

RESPONSE TO COMMENTS

Owl's Head – Butler County Landfill
Permit No. 071-00006 / Agency Interest No. 163490
Application No. APE20190001

New Residual Landfill

August 3, 2022

Background: The Division of Waste Management (DWM) received an application proposing a new Residual Landfill; the Notice of Intent was initially received on September 16, 2019, the Administrative Application was initially received on May 26, 2020, and the Technical Application was initially received on November 25, 2020. Public Notices were issued on October 02, 2019, January 13, 2021, and April 13, 2022 in the *Butler County Banner Green River Republican*. The DWM reviewed the application, and subsequent revisions, and issued a draft permit on April 11, 2022. Also, a public hearing was conducted on May 6, 2022 related to this permitting action.

DWM received comments during the comment periods and at the public hearing. The following is a summation of the comments and the response to the comments in accordance with 401 KAR 47:140.

Comment 1: Commenters stated the whole community is against the dumpsite, it is unacceptable and a hazard to all. The application is opposed as being inconsistent with the health, welfare, and economic well-being of Butler County citizens.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. The application for Owl's Head Alloys new residual landfill has been deemed consistent with the laws and regulations the Kentucky Division of Waste Management (DWM) must consider for such waste disposal facility.

Comment 2: Commenters stated the proposed landfill will provide little benefit to the county, with an estimated two jobs in exchange for the imposition of 1,000,000 tons of industrial wastes and the post-closure liability associated with the landfill.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. Additionally, the regulations require closure and post-closure care cost estimates for monitoring and maintenance of solid waste facilities; the owner or operator must provide acceptable financial assurance mechanisms to meet this liability.

Comment 3: Commenters stated the statute exempting residual landfills did not contemplate such landfills would be located away from the source of generation of the industrial wastes. It was added that the through a "loop hole" in the Kentucky (KY) Statues this specific type of landfill is

exempt from Municipal Determination which robs the citizens of their voice in the initial application process. This is regrettable and unjust, allowing off-site residual waste landfills to be imposed on the county while the jobs associated with the manufacturing are located elsewhere. Citizens of the county want a say on the matter.

Response: DWM must review applications pursuant to the laws and regulations promulgated thereof, including KRS 224.40-315(4).

Comment 4: A commenter stated that the City of Morgantown strongly opposes the entrance and egress into the Owls Head Alloy dumpsite. The Morgantown City Council has passed a resolution opposing this act. The entrance and egress is within the Limits of the City of Morgantown. Owls Head Alloy has never come before the Planning & Zoning Board and has never filed for any permits. The commenter added Owls Head Alloy has not presented their self to work with the City of Morgantown on their dump project. More commenters added the increased traffic could be a safety hazard.

Response: The enforcement of local laws and ordinances is not within the regulatory authority of the DWM. All permits issued by the DWM, Solid Waste Branch (SWB) contain the statement that: “Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses or approvals required by this Division or other state and local agencies.”

In considering whether to issue or deny the permit for a landfill of this type, DWM may only consider matters over which it has regulatory authority. Please note, the Administrative Application includes Attachment 9 which describes the potential transportation impact of the proposed site operations.

Comment 5: Commenters stated that the landfill will decrease their property value and keep recreational businesses from wanting to invest in the community. For years, the counties surrounding Butler Co have ignored, pushed out tourism grants, and largely underappreciated the resources found in Butler Co. They added they just want to use the county as a dumping ground.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. Property value concerns, and business and community investment are outside of the regulatory authority of KRS Chapter 224. The permit issued by SWB requires the facility to comply with the applicable standards in order to mitigate and prevent contamination of the surrounding area.

Comment 6: Commenters stated the site is too close to sensitive areas in the county. It is within Morgantown City limits; one mile of the high school; two miles of the middle and elementary schools; and within two miles of Butler Co Court House. [Due to the sensitive areas,] the site is inappropriate for a landfill that will accept wastes that are reactive and problematic to manage.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. Siting requirements pursuant to 401 KAR 48:050 are included in these regulations and were considered in its approval process; DWM found no inconsistencies with the siting criteria found in 401 KAR 48:050.

Comment 7: A commenter stated that Owls Head has failed to address hydrological discharge points in their Notice of Intent.

Response: The applicant is not required to address the hydrological discharge points in the Notice of Intent (NOI) application. Pursuant to 401 KAR 47:190 Section 2, surface water monitoring points are identified in Attachment 1 and a surface water monitoring plan is provided in Attachment 12 of the Technical Application. The facility has proposed one upstream surface water monitoring point and one downstream surface water monitoring point, located on a tributary that eventually flows into Renfrow Creek. Surface water compliance monitoring is required to be performed quarterly, per the permit, and for all parameters listed in the permit. A permitted discharge point is labeled KPDES 001, and this discharge point was permitted through the Division of Water (DOW). A copy of the issued permit may be found in Attachment 12, Appendix A of the Technical Application.

Comment 8: Commenters were concerned about the flow of leachate, the contents of the leachate, the ability to control the amount of leachate, and asked how the leachate will be monitored.

Response: Pursuant to 401 KAR 47:180 Section 9(1)(q), the applicant shall discuss the leachate management methodology to include treatment and or disposal. Pursuant to 401 KAR 48:170 Section 1(7), the applicant shall design the facility leachate control system as it relates to the physical and chemical characteristics of the waste, the climatic conditions of the specific location, the volume of leachate and contaminated run-off collected at the facility. The facility has proposed to monitor leachate quarterly for the parameters in 401 KAR 48:300 Section 10, and report the results per 401 KAR 47:190 Section 8(1)(e). After review of the application and the waste characteristics, DWM determined all requirements for leachate management were met for this facility.

Comment 9: Owls Head also chose not to address the Archaeological concerns in their NOI although there are several significant sites well within the two-kilometer impact radius that should raise immediate concern.

Response: The archeological survey performed and submitted as part of the application was referred to the Kentucky Heritage Council, having jurisdiction within the Commonwealth of Kentucky. The Kentucky Heritage Council concurred with the findings of the archeological survey in the subsequent phase(s) of the application.

Comment 10: Commenters stated the proposed landfill is unnecessary since the disposal needs are being met by other permitted facilities. The operating Real Alloys residual waste landfill currently services Owls Head; there is no benefit to have another facility. The property is adjacent to the former Bowling Green solid waste landfill. Butler County is officially tired of being regulated to the role of unwilling “dump site surrogate” to Warren County and its businesses.

Response: As specified in 401 KAR 47:080, residual landfills may only accept waste from sources for which approval has been granted by the Kentucky Division of Waste Management. Real Alloy Recycling LLC may only accept waste into its permitted landfill from other Real Alloy facilities, which are included on its current operating permit. The former Bowling Green solid waste landfill, as a closed facility, is not currently authorized to accept any solid waste from any source. In the case of Owls Head, it is apparent that the applicant has made a business decision to manage their own industrial waste streams and not rely solely on outside third parties to provide these services.

Comment 11: Commenters asked if there are any other counties in the state that have three landfills located in such proximity of each other and that it is an unsafe and unfair distribution in Butler County. Another commenter added that having two landfills so close to each other is a safety hazard. The concern included what is under the old landfill and how it could react with the new landfill. Gases released from both landfills could cause an explosion.

Response: Other counties in Kentucky do have multiple solid waste disposal facilities (both active and closed facilities) located within a particular county. Solid waste regulations contain siting criteria requirements that applicants must demonstrate compliance with, and DWM reviews such demonstrations presented in applications. Upon review of the application, including the siting criteria provisions of 401 KAR 48:050, DWM found no inconsistencies with the siting criteria and the proposed landfill.

Regarding the comment of the safety aspects with three landfills located in such proximity to one another, the solid waste regulations, including siting and operating criteria, are written with an emphasis on protection of human health and the environment.

Regarding the comment of the fairness of the number of facilities in Butler County, KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications and DWM does not have regulatory authority over this matter. It could be handled at the local government level through the establishment of local ordinances in such matters.

Comment 12: A commenter stated that Butler Co is located between Ft. Knox and Ft. Campbell. There is an increased number of low flying helicopters training in the rural area. They refuel close to the landfill site.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. Siting requirements pursuant to 401

KAR 48:050 are included in these regulations and were considered in its approval process; the Cabinet found no inconsistencies with the siting criteria found in 401 KAR 48:050.

Comment 13: A commenter stated Butler Co is located near enough to the Madrid Fault System and has felt effects of earthquakes. The concern included possible effects an earthquake could have on the liner.

Response: The landfill is not located in the New Madrid Seismic Zone. The facility submitted a seismic hazard analysis utilizing three earthquake scenarios, one of which was for the New Madrid Seismic Zone. The seismic hazard analysis indicated that the landfill will be engineered to meet the requirements in 401 KAR 48:070 Section 3 for a New Madrid Seismic Zone earthquake of magnitude 7.75M.

When reviewing residual landfill Technical Applications, DWM references 401 KAR 48:080 Section 10, which states, “The design engineer shall analyze the structural integrity of the site, the subbase, each component of the composite liner, each component of the final cover, the composite liner system and the final cap as a system. Modifications to the design shall be provided where necessary, to achieve a minimum factor of safety of two (2) for the subbase, one and one-fourth (1.25) for the structural design of the facility liner components, and one and one-half (1.5) for the final cover system. Synthetic liner material and structural synthetic materials shall be designed for a maximum elongation of ten (10) percent.”

Comment 14: Several commenters stated that liners fail. The concern included the effects if this does happen. If it were to happen, it could occur over a long period of time, going unnoticed by the public. Further, it was suggested the liner may melt and degrade in part due to the proposed waste stream. One commenter specifically outlined the following:

- a) Have there been instances of liner failure in other residual landfills that accept salt cake and bag house dust?
- b) What is the likelihood of a liner failure and what is the life expectancy of the proposed liner?
- c) How would the public become aware the liner has been compromised?
- d) If there is a failure how would it be addressed and how quickly?
- e) What type of effects on the liner can occur if the bag house dust or salt cake is exposed to water and moisture?
- f) If a liner failure occurs, what type of health implications are there for the Butler County area and residents?

Response: Pursuant to 401 KAR 48:170 Section 1, the engineering design shall consider the physical and chemical characteristics of the waste, including compatibility of the waste with the liner and cover materials and water that may come in contact with the waste. The liner shall be designed to ensure containment of the waste on site and compliance with the environmental performance standards of 401 KAR 47:030. DWM believes the applicant has demonstrated compliance with these requirements in the submitted application. Additionally, the applicant has proposed a groundwater and surface water monitoring plan/network which will require the

submittal of compliance monitoring reports to the DWM. Compliance monitoring reports records are made available to the public through the Kentucky Open Records Act.

Comment 15: Commenters stated the proposed waste materials will inevitably get wet. It was suggested the studies and requirements should not only look at the materials as if they were dry but make sure the operational and design plans accounted for the material when it was wet. Further one commenter specifically asked what type of reactions can occur and what effects can these reactions have if the bag house dust or salt cake is exposed to water and moisture. Commenters also specifically asked if material would be allowed to be deposited during wet weather.

Response: The applicant performed and documented in Attachment 7 of the NOI application Synthetic Precipitation Leaching Procedure (SPLP) testing for all waste materials. The SPLP test is designed to mimic the real-world environment for these wastes. DWM did not have any further comments or concerns regarding this testing.

There is a potential for ammonia generation associated with the salt cake material when it becomes wet from precipitation. Procedures will be utilized to reduce and control ammonia generation. Cover material (daily and long term) is required to be applied over the waste area. The cover material is required to be compacted and graded to provide positive drainage which will minimize rainfall infiltration into the underlying waste thereby reducing the potential for ammonia generation. In addition, applying cover material prevents exposure of the waste reducing the potential for ammonia emissions. During waste placement each lift of waste in the working face will be graded to provide positive drainage thereby promoting rainfall runoff and minimizing ponding.

The facility will distribute personal ammonia detection monitors to each landfill employee as stated in the application. The detection monitors will be used to monitor employees once per quarter for ammonia exposure as part of the internal health and safety program. The monitors will allow the facility to determine compliance with the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit of 50 ppm averaged over an 8-hour work day and the Short Term Exposure Limit of 35 ppm during any 15 minute period in the day recommended by the National Institute for Occupational Safety and Health (NIOSH). If ammonia levels exceeding the levels listed above are detected the facility is to take all necessary steps to ensure immediate protection of human health.

Comment 16: Commenters brought up transportation concerns, specifically if the waste material would get wet during transport and air movement resulting in harmful dust. It was added bag house dust exposure is linked to cancer in humans.

Response: The applicant must abide by Department of Transportation statutes, regulations and licensures regarding the hauling of solid waste material to the site. The Division of Waste Management has no authority regarding public road transportation. As stated above, the discussion of transportation impacts due to the proposed facility operations can be found in Attachment 9 of the Administrative Application.

Comment 17: A commenter stated the family farm is in close proximity to the landfill site. Sinkholes and karst sinkholes are very common in this area and impacted the well water.

Response: The proposed landfill is located on the Pennsylvanian aged Caseyville and Tradewater Formations that consist of interbedded sandstone, siltstone, shale, limestone, and coal. The Caseyville and Tradewater Formations are defined as an “area underlain by bedrock with limited or no potential for karst development” (Karst Occurrence in Kentucky, 2001). Karst terrain is defined as follows in 401 KAR 47:005 Section 1(81):

"Karst terrain" means a type of topography where limestone, dolomite or gypsum is present and is characterized by naturally occurring closed topographic depressions or sinkholes, caves, disrupted surface drainage, and well developed underground solution channels formed by dissolution of these rocks by water moving underground."

The limestone beds within the Caseyville and Tradewater Formations range in thickness from six inches to four feet and are not of thickness to produce significant karst terrain.

The applicant conducted a hydrogeologic investigation as part of the Administrative Application and fourteen seeps were identified within the property boundary. The hydrogeologic investigation concluded that these seeps represented wet weather conditions at the site, dependent upon the season. The seeps are not proposed for compliance monitoring. The applicant did not identify any other karst terrain features, such as sinkholes, caves, springs, etc. as defined by 401 KAR 47:005 Section 1(81).

Comment 18: The landfill that Owls Head is currently operating can often be smelt and the new landfill will further stink up the community.

Response: Presently, Owls Head is not operating a landfill. The Division for Air Quality (DAQ) regulates odors pursuant to the standards in KRS Chapter 224, Subchapter 20 and the administrative regulations promulgated pursuant thereto. DWM regulations include requirements for operational soil cover to be applied over the disposed wastes for this purpose as well as reducing leachate production.

Comment 19: A commenter stated that residents living close to landfill sites have shown concern due to several hazardous pollutants emanating from landfill operations. Complex chemical and microbiological reactions within the landfill often lead to the formation of several gaseous pollutants, persistent organic pollutants (such as dioxins, polycyclic aromatic hydrocarbons), heavy metals and particulate matter and all of this is already terrible for Butler County at the existing landfill.

Response: As part of the NOI application for new residual landfill, the facility submitted a toxic characteristic leaching procedure (TCLP) laboratory analysis, as required by 401 KAR 47:170 Section 2(5), and a synthetic precipitate leaching procedure (SPLP) laboratory analysis, as required

by 401 KAR 47:170 Section 2(15). TCLP and SPLP analyses were completed for the two waste streams (salt cake and baghouse dust) and a composite waste sample (combination of the two waste streams analyzed as one sample). The TCLP and SPLP analytical methods provide analyses for inorganic and metals parameters and volatile organic compounds (VOCs).

Residual landfills are required to monitor groundwater quarterly for all parameters in 401 KAR 48:300 Section 11(2)(a), Section 11(2)(b), and Section 11(2)(c) per 401 KAR 48:300 Section 11(2) and for parameters based upon a chemical analysis of the waste 401 KAR 48:300 Section 4. The following additional parameters were added to the permit based upon the chemical analysis of the waste provided with the TCLP and SPLP analyses per 401 KAR 48:300 Section 4: aluminum, calcium, copper, potassium, sulfur, magnesium, manganese, ammonia (nitrogen), and total nitrogen (nitrate + nitrite).

Dioxins and polycyclic aromatic hydrocarbons (PAHs) are not analyzed as part of the TCLP and SPLP tests, as required by 401 KAR 47:170. Salt cake and baghouse dust do not contain these organic constituents.

Salt cake primarily generates ammonia gas, but also hydrogen and methane gas, when it is hydrated. The applicant has stated that they will transport the waste by truck under a tarp. The applicant shall utilize daily cover to prevent infiltration of precipitation, as stated in the approved application, gas generation will be minimal. The applicant has also provided the following gas safety measures in the application: ammonia safety plan, installation of passive gas vents, and adherence with Division for Air Quality requirements per 401 KAR 47:030 Section 10(2). The Division for Air Quality (DAQ) regulates hazardous air pollutants (HAPs).

The applicant is required to monitor surface water and groundwater quarterly, for all parameters listed in the permit per 401 KAR 47:120 Section 1(1).

The applicant has proposed a leachate collection system, storm water controls, and proposed to apply daily cover over the waste to minimize impacts to human health and the environment.

Comment 20: Commenters ask that the safety of their children, grandchildren and the future of the county be taken into consideration.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. The solid waste regulations are written with an emphasis on protection of human health and the environment.

Comment 21: Commenters asked how often and who will do environmental monitoring. Also, if there is an observed change from baseline, it was asked how are the changes addressed and how will the public be notified. Further, it was asked what additional testing needs to be done at the water plant to ensure the safety of the drinking water and if current testing methods would identify if the County water plant had exposure from the landfill. If additional testing is done, it was asked how it would be done and who would pay for it.

Response: The applicant is required to monitor surface water and groundwater quarterly, for all parameters listed in the permit, per 401 KAR 47:120 Section 1(1). The applicant is also required to perform surface water correction active in the event of non-compliance with the permit per 401 KAR 48:300. The applicant shall be required to submit a groundwater assessment plan (GWAP) in the event of a maximum contaminate level (MCL) exceedance and/or a statistical exceedance over naturally occurring background per 401 KAR 48:300 Section 8. The applicant shall be required to take any steps deemed necessary by the Cabinet to ensure protection of human health and the environment prior to the approval of the GWAP per 401 KAR 48:300 Section 8(12). After approval of the GWAP, solid waste sites and facilities are required to submit a groundwater assessment report (GWAR) containing any collected data and analysis of the data, and recommendation on the necessity of abatement. Upon approval of the GWAR, a public notice will be issued, per 401 KAR 48:300 Section 8(10) and 401 KAR 47:140.

The Solid Waste Branch (DWM) does not regulate drinking water facilities. For information regarding testing of drinking water, you may contact the Division of Water (DOW).

Comment 22: Commenters stated the site will pollute the drinking water and make the fish toxic to eat. Real Alloys already puts out enough waste in the air, damaging the trees and other nature.

Response: The applicant has proposed a liner system design that exceeds the requirements for contained (i.e. MSW) landfills and construction demolition debris (CDD) landfills in the Commonwealth of Kentucky. This liner system is referred to as a double-composite liner system which means the primary liner system is designed to collect leachate and the secondary liner and the leak detection system is designed to detect any leaks in the primary liner system. The applicant has proposed multiple compliance monitoring points to provide early detection of contamination from the landfill.

The applicant has proposed one upgradient groundwater monitoring well that will provide data representative of groundwater that is not affected by the landfill and four downgradient groundwater monitoring wells that will provide earliest detection of groundwater that is impacted by the landfill. The applicant has also proposed an upstream surface water monitoring point and downstream surface water monitoring point to collect data and a point that is unaffected by the landfill and collect data from a point that will provide data if surface water is contaminated with leachate from the landfill. The frequency of monitoring is quarterly for both surface water and groundwater monitoring points and the points will be analyzed for all parameters listed in the permit.

The applicant has applied for a Kentucky Pollution Discharge Elimination System (KPDES) outfall, regulation by a Kentucky Division of Water KPDES permit, for surface water leaving the landfill via a sediment pond. For more information regarding the KPDES outfall and permitting process, please contact the Kentucky Division of Water. Air emissions are regulated by the Division for Air Quality (DAQ).

Comment 23: Commenters stated, the point of hydrological discharge from the property into the Green River is Renfrow Creek, 200 feet upstream from the Butler County water intake that supplies the whole county with drinking water. Renfrow creek is less than ¼ mile from many homes. The county does not want to become the next Flint, Michigan.

Response: The tributary that is located southeast of the proposed landfill is approximately 1.5 land miles from the confluence of the tributary to Renfrow Creek. The applicant has proposed two surface water monitoring locations, located on the tributary, to monitor an upstream and a downstream surface water monitoring point. Prior to disturbance of any areas proposed for the development of the landfill, the applicant is required, per the permit, to collect and analyze a minimum of two surface water samples from each surface water monitoring point and submit those results to the Cabinet. If the applicant receives a permit to operate, per 401 KAR 47:120 Section 1(11), quarterly surface water samples will be collected from each surface water monitoring point and analyzed for the parameters listed in the permit.

The applicant has proposed a Sediment Pond to collect surface water drainage from the landfill before it is discharged via a Division of Water KPDES permitted outfall to the unnamed tributary of Renfrow Creek.

Comment 24: A commenter asked specifically if there has been or if there will be a hydrology flow study conducted to determine how the unrestricted runoff leachate would flow as the site does feed a blue line stream that empties into the Green River System. The commenter also asked if there has been or if there will be baseline samples of water taken from the site for comparison if the landfill is opened.

Response: There was hydrologic analysis performed and pursuant to 401 KAR 48:170 Section 1 and 2, the applicant is required to design and operate the landfill to minimize leachate generation as well as separate leachate from clean stormwater run-off.

The applicant is required to collect and analyze a minimum of two surface water samples from each surface water monitoring point and submit those results to the Cabinet prior to disturbance of any areas proposed for development of the landfill. Per 401 KAR 47:120 Section 1(11), quarterly surface water samples will be collected from each surface water monitoring point, analyzed for the parameters listed in the permit, and submitted to the Cabinet per 401 KAR 47:190 Section 8(1).

Comment 25: Commenters stated the pollution (both air and ground) from landfills cause cancer and Butler Co has a very high rate of cancer diagnosis. Some very rare cases that have even resulted in death. Butler Co has above average cancer rates per capita. Statistics were provided from the census and county health rankings. Other commenters stated there are health risks to living close to landfills, suggested a third landfill may increase the health risk, and asked if the state monitors or investigates health issues in areas with close proximity to landfills.

Response: KRS 224 and 401 KAR Chapters 47 and 48 lay out the framework for matters which can be considered in the review of new landfill applications. Kentucky Division for Air Quality

(DAQ) has regulatory authority regarding air quality permitting. The proposed facility includes a double synthetic liner system (with a leak detection system), and groundwater and surface water monitoring systems. The leak detection and groundwater and surface water monitoring systems are to monitor for any leachate leakage or contaminants in the groundwater and surface waters of the Commonwealth.

Comment 26: Commenters said the landfill will contain DOT designated Hazardous Waste. It is hazardous in Europe. If salt cake gets wet it will release toxic explosive and malodorous gases. Not transporting in the rain is not enough, water will get into the ground and the salt cake will get wet. Others added the material was obviously hazardous and everyone should be able to see that.

Response: The proposed waste is not a listed hazardous waste and the applicant has submitted documentation that it is also not characteristically hazardous. The application meets the design requirements in accordance with 401 KAR 48:170.

Comment 27: A commenter is concerned that the landfill will become a terrorist target due to the proximity to the Green River. A terrorist could get a job at Owls Head or a terrorist could hijack the transport truck and drive it into the Green River. Two terrorist have been apprehended in Bowling Green, KY.

Response: The application was reviewed in accordance with the provisions of KRS 224 and 401 KAR Chapters 47 and 48 which lay out the framework for matters which can be considered in the review of new landfill applications.

Comment 28: A commenter stated that the Cabinet needs to fully review the total scope of the application and the impact it will have on the community.

Response: The application was reviewed in accordance with the provisions of KRS 224 and 401 KAR Chapters 47 and 48 which lay out the framework for matters which can be considered in the review of new landfill applications.

Comment 29: Commenters provided a petition with approximately 55 pages and 1093 signatures, and a 49-page petition was received with 1114 signatures. The request was to stop the landfill.

Response: The application was reviewed in accordance with the provisions of KRS 224 and 401 KAR Chapters 47 and 48 which lay out the framework for matters which can be considered in the review of new landfill applications.

Comment 30: Consultants and representatives on behalf of Owls Head made comments on the proposed landfill indicating the application met or exceeded regulatory provisions with respect to

many areas, including but not limited to environmental monitoring, engineering best practices, liner design, endangered species, and cultural and historic resources.

Response: The application was reviewed in accordance with the provisions of KRS 224 and 401 KAR Chapters 47 and 48 which lay out the framework for matters which can be considered in the review of new landfill applications.

Comment 31: A consultant for Owl's Head submitted a response to the comments made at the public hearing. The submittal included the commenter's summation of comments and included responses to those comments.

Response: The application was reviewed in accordance with the provisions of KRS 224 and 401 KAR Chapters 47 and 48 which lay out the framework for matters which can be considered in the review of new landfill applications.

Comment 32: A commenter provided an analysis on the hydrogeological evaluation of the site. The analysis included a concern regarding a coal layer or seam with a thickness of up to about five feet which was described as highly permeable. This commenter and others indicated there is further evidence of nearby underground mining which may not have been properly abandoned. It was suggested further investigation is needed to ensure the site is not within the zone of collapse of deep-mine workings or within the critical angle of draw of such workings.

Response: The proposed subgrade for the landfill will result in partial excavation of the Mining City Coal seam, leaving the upgradient portion of the landfill (north-north-east of the proposed landfill waste boundary), exposed to the Mining City Coal seam. While, the coal seam is an aquifer, the limited extent of exposure to the landfill, and the presence of the claystone and shale unit that acts as an aquitard, do not allow monitoring of the Mining City Coal seam. Due to DWM concerns regarding a potential perched aquifer and positive pressure exertion on the bottom of the liner, the applicant proposed to install an underdrain to maintain a perched phreatic surface below the bottom of the liner, as required by 401 KAR 48:050 Section 2.

The following conditions have been added to the permit:

“The facility shall begin quarterly compliance monitoring for the underdrain upon waste placement. The underdrain shall be sampled for the following parameters, based upon the TCLP and SPLP laboratory analyses provided in the Notice of Intent approved application (APE20190001), per 401 KAR 48:300 Section 11(4): aluminum, ammonia, chloride, potassium, sodium, and sulfur. Statistics shall be conducted for the underdrain per the statistical methods provided in the approved application APE20190001. The results of the quarterly compliance monitoring shall be submitted to the Cabinet quarterly.” [401 KAR 47:190 Section 8(1), 401 KAR 48:300 Section 7, 401 KAR 48:300 Section 9, 401 KAR 47:120 Section 1(1), 401 KAR 47:120 Section 2]

“Prior to placement of waste in the landfill, the facility shall collect a minimum of two underdrain samples and analyze the samples for the parameters listed in the permit.” [401 KAR 48:300 Section 7, 401 KAR 48:300 Section 3, 401 KAR 47:120 Section 1(1), 401 KAR 47:120 Section 2]

Regarding the underground mining comment, the applicant submitted, as Attachment 13 of the NOI application, a report prepared by Redwing Ecological Services, Inc. which was prepared in part after a field reconnaissance of the entire landfill property boundary which makes no mention of any discovered or suspected mine openings.

Additionally, the applicant submitted, as Attachment 8 of the administrative application, a report prepared by Cultural Resource Analysts, Inc. which was prepared in part after a field reconnaissance of the entire landfill property boundary which makes no mention of any discovered or suspected mine openings.

The applicant submitted, as Attachment 13 of the Administrative Application, a document stating the following:

“There were no identified active or inactive underground mines located within 1,500 feet of the proposed waste boundary.”

Maps and mining records were also submitted in the application indicating the lack of direct evidence of mine voids beneath the landfill property such that the siting criteria of 401 KAR 48:050 Section 1(2) would not be complied with.

During the public comment period, comments were submitted on behalf of the applicant by the applicant’s geologist and engineer indicating the landfill siting criteria of 401 KAR 48:050 Section 1(2) will be complied with. Contrary comments were also submitted and/or spoken at the public hearing by others with claims mine openings did exist on the landfill property, but the comments were submitted without including or following up with substantiating evidence.

Furthermore, the applicant did not submit a proposed variance from this siting criteria regulation, hence DWM has determined the applicant has demonstrated in good faith compliance with said regulation. However, if new information is obtained or presents itself during the course of site clearing and/or other landfill construction activities, it is incumbent upon the applicant to cease those activities and submit a permit modification to DWM demonstrating how the applicant will comply with applicable siting criteria.

Comment 33: A commenter suggested the proposed material may not be compatible with the liner. USEPA reports were provided and the commenter requested further review. It was added the long-term leaching potential and the presence of other crystalline species need further evaluation, and it may be more appropriate to send the material to an MSW landfill.

Response: The proposed waste material was taken into consideration and the proposed landfill design includes the use of a double synthetic liner system with leachate collection and leak detection. DWM is aware the salt content of the leachate may increase the hydraulic conductivity

of a low-permeable soil liner. Routine inspections are performed to ensure the leachate collection system is functioning and not clogged due to the presence of crystalline compounds.

With regard to the comment that the waste should be sent to a MSW landfill, DWM notes that disposal of this type of waste in an appropriately designed residual landfill is lawful pursuant to KRS Chapter 224 and 401 KAR Chapters 47 and 48. Further, 401 KAR 48:170 allows DWM to require design features specific for the proposed type of waste. This particular landfill's design exceeds the liner requirements for MSW Landfills. Additionally, based on the EPA study characterizing salt cake, co-disposal with MSW may actually lead to increased gas generation that the MSW landfill may not be designed to handle the specific type of gas released during the reaction.

Comment 34: A commenter suggested the alternate liner design may not be a suitable substitute. USEPA reports were provided and the commenter requested further review. The operations limits were also discussed, and it was suggested the proposal may not adequately satisfy the environmental performance standards.

Response: The applicant has proposed liner system designs that exceeds the requirements for Contained and CDD landfills in the Commonwealth. Both designs include a liner system that is referred to as a double-composite liner system which means the primary liner system is designed to collect leachate and the secondary liner is designed to detect any leaks in the primary liner system. Both designs also include a low-permeable capable soil component beneath the geosynthetics.

Comment 35: A commenter suggested the TCLP test is not sufficient for industrial waste landfills such as proposed here and does not provide long term leaching potential needed to determine how waste will react in the intended disposal site conditions and liner materials over the long term.

Response: Industrial facilities seeking a solid waste disposal permit are required to submit a chemical analysis of the waste per 401 KAR 47:170 Section 2(5) via a TCLP analysis per DEP Form 7061 (6/11) #70(b). In addition to the TCLP analyses, the applicant provided a synthetic precipitation leaching procedure (SPLP) laboratory analysis, which simulates actual environmental precipitation and the leaching potential of waste into the soil and environment. A long-term laboratory leaching test, incorporating site-specific conditions and liner specifications, is only plausible with leachate that is generated by the on-site landfill. The applicant has proposed a leachate collection system and is required to analyze quarterly compliance samples per 401 KAR 47:120 Section 8(2)(e). The DWM has the authority to request additional leachate monitoring to determine whether cause exists for modifying, revoking, or terminating the permit, or determining compliance with the permit per 401 KAR 47:120 Section 1(8).

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