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June 6, 2018

Lisa D. Houser, P.E.
Environmental Engineer Manager
Waste Management Program
Pennsylvania Department of Environmental Protection
208 West Third Street, Suite 101
Williamsport, PA 17701-6448

RE: Camp Hope Run Landfill - Permit # 101719
APS 944978; AUTH 1189259
Phase I Municipal Waste Landfill Application
Boggs Township, Clearfield County

Dear Ms. Houser:

PA Waste, LLC (PA Waste) received the Pennsylvania Department of Environmental Protection (DEP) Technical Deficiencies Letter (TDL)[1] on May 9, 2018 regarding the subject site. As you know, the Phase I Camp Hope Run Landfill application was submitted to the DEP on July 5, 2017, was determined to be administratively complete on September 13, 2017[2], and received a favorable Harms-Benefits determination on May 3, 2018[3]. In addition, as you are well aware, we spoke on at least one occasion following receipt of the TDL and received some clarification regarding a few of the technical review comments as well as how we intended to make revisions and transmit the three (3) revisions to the Department.

On behalf of PA Waste, Smith Gardner, Inc. (S+G) has prepared the following responses to address all comments from the DEP's May 9, 2018 TDL. Each of DEP's technical review comments is reiterated below in *italics* followed immediately by PA Waste's response. Revised Forms, Attachments and Exhibits, supporting each response are identified in **bold** and are attached herein in their entirety, and are reproduced on yellow paper to simplify incorporation into the hard-copy applications and for ease of DEP review. Any portions of the application that are revised are so marked in the margins with a vertical line which locates the edited text. Additionally, all pages of the revised Attachment or Exhibit contain a footnote "Rev. May 2018". Revised Forms contain a "Rev. May 2018" date in the form where indicated.

Form E - Contractual Consent of Landowner [25 Pa Code § 271.123]

Comment 1: The Right of Way for Camp Rattlesnake is not mentioned nor addressed in the consent form. Please explain how this has been resolved.

Response: This comment required some clarification from DEP, which we received from DEP in April during a telephone conversation. Based on those discussions, we understand

[1] Letter from Lisa D. Houser, P.E. PA DEP to Robert Rovner, PA Waste, LLC date May 9, 2018 (copy attached).
[2] Letter from Lisa D. Houser, P.E. PA DEP to Robert Rovner, PA Waste, LLC dated September 13, 2017.
[3] Letter from Lisa D. Houser, P.E. PA DEP to Rober Rovner, PA Waste, LLC dated May 3, 2018.

that the DEP has two primary concerns. First, the current agreement states that the Camp Rattlesnake members will have "the right to use the current existing access road from Pennsylvania Route 153 to the property" which runs across the center of the proposed facility; and secondly, how PA Waste will provide access controls.

There is no Right-of-Way for Camp Rattlesnake. As provided in the deed, which is included in **Attachment E-2** of the response package: (1) PA Waste owns the land on which access road is located in fee title; and (2) Camp Rattlesnake is given a limited easement allowing it to use the road for access to the Camp, provided its use does not interfere with PA Waste's use of the same road. Therefore no consent is needed from Camp Rattlesnake under 271.123 because it has no "fee title" interest to any property in the permitted area and it's right to use the road for access to the camp does not make it a "landowner" under the regulations, inasmuch as PA Waste is the fee title holder, or "landowner" for property on which the road is located.

As far as access control is concerned, PA Waste plans to provide access to Camp Rattlesnake through a dedicated access road that is fenced to prohibit access to the Landfill Facility Boundary. The proposed Camp Rattlesnake Access Road alignment is presented on **Exhibit E-2.1 (Rev. May 2018)**. As shown the road is located to avoid proposed Camp Hope Run Landfill features as well as any impacts to wetland areas or streams. The details of this road will be provided within the Phase II Response to Comments.

In lieu of the planned Camp Rattlesnake access road, PA Waste is also considering a land swap that would relocate the camp to areas outside the Camp Hope Run Landfill Facility Boundary or other similar remedy. In the event that the dedicated camp road is not constructed, PA Waste will provide DEP with documentation regarding the selected resolution of this matter.

Form F - Soil Information - Phase I [25 Pa Code §273.117]

Comment 2: Section B lists Edifluvents as a soil series. This soils series is not included on the soil maps. Please revise all appropriate forms and attachments.

Response: This is a typographical error. "Edifluvents" have been replaced with "Udifluvents". The revised **Form F (May 2018)** is included in the response package accompanying this letter.

Comment 3: The map referenced in Section C of Form F, Attachment F-2, is small and in a non-satisfactory scale. Please include a map of appropriate scale in this section of the application or indicate that a larger soils map is located in Attachment 2-3. [25 Pa Code §273.114].

Response: Attachment F-2 (Rev. May 2018) has been revised (enlarged) to a satisfactory scale, as requested, and is included in the response package accompanying this letter.

Comment 4: Attachment F-1 page 2-3 indicates that 34% of the area within the waste footprint is comprised of the soil series Udorthents. This is not reflected on the soils maps. Please revise all appropriate forms and attachments.

Response: **Attachment F-2 (Rev. May 2018)** and **Attachment 2-3 (Rev. May 2018)** have been revised to show the extent of the Udorthents soil series. This includes all former mined areas.

Comment 5: Section C refers to Attachment F-2 for a plan of borrow areas. Borrow areas are not identified on the map in Attachment F-2. Please revise all appropriate forms and attachments.

Response: All borrow areas for this site will be within the "Limits of Disturbance". **Attachment F-2 (Rev. May 2018)** and **Attachment 2-3 (Rev. May 2018)** have been revised as follows: (1) The legend has been modified to read "Approximate Limits of Disturbance"; and (2) Note 8 has been added that reads:

"All borrow areas will be within the future landfill phases within the proposed Limits of Disturbance."

Comment 6: Attachment 2-3, Note 6 states that "soil/rock cross sections are in Exhibit F - 6.1." This Exhibit is not included in the application. Please submit Exhibit F-6.1.

Response: **Attachment F-2 (Rev. May 2018)** and **Attachment 2-3 (Rev. May 2018)** include Note 6 which has been revised to read "Refer to Exhibits 6-1.2 to 6-1.8 for soil/ rock cross sections."

Comment 7: All Cut/Fill maps (Figure F-5.2 through F-5.6) are missing Cut/Fill elevations and/or Subbase contour elevations. Please provide revised maps to include this information.

Response: **Figures F-5.2** through **Figures F-5.6 (Rev. May 2018)** - have been revised to include Cut/Fill elevations and/or Subbase contour elevations.

Comment 8: Section C, 6. The application states that the particle size for daily cover will have a maximum particle size of less than 6 inches. Please provide technical justification how the maximum 6-inch particle size proposed for use for daily cover will meet the performance criteria in 25 Pa Code §273.232 (b).

Response: Section C, 6 of the **Form** F submittal states that the particle size for daily cover will have a **maximum particle size of** **less than** **6 inches**, and therefore, PA Waste **is not** proposing a maximum 6-inch particle size for daily cover. Additionally, PA Waste has selected the proposed soils (less than 6-inch maximum particle size) to meet the performance standards in 25 Pa Code §273.232 (b) as stated in the 2017 Submittal (Attachment F-1 Narrative) which reads,

> "Soil used for daily and intermediate cover will generally fall within the USDA textural classifications that support revegetation and meet the required performance standards. The combustible and/or coal content of on-site soils (including the mine spoil sampled from reclaimed areas of the site) generally do not exceed 6 percent by weight, and therefore are judged to be capable of controlling fires. On-site soil anticipated for use as intermediate cover is generally characterized by the samples obtained from the test pits excavated earlier this year which exhibit the following approximate grain-size parameters: average percent passing the 2 mm (No. 10) standard sieve: 53%; % sand: average of 52%; % silt: average of 31%; and, % clay: average of 16%, all by weight."

Further, **Attachment F-6 (Rev. May 2018)** has been added to the application to present a demonstration of how the proposed daily cover soils meet the performance criteria in 25 Pa Code §273.232 (b).

Comment 9: Section C, 6. The application states that the particle size for intermediate cover will have a maximum particle size of less than 6 inches. Please provide technical justification how the maximum 6-inch particle size proposed for use for intermediate cover will meet the performance criteria in 25 Pa Code§273.233 (b).

Response: Section C, 6 of the **Form F** submittal states that the particle size for intermediate cover will have a **maximum particle size of <u>less than</u> 6 inches**, and therefore, PA Waste **<u>is not</u>** proposing a maximum 6-inch particle size for intermediate cover. Additionally, PA Waste is not seeking approval of alternative design requirements to meet the performance standards in 25 Pa Code §273.233 (b), therefore, all proposed soils (less than 6-inch maximum particle size) have been selected to meet the design requirements in 25 Pa Code §273.233 (c) as stated in the 2017 Submittal (Attachment F-1 Narrative) which reads,

> "Soil used for daily and intermediate cover will generally fall within the USDA textural classifications that support revegetation and meet the required performance standards. The combustible and/or coal content of on-site soils (including the mine spoil sampled from reclaimed areas of the site) generally do not exceed 6 percent by weight, and therefore are judged to be capable of controlling fires. On-site soil anticipated for use as intermediate cover is generally characterized by the samples obtained from the test pits excavated earlier this year which exhibit the following approximate grain-size parameters: average percent passing the 2 mm (No. 10) standard sieve: 53%; % sand: average of 52%; % silt: average of 31%; and, % clay: average of 16%, all by weight."

Additionally, while the proposed intermediate cover soils discussed above **<u>do meet</u>** the design requirements in 25 Pa Code §273.233 (c), **Attachment F-6 (Rev. May 2018)** has been added to the application to demonstrate how the proposed intermediate cover soils meet the performance criteria in 25 Pa Code §273.233 (b).

Comment 10: Section C, 6. The application states that the particle size for final cover will have a maximum particle size of 6 inches. Please provide technical justification how the maximum 6-inch particle size proposed for use for final cover will meet the performance criteria in 25 Pa Code §273.234 (d).

Response: PA Waste is not seeking approval of alternative design requirements to meet the performance standards in 25 Pa Code §273.234 (d), and therefore, all proposed soils (6-inch maximum particle size) have been selected to meet the design requirements in 25 Pa Code §273.234 (e) as stated in the 2017 Submittal (Attachment F-1 Narrative) which reads,

> "Final cover soils will meet the appropriate USDA classifications (loam, sandy loam, loamy sand, silt loam, sandy clay loam and silty clay loam), as required. At least 40% by weight of the cover soil shall be capable of passing a 2 millimeter, No. 10 mesh sieve. On-site soil anticipated for use as final cover is generally characterized by the samples obtained from the test pits excavated at the site in 2005, which exhibit the following grain-size parameters (arithmetic averages, by weight): percent passing the 2 mm (No. 10) standard sieve: 53%; % sand: 52%; % silt: 31%; and, % clay: 16%. It is proposed, as part of site development, to remove the upper soil horizon from the proposed landfill footprint and stockpile areas (top 12 inches, minimum) and subsequently segregate, conserve and replace this material as the upper layer of final cover (i.e. topsoil) on the completed (closed) final landfill slopes."

Additionally, while the proposed final cover soils discussed above **do meet** the design requirements in 25 Pa Code §273.234 (e), **Attachment F-6 (Rev. May 2018)** has been added to the application to demonstrate how the proposed final cover soils meet the performance criteria in 25 Pa Code §273.234 (d).

Comment 11: Please provide technical specifications for verification in the field, during placement/construction of the 6" to 12" maximum size controlled fill that compaction will be met so as to not create stability issues in the areas of placement.

Response: Technical Specification 02223 (Embankment) has been revised to incorporate specific instructions regarding compaction around isolated rock and is included as **Exhibit F-6.1 (Rev. May 2018)**. In Section D (Construction) under Paragraph 10 (Compaction Requirements), Item d has been added to specifically address placement and compaction requirements regarding smaller-grained soils around isolated rocks larger than 6 inches in diameter. Item d. reads as follows:

> It should be noted that based on laboratory samples of material from 45 test pits in the borrow area, less than 1% of the tested soils contain particles larger than 3 inches. As such, large isolated rocks are expected to occur rarely in the borrow soil, and the added language in the Specification explicitly allows the Contractor the option of removing the isolated rocks.

Comment 12: If blasting is required, a Blast Plan must be submitted to the Department's Bureau of Mining Program for review and determination prior to blasting.

Response: A Blast Plan will be submitted to the Department's Bureau of Mining Program for review and determination prior to blasting, in accordance with applicable regulations for such activities.

Comment 13: Page 9 of Attachment F -1 discusses the proposed processing method for oversized material. Please include a discussion about where the processing will take place and what E&S controls will be implemented.

Response: The "Processing Method" section of **Attachment F-1(Rev. May 2018)**, which starts on Page 10, has been amended to state:

> The proposed processing method will take place within the excavation area, which is at a lower elevation than the surrounding areas. Any ponded water that collects will be checked for pH and either pumped into an onsite stormwater basin or will be pumped for AMD treatment.

Form 2- Phase 1 Map Requirements [25 Pa Code §273.113], Attachment 2-1, Sheets 1 through 5

Comment 14: The line type for the Proposed Limit of Waste in the legend on Sheet 1 does not match the line type on the map. The line type is correct on subsequent sheets (Sheets 2-5). Please revise Sheet 1.

Response: **Attachment 2-1, Sheet 1 of 5 (Rev.1 - 5/18),** has been revised to match the Proposed Limit of Waste line type with the line type in the legend.

Comment 15: The symbol for "Former Borehole Location" appears to be incorrect in the legend on all Sheets. Please revise the legend on all appropriate application maps.

Response: **Attachment 2-1, Sheets 1 through 5 (Rev. 1 - 5/18)**, have been revised to match the "Former Borehole Location" symbol in the legend with the "Former Borehole Location" symbol shown on the mapping.

Comment 16: Section B, 1. There is no property line between Property 1 and 2. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(l)]

Response: **Attachment 2-1, Sheet 1 of 5 and 5 of 5 (Rev. 1 - 5/18),** have been revised to include the property line between Properties 1 and 2.

Comment 17: Section B, 1. The right of-way for Camp Rattlesnake (Property 1) is not shown. Please revise all appropriate application maps and forms to include all right of-ways. [25 Pa Code §273.113 (a)(l), (a)(7)]

Response: There is no right-of-way for Camp Rattlesnake. Please refer to the response to **Comment 1**, above.

Comment 18: Section B, 2. The maps do not indicate the boundaries of land to be affected during the life of the operation. Please include an approximate limit of disturbance boundary, which includes stockpiles, impoundments, and any other proposed earth disturbance. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(2)]

Response: **Attachment 2-1, Sheets 1 through 5 (Rev. 1 - 5/18),** have been revised to include the proposed limit of disturbance including stockpiles, impoundments and other proposed earth disturbance activities based on the current Phase 2 Permit Drawings.

Comment 19: Section B, 3. Stockpile S 1 and S2 are not identified on the maps. Please include the boundaries of the proposed S 1 and S2 stockpiles on all appropriate maps and clarify between existing stockpiles and proposed stockpiles. Please revise all appropriate application maps.

Response: **Attachment 2-1, Sheets 1 through 5 (Rev. 1 - 5/18),** have been revised to include Soil/Rock Stockpiles S1 and S2.

Comment 20: Section B, 4. The private water supply on Property 1 is not shown. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(4)]

Response: **Attachment 2-1, Sheet 1 of 5 and Sheet 5 of 5 (Rev. 1 - 5/18),** have been revised to include the private water supply for Property 1, which is labeled CRI.

Comment 21: Section B, 5. For clarification, please indicate in the legend whether the ½ and ¼ mile radius boundaries are the distance away from facility boundary or disposal area. Please revise all appropriate application maps.

Response: **Attachment 2-1, Sheets 1 through 5 (Rev. 1 - 5/18)** , have been revised to clarify that the Half Mile Radius and Quarter Mile Radius are located as measured from the Facility Boundary. This clarification has been added to the legend. In addition, a Quarter Mile Radius from the Proposed Limit of Waste has been added to the mapping and is included on the legend.

Comment 22: Section B, 5(c). The Legend includes "Surface Water Impoundment" and "Sediment Basin from Former Mining Operation". It appears that the surface water impoundments shown on the map are the sediment basins from previous mining. Sediment Basin (SB) could not be located on the maps. Please revise and clarify on all appropriate application maps. [25 Pa Code §273.113 (a)(5)]

Response: "Surface Water Impoundment" in the legend serves as a broader designation for both Sediment Basins and Treatment Basins associated with the former mining on/near the proposed site. **Attachment 2-1, Sheets 1 through 5, (Rev. 1 – 5/18)** have been revised as

follows: (1) "SURFACE WATER IMPOUNDMENTS" has been added to the legend as a heading with "Sediment Basin from Former Mining Operations", "Treatment Basin from Former Mining Operations" and "Surface Water Impoundment Discharge" following the heading. These changes were made to better clarify the features associated with former mining activity.

Comment 23: Section B, 5(d). Several wetlands on Sheets 2 through 5 are shown in a line type inconsistent with the legend. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(5)]

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18), have been revised to include additional wetland delineation work, which is currently on-going and the wetland line type on the legend and on the mapping have been revised for consistency. The US Army Corps of Engineers (USACE) are currently scheduled to confirm recent wetland delineations. Upon confirmation, all site wetland areas will be updated, accordingly. It should be noted that these additional wetlands are outside the limits of disturbance and will not increase the wetland impact areas.

Comment 24: Section B, 5(d). On several Sheets some wetlands are labeled but others are not. For clarity please be consistent with line types and labeling formats. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(5)]

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18), have been updated as noted in the Comment 23 response, above; labeling has been removed; the legend has been revised, and line types have been revised to avoid any inconsistencies.

Comment 25: Section B, 5(g). The legend lists "Former Surface Mines" but does not indicate a symbol or line type. Please revise all appropriate application maps to identify the approximate boundary of former surface mines. [25 Pa Code §273.113(a)(6)]

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18), have been revised to add "Former Surface Mines" (shading) to the mapping to represent the approximate, historic mine limits and the legend has been revised to match the mapping.

Comment 26: Section B, 5(i). Map Note 12 states that mine spoil is presented on the drawings. The legend does not include spoil piles. Spoil piles could not be found on the maps. Please revise all appropriate application maps to clearly indicate where spoil piles are currently located. [25 Pa Code §273.113 (a)(6)]

Response: Attachment 2-1, Sheets 1 through 5 - Note 12 (Rev. 1 – 5/18), has been revised to read as follows: "ALL MINE SPOIL IS CONTAINED IN THE FORMER SURFACE MINE ARES SHOWN ON THESE DRAWINGS."

Comment 27: Section B, 5(n). Map Note 16 states that several dwellings and structures are shown on the map. The legend does not include structures/dwellings. Structures or

dwellings could not be found on the maps. Please revise all appropriate application maps to clearly indicate structures and dwellings. [25 Pa Code §273.113 (a)(8)]

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18) – The Legend has been revised to include "Structure/Dwelling"; structures/dwellings have been added to the sheets as appropriate; and the following label has been added on the sheets "EXISTING STRUCTURE (TYP.) (SEE NOTE 16)" for clarification.

Comment 28: Section B, 5(p). The legend includes "Future Well Clusters," but they could not be located on the maps. Please revise all appropriate application maps to include the proposed water quality monitoring points. [25 Pa Code §273 .113 (a)(10)]

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18), have been revised to include "PROPOSED NEW GROUNDWATER MONITERING WELL CLUSTER" on the mapping and the legend has been revised to replace "FUTURE WELL CLUSTERS" with "PROPOSED NEW GROUNDWATER MONITERING WELL CLUSTER".

Comment 29: Section B, 6(d). Map Note 21 states that water discharges and seeps are shown on the map. The legend does not include seeps/discharges. Seeps and discharges could not be located on the maps. Please revise all appropriate application maps to include seeps and discharges. [25 Pa Code §273.113 (a)(15)]

Response: There are no known seeps within the property and these are not required to be identified by 25 Pa Code §273.113 (a)(15)]. As a result, all references to seeps have been removed. In addition, the exact discharge locations of existing impoundments to receiving streams and wetlands are not known. As such, **Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18) – Note 21** has been revised to read:

> WATER DISCHARGES FROM THE SURFACE WATER IMPOUNDMENTS SHOWN ON THIS DRAWINGS ARE IDENTIFIED AT THE BASIN OUTLETS. DISCHARGE LOCATIONS INTO RECEIVING STREAMS AND WETLANDS ARE NOT KNOWN.

Comment 30: Section B, 6(e). Borings included in Attachment 6-5 could not be found on the maps. Please revise all appropriate application maps to include all borings and test holes included in the application. [25 Pa Code §273.113 (a)(12)]

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18) ,– have been revised to include all borings from Attachment 6-5.

Comment 31: Section, B 6(i). The regional groundwater flow direction is shown on Sheet 1 but is not shown on Sheets 2 through 5. Regional groundwater flow direction is included in the legend on all Sheets. Please revise all sheets to include regional groundwater flow direction.

Response: Attachment 2-1, Sheets 2 through 5 (Rev. 1 – 5/18), have been revised to include the groundwater flow direction.

Comment 32: There are several items on the maps that are not in the legend. These items include what appear to [be] possible tree lines, trails, piles, old bore holes or survey points, fence lines, and utility poles locations. These are the same line color and weight as the existing ground contours and make the maps confusing and cluttered. Please delete all unnecessary items from all application maps.

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1 – 5/18), have been revised to remove items not required to be shown on the Form 2 maps including tree lines, trails, piles, old bore holes or survey points, fence lines, and utility poles locations.. The legend has been similarly revised to reflect only those features required to be shown on the map.

Form 6- Geologic Information Phase I [25 Pa Code §273.114, §273.115]

Comment 33: Exhibit 6.10 Lower Kittanning Structure Contours. Please reevaluate the Lower Kittanning structure contours in the southern S2 area (1690 and 1680 contours). It appears that these structure contours should be shifted to the west in the area of NW-3 to TH-22. This is based on the elevations of the Clarion coals in NW-3C and the average separation distance between the Clarion and Lower Kittanning coals indicated in other included borings. Please reevaluate the structure contours and revise all appropriate application maps and cross-sections.

Response: Due to potential discrepancies in past instrument surveys of the well locations (in plan and elevation) and because some of the older well locations and elevations were likely interpreted from map (plan) locations, S+G (Meiser & Earl, M&E) only used data from wells that are listed in **Table 6.1** in completing Form 6 to prepare **Exhibit 6-1.10, Lower Kittanning Structure Contours**. All of the wells in **Table 6.1** were surveyed in 2014, and thus are internally consistent with survey controls. It is M&E's judgement that the stratigraphic variability of the position of the three Clarion Coals and the variability in their separation with the Lower Kittanning Coal do not provide a significantly useful marker in estimating the elevation of the Lower Kittanning Coal. TH22 was drilled in March 1986 for the original mining permit and we are concerned that it may not be a surveyed location. In general, our surveyed data places the Lower Kittanning at a higher elevation than the older data, which provides a conservative approach to where the potentially acidic material may be encountered in the excavation.

Comment 34: There is a slight discrepancy of the Lower Kittanning elevation for W5A. Exhibit 6.10 shows it as 1692.0', on Table 6.1 it is 1669.2', and on Table 6.3 it is 1667.2'. Please determine the correct elevation and revise the all appropriate tables and exhibits.

Response: Exhibit 6-1.10 shows an elevation for W5A of 1669.2 feet for the Lower Kittanning Coal and **Table 6.1** shows the same elevation of 1669.2 feet. **Table 6.3 (Rev. May 2018)** has been revised so that the Lower Kittanning Coal elevation is now 1669.2 feet.

Comment 35: There appears to be a typo on Table 6.2. Second column heading from the right "Height Above Bottom of gK", should be" ... ... Bottom of LK". Please revise this table.

Response: Table 6.2 (Rev. May 2018) has been revised so that it states LK rather than gK.

Comment 36: Include an explanation for the discrepancy between the table data and corresponding lithologic logs provided in Attachment 6-4. Please revise all appropriate tables.

Response: The bottom of Page 5 of **Attachment 6-1 (Rev. May 2018)** has been revised include the following paragraph:

Due to potential discrepancies in past surveys and because some of the older well locations and elevations were likely interpreted from map locations, we only used wells that are listed in **Table 6.1** in preparing **Exhibit 6-1.10**. All of these wells were surveyed in 2014, thus they are internally consistent with proper survey controls. In general, our surveyed data places the Lower Kittanning at a higher elevation than the older data, which provides a conservative approach to where the potentially acid material may be encountered in the excavation. We have, however, used the height of potentially acidic material above the Lower Kittanning Coal in our evaluations.

Comment 37: Table 6.3 is missing information for Borehole Number S2-1A. Please revise this table.

Response: Table 6.3 Rev. May 2018) has been revised to include the depth and elevation of the Lower Kittanning Coal from **Table 6.1**.

Comment 38: In cross-section C-C,' TH17 indicates a LKR hot zone. This is not indicated on the lithologic log for TH17. Please clarify and revise appropriate attachments and cross-sections.

Response: Exhibit 6-1.6 Cross Section C-C' has been revised with the "hot" zone removed from TH17.

Comment 39: Several overburden analyses test holes are located in close proximity to the geologic cross-sections. Since the subgrade elevation design in the S2 area is based on the elevation of potentially acidic material, please include overburden analyses test holes in the cross-sections and indicate zones of potentially acidic material (>0.5% total sulfur). Please revise all appropriate cross-sections.

Response: Exhibit 6-1.4 (Rev. 1 5/18), Geologic Cross Section A-A', now includes overburden holes, A1, OB-1, and S2-2. **Exhibit 6-1.5 (Rev. 1 5/18), Geologic Cross Section B-B'**, now includes overburden holes, A-4, OB-1, C-3, and C-5. **Exhibit 6-1.6, (Rev. 1 5/18) Geologic Cross Section C-C'**, now includes overburden hole A-9. **Exhibit 6-1.6, Geologic Cross Section**

D-D', now includes overburden holes S2-3 and OB-8. **Exhibit 6-1.7 (Rev. 1 5/18), Geologic Cross Section** E-E', now includes overburden holes C-3 and S2-4. In all cases the overburden hole was projected perpendicularly onto the cross section line. The bottom of the Lower Kittanning (LK) Coal, shown on the graphic log, was used to properly position the graphic log on the LK Coal line, shown on the cross section. The upper most potentially acidic material is marked on each of these overburden holes based on the heights of the zone from the LK Coal that are listed on **Table 6.2**.

In addition, all of the elevations from **Table 6.2 (Rev. May 2018)** have been removed to avoid any confusion due to their uncertainty. These elevations are not used in any of our interpretations. However, the height of potentially acidic material above the Lower Kittanning Coal were referenced in our evaluations.

These elevations are also shown on **Table J-1.3** submitted as part of Phase II of the application. A revised table will be submitted as part of a Phase II response to comments to be consistent with these revisions.

Form 7- Hydrogeologic Information Phase I [25 Pa Code §273.114, §273.115, §273.118]

Comment 40: Section B, 14. The first paragraph on page 11 of the narrative response states that there are two private water supplies within ¼ mile east of the permit area. Attachment 2-1.1 shows 5 private water supplies within ¼ mile east of the permit area. Please revise the narrative for this section.

Response: Attachment 7-1, Section B, 14 (Rev. May 2018) has been revised to:

Section B.14. Uses of Aquifers

> There are no public uses of groundwater within a one mile radius of the permit area. Refer to **Exhibit 7-1.6** for a map showing the source water protection areas for public water supplies relative to the landfill site. Five private residential water supplies are located within a ¼ mile radius, east, of the permit area. The locations of these four supply wells and one spring are depicted on the **Base Topographic Map in Form 2, Exhibit 2-1.1 (Rev. 1 5/18)** and identified as GR489, GR494, GR495, GR495A and GR489. The Wilson spring (GR489) is for camp use only and is the closest water source to the disposal area. The Wilson spring is 2,060 feet (>¼ mile) from the disposal area. The Gallaher supply well (GR494) is reportedly a shallow dug well serving a single residence. Water from this well is not treated by a point of entry treatment (POET) system and reportedly not used for potable purposes."
>
> The Levin's former supply well (GR495) is a drilled well (1979) completed to a depth of approximately 80 feet. Groundwater yield from this well was insufficient to meet the needs of the residence; thus, GR495A was drilled and completed in June 1999. Levin's supply well (GR495A) is a drilled well, completed to a depth of approximately

120 feet below ground surface. Based on the well's elevation (approximately 1755), the Levin well draws water from the Mercer level of local strata (regional water system). Based on the well's elevation (approximately 1755), the Levin well draws water from the Mercer level of local strata (regional water system). A POET system treats the groundwater prior to use within the residence and consists of oxygenation and pH neutralization. The Wood Well (GR503) is a hand dug well that is used for camp use. Thus, all five of these water sources are at least 2060 feet from the disposal boundary and they are not downgradient of the disposal area due to Camp Hope Run being between these water sources and the disposal area.

A sixth supply well is located on the property identified as Camp Rattlesnake, Inc, (CRI) according to Marshall Miller & Associates. CRI is located approximately 2,300 feet west of the proposed landfill disposal area. Groundwater from this well is not used for potable purposes. Information concerning well construction details based on discussions with personnel belonging to CRI (a private hunting club) indicate that the well was completed to a depth of approximately 150 feet and was completed as an open borehole well. Groundwater was potentially encountered just above the Lower Kittanning Coal and the bottom of the well would likely be just above the Clarion No. 1 Coal. Water from this well is not potable due to high iron, manganese, and sulfate concentrations.

Comment 41: Section B, 14. The third paragraph on page 11 of the narrative response addresses the private water supply on the Camp Rattlesnake property. Please revise this narrative to discuss the aquifer(s) this well draws from.

Response: **Attachment 7-1, Section B.14 (Rev. May 2018)** has been revised with the description of the likely stratigraphy encountered in the Camp Rattlesnake, Inc. well, as discussed in response to **Comment 40**, above.

Comment 42: Section D. The third paragraph on page 14 discusses groundwater samples obtained from private water supplies. The property numbers referenced in the discussion do not match the property numbers shown on Attachment 2-1. Please revise the narrative.

Response: The third paragraph on **Page 14 in Attachment 7-1, Section D. (Rev. May 2018)** has been revised to read:

Groundwater samples were also obtained from offsite supply wells including two drilled wells located on the Levin property (GR495 and GR495A), the shallow hand dug well located on the Gallaher property (GR494), and the non-potable drilled well located on Camp Rattlesnake, Inc. tract. The Levin and Gallaher properties are located to the northeast of the site on the north side of Camp Hope Run and are identified on the map (**Form 2, Attachment 2-1 (Rev. 1 5/18)**) as property numbers 21 and 20, respectively. Camp Rattlesnake is located immediately west of the site, in close proximity to W7, and is identified as property number 1 in **Form 2, Attachment 2-1 (Rev. 1 5/18**

Comment 43: Section E. Surface water sampling location GR450 could not be located on Exhibit 6-1.11. Sample point GR561 is on Exhibit 6-1.11 but not listed in the narrative as a sample location. Please revise the narrative and maps to address all sample locations.

Response: We have removed the location GR561 from **Exhibit 6-1.11 (Rev. May 2018).** **Section E, from Attachment 7-1 (Rev. May 2018)** has been changed to read:

> SECTION E. SURFACE WATER QUALITY DATA
> Surface water quality data was obtained via the sampling and analysis of water samples obtained from 23 surface water (seeps, springs, etc.) locations on and around the proposed permit area. These sample locations are shown on **Exhibit 6-1.11, Groundwater and Surface Water Locations Used for Site Characterization**. We do not have a specific sample location for GR450 so it is not located on **Exhibit 6-1.11,** but the sampling analyses description states that it was sampled from a seep downstream from the Lower Kittanning Crop. Five of the locations were sampled five times over an eleven month period, while 11 locations were sampled once. The samples were submitted for laboratory analysis of Form 8 permit constituents. The results are included in **Form 8** as **Attachments 8-8** through **8-12** and summarized on **Table 7.8 of Attachment 7-7**. The surface water sample locations are depicted on **Form 6, Exhibit 6-1.11**."

The 23 surface water sampling locations include:

- 13 locations associated with Sanbourn Run (tributaries or main channel) including: GR408, GR415, GR418, GR419, GR420, GR424, GR429, GR505, GR506, GR410, GR410A, GR411 and GR411A;
- Five locations associated with Camp Hope Run (tributaries or main channel) including: GR440, GR441, GR402, GR405, and GR451; and
- Five seep locations that are not associated with either watershed/drainage basins including: GR505A, GR505B, GR423, GR450, and GR563.

As noted on **Table 7.8, Attachment 7-7 (Rev May 2018)**, a sample was not obtained from all 23 sampling locations during each of the sampling events because many of these locations were dry over the course of the eleven month period. The 23 sampling locations are associated with the two watersheds that bound the proposed permit area – Sanbourn Run to the south and Camp Hope Run to the north, both of which contribute baseflow to the area's major watershed – Clearfield Creek. Sanbourn Run and Camp Hope Run are classified (by 25 PA Code Chapter 93) as cold water fisheries (CWF) and Clearfield Creek is classified as a warm water fishery (WWF).

Comment 44: Section E. First paragraph on page 22 states both that there are 21 and 23 sample locations. Please clarify and revise.

Response: As discussed above in response to **Comment 43** the 23 sampling locations are now all consistent.

Comment 45: Exhibit 7-1.5 -The Legend states "See Note 5" regarding the subgrade elevations. Note 5 is not included in the notes. Please revise as necessary.

Response: The phrase "(SEE NOTE 5)" has been removed from the second and third description in the Legend of **Exhibit 7-1.5 (Rev. 1 5/18)**.

Form 8 - Baseline Groundwater Analysis, Attachment 8-13, Groundwater and Surface Water Sampling and Analysis Plan

Comment 46: The proposed groundwater and surface water monitoring points are satisfactory. Note that the groundwater monitoring locations will not be approved until the landfill footprint is finalized and approved by the DEP.

Response: No response is required.

Comment 47: Page 2 states that "The wells will be sampled after stabilized chemistry is reached or a minimum of one borehole volume." Please revise this section to state that the wells will be sampled after a minimum of 1 well borehole volume has been purged and stabilized chemistry has been reached. Include a discussion on how chemistry stabilization will be determined. Include a discussion on how wells that run dry during purging will be sampled.

Response: Page 2 of **Attachment 8-13 (Rev. May 2018)** has been changed to:

> All site wells with sufficient yield will be purged and sampled using submersible pumps. This plan assumes that dedicated pumps or other sampling devices will be used. Those wells with insufficient water will be purged and sampled using a well-specific dedicated bailer or non-standard pumping technique. If non-dedicated pumps or sampling devices are used, prior to and between sampling locations, the pump/device will be properly decontaminated. Sampling personnel will wear a new pair of disposable gloves for each sampling location. Using portable meters, pH, specific conductance (temperature compensated to 25° C), and temperature will be measured in a water sample collected in a separate container to evaluate stabilized chemistry. This eliminates the potential for the probe(s) to contaminate a sample designated for laboratory analysis. If a monitoring well has limited yield that prevents the pumping of a well volume prior to dewatering the well, the well will be sampled immediately prior to it being dewatered. If a monitoring well's field chemistry does not stabilize, with stabilization defined as "consecutive specific conductance and pH readings differ by less than 10%", then the well will be sampled after a minimum of one borehole volume is achieved, with future sampling events purging similar water quantities to minimize sampling bias.

Comment 48: Page 4 includes a description of surface water sampling. Please revise this section to include procedures and methods to measure stream flow rate and that flow rate

will be a recorded field parameter. Also, include a discussion about how the surface water sample locations will be marked in the field.

Response: The Sampling of Surface Water section in the Groundwater and Surface Water Sampling and Analysis Plan **(Attachment 8-13, Page 3 (Rev. May 2018)** has been revised to:

SAMPLING OF SURFACE WATER

Surface-water samples will be collected as grab samples, with care given not to create turbidity by disturbing the underlying sediments. Samples should be collected from the center of the stream or body of water and at mid-depth, when possible. The sample containers should be labeled prior to sample collection. The information on the container label should be complete and legible before sample collection. Sampling personnel will wear a new pair of disposable gloves for each sampling location. The surface-water samples will be collected by submerging and filling the appropriate sample container, or, if necessary, a decontaminated transfer vessel can be used to collect the water sample, and then used to fill the sample container. Care should be given to not overfill sample bottles containing preservatives. Downstream sampling locations should be collected before upstream locations. The dissolved metals sample will be filtered using a disposable 0.45-micron filter system before filling the preserved sample container. The collected samples will be placed into an iced cooler for shipment to the certified laboratory, following proper chain-of-custody protocol.

Flow will be measured at the seven proposed surface water monitoring locations. At locations GR-415, GR-419, GR-505, GR-410A, GR-405, and GR-440 flows will be measured with permanent weirs. These weirs will also provide a permanent field location for sampling and monitoring. Due to the larger flows at GR-452, the downstream monitoring location on Camp Hope Run, it is likely a permanent staff gauge will be installed as opposed to a weir. The GR-452 stream will be gauged at various stages to develop a rating curve, which will then be used to determine the flow during monitoring events. The staff gauge will mark the sampling location.

Field parameters of pH, specific conductance, and temperature will be collected directly from the surface-water body and recorded onto the Sampling Record, Figure 1.

Comment 49: Please include a discussion about quarterly and annual water quality analysis data evaluation. This should include procedures and techniques for evaluation of analytical results to determine if groundwater degradation has occurred.

Response: The Analytical Parameters section in the Groundwater and Surface Water Sampling and Analysis Plan **(Attachment 8-13, Page 7) (Rev. May 2018)** has been revised to:

ANALYTICAL PARAMETERS

The monitoring well and stream samples from Camp Hope Run Landfill will be analyzed for those parameters listed on Form 19, which is based on the Department's Municipal Waste Regulations, Section 273.284. Annual sampling will also be conducted which will include an expanded list of Form 19 parameters. Leachate and detection zone samples are analyzed for the Form 50 list of parameters and/or Form 50 indicator analytes, as outlined on page 2 of Form 50. The analyses to be performed of well, stream, leachate, and detection zone samples are shown on Table 1.

Analytes that are not detected above respective laboratory reporting limits will be reported on Form 19 and qualified with a less than (<) symbol. The laboratory reporting limits will be at or below the current USEPA Maximum Contaminant Levels (MCLs), where reasonable.

The quarterly and annual analytical data will be submitted to the PADEP within 60 days of the last date of sampling. A letter report will be submitted with the data that will evaluate trends using time-series comparisons particularly for analytes that would indicate a release from the site and whether degradation has occurred. The report will evaluate whether groundwater protection standards have been exceeded.

Form 12 – Alternate Water Supply

Comment 50: Section C, 1. The narrative refers to Attachment 2-1 to locate water supplies within ¼ of the waste disposal area. This map contains a boundary line that is ¼ mile from the permit area not the waste disposal area. Please include the ¼ mile radius boundary from the disposal area on Attachment 2-1 or provide a map that clearly shows this boundary and water supplies.

Response: Attachment 2-1, Sheets 1 through 5 (Rev. 1, 5/18), have been revised to include a Quarter Mile Radius (From the Proposed Limit of Waste) in the mapping and on the Legend.

Comment 51: Section C, 10. The answer to this question states "There are no public or private water supplies within ¼ mile of the proposed permit area." Please revise this statement, since other sections of this application state the contrary.

Response: The responses to Section C of **Form 12 (May 2018)** have been revised to read: "THERE ARE NO PUBLIC OR PRIVATE WATER SUPPLIES WITHIN ¼ MILE OF THE PROPOSED WASTE DISPOSAL AREA."

Finally, although not specifically identified in the TDL, but as we recently discussed over the phone, to address professional licenses that expired between the Phase I application submission and the present time, an updated **Form B (May 2018)** has been signed/sealed by John M. Gardner, P.E. and Robert Hershey, P.G. who are in responsible charge of the work on the application and revisions and is included with this response. Similarly, an updated

Form B1 (May 2018) has been signed/sealed by John M. Gardner, P.E. who supervised the preparation of the permit application as well as all revisions and is included with this response.

On behalf of PA Waste, LLC, we trust that the above responses and accompanying attachments adequately address the Departments technical review comments and concerns. Should you have any additional questions, comments, or require further clarification, please do not hesitate to contact me at your earliest convenience.

Sincerely,
SMITH GARDNER, INC.

W. Michael Brincheck

W. MICHAEL BRINCHEK

John M. Gardner, P.E.
Senior Project Manager
john@smithgardnerinc.com

Attachments

Cc: Robert Hershey, P.G.
Robert Rovner (PA Waste)
Ramsey Dilibero (PA Waste)
Rita Luber (PA Waste)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

May 9, 2018

Robert Rovner
PA Waste, LLC
1785 Bustleton Pike
Feasterville, PA 19053

Re: Camp Hope Run Landfill – Permit # 101719
APS 944978; AUTH 1189259
Phase I Municipal Waste Landfill Application
Boggs Township, Clearfield County

Dear Mr. Rovner:

The Department of Environmental Protection (DEP) has reviewed the Phase I Waste Management application for the above referenced site and has identified the following deficiencies. The resolution of the following deficiencies does not constitute the approval of the Phase I application. Additional deficiencies to the Phase I application may be identified as the application review process continues. The deficiencies are based on applicable laws and regulations.

Deficiencies

Form E – Contractual Consent of Landowner [25 Pa Code § 271.123]

1. The Right of Way for Camp Rattlesnake is not mentioned nor addressed in the consent form. Please explain how this has been resolved.

Form F – Soil Information – Phase I [25 Pa Code §273.117]

2. Section B lists Edifluvents as a soil series. This soils series is not included on the soil maps. Please revise all appropriate forms and attachments.

3. The map referenced in Section C of Form F, Attachment F-2, is small and in a non-satisfactory scale. Please include a map of appropriate scale in this section of the application or indicate that a larger soils map is located in Attachment 2-3. [25 Pa Code §273.114]

Waste Management Program
Northcentral Regional Office |208 West Third Street | Suite 101 | Williamsport, PA 17701-6448
570.327.3636 | Fax 570.327.3565 | www.dep.pa.gov

4. Attachment F-1 page 2 – 3 indicates that 34% of the area within the waste footprint is comprised of the soil series Udorthents. This is not reflected on the soils maps. Please revise all appropriate forms and attachments.

5. Section C refers to Attachment F-2 for a plan of borrow areas. Borrow areas are not identified on the map in Attachment F-2. Please revise all appropriate forms and attachments.

6. Attachment 2-3, Note 6 states that "soil/rock cross sections are in Exhibit F-6.1." This Exhibit is not included in the application. Please submit Exhibit F-6.1.

7. All Cut/Fill maps (Figure F-5.2 through F-5.6) are missing Cut/Fill elevations and/or Subbase contour elevations. Please provide revised maps to include this information.

8. Section C, 6. The application states that the particle size for daily cover will have a maximum particle size of less than 6 inches. Please provide technical justification how the maximum 6-inch particle size proposed for use for daily cover will meet the performance criteria in 25 Pa Code §273.232 (b).

9. Section C, 6. The application states that the particle size for intermediate cover will have a maximum particle size of less than 6 inches. Please provide technical justification how the maximum 6-inch particle size proposed for use for intermediate cover will meet the performance criteria in 25 Pa Code §273.233 (b).

10. Section C, 6. The application states that the particle size for final cover will have a maximum particle size of 6 inches. Please provide technical justification how the maximum 6-inch particle size proposed for use for final cover will meet the performance criteria in 25 Pa Code §273.234 (d).

11. Please provide technical specifications for verification in the field, during placement/construction of the 6' to 12' maximum size controlled fill that compaction will be met so as to not create stability issues in the areas of placement.

12. If blasting is required, a Blast Plan must be submitted to the Department's Bureau of Mining Program for review and determination prior to blasting.

13. Page 9 of Attachment F-1 discusses the proposed processing method for oversized material. Please include a discussion about where the processing will take place and what E&S controls will be implemented.

Form 2 – Phase 1 Map Requirements [25 Pa Code §273.113], Attachment 2-1, Sheets 1 through 5

14. The line type for the Proposed Limit of Waste in the legend on Sheet 1 does not match the line type on the map. The line type is correct on subsequent sheets (Sheets 2-5). Please revise Sheet 1.

15. The symbol for "Former Borehole Location" appears to be incorrect in the legend on all Sheets. Please revise the legend on all appropriate application maps.

16. Section B, 1. There is no property line between Property 1 and 2. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(1)]

17. Section B, 1. The right of-way for Camp Rattlesnake (Property 1) is not shown. Please revise all appropriate application maps and forms to include all right of-ways. [25 Pa Code §273.113 (a)(1), (a)(7)]

18. Section B, 2. The maps do not indicate the boundaries of land to be affected during the life of the operation. Please include an approximate limit of disturbance boundary, which includes stockpiles, impoundments, and any other proposed earth disturbance. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(2)]

19. Section B, 3. Stockpile S1 and S2 are not identified on the maps. Please include the boundaries of the proposed S1 and S2 stockpiles on all appropriate maps and clarify between existing stockpiles and proposed stockpiles. Please revise all appropriate application maps.

20. Section B, 4. The private water supply on Property 1 is not shown. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(4)]

21. Section B, 5. For clarification, please indicate in the legend whether the ½ and ¼ mile radius boundaries are the distance away from facility boundary or disposal area. Please revise all appropriate application maps.

22. Section B, 5(c). The Legend includes "Surface Water Impoundment" and "Sediment Basin from Former Mining Operation". It appears that the surface water impoundments shown on the map are the sediment basins from previous mining. Sediment Basin (SB) could not be located on the maps. Please revise and clarify on all appropriate application maps. [25 Pa Code §273.113 (a)(5)]

23. Section B, 5(d). Several wetlands on Sheets 2 through 5 are shown in a line type inconsistent with the legend. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(5)]

24. Section B, 5(d). On several Sheets some wetlands are labeled but others are not. For clarity please be consistent with line types and labeling formats. Please revise all appropriate application maps. [25 Pa Code §273.113 (a)(5)]

25. Section B, 5(g). The legend lists "Former Surface Mines" but does not indicate a symbol or line type. Please revise all appropriate application maps to identify the approximate boundary of former surface mines. [25 Pa Code §273.113 (a)(6)]

26. Section B, 5(i). Map Note 12 states that mine spoil is presented on the drawings. The legend does not include spoil piles. Spoil piles could not be found on the maps. Please revise all appropriate application maps to clearly indicate where spoil piles are currently located. [25 Pa Code §273.113 (a)(6)]

27. Section B, 5(n). Map Note 16 states that several dwellings and structures are shown on the map. The legend does not include structures/dwellings. Structures or dwellings could not be found on the maps. Please revise all appropriate application maps to clearly indicate structures and dwellings. [25 Pa Code §273.113 (a)(8)]

28. Section B, 5(p). The legend includes "Future Well Clusters," but they could not be located on the maps. Please revise all appropriate application maps to include the proposed water quality monitoring points. [25 Pa Code §273.113 (a)(10)]

29. Section B, 6(d). Map Note 21 states that water discharges and seeps are shown on the map. The legend does not include seeps/discharges. Seeps and discharges could not be located on the maps. Please revise all appropriate application maps to include seeps and discharges. [25 Pa Code §273.113 (a)(15)]

30. Section B, 6(e). Borings included in Attachment 6-5 could not be found on the maps. Please revise all appropriate application maps to include all borings and test holes included in the application. [25 Pa Code §273.113 (a)(12)]

31. Section, B 6(i). The regional groundwater flow direction is shown on Sheet 1 but is not shown on Sheets 2 through 5. Regional groundwater flow direction is included in the legend on all Sheets. Please revise all sheets to include regional groundwater flow direction.

32. There are several items on the maps that are not in the legend. These items include what appear to be possible tree lines, trails, piles, old bore holes or survey points, fence lines, and utility poles locations. These are the same line color and weight as the existing ground contours and make the maps confusing and cluttered. Please delete all unnecessary items from all application maps.

Form 6 – Geologic Information Phase I [25 Pa Code §273.114, §273.115]

33. Exhibit 6.10 Lower Kittanning Structure Contours. Please reevaluate the Lower Kittanning structure contours in the southern S2 area (1690 and 1680 contours). It appears that these structure contours should be shifted to the west in the area of NW-3 to TH-22. This is based on the elevations of the Clarion coals in NW-3C and the average separation distance between the Clarion and Lower Kittanning coals indicated in other included borings. Please reevaluate the structure contours and revise all appropriate application maps and cross-sections.

34. There is a slight discrepancy of the Lower Kittanning elevation for W5A. Exhibit 6.10 shows it as 1692.0', on Table 6.1 it is 1669.2', and on Table 6.3 it is 1667.2'. Please determine the correct elevation and revise the all appropriate tables and exhibits.

35. There appears to be a typo on Table 6.2. Second column heading from the right "Height Above Bottom of gK", should be "..... Bottom of LK". Please revise this table.

36. Note 3 on Tables 6.3 and 6.4 refers to the borehole elevation survey performed in 2014. Please include an explanation for the discrepancy between the table data and corresponding lithologic logs provided in Attachment 6-4. Please revise all appropriate tables.

37. Table 6.3 is missing information for Borehole Number S2-1A. Please revise this table.

38. In cross-section C-C,' TH17 indicates a LKR hot zone. This is not indicated on the lithologic log for TH17. Please clarify and revise appropriate attachments and cross-sections.

39. Several overburden analyses test holes are located in close proximity to the geologic cross-sections. Since the subgrade elevation design in the S2 area is based on the elevation of potentially acidic material, please include overburden analyses test holes in the cross-sections and indicate zones of potentially acidic material (>0.5% total sulfur). Please revise all appropriate cross-sections.

Form 7 – Hydrogeologic Information Phase I [25 Pa Code §273.114, §273.115, §273.118]

40. Section B,14. The first paragraph on page 11 of the narrative response states that there are two private water supplies within ¼ mile east of the permit area. Attachment 2-1.1 shows 5 private water supplies within ¼ mile east of the permit area. Please revise the narrative for this section.

41. Section B, 14. The third paragraph on page 11 of the narrative response addresses the private water supply on the Camp Rattlesnake property. Please revise this narrative to discuss the aquifer(s) this well draws from.

42. Section D. The third paragraph on page 14 discusses groundwater samples obtained from private water supplies. The property numbers referenced in the discussion do not match the property numbers shown on Attachment 2-1. Please revise the narrative.

43. Section E. Surface water sampling location GR450 could not be located on Exhibit 6-1.11. Sample point GR561 is on Exhibit 6-1.11 but not listed in the narrative as a sample location. Please revise the narrative and maps to address all sample locations.

44. Section E. First paragraph on page 22 states both that there are 21 and 23 sample locations. Please clarify and revise.

45. Exhibit 7-1.5 – The Legend states "See Note 5" regarding the subgrade elevations. Note 5 is not included in the notes. Please revise as necessary.

Form 8 – Baseline Groundwater Analysis, Attachment 8-13, Groundwater and Surface Water Sampling and Analysis Plan

46. The proposed groundwater and surface water monitoring points are satisfactory. Note that the groundwater monitoring locations will not be approved until the landfill footprint is finalized and approved by the DEP.

47. Page 2 states that "The wells will be sampled after stabilized chemistry is reached or a minimum of one borehole volume." Please revise this section to state that the wells will be sampled after a minimum of 1 well borehole volume has been purged and stabilized chemistry has been reached. Include a discussion on how chemistry stabilization will be determined. Include a discussion on how wells that run dry during purging will be sampled.

48. Page 4 includes a description of surface water sampling. Please revise this section to include procedures and methods to measure stream flow rate and that flow rate will be a recorded field parameter. Also, include a discussion about how the surface water sample locations will be marked in the field.

49. Please include a discussion about quarterly and annual water quality analysis data evaluation. This should include procedures and techniques for evaluation of analytical results to determine if groundwater degradation has occurred.

Form 12 – Alternate Water supply [25 Pa Code §273.119]

50. Section C, 1. The narrative refers to Attachment 2-1 to locate water supplies within ¼ of the waste disposal area. This map contains a boundary line that is ¼ mile from the permit area not the waste disposal area. Please include the ¼ mile radius boundary from the disposal area on Attachment 2-1 or provide a map that clearly shows this boundary and water supplies.

51. Section C, 10. The answer to this question states "There are no public or private water supplies within ¼ mile of the proposed permit area." Please revise this statement, since other sections of this application state the contrary.

Your response should be in the form of revisions to affected pages, forms or drawings in the application. Each revision or addition should bear the revision date and show what items have been revised or added. DEP suggests you use colored paper for page revisions to the application with additions highlighted and deletions lined out so changes are easily identified. All revised forms must have the title sheet marked with the latest revision date. A revised Page 2 of Form A - Application for Municipal or Residual Waste Permit must be re-signed by the applicant, notarized and marked with the revision date.

You must submit a response fully addressing each of the significant technical deficiencies set forth above within 20 business days or DEP may deny the application.

If you believe that any of the stated deficiencies is not significant, instead of submitting a response to that deficiency, you have the option of asking DEP to decide based on the information regarding the subject matter of that deficiency that you have already made available. If you choose this option regarding any deficiency, you should explain and justify how your current submission satisfies that deficiency. Please keep in mind that if you fail to respond, your application may be denied.

Should you have any questions regarding the identified deficiencies, please contact me at 570.327.3752 or lhouser@pa.gov and refer to Application No. 944978, Authorization No. 1189259 to discuss your concerns or to schedule a meeting. The meeting must be scheduled within the 20-business day period allotted for your reply, unless otherwise extended by DEP.

Sincerely,

Lisa D. Houser

Lisa D. Houser, P.E.
Environmental Engineer Manager
Waste Management Program

Cc: Clearfield County Commissioners
Boggs Township Supervisors
Field
File