN DTTEE) ^L '	ogged By:	С. Та	ams	
16/11/2022	2022															R	Reviewed By:	T. Cı	urtis	



CL	IEN	IT	E	Eastern Irri	igati	on Distri	ct		P	PROJ	ECT N	NAME	Ξ			Sna	ake Lak	e Reservoir E	xpans	ion		
PF	roji	ECT NUMBER		1560	-193	3-00			P	PROJ	ECT L		TION	_			N	E 1/4 32-19-1	6			
DA	λΤΕ	STARTED	09/08/2022	COMPLE	ETE	D	09/08/	2022		ROL	JND E	ELEVA	ATION	_	778.9)2m	N_5	609434.154	Ε_	4152	06.8	70
DF	RILL	ING CONTRACT	OR	N	/al's	Drilling			0	ROL	JND V	VATE	R ELE	VATIO	N / DE	PTH	7	73.64 m		5.28	ßm	
CC	DRIN	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRO	UND	WATE	R REC	CORDE	ED		09/15	5/2022			
Depth (m)	SOIL SYMBOL	D	Soil escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKI	URE C IC - LIC) Blows 20 3 00 1 ET PEN	ONTEN QUID 5/300 mr 30 4(50 20 ((kPa)	T n D 10		REMARKS	3	Standpipe/	Instrument	Elevation (m)
1111111		CLAY TILL, silty mm, trace sand plastic, light bro staining, susper inclusions	/, some gravel ∣, dry, stiff, med wn, some oxid ct white sulpha	up to 20 lium lation ite	=	AU1 AU2					7.6 9.3		• +				0 m - 6 m. 1.2 m	5" SSA to 3. - LL = 43.9% PL = 16.2%	2			778
		2.0 m - becom dark brown	ning very stiff, (damp,	æ	AU3					13.6		•					PI = 27.7%	6			777-
		trace sand, high brown to dark g oxidation stainir extremely weak extremely close suspect white s	In weathered, Irey mottling, song, damp, high to hard soil, b y spaced fract	dark ome plastic, locky, tures, ons,	=	AU4 SH1 RC1	3.20 - 4.72	1	0 100 58	20	16.1		•				4 m - I	1 = 46.8%				776
		trace gypsum ci 3.2 m - becom staining 4.0 m - 19° fra 4.4 m - 110 m 4.9 m - becom weathered	rystals ning grey with o acture m of slough ning moderatel	oxidation y		RC2	4.72 - 6.24	2	0 105 89	20							4.9 m	PL = 19.2% PI = 27.6% - Sand = 8.1 Silt = 58.3% Clay = 33.0	% % % 6%	F		774
		BENTONITE (6 SHALE (Weath	. <u>6 m), 150 mm</u> ered), ""	n layer		RC3	6.24 - 7.76	3	0 99 66	20						1 	5.8 m 6.8 m	- LL = 47.09 PL = 18.79 PI = 28.39 - LL = 103.3	% % \$%			773
-7		6.9 m - 109° fi mm weak layer 7.2 m - becom 7.8 m - trace t 8.4 m - 5 mm 8.9 m - 106° fi \$HALE, clay ar	racture followe ning very weak pentonite inclus quartz lense racture nd silt, moderal	ed by 60 sions tely		RC4	7.76 - 9.28	4	0 106 99	20				-				PL = 41.39 PI = 62.09	% %			771
-9		weatnered, grey extremely weak fractures, thinly staining in joints crystals 9.8 m - becorr weak, trace oxic	y, damp, nigh p ;, very closely s laminated, oxi s, trace gypsun ning unweather dation staining	nastic, spaced dation n red, very		RC5	9.28 - 10.80	5	57 97 86	6							9.4 m	- LL = 57.4% PL = 18.6% PI = 38.8%	6 6 6			770
16/11/2022		Notes: Target depth of a well and back	15 m achieved	d. Coreho d and ber	le c iton	complet ite chip	ed as s.	D	Moni epth To 0.00 4.60	itorir op	ig Ins Dept	talla h Bo 4.60 6.10	tion P ttom	ipe W Pipe Pl SLC	/ork e Type LAIN DTTEI		ogged eviewe	By: ed By:	<u>С.</u> Т. (Tams Curtis	6	



	CLIEN	NT	E	Eastern Irrig	gati	ion Distr	ict		F	PROJ	ECTI	NAM	1E			Sna	ake Lak	e Reservoir	Expans	ion	
	PROJ	IECT NUMBER		1560-	-193	3-00			F	PROJ	ECTI	LOC	ATION				N	E 1/4 32-19-1	16		
	DATE	STARTED	09/08/2022	COMPLE	ΤE	D	09/08/	2022	20	GROL	JND E	ELE	VATION	_	778.9	92m	N_5	609434.154	_ E _	415206	.870
	DRILL		OR	V	al's	Drilling			0	GROL	JND V	VAT	ER ELE	VATIO	N / DE	PTH		73.64 m		5.28 m	1
	CORI	NG TYPE	HQ3		R (n	nm)	61		C		GRO) WATE	RREC	CORDE	ED		09/1	5/2022	\	
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE C IC - LIG) Blows 20 3 00 1 <u>21 PEN</u>	ONTEN (UID /300 mr 60 44 50 20 (KPa)	T n 0		REMARK	S	Standpipe Instrumen	Elevation (m)
11		10.1 m - 160 calcified shale 10.3 m - becc 10.6 m - 121° 10.8 m - 40 n 11.1 m - extre 11.5 m - 73° 1	mm of laminate oming unoxidize ° fracture nm of core loss emely weak clay fracture	ed ed y infill		RC6	10.80 - 12.32	6	81 100 88	4											768
		12.3 m - mec 12.5 m - 132°	hanically fractu ' fracture	red run		RC7	12.32 - 13.84	7	66 100 72	7											766
- - - - - - - - - - - - - - - - - - -		13.2 m - becc 13.8 m - becc widely spaced f	oming weak oming moderate fractures	əly		RC8	13.84 - 15.36	8	102 113 106	3							14 m -	- Sand = 2.4 Silt = 63.3 Clav = 34	4% 6% .3%		765
15 15 		BENTONITE (² b <u>entonite lamir</u> SHALE, "" 14.7 m - 30 n followed by 60	14.5 m), 150 mi nations nm of calcified s mm of slough	m thin shale													14.5 n	n - LL = 215 PL = 28.5 PI = 187.	5.5% % 0%		764
- 		l,.14.8 m - becc strong	oming moderate	ely																	763-
- 																					762
- 																					761
- - - - - - - - - - - - - - - - - - -																					760
														:							
16/11/202	2	Notes: Target depth of a well and back	f 15 m achieved kfilled with sand	d. Coreho d and ben	le c ton	complet ite chip	ed as os.	D	Mon epth T 0.00 4.60	itorir op	ng Ins Dept	stall th B 4.6 6.1	ation P ottom 0 0	ipe W Pipe Pl SLC	ork Type AIN TTE	e Lo R	ogged eview	By:	С. Т. (Tams Curtis	



	CLIEI	NT	Ea	astern Irri	gati	on Distri	ct		F	PROJ	ECTN	IAME				Sna	ike Lak	e Reserv	voir Expa	nsion		
1	PRO	JECT NUMBER		1560	-193	3-00			F	PROJ	ECT L	OCA	TION				NE	E 1/4 32-	19-16			
	DATE	STARTED	09/07/2022	COMPLE	TE	D	09/07/	2022		GROU	JND E	LEVA	TION	_	776.12	m	N_56	609425.1	57 E	41	5007.	962
	DRIL	LING CONTRACT	OR	V	/al's	Drilling			0	GROU	JND W	VATE	R ELE\	/ATIO	N / DEF	ΡTΗ	7	74.13 m		1.	99 m	
		NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRO	UND	WATEF	R REC	ORDE)		(09/15/202	22		
Depth (m)	SOIL SYMBOL	C	Soil Jescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTU PLASTIO SPT (N) <u>10 2</u> 50 10 POCKE	JRE CC C - LIQI Blows/ 0 30 15 T PEN	ONTENT UID 300 mm <u>0 40</u> 0 200 (kPa)			REMA	RKS		Standpipe/	Elevation (m)
		CLAY TILL, silt stiff, medium pl oxidation staini sulphate inclus	y, some sand, m lastic, brown, sol ng, suspect whit ions, trace coal s	oist, me e staining	Ŧ	AU1					16.9		•			1	0 m - 6 m.	6" SSA t	o 3.15			776
1 - - - - -		1.1 m - becor	ning sandy	- 114	-	AU2 SH1					14.5		•				1.2 m - 51.3%	Silt = 2	= 24 1%			775
-2		trace sand, cor brown to dark o oxidation staini extremely weal	npletely weather grey mottling, so ng, damp, high p < to hard soil, blo	red, me plastic, pcky		AU3 AU4					20.0		H	•			1.2 m - 1.2 m - 1.2 m - 2 1 m -	Clay = EC: 4. SAR: 5	24.6% 0 dS/m 5.8 7 0 6%	Ţ		774
3	· · · · · · · · · · · · · · · · · · ·	3.2 m - becor	ning extremely c	losely	-	RC1	3.15 - 4.67	1	0 108	20	17.0		•				3.5 m ·	PL = 1 PI = 3	6.6% 4.0% 04.5%			773-
- - 		BENTONITE (3 SHALE (Weath	3.5 m) ,70 mm se hered),	eam /		BOO	4.07		88	00							3.6 m ·	PL = 3 PI = 6 LL = 5 PL = 2 PI = 3	5.7% 8.8% 0.9% 0.7% 0.2%			772
- 		SHALE, clay an medium weath plastic, extreme	nd silt, trace san ered, grey, dry, h ely weak, very cl es, thinly laminat	d, iigh osely		RC2	6.19	2	97 86	20												771
		oxidation staini 5.3 m - 5 mm 5.5 m - becor 5.6 m - becor 6.1 m - 50 mr	ng in joints quartz lense ning slightly wea ning unoxidized n of core loss	ithered		RC3	6.19 - 7.71	3	59 100 67	8			ŀ				6.2 m -	- LL = 5 PL = 1 PI = 3	3.3% 9.2% 4.1%	· · · · · · · · · · · · · · · · · · ·		770
- ' - - - - - - - - - - - - - - - - - -		7.1 m - becor 7.2 m - becor 7.8 m - 70 mr	ning very weak ning unweathere n of crumbled co	ed ore		RC4	7.71 - 9.23	4	30 103 63	7							7.3 m -	- Sand = Silt = 5 Clay =	= 2.4% 58.4% 39.2%	• • • • •		769-
- - - - - - - - - - - - - - - - - - -						RC5	9 23 .	5	18	7												767
-		9.2 m - quartz 9.2 m - 260 m	z crystals nm of mechanica	al rubble		100	10.75	5	100 36													
		Notes:							Mon	itorir	l na Ins	tallat	ion Pi	pe W	ork							L
		Target depth of a well and back	15 m achieved. Afilled with sand	Coreho and ben	le c ton	complet ite chip	ed as s.	D	epth T 0.00 6.10	op	Dept	h Bo 6.10 7.60	ttom	Pipe PL SLO	Type AIN TTED	La	ogged	By: _	(<u>C. Tar</u>	<u>ns</u>	
16/11/2022	2																eviewe	ч ву: _		. cur	แร	



	CLIEN	IT	I	Eastern Irrig	gatio	on Distri	ct		P	ROJ	ECT	MAN	E			Sna	ake Lake Reservoir Expansio	n	
1	PROJ	ECT NUMBER		1560-	193	3-00			P	ROJ	ECT L	.00/	ATION				NE 1/4 32-19-16		
1	DATE	STARTED	09/07/2022	COMPLE	TEI	D _	09/07/2	2022	0	ROL	JND E	LEV	ATION		776.12	2m	N_5609425.157 E_4	15007.9	962
1	DRILL	ING CONTRACT	OR	Va	al's	Drilling			0	ROL	JND V	VATE	ER ELE	VATIO	N / DEF	РΤΗ	774.13 m	1.99 m	
	CORI	NG TYPE	HQ3		R (m	nm)	61		C	ATE	GRO	UND	WATE	R REC	ORDE	D	09/15/2022		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE CO IC - LIG) Blows 20 3 00 1: <u>T PEN</u>	ONTENT UID /300 mm 0 40 50 200 (KPa))	REMARKS	Standpipe/ Instrument	Elevation (m)
-		10.2 m - crum	nbled core																766-
- - - - - - - - - - - - - - - - - - -		11.1 m - becc bentonite seam BENTONITE (1	oming thinly lam is 11.7 m), 290 mi	ninated m seam		RC6	10.75 - 12.27	6	61 94 75	5				ļ			11.1 m - LL = 82.2% PL = 21.2% PI = 61.0%		765
12 		4.11.9 m - becc SILTSTONE, a grey, damp, hig fissured 12.2 m - 90 m 13.0 m - becc	oming very silty, nd clay, unwea gh plastic, weak nm of core loss	y, weak athered, k, finely		RC7	12.27 - 13.79	7	74 100 94	4									764
- - - - - - - - - - - - - - - - - - -		13.8 m - becc 13.8 m - becc cemented layer	fractures oming some we	eakly		RC8	13.79 - 15.31	8	82 99 86	3							13.9 m - Sand = 0.8% Silt = 60.7% Clay = 38.5%		762
15 15 	····· ····· ·····																		761
16																			760-
17 																			759-
—18 —18																			758-
19 19 																			757
		NI - 4											· ·						
16/11/2022	2	Notes: Target depth of a well and back	f 15 m achieved kfilled with sand	d. Corehol d and bent	e c ton	omplet ite chip	ed as s.	D	Moni epth To 0.00 6.10	torir op	ng Ins Dept	talla h Bo 6.10 7.60	ation P ottom))	ipe W Pipe Pl SLC	ork Type AIN TTED	Lo R	ogged By: <u> </u>	ams urtis	

	C	MP		an Englobe	cor	nnai	nv				E	30RI	EHC	OLE No): 2 3	BH'	12 3	3 B
	CLIE	NT		Eastern Irrigation Dis	trict	npui	י ע PR(OJECT	r name	E		s	Snake	Lake Reser	voir Expa	ansion		51 1
	PRO.			1560-193-00			PR(OJECT						NF 1/4 32	-19-16			
			08/08/2023		08/0	8/2023						65 00m	N	5612531	781 F	416(025.0!	57
	יווסרי		100/00/2020		~	3/2023	CR					/ DEDTI	_ '`	001200	<u> </u>			
	ווסר		IUK										י <u> </u>					
L				0 33A						WAIE	K KEUU	RDED						
Depth (m)	SOIL SYMBOL		Soil Descripti	ion	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M0 ⊢ PI ■ SF <u>10</u> 10 ▲ P0	OISTUR LASTIC PT (N) B 0 20 00 200 <u>DCKET</u>	E CONTE - LIQUID llows/300 r <u>300</u> <u>PEN (kPa</u>)	NT nm <u>40</u>		REMA	RKS	Standbibe	Instrument	Elevation (m)
-		CLAY TILL, so	me fine graine	d sand, trace silt,			T											
- 1	2	medium to hig	h plastic, dark	brown		1												1
-	2					1												764_
-	2					1												/04 -
- I 		SHALE (Weat	hered), clay ar	nd silt, moist, stiff, da	ark	1												1
-0		brown, high pla	astic, trace oxi	de specs		1												763_
		-				1												/03
- 1	<u></u>	1				1												-
-	·····					1												
-3	<u></u>	-				1												762-
- -		-				1												-
-	<u></u>	-				1												-
-4						1												761-
- 1		-				1												-
-						1												-
-5	<u> </u>	-				1												760—
-		-				1												-
- 1		-				1												-
6						1												759-
- -		-				1												3
						1												-
7		-				1												758-
- I - -	. <u></u>					1												-
- 1	·	-				1												-
8	[:					1			ļ									757-
-	·	-				1												-
- 1	<u> </u>	-				1												-
- 9		SHALE, silty, h	nighly weather	ed, grey, moist,	1	1			ļ									756-
-	E	medium to hig	h plastic, very	weak		1												-
- 1			End of Borehole	e @9.6 m		1												-
-			L	/ @0.0		1												_
		Notes: No seepage o	r sloughing ob:	served upon comple	 etion. P	acker te	est con	nplete	d afte	r drillir	ng.		Logg	ed By:		<u> </u>		
12/09/2023	3												Revie	эweu Бу.		<u> </u>	aun	

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BOREHOLE No : 23BH136B

CLIENT		Eastern Irrigation District			_ PRO	DJECT	NAM	1E	-		Sr	ake Lake	Reservoir I	Expans	sion	
PROJECT NUMBER		1560-193-00			_ PRO	DJECT	LOC	ATION	۱.			NE	1/4 32-19-1	6		
DATE STARTED	08/10/2023		08/10	0/2023	_ GR	DUND	ELE\	/ATIO	N	77	0.00m		12485.432	Ε_	41651	4.596
DRILLING CONTRACT	OR	Val's Drilling			GR	DUND	WAT	ER EL	EVAT	ION / I	DEPTH					
DRILLING METHOD		4" SSA			DAT	E GR	JUNE) wat	ER R	ECOR	DED					
Depth (m) SOIL SYMBOL	Soil Descript	on	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M 	NOISTU PLAST SPT (N) 10 2 00 2 OCKE	JRE CO IC - LIC Blows 20 3 T PEN	DNTEN QUID /300 mr 30 4 00 4 (kPa)	T n 0 20	R	EMARKS		Standpipe/	Elevation (m)
E CLAY AND SIL 	T, sandy, trace at brown, trace	e fine gravel, dry, stiff, oxide specks													×74	
SHALE (Weath completely weath damp, high plat blocky, thinly la 	nered), clayey, athered, dark l stic, extremely aminated, traca ning highly we	silty, trace sand, prown to grey mottling, v weak to hard soil, e white precipitates eathered	-													769
-3	ng some oxida	ation staining														767
-6 6.5 m - becom 	ning trace gyp ng moderately	sum crystals weathered														764
BHALE, silty, cl	layey, slightly stic, very wea	weathered, grey, k, thinly laminated	-													762
	End of Borehole	:@9.1 m						-								761
Notes [.]																
No seepage or	sloughing ob	served upon completion	n. P	acker te	sting o	done a	after	drillin	g.		L	.ogged B Reviewed	y: I By:	(<u>C. Tarr</u> C. Brau	ns un



BOREHOLE No : 23BH201B

CLIENT	Eastern Irrigation District	t		PRO	JECT	NAME	Snake Lake Reservoir Expar	nsion
PROJECT NUMBER	1560-193-00			PRO	JECT		NE 1/4 32-19-16	
DATE STARTED	08/11/2023 COMPLETED	08/11/20	23	GRO	UND	ELEVATION 768.00m	n <u>N 5612424.215</u> E	416805.362
DRILLING CONTRACT	ror Val's Drilling			_GRO	UND	WATER ELEVATION / DEPT	н	
DRILLING METHOD	4" SSA			DATE	E GRO	OUND WATER RECORDED		
Depth (m) SOIL SYMBOL	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	 MOISTURE CONTENT PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 30 40 100 200 300 400 POCKET PEN (KPa) 	REMARKS	Standpipe/ Instrument Elevation (m)
CLAY AND SIL brown, trace ro CLAY TILL, silt high plastic, da SAND, silty, pc rounded, moist CLAY TILL, silt completely wat high plastic, da SHALE (Weather damp, high plastic, da share trace white pre	T, sandy, dry, stiff, low plastic, light bot hairs ty, trace sand, moist, stiff, medium to ark brown, trace oxidation staining borly graded, medium grained, sub- t, compact, reddish brown ty, trace sand, trace fine gravel, trace athered shale inclusions, moist, stiff, ark brown, some oxidation staining hered), clayey, silty, trace sand, ed, dark brown to grey mottling, sistic, extremely weak to hard soil, aminated, trace oxidation staining, ecipitates, trace gypsum crystals ming moderately weathered e orange oxidation staining ming slightly weathered End of Borehole @6.1 m					POCKET PEN (kPa)		767- 766- 765- 764- 763- 763- 762- 761- 761- 760- 759-
							-	
Notes:						1		
No seepage or	r sloughing observed upon completio	n. Pack	er test	ting de	one a	after drilling.	Logged By: Reviewed By:	C. Tams C. Braun

OLENT Eastern Impation Dericit. PROJECT NAME Snake Lake Reservoir Expansion. PROJECT NUMBER 1980-193-00 PROJECT LOCATION N.E. 143-21-9-16 DIFTER STARTED 0.0010/0222 CORUNT DELEXTRON 7.02-2m N.960801.0358. g. 418687.228 PROJECT NUMBER 1.950-193-00 0.0010/0222 CORUNT DELEXTRON 7.02-2m N.96081.0358. g. 418687.228 PROJECT NUMBER 0.0010/0222 CORUNT DELEXTRON 0.0010/02 REMARKS 100000 PROJECT NUMBER 0.011 0.0110/02 0.0010/02 REMARKS 100000 PROJECT NUMBER Description 90000/02 90000/02 0.0010/02 REMARKS 100000/02 GLAY TILL, sithy samdy, trace fine gravel, dry, stiff, food 90000/02 90000/02 90000/02 90000/02 90000/02 100000 SHAREC, clayery and and clayer of the gravel, dry, stiff, food 1.00100 REMARKS 100000 100000 SHAREC, clayery and and clayer of the gravel, dry, stiff, food 1.001000 REMARKS 1000000 1000000 SHAREC, clayery and and clayer of the gravel, dry, stiff, food 1.001000000000000000000000000000000000			MP	an En	globe c	or	npar	۱y					B	ORI	EHOLE No : 2	3BH30 PAGE 1)1B
PROJECT NUMBER			NT	Eastern Ir	rigation District			PRO		ΝΔΜ	F			9	Snake Lake Reservoir Fu	ransion	
Indext Multick 00192022 COMPLETED 00202022 GROUND ELEMATION 70922m N 500510.559 E 41687.269 DRILLING CONTRACTOR Van Delling GROUND WATER RELEVATION / DEPTH				Lastern in	103 00							- J			NE 1/4 32 10 16	pansion	
Description Via bring GROUND CANTER RECORDED				06/10/2023 COMPI		6/2	0/2023					• - N	760) <u>)</u> 33m	NL 5609510 559	⊑ 416687 (289
UNDELING METHOD Value Simplex Outcome of Market Recorder DRILLING METHOD 4'SSA DATE GROUND WATER RECORDED general sectors and the sector of the sectors and				00/19/2023 COMPL	LEIED	10/2	0/2023									E	
UPULING ME INCU Image: Solid Description Image: Solid Big				JK											1		
Big Origin Or					4" SSA	1	1		EGR		VVAI	ERRI	ECOR	DED			
CLAY TILL, slily, sandy, trace fine gravel, dry, sliff, medium plastic, utrace wide specks SHALE, clayey, slift, highly weathered, grey, damp, highly hasher, extremely weak, blooky, thinly laminated, trace oxidation staining, trace while precipitates 76- 76- 76- 76- 76- 76- 76- 76	Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	SPT (N)	Moisture Content (%)	● M H F ■ S 1 ▲ P	IOISTU PLASTI PT (N) 10 2 00 2 OCKE	JRE CC IC - LIC Blows/ 20 3 00 3 T PEN	DNTEN QUID /300 mr 30 4 00 4((kPa)	T n 0 00	REMARKS	Standpipe/ Instrument	Elevation (m)
1 SHALE, clayey, silly, highly weathered, grey, damp, high plastic, extremely weak, blocky, thinly laminated, trace exidation staining, trace while precipitates 768- 2 777- 777- 3 777- 777- 3 777- 777- 4 777- 777- 5 777- 777- 6 777- 777- 788- 777- 777- 789- 777- 777- 789- 777- 777- 789- 777- 777- 789- 778- 777- 789- 778- 778- 780- 778- 778- 781- 778- 778- 782- 778- 778- 783- 778- 778- 784- 783- 778- 785- 784- 783- 786- 784- 783- 787- 784- 784- 788- 784- 784- 789- 784- 784- 789- 784- 784- <	-		CLAY TILL, silty medium plastic,	, sandy, trace fine grav light brown, trace oxid	vel, dry, stiff, e specks												769-
1 SHALE, clayey, silly, highly weathered, grey, damp, high plastic, extremely weak, blocky, thinly lamined, trace white precipitates 763 2 764 767 3 764 766 4 765 766 7 764 766 7 764 766 7 764 766 7 764 766 7 764 766 7 764 766 7 764 766 7 764 766 7 764 766 7 765 766 7 766 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 766 7 767 76	Ē		-														
Page plastic, extremely weak, blocky, thinly Image plastic, extremely weak, blocky, thinly, extremely w	-1	\leq	SHALE. clavev.	silty, highly weathered	. arev. damp.												
	Ē		high plastic, ext	remely weak, blocky, tl	hinly												768-
2 1	E	<u> </u>	precipitates	oxidation staining, tra	ce white												
3 1	2	===	-														
-3 -4 -4 -7 <td< td=""><td>Ē</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>767-</td></td<>	Ē		-														767-
3 1	Ē																
-4 -4 <td< td=""><td>-3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	-3																
-4 -4 <td< td=""><td>Ē</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>766-</td></td<>	Ē																766-
-4 -4 <td< td=""><td>Ē</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Ē		-														
	-4		· 														
-5 -7 <td< td=""><td>Ē</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>765-</td></td<>	Ē		-														765-
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1 1	E		-														764-
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77 78- 78- 78- 78- 78- 78- 78- 7	-6									 							
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1 1	E		-														
1 1	- 7		-							 							
8 1	Ē		-														762-
8 1	F	E															
1 1	-8	E								 							
P 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Ę		-														761-
P P P P P P P P P P P P P P P P P P P			_														
1/2/09/2023 1/2/09/2023	Ē																· ·
Notes: No seepage or sloughing observed upon completion. Packer test completed after drilling. Logged By: <u>C. Tams</u> Reviewed By: <u>C. Braun</u>		E															760-
Notes: No seepage or sloughing observed upon completion. Packer test completed after drilling. 12/09/2023 C. Tams Reviewed By: C. Tams	F		-														
Notes: No seepage or sloughing observed upon completion. Packer test completed after drilling. Logged By: <u>C. Tams</u> Reviewed By: <u>C. Braun</u>	Ē		-														· ·
Notes: No seepage or sloughing observed upon completion. Packer test completed after drilling. Logged By: <u>C. Tams</u> Reviewed By: <u>C. Braun</u>	—																1
INO seepage or sloughing observed upon completion. Packer test completed after drilling. Logged By: C. Tams Reviewed By: C. Braun			Notes:	- La constato		_				. ~		P.,					
12/09/2023 Reviewed By: <u>C. Braun</u>			No seepage or s	sloughing observed up	on completior	ι. P	acker te	est con	nplete	d afte	er dril	ling.			Logged By: _	C. Tams	
	12/09/202	3													Reviewed By: _	C. Braun	1



	CLIEN	NT	East	ern Irri	gatio	on Distri	ct		F	PROJ		AME	Si	nake Lake Reservoir Expai	nsion
	PROJ	IECT NUMBER		1560	-193	8-00			F	PROJ	JECT L	OCATION	N	NE 1/4 32-19-16	
	DATE	STARTED	08/11/2023 CC	OMPLE	TEI	D	08/11/	2023		GROU	UND E	LEVATIO	N 767.62m	N 5611494.100 E	416865.300
	DRILL	LING CONTRACT	OR	V	al's	Drilling			0	GRO	UND V	ATER EL	EVATION / DEPTH	l	
	CORI	NG TYPE	HQ3 DIA	AMETE	R (m	nm)	61	I	C	DATE	GRO	JND WAT	TER RECORDED		
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOIS ⊢ PLAS ■ SPT (10 50 POCI 	STURE CONTENT STIC - LIQUID (N) Blows/300 mm 20 30 40 100 150 200 :KET PEN (kPa)	REMARKS	Standpipe/ Instrument Elevation (m)
-1 -2 -3 4 		CLAY AND SIL stiff, low plastic CLAY TILL, silt gravel up to 30 medium plastic oxidation staini crystals, trace coal staining 1.2 m - becor completely wea SHALE (Weath highly weathere mottling, damp weak, blocky, t oxidation staini precipitates, tra 3.0 m - 270 n 3.3 m - 200 n 3.6 m - becor weathered \3.9 m - 80 mr SHALE, clayey grey, damp, hig weak, moderat fractures, thinly 4.6 m - 100 n 5.5 m - some 6.4 m - becor 7.0 m - 62° fr 7.4 m - 42° fr 7.6 m - mech 8.3 m - 45° fr	T, sandy, gravelly, e c, light brown y, trace sand, trace 0 mm, moist, firm, c, brown, some ing, trace gypsum white precipitates, f ming no gravel, som athered shale inclus hered), clayey, silty, ed, dark brown to g h, high plastic, extre hinly laminated, tra ing, trace white ace gypsum crystal nm of core loss nm of slough ming moderately m of crumbled core y, silty, unweathered gh plastic, extremel tely widely spaced y laminated nm of cre loss nm of crumbled core ming very weak mechanical rubble ming weak acture ancure acture	dry, trace ne sions yrey mely ce s d, y e un		AU1 AU2 AU3 AU4 RC1 RC2 RC3 RC3	3.05 - 4.57 4.57 - 6.09 - 7.61 7.61 - 9.13	1 2 3 4	49 82 64 75 93 78 89 100 90 87 100 89	2 3 2 2	18.2 26.6 22.3 24.3			0 m - Lost circulation and used lots of water this hole. Seismic cap and wire -found nearby. 1.2 m - Gravel = 0.1% 1.2 m - Sand = 6.4% Clay = 50.9% 1.2 m - Dispersivity Classification = ND3 % Dispersion = 78% 2.1 m - Dispersivity Classification = D2 % Dispersion = 45% 3.05 m - Switched from 6" SSA to HQ3 Rotary Coring	767 766 765 764 764 763 764 763 762 761 761
- - - 9 - - - - - - - - - - -						RC5	9.13 - 10.65	5	93 93 93	1				-	758
		Notes:							Mon	itorir	ng Ins	tallation	Pipe Work		
11/01/2024	4	Target depth of a 50 mm well.	f 10 m achieved. Ce Packer test comple	oreho ted af	le c ter	omplet coring.	ed as	D	epth T 0.00 7.60	ор	Dept	h Bottom 7.60 0.60	n Pipe Type PLAIN SLOTTED	Logged By:C	2. Tams . Curtis

		MP		a divis	sio	n of	Eng	glo	be				COR	EHOLE No :	23C	H7 .GE 2	02 0F 2
	CLIEN	NT		Eastern Irr	igati	on Distr	ict		P	PROJ	ECTI	NAME	S	Snake Lake Reservoi	r Expansion		
	PROJ	ECT NUMBER		1560)-193	3-00			P	ROJ	ECTI	LOCATION		NE 1/4 32-19	-16		
	DATE	STARTED	08/11/2023	COMPL	ETE	D	08/11/	2023	 3 G	RO	JND E	ELEVATION		N 5611494.100) E 41	6865.3	300
	DRILL		TOR	,	Val's	 Drillina				ROL	JND V	VATER ELEV	ATION / DEPT	— H			
	CORI	NG TYPE	HQ3	DIAMETE	ER (n		6	1		ATE	GRO	UND WATER					
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	acture Index (#/m)	isture Content (%)	 MOISTU PLASTIC SPT (N) 10 20 	RE CONTENT C - LIQUID Blows/300 mm D 30 40	REMAR	٢S	Standpipe/ Instrument	Elevation (m)
						0,				ЦЦ	β	50 10 POCKET	0 150 200 Г PEN (kPa)	7			
		10.0 m - 500 rubble <u>10.6 m - 100</u>	mm of mecha	anical													757- 755- 755- 754- 753- 752- 751- 755- 755- 755- 755-
Ē																	740
Ē																	/48-
—		Neter															
		NOTES: Target depth of	of 10 m achiev	ed Corebo	nle r	omolo	ted as	-	Mon	itorir	ng Ins	stallation Pip	be Work				
		a 50 mm well.	Packer test c	ompleted a	after	coring	.eu as		epth To	ор	Dept	th Bottom	Ріре Туре		o =		
			5			7.60			10.60	SLOTTED	Logged By:	<u> </u>	<u>ns</u>				
11/01/2024	1													Reviewed By:	T. Cur	tis	



	CLIEI	NT	E	astern Irri	gati	on Distr	ict		F	PROJ	ECTI	NAM	E	_		Sn	ake La	ike Reservoir I	Expar	ision		
	PRO	JECT NUMBER		1560	-19	3-00			F	PROJ	ECT I	LOC	ATION				١	NE 1/4 32-19-1	6			
	DATE	STARTED	08/07/2023	COMPLE	ΞTE	D _	08/07/	2023	80	GROL	JND E	ELEV	ATION	_	779.	07m	_ N _	5612596.600	_ E .	414	519.2	200
	DRILI	LING CONTRACT	OR	V	/al's	Drilling			0	GROL	JND V	NATE	ER ELE	EVATIC) N / DE	EPTH						
	CORI	ING TYPE	HQ3	DIAMETE	R (r	nm)	61	1	C	DATE	GRO	UND	WATE	ER RE	CORD	ED						
																				7	t ɗ	
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m	Moisture Content (%	● ⊢ ■	MOIST PLAST SPT (N 10 50 POCK	FURE C FIC - LIC N) Blows 20 : 100 1 ET PEN	CONTEN QUID 5/300 m <u>30 4</u> 50 20 1 (kPa)	NT m .0 D0		REMARK	8	Of the second		Elevation (m)
-		TOPSOIL, silty	, sandy, some cl	lay, trace																X		
-		root hairs	plastic, brown,	uace	-	AU1																-
E ,		CLAY TILL, silt	y, sandy, trace fi	ine stic	-																	-
E'		brown, some w	hite precipitates	site, s, trace	-	AU2																778
-		oxidation staini	ing	al un ta																		
		30 mm	ning some grave	ei up to																		
2 -					-	AU3																777-
Ē																						
-		SHALE (Weath	nered), clayey, si	ilty,	-	AU4																-
-3	<u> </u>	trace sand, hig	hly weathered, g	grey, veak to																		776-
-	· <u>···</u> ·	hard soil, block	cy, thinly laminate	ed,																		-
-	· <u>···</u> ·	some oxidation	n staining, trace v	white		AU5																
-4	··		ning moderatelv	,	-																	775_
-	·	weathered, trac	e oxidation stair	ning		RC1	4.27 -	1	72	3							4.27	m - Switched	ł			
F	· ·	4.3 m - 100 m	nm of core loss		Π	AU6	5.79		93								from	6" SSA to H	Q3			-
- -	<u></u> .	4.0 m - 100 m -	in benionite sea	am					80								Rotar	ry Coring				-
		5.2 m - 73° fr	acture																			774
-			acture																			
	· <u>·</u> ··	5.6 m - some	crumbled core	d rup		RC2	5.79 -	2	66	4												-
—6 _	· <u>··</u> ·	210 mm of core	e loss	u run,			7.31		86							+						773-
	· · ·	· 64 m traca	hontonito inclusi	ione					00													-
Ē	···	0.4 m - trace		10115																		-
-7	·	6.9 m - 63° fr	acture														-					772-
Ē	<u></u>	7.1 m - some	crumbled core			RC3	7.31 -	3	80	3												-
Ē	<u> </u>						8.83		82													-
-8	· · · · · ·	7 9 m - becor	ning slightly was	othorod					00													
F		very weak	ining singinary wea																			
-		.∖.8.1 m - 65° fr	acture	/																		-
Ē,		grey, damp, hic	, siity, unweatne gh plastic, very w	veak,		RC4	8.83 -	4	92	1												
Ē		moderately wic	lely spaced fract	tures,			10.35		92													770-
F		Ithinly laminated	d acture																			-
E																						-
		Notes:							Mon	itorir	ng Ins	stalla	ation F	Pipe W	/ork							
		a well refer to	r 14 m achieved. diagram Packer	. Coreho r test co	ie o mnl	complet	ted as iter	D	epth T	ор	Dept	th Bo	ottom	Pip	е Тур	е						
		coring.			pi	2.00 01			0.00 13 40	,		13.4 14 9	υ 1	P SI (oggeo	d By:	С	. Tam	IS	
11/01/2024	1															F	Review	ved By:	C	Brau	In	
1																						



	CLIE	NT		Eastern Irriç	gatio	on Distri	ict		F	PROJ	IECT	NAME	E		S	Snake	Lake Reservoir	Expar	ision	
	PROJ	IECT NUMBER		1560-	193	3-00			F	PROJ	IECT	LOCA	TION				NE 1/4 32-19-	16		
	DATE	STARTED	08/07/2023	COMPLE	TEI	D	08/07/	2023	80	GROL	JND E	ELEVA	ATION		779.07m	<u>N</u>	5612596.600	E	414519.	200
	DRILI	LING CONTRACT	OR	Va	al's	Drilling			0	GROL	JND \	VATE	R ELE	VATIO	N / DEPT	н				
	CORI	NG TYPE	HQ3		R (m	nm)	61	1	C	DATE	GRO	UND	WATE	R REC	ORDED					
Depth (m)	SOIL SYMBOL	C	Soil)escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) <u>10 2</u> 50 1 <u>POCKE</u>	URE CC C - LIQ) Blows/ 20 3/ 00 15 T PEN	DNTENT UID 300 mm 0 40 0 200 (kPa)		REMARK	S	Standpipe/ Instrument	Elevation (m)
		10.2 m - 120 10.6 m - 56° f 10.8 m - bedo widely spaced f 10.9 m - beco bedded sandsto	mm of core los fracture ding fracture, b fractures oming weak, sc one layers	ecoming		RC5	10.35 - 11.87	5	97 100 97	1										768
		11.8 m - trace 12.1 m - 75° 1	e shell fragmen fracture	ts		RC6	11.87 - 13.39	6	100 100 100	1										767-
		13.0 m - 550 extremely weak 13.6 m - 180 shale 14.2 m - 78° 1	mm of very hig < shale mm of strong c fracture	_l h plastic, calcified		RC7	13.39 - 14.91	7	100 100 100	1										766
																				763
- - - - - - - - - - - - - - - - - - -																				760
		Notes:							Mon	itorir	ng Ins	stalla	tion Pi	pe W	ork		-			
11/01/202	4	Target depth of a well, refer to coring.	f 14 m achieved diagram. Packo	d. Corehol er test con	le c npl	omplet eted af	ed as ter	D	epth T 0.00 13.40	ор	Dep	th Bo 13.40 14.91	ttom)	Pipe PL SLO	AIN TTED	Logg Revi	ged By: ewed By:	C C	<u>. Tams</u> . Braun	

		MP		a divis	io	n of	Enc	ilo	be						COR	EHOLE No :	23CH70	0B
							E.1.9	,										01 0
	CLIE	NT		Eastern Irri	igati	on Distr	ict		P	ROJ	IECT I	NAME	Ξ		S	nake Lake Reservoi	ir Expansion	
	PROJ			1560)-193	3-00			P	ROJ	IECT I					NE 1/4 32-19	<u>)-16</u>	
		STARTED	08/07/2023		ETEI	D	08/08/	2023	<u> </u>	GROU	JND E				779.05m	N 5612605.40	<u> </u>	00
			10R		/al's	Drilling			(GROU						1		
			Other			nm)	1	r	L		GRU		WAIER	REC	ORDED			
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTUI PLASTIC SPT (N) E <u>10 20</u> 50 100 POCKET	RE CC - LIQ Blows/) <u>3</u> 0 15 - PEN	DNTENT UID /300 mm 0 40 50 200 (kPa)	REMAR	Standpipe	Elevation (m)
-1 -2 -3 -4 -5 -6 -7 -7 -8 -9																		778 7777 7776 7775 7774 7773 7772 7772 7771
<u> </u>	1	Notes:					L		Moni	itorir	na Ins	stalla	tion Pin	e W	ork			
		100 mm PVC	well installed t	pun	nping t	est.	D	epth Te	op	Dept	th Bo	ottom	Pipe	е Туре				
					0.00			22.00		PL SL O		Logged By:	C. Tams					
11/01/2024	4						22.00		4	_0.00	-	510		Reviewed By:	C. Braun			

		MP		a divis	io	n of	Enc	ilo	be				COR	EHOLE No	23CH700B
				F		Dist		,							
				Eastern Irri			ICI		P				8		Ir Expansion
	PRUJ		08/07/2022		-193	<u>-00</u>	00/00/	2022					770.05m	N 5612605.40	0 = 414525400
			00/07/2023			Drilling	00/00/	2023						N0012000.40	<u> </u>
			Othor		ais D(m				(n	
			Other			iiii)	T	1	L		GRU		RECORDED		
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOISTUF ⊢ PLASTIC ■ SPT (N) E 10 20 50 100 ▲ POCKET 	RE CONTENT - LIQUID Blows/300 mm <u>30 40</u> - 150 200 PEN (kPa)	REMAR	Standpipe Instrumen Elevation (m)
															768- 767- 767- 766- 765- 764- 764- 763- 763- 763-
		Notes: 100 mm PVC	well installed t	o 25 m for	pun	nping t	est.	D	Mon epth T 0.00 22.00	itorir	ng Ins Dept	stallation Pip th Bottom 22.00 25.00	e Work Pipe Type PLAIN SLOTTED	Logged By:	C. Tams

		MP		a divis	io	n of	Eng	glo	be			COREHOLE No : 23CH700) B 0F 3
		NT		Fastern Irr	idati	on Distr	ict		F	PRO.I	FCT	NAME Snake Lake Reservoir Expansion	
	PROJ	IECT NUMBER		1560)-193	3-00			· F	PROJ	ECTI	LOCATION NE 1/4 32-19-16	
	DATE	STARTED	08/07/2023	COMPLI	ETE	D	08/08/	2023	 3 G	GROU	JND E	ELEVATION 779.05m N 5612605.400 E 414525.40	00
	DRILI	_ING CONTRAC			/al's	Drillina	00,00,		C	ROL	JND V	WATER ELEVATION / DEPTH	
	CORI	NG TYPE	Other	DIAMETE	ER (n	nm)			`	ATE	GRO		
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	racture Index (#/m)	10 10 10 10 10 10 10 10 10 10 10 10 10 1	• MOISTURE CONTENT H PLASTIC - LIQUID SPT (N) Blows/300 mm 10 20 50 100	Elevation (m)
										ш	Σ	POCKET PEN (kPa)	
-22													- - 757- - 755- - 755- - 754- - - 753-
27													752-
-28													751-
29 													750-
		Notes:					•		Mon	itorir	ng Ins	istallation Pipe Work	
11/01/2024	1	100 mm PVC	well installed t	o 25 m for	pun	nping t	est.	D	epth T 0.00 22.00	op	Dept	bith Bottom Pipe Type 22.00 PLAIN 25.00 SLOTTED Reviewed By: C. Tams	



		NT		Eastern Irr	on Distr	ct		F	PROJ	ECTN	IAME	Ξ			Sn	ake Lak	e Reservoi	r Expar	nsion			
	PROJ	IECT NUMBER		1560	-193	3-00			F	PROJ	ECT L	.OCA	TION				NE	E 1/4 32-19	-16			
	DATE	STARTED	08/09/2023		ETE	D	08/09/2	2023	80	GROL	JND E	LEV	ATION		770.2	8m	_ N_56	612525.300) Е	416	317.	500
	DRILI	LING CONTRACT	OR	١	/al's	Drilling			0	GROL	JND V	VATE	RELE	VATIO	N / DE	PTH						
	CORI	NG TYPE	HQ3	DIAMETE	ER (n	nm)	61		C	DATE	GRO	UND	WATE	R REC	ORDE	D						
Depth (m)	SOIL SYMBOL	D	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLASTI SPT (N 10 2 50 1 POCKE	URE CC IC - LIQ) Blows/ 20 3 00 15 ET PEN	ONTEN UID /300 mr 0 4(50 20 (kPa)	T n <u>)</u> 0		REMAR	<s< td=""><td></td><td>Instrument</td><td>Elevation (m)</td></s<>		Instrument	Elevation (m)
-		SILT AND SAN low plastic, ligh	D, some clay, o It brown, trace	dry, firm, root																X	1 🛛	770-
					=	AU1					3.3	•	н				0.6 m ·	- LL = 17. PL = 13%	1% %			-
	\geq	CLAY TILL, silt gravel, damp, s	y, sandy, trace stiff, low to med	fine lium	-	AU2											0.6 m ·	PI = 4.1 - Sand =	%			769-
-	··	plastic, brown, precipitates	some white	/													62.5%	Silt = 26.	.4%			-
2 2	·	SHALE (Weath some sand, co	nered), clayey, s mpletely weath	silty, ered.	-	AU3												Clay = 1	1.1%			
-	· _ · · ·	dark brown to g	grey mottling, d	amp, o hard																		/68
-3	· · · · ·	soil, blocky, sor	me oxidation st	aining	=	AU4 RC1	3 05 -	1	21	13							3 05 m	n - Switche	⊳d			
-	·	3.0 m - 100 m 3.3 m - becon	nm of core loss ning trace sand	d, highly			4.57	•	93								from 6	" SSA to H	HQ3			767-
-	·	weathered	0	, U ,					03								TOLATY	Coning				-
-4 -	···	-																				766-
-	·	4.4 m - becon	ning trace gyps	sum		RC2	4.57 -	2	44	7												100
-5	· <u>··</u> ·	crystals 4.6 m - 150 m	nm of core loss				6.09		90 59													-
-	· · · · · ·	5.0 m - some	crumbled core	1																		765
-	·																					-
-6	·	5.9 m - some	crumbled core	1		RC3	6.09 -	3	61	5												764
-	· · · ·	6.4 m - becon weathered	ning moderatel	У			7.61		86													704
-7		$6.8 \text{ m} - 83^{\circ} \text{ fra}$	acture																			
-	·	7.1 m - 76° fra	acture																			763-
	· ·	7.4 m - 100 m	n of core loss	lale		RC4	7.61 - 9 13	4	94 96	3												
-8	·	8.2 m - beddi 8.3 m - 65° fra	ng fracture acture						95													762
-	··	8.4 m - becon very weak, moo	ning slightly we derately widely	eathered, spaced																		702
-9		fractures 9.0 m - 68° fra	acture					_														
-	··	9.1 m - becon	9.13 - 10.65	5	97	3												761—				
-	··	9.3 m - 78° fra			97													-				
_	••									;												
		Notes:	od oo		Mon	itorir	ng Ins	talla	tion P	ipe W	ork											
	Target depth of 27 m achieved. Corehole completed a well, refer to diagram. Packer test completed after									ор	Dept	h Bo	ottom	Pipe	е Туре ДІЛІ	<u>.</u>		Dun	~	、 .		
		coring.			25.90		2	27.37	7	SLO	TTE) _	ogged	ву:	C	. Ian	<u>IS</u>					
11/01/2024											F	eviewe	eu By:	C	. Brai	111						



	CLIE	NT		Eastern Irri	gati	on Distr	ict		P	ROJ	ECTI	NAM	E		Sr	iake L	.ake Rese	rvoir E	Expan	sion		
	PRO	JECT NUMBER		1560-	-19	3-00			P	ROJ	ECT I		ATION	_			NE 1/4 32	-19-1	6			
	DATE	STARTED	08/09/2023		TE	D _	08/09/	2023		ROL	JND E	ELEV	ATION	_	770.28m	_ N	5612525	.300	Ε.	416	317.5	00
	DRIL	LING CONTRACT	OR	V	′al's	Drilling			0	ROL	JND V	VATE	ER ELE	VATIC	N / DEPTH							
	COR	ING TYPE	HQ3	DIAMETE	R (r	nm)	6		C	ATE	GRO	UND	WATE	RRE	CORDED							
Depth (m)	SOIL SYMBOL	C	Soil lescription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKI	URE C IC - LIC I) Blows 20 : 100 1 ET PEN	ONTENT QUID 5/300 mm 30 40 50 200 4 (kPa)	-	REMA	\RKS	3	Ctondaino/	otariupuper Instrument	Elevation (m)
		10.1 m - 64° 1	fracture																			760-
11		SHALE, silty, c grey, damp, hig moderately wid thinly laminated 10.6 m - becc thin weakly cen	layey, unweath gh plastic, very lely spaced fra d ming some ve nented layers fracture	nered, v weak, actures, ery thin to		RC6	10.65 - 12.17	6	98 100 98	1				-								759
		11.4 m - bedo widely spaced 1 12.3 m - beco	ling fracture, b fractures oming weak	ecoming		RC7	12.17 - 13.69	7	106 106 106	0												758
						RC8	13.69 - 15.21	8	99 100 99	1												757
		14.7 m - 72° 1 15.5 m - 41° 1	fracture fracture			RC9	15.21 - 16.73	9	95 100 96	2												755
		16.1 m - becc 16.3 m - 67° 1 16.4 m - som 16.8 m - 50 m inclusions 16.9 m - becc	oming very wea fracture e crumbled co nm of bentoniti oming weak	ak re c		RC10	16.73 - 18.25	10	87 100 91	1												754
		17.9 m - 60° 1 18.0 m - bedo crumbled core 18.0 m - 420 18.2 m - 90 m	fracture ling fracture w mm very weak ım of core loss	iith some k layer s		RC11	18.25 - 19.77	11	84 94 84	1												752-
- - - - - - -		19.5 m - 65° 1 19.6 m - trace 19.6 m - som	fracture e shell fragmer e crumbled co	nts re		RC12	19.77	12	97	1												751
11/01/202	4	Notes: Target depth of a well, refer to coring.	27 m achieve diagram. Pack	d. Coreho er test cor	le c npl	complet eted af	ed as ter	D	Moni epth To 0.00 25.90	itorin op	ig Ins Dept	stalla th Bo 25.9 27.3	ation P ottom 0 7	Pipe W Pip P SLC	/ork e Type LAIN DTTED F	.ogge Revie	ed By: wed By:		<u> </u>	. Tam Brau	is in	



PAGE 3 0F 3

	CLIE	NT	E	Eastern Irriga	tion Distr	ict		F	PROJ	ECT	NAME	_	Sn	ake L	ake Reservoir I	Expar	ision	
	PROJ	JECT NUMBER		1560-1	93-00			F	PROJ	ECTI	LOCATIO	N _			NE 1/4 32-19-1	6		
	DATE	STARTED	08/09/2023	COMPLET	ED	08/09/	/2023	30	GROL	JND E	ELEVATIO)N _	770.28m	_ N _	5612525.300	_ E .	416317.	.500
	DRILL	LING CONTRACT	TOR	Val	's Drilling			0	3ROL	JND V	VATER EL		N / DEPTH					
			HQ3		(mm)	61 	<u>1</u> T	L	DATE	GRU	UND WAI	FER REG		- <u> </u>				 -T
Depth (m)	SOIL SYMBOL	E	Soil Description	Samula Tune	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOIS ⊢ PLAS ■ SPT 10 50 <u>POC</u> 	STURE C STIC - LIC (N) Blows 20 100 1 CKET <u>PEN</u>	ONTENT 2UID 3/300 mm 30 40 50 200 N (kPa)		REMARK	S	Standpipe Instrumen	Elevation (m)
F		-				- 21 29		100										750-
- - - - - - 21 - - - -		20.6 m - 77° f 20.8 m - 78°	fracture fracture		RC13	21.29	13	86	1									749-
- - 22 			fracture			22.81		90						-				748-
-23		22.7 m - 130 -	mm of core loss	3	RC14	22.81	14	88 88	1				ļ!					
- - - - - - - - - - - - - - - - - - -		- 23.3 m - bedo	ding fracture			24.33		88										747
Ē	E	24.2 m - 180	mm of core lose	s	RC15	24.33	15	82	3									746-
-25		24.5 m - verti 24.7 m - 64° 25.2 m - 79°	ical fractures fracture fracture			- 25.85		101 84										745
- 26 		25.8 m - 130	mm of core lose	s	RC16	25.85	16	91 91	1									
- - 		26.5 m - bedo	ding fracture			21.31		91										744
				•'	 													/43
- 28 													ļ					
																		742-
-29																		
																		741
													<u> </u>	-				
		Notes: Target depth o a well, refer to	f 27 m achieved diagram. Packe	I. Corehole er test com	complet	ted as fter	D	Mon epth T	itorin op	ıg Ins Dept	stallation th Botton 25.90	Pipe W	/ork e Type				Termo	
11/01/202	24	coring.			25.90)		27.37	SLC	DTTED F	Revie	юву wed By:	C	<u>. Tams</u> . Braun				



	CLIEI	NT		Eastern Irri	gatio	on Distri	ct		F	PROJ	ECTI	NAM	E			Sna	ke La	ke Resei	voir E	xpan	sion		
	PRO	JECT NUMBER		1560	-193	3-00			F	PROJ	ECT I		ATION				N	E 1/4 32	-19-1	6			
	DATE	STARTED	06/13/2023		TE	D	06/14/	2023	<u> </u>	BROL	JND E	ELEV	ATION	_	771.21	m	N_5	5609474	300	Ε_	416	207.2	.00
	DRIL	LING CONTRACT	OR	V	al's	Drilling			0	ROL	JND V	VATE	R ELE	VATIC	N / DEP	тн							
	CORI	ING TYPE	HQ3	DIAMETE	R (m	nm)	61		C	DATE	GRO	UND	WATE	R REC									
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 POCK	TURE C TIC - LIC I) Blows 20 3 100 1 ET PEN	ONTENT QUID 5/300 mm 30 40 50 200 I (kPa)			REMA	ARKS	3	Ctondaria Ctondaria	Instrument	Elevation (m)
		CLAY, silty, sor medium plastic SHALE (Weath highly weather mottling, down	ne sand, damp c, light brown nered), clayey, ed, dark browr	o, stiff, silty, n to grey	Ŧ	AU1																	771
	· · · · · · · · · · · · · · · · · · ·	weak to hard s laminated, som trace white pre crystals	, high plastic, e oil, blocky, thin ne oxidation sta cipitates, trace	aining, gypsum	= X	AU2 SPT1																	770
- 2 					= =	AU3 AU4																	769
-3		3.3 m - 70° fr <u>3.4 m - some</u> SHALE, clayey weathered, dar mottling, damp	acture <u>crumbled core</u> , silty, moderat k brown to gre , high plastic, e	e tely ey extremely	Ĭ	RC1 SPT2	3.00 - 4.52	1	89 100 93	4													768
- 4 		fractures, thinly oxidation staini crystals 4.0 m - 78° fr. 5.1 m - horizo	/ laminated, so / laminated, so ing, trace gyps acture ontal fracture	cea ome sum		RC2	4.52 - 6.04	2	96 97 96	3													767
- - - - - - - - - - - - - - - - - - -		5.4 m - 64° fr 5.6 m - 56° fr 5.7 m - 72° fr 6.0 m - 40 mr 6.2 m - sub-h 6.4 m - 74° fr 6.5 m - mech	acture acture acture n of core loss orizontal fractu acture anically fractur	ure		RC3	6.04 - 7.56	3	66 97 70	7													765
- - - - - - - - - - - - - - - - - - -		6.8 m - 50 mr 7.0 m - 77° fr 7.2 m - 60° fr 7.5 m - 60 mr 7.7 m - becor oxidation staini	m of crumbled acture acture m of core loss ning grey, trac ng	e		RC4	7.56 - 9.08	4	59 84 70	3													764
	 8.1 m - 34° fracture 8.2 m - becoming very weak 8.4 m - 74° fracture 8.6 m - 70° fracture 8.8 m - 240 mm of core loss 9.1 m - becoming slightly weathered weak 9.7 m - 42° fracture 9.8 m - 74° fracture 						9.08 - 10.60	5	80 100 84	5													763
		Notes: Target depth of	f 20 m achieve	d. Packer	tesi	t comp	eted	D	Mon epth T	itorir op	ig Ins Dept	stalla th Bo	ation F	Pipe W	/ork e Type								
		after coring. Co diagram.	prehole comple	eted as a v	vell,	, refer t	0		0.00			18.5	0	P		Lo	ogged	By:		C.	. Tarr	IS	
11/01/2024	/01/2024											20.0	<u> </u>			Re	eview	ed By:		<u> </u>	Brau	<u>in</u>	



	CLIE	NT		Eastern Irri	igati	ion Distr	ict		F	PROJ	ECT	NAM	IE	_		Sna	ake La	ake Res	ervoir E	Expan	sion		
	PROJ	IECT NUMBER		1560	-19	3-00			F	ROJ	ECT	LOC	ATION	_			1	NE 1/4 3	2-19-1	6			
	DATE	STARTED	06/13/2023	COMPLE	ETE	D	06/14/	2023		ROL	JND E	ELEV	ATION	_	771.	21m	N	560947	4.300	E	416	207.2	:00
	DRILI	LING CONTRACT	OR		/al's	Drilling			Ģ	ROL	JND \	NATI	ER ELE	VATIO) DN / DE	PTH							
	CORI	NG TYPE	HQ3	DIAMETE	ER (r	nm)	61		C	DATE	GRO) WATE	R RE	CORD	ED							
	1			_	Ň	,					-	T										s t	
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKI	URE C IC - LIC) Blows 20 : 100 1 ET PEN	ONTEN QUID 5/300 m 30 4 50 20	m 0 00		REM	IARKS	3	Ctandara C	סיושוישי Instrumen	Elevation (m)
-		10.1 m - becc	oming some ve	ry thin																			761-
- - - 		weakly cement 10.4 m - 41° 10.7 m - 75° 10.8 m - becc	ed layers fracture fracture oming unweath	ered,		RC6	10.60 - 12.12	6	93 100 100	2													760
		11.4 m - 69° f	fractures, unox fracture	odized																			-
- 12 - - - -		12.1 m - becc strong	oming moderat	ely		RC7	12.12 - 13.64	7	100 100 100	1													759
13 		13.0 m - horiz 13.3 m - horiz	zontal fracture zontal fracture			RC8	13.64	8	100	1													758
		14.1 m - 76°	fracture				- 15.16		100														757
E		14.4 m - noriz	zontal fracture																				_
15 		15.6 m - 61°	fracture			RC9	15.16 - 16.68	9	76 84 78	2													756
-16		15.7 m - 73°	fracture																				-
- - - - - - - - - - - - - - - - - - -		16.2 m - horiz extremely weał 16.4 m - 240 16.7 m - 100 16.8 m - verti	zontal fracture < clay infill mm of core los mm of crumble cal fracture	with ss ed core		RC10	16.68 _ 18.20	10	71 96 86	1													755
																							-
		18.0 m - 35° 1 18.1 m - 60 n	fracture nm of core loss fracture	5		RC11	18.20 - 19.72	11	85 100 86	1													753-
-19		10.0 III - 20	nacture																				-
		19.5 m - 41° 19.8 m - 200 calcified shale 19.9 m - 60 n	fracture mm of very str nm of crumbled	ong d core		RC12	19.72	12	39	2													752
		Notes:					•		Mon	itorir	ng Ins	stall:	ation P	ipe V	/ork								
		Target depth of after coring. Co	f 20 m achieve orehole comple	d. Packer eted as a v	tes vell	st comp I, refer t	leted :o	D	epth T	op	Dep	th B	ottom	Pip	е Тур I ДІЛ	e		d D		~	Ter		
		diagram.	,						18.50		:	20.0	0	SLO	DTTE		ogge	а Ву:		<u> </u>	<u> </u>	IS	
11/01/2024	1															R	eviev	ved By:		<u> </u>	Brau	IN	

	CLIEN	ΝT		Eastern Ir	rigatio	on Distr	ict		P	ROJ	ECTN	NAME				Sna	ake Lake Reservoi	r Expansio	n	
	PROJ	ECT NUMBER		156	0-193	3-00			P	ROJ	ECTL	OCA	TION				NE 1/4 32-19	-16	40007	
	DATE	STARTED	06/13/2023	COMPL	ETE	D	06/14/	2023	<u> </u>	ROL					771.2	1m	_ N _ 5609474.300) E _4	16207.3	200
				DIAMET	Val's	Drilling	0.		6	ROU					N / DE	PIH				
	CORII		HQ3		ER (m	1m)	6	1		AIE	GRO	UND	WAIE	K REC	ORDE	<u>י</u> ש ד			t /	 T
Depth (m)	SOIL SYMBOL	E	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTU PLASTI SPT (N) <u>10 2</u> 50 10	JRE CC C - LIQ Blows/ 20 3 00 15	ONTEN UID /300 mr <u>0 4(</u> 50 20	T n <u>)</u> 0	REMAR	٨S	Standpipe Instrumen	Elevation (m)
		20.1 m - 78° 20.4 m - sub- 20.5 m - 50 n bentonitic clay 20.6 m - 620	fracture horizontal frac nm of extreme mm of core lo	cture ely weak			21.24		59 43					I PEN	<u>(kPa)</u>					751-
22 																749-				
																				748-
																				746-
26																				745-
27																				744-
- 28 																				743-
29 																				742-
								L					i 							
		Notes:	f 20 m achiow	od Packa	r too	toomn	lotod		Mon	itorir	ig Ins	talla	tion Pi	pe W	ork					
		after coring. Co	prehole compl	eted as a	well	, refer	to	D	epth To	op	Dept	h Bo	ttom	Pipe ID		<u>.</u>	. 5	<u> </u>		
	diagram.								18.50		2	20.00)	SLO	TTEC) R	oggea ву: eviewed By:	C. Ia C. Br	ams raun	



COREHOLE No : 23CH704B

	CLIE	NT		Eastern Irri	igati	on Distri	ct		P	ROJ	ECT	NAME	Ξ			Sna	ake Lake Reservoir	Expar	nsion		_
	PROJ	JECT NUMBER		1560	-193	3-00			P	ROJ	ECT I		TION				NE 1/4 32-19-	16			_
	DATE	STARTED	06/16/2023		ETE	D _	06/17/	2023		ROL	JND E	ELEVA	ATION	_	771.3	2m	N 5609458.400	_ E .	41620	94.500	_
	DRILI	LING CONTRACT	OR	V	/al's	Drilling			0	ROL	JND V	VATE	R ELE	VATIO	N / DE	PTH					_
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61	1	C	ATE	GRO	UND	WATE	R REC	ORDE	D					_
Depth (m)	SOIL SYMBOL	D	Soil)escription		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 POCK	TURE CC TIC - LIQ I) Blows/ 20 3 100 15 ET PEN	DNTEN ⁻ UID /300 mn <u>0 40</u> 50 200 (kPa)	Г 1 0 0	REMARK	S	Standpipe/	Elevation	(m)
		TOPSOIL, silty, frace gravel, dr brown, trace ro SHALE, clayey weathered, bro damp, high plas hard soil, block some oxidation crystals, trace v SHALE, silty, cl weathered, bro	, sandy, some y, firm, low pla ot hairs ; silty, complet wn to grey mc stic, extremely sy, thinly lamin: n staining, trac white precipita layey, modera wn to dark gre	clay, astic, light tely ottling, / weak to ated, e gypsum tes tely ey		AU1 AU2 RC1	1.50 - 3.02	1	63 75 64	1							1.5 m - No samp kept this hole.	les		771 770 769	
		mottling, damp, weak, moderati fractures, thinly oxidation staini crystals 1.5 m - 380 m 1.9 m - 56° fra 3.2 m - 100 m	, high plastic, (ely widely spa (laminated, sc ng, trace gyps nm of core los: acture nm of mechan	extremely ced ome sum s ical rubble		RC2	3.02 - 4.54	2	62 99 80	2										768	
		3.5 m - 80 mr 4.5 m - mech	n of mechanic anically fractu	al rubble		RC3	4.54 - 6.06	3	55 100 95	1									I	767 766	
		6.1 m - 220 m	ım of core loss	S		RC4	6.06 - 7.58	4	19 86 46	2				-					I	765	
		7.2 m - becon grey 7.6 m - mech	ning slightly w anically fractu	eathered, red run		RC5	7.58 - 9.10	5	0 100 66	2									I	764 763	
		9.1 m - mecha 9.4 m - becon	anically fractur ning very wea	red run k		RC6	9.10 - 10.62	6	23 89 72	2				-						762	
		Notes:							Mon	itorin	ng Ins	stalla	tion F	ipe W	ork	7			I		
11/01/2024	1	Target depth of a well, refer to o	[°] 25 m achieve diagram.	ole c	omplet	ed as	D	epth To 0.00 16.00	op	Dept	h Bo 16.00 19.00	ottom))	Pipe PL SLO	e Type AIN TTEC	, Lo , R	ogged By: eviewed By:	C C	<u>. Tams</u> . Braun		_	



COREHOLE No : 23CH704B

	CLIEN	T	E	Eastern Irrig	ation Dis	trict		F	PROJ	ECT	NAME		Sna	ake Lake	Reservoir I	Expan	sion	
	PROJ	IECT NUMBER		1560-1	93-00			F	PROJ	ECT I	LOCATIO	N		NE	1/4 32-19-1	6		
	DATE	STARTED	06/16/2023	COMPLET	ED _	06/17/	2023	<u> </u>	GROL	JND E	ELEVATIO	N _	771.32m	N_560	09458.400	_ E _	416204	.500
	DRILL	ING CONTRACT	OR	Va	l's Drilling	9			GROL	JND V	WATER EL	LEVATIC	N / DEPTH					
	CORI	NG TYPE	HQ3	DIAMETER	(mm)	6	1		DATE	GRO	UND WAT	TER REC	CORDED					
Depth (m)	SOIL SYMBOL	C	Soil Description	F	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	 MOIS ⊢ PLAS SPT 10 50 POC 	STURE C STIC - LIC (N) Blows 20 3 100 1 CKET PEN	ONTENT 2UID 3/300 mm 30 40 50 200 ((kPa)	F	REMARK	3	Standpipe/ Instrument	Elevation (m)
		10.4 m - 170 11.2 m - becc widely spaced f	mm of core los oming unweathe fractures, unoxe	s ered, odized	RC7	10.62	7	89 93 93	1									761
		12.0 m - 100 12.7 m - 62° 1	mm of core los fracture	s	RC8	12.14 - 13.66	8	100 100 100	1									759
14		13.7 m - becc 13.8 m - 78° 14.0 m - 71° 1	oming weak fracture fracture		RC9	13.66 15.18	9	100 100 100	2									758
15 15 		14.8 m - 68° t 15.2 m - becc cemented layer 15.5 m - 66° t 15.6 m - 44° t	fracture oming some thi rs fracture fracture	n weakly	RC10) 15.18 - 16.70	10	95 105 98	1									756
		17.3 m - 74° 1	fracture		RC11	16.70 - 18.22	11	93 101 96	1									755
- 		18.6 m - bedo	ding fracture		RC12	2 18.22	12	91 93 91	1					19 m - F in - insta	Hole sloug	hed		753
- - - - - -		19.4 m - 150 shale 19.6 m - 100	mm of strong c	alcified s	RC13	3 19.74	13	67	1					19 m.				752
11/01/2024	4	Notes: Target depth of a well, refer to	f 25 m achieved diagram.	d. Corehole	e comple	eted as	D	Mon epth T 0.00 16.00	itorir op	ng Ins Dept	stallation th Botton 16.00 19.00	Pipe W n Pip Pi SLC	/ork e Type LAIN Lo DTTED R	ogged B eviewed	by:	<u> </u>	. Tams Braun	



COREHOLE No : 23CH704B

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	CLIEN	NT	Ea	astern Irriga	tion Distr	ict		F	PROJ	ECTI	NAM	E			Snake	e Lake R	eservoir E	Expan	sion	
	PROJ	IECT NUMBER		1560-19	93-00			F	PROJ	ECTI	LOCA	ATION	_			NE 1/	4 32-19-1	6		
	DATE	STARTED	06/16/2023	COMPLET	ED	06/17/	2023	<u> </u>	GROL	JND E	ELEV	ATION	_	771.32r	n	N_5609	458.400	E	416204	.500
	DRILI	ING CONTRACT	OR	Val	s Drilling				GROL	JND V	NATE	RELE	VATIO	N / DEP	тн _					
	CORI	NG TYPE	HQ3	DIAMETER ((mm)	61	1		DATE	GRO	UND	WATE	R REC	CORDED) _					
Depth (m)	SOIL SYMBOL	E	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTI PLASTI SPT (N) 10 2 50 11 POCKE	URE CI IC - LIC) Blows 20 3 00 1: ET PEN	ONTENT QUID 5/300 mm 30 40 50 200 I (KPa)		RI	EMARK	6	Standpipe/ Instrument	Elevation (m)
- - - - - -		20.3 m - bedo 20.4 m - beco strong	ding fracture oming moderatel	у		- 21.26		70 67												751-
21		20.8 m - 450 recovered on n 21.4 m - 100 21.5 m - 69° t 21.6 m - becc spaced fracture	mm of core loss ext run mm weak layer fracture oming very widel es	, У	RC14	21.26 - 22.78	14	126 126 126	1											750
-23					RC15	22.78 - 24.30	15	112 112 112	0											748-
-24		25.7 m 80 m	nm of coro loss		RC16	24.30 	16	95 95 95	0											747
-26 		4 <u>.20.7 m - 00 m</u>																		745
- - - - - - - - - - - - - - - - - - -																				744
																				742
		Notoo																		
11/01/2024	4	Target depth of a well, refer to	f 25 m achieved. diagram.	Corehole	complet	ted as	D	Mon epth T 0.00 16.00	itorir op	ng Ins Dept	stalla th Bc 16.00 19.00	ottom D D D	ipe W Pipe Pl SLC	/ork e Type LAIN DTTED	Log	gged By viewed I	 Зу:	<u> </u>	. Tams . Braun	



	CLIEI	NT	E	astern Irri	gati	on Distri	ict		F	PROJ	ECTI	NAME				Sna	ke Lake Reserv	oir Ex	pan	sion		
	PRO	JECT NUMBER		1560-	-193	3-00			F	PROJ	ECTI	LOCA	TION				NE 1/4 32-1	9-16				
	DATE	STARTED	06/12/2023	COMPLE	TE	D	06/12/	2023	(GROL	JND E	ELEVA	TION		776.43	m	N 5609460.7	00	Ε_	41498	6.100)
	DRILI	LING CONTRACT	OR	V	/al's	Drilling			0	GROL	JND V	VATE	R ELE	VATIO	V / DEP	TH .						
	CORI	ING TYPE	HQ3	DIAMETE	R (n	nm)	61	I	[DATE	GRO	UND	WATE	R REC	ORDED) .						
Depth (m)	SOIL SYMBOL	D	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE CC C - LIQI) Blows/ 20 30 00 15 T PEN	DNTENT JID 300 mm 0 40 0 200 (kPa)		REMAR	RKS		Standpipe/	Elevation	(m)
		TOPSOIL, clay trace gravel, m plastic, brown, CLAY TILL, sar gravel, moist, v plastic, brown, staining, trace g SHALE (Weath completely weat grey mottling, c extremely weat thinly laminated staining, trace g gypsum crystal 2.0 m - becom dark grey 3.4 m - horized crumbled core SHALE, clayey weathered, gre extremely weat	ey, sandy, some oist, stiff, mediut trace root hairs ndy, silty, trace f rery stiff, mediur some oxidation gypsum crystals lered), clayey, s athered, dark br damp, high plast k to hard soil, bl d, some oxidatic white precipitate s ning highly wea ontal fracture with s, silty, highly y, damp, high plast k, blocky, closel es thinly lamina	e silt, m ine n s wilty, own to tic, oocky, yn es, trace thered, th some lastic, y ted		AU1 AU2 SPT1 AU3 AU4 SPT2 RC1 RC2	3.10 - 4.62 4.62 -	1	82 100 95 91	5							3.5 m - Switch otary coring	ed to			דד דד דד דד דד	74 773 773 773
		some oxidation crystals 3.8 m - horizo 3.8 m - horizo 4.2 m - 80° fra 4.4 m - becon weathered 4.6 m - 70 mr 4.7 m - 88° fra 4.8 m - becon	es, thinly lamina e staining, trace ontal fracture n bentonite sea acture ning moderately n of mechanica acture ning slightly wea	rea, gypsum m / I rubble athered,		RC3	6.14 6.14 - 7.66	3	100 95 71 100 75	4											77 77	
		very weak, moc fractures, unoxo 5.7 m - 84° fra 6.1 m - 200 m 6.3 m - 300 m fractured area 6.6 m - 53° fra crumbled core	derately widely s odized acture nm of slough nm mechanically acture followed	spaced / by		RC4	7.66 - 9.18	4	9 50 17	20			-								76 76	39
		6.7 m - 51° fra 6.9 m - 68° fra 7.0 m - 39° fra 7.5 m - becon cemented layer	acture acture acture ning some thin v s	weakly		RC5	9.18 - 10.70	5	92 100 95	3											76	37-
		Notes:							Mon	itorin	ig Ins	stallat	tion Pi	pe Wo	ork	1						
11/01/2024	1	Target depth of after coring. Co diagram.	[:] 15 m achieved prehole complet	. Packer ed as a v	tes vell	t compl , refer t	leted o	D	epth T 0.00 12.20	ōp)	Dept	th Bot 12.20 15.20	ttom	Pipe PL SLO	Type AIN TTED	Lo Re	ogged By: _ eviewed By: _		<u>С</u> .	<u>. Tams</u> Braun		



	CLIEN	NT		Eastern Irr	igati	on Distr	ct		F	PROJ	IECT	NAME				Snake	e Lake Re	servoir E	Expan	sion	
	PROJ	IECT NUMBER		1560	-193	3-00			F	PROJ	IECT	LOCA	TION				NE 1/4	32-19-1	6		
	DATE	STARTED	06/12/2023		ETE	D _	06/12/	2023	<u> </u>	GROU	JND E	ELEVA	TION		776.43n	<u>n</u> N	N 56094	60.700	Ε.	414986	.100
	DRILL	ING CONTRACT	OR	١	/al's	Drilling			0	GROL	JND \	NATEI	R ELE	VATIO	N / DEPT	н _					
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61		C	DATE	GRC	UND	WATE	R REC	ORDED						
Depth (m)	SOIL SYMBOL	E	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 2 50 1 POCKE	URE CO IC - LIQ) Blows 20 3 00 15 ET PEN	ONTENT UID /300 mm 0 40 50 200 (kPa)		RE	MARKS	6	Standpipe/ Instrument	Elevation (m)
- - - - - - - - - - - - - - - - - - -		7.7 m - mecn 7.9 m - 360 n 8.3 m - 760 n 9.2 m - mech 9.5 m - 74° fr 9.5 m - becor weak 9.8 m - 73° fr vertical fracture	anically fracture nm of crumbled nm of core loss anically fracture acture ning unweathe acture followed	ed area I core ed run red,		RC6	10.70 - 12.22	6	86 96 88	3											766
12		10.4 m - 63° 10.5 m - 76° f 11.0 m - 76° f 11.1 m - becc moderately stro 11.8 m - 81° f	fracture fracture fracture oming very silty ong fracture	,		RC7	12.22 - 13.74	7	95 100 100	2											764-
-14 -15 15 		11.8 m - 50 m 11.9 m - 100 12.0 m - 140 shale 12.2 m - 60 n 12.4 m - 73° 12.5 m - 40° fractures 13.7 m - becc 14.6 m - 74° 14.6 m - 74° 14.9 m - horiz some crumbled 15.2 m - 60 n	am of crumbled mm of bentonit mm of strong c and of core loss fracture fracture poming very clay fracture zontal fracture v to core and of core loss	core tic clay calcified		RC8	13.74	8	96 96 96	2											763 761 760- 759- 758- 758-
Ē																					-
├──		Notes:							Marc	ite -l			lior D	ine 14	ork						
11/01/2024	4	Target depth of after coring. Co diagram.	f 15 m achieved prehole comple	d. Packer ted as a v	tes well	t comp , refer t	leted o	D	epth T 0.00 12.20	op	Dep	th Bo 12.20 15.20	ttom	Pipe VV Pipe PL SLC	Type AIN TTED	Logo Rev	ged By: iewed B	y:	C C.	<u>. Tams</u> Braun	



	CLIEN	NT	E	Eastern Irri	gati	on Distri	ct		F	PROJ		JAME	Ξ			Snake Lake Res	ervoir E	Expan	ision		
	PROJ	IECT NUMBER		1560-	-193	3-00			F	PROJ	IECT L	.OCA	TION			NE 1/4 3	2-19-1	6			
	DATE	STARTED	06/26/2023	COMPLE	TE	D	06/26/	2023	<u> </u>	GROI	JND E	LEVA	ATION	_	777.39r	n N 561105	1.400	Ε.	41541	15.90	0
	ORILI	ING CONTRACT	OR	V	al's	Drilling			0	GROI	UND V	VATE	R ELE	VATIO	N / DEP	ГН					
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61	1	C	DATE	GRO	UND	WATE	R REC	ORDED						
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE CO IC - LIQ) Blows 20 3 00 1! ET PEN	ONTENT UID /300 mm 0 40 50 200 (kPa)	REN	IARKS	6	Standpipe/	Elevation	(m)
		TOPSOIL, sam firm, low plastic hairs CLAY, silty, sar plastic, brown CLAY TILL, silt fine gravel, dar plastic, brown, staining, trace 2.6 m - becor 3.0 m - becor weathered shal \$HALE (Weath completely weat grey mottling, of extremely weat laminated, sorr trace gypsum of 4.2 m - becor inclusions 4.4 m - 100 m 4.7 m - 80 m SHALE, silty, c weathered, gre extremely weat spaced fracture some oxidation crystals 5.2 m - 60° fr 5.4 m - 74° fr 6.2 m - 50 m 6.2 m - 90 m m 6.5 m - becor 6.6 m - 75° fr 7.5 m - 82° fr 7.5 m - 82° fr 7.5 m - 81° fr 7.5 m - 81° fr 7.5 m - 81° fr 7.9 m - 81° fr 7.9 m - 81° fr 8.5 m - 43° fr 8.5 m - 43° fr 8.5 m - 43° fr 8.5 m - 43° fr	dy, some silt, da c, brown, trace dy, dry, firm, lo y, some sand, t mp, very stiff, m some oxidation white precipitat ning trace coal ming some com e inclusions hered), clayey, s athered, dark bid damp, high plass k, blocky, thinly he oxidation sta crystals ning some bent m bentonite se m of core loss m of slough layey, moderately wes, thinly lamina a staining, trace acture	amp, root w trace hedium hes staining pletely silty, rown to stic, hining, tonite eam ely blastic, videly ated, gypsum eathered		AU1 AU2 SPT1 AU3 AU4 SPT2 AU5 AU6 SPT3 RC1 RC2 RC2 RC3	4.67 - 6.19 - 7.71 - 9.23 -	1 2 3 4	71 95 88 15 97 70 68 99 75 64	354	7.1 7.1 6.0 6.0 11.6 12.5 12.5 13.8 13.8 24.2 24.2		•			2.1 m - Gra 9.2% 2.1 m - San 71.4% 2.1 m - San 71.4% 2.1 m - Disp Classificatic % Dispersic 3.28 m - Ro 	rel = d = rersivil $n = 0.3%rersivil n = 0.1rersivil n = 0.1rersivil n = 0.1rersivil rersivil rersivil rersivil rersivilrersivil rersivil rersivilrersivil rersivil rersivilrersivil rersivil rersivilrersivil ightarrow rersivel rersive rersivel rersivel rersive rersive rersivel rersive rersivel r$	6 1ty 7 % ty 7 % ty 7 % % % % % % % % 6ty 2 % % % % % % % % % % % % % % % % % % %		7 7 7 7 7 7 7 7 7 7 7	'77 '76 '775 '774 '773 '772 '771 '770 '770 '770 '770
- - - - - -		9.0 m - some 9.1 m - 42° fr 9.4 m - vertic	crumpled core acture al fractures			KU4	9.23 -	4	04 100 78	3						Used ~2000 water	litres	of		7	'68
		Notes:							Mon	itorir	ng Ins	talla	tion Pi	ipe W	ork						
11/01/2024	L	Target depth of after coring. Co diagram.	f 10 m achieved prehole complet	l. Packer ted as a v	tes vell	t comp , refer t	leted o	D	epth T 0.00 0.00	ор	Dept	h Bo 9.10 3.40	ttom	Pipe PL PL	e Type _AIN _AIN	Logged By: Reviewed By	:	C C.	<u>. Tams</u> . Braur	1	

		MP		a divis	sio	n of	Eng	glo	be					CO	RE	HOLE No :	23C	H7 AGE 2	' 09 2 0F 2
				Fastern Irr	icati	on Dietr	ict		F		ECT		=		Sn	ake Lake Reservoir	Expansion	,	
				1560	19au				r		ECTI				011		16		
			06/06/0000	COMPL	-190 	<u></u>	06/06	0000	「						0	NE 1/4 32-19-	<u>г</u> 11	5/15 (
			06/26/2023			ם הייים	06/26/	2023	<u> </u>	BROU					igm IDTU	_ N	_ E + 1	5415.3	<u> </u>
					Val's	Drilling			(iROU		VAIE	R ELEVA	HON / DE	:PIH				
	CORI	NG TYPE	HQ3		ER (n	nm)	6	1	C	DATE	GRO		WATER	RECORDE	-D				
Depth (m)	SOIL SYMBOL	[Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOISTUR PLASTIC - SPT (N) BI 10 20 50 100 POCKET F	E CONTEN LIQUID ows/300 mr <u>30 41</u> 150 20 2EN,(kPa)	T n <u>D</u>	REMARK	S	Standpipe	Elevation (m)
		9.6 m - beco weak, unoxodi 9.9 m - 41° fi <u>10.6 m - son</u>	ming unweath zed racture <u>ne crumbled ca</u>	ered, very															767
														; ;					
		Notes:							Mon	itorir	ng Ins	stalla	ition Pipe	Work					
		Iarget depth o	orehole comp	ed. Packer leted as a	r tes well	t comp	leted	D	epth T	ор	Dept	th Bo	ottom F	Pipe Type	•				
		diagram.	5.51.510 0011pl			,			0.00 0.00			9.10		PLAIN PLAIN	L	ogged By:	C. Ta	ms	
11/01/2024	4								2.00						R	teviewed By:	C. Bra	aun	
				a alivia	:-		F m a	.l.a	h a						СО	RE	HOLE No :	23CH7	709B
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				a divis	010	n or	Eng	JIO	be									PAGI	E 1 0F 3
	CLIEN	NT		Eastern Irr	igatio	on Distr	ict		P	ROJ	ECTI	NAME	Ē	_		Sn	ake Lake Reservoir E	Expansion	
I	PROJ	ECT NUMBER		1560)-193	3-00			P	ROJ	ECTI	_OCA	TION	_			NE 1/4 32-19-1	6	
I	DATE	STARTED _	06/27/2023		ETEI	D	06/27/	2023	3 G	GROL	JND E	ELEVA	ATION	_	777.0	0m	N 5611051.600	E 4154	15.900
I	DRILL	LING CONTRAC	TOR	١	/al's	Drilling			0	GROL	JND V	VATE	R ELE	VATIC	N / DE	PTH			
		NG TYPE	Other		ER (m	חm)		1	C	DATE	GRO		WATE	R RE	CORDE	D			
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 2 50 1	URE C IC - LIC) Blows 20 (00 1	ONTEN QUID 5/300 mn 30 40 50 20	T n) 0	REMARKS	Standpipe/	Elevation (m)
										-	~		POCKE	<u>ET PEN</u>	(kPa)			~	~
$1 \\ 1 \\ 2 \\ 3 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$																			776- 775- 774- 773- 772- 771- 770- 769- 768-
⊢ 																			
	1	Notes:			<u> </u>		<u>.</u>		Moni	itorir	ng Ins	stalla	tion P	ipe W	/ork		<u>.</u>	I	I
		100 mm PVC	well installed t	o 25 m for	pun	nping t	est.	D	epth To	ор	Dept	h Bo	ttom	Pip	е Туре	;			
44 10 4 10									0.00			22.00 25.00)	P SLC) F	.ogged By: Reviewed By:	<u> </u>	: 1

		MP		a divis	io	n of	Eng	glo	be						COF	REHOLE No	o: 23	CH709B PAGE 2 OF 3
		JT		Fastern Irr	iaatio	on Distr	ict		P	PRO.I	FCT	NAM	F			Snake Lake Reser	rvoir Expar	nsion
	PROJ	ECT NUMBER		1560)-193	3-00			· P	ROJ	ECT		- ATION			NE 1/4 32	2-19-16	
	DATE	STARTED	06/27/2023	COMPLI	ETEI	D	06/27/	2023	3 6	ROL	JND E	ELEV	ATION		777.00	m N 5611051.	.600 E	415415.900
	DRILL	- ING CONTRAC	TOR		/al's	 Drilling				ROL	JND \	NATE			N / DEF	 РТН		
	CORI	NG TYPE	Other	DIAMETE	ER (m	<u>י</u> וm)				ATE	GRO	UND	WATE	R RE)		
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOIST PLAST SPT (N 10 50 1 POCKI	URE C IC - LIC) Blows 20 (100 1 ET PEN	ONTENT QUID 5/300 mm 30 40 50 200 I (kPa)	REM#	ARKS	Standpipe/ Instrument Elevation (m)
-11 -12 -13 -14 -15 																		766- 765- 764- 763- 763- 762- 762- 761-
17 17 																		760-
																		759-
	•	Notes:					-		Mon	itorir	ng Ins	stalla	tion P	ipe W	/ork			<u> </u>
		100 mm PVC	well installed t	o 25 m for	pun	nping t	est.	D	epth To 0.00 22.00	ор	Dep	th Bo 22.0 25.0	ottom 0 0	Pip P SLC	e Type LAIN DTTED	Logged By:	C	: Tams
11/01/2024	4															Reviewed By:	C	. Braun

		MP		a divis	sio	n of	Eng	glo	be						CO	REH	OLE No :	23C	H70 AGE 3	9 B
	CLIEN	NT		Eastern Irr	iaatio	on Distr	rict		Р	ROJ	ECTI	NAM	E			Snake	e Lake Reservoir	Expansio	n	
	PROJ	ECT NUMBER		1560)-193	3-00			· P	ROJ	ECTI	LOC	- ATION	_			NE 1/4 32-19-	-16		
	DATE	STARTED	06/27/2023	COMPLI	ETEI	D	06/27/	/2023		ROL	JND E	ELEV	ATION		777.00	0m I	N 5611051.600	E 4	15415.§	900
	DRILL	- ING CONTRAC	TOR	_ ```	Val's	 Drilling			G	ROL	JND V	NATE	ER ELE	- VATIC	N / DEF	PTH				
	CORI	NG TYPE	Other	DIAMETE	ER (m	nm)			D	ATE	GRO	UND	WATE	R REO	CORDE	 D				
Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	racture Index (#/m)	oisture Content (%)	● - =	MOIST PLAST SPT (N 10	URE C IC - LIC) Blows 20 (ONTENT QUID 5/300 mm 30 40 50 200	-	REMARK	Ś	Standpipe/ Instrument	Elevation (m)
										Ē	Σ		POCKE	ET PEN	1 (kPa)	,				
-22 -23 -24 -25 -26																				756- 755- 754- 753- 752- 751-
27																				750-
- 28 																				749-
-29																				748-
		Notes:						<u> </u>	Moni	itorir	na Ins	stalls	ation P	ipe W	/ork				<u> </u>	I
		100 mm PVC	well installed t	o 25 m for	pun	nping t	est.	D	epth To 0.00 22.00	op	Dept	th Bo 22.0 25.0	ottom 0 0	Pip	e Type LAIN DTTED	Log	iged By:	C. Ta	ams aun	
11/01/202	4							L								1.61		0. DI	<u>uu11</u>	



COREHOLE No : 23CH711

PAGE 1 0F 2

(CLIEI	NT	ct		F	PRO	IECT I	NAM	E			Snake	Lake Reservoir E	xpan	sion						
1	PRO	IECT NUMBER		1560-	193	3-00			F	PRO	IECT I	LOC	ATION				NE 1/4 32-19-16	6			
1	DATE	STARTED	06/13/2023	OMPLE	TE	D	06/13/	2023	<u> </u>	GRO	UND E	ELEV	ATION	_	771.69n	<u>n</u> N	5610068.500	Ε_	41603	31.00	00
1	DRILI	LING CONTRACT	OR	Va	al's	Drilling			0	GRO	UND V	VATE	ER ELE	VATIO	N / DEPT	тн					
(CORI	NG TYPE	HQ3 C	DIAMETER	R (n	nm)	61	1	C	DATE	GRO	UND	WATE	R REC	ORDED						
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTU PLASTI SPT (N) 10 2 50 10 POCKE	URE CC C - LIQ) Blows/ 20 3: 20 15 <u>T PEN</u>	DNTENT UID 300 mm 0 40 50 200 (kPa)		REMARKS		Standpipe/		Elevation (m)
		TOPSOIL, silty trace gravel, di prown, trace rc CLAY AND SIL plastic, light br CLAY TILL, silt gravel, damp, s brown, trace o white precipita 1.5 m - becor gypsum crystal 1.8 m - becor yeathered sha SHALE (Weath completely weathered sha SHALE (Weath completely weathered sha SHALE (Weath completely weathered sha SHALE (Weathered sha SHALE (Weathered sha SHALE (Weathered sha SHALE (Weathered sha SHALE (Weathered sha SHALE completely weathered sha stractures, thinly oxidation stain crystals 3.2 m - 470 m 6.3 m - becor 6.6 m - 69° fr 7.0 m - becor fractures 7.6 m - 55° fr 7.9 m - horized SHALE clayee	, sandy, some cla ry, firm, low plastic oot hairs T, silty, dry, firm, I own y, sandy, some fir stiff, medium plas kidation staining, i tes ming moist, trace s ming some compl le inclusions hered), clayey, silt athered, dark brow damp, high plastic k, very closely sput ing, trace gypsum nm of core loss mor f core loss ming highly weath acture acture ming closely spac	y, c, light ow ne tic, trace etely y, wn to c, aced ered ed		AU1 AU2 SPT1 AU3 AU4 SPT2 RC1 RC2 RC3	3.20 - 4.72 - 6.24 6.24 - 7.76	1	12 69 22 7 73 13 72 97 84	20 20 7	3.8 3.8 17.7 17.7 21.5 21.5			•		1.2 55. 1.2 42. 1.2 Cla % [2.1 95. 2.1 Cla % [2.7 Cla % [2.7 Cla % [3.5 rota	e m - Gravel = 7% m - Sand = 7% Silt = 1.0% Clay = 0.6% m - Dispersivity assification = NE Dispersion = 33 m - Sand = 1% Silt = 2.7% Clay = 2.2% m - Dispersivity assification = NE Dispersion = 86 m - Dispersivity assification = NE Dispersion = 42 m - Switched to ary coring.	% y 24 % y 24 % y 23 % 20 3 % 20			7771 7770 769 768 768 766 766 766 766 766
-7		weathered, gree extremely wea spaced fracture trace oxidation crystals 8.1 m - 72° fr 9.0 m - becor 9.2 m - 61° fr 9.3 m - mech 9.4 m - 62° fr 9.6 m - 52° fr 9.7 m - 30 m 9.9 m - 53° fr	a, only, ongring ay, damp, high pla k, moderately wides, es, thinly laminate staining, trace gy acture acture aning unoxodized acture anically fractured acture m of crumbled con acture	astic, ely ed, rpsum run re		RC4 RC5	7.76 - 9.28 9.28 - 10.80	4	74 100 93 68 89 74	3											764
11/01/2024		Notes: Target depth o after coring. Co diagram.	f 10 m achieved. I orehole completed	Packer t d as a w	tes vell	t compl , refer t	leted o	D	Mon epth T 0.00 0.00	itorii op	ng Ins Dept	stalla th Bo 3.50 8.50	ation Pi ottom))	ipe W Pipe PL PL	ork e Type AIN AIN	Logg Revie	ged By: ewed By:	C. C.	Tams Braur	1	

CLIENT Eastern Intigation District PROJECT NAME Snake Lake Reservoir Expansion PROJECT NUMBER 1560-193.00 PROJECT NOMIN N. 14 32-19-16 DATE STRATED 00132023 COMPLETED 00132023 GROUND LIVENTO 771.00 ORIGINATIVE HG3 DMAETER (mm) 61 DATE STRATE 00132023 GROUND LIVENTO 771.00 USB GROUND LIVENTO HG3 DMAETER (mm) 61 DATE STRATE ECONDID CORING TYPE HG3 DMAETER (mm) 61 DATE STRATE ECONDID STRATE ECONDID USB GROUND LIVENTON T11 IN ASTOC LIVENTON T11 IN ASTOC LIVENTON T11 USB GROUND LIVENTON T11 IN ASTOC LIVENTON T11 IN ASTOC LIVENTON T11 USB GROUND LIVENTON T11 IN ASTOC LIVENTON T11 IN ASTOC LIVENTON T11 USB GROUND LIVENTON T11 IN ASTOC LIVENTON T11 IN ASTOC LIVENTON T11 USB GROUND LIVENTON T11 IN ASTOC LIVENTON <t< th=""><th></th><th></th><th>MP</th><th></th><th>a divis</th><th>sio</th><th>n of</th><th>Eng</th><th>jlo</th><th>be</th><th></th><th></th><th></th><th></th><th></th><th>СО</th><th>RE</th><th>HOLE No :</th><th>23CH</th><th>-17 3e 2</th><th>'11 : 0F 2</th></t<>			MP		a divis	sio	n of	Eng	jlo	be						СО	RE	HOLE No :	23CH	-17 3e 2	' 11 : 0F 2
PROJECT NUMBER 1500-153-00 PROJECT LOCATION Net 43-15-16 DATE STARTED 00132023 COMPLETED 00132023 GROUND LEVINION 771.00m N 9510085.500 E 419031.000 DRILLING CONTRACTOR Wait Dming CROUND WATER RECORDED COMPLETER (mm) 61 DATE GROUND WATER RECORDED CORNON TYPE HG3 DAMETER (mm) 61 DATE GROUND WATER RECORDED THATE CONTENT REMARKS 000000000000000000000000000000000000		CLIEN	NT		Eastern Irr	igati	on Distr	ict		P	ROJ	IECT I	NAME	E			Sn	ake Lake Reservoir	Expansion		
Det E STARTED OG193223 CORVELTED Image: Status of the		PROJ	ECT NUMBER		1560)-193	3-00			P	ROJ	IECT	LOCA	TION				NE 1/4 32-19-1	16		
DRULING CONTRACTOR Vals brilling GROUND WATER RELEVATION / DETPH		DATE	STARTED	06/13/2023		ETE	D _	06/13/	2023	<u> </u>	BROL	JND E	ELEV	ATION	_	771.6	9m	N 5610068.500	_ E4160	031.0)00
CORING TYPE HQ3 DAMETER (mm) 61 DATE GROUND WATER RECORDED 60 Soll Soll B		DRILL	LING CONTRAC	TOR	١	/al's	Drilling			G	GROU	JND V	VATE	R ELE	VATIC	N / DE	PTH				
Soil Bescription Soil Bescription<		CORI	NG TYPE	HQ3		ER (n	nm)	6	1	D	DATE	GRO	UND	WATE	R REC	CORDE	D				
10.6 m - 170 mm of core loss 761 11 760 12 761 13 761 14 761 15 761 16 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 17 761 18 761 19 761 10 761 17 761 17 761 17 761 17 761 17 761 17 761 17 <	Depth (m)	SOIL SYMBOL		Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)	● ⊢ ■	MOISTI PLASTI SPT (N) 10 2 50 1 POCKE	URE C IC - LIC) Blows 20 3 00 1 ET PEN	ONTEN ⁻ QUID 5/300 mn 30 40 50 20 I (kPa)	T n) 0	REMARK	C) Standnine/	otariupupor Instrument	Elevation (m)
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11 105 m - 1/0 mm or core loss 10 760 12 760 770 770 13 771 771 772 14 775 775 15 775 775 16 775 775 17 775 775 18 775 775 19 772 774 10 774 775 10 775 775 10 775 775 10 775 775 10 775 775 10 775 775 10 775 775 10 775 775 11 775 775 11 775 775 11 775 775 11 775 775 11 775 775 11 775 775 11 775 775	Ē		40.0																		761
12 12 760 13 751 14 753 15 751 16 751 17 751 18 752 19 753 10 754 10 754 10 754 10 754 10 754 10 754 10 754 10 754 10 754 10 754 10 754 11 755 12 755 13 754 14 754 15 755 16 754 17 754 18 754 19 754 10 754 10 754 11 754 12 755 13 754 14 754 15 755 16 754	E —11		10.6 m - 170	mm of core lo	ss																/01
12 13 760 13 759 14 759 14 759 15 751 16 752 17 756 18 758 19 759 Noles: Monitoring installation Pipe Work. Target depth of 10 m achieved. Packer test completed material and up will rate as well ra																					-
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13 Image: Complex comple																					759-
14 758 15 757 16 768 17 756 18 758 18 758 19 10 Notes: Monitoring Installation Pipe Work Depth Top 752 Monitoring Installation Pipe Work Depth Top	—13 -																				-
14 768 15 757 16 768 17 757 18 757 19 758 Notes: Monitoring Installation Pipe Work Target depth of 10 m achieved. Packer test completed Monitoring Installation Pipe Work Depth Top Depth Bottom																					-
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15 16 767 16 760 757 17 751 756 18 754 754 19 752 752 Notes: Target depth of 10 m achieved. Packer test completed attraction Combined commisted as a usell, refer to 10 m achieved. Packer test completed attraction Pipe Work Monitoring Installation Pipe Work 200 Depth Top Depth Bottom Pipe Type	- 14																				-
15 Image: Construction of 10 machieved. Packer test completed of the combined as used in for the	-																				757-
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17 18 754 18 19 10 <	-16																				
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17 18 19 10 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>755-</td></td<>																					755-
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18 19 10 <td< td=""><td>È.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>754</td></td<>	È.																				754
-19 Image: Construction of the second se	-18																				104
19 Image: Second seco																					-
19 Image: Second seco	Ē																				753-
Notes: Monitoring Installation Pipe Work Target depth of 10 m achieved. Packer test completed after coring. Correbole completed as a well, refer to	-19																				
Notes: Monitoring Installation Pipe Work Target depth of 10 m achieved. Packer test completed as a well, refer to	Ē																				
Notes: Monitoring Installation Pipe Work Target depth of 10 m achieved. Packer test completed atter coring. Correbole completed as a well, refer to Depth Top Depth Bottom Pipe Type	Ē																				752-
Notes: Monitoring Installation Pipe Work Target depth of 10 m achieved. Packer test completed as a well, refer to Depth Bottom Pipe Type	-													: 	i	· · · ·	_				
after coring. Corebole completed as a well refer to			Notes: Target depth of	f 10 m achieve	ed Packer	tes	t comp	leted		Moni	itorir	ng Ins	stalla	tion Pi	ipe W	/ork					
diagram			after coring. C	orehole comple	eted as a	well	, refer	to		0.00	op	Depi	3.50	າແບກ	PIP	e Type LAIN	; 	oaged Bv:	C. Tam	IS	
0.00 8.50 PLAIN Reviewed By: <u>C. Braun</u>	11/01/000		ulayıallı.							0.00			8.50		P	LAIN	F	Reviewed By:	C. Brau	ın	



23TH02 COREHOLE No :

PAGE 1 0F 2

		NT	ict		F	PRO	IECT I	NAM	E			S	nake	e Lake Reserv	/oir E	Expan	sion					
F	PROJ	IECT NUMBER		1560-	193	3-00			F	PRO	IECT I		ATION	Ν.				NE 1/4 32-	19-10	6		
ı	DATE	STARTED	08/08/2023		TE	D _	08/08/	2023		GRO	JND E	ELEV	ATIO	N	779	9.80m	1	N 5612565.9	<u>300</u>	Ε.	414787	.100
٦	ORILL	ING CONTRACT	OR	V	al's	Drilling			0	GRO	JND V	VATE	ER EL	EVAT	'ION / [DEPTH	۰ _					
	CORI	NG TYPE	HQ3	DIAMETE	R (n	nm)	61	1	C	DATE	GRO	UND	WAT	ER R	ECOR	DED						
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIS PLAS SPT (10 50 POC	STURE STIC - I (N) Blo <u>20</u> 100 :KET Pl	CONTE LIQUID ws/300 <u>30</u> 150 EN (kPa	ENT mm <u>40</u> 200 a)		REMA	RKS	6	Standpipe/ Instrument	Elevation (m)
	CLAY TILL, silty, sandy, trace fine gravel, damp, stiff, medium plastic, brown, trace oxide specks, trace white precipitates 1.0 m - becoming trace to some gravel up to 40 mm 1.5 m - becoming dark brown to grey mottling, some oxidation staining, trace coal specks 3.0 m - becoming some completely weathered shale inclusions 4 SHALE (Weathered), clayey, silty, trace sand, highly weathered, dark grey, damp, high plastic, extremely weak, blocky, moderately widely spaced fractures, thinly laminated, trace oxidation staining, trace gypsum crystals 4.4 m - 40 mm of core loss 4.7 m - 84° fracture 5.8 m - 200 mm of strong calcified shale 6.2 m - becoming moderately weathered 6.7 m - 69° fracture 7.8 m - becoming slightly weathered, 8.3 m - 83° fracture SHALE, clayey, silty, unweathered,						4.45 - 5.97 7.49 7.49 9.01 9.01 - 10.53	1 2 3 4	91 97 93 83 100 95 93 98 96 92 100 92	2 3 3							4.4 frc Rc	45 m - Swito om 6" SSA to otary Coring	shed o HG	23		779 777 777 777 777 777 777 777 777 777
Ē		9.7 m - 73° fr	acture																			770
		Notes:							N/				41.4.11	Dices	\A/z ::-!							I
11/01/2024		Target depth of bentonite chips	f 15 m achieve s. Packer test c	d. Corehol completed	e b afte	oackfille er corin	ed with Ig.	D	Mon epth T	itorii op	ng Ins Dept	stalla th Bo	ation	Pipe n P	vVork ipe Ty	pe	Log Rev	ged By: _ riewed By: _		<u> </u>	<u>. Tams</u> Braun	



23TH02 COREHOLE No :

PAGE 2 0F 2

CLIENT	Eastern	ion Distr	ict		F	PROJ	ECT	NAME	Ξ			Snake	e Lake Res	ervoir E	xpan	sion		
PROJECT NUMBER	1	560-19	3-00			F	PROJ	ECT I		TION	_			NE 1/4 3	32-19-1	6		
DATE STARTED	08/08/2023 COM	PLETE	D	08/08/	2023	80	ROL	JND E	LEVA	ATION	_	779.80r	<u>n</u> 1	N 561256	5.900	Ε_	414787	7.100
DRILLING CONTRACT	TOR	Val's	Drilling			0	BROL	JND V	VATE	R ELE	VATIC	N / DEP1	н_					
CORING TYPE	HQ3 DIAM	ETER (I	mm)	61	1	C	DATE	GRO	UND	WATE	R REC	CORDED						
Depth (m) SOIL SYMBOL	Soil Description	Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKE	URE C IC - LIC I) Blows 20 3 100 1 ET PEN	ONTENT QUID 5/300 mm 30 40 50 200 I (kPa)		REM	IARKS	3	Standpipe/	Elevation (m)
10.3 m - som	ne crumbled core mm of core loss		RC5	10.53 - 12.05	5	91 96 93	2				-							769
	fracture fracture Il fragments with orgar oming some moderate e layers oming weak	iic Iy	RC6	12.05 - 13.57	6	100 100 100	1											768
	o mm moderately stron Iding fracture e shell fragments fracture soming some bentonitio	g	RC7	13.57 - 15.09	7	109 109 109	2				-							766
-15	mm of moderately stro	ng									-							765
																		763
																		762
																		761
									-									760
Notes:			<u> </u>	L		Mon	itorir	a loc	talla	tion P	ine M	lork						
Target depth o bentonite chips	Target depth of 15 m achieved. Corehole backfilled w bentonite chips. Packer test completed after coring.									ottom	Pip	e Type	Log Rev	iged By: viewed By	:	<u> </u>	<u>Tams</u> Braun	



23TH04 COREHOLE No :

PAGE 1 0F 2

	CLIE	NT	E	Eastern Irriga	ation Dist	rict		F	PROJ	IECT I	NAME			5	Snake Lake Reservoir Ex	pansi	on	
	PRO	JECT NUMBER		1560-1	93-00			F	PROJ	IECT L		TION			NE 1/4 32-19-16			
	DATE	STARTED	08/10/2023	COMPLET	ED _	08/10/	2023	<u> </u>	GROL	JND E	ELEVA	TION		770.73m	N 5612438.300	E	416352.	100
	DRIL	LING CONTRACT	OR	Val	's Drilling			0	GROL	JND V	VATE	R ELE	VATIO	N / DEPT	Н			
	COR	ING TYPE	HQ3	DIAMETER	(mm)	6	1		DATE	GRO	UND	WATE	R REC	ORDED				
Depth (m)	SOIL SYMBOL	C	Soil Description	Comolo Timo	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m)	Moisture Content (%)		MOIST PLAST SPT (N 10 50 1 POCKI	TURE CC TIC - LIQ I) Blows/ 20 3 100 15 ET PEN	DNTENT UID /300 mm 0 40 50 200 (kPa)	REMARKS		Standpipe/ Instrument	Elevation (m)
-1-2-2		CLAY FILL, silt low plastic, bro CLAY TILL, silt fine gravel, dar plastic, dark br specks, trace v SHALE (Weath some sand, res to grey mottling extremely weat up 2.9 m - becor weathered, bloo staining, trace v	y, sandy, damp, wn y, some sand, ti np, stiff, mediur own, trace oxide vhite precipitate nered), clayey, s sidual soil, dark J, damp, high pl k to hard soil, gr ning completely cky, trace oxida white precipitate	, stiff, race n e s s illty, brown astic, round tion es	AU1 ST1 ST2 AU2										0.5 m - Couldn't pus Shelby Tube due to loose sloughing fill 1 m - Consolidation Index: 0.24 Expansion Index: 0.08	sh		769-
		4.6 m - 80 mr 4.7 m - 220 n 4.9 m - becor closely spaced weak, some ox gyosum crystal	n of core loss nm of slough ning highly wea fractures, extre idation staining, s	thered, mely , trace	RC1	4.60 - 6.12	1	31 95 72	5						4.6 m - Switched from 6" SSA to HQ3 Rotary Coring	3		766
					RC2	6.12 - 7.64	2	92 100 92	3				-					764
- - - - - - - - - - - - - - -		7.7 m - 260 n 8.3 m - 72° fr 8.5 m - becor weathered, mo	nm of mechanic acture ning moderately derately widely	al rubble y spaced	RC3	7.64 - 9.16	3	51 84 58	3									763
9 		fractures 8.9 m - 250 n 9.2 m - 140 n 9.3 m - 200 n 9.5 m - becor weathered, ver	nm of core loss nm of core loss nm of slough ning moderately y weak	y	RC4	9.16 - 10.68	4	71 91 79	2									762
		Notes:						Mon	itorir	ng Ins	stallat	tion P	ipe W	ork				
11/01/2024	1	Target depth of bentonite chips	f 19 m achieved Packer test co	l. Corehole mpleted af	backfill ter corir	ed with ig.	D	epth T	ор	Dept	th Bo	ttom	Pipe	е Туре	Logged By: Reviewed By:	C. 1 C. E	Tams Braun	



23TH04 COREHOLE No :

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	CLIEI	NT		F	PROJ	IECT I	NAM	E			Sna	ake La	ake Res	ervoir E	Expan	sion							
	PRO	JECT NUMBER		1560-	193	3-00			F	PROJ	IECT I		ATION	_			1	NE 1/4 3	2-19-1	6			
	DATE	STARTED	08/10/2023	_ COMPLE	ΤE	D	08/10/	2023		GROI	JND E	ELEV	ATION	_	770.7	'3m	_ N _	561243	8.300	E	416	352.1	00
	DRIL	LING CONTRACT	OR	Va	al's	Drilling			0	GRO	JND V	VATE	ER ELE	VATIO	DN / DE	PTH							
	CORI	NG TYPE	HQ3	DIAMETER	R (n	nm)	61	I	C	DATE	GRO	UND	WATE	RRE	CORDE	ED							
												1									ì	μά	
Depth (m)	SOIL SYMBOL	C	Soil Description		Sample Type	Sample Number	Run Depth (m)	Run Number	RQD TCR SCR	Fracture Index (#/m	Moisture Content (%	● ⊢ ■	MOIST PLAST SPT (N 10 50	URE C IC - LIC I) Blows 20 1 100 1 ET PEN	CONTEN QUID s/300 mi <u>30 4</u> 150 20	T n D 10		REM	IARKS	3	Ctordania Distant	Instrume	Elevation (m)
_					Π																		
- - - 		SHALE, clayey grey, damp, hig moderately wic thinly laminate 11.3 m - 64° 1 11 4 m - som	ν, silty, unweath gh plastic, very dely spaced fra d fracture e mechanical r	nered, vweak, lictures, rubble		RC5	10.68 - 12.20	5	89 96 91	2													760
		11.7 m - 60° 1 12.0 m - som 12.2 m - som 12.6 m - 76°	fracture e mechanical r e mechanical r fracture	rubble rubble		RC6	12.20 - 13.72	6	85 100 89	2													759
		13.2 m - 73°	fracture			RC7	13.72 - 15.24	7	100 109 100	1													757
- - 		14.4 m - 37° '	fracture			RC8	15.24 -	8	100 100	1													756
- - 		15.6 m - beco 16.2 m - 130	oming weak mm of strong o	calcified			16.76		100														755
- - - - - - - - - - - -		16.6 m - bedo 16.8 m - 80 n 16.9 m - 80 n	ding fracture nm of core loss nm of bentoniti	s c clay		RC9	16.76 - 18.28	9	95 95 95	2													754
- - 		17.4 m - 76° 18.0 m - 66° fragments	fracture with sh	nell		RC10	18.28	10	89 94	1													753
19 19 		19.0 m - 70°	fracture	,			19.80		89														752
		19.6 m - 38°	fracture																				751
		Notes:							Mon	itorir	ng Ins	stalla	ation P	ipe V	Vork								ĺ
		larget depth of bentonite chips	r 19 m achieve s Packer test c	a. Corehol ompleted a	e k afte	ackfille r corine	ed with g.	D	epth T	ор	Dept	th Bo	ottom	Pip	е Туре					_	_		
					-		-										ogge	d By:		C	Tam	IS	
11/01/2024	1															R	leviev	ved By		<u> </u>	Brau	<u>in</u>	