Pickles Butte Sanitary Landfill

Landfill Expansion Process

July 27, 2023

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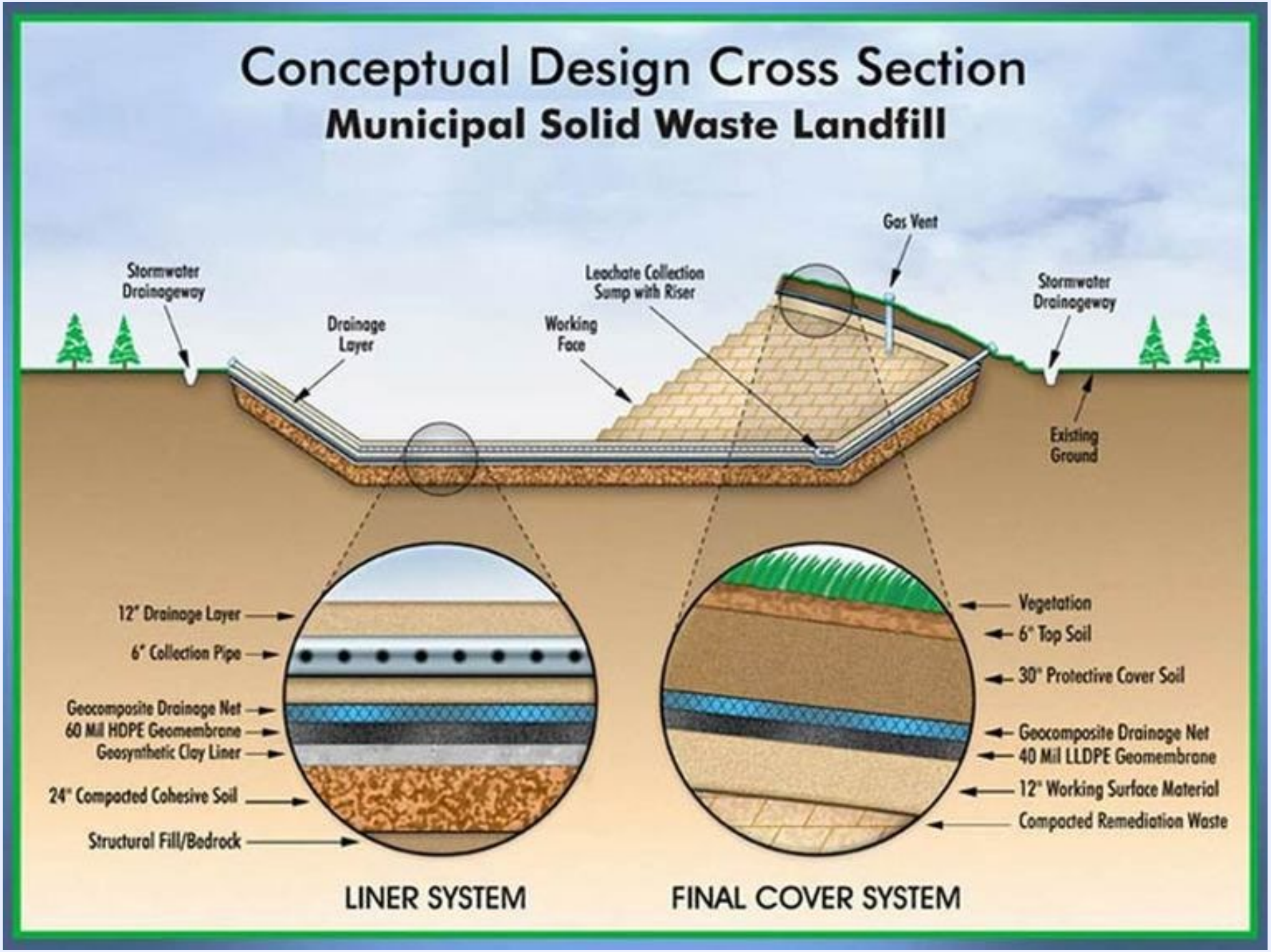
CANYON COUNTY | TETRA TECH

Landfill Life Span

- Based on the 2020 updated design for Phase 3, the calculated volume of air space remaining as of September 30, 2022 is 5,155,918 CY.
- The amount of waste accepted at the landfill has increased over time. Without accounting for yearly variation or increases in the annual tonnage acceptance rate there was approximately 8.3 years of capacity in Phase 3 left as of September 30, 2022.
- The continued use of the tarps to reduce the amount of soil used for daily cover, and diversion of clean wood, green waste, and dry wall out of the landfill will help increase the life span of Phase 3.



http://www.projectdataresearch.com/landfills.html

Idaho Solid Waste Facilities Act 39-7409

39-7409. STANDARDS FOR DESIGN. (1) Applicability. These standards apply to new MSWLF units and lateral expansions of existing facilities as provided in 40 CFR 258.40.
(2) Liner designs. All owners or operators of MSWLF units shall use one (1) of the following designs:
(a) Composite liner design.
(b) Alternate liner design.
(c) Arid design. A site-specific design based upon environmental performance, as allowed under 40 CFR 258.40(a)(1) which will ensure that the concentration values listed in table 1, 40 CFR 258.40, or as amended, will not be exceeded in the uppermost aquifer at the relevant point of compliance. This design shall use both field collected data and predictions that maximize contaminant migration for demonstrating no potential for migration. This design will apply to locations having less than twenty-five (25) inches of precipitation annually, net evaporative losses greater than thirty (30) inches annually, and holding capacity in native soils greater than annual absorbance; and

(i) solid waste is deposited no less than fifty (50) feet above the seasonal high level of ground water in the uppermost aquifer;
(ii) the geologic formation beneath the site and above the uppermost aquifer must have capillary capacities greater than the projected maximum volume of leachate generated during the active life of the MSWLF unit; and
(iii) "no potential for migration" is demonstrated when the geologic formation beneath the site and above the uppermost aquifer has sufficient hydrogeological characteristics and holding capacity adequate to contain all hazardous constituents generated during the active life, closure and post-closure care periods.

Regulatory Requirement for Expansion

§ 258.40 Design criteria.

(a) New MSWLF units and lateral expansions shall be constructed:

(1) In accordance with a design approved by the Director of an approved State or as specified in § 258.40(e) for unapproved States. The design must ensure that the concentration values listed in Table 1 of this section will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Director of an approved State under paragraph (d) of this section, or

(2) With a composite liner, as defined in paragraph (b) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner.

(c) When approving a design that complies with paragraph (a)(1) of this section, the Director of an approved State shall consider at least the following factors:

(1) The hydrogeologic characteristics of the facility and surrounding land;

(2) The climatic factors of the area; and

(3) The volume and physical and chemical characteristics of the leachate.

Regulatory Requirement for Expansion Continued

§ 258.40 Design criteria.

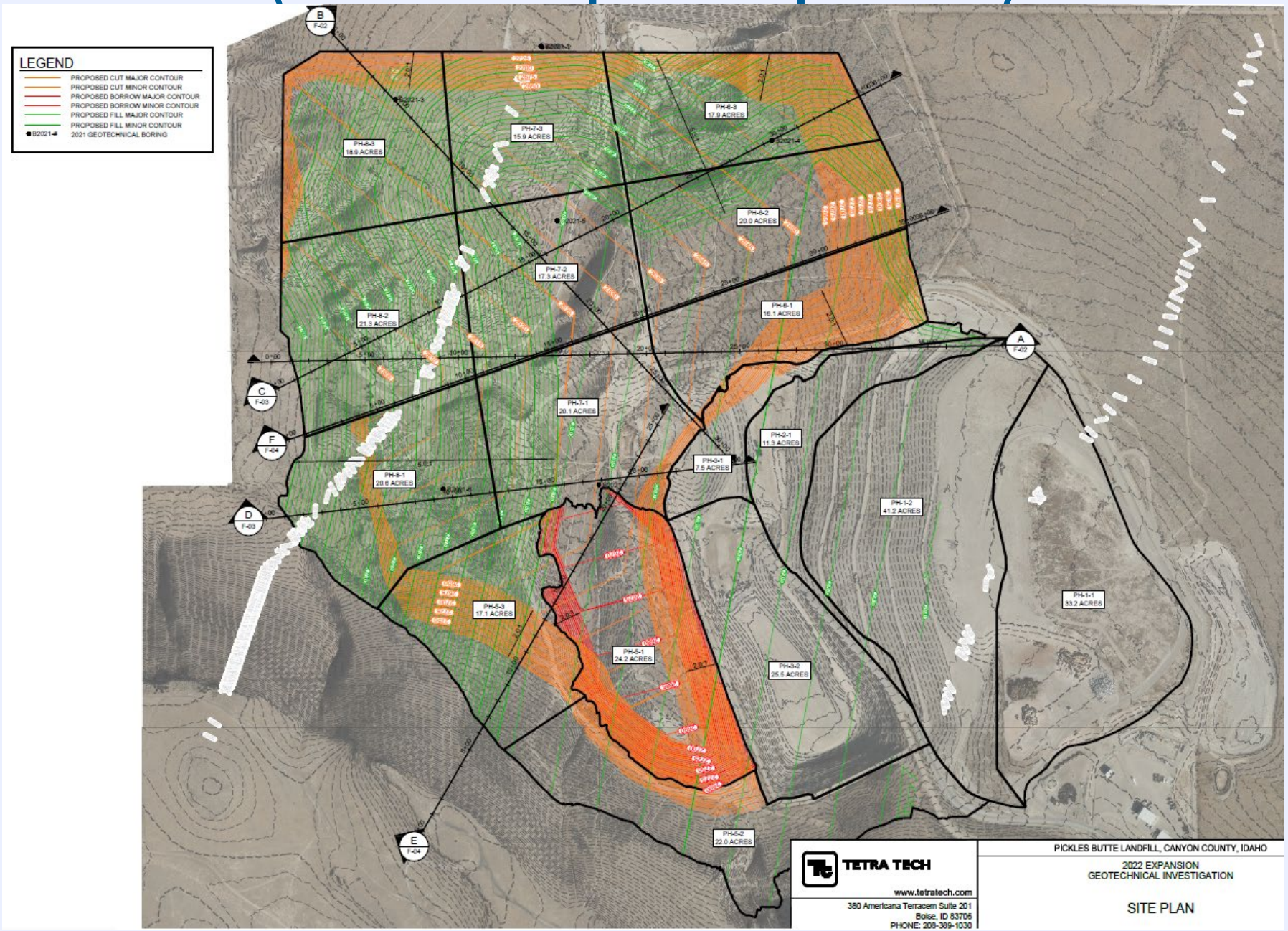
(d) The relevant point of compliance specified by the Director of an approved State shall be no more than 150 meters from the waste management unit boundary and shall be located on land owned by the owner of the MSWLF unit. In determining the relevant point of compliance State Director shall consider at least the following factors:

(1) The hydrogeologic characteristics of the facility and surrounding land;
(2) The volume and physical and chemical characteristics of the leachate;
(3) The quantity, quality, and direction, of flow of ground water;
(4) The proximity and withdrawal rate of the ground-water users;
(5) The availability of alternative drinking water supplies;
(6) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water, and whether the ground water is currently used or reasonably expected to be used for drinking water;
(7) Public health, safety, and welfare effects; and
(8) Practicable capability of the owner or operator.

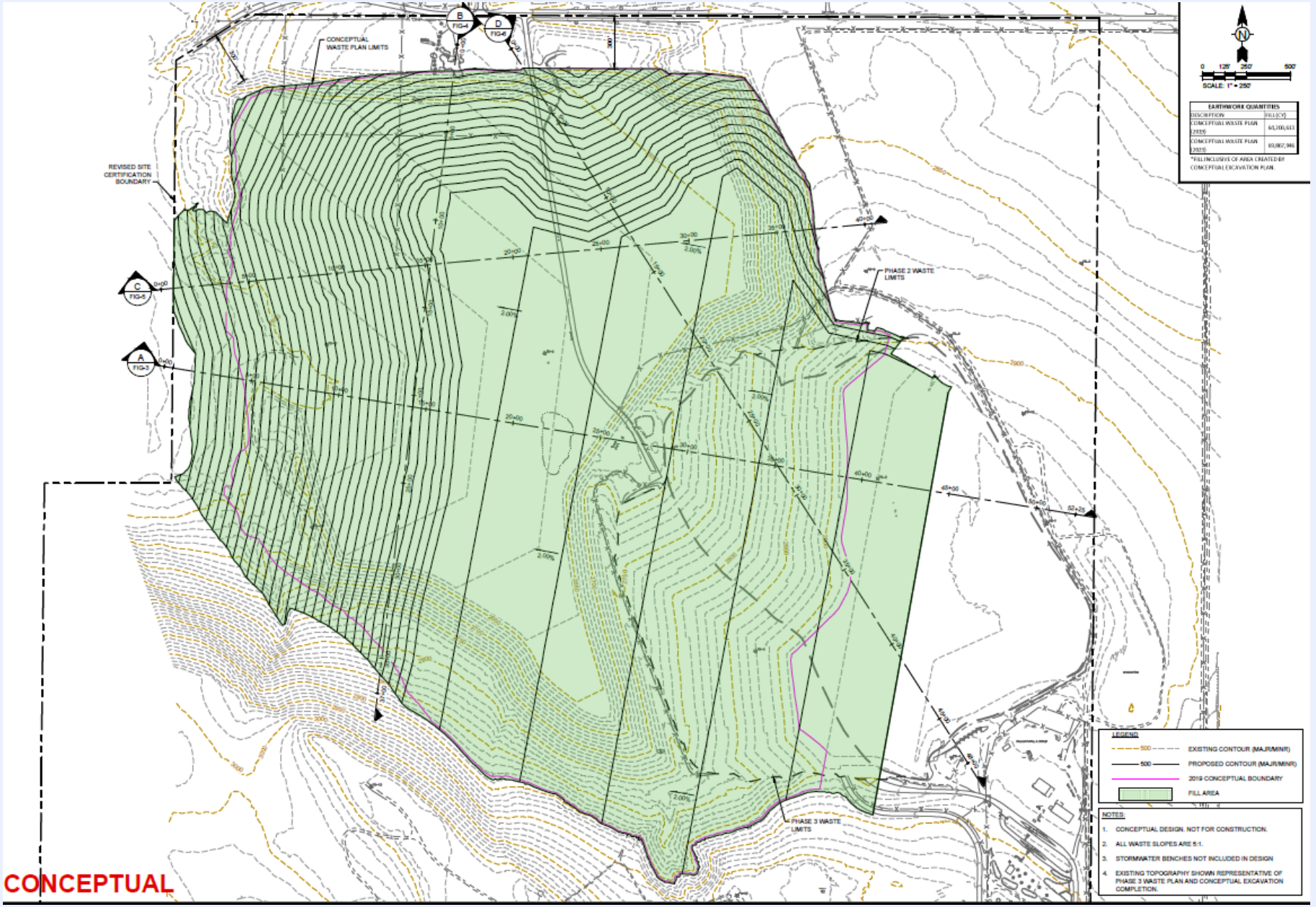
Expansion Progress

4/2014	Original Work Completed by Daniel B Stephens
6/2020	Closure of PB-4/Replacement PB-16
10/2020	Canyon County Land Use Planning
2/2021	Site Certification Approved
12/2021	Seismic Survey Completed
12/2021	Drilling Completed Characterization Borehole
2/2022	Seismic Report Completed
8/2022	Geotechnical Stability Analysis Completed (based on borings, conceptual design, lab testing)
10/2022	Test Pits for Soil Cover Evaluation Completed
2/2023	Revised Conceptual Expansion Based Allen Property
6/2023	Start Construction Landfill Gas System
8/2023	Complete No Potential for Migration Application for Submittal DEQ

Geotechnical Investigation
(2019 Conceptual Expansion)

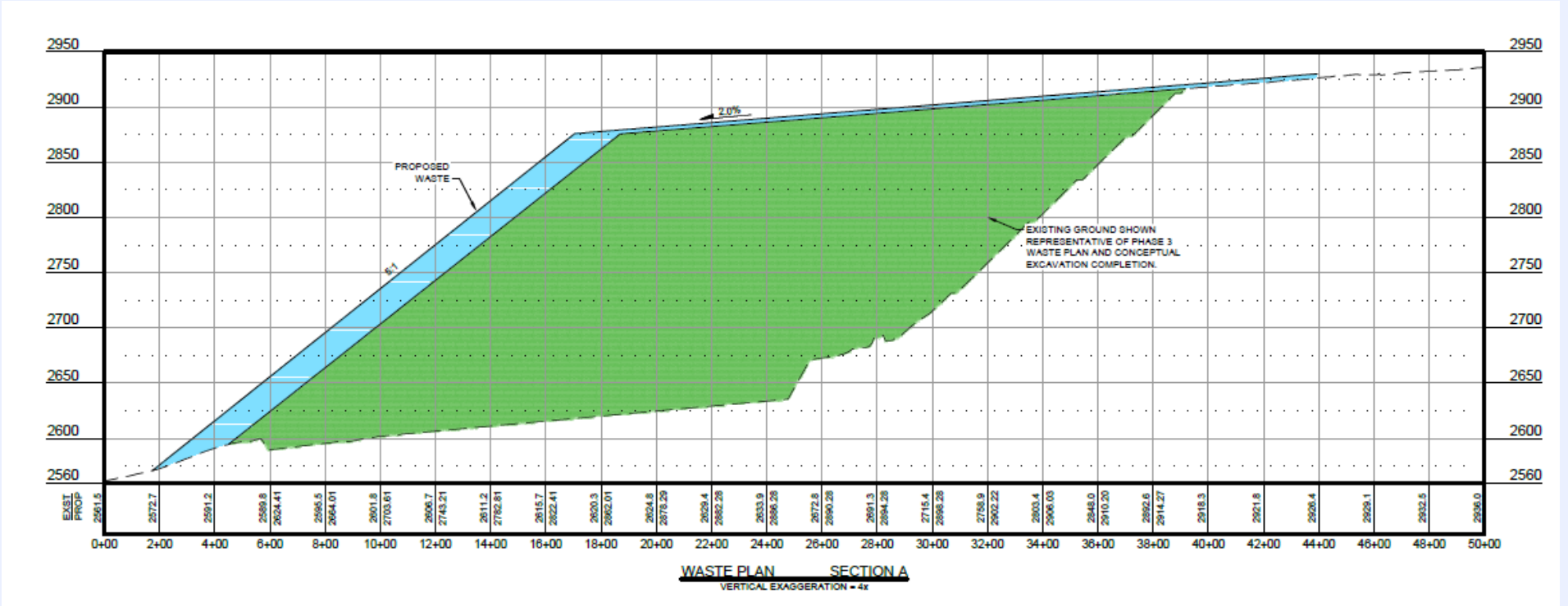


Revised Expansion Based on Allan Property



CONCEPTUAL

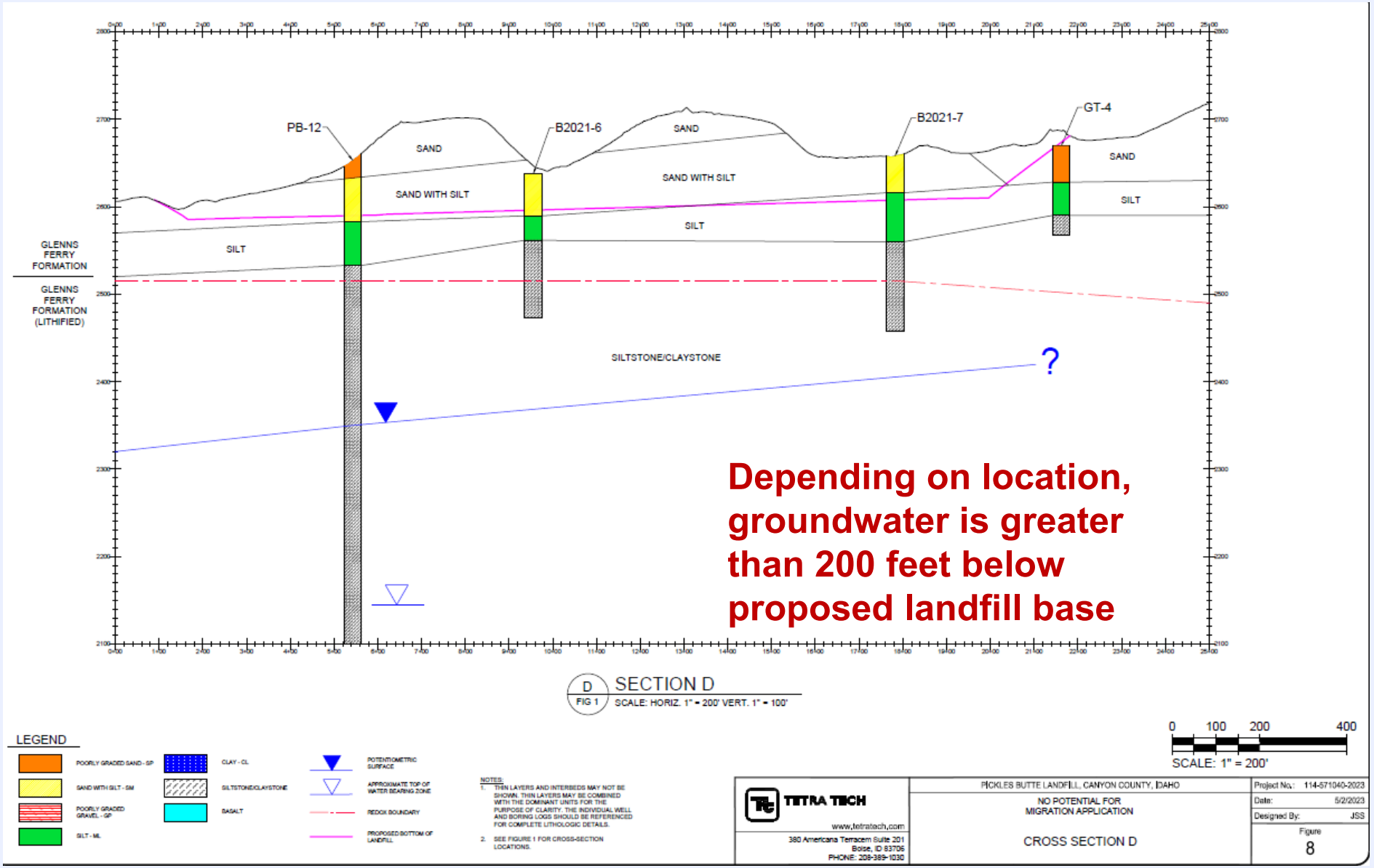
2023 Revised Conceptual Expansion



EARTHWORK QUANTITIES	
DESCRIPTION	FILL (CY)
CONCEPTUAL WASTE PLAN (2019)	64,200,613
CONCEPTUAL WASTE PLAN (2023)	69,867,946

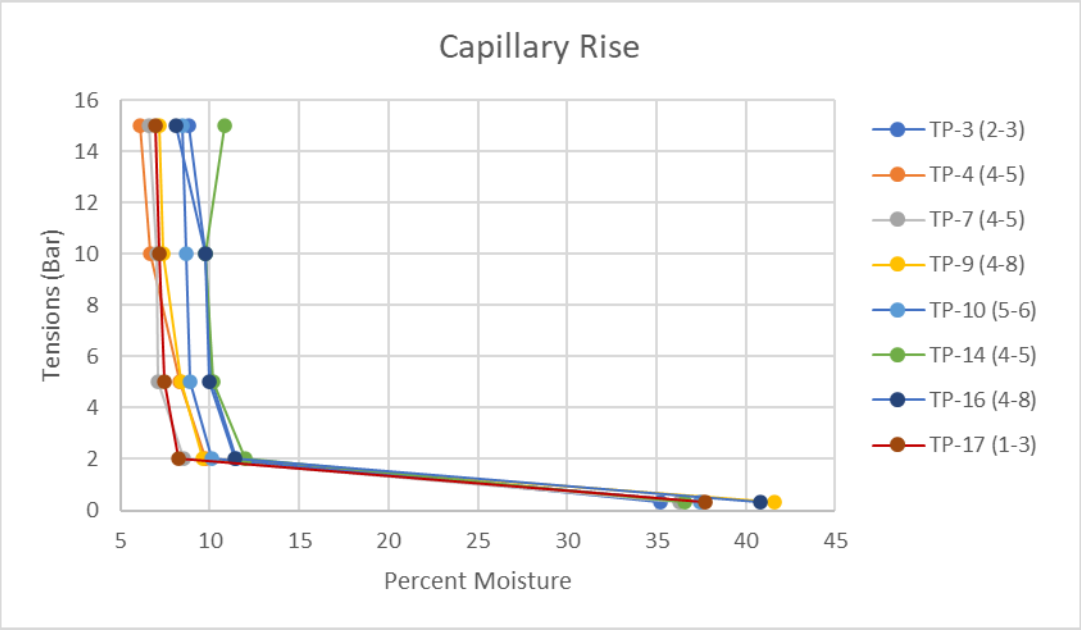
Allan Property

Viability of PBSL to Design No Liner
(1) The hydrogeologic characteristics of the facility and surrounding land:



Viability of PBSL to Design No Liner
(2) The climatic factors of the area

- Weather Station installed in 2017 to provide site specific data
- Annual Precipitation varies (11.38 to 11.66 inches/year), so meets requirement for less than 25 inches per year
- Based on modeling, the average evapotranspiration is estimated to be >10 inches per year, but varies seasonally with the highest rate in the summer months
- For comparison, evaporation at Lake Lowell is ~33 inches per year



Represents the holding capacity of the soil. The soil is fine grained and has a high “field capacity” or ability to hold water based on larger surface area

Viability of PBSL to Design No Liner
(3) The volume and physical and chemical characteristics of the leachate

- Approved Alternative Cover Modeling demonstrated percolation through final cover and base of waste was between 0.09 to 0.28 inches/year
- Daniel B Stephens reported percolation through the bottom of landfill deposits is predicted to occur at an average rate of 1.19×10^{-8} in/yr
- The MSW is very dry at the time of deposition and no (very minimal) initial drain down occurs
- >90% of precipitation that infiltrates at the surface is lost to evapotranspiration before it can percolate