



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

September 8, 2020

Keystone Sanitary Landfill, Inc.  
c/o Mr. Dan O'Brien, Business Manager  
249 Dunham Drive  
Dunmore, PA 18512-0249

RE: Technical Deficiencies  
Keystone Sanitary Landfill  
Major Permit Modification – Phase III Site Development  
Application No. 101247-A142  
APS #860390; Auth. ID #1057908  
Dunmore and Throop Boroughs, Lackawanna County

Dear Mr. O'Brien:

The Pennsylvania Department of Environmental Protection (DEP) has reviewed the above referenced application and has identified the following technical deficiencies. The deficiencies are based on applicable laws, regulations, and policies and this guidance sets forth DEP's preferred means of satisfying the applicable regulatory requirements.

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Technical Deficiencies

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1. Form HW-C/MRW-C: Compliance History
  - a. Section B.1.b was not specifically answered. An answer should be provided. Use "Not Applicable" if appropriate.
  - b. Section D is missing some enforcement actions/violations cited against Commonwealth Environmental Systems, L.P., Mount Airy #1, LLC and Smart Recycling, Inc. Please submit a revised, up-to-date list to ensure the list is complete. If any are not to be included, explain why.
  - c. Section D should also be revised to specifically identify the types of enforcement actions (e.g. Notice of Violation, Consent Assessment of Civil Penalty, Summary Citation, etc.) associated with the violations.
  - d. Please provide an up-to-date spreadsheet showing the companies that are responsive to the Form HW-C, as provided with the January 20, 2017 Form HW-C submittal that was part of the renewal application for Commonwealth Environmental Systems, L.P. Solid Waste Management Permit #101615 (referencing the excerpt from the Annual Report of Holding Companies for First National Community Bancorp, Inc.). Ensure that the applicable information on the Form HW-C is provided for any additional companies identified as being responsive.
  
2. Form H – Revegetation Plan

Any area receiving temporary seeding that will be inactive for longer than 1 year shall be revegetated using the permanent mix including wildflowers etc. In the original 2014 application, KSL indicated that shallow root trees would be utilized as well. Please clarify to the Department if this is the extent of revegetation proposed.

3. Form G – Air Resource Protection

Section V. Entrance Roads, Access Roads, and Parking Areas – KSL’s narrative responses do not match up with the questions. KSL should fix their narrative to be responsive to the questions in each section.

- a. KSL’s response indicates that haul roads inside the landfill shall be paved. The entrance road is paved, but the haul roads are not. Please explain the portion of the narrative response “N/A – Project does not require travel on paved roadways”
- b. KSL’s response does not relate to shoulders of access roadways from public highways to the facility. (in narrative section c)
- c. KSL’s response does not relate to application of water or dust suppressants on unpaved areas (in narrative section b)
- d. KSL’s response does not relate to how vehicles that transport waste or soil are cleaned before exiting the site. (in narrative section f) The response that no waste oil shall be used for dust suppressant is not relevant.
- e. KSL’s response does not relate to roadway speed limit question. (in narrative section h)
- f. KSL’s narrative response for g - there is no g on section V of the form. Response states “N/A project is onsite only and does not require vehicle travel upon leaving the landfill.” Please explain.

4. Form L – Contingency plan

KSL’s PPC is dated 4/15/13. There is out of date information throughout the PPC plan. While the Department may have a more recent PPC plan on file, KSL should evaluate and update the PPC plan as appropriate to insure a complete and up to date copy is included in the application.

5. Form R – Waste Analyses/Classification Plan

- a. Exclusions –discusses wastes that are excluded from being hazardous even though they exceed a concentration limit for toxicity (via TCLP). KSL states that the excluded waste will be exempt from having to meet the maximum allowable limit for the specific constituents for which the specific waste stream has been granted exclusion status. If the material exceeds KSL’s acceptance limits, then KSL cannot accept the waste if it would exceed liner compatibility and/or leachate treatability regardless of whether or not it is considered to be a hazardous waste.
- b. KSL includes waste codes in Table 3-1 that are liquid wastes. KSL cannot accept liquid wastes. (314, 315, 316, 420, 421, 422, 504)
- c. Table 3-2 – was submitted as confidential business information (CBI). KSL needs to provide justification that this information meets the

requirements of 25 Pa. Code § § 271.5(b) and 287.5(b) to be considered CBI. In order for the Department to designate information as confidential, KSL must demonstrate the following in accordance with 25 Pa. Code § § 271.5(b) and 287.5(b):

- i. The information contains trade secrets, processes, operations, style of work or apparatus of a person or municipality or is otherwise confidential business information.
  - ii. The information is not emission or discharge data or other information that relates to public health, safety, welfare or the environment.
- d. Table 3-2 - The maximum allowable limits proposed have largely not changed, however the limits for non-characteristic hydrocarbons were not included. Please explain.
- e. In KSL's list of approved Form U's, are all listed active within the last 5 years? Many were approved more than 5 years ago do not have a "last analysis date". Only active Form U's with analysis within the last 5 years should be included. Any inactive Form U's will require a new Form U submission if additional waste is to be accepted.

6. Form 1 – Facility Plan

This form should be updated to reflect the currently proposed plan, including but not limited to:

- a. Facility capacity and life (due to changes in terraces, elimination of K/D removal, changes in footprint)
- b. Exhibit 1.B.1(e)
- c. Earth work mass balance

7. Form 7- Hydrogeological Information - Section C

- a. A schedule of proposed well abandonment/decommissioning and corresponding pad construction should be provided.
- b. An additional well(s) location should be investigated for the northwest corner of Logan.
- c. All existing wells that comprise the groundwater monitoring network need to be physically reevaluated and audited, i.e. items listed on the Form 18 such as depth, cased depth, screening, hydrogeologic characteristics.

8. Additional Ground Water Comments concerning the supplemental information received related to MW-48DT

- a. KSL has indicated the floor of the mine workings provide a flow zone for groundwater through the unconsolidated and bedrock. Wells monitoring this zone provide the first indication of leakage from the existing or proposed disposal areas across the landfill complex. Drawing(s) should be provided that show in plan view and cross-section the exact area and orientation the floor of the mine workings that are proposed to be removed. Document the result of removing those mine worked areas.
- b. KSL should evaluate how the proposed excavation of Dunmore #3 will affect upgradient, cross gradient, and downgradient hydrogeologic

dynamic movement across the site. What will be the results in flow direction, gradient, and rates of flow if this area is intercepted and altered? KSL should describe how the monitoring array will be amended to provide accurate operational data moving forward.

- c. KSL should identify and characterize an impermeable layer in the area where the Phase III subgrade is proposed to be below the mine workings.
- d. KSL states MW-48DT's lowest water is perched water associated with a fracture at 76' or 1051' amsl and not representative of groundwater elevations in the regional groundwater system. Please provide pumping and recovery details, data, and narrative for MW-48DT.
- e. KSL contends the source of water at the base of MW-48DT is from the surface, the source should be identified. Tracer investigations of stormwater in Basin 3, stormwater channels, crusher sediment settling water could all be tested. The inference that surface water and constructed recharge areas effect flow in the fracture system should be confirmed. An effort should be completed that demonstrate the effect of recharge of these locations.
- f. KSL should develop a rose diagram of fractures across the site, including the fractures in MW-48DT. This would establish orientations for well installation in further investigations and a final monitoring plan

9. Form 11 - Mineral Deposits Information Phase I

No additional subsidence remediation is proposed at the Keystone facility for the Phase III Permit Modification. Geo-Science Engineering and Testing, LLC. (GSET) has indicated they would like to schedule a meeting with the Department to discuss the report and answer potential questions. Keystone in conjunction GSET should contact the Department and provide available dates and times for a virtual meeting. At least thirty (30) days prior to meeting with the Department, two copies of a DVD or thumb drive of the reported 67 preliminary drill hole videos confirming mining conditions at the site should be provided to the Department.

10. Form 14-Operations Plan Phase II

This Form should be updated to reflect the project as currently proposed. The current form has not been updated since the 2014 submission.

Nuisance Minimization and Control Plan (NMCP)

- a. Please update the NMCP to include all the most recent measures to be taken to minimize all potential nuisances.
- b. The Department requests additional information on the use of temporary geosynthetic cap for odor control. Temporary Geosynthetic Cap is not mentioned as a potential odor control measure. If temporary geosynthetic cap is to be utilized in intermediate slope areas, details regarding the triggers for deploying the temporary cap should be provided. If intermediate slopes will be in place for an extended period of time, implementation of enhanced surface monitoring in those areas will need to

be evaluated. Details regarding the implementation of enhanced surface monitoring should also be included in the NMCP.

11. Form 24 – Liner System Phase II

- a. Construction details indicate proposed use of two layers of uniaxial geogrid. KSL should show the geogrids on the construction plans.
- b. Narrative introduction page 2 indicates the use of 18-inch compacted subgrade over the existing waste. This should be added on both construction plans and liner construction details.
- c. Sheet 12 should be broken down into two separate sheets – one for material balance calculations and one for construction sequence schedule, including closure schedule.
- d. Sheet 44/45 – Leachate Collection Profiles: need legends for LCM, MH, MM, and CO.

12. Form 25 – Leachate Management Phase II

Figure 1 - This graph shows a decrease in stored leachate but does not correlate the reduction in storage to a decrease in leachate generation. KSL should provide a leachate generation rate graph over the same timeframe.

13. Form 28 – Closure - Post Closure Land Use Plan

- a. C.2. - KSL states that the implementation of closure activities for increment No 14 is anticipated by 2065. There are currently 16 pads proposed - KSL should evaluate and update closure plan for consistency with currently proposed project.
- b. C6 – bonding worksheets - assumptions based on 10 years of landfill operation are not adequate. Bonding must consider a worst-case scenario during the life of the facility, not just the first 10 years.
- c. Please provide Exhibit 28.B.2.
- d. Bonding Calculations
  - i. Provide updated 3<sup>rd</sup> party cost information to back up all calculations.
  - ii. **Worksheet A** – KSL estimated the volume of disposal of contaminated liquids based on planned closure assumptions. KSL states in their supporting narrative “prior to taking the on-site treatment plant out of service the lagoons will be drained, processed and conveyed to the SSA collection and treatment system. At the end of the post closure long term monitoring period, the volume of flow to the lagoons will be limited. However, a residual amount of untreated wastewater would remain in the lagoon that will be required to be drained and processed as noted above. For the purposes of establishing an amount for the bonding we would assume the residual volume to 10% of the lagoons’ capacity.” This assumption is not the proper assumption. The bond calculations are to be based on the worst-case scenario, which would be the maximum capacity of the leachate lagoons.

- i. **Worksheet B #2** – KSL assumed 70 acres of area to be final capped based on the first 10 years of operation. KSL needs to consider the full life of the facility. The construction schedule (2016 Sheet 12) appears to show that during pad 15 Closure increment 2 there could be as much as 235.1 acres under temporary cap and 24.1 acres of open area. The temporary cap would need to be replaced with final cap, plus capping of the open area.
- If over 250 acres are in need of final cap, sections 4-12 are likely underestimated.
  - Section 7 on Worksheet B indicates that there is enough onsite borrow material. The 2020 Sheet 12 material balance seems to indicate that the landfill will require 27,009,431 cy of material, but only 16,262,624 cy of material is available onsite.
- ii. **Worksheet C** – KSL should provide supporting information for the number of groundwater monitoring wells used. Consider the worst case of the maximum number of wells at any one time.
- iii. **Worksheet G** – KSL should include all of the gas wells, not just those to be installed in the first 10 years. KSL should also consider costs associated with the proposed subsurface gas migration monitoring wells. These calculations should include costs associated with any gas well installation or adjustment based on having to install permanent final cap.
- iv. **Worksheet I - #2** Annual leachate volume seems underestimated. KSL estimates 13,572,772 gallons per year of leachate generation. Based on monthly engineer reports, from July 1, 2019 through June 30, 2020, KSL generated (missing data for generated amounts in November and April) is 55,511,931 gallons. The total for the period July 1, 2018 through June 30, 2019 is 73,158,755 gallons. It could be expected that the site will likely generate more leachate with/during the expansion.
- Line 3 is based on a 2009 cost estimate, line 4 is based on 2013 cost estimate, Line 5 is based on 2009 cost estimate, Line 6 is based on 2006 cost estimate. These should be updated.
  - Line 12.k. estimates the volume of materials that would need to be disposed of to remove the leachate lagoons at 5,256 CY. This appears to be underestimated. The volume of 12" of soil alone is 5,324.02 CY. KSL also needs to consider the volume of the liner materials.
  - Line 12.l. The unit cost for disposal of \$20/CY seems low. KSL should confirm/reevaluate with 3<sup>rd</sup> party costs.
  - It's not clear if KSL includes RO concentrate and plant sludges included in the bonding. While active, these wastes are applied to the working face, after closure, these wastes will need to be treated and/or disposed.

- vii. **Worksheet J** – KSL did not include any costs associated with closure of the borrow area. There is a large stockpile area adjacent to Phase II. KSL should explain. The worst-case scenario is not the planned closure at the end of the life of Phase III.
- viii. **Worksheet K** – KSL assumed 150 acres for the size of the waste placement footprint. KSL has 442 acres of permitted disposal area
  - Line 8.a. KSL only assumes 1.5 acres of cap to be repaired per year.
  - Line 10 says to assume 20% of the acreage of the lagoons, but KSL has done extensive repairs and had to replace the liner more than expected. It is reasonable to expect the liner system may have to be replaced at least once in 30 years.
- ix. **Worksheet L**-revise to reflect changes to the bonding worksheets

#### 14. Ambient Air Monitoring Plan

- a. This statement is unclear as to the actual sampling intent and is missing the reference to the Primer –“KSL will collect one (1) ambient air sample at each of the six (6) sample locations on a six (6) day cycle to ensure samples are collected during every day of the week in accordance with the ASTDR Landfill Gas Primer.” Samples should be collected in pairs of an upwind/downwind set based on the expected wind direction. This should allow the calculation of a delta across the facility.
- b. It is not clear from the proposal that the entire suite of proposed analytes will be sampled for on every sampling event.
- c. The proposal suggests that sampling will be conducted on a 1-in-6 day cycle until each of the seven days of the week has had a sample collected on it. This means that the total time between the first sampling day in a quarter to the last sampling day in the quarter will be 36 days, just over five weeks of sampling time to represent approximately 13 weeks of the quarter. It is not clear how much time will be between the sampling sets in each quarter.
- d. What criteria will be used to reduce certain methods to an 8-hour period?
- e. The PM sensors can and probably should be run continuously, not only on the selected sampling dates.
- f. What onsite met data is being collected? What is the height of the tower(s) (5M, 10M, Higher)?
- g. The 2-year timeframe to complete the study may be too long. The Department recommends a reevaluation of the plan to shorten the time needed to complete the study.
- h. The Department recommends that KSL evaluate the placement of an additional monitoring station in closer proximity to the leachate storage lagoons and treatment plant. This area is unique in that it may produce air emissions that differ from the other areas of the landfill.

15. Subsurface Gas Probe Monitoring Plan

- a. What role if any do the existing gas probes play in the Subsurface Gas Probe Monitoring Plan. For example, were historic monitoring results evaluated when developing sampling protocols and new gas probe placement?
- b. The Department recommends that KSL evaluate the area closer to the main entrance of the landfill to determine if there is any value to either moving a probe closer to this area or potentially adding a probe.

16. Educational Benefit

- a. KSL's application identifies and details an environmental education benefit consisting of a partnership with Keystone College for an environmental education and academic program that would expand and enhance Keystone College's program offerings on environmental resource management and stewardship to K-12 children in Northeast Pennsylvania. The program was to focus, but not be limited to, the environmental aspects of the design and operation of a Municipal Solid Waste Disposal Facility. On December 9, 2019, the Department received an email from KSL indicating that Keystone College was reducing their environmental science studies and no longer wished to run the environmental education program which KSL had proposed as a benefit. The email further explained that Penn State University Scranton was interested in partnering with KSL for an environmental education program. The email included a chart summarizing a proposed summer environmental program at PSU Scranton. The chart does not indicate anything about landfills and nothing about KSL specifically. KSL needs to provide more information regarding the partnership with PSU Scranton (correspondence from school districts that the program will target, details on the program, contracts, and other information for this education program).

17. Phased Construction Drawings

- a. The 2020 drawing set includes sheets with the same sheet numbers as previous drawing sets, however when the sheets have the same sheet number, they do not show the same information. Sheets with the same number should replace past sheets or have some other number so there is no confusion when referencing sheet numbers.
- b. The number of pads, pad layout, pad sizes, sequencing, and the size of the footprint appear to have changed. Please explain these changes in detail including an evaluation of the impacts these changes will have on visibility of the operation and disposal capacity. As part of the modification application to eliminate the relocation of the Keystone/Dunmore waste, KSL stated that the construction sequence of Phase III would not change. The DEP may need to reevaluate.



- c. For technical review, KSL was to provide the complete design of the facility, including phased construction drawings that include the proposed staged construction and timing of landfill development for the entire proposed life of the project. The updated plans should include detailed stage development drawings that tie all construction, filling, and capping sequences to a timetable. These should show complete landfill construction at a point in time prior to the next stage of landfill construction. This includes location of access roads, berms, storage and stockpiles areas, staging and parking areas, areas to be revegetated, mitigation features such as landfill gas collection and E&S and PCSM controls, and berm construction, as well as any other relevant controls related to each stage. All drawings should meet the requirements of Forms 2 and 3.
  - i. The contours and other details are not shown on the phased construction drawings for the portions of the pads that are overtopping areas that have final cap. Some pads that are entirely an overlay have no details shown (e.g. Pad 4) Please include the contour lines and any other missing details in these areas.
  - ii. The phased drawings should include cap removal areas, revegetation areas, temporary or permanent E&S controls, rain flaps, berms, stockpile areas, etc.
- d. An updated construction /operation/closure flow chart as provided on Sheet 12 of the 2016 drawing set was not included with the revised application. The chart submitted in the 2020 revision does not contain the same information and includes material balance information. Actual dates are not necessary, but timeframe by month or month/year into the project should be included for the entire life of the facility with the information as in the 2016 Sheet 12. As mentioned in a previous comment related to the Form 24, material balance information should be in a separate chart.
- e. The Pad Construction drawings should include the capping and other mitigation measures required as part of listed pad certification requirements.
- f. Pad 7's construction plan referencing K/D leachate collection piping abandonment. Please explain as leachate will still need to be collected from the Keystone/Dunmore disposal area.

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You must submit a response fully addressing each of the technical deficiencies set forth above within 60 business days or DEP may deny the application.

If you believe that any of the stated deficiencies are not significant, instead of submitting a response to that deficiency, you have the option of asking DEP to make a decision

based on the information with regard to the subject matter of that deficiency that you have already made available. If you choose this option with regard to 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 Sam Warmate at (570) 826-2022 and refer to Application No. 101247-A142, Authorization No. 1057908 to discuss your concerns or to schedule a meeting. You may also follow your application through the review process via *eFACTS on the Web* at: <http://www.ahs2.dep.state.pa.us/eFactsWeb/default.aspx>.

Sincerely,

*David F. Matcho*

David F. Matcho, P.E.  
Environmental Engineer Manager  
Waste Management Program

cc: LaBella Associates