EXHIBIT 11

PITEAU TECHNICAL MEMORANDUM
(JANUARY 26, 2021)

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TECHNICAL MEMORANDUM

DRAFT: January 22, 2021

FINAL: January 26, 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**

INTRODUCTION

This technical memorandum has been prepared at the request of Lithium Nevada Corporation (LNC) to estimate infiltration through their 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 dried to 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.

The CTFS will be constructed on a single lined synthetic liner as proposed in the engineering design report (Newfields, 2020). 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 a silty sand to a silty clay material and meet the criteria for a clay cap. Measured hydraulic conductivity range from 4.8 x 10^{-6} cm/s to 4.1 x 10^{-7} cm/s with a median value of 8.1 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 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. Table 1 summarizes the particle size distributions and hydraulic conductivity values for three available clay tailings samples.

Table 1 Hydraulic summary of clay tailing samples

Sample ID	% Sand & Gravel	% Silt	% Clay	USCS Classification	Hydraulic Conductivity (cm/s)	Φ_{sat}	Source
4-LFILTCAKE-E05B-315	61.4	17.1	21.4	SM	8.3×10^{-7}	0.63	DBSA, 2019
4381-Blend	52.8	12.3	34.9	SM	4.8×10^{-6}	0.59	DBSA, 2019
19-036-01	16.5	28.4[1]	54.8[1]	ML	4.1×10^{-7}	0.59	Newfields, 2019

[1] Projected from ratio of other samples

The CTFS is 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 CFTS closure design is provided in Figure 1.

APPROACH

The analysis followed the approach and methodology utilized to simulated infiltration through WRF 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 a 700-year model period until equilibrium was reached in the clay tailings (i.e. water contents did not change). 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.
- Four 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 1.2×10^{-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.

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

Notes: [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 700yr 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-m 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% - ~0.5% MAP). 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. Reducing the potential evaporation had minimal effect on simulated infiltration, indicating that the climatic evaporation deficit is sufficiently large to attenuate fluctuations in year to year PET. The "No Transpiration" sensitivity produced the highest infiltration rate at ~ 1% % MAP, however it was not considered as a reasonable closure configuration owing to the good practice of revegetating covers and the propensity of natural vegetation to migrate. The sensitivity does underscore the robustness of the store and release cover, that even unvegetated it can effectively intercept precipitation from infiltrating.

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

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 m 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 material 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. 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 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). Given the sensitivity analysis, ET cell engineered to accommodate 2% infiltration from the CTFS are sufficient.

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.

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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

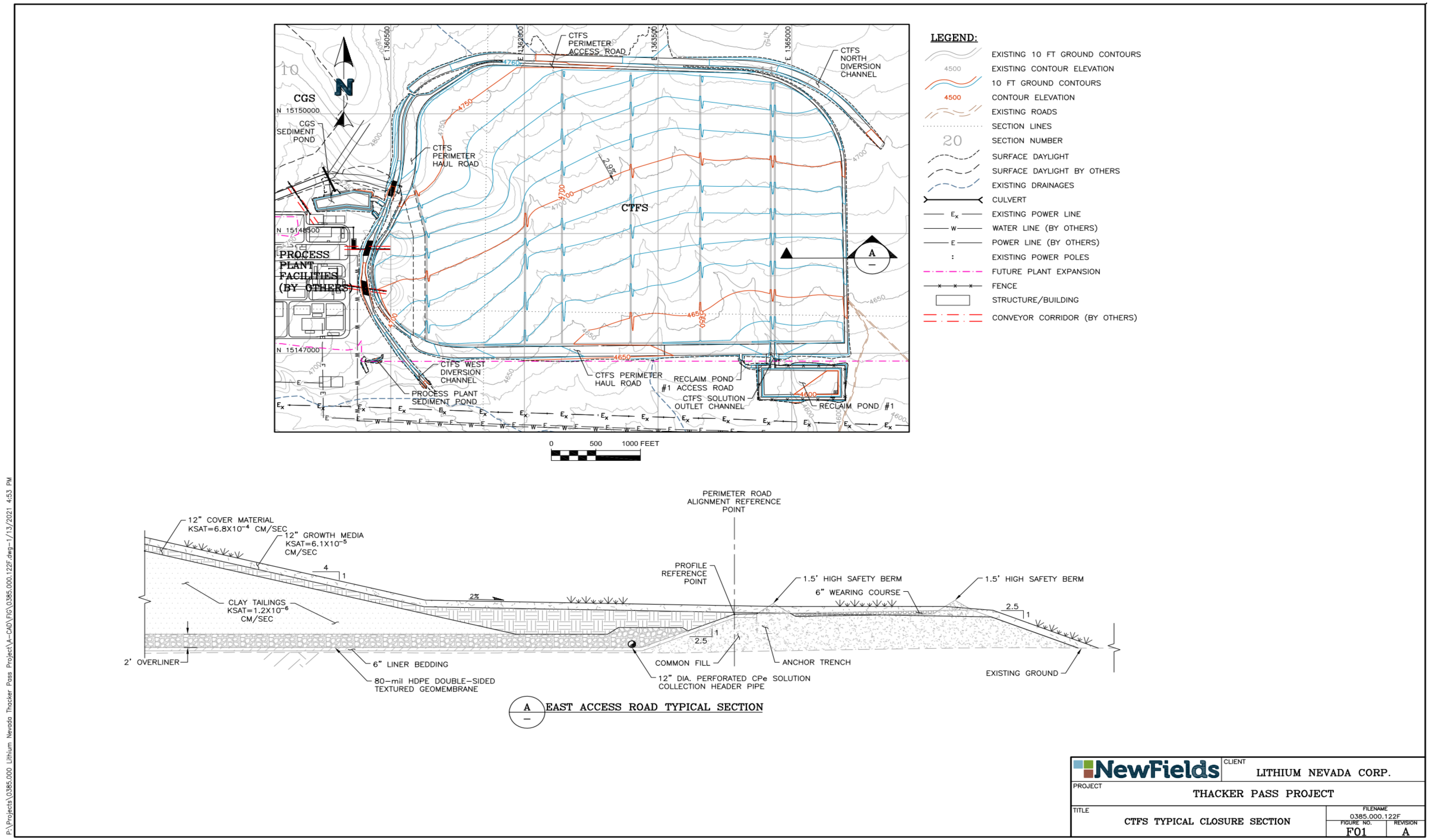
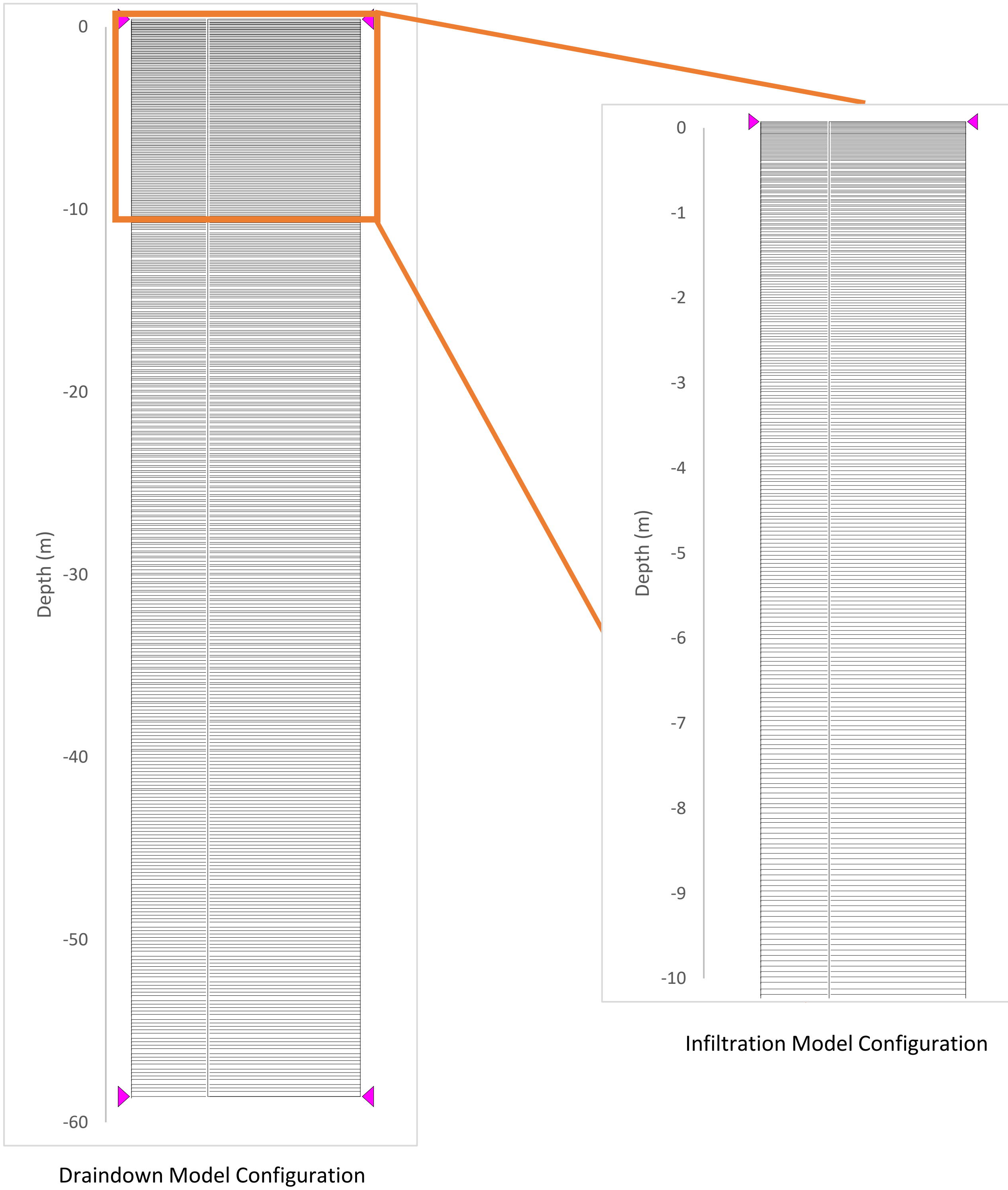


Figure provided from Newfields, 2020

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		



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1D Hydrus Model Configurations			
CLIENT: LNC	PROJECT: CTFS		
JOB #: 3898	DRAWN: TC	CHECKED: TC	
DATE: January, 2021	FIGURE: 2		

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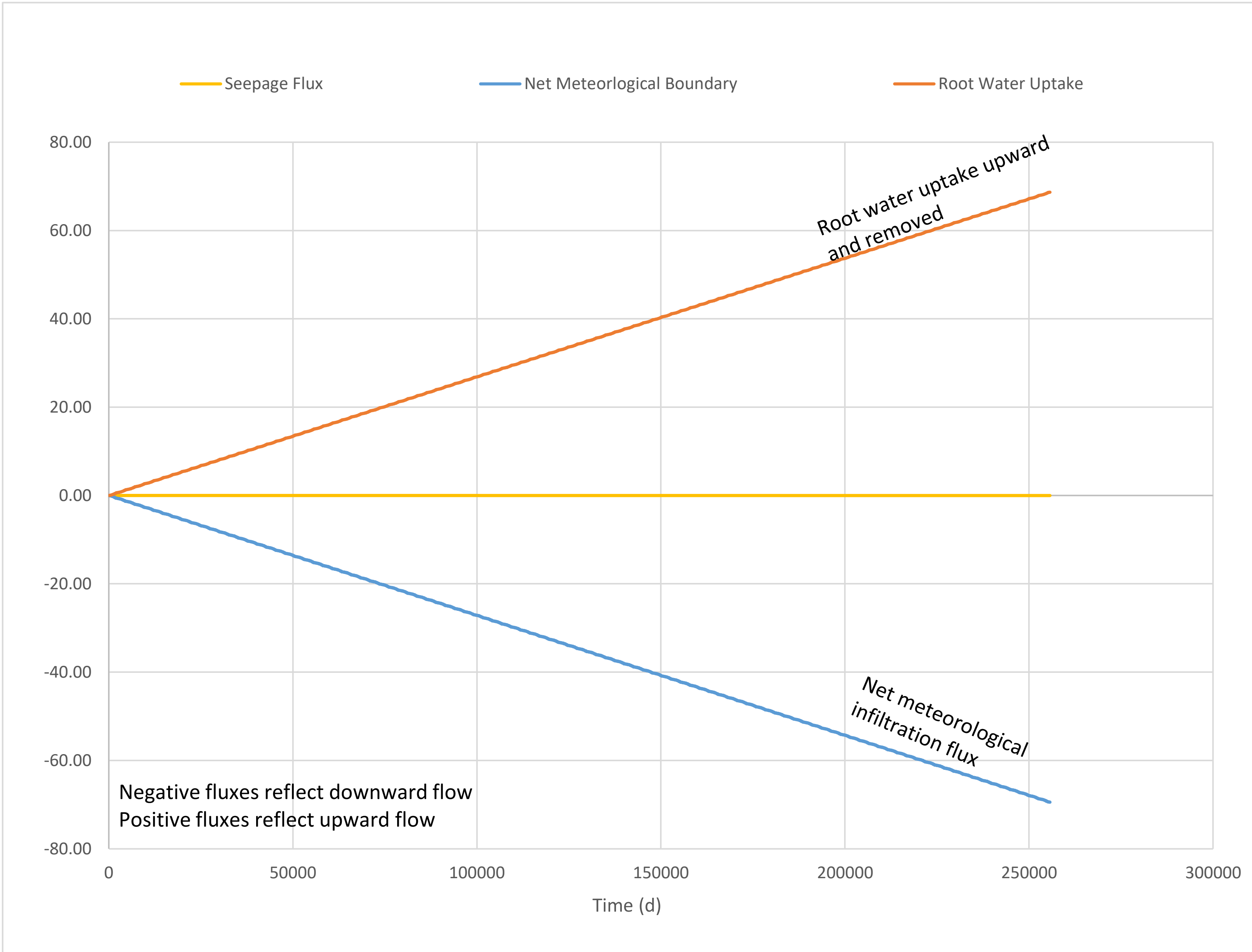

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Cumulative Fluxes for 10-m CTFS Infiltration Model

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

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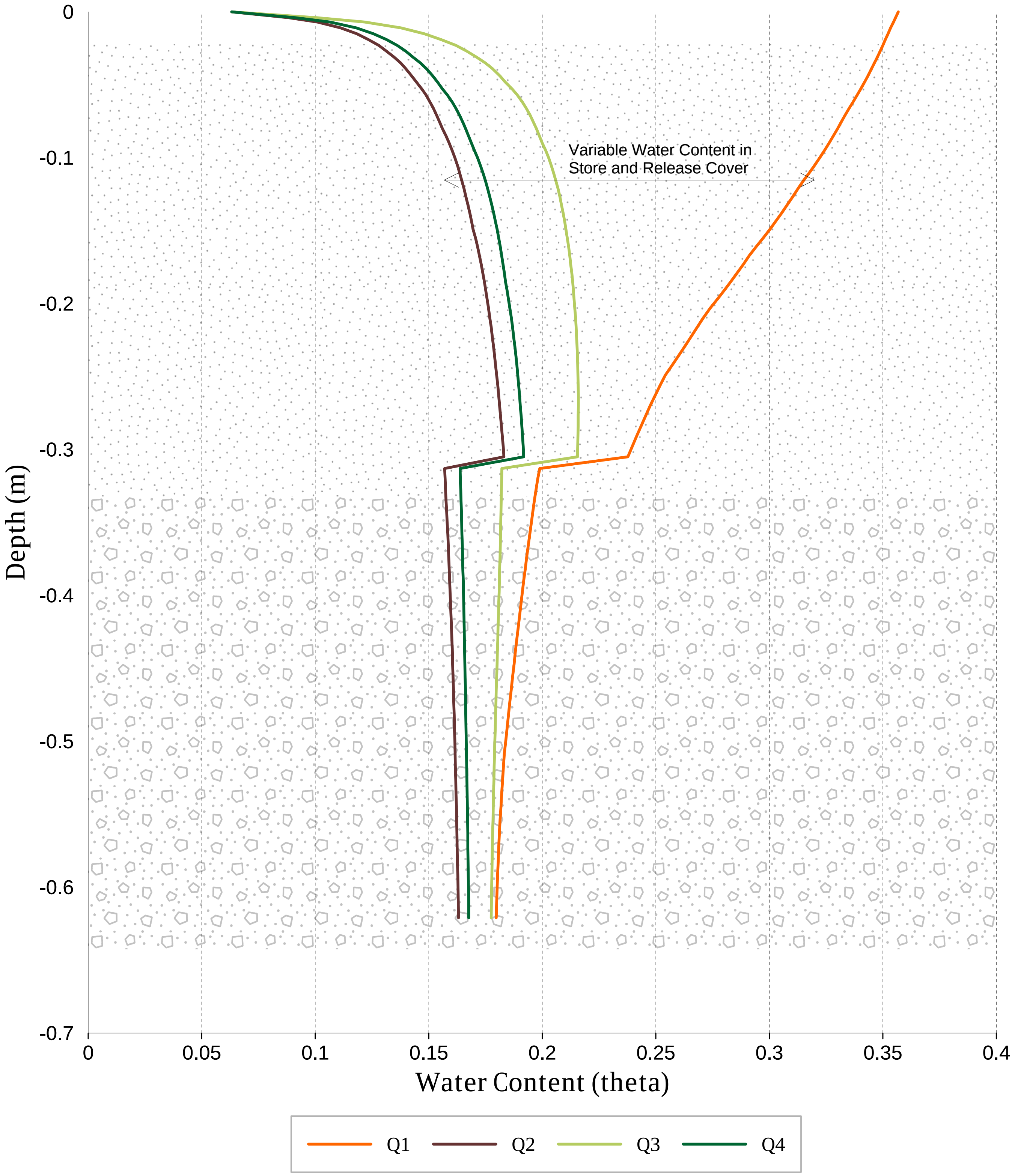

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Thacker Pass Project
Lithium Nevada Corporation
CTFS Infiltration Modeling

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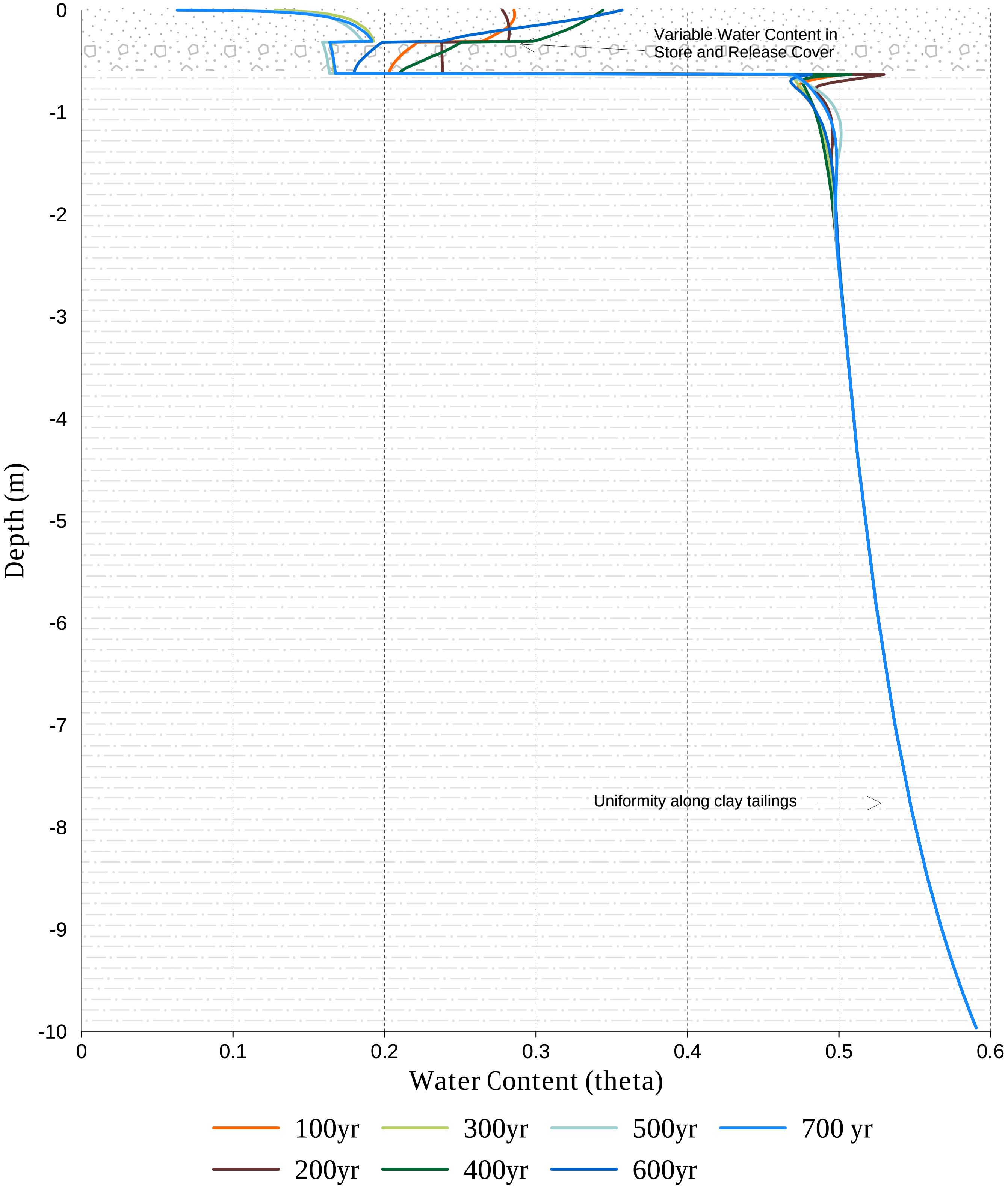
Annual Water Content Variation in Store and Release Cover

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



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

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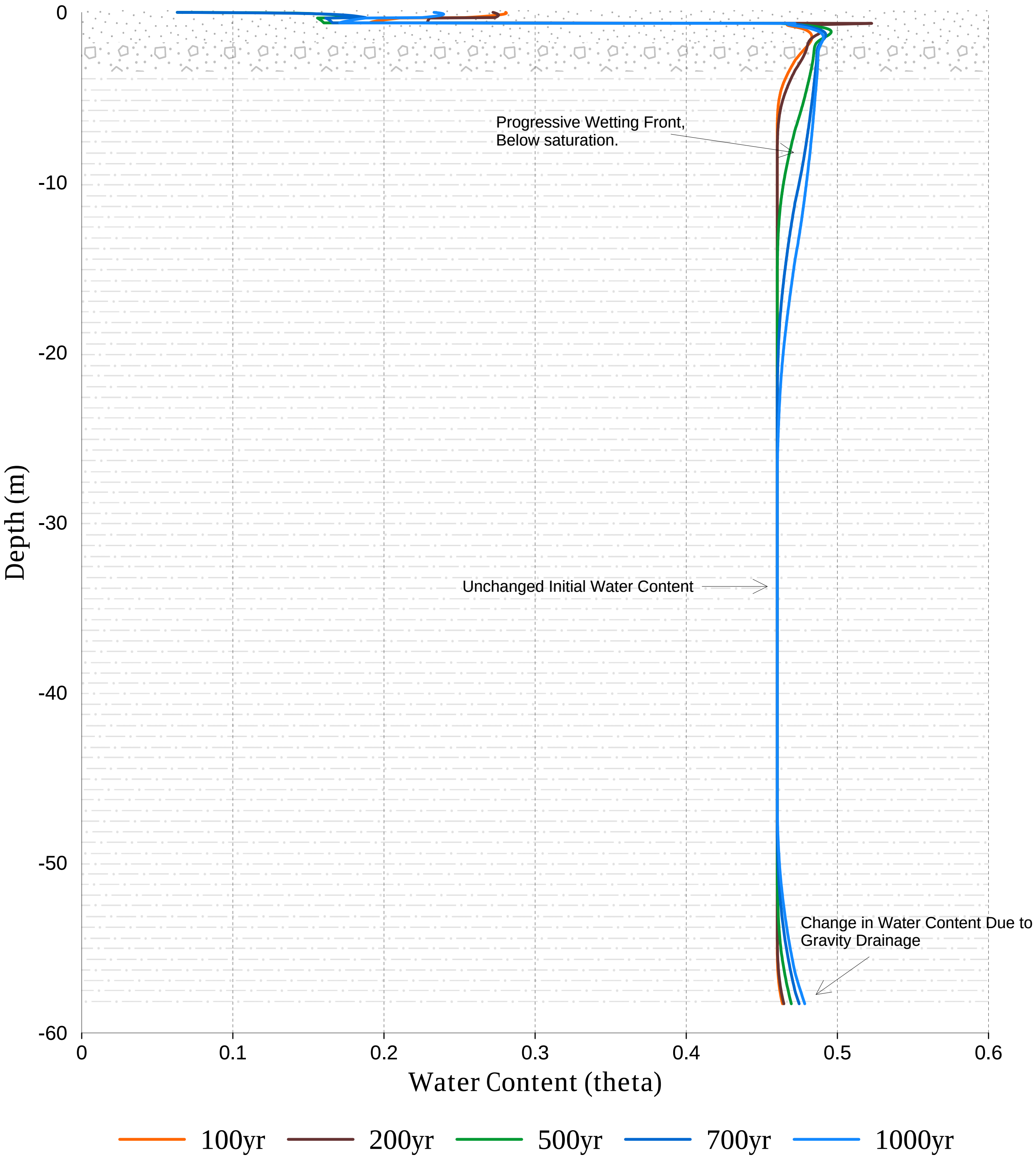
Equilibrium Water Content in 10-Meter Infiltration Model

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



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

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Simulated Water Content in 58.5-Meter Drain Down Model

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