



NORTHEAST REGIONAL OFFICE

July 8, 2019

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

Re: Environmental Assessment
Keystone Sanitary Landfill
Major Permit Modification – Phase III Site Development
Application No. 101247-A142
APS#860390 AUTH#1057908
Dunmore and Throop Boroughs, Lackawanna County

Dear Mr. O'Brien:

The Department of Environmental Protection (DEP) has completed its review of the Environmental Assessment Process (EAP) for the Keystone Sanitary Landfill (KSL) Phase III Site Development Application. The review was performed in accordance with the Municipal Waste Regulations, 25 Pa. Code §271.126 and §271.127, as well as DEP's Environmental Assessment Process Policy. DEP evaluated the information contained in the application to determine whether KSL demonstrated that the benefits of the proposed project to the public clearly outweigh the known and potential environmental harms that will remain after the proposed mitigation.

DEP has determined that KSL has shown that the identified benefits of the project clearly outweigh the remaining known and potential harms of the project. DEP's Phase I review/EAP is enclosed with this letter. Additional information is required before DEP can begin the technical review of the application and make a final decision on the application. This information is identified at the end of the enclosed Phase I review/EAP.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Bellas", written over a white background.

Roger Bellas
Environmental Program Manager
Waste Management Program

Enclosure

cc: Labella Associates (w/ enclosure)
Lackawanna County Regional Planning Commission (w/ enclosure)
Lackawanna County Commissioners (w/ enclosure)
Dunmore Borough (w/ enclosure)
Throop Borough (w/ enclosure)
Senator Robert P. Casey, Jr. (w/ enclosure)
Congressman Matt Cartwright (w/ enclosure)
Senator John Blake (w/ enclosure)
Representative Marty Flynn (w/ enclosure)

Environmental Assessment Analysis (Harms/Benefits)

**Keystone Sanitary Landfill #101247
Phase III Site Development
Environmental Assessment
Dunmore and Throop Boroughs, Lackawanna County**

Prepared by:
Pa. Department of Environmental Protection
Northeast Regional Office
Waste Management

July 2019



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

ENVIRONMENTAL ASSESSMENT PROCESS

On March 20, 2014, the Department of Environmental Protection (DEP) received a major modification application for Keystone Sanitary Landfill's (KSL) Phase III Site Development project, an expansion of KSL's existing landfill located in Dunmore and Throop Boroughs, Lackawanna County. DEP's municipal waste regulations require that DEP evaluate KSL's landfill expansion permit application consistent with a two-phase process (25 Pa Code § 273.101). The environmental assessment is evaluated in Phase I prior to technical review in Phase II of the permit review. 25 Pa. Code § 271.126 and § 271.127 (relating to environmental assessment) require that an applicant conduct and demonstrate that the benefits related to the project clearly outweigh the known and potential environmental harms that remain after mitigation.

Applications subject to the environmental assessment regulations must: (1) include a detailed analysis of the potential impact of the proposed facility on the environment, public health and public safety; (2) describe the known and potential harms of the proposed project; (3) include a written mitigation plan that explains how each known and potential harm will be mitigated and the extent to which any known or potential harms remain after mitigation; and (4) demonstrate that the benefits of the project to the public clearly outweigh the known and potential environmental harms that will remain after the proposed mitigation. Benefits and known and potential harms can be identified by the applicant, DEP or other agencies, or any municipality or person.

Benefits of the project consist of social and economic benefits that remain after taking into consideration the known and potential social and economic harms of the project and may also consist of the environmental benefits of the project. To determine whether an impact is a harm or a benefit, DEP compares the applicant's proposal to the conditions that would exist if the project did not move forward. In reviewing an environmental assessment, DEP evaluates social and economic benefits after offsetting them with social and economic harms. Environmental harms are evaluated after offsetting them with acceptable mitigation plans. The environmental harms are then balanced against the social and economic and environmental benefits to determine if the benefits clearly outweigh the harms.

Benefits and harms are identified as "known" benefits or harms or "potential" benefits or harms. A known harm or benefit is one that DEP believes will occur in the future. A potential benefit or harm is one that might occur given the right circumstances. A known benefit or harm carries greater weight than if that same benefit or harm were a potential benefit or harm for a particular project.

For each benefit and harm the duration, frequency, intensity, reach (i.e., who will be affected) and sensitivity of receptor are evaluated. For this discussion, duration refers to how long a harm or benefit may continue. Frequency refers to how often it may occur. Intensity refers to how much the harm or benefit may be if or when it occurs. It should be noted that the words "duration," "frequency," "intensity," "reach," and "receptor sensitivity" will not be used to describe every harm and benefit in the analysis. However, these factors are considered for each harm or benefit and are discussed when appropriate.

Each harm is discussed individually below to determine if it has been fully mitigated. If a harm is fully mitigated, that harm is not included in the balancing portion of this document. If there is harm remaining after mitigation, that remaining harm is included in the balancing. The balancing looks at the individual and collective impacts of all the harms and the benefits to ensure that the total effect of the project is such that the related benefits clearly outweigh the harms.

KSL submitted an environmental assessment in its application that provided its analysis of the potential impact of the proposed facility on the environment, public health, and safety. DEP, after consultation with appropriate government agencies and potentially affected parties, evaluated the environmental assessment to determine whether the proposed project has the potential to cause environmental harm. Where appropriate, past performance is used to predict future conditions related to a harm or benefit. In this document, DEP provides its analysis of the known and potential environmental harm that will remain after implementation of the proposed mitigations and whether the benefits of the proposed project clearly outweigh the remaining harms.

The harms detailed below are those identified by KSL, DEP, or other parties who provided comment on the application. The mitigation measures and benefits have been edited from the application and reflect KSL's own wording or viewpoint. There is no tacit or implied acceptance of statements made by KSL within its application or repeated in the mitigation or the benefits sections of this document, by virtue of those statements being included in, or excluded from, this document. The "DEP Determination of Remaining Impacts" and "DEP Evaluation of Benefit" sections are DEP's independent evaluation of KSL's proposed mitigation and proposed benefits.

PROJECT DESCRIPTION

The Keystone Sanitary Landfill is an existing landfill located at 249 Dunham Drive in Dunmore and Throop Boroughs, Lackawanna County. The site is comprised of three closed disposal areas (Keystone/Dunmore, Logan and Tabor) and a current active Phase II disposal area. The Keystone/Dunmore disposal area is the oldest and is unlined. The immediate surrounding area consists of highway (Interstate 81 and Route 6) to the west, south and east; and commercial areas to the north and northwest. The area beyond the highway to the south and east is wooded, and a residential area is located immediately beyond the highway to the southwest. On March 20, 2014, the Department of Environmental Protection (DEP) received the application for KSL's Phase III expansion project. The expansion area would be located within the current permit boundary and involve expanding over and between existing fill areas.

As part of the review of Keystone's landfill application, DEP's review is coordinated with various local, state and federal entities where necessary. Local land use approval and other state and/or federal agency concurrence may be necessary prior to permitting of the expansion project. In addition, permits required by KSL from DEP may be coordinated as necessary for the project.

Pursuant to 25 Pa. Code § 271.202, receipt of a permit application for a modification that results in increased disposal capacity does not occur until a Local Municipality Involvement Process meeting is held. At this meeting DEP, the applicant, and municipal officials meet to discuss the application, DEP's review process, the public involvement steps, and any concerns and questions of the municipal officials. This Local Municipality Involvement Process meeting was held on May 20, 2014 at the Scranton State Office Building. DEP found the application to be incomplete and a deficiency letter was issued to KSL on June 24, 2014. KSL submitted additional information to DEP in response on September 9, 2014, October 2, 2014, October 27, 2014 and November 7, 2014. Following review of this additional information, the application was found to be complete and officially accepted for review on December 17, 2014.

In their application KSL originally proposed to increase the height of the landfill by 165 feet. As the first step in the review process, DEP reviewed the Form D – Environmental Assessment, and portions of the application that were relevant to the evaluation of harms or benefits. On October 13, 2015, DEP issued a first Environmental Assessment review letter. KSL's response to this review letter was received by DEP on May 17, 2016. The response included a significant reduction in the proposed final height of the expansion and a reduction in volume and design life of the proposed expansion. KSL modified the project to lower the peak elevation to that of the previously permitted Phase II height (1,585 feet). The majority of disposal would occur in the valley between the existing disposal areas. The revised proposal would increase the facility's disposal capacity by 134 million cubic yards and expand KSL's life-span by approximately 44 years, based on their current permitted average daily volume. The project does not propose to increase the daily maximum or quarterly average waste acceptance rates for the landfill. If approved, the major modification will not change the 10-year term of the existing permit and KSL would need to apply for permit renewal prior to expiration of the current permit (April 6, 2025).

PUBLIC INPUT

DEP determined that a portion of Dunmore Borough is an Environmental Justice (EJ) area for economics and DEP has taken appropriate measures to ensure the public and EJ community is informed regarding the Phase III expansion. In accordance with DEP's EJ Public Participation Policy, DEP conducted outreach and public meetings to educate the public, including the EJ community, about the pending application and how they could participate. DEP created a fact sheet and plain language summary to explain the proposed project and made the application and all related materials accessible to the public on the DEP website.

There has been significant public interest in the application and over 900 comments have been received. DEP provided several opportunities for public input: a public meeting was held on February 25, 2015 at the Dunmore High School, an open house was held on April 27, 2015 at the Dunmore Community Center, a second public meeting was held on June 15, 2015 at Mid Valley High School, and a public hearing was held on July 18, 2016 at Mid Valley High School. Concerns raised by local government and municipal officials, residents, business owners and other persons affected by the proposed expansion included odors, visual impacts, health impacts, existing and potential groundwater contamination, property values, bird

nuisances, acceptance of out of state waste, discharge of leachate through combined sewer lines into the Lackawanna River, and civic pride. A community organization known as Friends of Lackawanna (FOL) was formed to oppose the ongoing landfill operation and expansion and created an online petition opposing the landfill. DEP received a harms and benefits analysis prepared by FOL dated June 26, 2015 and an updated analysis dated November 22, 2017. DEP also received comments in favor of the expansion including letters from numerous local businesses and a petition from landfill employees, friends and family supporting the landfill. All comments received were reviewed and considered as part of DEP's review.

HEALTH CONSULTATION

The Pennsylvania Department of Health (PADOH) received a request from a Pennsylvania state representative and members of FOL to conduct an environmental health study/evaluation of air quality surrounding KSL. The request indicated that the local community was concerned about harmful environmental exposures because of the landfill's operation and its future expansion. Based on these concerns, PADOH and the federal Agency for Toxic Substance and Disease Registry (ATSDR) began a collaboration with DEP to evaluate community concerns about environmental exposures near the landfill, particularly focusing on evaluating air quality data near the landfill.

PADOH and ATSDR reviewed data collected by DEP and issued their findings in a Health Consultation Report dated April 1, 2019. The report concluded that chronic (long-term) exposure to the chemicals detected in ambient air near the landfill at the monitored locations is not expected to cause harmful non-cancer health effects under the landfill's current operating conditions. However, chronic exposure to benzene and formaldehyde may cause a very low increased cancer risk. The study did not conclude the chemicals detected are coming from KSL. Benzene and formaldehyde are commonly found in outdoor air and the cancer risk estimates based on community measurements were typical of exposure across similar suburban/urban communities in the United States that are not necessarily located near landfills. The report also concluded that acute (short-term) exposure to some of the contaminants detected in ambient air near the landfill could have caused transitory health effects for sensitive populations, such as pregnant women, children, older adults and people with respiratory disease. An additional conclusion of the report was that a data gap exists for assessing current and future potential exposures from subsurface vapor migration from the landfill into residences (i.e., vapor intrusion). Planned changes in landfill operations (including excavation, line construction and landfilling in an area closer to the Swinick community) could adversely impact future subsurface vapor migration pathways. To address these conclusions, the report recommended that DEP continue to oversee landfill activities and enforce landfill permit regulations, including nuisance odor rules; consider a fence line air monitoring program that includes publicly accessible real-time results for selected limited analytes as part of the landfill's future permit requirements; make publicly available the response and oversight activities that DEP has conducted at the landfill; conduct timely responses to nuisance odor complaints; consider maintaining and posting an odor complaint log; and consider working with the landfill to perform vapor intrusion investigations in the Swinick community to evaluate current indoor air levels of volatile organic compounds and to ensure that conditions do not change in the future after new operations commence in the landfill area.

To address the recommendations contained in the report, KSL has proposed what they believe to be a comprehensive air monitoring program and an enhanced onsite underground gas migration monitoring plan. Further, the environmental regulations and permits issued by DEP are designed and intended to be protective of public health. DEP will continue its oversight of landfill activities and enforcement of landfill permit regulations in this regard. “Health impacts” was not listed as a specific harm for the purpose of the environmental assessment, but rather the individual harms that could contribute to health impacts (e.g., air quality) are addressed separately.

HARMS AND MITIGATION

(E) = Environmental, (SE) = Social & Economic

- 1. Property Values (SE):** Potential harms to the value of properties are a concern of those living in the vicinity of the landfill.

KSL’s Proposed Mitigation: KSL retained a real estate appraiser to evaluate the performance of real estate markets in the vicinity of KSL. The evaluation concludes that proximity to KSL has not diminished the residential property values in the surrounding neighborhoods. However, recognizing the future residential property value and/or perceived property values still may be classified as a potential harm; KSL will implement a Property Value Protection Plan (PVPP) upon issuance of the Phase III permit modification. This PVPP would allow a residential homeowner located within ½ mile of KSL’s property boundary to enter into an agreement with KSL where KSL would purchase the property for an amount based on the average of three appraisals.

DEP Determination of Remaining Impacts: Much of the residential development around the landfill has occurred despite the presence of the landfill, demonstrating that the landfill did not deter the sale of existing homes, or the construction of new residential development nearby. However, because the proposed expansion would make the landfill closer and more visible to some residences in nearby developments, the expansion may impact property values. KSL’s PVPP provides adequate mitigation to address potential impacts to property values and no harm remains for the purpose of this environmental assessment.

- 2. Visual Impacts (SE):** Visibility of the landfill is a harm of the project because the proposed project will extend the peak elevation over a larger area than the currently permitted disposal area, enlarging the unnatural, permanent mound on the horizon. The landfill will extend the peak of the landfill 3,000 feet closer to residential development and increase the height of existing final grades in areas that are presently closed by over 200 feet. Public comment indicates that those living in proximity to the landfill are particularly sensitive to the visual impact of the proposed Phase III expansion.

KSL’s Proposed Mitigation: KSL modified the project to lower the peak elevation to that of the previously permitted Phase II height. A line of sight study was completed to fully assess the potential visual impacts of the project. Visual impacts during

construction and daily waste placement are temporary and the majority of disposal would occur in the valley between the existing disposal areas, further mitigating the potential for visual impacts. An aggressive closure capping and revegetation program is planned to mitigate any remaining visual impacts. Furthermore, KSL will plant shallow root trees and plantings along the top and berms of the site.

DEP Determination of Remaining Impacts: The currently permitted maximum elevation of the landfill is 1,585 feet. The proposed expansion will not change that maximum height; however, the proposed expansion will elongate the profile of the landfill to extend the height across a larger distance. The profile of the top of the currently permitted Phase II landfill, which is not yet at final grade, will extend approximately 280 feet in length whereas the proposed expansion would extend this horizontal profile to approximately 4,300 feet in length¹.

The revised, lowered height (from the originally proposed 1,750 feet) and capping and revegetation program provides some mitigation; however, because the new proposed peak elevation will extend over a larger area than the currently permitted disposal area, presenting a much longer profile, and moving it closer to residential development, the project will still result in visual impacts. Harm related to the visual impact of a closed landfill on the surrounding viewscape has only vaguely been addressed. KSL proposes to implement an aggressive closure capping and revegetation plan; however, the application shows that during the last 30 years of landfill life, only an additional 15.7 acres of landfill will be placed under final cap. During this time the acreage under temporary cap will increase from 115.6 acres to 235.5 acres. The daily landfill operations will be mostly unshielded from view from traffic on Interstate 81 and readily visible to some of the closest residents to the landfill (portions of the Swinick development). Some residents in this area will not be screened by natural or unnatural buffers. The line of sight analysis provided by KSL shows that the landfill will be clearly visible from some of these areas. The intensity of the visual harms related to the expansion will be greatest during construction activities and active working face operations which are projected to last approximately 44 years. KSL characterizes this as temporary; however, the duration is still significant. KSL has planned the sequencing of the expansion to reduce visual impacts related to active landfill operations. By working inside the valley between existing disposal areas, active operations will be screened from view by finished disposal areas for some of the time during the life of the project. Because KSL's proposed mitigation will not completely eliminate visual impacts, harm will remain for the purpose of this environmental assessment.

¹ For purposes of evaluating the visibility of the horizontal profile of the expansion, DEP used an elevation of 1,575 feet. The profile of the current permitted Phase II landfill that will be at or above this elevation (1,575') will be approximately 280 feet. The profile of the proposed Phase III landfill that will be at or above this elevation (1,575') will be approximately 4,300 feet.

3. **Odors (E):** Odors from waste disposal and landfill gas production are a potential harm. Public comment indicates that odors are a concern for those living in proximity of the landfill.

KSL's Proposed Mitigation: KSL will continue to follow its Nuisance Minimization and Control Plan (NMCP) to address the potential for odors including employing the following: odor patrols, gas detection equipment, odor neutralizers, portable flares, horizontal gas collectors, temporary gas wells, stone columns to promote leachate drainage, temporary liner, vacuum equipment installation, limiting size of the working face, immediate disposal of odorous waste, daily monitoring of gas collection system, and aeration systems within leachate lagoons. KSL also indicates that the protocols in place from the landfill's ISO 14001 certification aid in the mitigation of off-site odor concerns and reduce potential by maximizing awareness among employees and establishing procedures for monitoring the landfill in this regard. Also, a new meteorological station has been installed on the top of a secondary litter fence pole paralleling the Lackawanna Valley Industrial Highway. The station provides data upon which operational activities can be modified to minimize any potential odor issues.

DEP Determination of Remaining Impacts: DEP regulations require landfill operators to minimize and control odors through the implementation of measures outlined within a NMCP. DEP's experience based on inspections and oversight is that KSL generally operates in compliance and has effective mitigation measures in place to control odors. However, this past fall and winter most of the landfills in DEP's Northeast Region experienced weather extremes (excessively wet weather and temperature fluctuations, etc.) that have required implementation of measures beyond regular NMCP protocols. KSL was not unique to the difficulties facing all of the region's landfills. KSL has had to consider additional measures in an attempt to adequately capture the elevated amounts of landfill gas being generated at the site due to the excessively wet weather experienced by the region last year. These measures included the deployment of temporary geosynthetic capping material on intermediate slopes before required by the permit, use of a more clay like material as intermediate cover on some of the intermediate slopes, and modifications of KSL's "Enhanced Monitoring Program." DEP inspections conducted at KSL in March and April 2019 have verified that the additional measures implemented by KSL to address the issues caused by the recent weather extremes have been effective. Some of these additional measures that were implemented have been incorporated into KSL's NMCP, specifically those in the "Enhanced Monitoring Program." While KSL has proposed adequate mitigation, it is unlikely to provide complete elimination of odors at all times. Furthermore, the mitigation could fail to work as intended due to improper implementation or maintenance. Some potential harm will remain for the purpose of this environmental assessment.

4. **Litter (E):** On and off-site litter from the acceptance and disposal of waste is a potential harm.

KSL's Proposed Mitigation: KSL follows its litter control plan that includes: Vehicles are tarped and swept out, portable litter fencing, prompt compaction of waste and application of daily cover, placement of top liner within 1 year, limit size of working face, litter collection crews, permanent litter fence along the Lackawanna Valley Industrial Highway, daily monitoring, monitoring weather conditions and adjusting operations accordingly. Also, a new meteorological station has been installed on the top of a secondary litter fence pole paralleling the highway. The data is analyzed daily and used to adjust the orientation and/or increase the number of litter fences and to assign the daily full-time litter cleanup crew. If a litter issue is identified during the Compliance Officer's daily tour to the site and adjacent roadways, an additional litter cleanup crew will be assigned. Additionally, if extreme wind conditions prevail, disposal operations will be relocated to valley locations.

DEP Determination of Remaining Impacts: KSL has proposed adequate mitigation measures to prevent litter from being unsightly or leaving the site. DEP's experience based on inspections and oversight is that KSL generally operates in compliance and has effective mitigation measures in place to control litter. However, because the mitigation depends on proper implementation of various measures some potential harm will remain for the purpose of this environmental assessment.

5. **Noise (E):** Off-site noise is a potential harm.

KSL's Proposed Mitigation: KSL has identified that the use of existing horizontal buffers such as nearby limited access highways, the industrial park, and forested areas will maintain the horizontal separation of over ¼ mile from the closest residential areas. KSL indicates that it will maintain and enhance vegetative planting along public roadways. KSL also employs the following measures to control potential off-site noise: prohibit use of "jake brakes," require vegetative plantings, and annual noise monitoring inspections. A Noise Impact Assessment concluded the landfill is not significantly affecting noise levels at the nearest receptor sites. A Noise Study will be performed annually during the Phase III operations and any variations from the noise levels in the Noise Impact Assessment, attributable to KSL, will be included in the Annual Operations Report along with the details of the mitigation program instituted by KSL.

DEP Determination of Remaining Impacts: The proposed project should not exacerbate the existing potential for off-site noise, but it will extend the operating life of the landfill and therefore will extend the duration of the potential harm. While KSL has proposed adequate mitigation, it is unlikely to provide complete elimination of noise; therefore, some potential harm will remain for the purpose of this environmental assessment.

6. **Vectors/Birds (E):** The attraction of vectors and birds is a potential harm of a landfill operation. Public comments indicate that there is a concern about large populations of birds visiting the landfill and surrounding community.

KSL's Proposed Mitigation: KSL's vector controls include: compact and cover waste daily; limit the acceptance of wastewater sludge to certain times to limit attraction of insects; limit size of working face; maintain a compact working face to disrupt congregation of birds; use of decoys or noisemakers to limit attraction of birds; retaining outside vector control professionals as needed. KSL has executed an agreement with the U.S. Department of Agriculture (USDA), APHS Wildlife Services, PA to control the bird population at the landfill and plan assistance, regarding wildlife conflicts and management issues, to residents of communities surrounding KSL. KSL will continue to contract with the USDA for the duration of the site life of Phase III.

DEP Determination of Remaining Impacts: KSL has proposed adequate mitigation measures to prevent nuisances from vectors. However, because the mitigation could fail to work as intended due to improper implementation or maintenance, some potential harm will remain for the purpose of this environmental assessment.

7. **Traffic (SE):** Active landfill operations result in more traffic, including unsafe and overweight vehicles, on the roadways.

KSL's Proposed Mitigation: KSL will continue to implement its Transportation Compliance and Vehicle Safety Action Plan which incorporates six formal compliance checks per year on vehicles accessing the site in conjunction with State or local police. These compliance checks include: inspection of tarps, leaking loads, signage, fire extinguishers, daily logs, weight, presence of radioactive materials and contingency plans for residual waste haulers. KSL's Transportation Compliance and Vehicle Safety Action Plan also includes a notification and warning, delay the driver, and a 60-day ban from the site for overweight vehicles/repeat offenders. KSL has increased its efforts to communicate through written correspondence the penalties that KSL will enforce on its customers and drivers when their vehicles are repeatedly over the legal weight limits.

DEP Determination of Remaining Impacts: Based on DEP's inspections and review of records, KSL's Transportation Compliance and Vehicle Safety Action Plan has generally been effective at reducing the number of unsafe vehicles that come to the site and ensuring the drivers are in compliance with applicable rules and regulations. However, because of the volume of trucks that utilize the site daily, there are still a large number of overweight vehicles coming to the site. The proposed expansion should not exacerbate the existing harms associated with traffic, but it will extend the duration of those harms by providing new disposal capacity to extend waste disposal operations in the area. Some harm will remain for the purpose of this environmental assessment.

8. **Dirt/Mud (E):** Tracking of dirt and mud off-site is a potential harm of a landfill operation. Public comment indicates that use of water trucks to wash the roads does not eliminate the problem.

KSL's Proposed mitigation: Water trucks are used on interior roadways, transport vehicle transition areas and Dunham Drive. In 2015, KSL completed a bituminous pavement project in the vehicle hauling transition area. Also, a minor permit modification was approved in 2015 for a new site entrance and to expand the vehicle hauling transition and staging area. The paved transition area serves as an inspection location where all transport vehicles entering or exiting KSL, on which dirt and mud is observed, are directed to a location to be cleaned. KSL has acquired a new, more efficient sweeper truck for use in the bituminous areas of the site, on Dunham Drive and, upon a request from the Borough of Dunmore, on adjacent public streets used as an access roadway to KSL. Furthermore, KSL installed an industrial truck wash and paved the employee parking lot.

DEP Determination of Remaining Impacts: KSL has proposed adequate mitigation measures to prevent mud from being tracked off-site. However, because the mitigation could fail to work as intended due to improper operation or maintenance or because of natural events, some potential harm will remain for the purpose of this environmental assessment.

9. **Uncompensated Losses to Local Government (SE):** More frequent paving of Dunham Drive and Tigie Street in Dunmore Borough due to traffic accessing the landfill is a potential harm.

KSL's Proposed Mitigation: KSL will inspect Dunham Drive and Tigie Street annually and necessary repairs/improvements will be made in accordance with KSL's proposed Roadway Inspection Program.

DEP Determination of Remaining Impacts: KSL has proposed adequate mitigation to address impacts to Dunham Drive and Tigie Street and no harm remains for the purpose of this environmental assessment.

10. **Runoff (E):** The release of sediment laden stormwater associated with the continued construction and operation of KSL is a potential harm.

KSL's Proposed Mitigation: KSL will continue to design, install and maintain Erosion & Sedimentation (E&S) controls in accordance with DEP Chapter 102 regulations. The Stormwater Management Plan was updated to address comments from the review on behalf of Throop and Dunmore Boroughs, to sequence the best management practices for the proposed project and to include measures for volume control.

DEP Determination of Remaining Impacts: KSL has proposed adequate mitigation measures to address stormwater runoff. Specifically, DEP has reviewed KSL's Stormwater Management and Post Construction Stormwater Management plans and

determined that they are sufficient to mitigate stormwater runoff during the construction and after the construction that will occur as a result of the Phase III expansion. KSL's stormwater is also regulated under DEP's Clean Water Program. KSL maintains an active Industrial Stormwater Discharge Permit (PAG 502203). This permit contains effluent parameters, monitoring and other requirements. However, because the mitigation could fail to work as intended due to improper operation or maintenance or because of natural events, some potential harm will remain for the purpose of this environmental assessment.

11. Air Quality (E): Migration of air pollutants (particulate matter, methane, VOCs, HAPs, etc.) is a potential harm.

KSL's Proposed Mitigation: KSL's proposed mitigation includes continued expansion of the landfill gas control system, final liner capping within one year of any pad or segments of any pad achieving final elevation, use of water trucks to control dust, enforce site speed limit, and to apply water to certain residual wastes or construction and demolition waste to minimize dust. KSL conducted dispersion modeling which demonstrated that there is minimal to no impact on the ground level concentrations of fugitive particulate matter emission and odor emissions associated with changing the elevation of the working face of the landfill. KSL has also proposed a comprehensive air monitoring program.

DEP Determination of Remaining Impacts: KSL has submitted an Air Quality Plan Approval application. This application will be reviewed by DEP Air Quality staff to ensure compliance with applicable regulations. Obtaining this approval in addition to implementing the measures discussed above constitutes adequate mitigation; however, because mitigation could fail to work as intended due to improper operation or maintenance or because of natural events, some potential harm will remain for the purpose of this environmental assessment.

12. Groundwater Impacts (E): The potential for groundwater impacts is a potential harm of a landfill operation.

KSL's Proposed Mitigation: The Phase III expansion will be a double-lined landfill that will contain waste and waste constituents within the landfill. KSL states that they have 6 upgradient and 27 downgradient monitoring wells that show that the liner system is effective at preventing release of contaminants into the groundwater. KSL will continue to pretreat leachate from the landfill prior to discharge to Pennsylvania American Water Scranton Wastewater (PAWSW) for final treatment. KSL has recently upgraded its leachate treatment plant which now has the capability to treat 250,000 gallons per day. If KSL chooses to move forward with the additional upgrades that have already been approved through a minor permit modification, the leachate treatment plant would be capable of treating a maximum of 350,000 gallons per day. However, currently PAWSW only allows KSL to discharge a maximum of 225,000 gallons per day. KSL would need to apply for a modification of its Industrial Wastewater Discharge permit with PAWSW to accommodate the additional flow. KSL

will promptly install its liner cap system in a phased approach which will aid in reducing the potential development of leachate.

Current Impacts Observed in MW-15A: Currently there are impacts seen in MW-15A, which is a well that monitors a low volume of drainage in the Dunmore #3 coal vein. The indicator parameters that are elevated in this well indicate that there was a release of leachate. Several investigative efforts and remedial measures have been taken by KSL since 2002 to find and arrest the source of the MW-15A elevated indicator parameters. The investigation led to the discovery of several potential sources of groundwater contamination, including cracks in the treatment plant's floor, overflows, a leachate outbreak, and finally, the lagoon liner integrity. Based on these findings, several corrective actions were taken. Specifically, the leachate lagoons were upgraded and completely relined, underground piping was converted to double-wall piping, cracks in the leachate treatment building floor were sealed and leachate is no longer discharged to floor drains leading back to the lagoons, the new leachate treatment building has a geomembrane liner under the concrete floor, and the leachate manhole was completely epoxied to seal any potential leaks. With these improvements, KSL has minimized the likelihood that a similar incident could occur.

While detected elevated leachate indicator parameters continue to exhibit decreasing trends in MW-15A, downgradient investigation wells continue to show elevated leachate indicator parameters and nitrate above background levels. In January of 2017, two additional wells were constructed downgradient of MW-15A (MW-46D and MW-47D). Both wells showed elevated levels of leachate indicator parameters and nitrate above the MCL in the shallower well, MW-46D. As required by the PA Environmental Hearing Board's November 8, 2017 Adjudication on KSL's permit renewal, KSL submitted a groundwater assessment plan that addresses the groundwater degradation detected in MW-15A dated December 14, 2017. This assessment plan involved the construction of two additional monitoring wells further downgradient from MW-15A (MW-49D and MW-50D). The shallower well (MW-49D) shows nitrate levels below the MCL since October 2018. To mitigate these leachate indicator parameters and nitrate, KSL continues to pump groundwater, including from MW-15A and MW-46D to the leachate lagoons. Groundwater monitoring and pumping will continue and any need for further assessment to delineate the extent of the impacts will be evaluated.

Excess Leachate Generation: Over the past few years, events involving a leachate conveyance system manhole overflow, the need to add temporary leachate storage and the need to haul leachate off site to be treated has made it apparent that KSL has an issue with either excess leachate generation or stormwater infiltration into the leachate conveyance system. These excess flows increase the potential for the facility to have overflows and other incidents related to the leachate conveyance system which could then potentially lead to groundwater impacts. In an attempt to minimize stormwater infiltration's effect on leachate flows, KSL has performed numerous stormwater infiltration mitigation projects. KSL modified its temporary

geosynthetic capping installation in Phase II to greatly reduce the amount of stormwater entering the leachate collection system during precipitation events. KSL has also conducted some projects in the Keystone/Dunmore area to reduce stormwater infiltration. Also, KSL recently received approval from DEP to reconfigure the leachate conveyance piping for the Tabor Landfill. This will enable KSL to isolate leachate flows from this landfill to better determine if Tabor needs to be further evaluated for any stormwater infiltration mitigation projects. KSL is currently continuing its investigation of additional potential sources of stormwater infiltration. Although KSL has made progress, based on a review of recent flow amounts, it is apparent KSL continues to have an issue with either excessive leachate generation and/or infiltration into the leachate conveyance system. KSL continues to have current flow amounts not only higher than what was predicted for the current landfill, but also higher than what was predicted as a maximum peak flow for the proposed Phase III expansion.

Furthermore, KSL has recently had to transport leachate to an offsite treatment facility to compensate for excessive volumes of stored leachate. Because of the recent upgrades KSL has made to the leachate treatment plant, the need to haul leachate has been reduced as KSL has increased its ability to treat leachate from 150,000 gallons per day to 250,000 gallons per day. However, because KSL continues to have high flows, it is reasonable to assume it may have to haul leachate again in the future. This would result in additional truck traffic and associated harms related to traffic in general and spills or releases of leachate as a result of tanker truck accidents in particular.

Leachate Generation from the Keystone/Dunmore Area: KSL has proposed to remove approximately 8 million tons of waste in the unlined Keystone/Dunmore area. Although this waste will be removed, approximately 2 million cubic yards of waste will still remain resulting in the potential for unknown waste constituents to cause groundwater contamination with the compaction of this waste and construction of Phase III on top. To address leachate from the remaining waste in the Keystone/Dunmore area, KSL will utilize mine drainage interceptor wells to collect and treat mine drainage before leaving the property. During excavation of waste in this area KSL will manage surface water runoff, progress in an upgradient manner and limit the size of the active area. KSL commissioned a subsurface investigation of the moisture in the waste proposed to remain in the Keystone/Dunmore landfill area using the sonic vibratory technique. Overall, the results of KSL's investigation indicated that saturated conditions are not prevalent within the disturbed material beneath Keystone/Dunmore. In addition, KSL will cap the remaining waste in place by constructing the Phase III liner system over top of the Keystone/Dunmore area. Observations of saturation in the disturbed material appear to be isolated and not continuous across the Keystone/Dunmore landfill area. KSL will continue to monitor the boreholes that were drilled as part of the investigation through 2019 to evaluate changes from ongoing capping repairs and installation of a check valve in one of the manholes. KSL has shown that the

presence of liquids in the Keystone/Dunmore landfill area is minimal and that expulsion of leachate from the remaining waste should not be an issue.

DEP Determination of Remaining Impacts: Controls and groundwater monitoring systems are design features required by regulation. There will always be a potential harm associated with their failure to work as intended or because of improper operation or maintenance. The impacts and investigation associated with MW-15A show that KSL has some history of controls and mitigation failing to work, resulting in groundwater impacts. KSL has made several improvements that have greatly improved the mitigation measures taken to address the groundwater impact in this area and recent groundwater monitoring data is indicating that the improvements made to the leachate lagoons has mitigated the primary contributing cause of the groundwater degradation described above. Recent MW-15A sample results indicate a downward trend of the leachate indicator analytes, although downgradient investigation wells (MW-46D and MW-49D) continue to show elevated leachate indicator parameters and nitrate above background levels. However, KSL's history of groundwater degradation in MW-15A is still considered when evaluating the potential likelihood of this harm to occur in the future.

Because current leachate flows at the site regularly exceed the HELP model calculated maximum flow for both the existing site and what was calculated for the proposed Phase III expansion, it is clear these models as run did not fully and accurately predict leachate generation at the site. During 2018 and 2019, DEP's Northeast Region experienced weather extremes (excessively wet weather and temperature fluctuations, etc.) and it is possible that these weather extremes will continue or worsen in the future. Excessive leachate flows due to stormwater infiltration increase the potential for the facility to have overflows and other incidents related to the leachate conveyance system, which could then potentially lead to groundwater impacts. Furthermore, KSL will potentially need to haul leachate in the future resulting in harms associated with additional truck traffic and spills or releases of leachate as a result of tanker truck accidents.

Despite the improvements KSL has made, potential harm for groundwater impacts will remain for the purpose of this environmental assessment.

- 13. Fire Risk (E):** The risk of fires and subsurface reactions is a potential harm of a landfill operation.

KSL's Proposed mitigation: All waste is immediately and properly covered at the end of each working day. The active working area is properly graded to eliminate ponding of water. Water level monitoring is conducted semi-annually to monitor for perched water inside of the waste mass and, if water is located, it is pumped out to the leachate treatment system. The gas collection system is monitored on a daily basis and each gas extraction well is monitored on a monthly basis. In the event combustion is determined to be active in the waste mass, KSL will immediately implement a Fire Suppression Plan.

DEP Determination of Remaining Impacts: KSL has proposed adequate mitigation to prevent fires and subsurface reactions and has proposed adequate measures KSL would employ should a fire or reaction occur at the landfill. KSL has had four subsurface fire incidents (2009, 2011, 2014 and 2015) in its recent history. These incidents were determined to be caused by gas wells rather than a waste stream that was disposed of. DEP believes KSL responded appropriately to the fires that have occurred at the landfill. Because the risk of fires and subsurface reactions cannot be eliminated entirely, some potential harm will remain for the purpose of this environmental assessment.

- 14. Discharge of Treated Leachate to the Lackawanna River (E):** KSL discharges its treated leachate to the sewer lines that convey wastewater to the PAWSW facility. These lines are a combined sewer system. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies. As such, there is the potential for treated leachate to discharge to the Lackawanna River.

KSL's Proposed Mitigation: A protocol is in place, that upon notification of a severe rain event or major equipment failure in the sewer system facilities, KSL will terminate the treated wastewater discharge to the system and instead recirculate the discharge to the onsite storage lagoons. KSL's new wastewater treatment plant has a process capacity of 40% in excess of the predicted leachate volume and the existing treatment plant will be rehabilitated and serve as a standby processing facility.

DEP Determination of Remaining Impacts: The Industrial Wastewater Discharge permit issued to KSL by PAWSW on March 31, 2017 contains a condition that in order to reduce flow and combined sewer overflows through the collection system during periods of heavy rainfall or snowmelt, KSL shall be required either via verbal or written notice to voluntarily reduce wastewater flow for an agreed period of time. Although KSL has proposed adequate mitigation there is still a potential for treated leachate to discharge to the Lackawanna River through the combined sewer system; therefore, some potential harm will remain for the purpose of this environmental assessment.

- 15. Subsidence Potential (E):** Most of the proposed Phase III disposal area is underlain by deep coal mines. There is potential that remaining mine passages could collapse, causing a subsidence that could affect the integrity of the liner or other systems at the landfill.

KSL's Proposed Mitigation: The subsidence potential for portions of the KSL site that were permitted after 1990 has already been defined. This potential has already been fully defined and mitigated in some areas of the proposed Phase III area in the Logan, Tabor, and parts of the Phase II disposal area by measures taken during the construction of these areas. KSL provided the results of a geologic investigation for the areas that had not previously been subjected to a study or mitigation to define the potential for mine

subsidence and proposed mitigation measures. Significant voids (voids with heights greater than one foot) within 70 feet of the proposed Phase III liner subgrade will be filled and grouted to address open voids that remain.

DEP Determination of Remaining Impacts: KSL has submitted an appropriate geologic investigation and has proposed adequate mitigation measures to address the maximum subsidence that could potentially occur in the future and the effect of that subsidence on the integrity of the facility. This geologic investigation ensures that any potential subsidence will not endanger or lessen the ability of KSL to operate in a manner consistent with environmental regulations and will not cause the proposed operation to endanger the environment or public health, safety, or welfare. No harm remains for the purpose of this environmental assessment.

BENEFITS

(E) = Environmental, (SE) = Social & Economic

1. **Environmental Education (SE):** KSL will provide Keystone College with \$100,000 annually to reimburse the college for all the financial costs associated with the Environmental Education and Academic Program. The objective of the program is to expand and enhance Keystone College's program offerings on environmental resource management and stewardship to K-12 children in Northeast Pennsylvania. The program would focus on, but not be limited to, the environmental aspects of the design and operation of a municipal solid waste disposal facility, such as KSL. This partnership will allow for the opportunity for "real life" observations and experiences of onsite tours to be conducted at KSL. KSL has agreed to make its consultants available, as appropriate, to assist with in-school presentations and student field experiences.

DEP Evaluation of Benefit: DEP considers the environmental education partnership with Keystone College a Social and Economic benefit for the life of the project.

2. **Continuation of Recycling and Cleanup Programs (SE):** KSL provides service for recycling and area cleanups, including providing free disposal for litter and debris collected by the community and volunteer groups as part of the Great American Cleanup program.

DEP Evaluation of Benefit: DEP believes that the recycling and cleanup program is a Social and Economic benefit because KSL is providing access to free disposal. Because this is a service that the local community would not continue to receive without the Phase III expansion, this is a Social and Economic benefit for the life of the project.

3. **Goods and Services (SE):** KSL will purchase fuel/oil/lubricants; machinery, equipment, services, rentals and maintenance; and miscellaneous goods and services from local/regional vendors to support the continued operation of the landfill. KSL estimates that it will purchase a total of \$53,489,710 of fuel, oils and lubricants from

local and regional vendors over the initial 10-year permit of Phase III, and \$248,727,152 over the life of the expansion. KSL estimates that it would expend \$119,912,870 over the initial 10-year permit of Phase III and \$557,594,846 over the life of the expansion on machinery, equipment, services, rentals and maintenance. The economic benefits associated with miscellaneous goods and services over the life of the Phase III expansion is \$367,767,999. KSL classified the economic data into five zones in relation to the proximity to the landfill. The majority of the benefits are to the communities within 25 miles of the landfill.

DEP Evaluation of Benefit: While the total amount is uncertain because KSL is not necessarily spending the same amount each year, the historical amounts can be used as an estimate and the purchasing of goods and services from local vendors is a Social and Economic benefit of for the life of the project.

- 4. Continued Employment (SE):** The landfill will provide 145 jobs to address the administrative, operational, construction and maintenance aspects associated with the operation of Phase III.

DEP Evaluation of Benefit: The continued employment of 145 full time workers is a Social and Economic benefit for the life of the project.

- 5. PA Disposal Fees (SE):** KSL currently pays the Commonwealth of Pennsylvania the following waste disposal fees: \$4/ton for the PA Growing Greener Fund, \$2/ton for the PA Recycling Fee, and \$0.25/ton for the PA Post Closure Fund. Approval of the Phase III permit modification will result in a minimum of 10 years of payments into those funds.

DEP review: All fees identified by KSL are mandated by law. Because the amount of fees paid is dependent on the volume of waste received, this amount is uncertain. These fees will be considered to be a Social and Economic benefit for all of Pennsylvania for the life of the project.

- 6. Tax Revenue (SE):** KSL estimated the property tax revenue for the Phase III expansion is approximately \$6,927,605.

DEP Evaluation of Benefit: The increased tax revenue associated with the Phase III expansion is considered a Social and Economic benefit for the life of the project.

- 7. Participation in the PA DOT Adopt a Highway Program (SE):** KSL provides crews to collect litter that is dispersed along a portion of US Route 6 between the Tigue St. and Marshwood Road exits. The litter collected by KSL personnel includes material that was released from waste transport vehicles accessing KSL, but also includes waste released by all other vehicles that utilized that section of U.S. Route 6.

DEP Evaluation of Benefit: The section of highway identified is that most likely to be impacted by litter from KSL itself and therefore part of this can be considered

mitigation by KSL. However, not all of the litter would be from the landfill; therefore, picking up this additional litter along the adopted highway is considered a benefit for the life of the project.

8. **Benefits from Host Agreements (SE):** KSL has an agreement in place to pay Throop Borough \$2.02 per ton for waste placed in the KSL site. Based on 2013 waste totals the host fee paid to Throop amounted to \$3,797,404. Additionally, Throop is not charged for waste that it collects and conveys to the KSL site. In 2013, that was 2,287 tons, or worth \$125,785. KSL also pays Throop \$90,000 per year for the purpose of “facilitating the safe and efficient management of solid waste generated within the borough.” KSL must accept all waste from Throop as long as the site is permitted and in operation. At 2013 rates, KSL estimates the value during the first 10 years to be \$40,131,890, and \$178,586,911 over the life of Phase III.

Under KSL’s current agreement with Dunmore Borough, KSL pays \$1.51 per ton for waste placed in the KSL site. KSL will increase the host fee by \$.01 per ton on each December 1 for the life of the landfill. The benefit is estimated to be \$29,426,485 for the first 10 years. Dunmore will not be charged for waste generated in the Borough, estimated at \$300,685/year and KSL shall reserve space for its waste for the active operational DEP permitted site life. The estimated total benefit to Dunmore over the first 10 years is \$32,433,335, and \$160,582,890 over the life of Phase III.

DEP Evaluation of Benefit: The host fees are based on tonnages and are paid on a quarterly basis and there is no guaranteed minimum amount. KSL reserves capacity for Dunmore and Throop and does not charge the host municipalities for waste generated in the Borough. These fees and free waste disposal are considered to be a Social and Economic benefit for the life of the Phase III expansion.

BALANCING OF HARMS AND BENEFITS

The regulations require that the benefits of the project to the public clearly outweigh the known and potential harms. The harms and benefits were evaluated individually and collectively taking into account duration, intensity, frequency, who will be affected, sensitivity of the receptor, whether the harm or benefit is known or potential, public comment, input from other agencies, and DEP's knowledge and experience related to KSL's past performance and compliance history. The following discussion summarizes this evaluation.

Based on the discussion of harms above, DEP has determined that the following known or potential harms are related to the proposed Phase III expansion:

Known Environmental Harms:	Known Social and Economic Harms:
	Visual Impacts
	Traffic
Potential Environmental Harms:	Potential Social and Economic Harms:
Odors	
Litter	
Noise	
Vectors/Birds	
Dirt/Mud	
Runoff	
Air Quality	
Groundwater Impacts	
Fire Risk	
Discharge of Treated Leachate to River	

To eliminate any harm to property values, KSL has committed to implementing a Property Value Protection Plan; and to mitigate impacts to Dunham Drive and Tigie Street, KSL will implement a Roadway Inspection Program.

Through the design and operational controls utilized at its existing facility, KSL has been largely successful in mitigating many of the harms associated with odors, litter, noise, unsafe vehicles, fires, runoff, and air quality. This indicates that KSL should be successful in mitigating the harms from the proposed project to the same extent. KSL's effective mitigation is expected to limit the duration and frequency of any occurrences. The intensity of the harm is also impacted by the effectiveness of KSL's controls in reacting and responding to the incident. Based on past experience, KSL's design, operational controls, and responsiveness should result in only infrequent occurrences of harms related to odors, litter, noise, unsafe vehicles, fires, runoff, and air quality. These controls should also minimize the severity, or intensity, of any such occurrence. DEP is committed to oversight and monitoring of these controls and KSL's operations.

Similarly, due to the public's concerns with health effects, particularly related to air quality, the recommendations of the 2019 PADOH and ATSDR Health Consultation Report will be implemented to ensure air quality impacts are mitigated adequately. Specifically, DEP will

oversee landfill activities, enforce landfill permit regulations and ensure that KSL is implementing a comprehensive air monitoring program and enhanced onsite underground gas migration monitoring. This monitoring will help to further limit the potential frequency and duration of any air quality related harms.

KSL has recently increased mitigation for vectors by contracting with USDA Wildlife Services, and increased mitigation for dirt/mud by installing a truck wash. These mitigation measures are expected to limit the number of occurrences of harms related to vectors and dirt/mud, and these controls should also minimize the severity, or intensity, of any such occurrence.

While the project does not propose to increase the waste acceptance rates for the landfill and therefore does not increase traffic; the proposed expansion will extend the duration of harms related to traffic by increasing the operating life of the landfill. Despite mitigation efforts, because of the volume of trucks that utilize the site daily, traffic impacts of varying magnitudes regularly occur. The local community frequently deals with impacts of truck traffic ranging from overweight vehicles, to nuisance type incidents and even occasional accidents, and the proposed project would extend the risk of those incidents over the life of the project.

Visual impacts are a known harm of the proposed Phase III expansion project. Public comment has indicated that this a particularly important concern within the community. KSL's original proposal included an increase in overall height of the landfill by approximately 165 feet above the current permitted height. In response to these public concerns, KSL revised its application to reduce the maximum proposed elevation to be equal to the currently permitted maximum elevation of 1,585 feet above sea level. While this reduction in overall height made a significant difference in some of the visual impacts, it did not completely mitigate the impacts of the proposed expansion compared to the current permit limits and visual impacts. The redesign and lowering of the maximum proposed height will create a much larger horizontal profile than that which currently exists and will bring landfill operations much closer to residents. Beyond visual impacts of the completed project, the visibility of active construction, disposal activity and temporary capped areas can also negatively impact surrounding communities. KSL is proposing to reduce visibility of active landfill operations by working inside the valley between existing disposal areas, which will shield the active landfill operations from view for some periods of time; however, the duration of the project is significant and at times there will be visual impacts associated with active landfill operations.

The potential for water quality impacts will persist beyond the cessation of active landfill disposal operations. KSL has struggled in the past to completely mitigate water quality impacts, as indicated by the groundwater degradation that occurred in and around MW-15A. KSL completed numerous projects to eliminate or minimize the potential impact the leachate lagoons, leachate conveyance lines, and the leachate treatment plant could have on groundwater in the area around MW-15A. Recent MW-15A sample results indicate a downward trend of the leachate indicator analytes, although downgradient investigation wells (MW-46D and MW-49D) continue to show elevated leachate indicator parameters and nitrate above background levels. Operational and engineered controls implemented by KSL have

likely minimized the potential number, duration and intensity of similar issues to occur moving forward. KSL has also had excessive leachate generation rates, particularly during storm events over the past few years. These excess flows during storm events increase the potential for the facility to have overflows and other incidents related to the leachate conveyance system which could then potentially lead to groundwater impacts. KSL has evaluated potential sources of stormwater infiltration in several places at the facility. As a result, infiltration in some areas has been eliminated or reduced. KSL is currently still continuing its investigation of additional potential sources of stormwater infiltration, including a recent minor modification to its permit to isolate leachate flow from the Tabor landfill. Although KSL has made progress to isolate and mitigate areas of concern, KSL continues to have an issue with either excessive leachate generation and/or stormwater infiltration into the leachate conveyance system. KSL's current and proposed additional efforts to isolate and mitigate excessive leachate generation are expected to limit the number, duration and intensity of future excessive leachate flow occurrences. Water quality impacts remain a potential harm of the Phase III expansion.

Based on the discussion of the benefits above, the Department has determined that the following known or potential benefits are related to the proposed Phase III expansion:

Known Environmental Benefits:	Known Social and Economic Benefits:
	Environmental Education
	Recycling and Cleanup Programs
	Goods and Services
	Continued Employment
	PA Disposal Fees
	Tax Revenue
	PADOT Adopt A Highway Program
	Host Agreements

There are significant social/economic benefits to the local community in the form of host fees, with additional benefits arising from the purchase of goods and services, direct employment, tax revenue and free waste and recycling services. These benefits directly impact the local community and that impact can be very significant as far the Boroughs' revenue and jobs. The host fees amount to a significant portion of the Boroughs' operating revenue. The landfill provides approximately 145 jobs and has significant operating expenditures. DEP received numerous letters in support of KSL's expansion proposal from local businesses and a petition signed by friends and families in support of the landfill employees that will maintain employment as a result of continued operation of the landfill. The social/economic benefits will continue for the duration of the Phase III expansion.

The remaining accepted benefits of the project are being considered; however, they are considered to be limited in scope. Environmental Education, Recycling and Cleanup program and PADOT Adopt A Highway Program are limited both in frequency and intensity, but they will occur for the active life of the project. PA Disposal Fees are mandated and dependent on the volume of waste received. They are significant in dollar amount over the life of the project; however, because they are state fees, they do not directly benefit the impacted host

communities. KSL identified additional benefits; however, DEP determined they either have not been adequately defined, are not benefits to be attributed to the proposed project, or are more appropriately considered to be mitigation rather than benefits.

DEP considered the harms and benefits individually and collectively when balancing the harms against the benefits. DEP considered the identified environmental harms and their mitigation measures. The host fees are a significant social/economic benefit to the local community. The known social/economic harms are expected to be minimized. The potential harms are not likely to occur or, should they occur, would be infrequent or of low intensity or short duration, as long as the proposed mitigation measures are implemented properly. With the exception of the increase in visual impacts, all of the harms associated with the proposed Phase III expansion are already associated with the existing landfill operation, albeit these harms would be extended in duration over the life of Phase III. DEP's experience based on inspections and oversight is that KSL generally operates in compliance and has effective mitigation measures in place to control harms such as dust, vectors, litter and odors. KSL's past mitigation efforts have, at times, not fully mitigated water quality impacts; however, the implementation of enhanced operational and engineered measures is expected to further improve mitigation of water quality impacts in the future.

Based on the information provided during the Phase I/EAP review pursuant to 25 Pa. Code § 271.127, DEP has determined that KSL has demonstrated that the benefits to the public from the project clearly outweigh the known and potential harms. Following its Phase II/technical review, which includes further consideration of whether the project will cause unreasonable degradation and diminution of the environment, DEP may act to deny, approve or approve with condition the permit for KSL's Phase III expansion.

TECHNICAL REVIEW

Before DEP can proceed with the technical review of the application, KSL must provide the following additional information:

1. A current Form C1 or Form HW-C.
2. Revised Form H and Form 28 to include plans for the proposed shallow root trees and plantings along the top and berms of the site.
3. Revised Form 25 to include the recent upgrades to the leachate treatment plant and additional information to address the high leachate flows. The form should also include a discussion regarding the difference between actual flows and the predicted HELP model numbers.
4. Based on a review of water levels in MW-48DT, DEP identified that the Regional Groundwater Flow may be above the proposed Phase III subbase in this area. KSL will need to complete its investigation and, if necessary, address any separation distance issues.
5. Updated Form R to include updated liner compatibility and leachate treatability determination, updated waste code list using DEP waste codes (no KSL codes), and current list of approved Form U's – active and that have analytical within the last 5 years. The listing should include: generator name, address, waste codes, description of waste, volume, unit of measure (UOM), date of approval, and date of last analysis.
6. 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 time table. 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.
7. Details of the comprehensive air monitoring program and enhanced onsite underground gas migration monitoring KSL is proposing in response to the health consultation.