CANYON COUNTY SOLID WASTE

15500 MISSOURI AVENUE
NAMPA, IDAHO 83686

24 January 2025

Idaho Department of Environmental Quality
Beth Bahem
1445 N. Orchard St.
Boise, ID 83706
Beth.Bahem@deq.idaho.gov

Dear Ms. Bahem:

Below are the responses to your comments received on January 10, 2025, on the Pickles Butte Sanitary Landfill Lateral Expansion Tentative Design Plan (Facility ID No. 027-00170). As documented in the responses, minor revisions were made to the expansion application. They are:

- Section 3.2.1, 1st paragraph;
- Section 3.3., 2nd paragraph;
- Section 3.4.2, 4th paragraph;
- The reference section;
- Appendix H – Sheet C-109 was updated to show the gravel pit, and Sheet C-110 was updated to show the gravel pit and label the subbasin drainage areas. On Sheets C-102, C-109, and C-110 the call out for the northwest pond was changed from "proposed" to just northwest pond to reflect it already exists.
- Appendix I – a HEC-HMS layout figure was added, and the new NOAA data was included at the end for reference.

Section 3.2.1 - In this section, the site-specific rainfall data for a 25-yr 24-hr storm event was taken from NOAA, Atlas 2, Vol 5. and estimated at 1.8 inches. Why was NOAA Atlas 2, Vol 5 used for the 25-yr 24-hr storm event rather than the most updated NOAA Atlas 14? Based on NOAA Atlas 14 data (https://hdsc.nws.noaa.gov/pfds/), the precipitation total for a 25-yr 24-hr storm event for the area is between 1.51-2.00 inches. For Nampa specifically, NOAA Atlas 14 provides the 25-yr 24-hr storm event precipitation total at approximately 1.59 inches with 90% confidence.

Stormwater controls for the Pickles Butte Sanitary Landfill (PBSL) are reviewed regularly. The last update to the stormwater controls was associated with the Phase 3 cut and fill plan update completed in 2020. Specifically, the design was submitted to Southwest District Health (SWDH) on June 11, 2020. Comments were received from SWDH on July 31, 2020, with no comments deemed substantive or required resubmission. Responses and corrections were provided to SWDH on August 5, 2020.

In general, some of the stormwater controls and ponds used for the expansion application are already part of the site's stormwater controls. The HEC-HMS model for the expansion was a revision of the 2020 model for the Phase 3 update, which updated the 2016 model for stormwater controls. Review of precipitation rates at the landfill, based on the NOAA Atlas 14 Volume 12 Version 2.0 that was officially released in September 2024, indicates that the precipitation for the 24-hour 25-year storm event would be between 1.47 to 1.83 inches with a 90% confidence value of 1.64 inches (included at the end of Appendix I). The modeling for the site was already completed by the time of the official release, and Version 1 was considered preliminary for testing and, therefore, was not used. The expansion design used a precipitation value of 1.8 inches, which is within the range of values in the updated Atlas and would be considered conservative since it is closer to the upper range of precipitation values. Therefore, the precipitation value of 1.8 inches will not be modified. Expansion application text was modified to provide an explanation and note that a value of 1.8 inches was used.

Section 3.3.3 - In this section, it is explained that run-off from the eastern landfill slopes will likely flow into the existing gravel pit. How much flow is expected to flow to the gravel pit following the 25-yr, 24-hr storm event parameters? Please identify the gravel pit location on the design drawing.

Sheet C-109 and Sheet C-110 have been updated to show the gravel pit location on the east side of the landfill. A runoff calculation estimates that 0.36 acre-ft of water would report to the gravel pit during a 24-hour 25-year storm event.

Section 3.3.3 - Please confirm the units in Table 13. The acre measurements provided appear to be incorrect.

The units in Table 13 were ft^2, which was an error in creating the table in the application. The table has been corrected, and the data is now in acres as labeled.

Section 3.3.3 - The tables included in this section provide each pond stage storage and the associated required pond capacity. Table 10: Northwest Pond Stage-Storge includes, as a footnote, that the required capacity is 1.1 acre-ft. Based on a summation of the direct runoff volumes for the drainage areas discharging into the Northwest Pond (taken from Appendix I), 1.42 acre-ft would be required. How are the 25-yr 24-hr storm event required capacities calculated for each pond?

As noted in Section 3.3.3, the northwest pond is oversized. Text has been added to clarify that the size is based on the current capacity requirements for the 2020 Revised Phase 3 design. And that, based on the final grading, there will be excess capacity for the final buildout of the proposed expansion design.

The Northwest Pond capacity was checked by identifying the channels, chutes, and basins that drain into the pond. Runoff from Downchute 4.3 (0.16 acre-feet), Downchute 5.3 (0.79 acre-feet), N Channel 1.6 (0.05 acre-feet), and NW-30 (0.1 acre-feet) are summed to calculate the required capacity of 1.1 acre-feet for the pond. The required capacities for the other ponds are calculated in a similar manner based on the drainages that flow into those ponds.

Section 3.3.4 - In this section describes that the culvert properties for both the North Channel and East Channel were analyzed using the HY-8 Culvert Hydraulic Analysis Program. What

were the design flow and maximum flow values input into the HY-8 Culvert Hydraulic Analysis Program for both the North Channel Culvert and the East Channel Culvert? How were the design flow and maximum flow values calculated?

The design flow of 1.2 cfs was input into the HY-8 Culvert Hydraulic Analysis program for the East Channel Culvert. Also, the design flow of 0.2 cfs was used for the North Channel Culvert. Both design flows were calculated through HEC-HMS modeling. The maximum flow values shown in the HY-8 output were calculated by the HY-8 model to represent an overtopping condition (upper limit used for the crossing performance curve) which is not used for the design.

Section 3.4.2 - The well should be installed/screened to monitor groundwater in the confined aquifer and not the unconfined aquifer.

Modified text to change from screen across first water to screened within the confined aquifer. Also added text indicating that if the unconfined aquifer is encountered it will be noted in the well logs, and that the seal will prevent mixing.

Although not added to the text, when the landfill is ready to install the new wells, a site visit will be scheduled with DEQ to review the proposed locations, and the proposed construction drawings will also be provided.

Appendix I - The HEC-HMS simulation run summary for the 25-yr 24-hr storm event was included in Appendix I starting on pdf page 16. In the Global Results Summary for the simulation, on pdf page 24, under the volume (IN) column was listed 0.17. Based on the rainfall data selected for a 25-yr 24-hr storm event in Section 3.2.1, the precipitation total of 1.8 inches was selected. Why was 0.17 inches used in the HEC-HMS simulation?

The 0.17 inch shown in the Global Results Summary table, starting on pdf page does not represent precipitation. That value represents the direct surface runoff volume in inches for each Hydrologic Element that correlates to the curve number and surface land type used in the analysis. The precipitation value of 1.8 inches was used in the direct runoff volume calculation performed by HEC-HMS based on the following equation where "Q" is the direct runoff volume in inches.

$$Q = \frac{(P-0.2S)^2}{(P+0.8S)} \quad for\ P > I_a \qquad \text{(eq. 2–3a)}$$

where: Q = runoff, in
P = rainfall, in
I_a = initial abstraction, in
S = potential maximum retention after runoff begins, in

Source: National Engineering Handbook, Chapter 2, Estimating Runoff Volume and Peak Discharge

Appendix I - Worksheets for each subbasin were provided starting on pdf page 28. On these worksheets listed the area of the subbasin, the storm event precipitation total, and the total precipitation volume from the subbasin. When calculating the subbasin precipitation volume using the 25-yr 24-hr storm event precipitation total, the total precipitation volume calculated

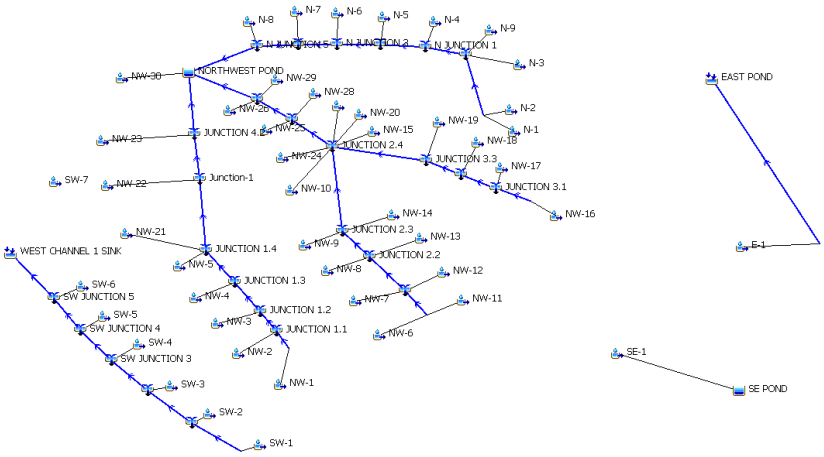
by-hand is different from what is presented in the worksheet. For example, the Subbasin: NW-6 worksheet on pdf page 28, the area used (0.03 mi^2) was converted to 19.2 acres. The storm event precipitation total provided is 0.17 inches. This would result in a total precipitation volume of 0.272 acre-ft. If the storm event precipitation total was correctly input as 1.7 inches (similar to the value from NOAA Atlas 2, Vol 5 data), the total precipitation volume would be 2.72 acre-ft. If using the area listed in Table 1, on pdf page 12, for Drainage Area ID NW-6 as 16.38 acres (to account for a rounding error in unit conversion) and using the 1.7 inches as storm event precipitation total, the total precipitation volume would be 2.32 acre-ft. The worksheet for Subbasin: NW-6 provides the total precipitation volume as 2.46 acre-ft. Please provide an explanation of how the total precipitation volume would be calculated differently between the program and by-hand.

There are two parts to this response. First, HEC-HMS rounds input data when it shows those data in the output. For example, for NW-6, HEC-HMS reports the area in the output to the nearest hundredth, although the area input used by the model was 0.256 mi^2 (rounded in the output to 0.03). Second, the 0.17 inch represents the direct runoff volume result and not the input precipitation, as discussed in the response to the comment above. The rainfall value used in the model was 1.8 inches. Therefore:

16.38 acres * 1.8 inches * 1 foot/12 inches = 2.457 acre-ft = 2.46 acre-ft for NW-6.

Appendix I - The HEC-HMS simulation run Global Results Summary table, on pdf page 24, identifies multiple different hydrologic elements. The design drawings provided in Appendix H do not provide the level of detail of the hydrologic elements used in HEC-HMS. It would be helpful to have a figure that identifies these hydrologic elements. Please provide a figure with the labeled drainage area IDs, reaches, down chutes, junctions, and channels.

The snippet below shows the layout of the hydrologic elements in HEC-HMS. A more detailed diagram has been included in the front of Appendix I.



Please let us know if you have any additional questions. Based on the receipt of no public comments and the response to the comments provided above Pickles Butte Sanitary Landfill Lateral (Facility ID No. 027-00170) will submit the final Expansion Design Plan with the modifications noted in this letter in compliance with IDAPA §39-7409. Legal notice will be published for 56-days and IDEQ will be provided with the required documentation and certification after the comment period is complete.

Sincerely,

David M. Loper, REHS/RS
Director, Canyon County Solid Waste

Attachments: Flash Drive with the following files:

- Form SW-G1
- Phase 5 Landfill Lateral Expansion Application
- Appendices A through I
- Supplemental Reports

Cc:
Matthew Beeter, DEQ, Matthew.Beeter@deq.idaho.gov
Matthew Pabich, DEQ, Matthew.Pabich@deq.idaho.gov
Rebecca Blankenau, DEQ, Rebecca.Blankenau@deq.idaho.gov
Fritz Durham, DEQ, Fritz.Durham@deq.idaho.gov
Mitch Kiester, SWDH, Mitch.Kiester@phd3.idaho.gov