EXHIBIT 7

PITEAU ASSOCIATES TECHNICAL MEMORANDUM
(REVISED SEPTEMBER 21, 2021)

ATTACHMENT 10
Piteau TM 21-01 CTFS Unsaturated Flow Modelling Revision

PITEAU ASSOCIATES
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FILE: 3898 TM21-01

TECHNICAL MEMORANDUM

FINAL: January 26, 2021

REVISED: September 21, 2021

TO: Ted Grandy, Catherine Clark
Lithium Nevada Corporation

FROM: Tyler Cluff
Email: tcluff@piteau.com

RE: **Clay Tailing Filter Stack (CTFS) Unsaturated Flow Modeling Revision 1**

INTRODUCTION

This technical memorandum has been prepared at the request of Lithium Nevada Corporation (LNC) to estimate infiltration through the Clay Tailing Filter Stack Facility (CTFS) upon permanent closure. Seepage through the CTFS will be controlled by unsaturated flow governing equations because i) clay tailings will be mechanically and naturally dried to near optimal moisture content prior to stacking, and ii) a store and release cover will be placed upon closure to eliminate / reduce infiltration to the facility. The objectives of this analysis are:

- Estimate long term infiltration through the proposed store and release cover;
- Estimate draindown from residual pore water present in clay tailings for water management.

This analysis includes a sensitivity designed to consider sectors of the CTFS which may be exposed to greater precipitation and/or snow cover (i.e. north facing slopes) and addresses the effect of non-structural material on the hydraulic conductivity of the tailings.

The CTFS will be constructed on a single lined synthetic liner as proposed in the engineering design report (Newfields, 2020). The engineering design provides that the CTFS will be fully lined with an HDPE geomembrane, with two feet of material as overliner and underlain with a six-inch liner bedding material. The facility will include an underdrain collection system above the geomembrane to collect drainage from the stack. Drainage from the stack will report to the geomembrane lined reclaim ponds.

The CTFS is designed to span an area of ~386 acres and have an average thickness of 190 ft (~58 m). The CTFS surface will be graded to match natural topography (~3% - 6%) which drains towards the southeast, encouraging runoff and reducing the presence of ponds forming on the surface. The clay tailings will be comprised of a silty sand to a silty clay material and will meet the criteria for a clay cap. Measured hydraulic conductivity range from 4.8 x 10^{-6} cm/s to 1.2 x 10^{-7} cm/s (DBS&A, 2019, Newfields, 2019). Therefore, the clay tailings themselves will function as a 190 ft thick low permeability cap which will impede infiltration and enhance the functionality of the store and release cover. Compaction drying, and stacking of clay tailings in the CTFS is anticipated to further reduce the hydraulic conductivity of materials. Due to the thickness and stacking of clay tailings, the material itself is not expected to develop desiccation cracks that might penetrate the full 190 ft profile. Composite salt/clay tailings materials were tested to have even lower hydraulic conductivity values than unmixed clay tailings (1.2 x 10^{-7} cm/s) owing to the hydration of salts (Newfields, 2019). Table 1 summarizes the particle size distributions and hydraulic conductivity values for available clay tailings samples. Laboratory testing results are provided in Attachment A.

Table 1 Hydraulic summary of clay tailing samples

Sample ID	% Sand & Gravel	% Silt	% Clay	USCS Classification	Hydraulic Conductivity (cm/s)	Φ_{sat}	Type	Source
4-LFILTCAKE-E05B-315	61.4	17.1	21.4	SM	8.3 x 10^{-7}	0.63	Clay Tailings	DBSA, 2019
4381-Blend	52.8	12.3	34.9	SM	4.8 x 10^{-6}	0.59	Clay Tailings	DBSA, 2019
19-036-01	16.5	83.5[1]		ML	4.1 x 10^{-7}	0.59	Clay Tailings	Newfields, 2019
19-057-02C	35.4	64.6[1]		ML	1.2 x 10^{-7}	0.45	Composite Salt / Clay Tailings	Newfields, 2019

[1] This is percentage of Silt and Clay combined
[2] Saturated Porosity (Φ_{sat})

The CTFS will be divided into two zones as follows:

- Structural zone: This zone will consist of stacked and compacted clay tailings.
- Non-structural sector: This zone will consist of a mixture of clay tailings with interlayers of salt. The effect of hydrated salts has been shown to decrease the hydraulic conductivity of the clay tailings (Newfields, 2019). This zone is anticipated to be comprised of interbeds of clay and salt, which at the bulk, 190-ft thick scale, resembles a well mixed material.

Both CTFS zones are planned to be closed with a 24-inch thick store and release cover, comprised of a waste rock layer and growth media. The cover design is engineered to shed runoff, foster vegetation growth, and limit erosion / exposure of clay tailings. The cover will be vegetated using a seed mixture, as previously described in unsaturated modeling for waste rock and coarse gangue facilities (Piteau, 2020). The cover design is as follows:

- 12-inch layer of growth media (alluvium) will be placed on top to foster vegetation growth;

- 12-inch layer of run of mine waste rock will underlay the growth media. This material is designed as a coarser grained layer to reduce erosion, supply a material buffer should an isolated rill come in contact with surface runoff, and support deeper root growth.

Alluvium growth media and waste rock hydraulic properties were previously characterized in the Thacker Pass Project Water Quantity and Quality Impacts Report (Piteau, 2020). A schematic of the CTFS closure design is provided in Figure 1.

APPROACH

The analysis followed the approach and methodology utilized to simulated infiltration through Waste Rock Storage Facility (WRSF) and coarse gangue stockpiles in the Thacker Pass Project Water Quantity and Quality Impacts Report (Impacts Report) (Piteau, 2020). Model configuration was adjusted to reflect the CTFS geometry, including the modified store and release cover, and material properties. A summary of the model approach is as follows:

- Identical meteorological boundary conditions were used as in the Impacts Report.
- A seepage face was employed as the lower boundary conditions.
- Root water uptake was simulated using the same Feddes parameters; however, the root length density was adjusted to reflect the thicker store and release cover and truncated so roots would not extend into clay tailings. A root density to a depth of 0.6 m, following that found by Winkler for Nevada climate was used (Winkler, 1999).
- Hydraulic properties for growth media and waste rock materials were identical to those used in the Impacts Report (Table 2). CTFS materials were assigned hydraulic properties based on geometrically averaged values from soil testing.
- Two suites of Hydrus 1D models were developed to assess i) potential infiltration through the CTFS cover and ii) draindown from residual water within clay tailings present during stacking. Brief descriptions of the Hydrus 1D model are as follows:

  Infiltration models: A 10-meter thick model was developed to simulate long term infiltration through the CTFS store and release cover. Because of the very long equilibration period (due to the low hydraulic conductivity of clay tailings), it was more practical to breakout the infiltration model separately. Initial water contents were recycled through until equilibrium was reached in the clay tailings (i.e. water contents did not change). Equilibrium seepage rates were then estimate using the unsaturated models. Several sensitivities were run for this configuration to assess infiltration.

  Drain down model: A 58.5-meter thick (192 ft) model was developed to simulate the drain down from residual water content in clay tailings. Initial water content for materials was 23% - 46% as described in Table 2. The simulation was run for a 1,000 year period. All other model inputs were identical to the infiltration model.

  It should be noted that clay tailings will be dried and stacked at near optimal moisture content, thus the materials are unsaturated upon placement and are not anticipated to produce any meaningful seepage. The purpose of this exercise is to validate the concept.

A side-by-side summary of both configurations are shown in Figure 2. Flux values from the 1D Hydrus models were multiplied by the facility footprint to assess the total seepage rate.

- Six sensitivity analyses were run for the infiltration model configuration to evaluate the potential variation that may be encountered during closure. The sensitivities are described as:

  Alternate clay tailings: Clay tailings material were assigned hydraulic properties of silty loam from the HYDRUS database. The key element is that hydraulic conductivity was raised by two orders of magnitude to 1.2 x 10^{-4} cm/s.

  No transpiration: Plant transpiration was turned off in this sensitivity to assess the effect of root uptake in controlling infiltration.

  Decreased Potential Evaporation/Transpiration: PET rates were decreased by 15% to assess the effect on infiltration. This is more robust than adjusting precipitation rates because it does not need to account for the episodic occurrence of precipitation.

  12-inch cover: An alternative cover configuration utilizing only 12-inches of growth media was used to simulate infiltration. This is a similar cover design as the waste rock facilities and coarse gangue facilities.

  Cover only: This sensitivity only simulated the upper 24-inch cover material. No tailings were simulated. The lower boundary condition at the bottom of the cover was simulated using a deep drainage boundary condition, meaning that the lower boundary simulated the same water content and unsaturated hydraulic conductivity to permit pore water to drain out of the model.

  Precipitation x 2: This sensitivity multiplied daily precipitation by a factor of 2. The frequency of rainy days remained the same with double the magnitude. The cumulative effect doubles precipitation, but maintains the lower PET measured on rainy days. This sensitivity is designed to consider sectors of the CTFS which may be exposed to greater precipitation and/or snow cover (i.e. north facing slopes).

All Hydrus models conservatively simulate infiltration in the structural zone (i.e. clay tailings), because the clay tailing material has been shown to possess greater hydraulic conductivity than the composite salt / clay tailings. The non-structural zone will have less infiltration than the structural zone, owing to it’s lower saturated hydraulic conductivity values. Additionally, physical processes associated with the dissolution of salts are anticipated to increase density contrasts between the tailings pore water and meteoric water, thus further reducing the saturated hydraulic conductivity of composite salt/clay tailings.

Table 2 Materials property summary of CTFS models

Material	alpha (1/m)	N	θr	θsat	Ksat (cm/s)	Initial Water Content (%)
Growth Media	0.74	1.342	0.021	0.424	6.1×10^{-5}	23
Waste Rock	1.67	1.336	0.03	0.435	6.8×10^{-4}	23
Clay Tailings	0.6	1.128	0.066	0.61	1.2×10^{-6}	46[1]
Alternate Clay Tailings[2] (Hydrus' Silt Loam)	2	1.41	0.067	0.45	1.2×10^{-4}	30

[1] Projected water content of stacked clay tailings
[2] Selected soil material data from HYDRUS database

RESULTS

Infiltration model results

Infiltration through the store and release cover was minimal, simulated as ~0.01% MAP (Table 3). The store and release cover was very effective in facilitating the removal of infiltration from precipitation or temporary ponding. Nearly all precipitation was removed via root uptake or evaporation. Cumulative fluxes to the model are shown in Figure 3, which identifies that ~69 m of precipitation entered the store and release cover and a nearly equal amount of water was removed via root uptake. Approximately 0.02 m of seepage occurred during the simulation.

Water content in the store and release cover varies seasonally according to meteorological conditions (Figure 4). The low hydraulic conductivity of the clay tailings enhanced the effectiveness of the store and release cover by acting as a flow barrier to the wetting front. Soil moisture stored in the cover was then removed during the growing season via root uptake and soil capillarity prior to penetrating the clay tailings.

The water content profile of the 10-meter simulated section at several time periods during the simulation is shown in Figure 5. Water content in the clay tailings has reached equilibrium during the final model simulation, as shown by the consistent water content profile, thus simulated results represent an equilibrium condition.

Infiltration model sensitivities all indicated that the range of reasonable infiltration through the cover was low (0.06% - ~6% MAP). The majority of sensitivity scenarios indicated minor changes to seepage rates associated with input parameters. Modifications to the clay tailings material produced higher infiltration rates over the base case but were still quite low and underscoring the effectiveness of the store and release cover.

Eliminating vegetation from the cover and/or reductions to atmospheric PET had minimal effect on simulated infiltration, indicating that the climatic evaporation deficit is sufficiently large to attenuate fluctuations in year to-year PET. These sensitivities underscore the robustness of the store and release cover, that even unvegetated it can effectively intercept precipitation from infiltrating.

Doubling the precipitation rate had a moderate effect on increasing seepage rates (~5.2% MAP) because precipitation falls during the winter season when PET is low. The increased seasonal water content of cover materials provides a pathway for percolation into tailings materials. However, it should be noted that this condition would occur only on a portion of the CTFS and southern facing slopes would be exposed to the opposite conditions (i.e. lower infiltration rates in those sectors). Thus the net effect is insubstantial. Additionally, the double precipitation model does not account for increases to vegetation density that would occur where soil moisture can sustain growth.

The "Cover only" sensitivity produced the highest infiltration rate at ~6.3% MAP. The "Cover only" sensitivity is considered an overestimate of potential seepage because in reality the presence of any underlying materials will constrain the infiltration rate below the cover and allow root transpiration to remove pore water. Fine-grained materials, such as the clay tailings, have a very low saturated hydraulic conductivity which will cause increased water content at the boundary between materials seasonally, until transpiration removes water from the cover. Coarse-grained materials will form a Richard's barrier (low unsaturated hydraulic conductivity) at the transition of the cover until sufficient water content is reached to permit percolation. This allows transpiration to consume much of the seasonal wetting front before infiltration migrates into underlying material.

Table 3 Summary of Infiltration Results

Simulation / Sensitivity	Cumulative 1D Seepage (m)	Average Seepage rate (in/yr)	Average Seepage rate (% MAP)	Facility Seepage rate (gpm)
Base Case	**0.02**	**0.001**	**0.01%**	**0.02**
Alternate Clay Tailings	1.0	0.056	0.46%	1.12
No Transpiration	2.2	0.121	0.99%	2.42
Reduced Evaporation	0.14	0.008	0.06%	0.15
12-inch Cover	0.68	0.038	0.31%	0.76
Cover Only	13.6	0.76	6.26%	15.2
Precipitation x 2[1]	11.3	0.64	5.22%	12.7

[1]Sensitivity meant to represent, among other properties, north facing slopes with greater precipitation and/or snow drifts.

Draindown model results

Seepage related to the drainage of insitu water content during the first 1,000 years of emplacement was zero. Water content at the bottom of the CTFS was simulated to slowly increase as a result of unsaturated gravity drainage (Figure 6). However, pore water along the bottom of the CTFS will remain in tension with clay material until water content reaches field saturation conditions to overcome capillary tension and freely seep into the collection system. The wetting front via infiltration slowly migrated downward to approximately the 20-meter depth during the 1,000 year simulation, confirming that there will be significant time before any infiltration reaches the CTFS bottom. In practice a minor amount of draindown may occur, due to macro pores, heterogeneity, and stacking irregularities; but it is anticipated to be very small, if measurable at all.

CONCLUSIONS

Key conclusions drawn from the foregoing analysis are summarized as follows:

- The hydraulic conductivity of the clay tailings materials (both the clay tailings and mixed clay tailings / waste salts) in the CTFS is anticipated to be very low, in the range of 10^{-6} to 10^{-7}cm/s based on testing data as well as the anticipated grain size of clay tailings and compaction during stacking. Hydration of salts after mixing with clay tailings is anticipated to reduce hydraulic conductivity further. Thus, the clay tailings themselves function as a 190 ft thick clay cap.

- A store and release cover is proposed to close the CTFS which is designed to shed runoff, reduce erosion, and foster vegetation growth. The store and release cover is expected to be very efficient at removing precipitation percolation, owing the thicker profile of materials (24-inch) and being underlain by low permeability clay tailings. The penetration of moisture through the upper clay tailings is limited by the material's low hydraulic conductivity. When the growing season resumes, soil capillarity and root uptake remove the excess water stored in the cover.

- Water content in the store and release cover will fluctuate seasonally, which will wet the upper layer of clay tailings and reduce desiccation. Given the thickness of the clay tailings, any desiccation in the upper horizon would not compromise the overall ability of the CTFS to impede infiltration.

- Moisture content through the CTFS was estimated to take several thousand years to equilibrate and produce any seepage to the underdrain system. No meaningful seepage related to draindown from residual water present in the clay tailings upon stacking is anticipated.

- Infiltration rates for the structural zone of the CTFS are estimated be quite low, ~0.01% of MAP. Reasonable sensitivities to the infiltration model suggest infiltration rates may vary from 0.06% - ~0.5% MAP (the "No Transpiration" sensitivity is unlikely to occur).

- Infiltration rates for the non-structural zone of the CTFS will be less than the structural zone, owing to the lower hydraulic conductivity value of composite salt/tailings material. Thus the results and sensitivity analysis for the structural zone is sufficient for seepage design purposes.

- Although sectors of the CTFS may experience different climatic conditions and infiltration rates, the design capacity of ET cells will be capable of managing seepage rates. The sensitivity analysis estimated 12.7 gpm of seepage from the CTFS in the case where the entire facility is subjected to doubled precipitation rates. Snow drifting or shading would be restricted to smaller footprints of the CTFS.

- A "Cover only" sensitivity provided an upper bound, very conservative estimate of potential infiltration (6.3% MAP, ~15 gpm seepage). The CTFS reclaim pond will be converted to an evapotransporation cell upon closure and can handle a seepage rate of 15 gpm even though the realistic seepage rate is expected to be orders of magnitude less.

LIMITATIONS

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions in Nevada. No warranty is expressed or implied.

This memorandum is prepared for the sole use of Lithium Nevada Corporation. Any use, interpretation, or reliance on this information by any third party, is at the sole risk of that party, and Piteau Associates accepts no liability for such unauthorized use.

CLOSING

We trust the above is adequate for your current needs. If you have any questions regarding the above, or we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

PITEAU ASSOCIATES USA LTD.

Tyler Cluff, PG
Senior Hydrogeologist

TC/ap

REFERENCES

DBS&A, Inc., 2019. DBS&A Laboratory Report for the Piteau Associates, Lithium Nevada Sample Testing. October 2019.

Piteau Associates. 2020. Thacker Pass Project. Water Quantity and Quality Impacts Report, Revision 1. Report No. 3898 R20-03. May.

Newfields. 2019. Testing data for sample 19-036-01 and 19-057-02, provided via email January 2021 and September 2021 respectively.

Newfields. 2020. Attachment J. Thacker Pass Project Engineering Design Report. Clay Tailings Filter Stack, Waste Rock Storage Facilities, Coarse Gangue Stockpile, Mine Facilities & Process Plant Stormwater Management.

Winkler, W. 1999. Thickness of Monolithic Covers in Arid and Semi-Arid climates. MS Thesis, University of Wisconsin-Madison. January.

FIGURES

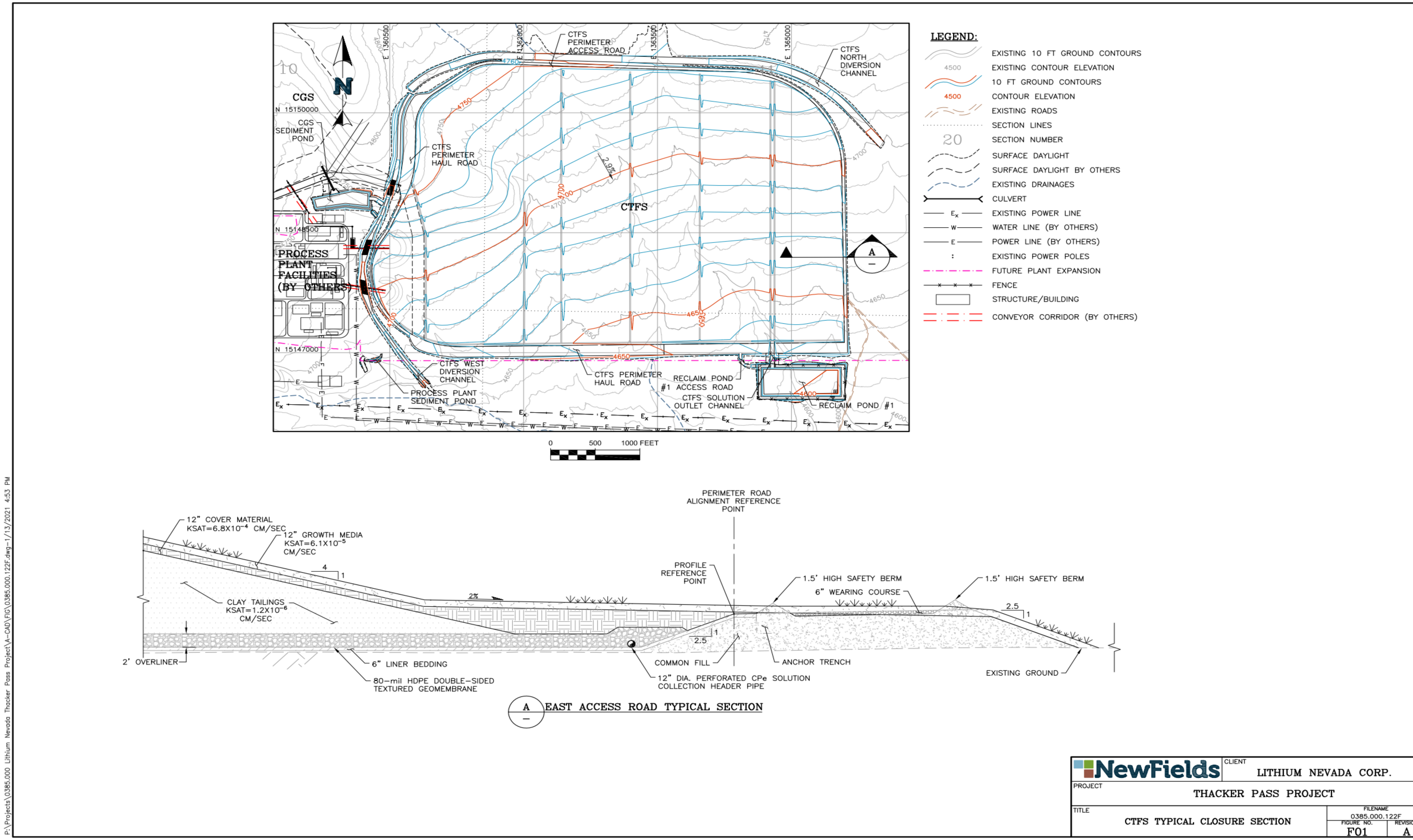
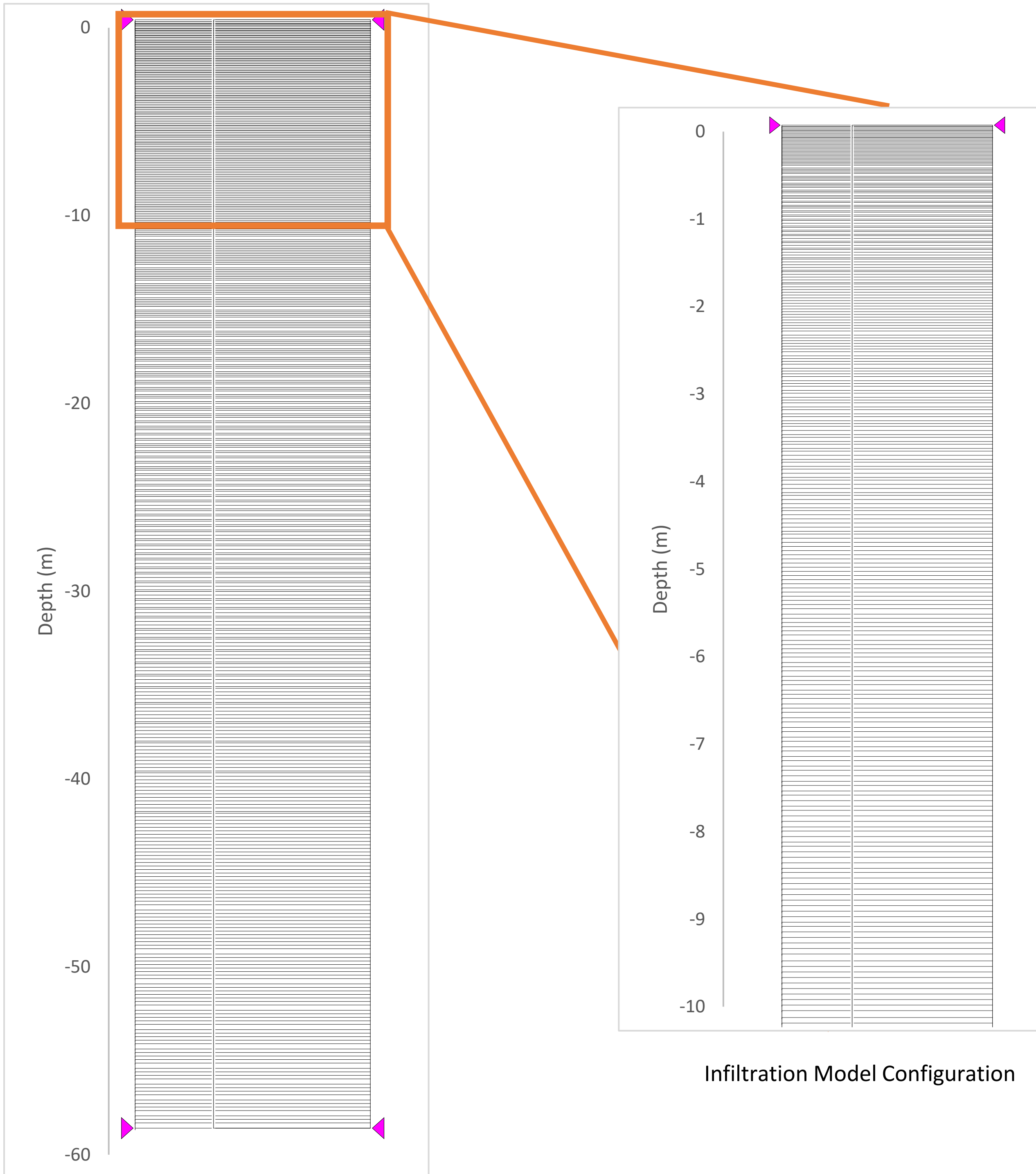


Figure provided from Newfields, 2020

PITEAU ASSOCIATES GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS	CTFS Closure Configuration				
	CLIENT:	LNC	PROJECT:	CTFS Infiltration Modeling	
	JOB	3898	DRAWN:	TC	CHECKED: TC
	DATE:	January, 2021	FIGURE:	1	



Draindown Model Configuration

Infiltration Model Configuration

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GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

1D Hydrus Model Configurations

CLIENT: LNC	PROJECT: CTFS		
JOB #: 3898	DRAWN: TC	CHECKED: TC	
DATE: January, 2021	FIGURE: 2		

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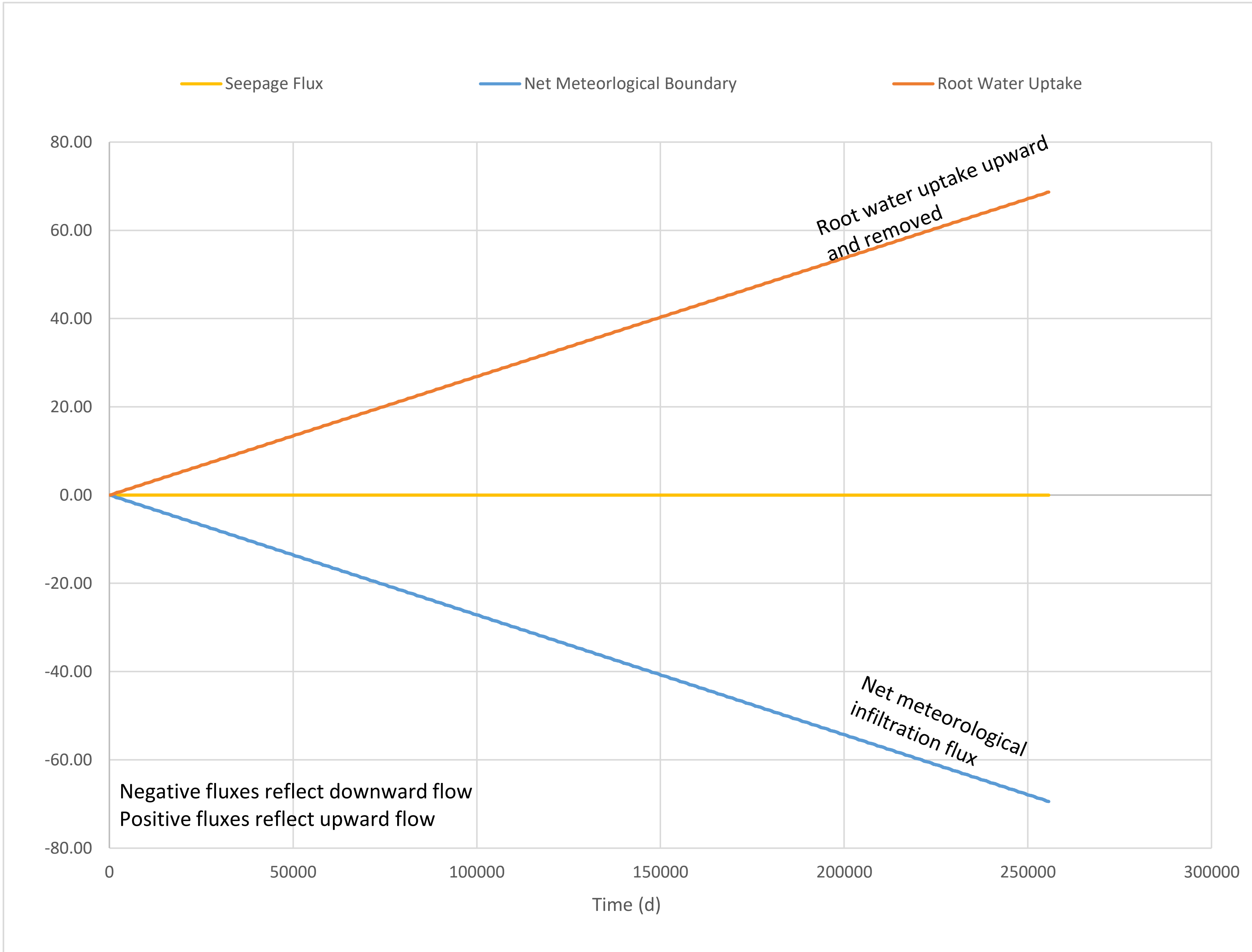
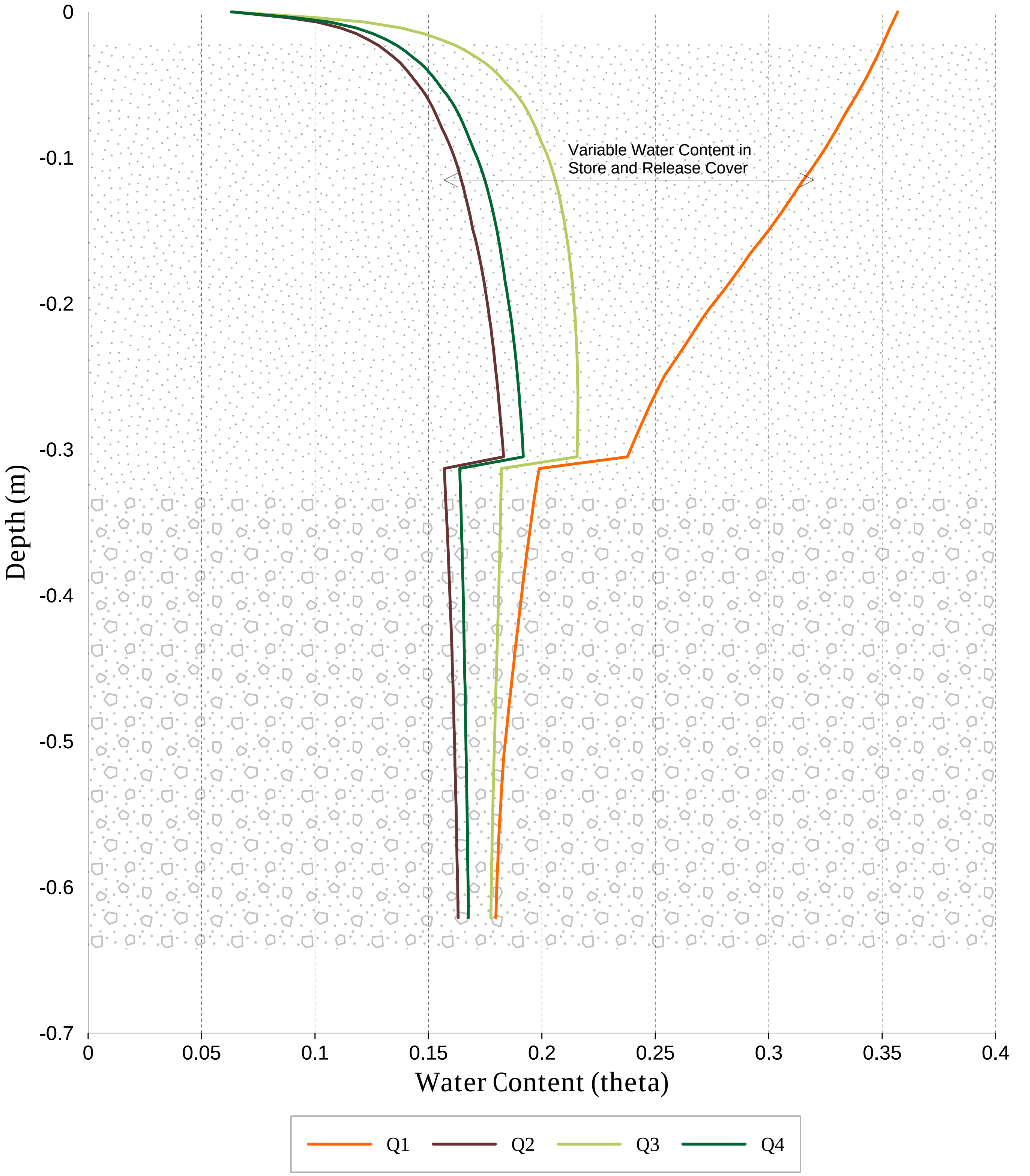
D:\Work\Templates\Excel\[Title Block templates2014.xlsx]

PITEAU ASSOCIATES

Cumulative Fluxes for 10-m CTFS Infiltration Model

CLIENT:	LNC	PROJECT:	CFTS Infiltration Modeling
JOB #:	3898	DRAWN:	TC
		CHECKE	TC
DATE:	January, 2021	FIGURE:	3



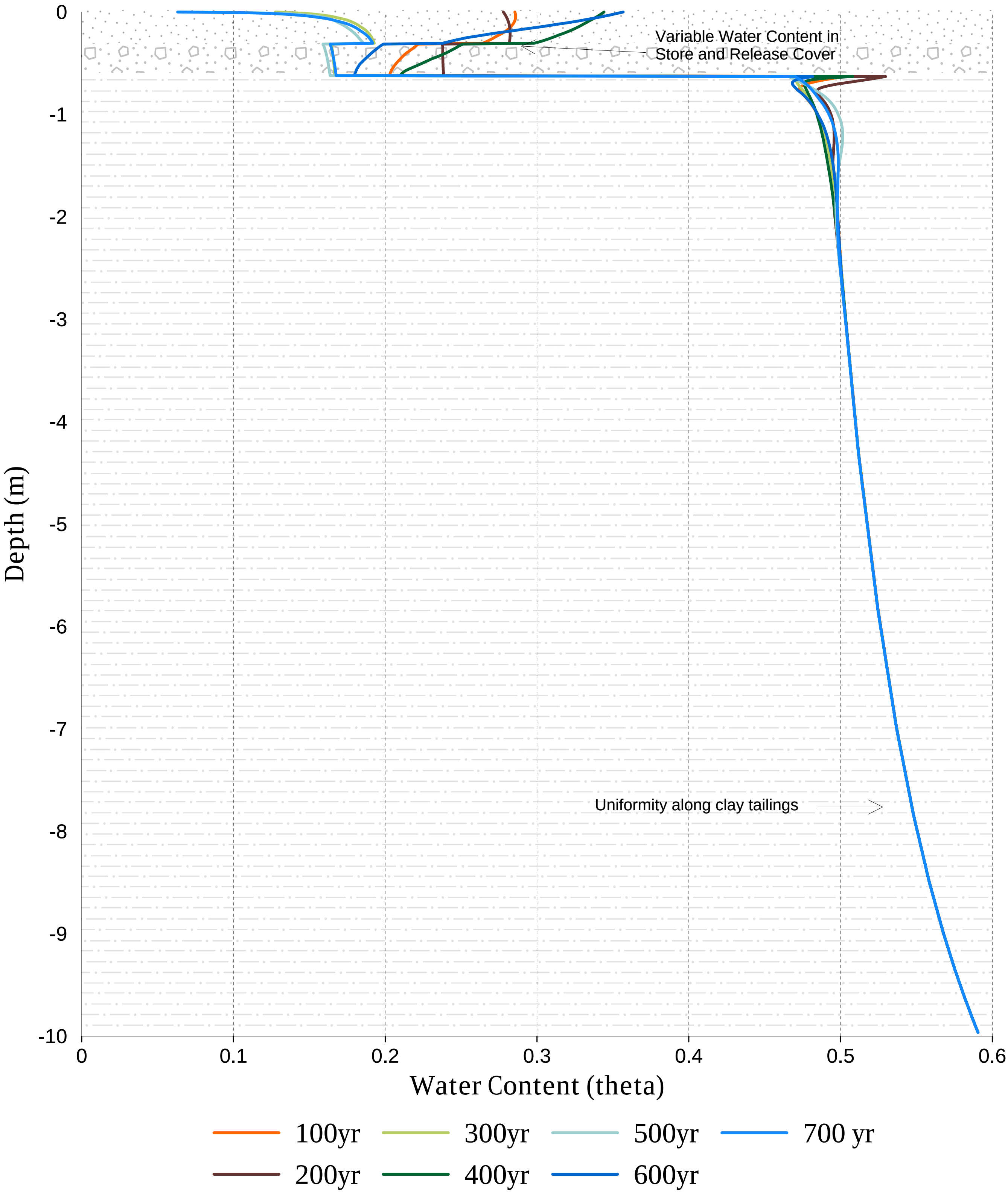


Thacker Pass Project
Lithium Nevada Corporation
CTFS Infiltration Modeling

PITEAU ASSOCIATES
GEOTECHNICAL AND HYDROGEOLOGICAL CONSULTANTS

Annual Water Content Variation in Store and Release Cover

BY: TC	DATE: Jan 2021
APPROVED: TC	FIG: 4

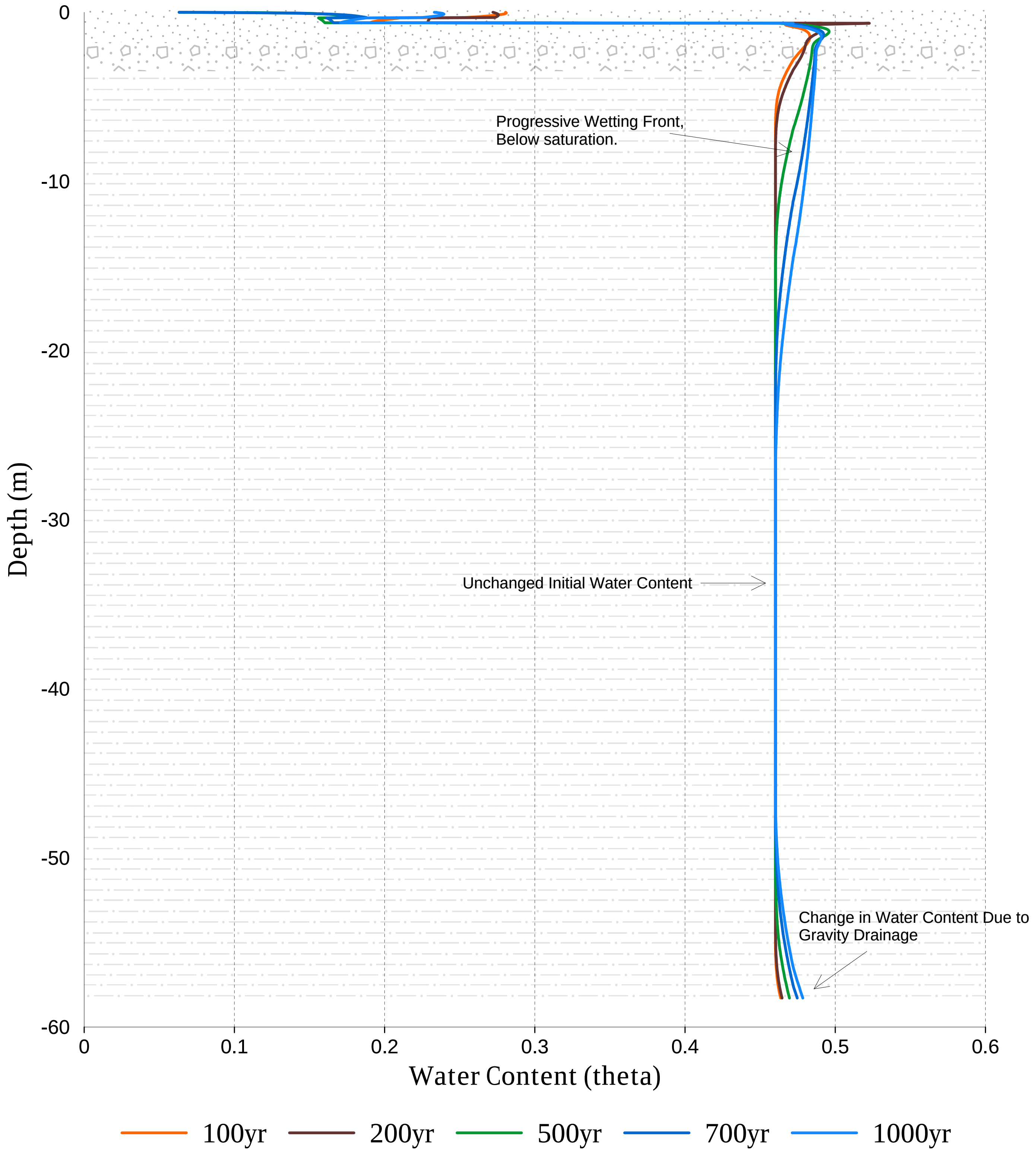


CTFS Equilibrium Water Content Profile
Lithium Nevada Corporation
CTFS Unsaturated Flow Modeling

PITEAU ASSOCIATES
GEOTECHNICAL AND HYDROGEOLOGICAL CONSULTANTS

Equilibrium Water Content in 10-Meter Infiltration Model

BY: TC	DATE: Jan 2021
APPROVED: TC	FIG: 5



CTFS Equilibrium Water Content Profile
Lithium Nevada Corporation
CTFS Unsaturated Flow Modeling

PITEAU ASSOCIATES
GEOTECHNICAL AND HYDROGEOLOGICAL CONSULTANTS

Simulated Water Content in 58.5-Meter Drain Down Model

BY:	DATE:
TC	Jan 2021
APPROVED:	FIG:
TC	6

ATTACHEMENT A
LABORATORY TESTING

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name:	Piteau Associates
Job Number:	DB19.1317.00
Sample Number:	4-LFILTCAKE-E05B-315 (Firm) (930 kg/m³)
Material Type:	Tailings
Depth:	NA

	As Received	Remolded
Test Date:	NA	10-Sep-19
Field weight of sample* (g):		490.40
Tare weight, ring (g):		140.05
Tare weight, pan/plate (g):		0.00
Tare weight, other (g):		0.00
Dry weight of sample (g):		208.81
Sample volume (cm^3):		224.27
Assumed particle density (g/cm^3):		2.65
Gravimetric Moisture Content (% g/g):		67.8
Volumetric Moisture Content (% vol):		63.1
Dry bulk density (g/cm^3):		0.93
Wet bulk density (g/cm^3):		1.56
Calculated Porosity (% vol):		64.9
Percent Saturation:		97.3

Laboratory analysis by:	D. O'Dowd
Data entered by:	D. O'Dowd
Checked by:	J. Hines

Comments:

* Weight including tares
NA = Not analyzed
--- = This sample was not remolded

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Saturated Hydraulic Conductivity
Falling Head Method

Job Name: Piteau Associates
Job Number: DB19.1317.00
Sample Number: 4-LFILTCAKE-E05B-315 (Firm) (930 kg/m³)
Material Type: Tailings
Depth: NA

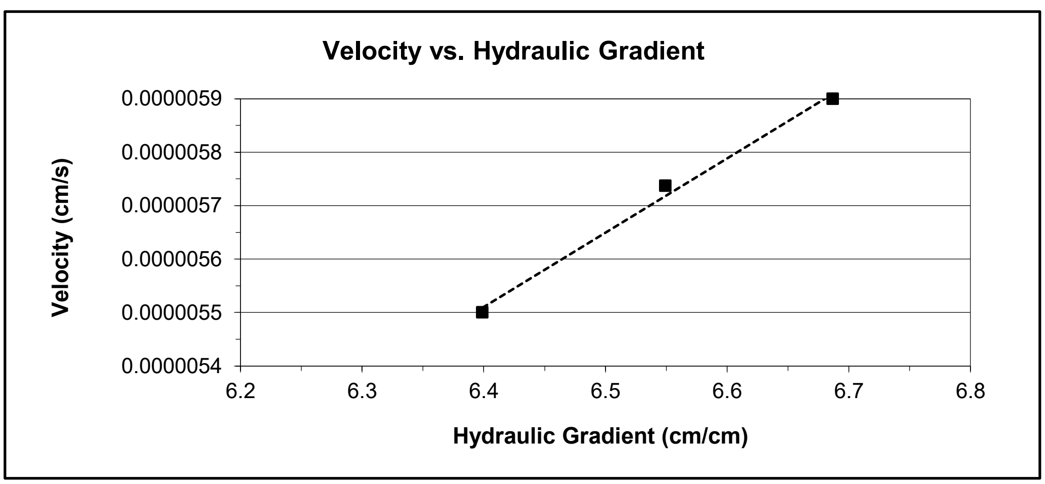
Type of water used: TAP
Backpressure (psi): 0.0
Offset (cm): 0.1
Sample length (cm): 7.64
Sample x-sectional area (cm^2): 29.36
Reservoir x-sectional area (cm^2): 0.70

Date	Time	Temp (°C)	Reservoir head (cm)	Corrected head (cm)	Elapsed time (sec)	Ksat (cm/sec)	Ksat @ 20°C (cm/sec)
Test # 1:							
12-Sep-19	12:53:47	22.5	51.1	51.0	2425	8.9E-07	8.4E-07
12-Sep-19	13:34:12	22.5	50.5	50.4			
Test # 2:							
12-Sep-19	14:09:12	22.5	50	49.9	2078	8.8E-07	8.3E-07
12-Sep-19	14:43:50	22.5	49.5	49.4			
Test # 3:							
12-Sep-19	15:25:59	22.5	48.9	48.8	2601	8.7E-07	8.2E-07
12-Sep-19	16:09:20	22.5	48.3	48.2			

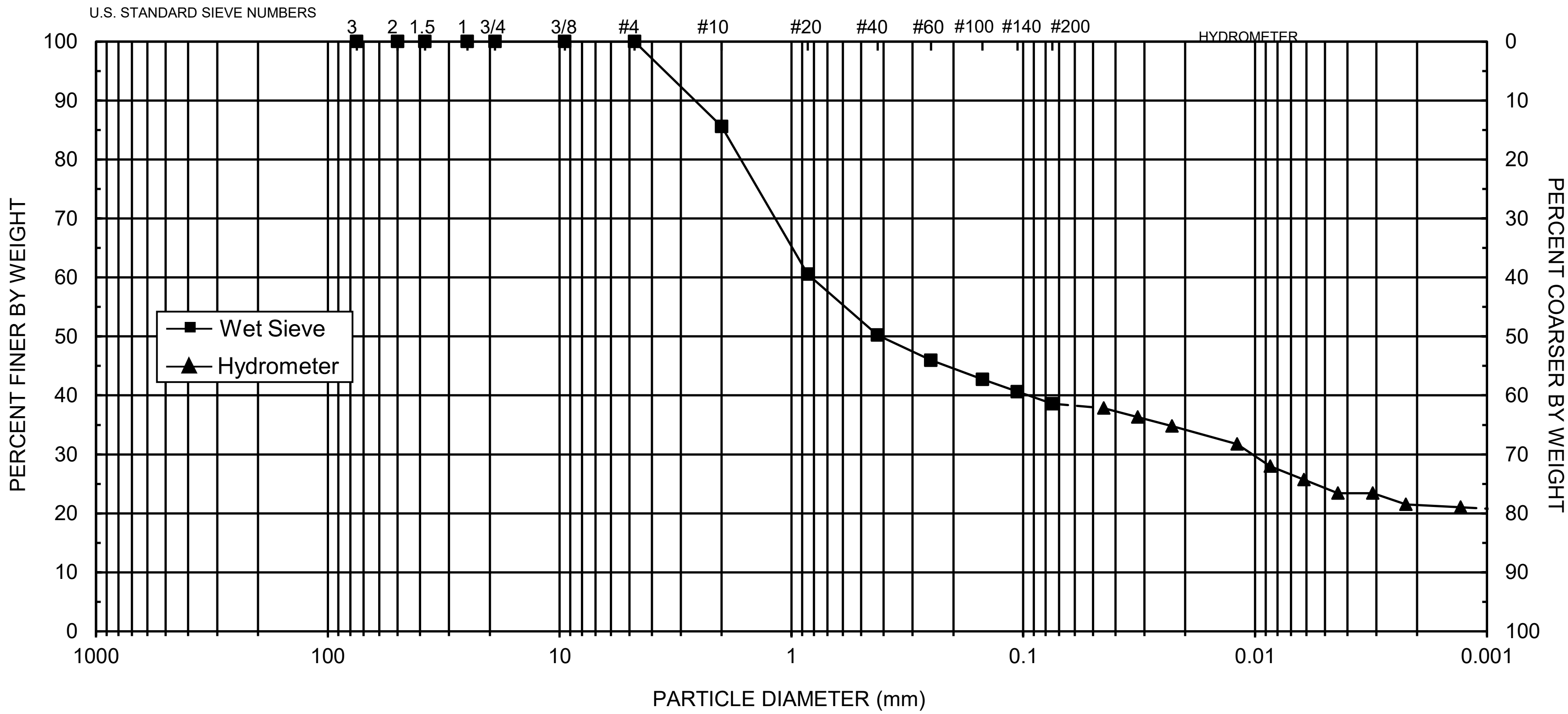
***Average Ksat* (cm/sec):** **8.3E-07**
***Oversize Corrected Ksat* (cm/sec):** **NA**

Comments:

--- = Oversize correction is unnecessary since coarse fraction < 5% of composite mass
NA = Not applicable



Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL Coarse	GRAVEL Fine	SAND Coarse	SAND Medium	SAND Fine	SILT OR CLAY

USDA	COBBLES	GRAVEL	SAND Very coarse	SAND Coarse	SAND Medium	SAND Fine	SAND Very fine	SILT	CLAY

d_{10} = **6.5E-09**	d_{30} = **0.010**	d_{50} = **0.41**	d_{60} = **0.82**	C_u = **1.3E+08**	C_c = **1.9E+04**

SAMPLE NUMBER	DEPTH	ASTM CLASSIFICATION	USDA CLASSIFICATION
4-LFILTCAKE-E05B-315	**NA**	**Silty sand (SM)**	**Sandy Clay Loam** †

† Greater than 10% of sample is coarse material

Note: Reported values for d_{10}, C_u, C_c, and ASTM classification are estimates, since extrapolation was required to obtain the d_{10} diameter

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Piteau Associates
Job Number: DB19.1317.00
Sample Number: 4381-Blend (Firm) (970 kg/m³)
Material Type: Tailings
Depth: NA

	As Received	Remolded
Test Date:	NA	10-Sep-19
Field weight of sample* (g):		717.10
Tare weight, ring (g):		276.80
Tare weight, pan/plate (g):		0.00
Tare weight, other (g):		0.00
Dry weight of sample (g):		274.58
Sample volume (cm^3):		283.34
Assumed particle density (g/cm^3):		2.65
Gravimetric Moisture Content (% g/g):		60.4
Volumetric Moisture Content (% vol):		58.5
Dry bulk density (g/cm^3):		0.97
Wet bulk density (g/cm^3):		1.55
Calculated Porosity (% vol):		63.4
Percent Saturation:		92.2

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not analyzed
--- = This sample was not remolded

Saturated Hydraulic Conductivity
Falling Head Method

Job Name:	Piteau Associates	*Type of water used:*	TAP
Job Number:	DB19.1317.00	*Backpressure* (psi):	0.0
Sample Number:	4381-Blend (Firm) (970 kg/m³)	*Offset* (cm):	0.1
Material Type:	Tailings	*Sample length* (cm):	7.00
Depth:	NA	*Sample x-sectional area* (cm^2):	40.49
		Reservoir x-sectional area (cm^2):	0.70

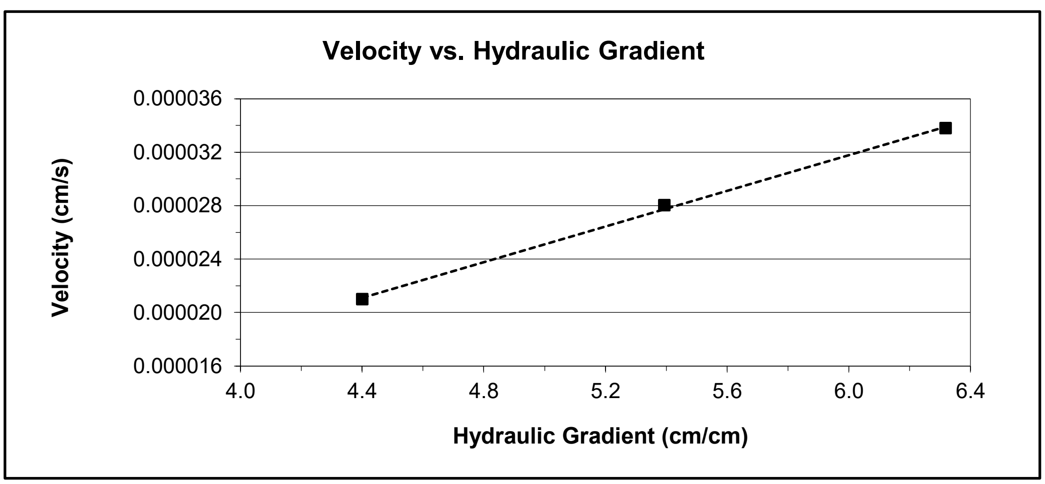
Date	Time	Temp (°C)	Reservoir head (cm)	Corrected head (cm)	Elapsed time (sec)	Ksat (cm/sec)	Ksat @ 20°C (cm/sec)
Test # 1:							
12-Sep-19	13:11:45	22.5	45.7	45.6	1408	5.3E-06	5.0E-06
12-Sep-19	13:35:13	22.5	42.95	42.9			
Test # 2:							
12-Sep-19	14:06:01	22.5	39.6	39.5	2160	5.2E-06	4.9E-06
12-Sep-19	14:42:01	22.5	36.1	36.0			
Test # 3:							
12-Sep-19	15:24:35	22.5	32.55	32.5	2718	4.8E-06	4.5E-06
12-Sep-19	16:09:53	22.5	29.25	29.2			

***Average Ksat* (cm/sec): 4.8E-06**

***Oversize Corrected Ksat* (cm/sec): ---**

Comments:

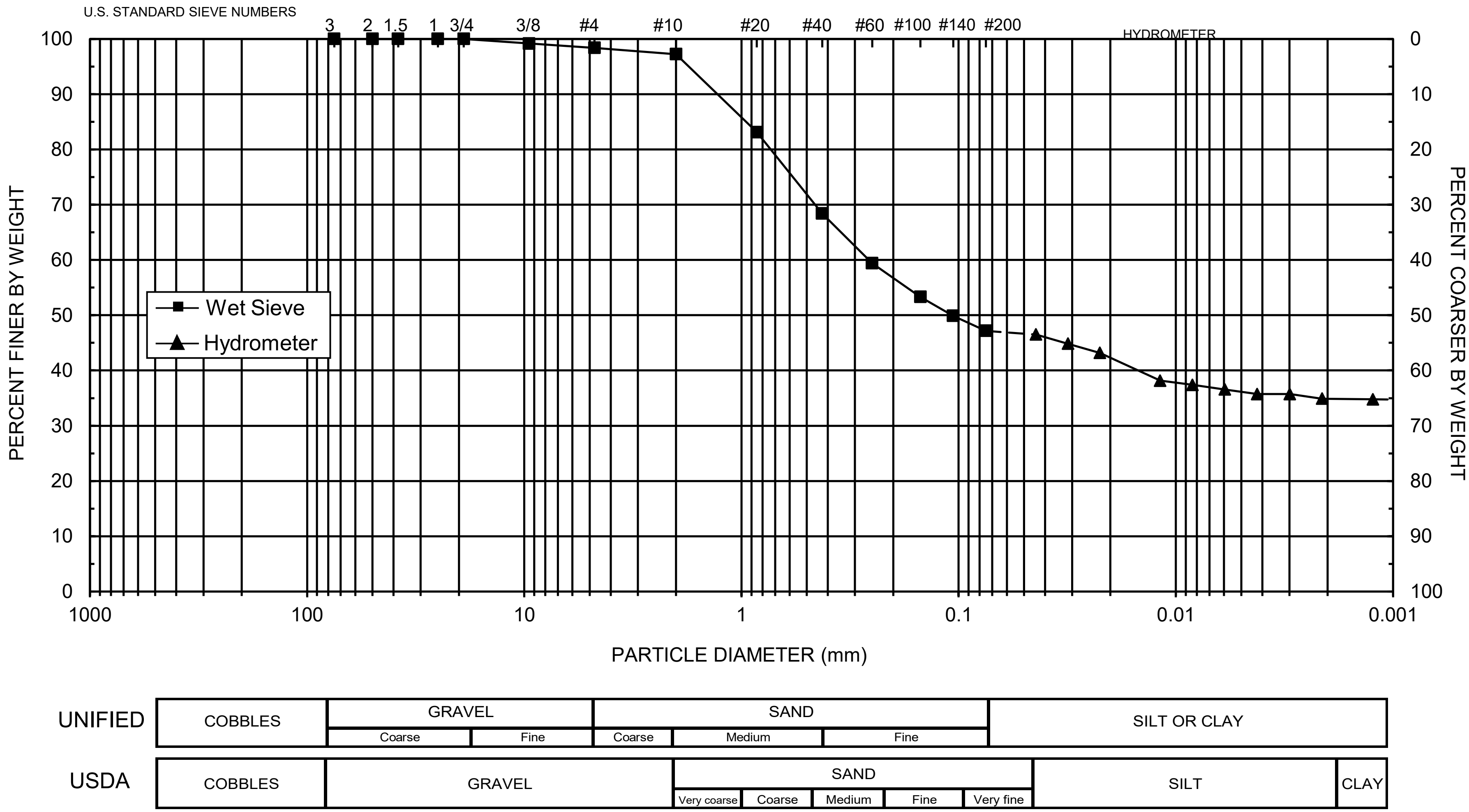
--- = Oversize correction is unnecessary since coarse fraction < 5% of composite mass



Laboratory analysis by: D. O'Dowd

Data entered by: D. O'Dowd

Checked by: J. Hines



d_{10} = **5.7E-52**	d_{30} = **6.2E-13**	d_{50} = **0.11**	d_{60} = **0.26**	C_u = **4.6E+50**	C_c = **2.6E+27**

SAMPLE NUMBER	DEPTH	ASTM CLASSIFICATION	USDA CLASSIFICATION
4381-Blend	**NA**	**Silty sand (SM)**	**Sandy Clay**

Note: Reported values for d_{10}, C_u, C_c, and ASTM classification are estimates, since extrapolation was required to obtain the d_{10} diameter

Daniel B. Stephens & Associates, Inc.

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Lithium Nevada	Lab Sample No.:	19-036-01A
Project:	Thacker Pass	Field Sample No.:	Clay Tailings
Project No.:	475.0385.000	Location:	Pilot Plant
Phase:	-	Elevation/Depth:	N/A
Requested By:	Mark Walden	Tested By:	K.Engelmeier
Test Started:	4/1/2019	Checked By:	K.Magner
Test Finished:	2/25/2019	Sample Description:	Light brown Silt with Sand

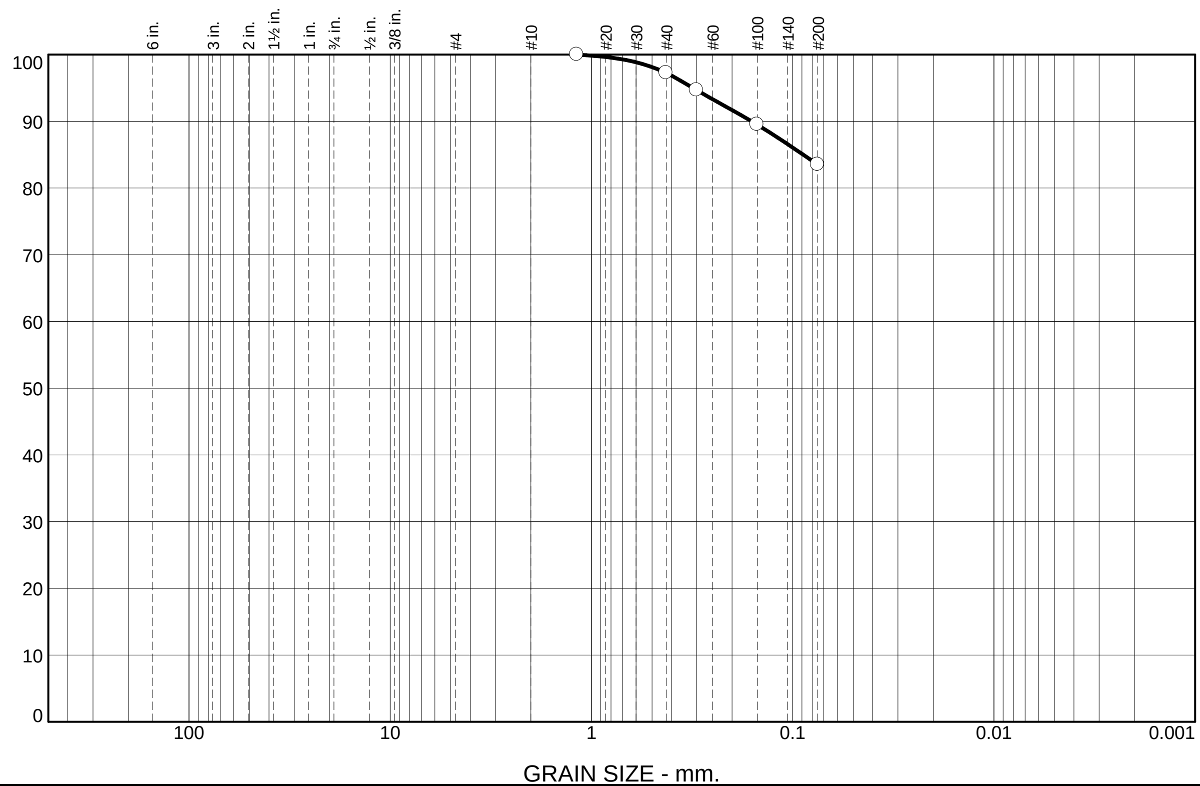
Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	50
Saturated (Y/N):	Yes
Permeability: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	After Consolidation	Final
Wet Soil + Tare (g)	905.8		945.26
Dry Soil + Tare (g)	612.31		640.35
Tare (g)	0.00		45.19
Wt. of Water (g)	293.49		304.91
Dry Soil (g)	612.31		595.16
Moisture Content (%)	47.9		51.2
Sample Volume (ft^3)	0.02023	0.02012	
Dry Unit Weight (pcf)	66.7	66.9	
Wet Unit Weight (pcf)	98.7	106.6	
Saturation (%)	80.7	100.0	
Relative Compaction (%)	89.1	89.3	
Height (in)	5.680	5.672	
Diameter (in)	2.799	2.795	
Area (in^2)	6.153	6.137	
Est. Moisture Content after Consolidation (%)		59.1%	
Est. Void Ratio after Consolidation		1.731	
Specific Gravity*	2.93		

*Specific gravity is measured
Maximum Dry Unit Weight:
ASTM D 1557

Maximum Dry Unit Weight (pcf):	74.9	
Initial Remolded Dry Unit Weight (pcf):	66.7	
Initial Percent Compaction:	89%	
Initial Void Ratio:	1.741	
Optimum Moisture Content(%):	40.4	
Initial Moisture Content (%):	47.9	
Confining Pressure (psi):	5.0	
Hydraulic Conductivity, k_{20} (cm/s):	**4.1E-07**	
Gradient Range (h/L):	2.6	3.6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.8	13.7	83.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#16	100.0		
#40	97.2		
#50	94.7		
#100	89.5		
#200	83.5		

* (no specification provided)

Material Description

Light Brown silt with sand

Atterberg Limits

PL= 35 LL= 48 PI= 13

Coefficients

D_{90}= 0.1601 D_{85}= 0.0887 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-7-5(14)

Remarks

Atterberg and moisture correction dried at 110C / Natural Moisture Content: 51.9%

Location: Pilot Plant/ Clay Tailings
Sample Number: 19-036-01

Date: 4/1/2019

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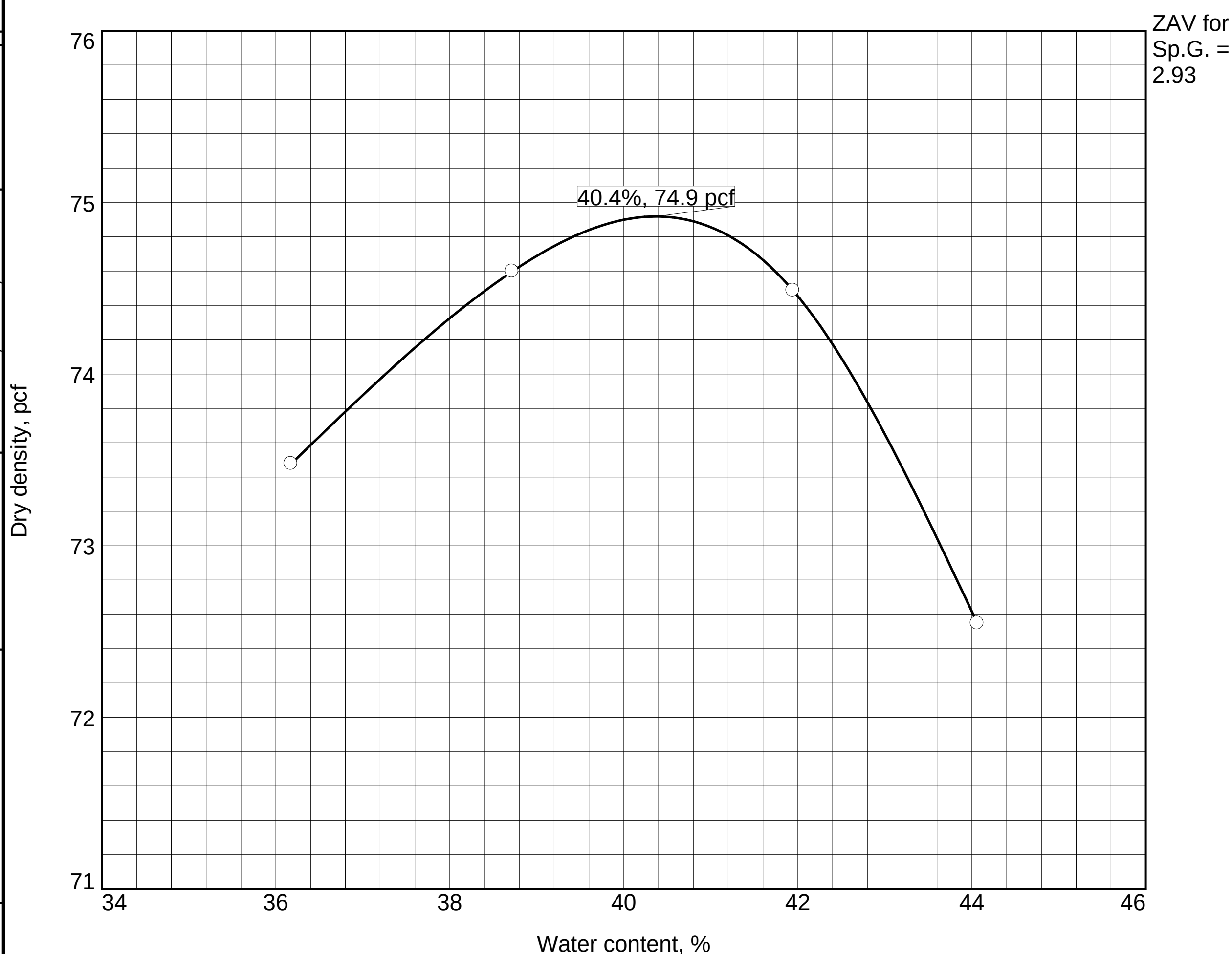
Client: Lithium Nevada
Project: Thacker Pass

Project No: 475.0385.000 **Figure** 19-036-01

Tested By: AH **Checked By:** JH

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	ML	A-7-5(14)	51.9	2.932	48	13	0.0	83.5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 74.9 pcf Optimum moisture = 40.4 %	Light Brown silt with sand

Project No. 475.0385.000 **Client:** Lithium Nevada

Project: Thacker Pass

Date: 4/1/2019

○ **Location:** Pilot Plant/ Clay Tailings **Sample Number:** 19-036-01

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Remarks:

*Measured Specific Gravity
*Dried at 110C

Figure 19-036-01

Tested By: CB **Checked By:** JH

NewFields

Flexible Wall Hydraulic Conductivity
ASTM D5084

Client:	Lithium Nevada	Lab Sample No.:	19-057-02C
Project:	Thacker Pass	Field Sample No.:	Composite Tailings
Project No.:	475.0385.000	Location:	Composite Tailings
Phase:	-	Elevation/Depth:	Composite
Requested By:	Kerry Magner	Tested By:	KE
Test Started:	3/22/2019	Checked By:	KE
Test Finished:	3/25/2019	Sample Description:	Light brown sandy silt

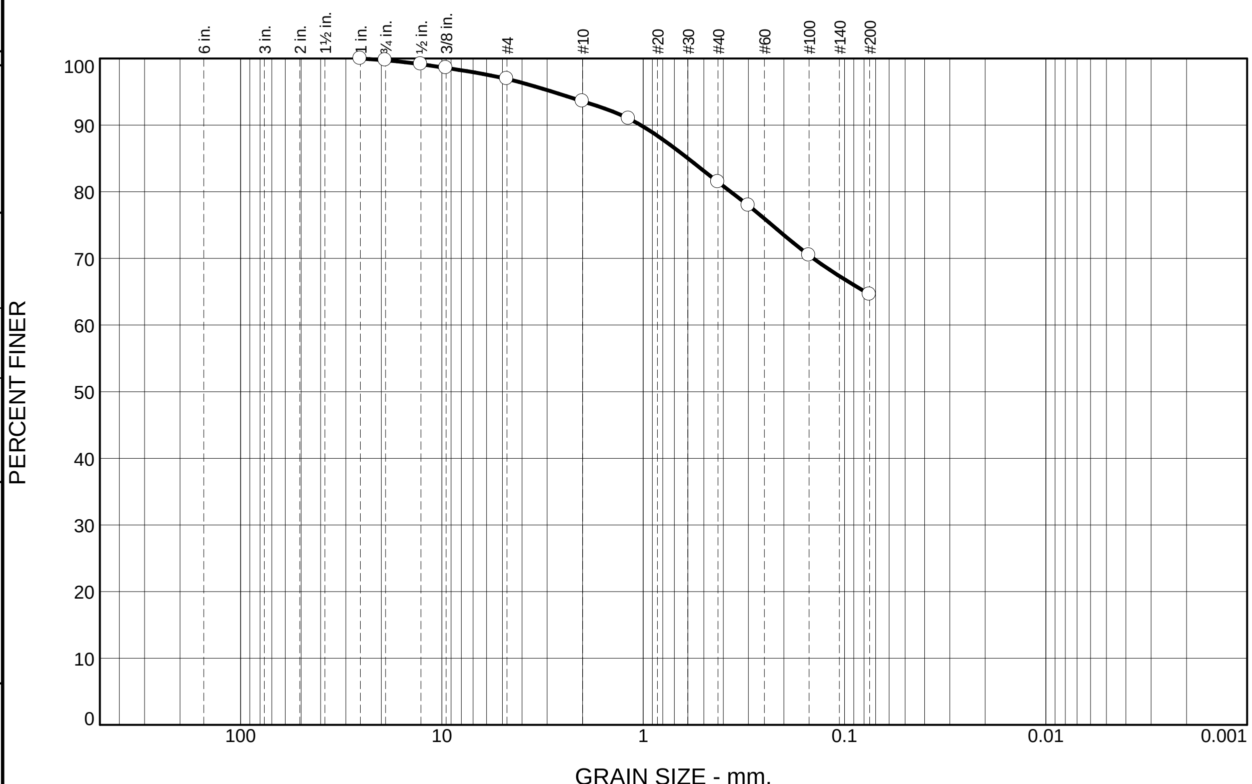
Test Boundary Conditions	
Type of Permeant	De-aired Bottled
Magnitude of Back pressure (psi)	50
Saturated (Y/N):	Yes
Stage 1: Effective Stress (psi)	5
Sample Type	Remolded
Burrete Area (cm^2)	0.877

Test Specimen Data	Initial	During k Testing	Final
Wet Soil + Tare (g)	977.97		1104.40
Dry Soil + Tare (g)	688.77		840.29
Tare (g)	0.00		191.05
Wt. of Water (g)	289.20		264.11
Dry Soil (g)	688.77		649.24
Moisture Content (%)	42.0		40.7
Sample Volume (ft^3)	0.02002	0.01989	
Dry Density (pcf)	75.8	76.0	
Wet Density (pcf)	107.7	110.4	
Saturation (%)	92.8	100.0	
Percent Compaction	89.7	90.0	
Height (in)	5.623	5.612	
Diameter (in)	2.799	2.794	
Area (in^2)	6.153	6.130	
Est. Moisture Content after Consolidation (%)		44.8%	
Est. Void Ratio after Consolidation		1.210	
Specific Gravity*	2.70		

*Specific gravity is assumed
Maximum Dry Density:
ASTM D 1557

Maximum Dry Density (pcf):	84.5	
Initial Remolded Dry Density (pcf):	75.8	
Initial Percent Compaction:	90%	
Initial Void Ratio:	1.222	
Optimum Moisture Content(%):	34.5	
Initial Water Content (%):	42.0	
Confining Pressure (psi):	5.0	
Hydraulic Conductivity, k_{20} (cm/s):	**1.2E-07**	
Gradient Range (h/L):	1.0	1.8

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.3	2.8	3.3	12.1	16.9	64.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	99.7		
.5	99.1		
.375	98.6		
#4	96.9		
#10	93.6		
#16	91.0		
#40	81.5		
#50	77.9		
#100	70.5		
#200	64.6		

* (no specification provided)

Material Description

Light Brown sandy silt

Atterberg Limits

PL= 33 LL= 48 PI= 15

Coefficients

D_{90}= 1.0279 D_{85}= 0.5986 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-7-5(10)

Remarks

Atterberg and moisture correction dried at 110C

Location: Composite Tailings
Sample Number: 19-057-02

Date: 2/27/2019

NewFields

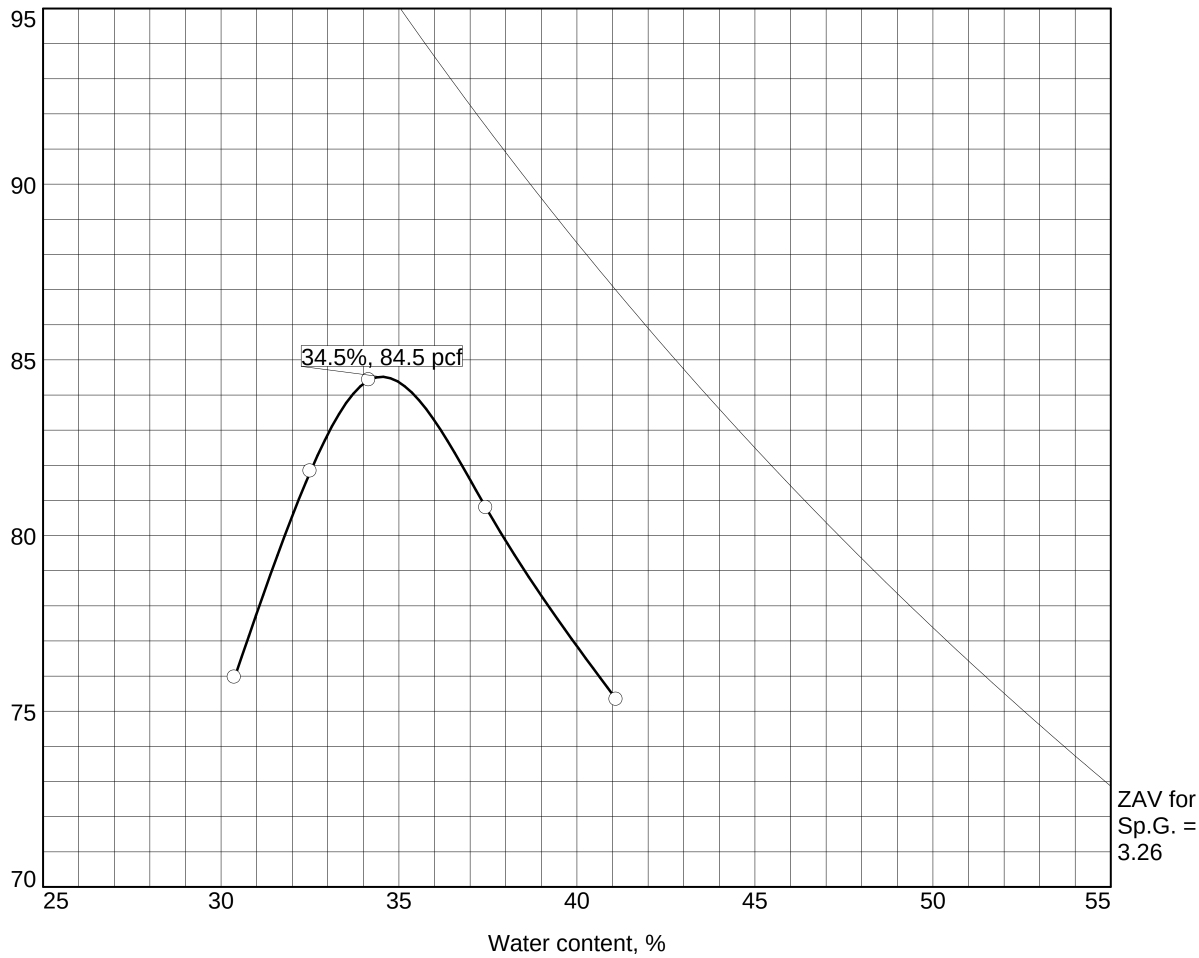
Client: Lithium Nevada
Project: Thacker Pass

Project No: 475.0385.000 **Figure** 19-057-02

Tested By: AR **Checked By:** JH

Test results included in this report relate only to the items inspected or tested. This report shall not be reproduced, in full, without prior written approval of NewFields.

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	ML	A-7-5(10)		3.26	48	15	0	64.6

TEST RESULTS

Maximum dry density = 84.5 pcf

Optimum moisture = 34.5 %

MATERIAL DESCRIPTION

Light Brown sandy silt

Project No. 475.0385.000 **Client:** Lithium Nevada

Project: Thacker Pass

Date: 3/1/2019

○ **Location:** Composite Tailings **Sample Number:** 19-057-02

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Remarks:

*Assumed Specific Gravity
*Dried at 110C

Figure 19-057-02

Tested By: AR **Checked By:** JH