

May 7, 2024

2018-3854

Electronic Mail Delivery Only

Mr. Andrew Grenzer, Chief
Solid Waste Operations
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

**RE: Response to MDE “Questions for Applicant” Letter for
Proposed Chesapeake Terrace Rubble Landfill
Odenton, Maryland
Control Number 1993-WRF-0225**

Dear Mr. Grenzer:

Provided below are responses to the Maryland Department of the Environment (MDE) “questions for applicant” letter issued to National Waste Managers, Inc. (NWM) on during the week of March 25, 2024 (Doc Control No. 1993-WRF-0225) regarding the Phase III Engineering Plans and Specification Report, and the Phase II Addendum for the proposed Chesapeake Terrace Rubble Landfill.

This document has been prepared in a comment and response format, with your questions/request followed by the NWM response in bold. Attached to this letter are

1. **MDE Comment:** Per Code of Maryland Regulations (COMAR) 26.04.07.15A, the Phase II Report must be signed by a geologist who possesses at least a bachelor’s degree from an accredited college or university in the field of geology or a related field of earth sciences. The final Phase II Report did not include a signature by a geologist. The Phase II Report must be submitted with a signature.

NWM Response: Attached as Response to Comment 1 to this letter, please find a signature page for the Phase II Report and subsequent revisions and modifications. The signature page is signed by Paul G. Stratman a Licensed professional Geologist in the states of Pennsylvania and Delaware. We note Maryland does not have a Professional Geologist Licensing program.

2. **MDE Comment:** The Phase III Report contains several references to COMAR 26.11.15.04 in report sections containing asbestos related information, however this reference is incorrect and is not related to asbestos. Please correct the COMAR citations in Section 2.1 Acceptable and Unacceptable Waste, Asbestos Waste on Page 2-2; Section 12.7.1 Types of Waste, Asbestos Waste on Page 12-8; Section 12.7.9.2 Asbestos Containing Material on Page 12- 13; Attachment 12-B Asbestos Waste Management, Section 3.2 on Page 12B-3; and Attachment 12-B Asbestos Waste Management, Section 4.0 Transportation of Asbestos Related Material on Page 12B-3.

NWM Response: The changes have been made as requested. Revised copies of the Sections 2.0 “Waste Acceptance and Area to be Served” text and the Section 12.0 “Operations Plan” text are provided in their entirety. Section 12.0, Attachment 12-B “Asbestos Waste Management” is attached as Response to Comment 2.

3. **MDE Comment:** Attachment 5B, Cell Life Summary, Table A - Cell Life Estimates needs to be reviewed and revised for accuracy. It appears that the rate of filling calculations were revised but the cell life calculations were not adjusted accordingly. Additionally, footnotes (3) and (4) indicated in columns Estimated Cell Life and Cell Life are not provided.

NWM Response: A fully revised version of the Cell Life Estimates (Attachment 5B, Table A) is provided as Response to Comment 3 Attachment 5B, Table A has been revised for the average top of waste elevations and the average waste thickness and average number of 8-ft thick lifts. The footnotes have been added back to the bottom of the table. As indicated by note number 3, the cell life is based on the new filling rate of 1,602 tons/day, a waste density of 44 pounds/cf., producing an average rate of filling of 4.8 days per acre of 8-ft thick lift. The estimated operating life is 12 years.

4. **MDE Comment:** In the Phase II Report, page 50, Section 10.0 Ecological Considerations states that "protection measures for rare species habitats should be addressed during the detailed engineering design.". The text references correspondence with Katherine McCarthy of the Maryland Department of Natural Resources. Ms. McCarthy stated in correspondence dated October 21, 2003 and included in Appendix L of the Phase II Report that "In preparation for the next phase, the Natural Heritage Program recommends that either habitat assessment or species surveys be conducted for the following rare plant species currently known to occur in the vicinity of the project: State endangered Velvety sedge (*Carex vestita*), State threatened Featherbells (*Stenanthium gramineum*), and the State endangered extirpated Water-plantain spearwort (*Ranunculus ambigens*). Ms. McCarthy also expressed concern for the state endangered fish (*Etheostoma viteum*) which inhabits the Little Patuxent River. These ecological concerns were not addressed in the Phase III Report. Please address.

NWM Response: This issue was addressed by NWM in its June 9, 2004 response to MDE. A copy of that previous response is provided as Response to Comment 4 of this letter.

5. **MDE Comment:** Complete information about the location of recycling facilities and recycling operations at the landfill that will be used to comply with Anne Arundel County's 30% recycling requirements must be included in the Phase III report.

NWM Response: A description of the anticipated recycling and salvage operations is provided as a new section (Section 12.15) in the Operations Plan. As describe therein, NWM will develop a detailed plan with equipment and detailed operations as part of the permitting process that is required to operate a concrete rubble type operation. Operating practices will also include recovery of steel, white goods, plastic, tires, etc. at the landfill working face.

6. **MDE Comment:** Section 3.5.2 Leachate Management states that the Environmental Recovery Corporation of Maryland can process and treat the estimated leachate volume of 75,000 gallons per day. However, in Section 10.10.2 Leachate Storage Tank Selection, the average daily rate of leachate production provided is 85,000 gallons/day. Please explain how the excess leachate will be managed.

NWM Response: The Recovery Corporation of Maryland is now VLS Environmental Solutions. We have contacted VLS and obtained the attached letter stating that the between its facilities located in Baltimore, MD and Lancaster, PA they have a combined available capacity of 150,000 gallons. A copy of that letter is provided as Response to Comments 6 and 7.

7. **MDE Comment:** MDE requested a copy of a supporting document from Environmental Recovery Corporation (ERC) stating that the facility has sufficient permitted capacity to accept the anticipated volume of landfill leachate. In response, a copy of the quote and acceptance criteria from ERC was provided, but the capacity to manage the anticipated volume of landfill leachate was not provided in the documentation. Please provide documentation that ERC can manage the anticipated volume of landfill leachate.

NWM Response: The Recovery Corporation of Maryland is now VLS Environmental Solutions. We have contacted VLS and obtained the attached letter stating that between its facilities located in Baltimore, MD and Lancaster, PA they have a combined available capacity of 150,000 gallons. The acceptance criteria remain unchanged. A copy of that letter is attached provided as Response to Comments 6 and 7.

8. **MDE Comment:** The Variance granted in 1993 is not addressed in the report or the design of the landfill. The variance allows only clean rubble as defined by the Appeal Board in 1993 to be placed within a 760 foot buffer zone from nearby homes. Please detail how the landfill will operate to remain in compliance with the terms of the variance.

NWM Response: This comment represents the Variance granted by Anne Arundel County as requiring the use of the "clean rubble" within 760 feet of dwellings and implies that the waste placed within the landfill that is less than 760 feet from the residences must also be "clean rubble". This representation is incorrect.

The variance as granted, actually reduces the 1,000 ft set back from residences by 760 feet from 1,000 feet to 240 feet. The design as developed maintains the 240 ft minimum distance between the residences and the outside top of berm for the waste disposal area; therefore, the variance has no bearing on the material being placed within the landfill and does not impact landfill operations. The material to be utilized for constructing the landfill berms, exterior slopes and other features around the landfill that are within the 240 foot distance and subject to the variance, are defined in Specification Section 02223 "Structural and General Fill". The specifications exceed the minimum standards for "clean rubble" defined in the variance.

In response to this comment we have added the following language to the end of the second paragraph in Section 3.2 (see attached text for Section 3 "Project Description" as a reference to the Variance. *"The proposed use as a landfill is subject to Special Exceptions and Variances as issued by Anne Arundel County on December 23, 1993. The conditions contained therein included locations for access, operating life of the landfill, hours of operation, and replacement of shallow potable water wells impacted by the development. The variances granted a reduction in the setback distance for the landfill of 760 feet (1,000 feet to 240 feet) and reduced the distance for regrading by 100 feet (100 feet to 0 feet) to allow NWM to perform grading up to the property boundary where necessary to eliminate unsafe conditions created by historic quarry operations."*

9. **MDE Comment:** In Section 10.2 Leachate Production Estimates, please clearly state the storm event the leachate system was designed to manage.

NWM Response: The leachate production estimates were developed utilizing the USEPA Hydrologic Evaluation of Landfill Performance (HELP) model. The model does not utilize

individual storm events like those utilized when sizing stormwater management facilities. The HELP model is the industry standard for estimating leachate generation. It utilizes region specific rainfall and climatological data, in this case Baltimore, to estimate the amount of evaporation, infiltrations and movement of precipitation into and through the waste to predict the volume and rate of flow into the leachate collection layers. No change to the text or documents is required.

10. **MDE Comment:** Section 10.4 Leachate Pumps states "As shown on the "Cell Pump List" on Drawing 27 and in Section 10.9.3, one pump in each cell sump is sufficient to remove leachate under the peak daily generation scenario, described further in Section 10.9. A spare pump will be provided during construction of each cell for storage in the associated Leachate Pump House for immediate installation when the installed pump needs annual servicing or malfunctions." MDE requires two pumps in a sump for the low flow/high flow conditions and for redundancy. Please correct the design to include two pumps per cell.

NWM Response: We have modified the text in Section 10 to state that as required by MDE duplicate pumps shall be installed in each sump. This does not require modification of the design as all sumps were designed to accommodate 2 pumps. A complete copy of the revised Section 10 "Leachate" text is attached to this letter.

11. **MDE Comment:** In Section 10.4 Leachate Pumps, please confirm and state in the Report that the selected pumps are explosion proof and are grinder pumps or other pumps capable of handling biological solids.

NWM Response: The EPG pumps specified are intended for use in landfill leachate sumps and are suitable for use in Class I, Division 1 hazardous classified locations pursuant to National Electric Code (NEC), Article 50 1-8 condition 4 requirements and is designed to be submerged in a liquid that is flammable when vaporized. We have added language to the first paragraph of Section 10.4 stating that any pump substitutions shall be meet NEC 501-8 condition 4 requirements and be capable of handling biological solids. A complete copy of the revised Section 10 "Leachate" text is attached to this letter.

12. **MDE Comment:** Please clearly demonstrate in Appendix 10F Leachate Pump Sizing Calculations the head loss through the flexible pump discharge hose and couplings and other transitions, fittings, and valves in the hydraulic calculations. Currently, only the friction loss through the 6-inch force main is provided.

NWM Response: The Leachate Pump Sizing Calculations in Appendix 10F have been revised to include the friction loss through the 2" line from the bottom of the leachate sump to the connection with the 6" carrier pipe. We have accounted for the head loss through the various elbows and connections in both the 2" and 6" lines utilizing the Crane Co. Technical Paper 409 Equivalent Pipe Length Technique (Based on Hazen-Williams Formula) where various connections and valves are assigned an equivalent pipe length that is subsequently added to the pipe lengths when calculating friction loss. The resulting calculations, shown in the revised Appendix 10F Table (attached to this letter as Response to Comment 12), prompted an increase in the pump sizes for Sumps 9, 10, 13, 14 and 16. In addition to the Table in Appendix 10F, the design head and/or model of the pumps appear in Drawing 27 and Table 5 in Section 10.9.3. The revised Drawing 27 and copy of the revised Text for Section 10

"Leachate" are attached to the response to comments letter.

13. **MDE Comment:** Attachment 10I Sideslope Riser and Force Main Loading Calculations in the Phase III Report provides information based on a 2005 design with 16 pumps. The design has changed since this calculation was performed and these calculations need to be updated.

NWM Response: The original Attachment 10I "Side Slope Riser & Force Main Loading Calculation" was performed to demonstrate that an extreme worst-case flow condition where the max flow from every sump occurred simultaneously would not result in a condition where excessive friction loss would render the 6-inch pipe insufficient in size. The original calculation was performed utilizing the original cell configuration for the landfill and had not been rerun for the new cell layout because the precited worst case flow would be essentially the same for this qualitative analysis. However, in response to this comment we replicated the original calculations utilizing the revised design force main layout and cell by cell flow rates and the Hazen Williams-Formula. The results demonstrate that the 6-inch force main will be adequate even under the extreme worst-case flow assumption. The side slope riser pipe no longer needs to be included in this calculation because the 2" riser in each cell is now evaluated separately in the response to MDE Comment 12. We have changed the title of Appendix I to Force Main Sizing Calculation. The results of the evaluation and an accompanying narrative description are attached to this letter as Response to Comment 13 and are intended to replace Appendix 10I in its entirety.

14. **MDE Comment:** In Section 11.3.3.4 Reading Gas Levels at Probes and Facility Structures it is stated that "For facility structures, places the monitoring device central to the facility or in the low point of the structure and take a reading with the quick connect fitting open to the atmosphere. In addition to quarterly monitoring of facility structures, a continuous methane monitoring device will be installed to alert occupants when 25% of the LEL is met or exceeded. Methane is lighter than air and methane sensors should be placed near the high point of the structure and/or the breathing area. Please correct.

NWM Response: The required edit has been made.

15. **MDE Comment:** Section 12.7.3 Noise, Dust, Odor, and Vector Control, in the Dust paragraph states that "Dust will be controlled by sprinkling working areas with water. Stockpiles and excavation areas will be sprinkled periodically while working. During dry periods and in the summer, a water truck equipped with pump and hose will be available to add moisture when dust conditions arise." Please provide the source of the water to be used for dust control.

NWM Response: Water utilized for dust control will be acquired from various sources depending on water availability and where the dust suppression is being performed. When available, stormwater runoff from stormwater ponds and collection points outside active waste disposal areas, will be utilized for dust control in areas outside the active waste disposal areas. If water is required for dust suppression within an active waste disposal area, runoff from within the active waste disposal areas may be utilized but only within the waste disposal areas. When accumulated stormwater runoff is not available water obtained from an on-site production well will be utilized. We have added language to Section 12.7.3 to specify these intentions. A complete copy of the Section 12 "Operations Plan" text is attached to this letter.

16. **MDE Comment:** In Section 12, Attachment 12A, Table 12A-2 provides minimum personnel recommended based on the daily tonnage rate. Please explain how the daily tonnage rate is anticipated and staffing levels are determined.

NWM Response: The information provided on the Table 12A-2 comes from a Waste 360® Training Module. These are general figures that may need to be adjusted based on overall operating efficiency, personnel ability and waste flow conditions. The average daily tonnage is 1,603 tons/day which was derived from the total landfill capacity, the average expected unit weight and the number of operating days anticipated over the 12-year operating history.

17. **MDE Comment:** In the Operations Plan please provide information regarding the removal of solids that have accumulated in the leachate tank.

NWM Response: We have added language to Section 12.12.1 regarding the need to monitor tank sediment levels and the need to perform sediment removal whenever the sediment levels reach 2 ft. A complete copy of the Section 12 "Operations Plan" text is attached to this letter.

18. **MDE Comment:** Please address how odor will be controlled at the leachate tanks.

NWM Response: We have added an in-line dynamic mixer to the leachate inflow line inside the leachate tank containment area between the 1-inch sample port and the 6-inch solenoid valves (see Drawing 28). The chemical inflow line to the mixer will be capped when initially installed but when/if tank odor becomes a problem the mixers will be utilized to feed an oxidant into the leachate lines before the discharge to the tanks. The specific type of oxidant will be determined based on the source of odors, but expectations are that any significant odor concerns will be sulfur based (hydrogen sulfide, mercaptans, or disulfides) and that the most logical oxidant will be H₂O₂, permanganate or a proprietary compound. Dosing rates will also be a function of the oxidant utilized, concentrations present in the leachate and flow rates. These are typically addressed through a combination of head space testing (in the tanks) and monitoring the effect from different dosing rates. We added text to Section 12.12.1.2.2. A complete copy of the Section 12 "Operations Plan" text is attached to this letter.

19. **MDE Comment:** Please provide information on the software that was used to generate the groundwater contour maps.

NWM Response: The groundwater contours were developed using the contouring program Surfer as produced by Golden Software and available through GroundwaterSoftware.com. As with any software program subsequent adjustments were made based on geologic and hydrogeologic site conditions.

20. **MDE Comment:** Please provide electrical design drawings.

NWM Response: Based on our understanding of COMAR, detailed electrical design drawings are not a requirement under the permitting process. We requested that MDE provide a citation to the section requiring electrical drawings in the permitting process during our telephone call to review the comments on April 9, 2024 but never received a response. It is our intent, and will be a necessary component of the construction/building permit process, to prepare detailed electrical drawings after receipt of the MDE permit.

21. **MDE Comment:** Technical Specification 13214 Leachate Pumping and Storage Control System,

Section 3.5 A Leachate Sump Pumps provides information on the on/off pump status that is different from information provided in other sections of the Phase III Report including in Section 12.12.1.2.1 Leachate Pumps and Technical Specification 02652. Please correct the discrepancies.

NWM Response: 21. The text contained in Section 12.12.1.2.1 stating the following is correct: A level sensor for each submersible pump is included in all cell sumps. The leachate levels are monitored at the pump control panel, mounted on the Pump House wall (see Drawing 26). The level sensor pump-off position will be set at 6-inches above the sump floor. The pump-on position will be 12-inches above the sump floor, and pump high-level alarm will be set at 16-inches above top of sump. Drawing 19 includes the materials that are included in the cell sumps. We have modified the text in Specification 02652, Section 2.3.C.3 and Specification 13214, Section 3.5.A.2 and 3 for consistency. It should also be noted that Specification 02653 "Leachate Side Slope Pump System" was mislabeled as Specification 02652. We have corrected this discrepancy. Copies of the corrected Specifications sections are provided as Response to Comment 21.

22. **MDE Comment:** On Drawing 63, Section IV Sequence of Rubble Waste Placement Operation, Note 4 states that "Final side slopes shall be 3:1, with stormwater management terraces and downchutes installed per plans and details." Please correct this to a slope of 4:1 or less per Anne Arundel County requirements.

NWM Response: Drawing 63, Section IV, Note 4 has been revised as requested. A pdf scan of the revised drawing is included in the electronic version.

23. **MDE Comment:** Please evaluate the slopes of the landfill berms to ensure that they are in compliance with the county requirement of a final slope of 4:1 or less.

NWM Response: All finished slopes within the proposed waste disposal areas are 4:1 or flatter. This is consistent with the requirements of County Code § 18-11-131 that states that finished slopes will be four to one or flatter. Slopes outside the limits of waste disposal, such as slopes for stormwater basins, embankments and other features are steeper than 4:1. Our interpretation that the requirement for 4:1 slopes applies to the final landfill cap and not surrounding features is supported by the slopes observed at the County's own Millersville Municipal Landfill where surrounding slopes currently exceed 4:1. It should also be noted that the County's own Landfill Cell 9 Enhancements at the Millersville Municipal Landfill even call for increasing top of waste slopes up to 3:1.

24. **MDE Comment:** The Special Exception granted by the AA Board of Appeals provides for an entrance only along Conway Road. The proposed East Entrance from Conway Road constitutes a risk to human health and safety. Please provide an alternative entrance, approved by AA BOA, which does not intersect or adjoin the West County Elementary School parcel.

NWM Response: A detailed response to this comment has been prepared by NWM and is attached to this letter as Response to Comment 24.

We believe the written responses and attached information adequately address the questions presented by MDE. Please let us know if you need additional information.

Sincerely,

Montrose Environmental Solutions, Inc.



Paul G. Stratman, P.E., P.G.
Senior Consultant

PGS:mm

Attachments

Revised Report Text Section 2 –Waste Acceptance and Area to be Served (Revised May 4, 2024)

Revised Report Text Section 3 – Project Description (Revised May 4, 2024)

Revised Report Text Section 10 – Leachate Management System (Revised May 4, 2024)

Revised Report Text Section 11 – Landfill Gas Management Plan (Revised May 4, 2024)

Revised Report Text Section 12 – Operations Plan (Revised May 4, 2024)

Drawing 27 – Leachate Control Panel Layout

Drawing 28 – Leachate Storage Tank Details (1 of 2)

Drawing 63 – Sequence and General Notes for Construction

Response to Comment 1 – Signed Professional Geologist Certification Page dated May 4, 2024

Response to Comment 2 – Redline Text Attachment 12B – ACM Waste Management Plan (Revised May 4, 2024)

Response to Comment 3 – Revised Table A – Attachment 5B – Cell Life Estimates

Response to Comment 4 – Response-MDE-Question 4

Response to Comments 6 & 7 – Leachate Letter Comments 6 and 7 from VLS Environmental, April 26, 2024

Response to Comment 12 – Leachate Sump Pump Sizing Summary Table

Response to Comment 13 – Attachment 10I – Force Main Sizing Calculation

Response to Comment 21 – Section 02652 Leachate Side Slope Pump System (Revised May, 2024)

Response to Comment 21 – Section 02653 Leachate Storage Facility (Revised May 4, 2024)

Response to Comment 21 – Section 13214 Leachate Pumping and Storage Control System (Revised May 4, 2024)

Response to Comment 24 – Exhibit List

Exhibit A: Zoning Decision

Exhibit B: Office and Planning and Zoning, Suzanne Schappert, June 8, 2006

Response to Comment 24 – Exhibit C: John Fury Transcript, August 15, 2013

Exhibit D: Second Supplemental Memorandum of Opinion, December 1, 2022

Response to Comment 24 – Exhibit E: Circuit Court Decision Judge Trunnel, May 26, 2021

Exhibit F: Circuit Court Decision Judge Trunnel, January 26, 2024

Response to Comment 24 – Response-MDE-Question 24

Attachments

Revised Report Text Section 2
Waste Acceptance and Area to be Served (Revised May 4, 2024)

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2.0 WASTE ACCEPTANCE AND AREA TO BE SERVED

The Code of Maryland (COMAR) Regulations Title 26 Subtitle 4 Chapter 7 (herein after referenced as 26.04.07), identifies four categories of solid waste landfills in Maryland:

- Municipal Solid Waste (MSW) – defined as waste generated by a community, excluding wastes defined otherwise (COMAR 26.04.07.02). Traditionally MSW is residential and office and retail business wastes.
- Land Clearing– limited to soils, trees stumps, root mats, brush and limbs, logs, vegetation, and rock (COMAR 26.04.07.11)
- Industrial Waste – nonhazardous industrial solid wastes (COMAR 26.04.07.19)
- Rubble Waste – typically debris associated with construction demolition (see Section 2.1)

The Chesapeake Terrace Rubble Landfill will only accept wastes COMAR-approved “rubble waste.”

2.1 Acceptable and Unacceptable Waste

The Chesapeake Terrace Rubble Landfill is located in Odenton, Anne Arundel County, Maryland. The rubble landfill will accept the types of rubble waste listed in the COMAR 26.04.07.13 summarized, as follows:

- Land Clearing Debris, includes the following:
 - Earth material such as clays, sands, gravels, and silts;
 - Topsoil;
 - Tree Stumps;
 - Root Mats;
 - Brush and Limbs;
 - Logs;
 - Vegetation; and,
 - Rock.
- Demolition Debris, includes the following:
 - Acceptable demolition debris associated with the razing of buildings, roads, bridges, and other structures includes structural steel, concrete, bricks (excluding refractory type), lumber, plaster and plasterboard, insulation material, cement, shingles and roofing material, floor and wall tile, asphalt, pipes and wires, and other items physically attached to the structure, including appliances if they have been or will be compacted to their smallest practical volume.
 - Unacceptable demolition debris includes industrial waste or byproducts, any waste materials contained within a structure or on the grounds of the structure being demolished that are not physically part of the structure, or which are comprised of or contain materials that pose an undue risk to public health or the environment.

- Construction Debris, includes the following:
 - Acceptable construction debris is structural building materials including cement, concrete, bricks (excluding refractory type), lumber, plaster and plasterboard, insulation, shingles, floor, wall and ceiling tile, pipes, glass, wires, carpet, wallpaper, roofing, felt, or other structural fabrics. Paper or cardboard packaging, spacing, or building materials, provided that they do not exceed 10% by volume of the waste, may be accepted at the rubble landfill. Paint containers, caulk containers, or glaze containers are acceptable, provided that they are empty and any residual material that is dried before acceptance at the rubble fill, and further provided that this waste category does not exceed 1% by volume of the waste accepted at the rubble landfill.
 - Unacceptable construction debris includes commercial, domestic, or industrial wastes or byproducts, paint, tar or tar containers, caulking compounds, glazing compounds, paint thinner or other solvents or their containers, creosote or other preservatives or their containers, tile, paneling, or carpet cement or other adhesives, and other solid waste which may contain an unacceptable waste or substance as may be determined by the approving authority to be unacceptable.
- Tires. Scrap tires may be accepted at the facility and managed in accordance with the requirements of a scrap tire collection facility license issued under COMAR 26.04.08. Disposal of tires in a landfill is prohibited.
- Asbestos Waste. Asbestos waste is acceptable provided that the material that is received is packaged and labeled as specified in COMAR 26.04.07.13, and is managed in the following manner:
 - Prior notification to the landfill supervisor is required;
 - The waste asbestos is unloaded carefully to prevent emission of fibers into the air;
 - The area used for burial of asbestos shall be restricted to the working face of the landfill, or a separate cell dedicated solely to asbestos disposal;
 - The waste shall be completely covered with earth or other rubble and may not be compacted or driven over until sufficient cover has been applied to prevent the release of asbestos fibers to the atmosphere during compaction or application of other cover material; and,
 - Operators at the landfill shall wear respiratory protection approved by the National Institute for Occupational Safety and Health for protection against asbestos fibers, and protective clothing when considered necessary.
 - Household Appliances and White Goods. Household appliances and white goods are acceptable provided that any refrigerant is removed from the appliances before burial in the landfill and is managed in accordance with §608 of the Federal Clean Air Act (42 U.S.C. §7671g).
 - Processed Debris. Processed debris is acceptable only at a rubble landfill having a liner and leachate collection system constructed to the standards as specified in Maryland Department of the Environment (MDE) COMAR Regulations 26.04.07.16.

- Other Waste Materials. Waste materials not specifically listed in this section may not be disposed of in a rubble landfill before receiving written approval of the Approving Authority.

The Chesapeake Terrace Rubble Landfill has a total gross design capacity of approximately 9.36 million cubic yards (MCY). Assuming three percent (3%) of the volume is reserved for daily/weekly cover, the net disposal capacity is 9.08 MCY.

The average daily rubble intake used for calculating the life of the Landfill is 1,717 tons per day, and an average unit weight of 0.59 tons/cubic yard. At the average daily rubble intake rate (5-day per week operation), the life of the Chesapeake Terrace Rubble Landfill facility is 12 years. The average daily rubble intake is used for estimating purposes and the actual rubble intake rate may lead to a different facility life span. Often, waste intake varies by season and day of the week. As such, some days may have higher intakes, while others may be lower. At the end of life, the landfill will be closed, maintained and monitored according to the COMAR regulations and the facility's Closure and Post-Closure Plan, included in Section 15 of the Phase III Permit Application.

2.2 Signage

To be clear on the types of wastes accepted at the site, there will be two large signs posted near the scalehouse at the main entrance listing wastes that are and wastes that are not acceptable. The details for these signs are provided on Drawing 9.

Due to the number of vehicles and the traffic expected within the property, there will also be a series of other signs controlling traffic throughout the site, including but not limited to, the list of signs below:

- | | | |
|----------------|-------------------------|----------------------------|
| • Stop | • Speed Limit (various) | • Steep Grade |
| • Yield | • No Shoulder | • Authorized Vehicles Only |
| • Do Not Enter | • Wrong Way | • Back-in Parking Only |

A variety of other signs will be used as needed.

2.3 Area and Population Served

The Chesapeake Terrace Rubble Landfill is located in Anne Arundel County, Maryland. Due to the cost of transporting rubble, it is a reasonable assumption that most of the rubble waste will originate within a 75-mile radius of the landfill. This area includes the following Maryland counties and their corresponding populations:

County	2020 (projected) Population
Anne Arundel	556,100
Baltimore	842,600
Calvert	100,450
Caroline	40,300
Carroll	197,400
Charles	177,200
Dorchester	36,300
Frederick	287,900
Harford	276,500
Kent	22,200
Montgomery	1,075,000
Prince George's	921,900
Queen Anne's	55,650
Saint Mary's	130,100
Somerset	28,300
Talbot	40,050
Wicomeco	107,450

Population taken from web page <https://msa.maryland.gov/msa/mdmanual/01glance/html/pop.html#county>

The total population of these counties is nearly 5 million people.

Revised Report Text Section 3
Project Description (Revised May 4, 2024)

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LIST OF ATTACHMENTS

Attachment

3A - Regional Topographic Information

3.0 PROJECT DESCRIPTION

3.1 Regulatory Compliance

Table 3.1 - Phase III Application Compliance with COMAR Regulations

COMAR Regulation 26.04.07.16 Phase III	Description	Where addressed
1.	A map which designates the property boundaries, the actual area to be used for filling, and existing and proposed structures and on-site roads	Drawings
2.	A description of any vehicle weighing facilities, communications (telephone, radios), maintenance and equipment storage facilities, and water supply and sewage systems.	Section 12.0
3.	a. A description of the types of solid waste: (i) to be accepted. (ii) NOT to be accepted. b. Area and population to be served by the facility.	Section 2.0
4.	The anticipated quantities of solid waste to be accepted and the calculations used to determine the useful life of the facility	Section 5.0
5.	Proposed methods of collecting and reporting data on the quantities and types of solid waste received and for revising facility life expectancy projections.	Section 12.0
6.	The volume and type of available cover material, the calculated volume of earth needed for periodic, intermediate, and final cover, the location of earth stockpiles, and provisions for saving topsoil for use as final cover.	Section 8.4
7.	Proposed means of controlling unauthorized access to the site.	Section 12.0
8.	Proposed operating procedures including: a. Hours and days of operation b. Number and types of equipment to be used c. Number of employees and their duties d. Provisions for fire prevention and control e. Means of preventing public health hazards and nuisances from blowing paper, odors, rodents, vermin, noise, and dust f. Proposed method of daily operation including wet weather operation	Section 12.0
9.	The location and depth of solid waste cells and the sequence of filling.	Drawings
10.	Natural or artificial screening to be used.	Section 6.3
11.	Methods of controlling on-site drainage, drainage leaving the site, and drainage onto the site from adjoining areas.	Section 17.0 & Drawings

COMAR Regulation 26.04.07.16 Phase III	Description	Where addressed
12.	A contingency plan for preventing or mitigating the pollution of the waters of the State of Maryland.	Section 16.0
13.	Proposed methods for covering and stabilizing completed areas.	Section 18.0
14. & 15.	A system for monitoring the quality of the waters of the State around and beneath the site, including the location and types of monitoring stations, and the methods of construction of monitoring wells.	Section 16.0
16.	A schedule for implementing construction and implementation of the operation plans and engineering specifications once the refuse disposal permit has been issued.	Section 7.2
17.	A landfill closure and post-closure plan to be followed over a period of not less than 5 years after application of final cover.	Section 15.0
18.	The name, address, and telephone number of the person or agency responsible for the maintenance and operation of the site.	Section 1.0
19.	An engineered design for a liner system and leachate collection system for the proposed rubble landfill based upon geotechnical information developed in Phase I and Phase II.	Sections 9.0 & 10.0 and Drawings
20.	A proposed method, engineering specifications, and plans for the collection, management, treatment and disposal of leachate generated at the facility, including the calculations used to determine the estimated quantities of leachate to be generated, managed, stored, treated, and disposed.	Section 10.0

3.2 Existing Site

The site of the proposed rubble landfill is located southeast of Fort Meade in Odenton, Maryland. The property is bounded by Patuxent Road to the north, CSX/Amtrak rail lines to the west, Conway Road to the south, and Patuxent River Park to the northeast. See Location Map on Drawing 2. The property, consisting of approximately 480 acres, was previously used to mine sand and gravel. Surface runoff drains across the site in a northerly direction toward a 100-year flood plain, between the proposed rubble landfill and Patuxent Road. See Site Plan on Drawing 2.

National Waste Managers, Inc. proposes to reclaim approximately 114.4 acres, formerly used for sand and gravel mining, with an engineered state-of-the-art rubble landfill that will provide air space for rubble waste disposal for 12 years. The site consists of a 480-acre parcel located near Odenton, Maryland, as shown on Drawing 2. Existing topography and mapped wetland boundaries are presented on Drawing 2. The proposed landfill limit of waste is approximately 114.4 acres, as shown on Figure 3. The proposed use as a landfill is subject to Special Exceptions and Variances as issued by Anne Arundel County on December 23, 1993. The conditions contained therein included locations for access,

operating life of the landfill, hours of operation, protection/replacement of potable water wells. The variances granted a reduction in the setback distance for the landfill of 760 feet (1,000 feet to 240 feet) and reduced the distance for regrading by 100 feet (100 feet to 0 feet) to allow NWM to perform grading up to the property boundary where necessary to eliminate unsafe conditions created by historic quarry operations.

The landfill is proposed to have 21 cells, to allow sequential development. The landfill cells will be lined with a state-of-the-art, low-permeability liner system to block leachate (water which contacted the waste) from contacting groundwater. Each cell will be equipped with a leachate collection and removal system, which will convey the leachate through a force main to one of the on-site leachate storage tank. Final disposition of the leachate from the storage tank is addressed under Section 10.11 Leachate Disposal, of this Phase III Report.

As the landfill achieves final grades, the closure cap will be constructed. The closure cap will also include a low-permeability barrier layer designed and constructed to prevent precipitation from infiltrating into the filled waste material. By constructing the closure cap as grades within cells or portion of cells are achieved the volume of leachate requiring management is reduced. Precipitation falling on the completed cap (i.e., stormwater runoff) is managed through the series of controls and diversion (such as terraces, down-chutes, perimeter channels and culverts) that direct the water to stormwater retention basins situated around the landfill. The stormwater retention basins provide storage and allow the water to be discharged in a limited/controlled fashion. Drawing 3 presents the conceptual layout and configuration for the proposed landfill cells and stormwater retention basins. Additional details regarding landfill layout, configuration, closure cap construction and stormwater management are presented throughout this Phase III Permit Application.

3.3 Topography, Drainage and Features

3.3.1 On-Site

A topographic base map of the site is shown on Drawing 2. This map shows natural drainage features, wetlands, the 100-year flood plain, property lines, and forested areas. Extensive surface mining for sand and gravel has taken place in the northwestern portion of the proposed landfill area. The results of this past mining activity is the surface is uneven and barren in some areas. There are no on-site structures, utility pipelines, storage tanks, or water supply wells.

A ridge with elevations up to 196 feet (ft) above mean sea level (amsl) is located on and adjacent to the southern property line. The land surface across the site slopes north from this ridge toward the Little Patuxent River which is at an elevation of approximately 60 ft amsl. The vast majority of surface water from the site drains to the northeast toward the Little Patuxent River. The extreme western corner of the property drains to the west toward the Patuxent River.

3.3.2 Localized

The topography beyond the property can be viewed on Figure 2 from the Phase II Permit Application (included here as Attachment 3A), which shows profiles in four directions through the site. These profiles are taken from GoogleEarth® so the elevations are +/-5-ft

amsl. The value of these profiles is that they show the relative elevations of the site compared to the surrounding communities, from 3 to 5 miles from the site. The data shows that the site is located along a localized high-point created by the Little Patuxent and Patuxent River valleys. The areas north, west and east are at lower elevations than the southern portions of the site. The elevations beyond the southern limits of the site generally slope downward to the Patuxent River. This means that surface water is generally not running onto the site from off-site sources.

3.4 Access/Site Entrances

Three entrances are shown for the site, as depicted on the Design Drawings. Construction of only one site entrance is required by COMAR regulations and Maryland Department of the Environment (MDE). The main entrance is intended to be the East Entrance (Drawings 4 and 5) from Conway Road, as stipulated in the special exception issued by the County. The Optional North and South Entrances, Drawings 89 and 90, respectively, are presented for approval in the permit but will only be constructed in the event that acquisition of the property, right-of-ways or easements required for the East Entrance is unsuccessful. NWM recognizes that the stipulation in the special exception must be changed or nullified before the optional entrances may be utilized.

If the Optional North Entrance is constructed in lieu of the East Entrance, stipulations under construction sequencing drawings for the Optional North Entrance are maintained. If the Optional South Entrance is designated by the Owner to be constructed in lieu of both the East and North Entrances, then a variance from MDE (as specified under Section 7.3, "Variance from Sequence of Construction for Landfill Cells") must be obtained, prior to beginning construction.

Information on Drawing 63 "Sequence and General Notes for Construction" describes criteria for landfill construction.

Primary methodology associated with landfill construction over the life of cell construction and waste placement operation is depicted on Intermediate Construction Stage Plans (see Drawings 64 through 81), which depict construction of landfill cells and appurtenances from beginning to end of landfill construction.

Contract Documents for landfill construction, per Specifications under Section 7.6, "Preparation of Contract Documents for Intermediate Stage Construction", will be prepared per Intermediate Construction Stage Plans shown on Drawings hereunder.

3.4.1 Site Entrance Infrastructure and Queue Lanes

As shown on Drawings 4 and 5 for the East Entrance, and on Drawings 89 and 90 for the optional entrances, scale house and truck scales, maintenance building, and wheel wash with adjacent concrete clean-out are provided for each of the three site entrances. See "Operations Plan" in Section 12.0.

It is anticipated that the facility will accept rubble waste at the rate of approximately 1,602 tons per day. Per "Operations Plan" in Section 12.0, at this waste acceptance rate, it is expected that almost all waste will be delivered to the site by semi-trailers.

Under the assumption that each semi-trailer delivers 20 tons waste to the site, 80 semi-trailers per day would be required to meet 1,602 tons per day throughput.

Per "Operations Plan" Section 12.6.2.3, approximately two minutes processing per vehicle would be required to move a vehicle from the truck scale onto the landfill perimeter access road. During an 8-hour day, average arrival rate of semi-trailers at the site would be approximately 6 minutes. In consideration of the eventuality that peak traffic consisting of simultaneous arrival of semi-trailers at the scale house, queue lanes for each of the three site entrances are provided (per description under Sections 3.4.2 through 3.4.5). Regardless of which entrance is eventually constructed, trucks will not be permitted to queue onto public roads.

3.4.2 Assumed East Entrance

The assumed East Entrance would be constructed as shown on Drawings 4, 5, 55, and 56. The East Entrance access road from Conway Road to the scale house is approximately 5,000 feet long. Assuming the length required to queue a single tractor trailer is 60 feet, and no movement past the scale house, all of the landfill's estimated daily 80 waste trucks could be queued on the East Entrance access road. Access for emergency vehicles will be provided via a 12 feet wide lane from Patuxent Road (see Drawing 89).

The portion of the East entrance access road from Conway to the property line is a gravel-surfaced road. From the property line to the scales through the turn onto the landfill perimeter road, the road surface is paved.

3.4.3 Optional North Entrance

Optional North Entrance would be constructed as shown on Drawings 89 and 57.

Three lanes, approximately 600 feet long each, are provided. Assuming single vehicle queue length of 60 feet and no movement past the scale house, 20 of the landfill's estimated daily 80 waste trucks could be queued on two North Entrance lanes. The remaining lane would be reserved for outbound traffic. As warranted, outbound traffic would be queued on-site and the outbound lane would be used by emergency vehicles entering the site, if the main path is blocked with waste trucks.

3.4.4 Optional South Entrance

Optional South Entrance would be constructed as shown on Drawings 90 and 54. Four approximately 450 feet long lanes are provided. Assuming single vehicle queue length of 60 feet and no movement past the scale house, 22 of the landfill's estimated daily 80 waste haulers could be queued on three South Entrance lanes. The remaining lane would be reserved for outbound traffic. As warranted, outbound traffic would be queued onsite and the outbound lane would be used by emergency vehicles.

3.4.5 Emergency Exit

Regardless of which entrance is constructed, consistent with the redundant design approach associated with landfills, so that each system has a primary and a “backup”, there will be a road for use as an “emergency exit”, in the event the Entrance is blocked (e.g., downed power lines, broken-down truck, loss of power at the automatic gates, etc.). This emergency exits will be one 12-foot wide, paved lane, as shown on Drawing 64, at the location of the Optional North Entrance.

3.5 Proposed Rubble Landfill Description

The proposed rubble landfill will consist of approximately 114.4 acres dedicated for landfill waste disposal, or airspace. Total site disturbance to construct the facility (including the access road, leachate collection and storage area, stormwater management facilities, etc.) is approximately 193.2 acres. The rubble landfill will consist of a series of excavated cells, contained within a perimeter berm (Cells 1 through 10 in the West Section and Cells 11 through 16 in the East Section, as shown on Drawings 10 and 11). A summary of cell areas is provided in the following table.

Summary of Cell Areas	
Cell	Area (acre)
1	13.2
2	7.5
3	4.9
4	5.5
5A	5.6
5B	3.4
5C	4.4
5D	2.9
5E	3.2
5F	1.7
6	5.2
7	6.7
8	6.0
9	4.0
10	9.6
11	7.0
12	6.7
13	3.4
14	4.3
15	4.7
16	4.5

The landfill will have a series of containment systems to protect human health and the environment from potential releases from the landfill. These containment systems include the following:

- Liner System
- Leachate Collection and Management

- Cap/Closure System
- Landfill Gas Collection and Control
- Stormwater Management

These systems are described briefly below and in greater detail throughout the Phase III Permit Application.

Site entrances are described under Section 3.4.

3.5.1 Liner System

Each landfill cell will contain a liner system. The proposed design includes a liner system configuration specifically meeting the COMAR requirements listed in 26.04.07.16C. The proposed liner system components include the following basic components, from top to bottom:

- Select Waste: A 48-inch protective layer to protect the integrity of the underlying layers;
- Leachate Collection Layer: A 24-inch leachate collection and removal system to remove leachate, precipitation that comes into contact with the waste, from the landfill;
- Barrier Layer: Layer to prevent leachate from percolating beyond the landfill liner system and into the underlying soils and groundwater; and
- Prepared Subbase: A 24-inch layer with reduced hydraulic conductivity in intimate contact with the barrier layer intended to minimize the leakage from the barrier layer, in the event the barrier layer is compromised.

As indicated by the description of the liner system, most items at a landfill have a primary system and then a backup for contingency – in the event the primary system fails. This redundancy is reflected in the liner system with the primary barrier layer and the prepared subbase backup barrier layer.

The COMAR-required liner system identifies the use of natural soil materials or synthetic materials for certain liner system components. The liner system proposed by NWM utilizes the synthetic alternatives provided for in the COMAR regulations for the barrier layer (60 mil HDPE geomembrane) and a portion of the leachate collection layer (geocomposite drainage layer (GDL) located on top of the geomembrane and at the bottom of the 24-inch thick leachate collection layer).

Geosynthetics are widely preferred and used over natural soil materials for many of the liner system components due to consistency of product, ease of installation, improved performance over natural materials relative to protection of groundwater, and their use for this purpose for more than thirty (30) years in hazardous waste, municipal solid waste, and industrial waste applications.

Landfill liner systems with properly installed geosynthetic components are viewed as superior to systems with natural soils, for a number of reasons, including but not limited to:

- Consistency of the geosynthetic products over multiple years of construction;
- Permeability being several orders of magnitude lower than the permeability of natural soils, providing more protection against leakage;
- Inert nature of the geosynthetics, averting possible chemical reactions with the leachate or waste disposed at this site;
- Proven-track record of using geosynthetics as barrier components of liner systems for more than 30 years in municipal waste landfills, hazardous waste landfills, and industrial waste landfill;
- Reduced traffic from hauling natural materials to site for construction;
- Reduced timeline for each phased construction effort; and,
- Preservation of natural soils to reducing the needing for soils mining.

More detailed discussions of materials and their selection is provided in Section 9 of this Phase III Permit Application. Liner system details are provided on Drawings 14 through 16.

The landfill cell floor grades have been designed to maintain 3 feet minimum distance (after landfill settlement) from the bottom of the prepared subbase to the Highest Predicted Groundwater Contours indicated on Phase II Permit Application, as discussed further in Section 4.0.

3.5.2 Leachate Management System

The leachate collection system has been designed in accordance with COMAR 26.04.07.16.C. The bottom limit of the leachate collection system is defined by the GDL, which will be installed directly on the geomembrane liner component. The geomembrane layer will be in intimate contact with the top of the prepared subbase. Elevation control for the top of subbase grading presented on Drawings 10 and 11, is critical to ensure that 2% minimum required bottom slopes remain following any predicted long term settlement. During construction, bottom elevations shall be laid out utilizing the sump invert elevations and minimum slopes presented on Drawings 6 and 7, and 10 and 11.

Leachate collection system details are shown on Drawings 19 through 21. Leachate will be intercepted by the leachate collection layer contained within the liner system, immediately above the barrier layer. Leachate will flow within the leachate collection layer to the leachate collection sump. Within the cell sump (i.e., low spot), submersible pumps compatible with the leachate will transfer the leachate out of the cell into the leachate force mains and then to one of two Leachate Storage Facilities.

From the leachate storage tanks, the leachate will be hauled off-site for disposal.

Environmental Recovery Corporation (ERC) of Maryland, located in Baltimore, has provided written confirmation that they can process and treat the estimated leachate volume of 75,000 gallons per day. A copy of that confirmation is attached to this response to comments letter. No pre-treatment is anticipated prior to shipment.

Details and layout of the leachate management system are provided on Drawings 17 through 29. Detailed description pertinent to leachate collection system design and

installation is presented in Section 10.0 "Leachate Management System" and in Section 14.0, "Construction Specifications", respectively.

Depending on the nature of the waste disposed, the levels of contaminants in the leachate, and the volume of leachate produced (which is directly linked to the amount of rainfall), the owner may choose, in the future to develop an on-site wastewater treatment plant to treat leachate and obtain a NPDES discharge permit.

3.5.3 Cap/Closure System

3.5.3.1 Final Cover Layer

As waste grades attain the maximum permitted filling elevations presented on Drawings 30 and 31, a minimum 24-inch thick Final Cover will be placed. The Final Cover Surface shall be graded to promote runoff and minimize erosion. Minimum and maximum Closure Cap slopes are four percent (4%) and twenty-five (25%), respectively. In addition, to ensure adequate flow capacity for the proposed cap drainage layer, the minimum cross-slope for the Final Cover surface across proposed terraces and haul road benches shall be 7-percent.

3.5.3.2 Closure Cap

The Final Cover Layer will be the supporting layer for the Closure Cap. Pursuant to COMAR 26.04.07.21G, the Closure Cap will consist of the following components, from top to bottom:

- Vegetative Stabilization – Perennial cover as recommended by the Anne Arundel County Soil Conservation District, with sufficient lime and commercial fertilizer applied to sustain vegetative growth.
- Final Earthen Cover – 24-inch thick (minimum) soil layer, including a upper 6-inch thick vegetative support layer.
- Drainage Layer - Geocomposite Drainage Layer (GDL) or 6-inch thick drainage layer with a permeability equal to or greater than 1×10^{-3} cm/sec. We are requesting MDE approve of the GDL in-lieu of the 6-inch thick drainage layer.
- Low Permeability Cap - 40 mil (minimum) synthetic (textured LLDPE) material with a maximum permeability of 1×10^{-10} cm/sec.

The purpose of the closure cap is several-fold, including to:

- Prevent infiltration of precipitation into the waste,
- Prevent contact with the waste, by people or animals, and
- Prevent burrowing animals from disturbing the waste.

More detailed discussion of the Closure Cap system and selection of materials is provided in Section 9.0. Grading plans and details associated with the final cover layer and the closure cap system are provided on Drawings 30 through 35. Materials specifications are provided in Section 14.

3.5.4 Landfill Gas Collection and Control

A byproduct of landfill disposal of waste is often gaseous emissions, as the waste decomposes, when exposed to infiltrating rainwater or the mixture of the wastes disposed. The exact character and nature of these emission, dubbed “landfill gas”, varies based on the composition of the wastes disposed, but the primary component is usually methane. Depending upon the concentration of methane in the landfill gas, a passive landfill gas management system may be used. However, if concentrations are higher, so that they can sustain a landfill gas flare or even be used to produce power for on-site use, an active landfill gas collection and control system should be installed.

For municipal waste landfills, an active landfill gas (LFG) collection and control system is required. For rubble waste, the need for an active system varies with the type and volume of waste deposited. For this application NWM has included information and details for an active LFG collection and control system will be needed. This LFG system will include the following components:

- LFG monitoring probes at the property line to verify LFG is not in the soils or groundwater at the property limits.
- LFG extraction wells installed in the waste (the extraction wells will be capable of functioning in passive mode if gas generation rates cannot support an active gas system and use of a passive system is approved by MDE).
- LFG laterals and headers to convey LFG from the wells to a LFG Flare to burn the LFG.
- A blower which will impose a negative pressure on the system to “suck” the LFG out of the landfill. The blower is typically included with the flare and recommended by the flare manufacturer. (The size and configuration of the blower and flare will be a function of the volume of gas being generated/required extraction rates, methane concentrations and size and layout of the area of extraction.)

Further discussion of the LFG Collection and Control System is provided in Section 11.

3.5.5 Stormwater Management

One of the requirements of COMAR 26.04.07 and 40 CFR 257 is the management of surface water run-on from upgradient sources and the management of stormwater runoff from landfills. 40 CFR 257 and 258 list requirements for coal-combustion residual and municipal solid waste facilities. 40 CFR 258.26 (a) specifically requires

- “(1) A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 25-year storm;
- (2) A run-off control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm.”



While this is a Rubble Waste facility so these federal requirements are not applicable, they are relevant and appropriate. Thus, surface water/stormwater runoff controls at the Chesapeake Terrace Rubble Landfill were designed for the 25-year, 24 hour storm event.

The stormwater management systems consists of a number of components, including the following:

- Terraces on the closure cap
- Downchutes to convey flow from the terraces, off the landfill
- Perimeter channels and swales to convey flow from the downchutes and other operational areas to the stormwater management basins
- Culverts convey flow at road or driveway crossings

Detailed design information about the stormwater management system is provided on Drawings 38 through 53 and described in Section 17.

3.6 Solid Waste Management Plan

The Chesapeake Terrace Site was included in the Anne Arundel County 10-Yr Solid Waste Management Plan 2013-2023 as a proposed facility.

Revised Report Text Section 10
Leachate Management System (Revised May 4, 2024)

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LIST OF ATTACHMENTS

Attachments

10A	-	Leachate Generation Rates
10B	-	Geocomposite Drainage Layer Permeability
10C	-	Leachate Collection Pipes Flow Capacity
10D	-	Leachate Collection Pipe Stress
10E	-	Peak Daily Flows from Each Cell
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10G	-	Leachate Generation over Landfill Life
10H	-	Leachate Storage Facility Secondary Containment
10I	-	Force Main Sizing Calculations
10J	-	Environmental Recovery Corp. Leachate Disposal Letter

10.0 LEACHATE MANAGEMENT SYSTEM

COMAR Section 26.04.07.16 (C)(2) requires a liner system to be “designed, constructed, and installed to contain and facilitate the collection of leachate generated in the landfill in order to prevent the migration of pollutants out of the landfill to the adjacent subsurface soils, ground water, or surface water.”

10.1 Introduction

There are 21 rubble landfill cells/subcells, each with a leachate collection system.

The Proposed Liner System for the Chesapeake Terrace Rubble Landfill includes the following, from top to bottom:

- Four feet of Select Waste
- 10 ounce per square yard (oz./s.y.) nonwoven geotextile for layer separation and visual indicator if breached;
- Two feet of leachate collection layer, comprised of locally mined sandy soils;
- A geocomposite drainage layer (GDL), consisting of a tri-planar drainage net with a minimum 8 oz./s.y. nonwoven geotextile heat-bonded to both sides;
- 60 mil HDPE Geomembrane; and,
- Prepared subbase with a minimum thickness of 2 feet and having a permeability less than or equal to 1.0×10^{-5} cm/sec.

Leachate percolation through rubble waste headers and laterals along the cell floor, graded at minimum three percent (3%) slope and two percent (2%) slopes, respectively, at the time of construction, to a sump with a submersible pump contained in a 24-inch diameter HDPE carrier, or sideslope riser, pipe.

Leachate is pumped from each cell sump through a pump house to one of five force main, discharging to one of two leachate storage facilities. Each leachate storage facility has two 500,000-gallon leachate storage tanks, i.e., 1,000,000-gallon storage capacity per facility.

The following list indicates Drawings associated with Leachate Collection System Grading and installation of Leachate Pumps, Force Mains, and Storage Tanks.

- Drawing 17 – Top of Leachate Collection System Grading Plan and Layout - West Section
- Drawing 18 – Top of Leachate Collection System Grading Plan and Layout - East Section
- Drawings 19-21 – Leachate Collection System Details
- Drawings 22-23 – Leachate Force Main Details
- Drawings 24-25 – Leachate Force Main Profiles
- Drawing 26 – Leachate Pump House Details
- Drawing 27 – Leachate (Pump) Control Panels Layout Main Details
- Drawings 28 – 29 – Leachate Storage Tank Details

10.2 Leachate Production Estimates

The computer program, Hydrologic Evaluation of Landfill Performance (HELP) version 3.07 was used to estimate the amount of leachate percolation through rubble waste onto the cell leachate collection system (see Section 10.3).

To determine the most efficient manner to provide leachate management for the facility over the life of landfill construction and operation, HELP analyses were performed for a range of filling conditions (i.e., first lift, mid-lift, full-height, etc.) to understand the peak daily leachate generation rates. These conditions were evaluated for a range of cell floor slope conditions, for a unit area of 1-acre, so it would be easy to extrapolate leachate generation rates for each cell, based on cell area. Peak Daily Leachate Generations rates were used to size leachate collection system headers and laterals (in the cells), leachate sump pumps, and leachate force mains.

The peak daily leachate generation was used for varying fill conditions to construct a timeline of filling and new cells coming online with other cells were being closed. Using this sophisticated timeline, the peak daily leachate was determined and used for sizing the leachate storage tanks.

HELP Analysis Methodology is described further in Section 10.7. Summary of Analyses for Leachate Generation is in Section 10.9.

10.3 Leachate Collection System COMAR Regulations

The rubble landfill leachate collection system design is based on adherence to the following COMAR requirements:

- 26.04.07.16C (3): Liner system components, comprised of layers of construction materials and thicknesses in conformance with this regulation, are specified on Drawing 14.
- 26.04.07.16C (6)(a): In accordance with this regulation, there is minimum 3-foot vertical buffer distance (after landfill settlement) between the highest anticipated groundwater elevation (as defined in the Phase II Report) and the bottom of each cell sump's prepared subbase components (see Section 4.0 herein).
- 26.04.07.16C (3)(e): Three percent (3%) minimum cell floor slope at the time of construction is provided in all cells, as shown on Drawings 10 and 11, to meet the regulatory-required two percent (2%) slope after differential settlement.
- 26.04.07.16 C (7)(d): Less than 30 centimeters (1 foot) of leachate head on the liner required by this regulation is achieved by utilization of HELP Analysis Methodology in Section 10.7. Results of all HELP Analyses (see Section 10.9 and Attachment 10A) indicate less than 1-foot head on the liner is achieved with the Alternate Liner System specified.

10.4 Leachate Pumps

Submersible pumps and accessories will be manufactured by EPG Companies. Existing electrical power supply for pump operation is located near the site in Patuxent Road and Conway Road rights-of-way. EPG pumps specified are specifically intended for landfill leachate use, meet NEC Article 501-8 explosion proof requirements, and are capable of handling biosolids. Any substitutions in pump type and/or manufacturer shall also meet these requirements.

Pump sizes were selected based upon the peak daily leachate production under "first lift" conditions. As shown on the "Cell Pump List" on Drawing 27 and in Section 10.9.3, one pump in each cell sump is sufficient to remove leachate under the peak daily generation scenario, described further in Section 10.9. However, as required by MDE a duplicate pump will be installed in each sump.

10.4.1 Pump Level Sensors and Alarm Systems

A level sensor for each submersible pump will be provided in all cell sumps. Leachate levels will be monitored in the pump control panel, mounted on the Pump House wall (see Drawing 26). Level sensor pump-off position will be 6 inches above the sump floor. Pump-on position will be 12 inches above sump floor, and pump high-level alarm will be 16-inches above the sump floor, per COMAR Regulations (See detail on Drawing 19). See Drawing 19 for materials to be placed in cell sumps, and depiction of pump control positions.

Equipment in the Pump Control Panel, provided by the Pump Manufacturer, will monitor and record leachate levels in the landfill cells. In the event of high-level alarm occurrence, a light at the Pump Control Panel will be activated. During landfill operating hours, the alarm signal will be electronically transmitted to the Scale House. During landfill non-operation hours, the landfill manager and Superintendent will receive a high-level alarm signal, via electronic telemetry from the Pump Control Panel. If a caretaker is not provided, a designated landfill employee will receive the high-level alarm signal offsite, via telemetry.

A Master Control Panel will be located in the Leachate Storage Facility Controls Building (located as shown on Drawing 10). This Master Control Panel will include a display for each Cell pump as well as each Leachate Storage Tank. The controls for cells sump pumps and the storage tanks will be interconnected so that high liquid levels in the tanks will trigger an alarm and notification to the landfill manager, care taker, or landfill employees and shut-off the cell sump pumps.

See Section 12, "Operations Plan" for actions taken by landfill personnel as response to pump high-level alarm activation.

10.4.2 Pump Access and Maintenance

Access to the pumps within 24-inch HDPE sideslope riser pipes is provided by means of stainless steel pulling cables as shown on Drawing 19. The Landfill Perimeter Berm and Pump House are designed to provide equipment access, as necessary to install and remove pumps. As shown on Drawing 26, an 8 ft wide doorway, preferably an industrial roll-up overhead door, allows access to both pump carrier pipes.

The Landfill Perimeter Berm top width is designed to allow access for Pump Installation and Removal Equipment (i.e., equipment mounted with boom and winch, with steel cable for attachment to the pumps stainless steel pulling cable). Pump Installation and Removal Equipment access across the perimeter channels to the top of the Landfill Perimeter Berm will be provided by installation of a precast concrete or steel ramp. The details for the precast ramps are provided on Drawings 19, 23, and 40.

Upon receipt of an order for a pump, the Pump Manufacturer will provide a Pump Operations and Maintenance (O&M) Manual, prepared based on site specific application. The Pump O&M Manual is included with delivery of each pump to a specified site. A listing of a typical EPG Companies, Inc. Pump O&M Manual along with other Pump Manufacturer's Literature is provided in Section 10.4.3 below.

10.4.3 Pump Manufacturer's Accessories

In addition to pumps and alarm system described above, the Pump Manufacturer will provide accessories and appurtenances that will be used for the landfill's leachate pump and conveyance systems. Pump Manufacturer's Literature typically includes:

- Information regarding the pump itself (including pump curves for site specific pumps); stainless steel check valves on pump discharge lines in the Pump House and leak detection sensor on the Pump House floor; Pump Control Panels; Level Sensor and Monitoring Equipment; Flow Metering and Control Devices; SCADA (Supervisory Control and Data Acquisition) and Telemetry Equipment.
- Pump description, illustrations, capacities, materials of construction; suitability for Class 1, Division 1 & 2 application; and Engineer's Specification Sheet for pump order;
- Pump curve for pump(s) in each cell sump, with system TDH/GPM line intersects indicative of the specified pump's capacity;
- Pump Control Panel description, illustrations, and Series L950PT Engineers Specification;
- Level meter, level sensor, bellows, LMSA level monitoring system, tank gauging system and sensor data sheets;
- Alarm system data acquisition, SCADA and telemetry;
- Flow metering and control devices;
- Miscellaneous accessories (stainless steel check valves and leak detection sensor); and,

- EPG Companies, Inc. provides a Pump O&M Manual for each pump delivered to a site, based on the pump's site-specific requirements.

10.5 Leachate Force Mains and Sideslope Riser Pipes

All pipes associated with landfill cell construction (excluding stainless steel pipes at select locations) will be High Density Polyethylene (HDPE), manufactured by Performance Pipe, or approved equal.

The Sideslope Riser Pipe has among the lowest loading for the piping at the site, due the Sideslope Riser being located along the outer edges of the landfill. The Sideslope Riser with the highest load is in Cell 7, with a sump elevation of 102 ft MSL and a top of closure cap grade immediately above the sump of approximately 208 ft MSL, for a net load of 106 feet (8 feet of soils and 98 feet of rubble waste). Previous calculations conducted by the local Performance Pipe Distributor, Lee Supply Company, Inc., for loading of the 24-inch perforated Sideslope Riser pipe show adequate strength and performance for a maximum burial depth of 138 feet (15 feet of soil and 123 feet of rubble waste).

The force main has been specifically designed to have a minimum depth of 3.5 feet in the side of the perimeter (access) road. This depth was selected to provide adequate protection for the HS20 loading of the waste trucks as well as frost depth.

10.6 Leachate Storage Tanks

As shown on Drawings 28 and 29, leachate from the entire landfill is conveyed to two leachate storage facilities, each with two 500,000-gallon storage tanks inside a secondary containment area. Each secondary containment area is comprised of concrete floor and walls, designed for 500,000 gallons containment capacity, with 1-foot freeboard to top of berm, as shown on Drawing 28. To prevent storage tank overflow, Pump Manufacturer will provide tank-gauging systems, under which an alarm would be activated and all leachate pumps, pumping to a tank filled to near capacity, would automatically shut down, per description under Section 10.4.1.

Storage tanks will be 45-foot diameter, glass coated, bolted steel Aquastore Tanks, manufactured by Engineered Storage Products, Inc. Specifications of these tanks are provide in Section 14, Technical Specification Section 02653.

10.7 Leachate Production - HELP Analysis Methodology

The HELP computer program models climatologic, soil, and design data and utilizes a solution technique that accounts for infiltration, percolation, evapotranspiration, soil moisture storage, and lateral drainage over a specified time period. A 1-year time period was used for a variety of filling active conditions, per unit area of cell. This allowed apply the leachate generation rates per acre of cell to all cells by simply multiplying the leachate generation rates by the area of each cell.

The program uses climatologic, soil, and landfill design data to produce daily estimates of water moving across, into, through, and out of landfills. To accomplish this, daily precipitation is partitioned to maintain a water budget. The following describes the data fields in detail:

- Climatologic Data - Climatologic data includes daily precipitation, mean monthly temperatures, mean monthly insolation, leaf area indices, vegetative cover, and winter cover factors. These values may be entered manually or default climatologic data for 102 cities is available in the HELP program. Based on nearest proximity to the landfill, default rainfall for Baltimore, Maryland was used, with average rainfall and average precipitation modified to reflect average values for Anne Arundel County, Maryland, from the National Oceanic and Atmospheric Administration (NOAA).
- Soil Data - Soil data includes material types used in the landfill and the characteristics of the material, i.e. vertical percolation, lateral drainage, barrier soils, or geomembrane liners. Material properties such as thickness, porosity, field moisture capacity, wilting point, initial material water content, and effective saturated hydraulic conductivity are used in the evaluation. Geosynthetic properties and installation construction such as pinhole density, installation defects, and placement quality are considered. HELP 3 provides default values for the properties of 42 material types. The user may edit these values.
- Design Data - Design data includes information that models the layout of the landfill such as total surface area, material layer thickness, and drainage slope and length. Other data such as surface runoff curve number, membrane leakage fraction, and potential runoff fraction may be requested by the program for certain materials.

Once the input is entered, the HELP program is used to evaluate the landfill design for the specified one-year time period for active landfilling conditions. The model runs simulations for 30-years for the closed conditions. However, after seven years of closed condition, the model shows a leachate generation of zero.

HELP performs water budget calculations by modeling each of the hydrologic processes that occur and outputs information used to design components associated with the landfill's leachate collection, conveyance and storage.

10.8 Analyses for Post-Closure and Peak Daily Leachate Production

The landfill will be constructed and filled with rubble waste in accordance with conditions specified on Drawing 63, "Sequence and General Notes for Construction" and Intermediate Construction Stage Plans on Drawings 64 through 81. As shown on Intermediate Construction Stage Plans, surface runoff in areas adjacent to a cell under construction will be diverted around the cell, during cell construction and as the cell is filled with rubble waste. Therefore, leachate production for the entire landfill will primarily be limited to precipitation that falls directly within the cell as waste is being placed, during the life of landfill construction and operation.

To determine the most efficient manner to provide leachate management over the life of landfill construction and operation, the following HELP analyses were performed:

- Analysis #1 – Active Landfilling, covering a range of waste thickness from "first lift" through "17 Lifts" to determine the peak daily rate of leachate production under each scenario and floor slope condition. The maximum per acre "first lift" leachate production rate was used for sizing the cell pumps and the leachate collection layer header pipes in the cells.
- Analysis #2 – Closed condition for various list conditions (impacts duration and length of leachate being released from cell due to moisture storage in the waste). This scenario in tandem with the peak daily rates developed under Analysis #1, were used with the cell sequencing and landfill timeline to determine the peak leachate generation when multiple cells were undergoing various stages of filling and closure.

10.9 Develop Leachate Generation Rates

The Liner System Configuration and input data is summarized in the Table 1, below.

Table 1 - Summary of Liner System Soil and Material Data		
Layer	Description	HELP Default Soil
1	12 inches intermediate cover cover	6
2	96 inches of waste	19
3	48 inches of Select Waste	19
4	24 inches of gravel/course sand	6
5	Tri-planar GDL	34 (modified k = 4.4 cm/sec)
6	60 mil HDPE geomembrane	35
8	36 inches natural soils	5

The Closure Cap (Final Cover) System configuration and input data is summarized in Table 2 below:

Table 2 - Summary of Closure Cap System Soil and Material Data		
Layer	Description	HELP Default Soil
1	6 inches of vegetative support layer	9
2	18 inches of protective cover	6 (modified k = 1x10-5 cm/sec)
3	GDL	34 (modified k = 12.8 cm/sec)
4	40 mil LLDPE geomembrane	36
5	24 inches Final cover	6

The waste properties were assumed to be consistent with municipal solid waste with channeling. Channeling is expected to occur in the rubble waste. No runoff was allowed under active landfilling conditions, forcing all rainfall to be treated as leachate.

The per acre peak daily generation rates developed under Analysis #1 (which indicate less than 1-foot head on the landfill's textured 60-mil HDPE liner, for each HELP3 Run) are included in the table below.

Table 3 - Summary of Peak Daily Leachate Generation (cf/acre/day)						
Total Waste Thickness (ft)	Leachate Collection System Drainage Slope (%)					
	2	3	4	5	6	33
First Lift						
8	1100	1224	1300	1300	1214	1655
Mid-Fill						
20	788	793	802	785	836	1001
32	839	832	1011	837	854	1001
52	883	924	838	864	841	1001
68	885	921	832	843	842	1001
Full-Fill						
40	1031	1070	1028	1028	1096	977
64	963	978	975	980	944	1031
104	1058	1062	1113	1110	933	1024
136	1012	1022	1030	1027	985	993

Based on the summary table above, the peak leachate generation rates for the flatter sloped cells floors was 1300 cf/acre/day (9,724 gal/ac/day) and 1655 cf/acre/day (12,380 gal/ac/day) for the steeper cell sideslopes. The area in each cell with the shallow slope and the steep slope were multiplied by their corresponding peak leachate generation rate, then added to get the peak daily leachate for the cell. The detailed analyses, with supporting HELP model printouts, are provided in Attachment 10A.

The calculated peak daily flow for each cell, under first lift conditions is as follows:

Table 4 - Summary of Peak Daily Leachate Generation for each Cell				
Cell	Area of Floor (acre)	Area of Slope (acre)	Peak Daily Leachate (gal/day)	Peak Daily Leachate (gal/min)
1	11.7	1.5	132,340	91.9
2	5.4	2.1	78,506	54.5
3	4.2	0.7	49,506	34.4
4	4.9	0.6	55,075	38.2
5A	4.7	0.9	56,844	39.5
5B	2.9	0.5	34,389	23.9
5C	3.6	.8	45,405	31.5
5D	1.9	1.0	30,855	21.4
5E	2.3	0.9	33,507	23.3
5F	1.0	0.7	28,340	12.8
6	2.0	3.2	58,788	40.8
7	2.2	4.5	76,826	53.4
8	4.6	1.4	62,327	43.3
9	2.7	1.3	42,348	29.4
10	7.5	2.1	98,193	68.2
11	3.9	3.1	76,963	53.4
12	5.7	1.0	67,806	47.1
13	2.6	0.8	35,186	24.4
14	4.0	0.3	42,609	29.6
15	2.8	1.9	50,748	35.2
16	2.1	2.4	50,131	34.8

Detailed summary and the HELP model output is included in Attachment 10A. Calculations showing the peak flow from each cell are presented in Attachment 10E.

10.9.1 Leachate Lateral Spacing

The initial analysis was to determine the spacing the leachate collection laterals in the leachate collection layers. While the high-flow geocomposite drainage layer (GDL) will quickly convey the leachate which gets to it, a key to landfill design is redundancy. Thus, NWM proposes including a series of perforated leachate collection piping in the 2-foot thick layer of sandy soils immediately atop of the GDL. The header pipe will convey flow from the laterals to the sump. Headers and laterals will be perforated and installed in a stone bedding, then wrapped by a 16 oz/s.y. nonwoven geotextile to maintain layer separation with the surrounding soils and provide additional protection of the underlying geosynthetics from puncture due to possible angularity of the stone bedding.

Based upon a series of HELP model runs, the spacing which maintained a head of less than 12-inches is 250 feet.

10.9.2 Leachate Collection Header and Lateral Sizing

As indicated previously, leachate collection headers and laterals are being include in the leachate collection system design. The pipes will convey any flow they intercept by gravity

to the leachate sump in each cell. Based on the peak flow in Cell 1 (the largest cell), the pipe sizes and pipe perforation sizing was confirmed to have adequate capacity of the anticipated flow. The configuration of each system is as follows:

- Leachate collection system header is 8" diameter HDPE pipe
- Leachate collection system lateral is 6" diameter HDPE pipe
- Perforations are 3/8" dia holes, two per row, a row every 6-inches, each row is rotated 90-degrees

Attachment 10C includes these calculations.

10.9.3 Leachate Pumps

Pump sizing is dependent upon two features: required flow rate and head loss to overcome. The required flows for each cell were assumed to be the same as the peak daily flows computed and included in Table 4, above. While the pumps are sized to accommodate this peak daily flow rate, the pump will not be in continuous operation. As indicated elsewhere, the pump will be equipped with transducers, or floats, to monitor leachate levels as it accumulates, so the pump can engage at a pre-determined level and pump down the leachate until the liquid level drops to a pre-set level (usually 6 inches above the pump intake to avoid burning-out the pump). Then, leachate will be allowed to build again. During drier periods (less rainfall) or after more waste is within the cell, the leachate flow rates will be less and the pump will operate less often.

For landfill application, the elevation difference between the intake and the discharge location is often the biggest driver of the head loss to be overcome. To determine the headloss, the elevation of the sump and the elevation of the discharge at the leachate storage tanks was the static head. The dynamic head is the friction loss associated with the force main pipe. Since smooth-walled HDPE is proposed for the force main, the friction loss is negligible, but actually tabulated using Hazen-Williams equation.

In the end, four pump models were specified for the 21 cells at the site, as summarized in Table 5 and presented in Attachment 10F.

Table 5 - Summary of Sump Pump Sizing for each Cell			
Cell or Sub-cell	Peak Leachate Generation (gpm)	Total Head (feet)	Selected Pump
1	91.9	124.0	Model 18-4 HP 5.0
2	54.5	55.5	Model 18-2 HP 3.0
3	34.4	37.6	Model 18-1 HP 1.5
4	38.2	34.9	Model 18-1 HP 1.5
5A	39.5	101.5	Model 18-2 HP 3.0
5B	23.9	93.2	Model 18-2 HP 3.0
5C	31.5	92.0	Model 18-2 HP 3.0

Table 5 - Summary of Sump Pump Sizing for each Cell (continued)			
Cell or Sub-cell	Peak Leachate Generation (gpm)	Total Head (feet)	Selected Pump
5D	21.4	87.6	Model 18-2 HP 3.0
5E	23.3	87.0	Model 18-2 HP 3.0
5F	12.8	87.4	Model 18-3 HP 5.0
6	40.8	111.7	Model 18-3 HP 5.0
7	53.4	125.8	Model 18-3 HP 5.0
8	43.3	109.7	Model 18-3 HP 5.0
9	29.4	102.4	Model 18-3 HP 5.0
10	68.2	122.9	Model 18-4 HP 5.0
11	53.4	69.8	Model 18-2 HP 3.0
12	47.1	68.4	Model 18-2 HP 3.0
13	24.4	60.9	Model 18-2 HP 3.0
14	29.6	59.1	Model 18-2 HP 3.0
15	35.2	57.0	Model 18-2 HP 3.0
16	34.8	61.2	Model 18-2 HP 3.0

*Pumps are made by EPG Companies.

It is possible the manufacturer may adjust the capabilities of these pump models over the life of the landfill construction and operation. As such, cells constructed later in the landfill operation timeline may have to order different pumps, due to manufacturer changes.

10.9.4 Leachate Force Main Sizing

Based on the same data use for leachate sump pump for each cell, the force main sizing can be checked. We assumed an extreme worst-case scenario where all sumps are pumping simultaneously at their individual design flow rates. The force main pipe flow increases by the contributing flow from each sump as it travels past the sump. As shown in the calculations provided in Attachment 10I the worst case TDH increase even for this extremely conservative worst-case assumption, is 5.7 feet for the pump in Sump 6 on Force Main No. 1. This is not considered excessive and does not warrant increasing the pipe size as a means of limiting head.

10.10 Summary of Leachate Storage Tank Sizing

The landfill will have two Leachate Storage Facilities as shown on Drawings 10 and 11, with details shown on Drawings 28 and 29. Facility No. 1 (for Cells 2 through 4 and 11 through 16) has a drainage area of 48.5 acres. Facility No. 2 (for Cells 1 and 5A through 10) has a drainage area of 65.9 acres.

Sections 10.10.1 and 10.10.2 describe the analysis of the peak flows for the leachate tanks.

10.10.1 HELP Analysis

Using the same simulations from which the peak daily rates were obtained described in 10.9 above, estimates were developed for the entire 12 year operational timeline. In general, multiple cells will be in operation each year – one nearing maximum filling grades, one actively filling, and one just beginning to fill. Due to the variety of cell size, some cells may be developed and operated at the same time as a larger cell. The benefit of the smaller cell size is reduction in leachate management.

Based on the construction sequencing for the landfill cells, there may be cells in operation for less than one year and others in operation for two years.

The following is a description of how the leachate timeline was developed.

1. Since the life of each cell is relatively short – most a few months, some for two (2) years – planning for cell construction will require that multiple cells be “grouped together”.
2. From the HELP modeling, each cell has peak daily flows for the first lift, mid-fill, and full-fill. The mid-fill and full-fill were estimated to be average heights for each cell for timeline design and modeling purposes.
3. From the cell life estimates, each cell has an estimated life, and collectively they provide twelve (12) years of landfilling. For each cell, mid-fill is associated with mid-life, and full-fill is associated with maximum waste grades. Since each cell has a different life, each cell group has a different total life.
4. The first cell is brought into service, and experiences the “first lift” daily peak flow.
5. At mid-life in the first cell, the first cell experiences the “mid-life” peak daily flow. At the same time, the second cell in the group is brought into service, and experiences its “first lift” peak daily flow.
6. At the mid-life of the second cell, it experiences its mid-life peak daily flow. At the same time, the third cell is brought into service with its “first lift” peak daily flow.
7. At mid-life, the third cell experiences its “mid-fill” peak daily flow.
8. All of the cells in the group are presumed to experience their respective full-fill peak daily flows at the end of the total life for the group.
9. Between any of the calculated peak daily flows, between first lift and mid-fill flows, and between mid-fill and full-fill flows, flow values were linearly interpolated.
10. A closure construction period of 10 months was assumed. Between the calculated flows for full-fill and post-closure year 1, peak daily flows for each month were interpolated.
11. Flows during post-closure months between calculated values were interpolated.
12. This arrangement continued for each cell, each group, and through a minimum of 10 years after the last cell is closed. The HELP model output shows that leachate continues

For example, refer to the tables in Attachment 10G, and consider the following:

Step 1: The first cell group includes Cells 11, 16, and 12, in that order.

- Step 4: Cell 11 is brought into service, and it has an estimated life of 8 months. In Month 1, the flow is the first lift peak daily flow.
- Step 5: At Month 4, the flow from Cell 11 is the mid-fill peak daily flow. Cell 16 is brought into service with its first lift peak daily flow. Cell 16 has an estimated life of 5 months.
- Step 6: At month 6, the flow from Cell 11 continues. The flow from Cell 16 is at its mid-fill peak daily flow. Cell 12 is brought into service with its first lift peak daily flow. Cell 12 has an estimated life of 5 months.
- Step 7: At month 8, the flows from Cells 11 and 16 continue. The flow from Cell 12 is its mid-fill peak daily flow.
- Step 8: In month 18, all three cells experience their respective full-fill peak daily flows. Cell 13 is brought into service with its first lift peak daily flow. Cell 13 is the first cell planned in the next group of cells to be constructed.
- Step 10: During the subsequent 10 months after Cells 11, 16, and 12 have been completely filled, closure construction takes place. Leachate flow from these three cells continue. Filling occurs in the next group of cells with their leachate flows.
- Step 11: Once closure of Cells 11, 16, and 12 is complete, the leachate flow begins to taper off. By post-closure year 7, modeling indicates flow will have ceased. Concurrently, filling and leachate flow continues from the next group of cells.

During the timeline, peak daily flows each month are summed to estimate the total peak daily leachate flow from the facility. At some point, the facility will experience a maximum total flow – a combination of peak daily flows from cells under different fill conditions, including cells that are being closed, and cells that are actively being filled.

Leachate Storage Facility No. 1 will serve Cells 11, 16, 12, 13, 14, 15, 2, 3, and 4. The peak daily flow is estimated to be 254,933 gallons. This is associated with the following fill conditions:

Leachate Storage Facility No.1 Peak Daily Leachate Flow and Fill Conditions	
Location	Fill Condition
Cells 11, 16, and 12	Post-Closure
Cells 13, 14, and 15	Closure construction in progress
Cells 2 and 3	At or beyond Mid-Fill
Cell 4	First Lift

Leachate Storage Facility No. 2 will serve Cells 1, 5E, 5F, 10, 9, 5D, 5C, 5B, 8, 5A, 7, and 6. 1, 16, 12, 13, 14, 15, 2, 3, and 4. The peak daily flow is estimated to be 245,579 gallons. This is associated with the following fill conditions:

Leachate Storage Facility No.2 Peak Daily Leachate Flow and Fill Conditions	
Location	Fill Condition
Cells 1, 5E, and 5F	Just at Full-Fill
Cell 10	First Lift

It should be noted that this evaluation is conservative as it assumes the peak daily rates for multiple filling conditions coincide. A shift in the peaks so that they do not align is expected. For example, the peak leachate generation from each stage of filling will vary based on the thickness of waste through which the leachate, produced as a result of a rainfall event, will migrate to the sump. A significant rainfall may result in the peak in a first lift condition on the same day as the rainfall, but a peak rate for a cell that is nearly full may not occur for 4 or 5 days after the rain event.

For the post-closure period, flows were based on the peak month of each post-closure year for that waste thickness within that particular cell. The HELP analysis shows that after a few years of closure, the peak month discharges is the same regardless of waste thickness.

During the life of cell construction and waste placement, surface run-on from adjacent areas will be diverted around waste placement areas, as shown on Drawings 38 through 44.

10.10.2 Leachate Storage Tank Selection

Per criteria under Sections 10.10.1, comparing the peak daily with average annual leachate production rates, the peak daily rates are typically three times the average monthly rates. Further, as indicated above, peak operational daily rates assume the peak production in each cell under differing fill conditions occurs on the same date.

If the average daily rates are one-third the peak daily values, then the average daily values is $255,000 \text{ gpd} / 3 = 85,000 \text{ gallons/day}$. By providing 1M gallons of leachate storage capacity in each Leachate Storage Facility, there will be 11 days of on-site storage for average daily flow from the filling condition which produces the highest peak daily operational leachate generation. The leachate generation volume calculations were prepared assuming that installation of the Closure Cap will be completed in groups of 3 cells at a time. This results in between 8.4 and 18.2 acres sitting in “full-fill” conditions when filling operations have been moved to other cells. Sequencing completion of filling in a manner allow installation of the Closure Cap in smaller areas more frequently will help reduce leachate generation rates.

10.11 Leachate Disposal

From the leachate storage tanks, the leachate will be hauled off-site for disposal.

We have received a favorable response from VLS Environmental Solutions (VLS) (formerly Environmental Recovery Corporation (ERC) of Maryland), located in Baltimore that they do receive rubble landfill leachate and they have provided a letter stating that they are capable of handling 40,000 gpd at 40,000 gpd at the Baltimore location and 110,000 gpd at their Lancaster Pennsylvania location. A copy of the original ERC quote and acceptance criteria for disposal, and the April 2024 VLS letter stating their capacity is provided in Attachment 10J.

Details and layout of the leachate management system are provided on Drawings 17 through 29. Detailed description pertinent to leachate collection system design and installation is presented in Section 10.0 "Leachate Management System" and in Section 14.0, "Construction Specifications", respectively.

Depending on the nature of the waste disposed, the levels of contaminants in the leachate, and the volume of leachate produced (which is directly linked to the amount of rainfall), the owner may choose, in the future to develop an on-site wastewater treatment plant to treat leachate and obtain a NPDES discharge permit.

Revised Report Text Section 11
Landfill Gas Management Plan (Revised May 4, 2024)

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11.0 LANDFILL GAS MANAGEMENT PLAN

11.1 General

This *Landfill Gas Management (LFG) Plan (LFGMP)* has been developed for the proposed Chesapeake Terrace Rubble Landfill to identify the landfill gas control and monitoring procedures and activities to be performed during the operation, closure, and post-closure periods of the landfill. The purpose of this LFGMP is to ensure that decomposition gases generated by the landfill are controlled to protect public health, safety, and the environment.

11.1.1 Nature and Composition of Landfill Decomposition Gases

Following placement of rubble fill in a disposal area, aerobic and anaerobic processes immediately begin degrading the waste. The degradation processes produce heat, water, and decomposition gases. A significant component of the decomposition gas is methane, which can account for approximately 40% of the decomposition gas that is generated. The remainder of decomposition gas is generally composed of carbon dioxide, hydrogen sulfide, carbon monoxide, nitrogen oxides, and trace amounts, typically less than 1% by volume, of contaminants known as "non-methane organic compounds" or NMOCs.

The methane component of landfill decomposition gas is generally the component of concern due to the relatively low explosive limit. In the pure form, methane is lighter than air, is clear and odorless. The lower explosive limit (LEL) for methane is 5% methane by volume and the upper explosive limit (UEL) is 15% by volume. Concentrations below 5% by volume will not ignite. Concentrations above 15% can ignite, but will not explode (NIOSH, 1997). The hydrogen sulfide component of rubble landfill decomposition gases may also be of concern due to the toxicity and odor.

11.1.2 Methane Compliance Limits

Pursuant to 26.04.07.21(5) of the Code of Maryland Regulations (COMAR), the compliance limits for methane gas are as follows:

- The Compliance Level for methane in facility structures, excluding gas control and recovery system components, is 25% of the LEL for methane, or 1.25% methane by volume; and,
- The Compliance Level for methane at the facility property boundary is 100% of the LEL for methane, or 5.0% methane by volume.

While this COMAR citation is for "municipal landfill", LFG can be an issue at rubble landfills depending upon the mixture of rubble waste disposed at any facility. This LFG system has been designed to provide active extraction, collection, and removal. If, during the course of operating the landfill, less waste that would contribute to higher levels of methane is placed, National Waste Managers (NWM) may pursue a permit modifications to downgrade the LFG Management System to a passive system instead of the active system describe herein.

11.2 Landfill Gas Generation Potential

The proposed Chesapeake Terrace Rubble Landfill is a rubble, or construction and demolition debris, landfill located in Anne Arundel County, Maryland, approximately 3 miles northwest of Crofton on State Route 424. The landfill is separated into two areas, designated as the West Section and the East Section. In general, the landfill is bounded on the west by the Patuxent Research Refuge, to the north and east by Patuxent Road, and to the south by Conway Road, across which is agricultural land and residential development.

The proposed Chesapeake Terrace Rubble Landfill will accept construction and demolition (C&D) debris waste (e.g., soil, concrete, brick, wood, metal, green waste – Refer to Section 2). Approximately 117 acres of the property on which the landfill is sited are proposed for waste disposal activities. The permitted waste disposal area is divided into two separate footprints, the West Section comprising approximately 84 acres and the East Section comprising approximately 31 acres. NWM expects the Landfill to provide approximately 12 years of life for construction demolition debris (C&D) disposal.

The amount and rate of landfill gas production within a landfill is dependent on several factors including:

- The amount of waste in-place;
- Waste composition;
- Waste moisture content and pH;
- Waste temperature;
- Quantity and quality of nutrients in the waste; and,
- Composition and effectiveness of the cover and cap materials.

The typical municipal waste stream is high in cellulose content (food waste, office paper), and will produce large amounts of landfill gas in a short period of time due to their rapid degradation. A rubble, or C&D, accepting the materials described above has a waste stream consisting of components with high lignin content that will produce lower volumes of landfill gas over a longer period of time.

The landfill gas generation rates have been predicted using the Landfill Gas Emissions Model (LandGEM) version 3.02 produced by the United States Environmental Protection Agency (USEPA). The model inputs include the anticipated refuse placement rates, a gas generation rate (k), a gas generation potential (L_o), and concentration of NMOCs (C_{NMOC}). The anticipated refuse placement rates are assumed to be 2,686 tons per day with 286 working days per year. The model was analyzed with the AP-42 default parameters as follows:

- $k = 0.04 \text{ yr}^{-1}$
- $L_o = 100 \text{ m}^3/\text{Mg}$
- $C_{NMOC} = 600$ parts per million (by volume) as hexane

It is assumed that the methane concentration is 40%. The results of the model are provided in Attachment 11A. The peak landfill gas generation occurs in 2036 (based on a start of filling in 2024), which coincides with the final closure cap construction period, and is 4,472 standard cubic feet per minute (SCFM) of landfill gas. The blowers and piping will be sized based on this maximum production rate corrected for collection efficiency of 75%, providing a conservative size for the majority of significant landfill gas production period.

11.3 Landfill Gas Monitoring System

Pursuant to COMAR 26.04.07.21(5), the LFG monitoring system for this facility has been designed to ensure the detection of decomposition gases prior to migration beyond the facility property boundary, into facility structures, or other structures located within the property boundary. To monitor this facility, a perimeter system of subsurface gas probes is proposed. The perimeter system (described in the following section) has been designed based on the subsurface conditions, surrounding property usage, the location of surface water bodies, the depth of the groundwater table, and in consideration of potential preferential flow pathways in the vadose zone, both natural and man-made. The perimeter system shall be in place prior to placement of waste in the landfill to ensure that landfill gas does not exceed the lower explosive limit (LEL) at the landfill property boundary or 25 percent of the LEL in facility structures.

11.3.1 Perimeter System

Pursuant to COMAR 26.04.07.21(5), solid waste disposal facilities are required to maintain a gas monitoring network capable of detecting the presence of decomposition gas in the vadose zone at the facility property boundary. The perimeter system proposed herein is designed to detect the presence of decomposition gases adjacent to the facility and within the facility property boundary. Gas probe spacing is at a maximum of 400 feet on center. The spacing of the gas probes is based on Maryland Department of the Environment (MDE) requirements. This landfill gas monitoring network consists of fifty-nine (59) gas probes to provide the necessary monitoring components for routinely determining compliance with COMAR 26.04.07.21(5) regulation. The gas monitoring probe plan is found on Drawing 85.

11.3.1.1 Perimeter Probe Construction

Boreholes for the proposed gas probes will be advanced using a mechanical drill rig equipped with 4.25-inch inside diameter hollow stem augers. During advancement of the soil borings, soil samples will be collected and logged in the field. Field descriptions will be transcribed to soil boring logs for future reference as needed. Boreholes will be advanced to the water table or the underlying low permeability clay confining layer, where present, to ensure that the entire vadose zone is monitored for the landfill decomposition gases.

The screened portions of the probes will be constructed from 1-inch inside diameter schedule 40 PVC casing slotted with two rows of 1/4-inch wide by 3-inch tall slots, 6 inches on-center, staggered, and offset 90 degrees. Following placement of the probe casing and screen, the annular space in the borehole will be backfilled to 3 feet below grade with washed pea gravel (minimum sieve size of 3/8-inch). Following placement of the gravel pack, a minimum 1-foot thick hydrated bentonite seal will be placed.

The remaining annular space in the borehole will be filled with concrete during placement of the locking well head and protective surface pad. The gas probes will be equipped with a 5/16-inch or similar size acetyl or polypropylene male quick-connect fitting with a built-in shut-off valve to facilitate instantaneous gas pressure readings during monitoring. Following placement of the protective casing, each probe will be affixed with a high visibility label identifying the probe number. Following construction of the probes, a surveyor licensed in the State of Maryland will locate the probes and obtain elevation data for the top of the PVC casings. Gas monitoring probe construction details are found on Drawing 88.

Soil boring and probe construction logs will be completed for the gas probes and retained with the facility's records. Soil boring logs will identify the method of drilling, subsurface soils and moisture conditions encountered during advancement of the soil borings, and total depth of the borings. Probe construction logs will identify materials used for construction of the probes, depth of the probe, top of the screen, and survey information.

11.3.2 Facility Structures

Pursuant to COMAR 26.04.07.21(5)(a), facility operators are required to include facility structures, exclusive of gas control or recovery system components, that are located on the waste mass or within 1,000 feet proximity to the waste mass. Based on these criteria, the monitored structures will include the equipment maintenance building(s), cell pump houses, Leachate Storage Facility control buildings, wheel wash building (if a closed building – or capable of being closed), and scale house(s).

11.3.3 LFG Monitoring Probe and Facility Structure Monitoring Procedures

The following sections outline the recommended procedures for performing required probe and facility structure monitoring for methane gas.

11.3.3.1 Monitoring Equipment

The GEM-500 or GEM-2000, or the latest version thereof, is the preferred monitoring device for monitoring probes and facility structures. Alternatively, a digital or analog manometer combined with a vacuum pump equipped monitoring device designed to measure methane gas concentrations (e.g., Industrial Scientific Gas Monitoring Meter) can be used for probe and facility structure monitoring.

In addition to the monitoring device(s), the following equipment and documents should be readily available during monitoring events.

- A copy of the facility's Landfill Gas Management Plan, and the project specific Health and Safety Plan. All documents should be reviewed by sampling personnel prior to leaving the office;
- Copy of the Standard Operating Guidance and the Operation Manual(s) for the equipment being used during monitoring;
- Blank copies of a Landfill Gas Monitoring Log. A sample Landfill Gas Monitoring Log is provided as Attachment 11DI;
- Calibration gas;
- Barometer (if available);
- Personal protection equipment (site specific);
- Field book;
- Waterproof pen;
- Calculator; and,
- Necessary keys (site specific).

11.3.3.2 Equipment Calibration

Gas monitoring equipment should be calibrated prior to each day's use in the field. Generally, one calibration per day is sufficient. In some instances where highly variable concentrations are being observed, it may be necessary to re-calibrate the monitoring device during the work day to ensure that instrument drift is minimal. Instrument drift can be checked with a calibration gas of known concentration. If more than a 3% differential is observed between the instrument reading and the gas standard during an instrument drift check, the unit should be recalibrated.

Calibration should be performed in accordance with the instrument manufacturer's recommendations using an approved gas standard. Generally, when monitoring probes, it is best to calibrate the unit with a standard composed of 15% or less methane. Calibration activities should be documented on a calibration log form or on the landfill gas monitoring log for future reference.

11.3.3.3 Field Observations

After calibrating the monitoring instrument, record the weather conditions at the site, including the barometric pressure and ambient temperature. The temperature and barometric pressure should be logged at the beginning and ending of each field day. Site specific barometric pressure readings are preferred. In the event that a barometer is not available, barometric pressure readings from a nearby weather station can be used.

Required monitoring measurements and observations should be recorded, in duplicate, on a monitoring log and in a field book, as a backup record keeping procedure. If the monitoring is performed with a device that electronically saves the monitoring measurements, the monitoring results should be recorded in a field book or on a field log after logging the data in the event that the monitoring device's memory is corrupted prior to downloading the information.

11.3.3.4 Reading Gas Levels at Probes and Facility Structures

Prior to monitoring the methane concentration in a probe or a facility structure, it is necessary to gauge the static pressure in the probe using a manometer. Ideally, the manometer, which must be “zeroed” prior to each usage, should measure pressure in inches of water. For monitoring probes, after zeroing the manometer, connect the quick connect fitting to the probe fitting and record the pressure on the monitoring log, noting if the pressure is negative or positive. For facility structures, place the monitoring device central to the facility or in the high point of the structure and take a reading with the quick connect fitting open to the atmosphere. In addition to quarterly monitoring of facility structures, a continuous methane monitoring device will be installed to alert occupants when 25% of the LEL is met or exceeded.

If the probe pressure is positive, connect the gas monitoring device to the probe using the quick-connect fitting, activate the vacuum pump, and record the steady-state concentrations of methane and any other gases of interest.

If the probe pressure is negative or zero, connect the gas monitoring device to the probe using the quick-connect fitting, activate the vacuum pump, and purge two casing volumes of air from the probe. After purging of the probe is complete, record the steady-state methane concentration and any other gases of interest.

Prior to mobilizing to the next probe, record the time of monitoring.

11.3.3.5 Monitoring Wrap-up

After required monitoring has been completed, a completed copy of the monitoring results should be placed in the facility’s operating record.

If any exceedances of the methane compliance level are noted in a facility probe, the facility operator should be notified of the exceedances prior to leaving the site. If methane is detected above the 25% LEL limit in a facility structure, the facility operator should be notified as soon as possible.

11.3.4 Monitoring Parameters

Pursuant to COMAR, perimeter gas probes shall be monitored for methane and pressure, and facility structures shall be monitored for methane. The monitoring parameters for this facility are as follows:

- Instantaneous pressure (perimeter probes only);
- Percent methane;
- Percent oxygen; and,
- Percent carbon dioxide.

An example landfill gas probe monitoring log is presented in Attachment 11D.

11.3.5 Monitoring Frequency

In accordance with USEPA requirements, facility structures and perimeter probes that are part of the facility’s landfill gas monitoring network shall be monitored on a quarterly (approximately every 3 months) basis. Monitoring results along with the probe location drawing will be forwarded to MDE on a semi-annual basis.

If the methane levels in the monitoring probes remain in compliance for a period of two (2) years, or eight (8) quarters, the frequency of monitoring can be scaled-back to annually with notification to MDE of the change..

In the event that the methane compliance level is exceeded, the monitoring frequency will increase to monthly until three consecutive months have passed without a methane compliance level exceedance, at which time the monitoring frequency will revert to quarterly.

11.4 Monitoring Results Evaluation and Response

Requirements for record keeping, and in the event of a methane compliance level exceedance, for notifications and mitigation are presented in the following sections.

11.4.1 Record Keeping Requirements

LFG monitoring results shall be maintained by the facility operator for the life of the facility and the post-closure care period. At a minimum, these records shall identify the following:

- Date and time of monitoring;
- Concentration of methane, oxygen, and carbon dioxide recorded in each gas probe and facility structure;
- Probe pressure, atmospheric temperature, and barometric pressure;
- A description of the weather conditions during the monitoring event;
- Name(s) of the personnel performing the monitoring activities;
- Description of the monitoring device used to perform the monitoring;
- Description of the procedures used to perform the monitoring activities; and,
- A number system to correlate monitoring results to specific locations.

11.4.2 Notification Requirements

If the compliance level for methane (25% of the LEL in facility structures and 100% of the LEL at the facility boundary) is exceeded, the facility operator shall perform the following activities:

- Take immediate steps, as necessary, to protect human health and safety. Depending on the location of the elevated methane gas concentration, immediate remedial action may consist of evacuation of impacted structures, venting of subsurface utility conduits or crawl spaces, or other measures deemed protective of human health and safety based on the risk level identified in association with the detected methane concentrations;
- Notify the MDE in writing identifying the compliance level exceedance. The notification shall identify the location(s) of the exceedance(s) and activities that have been completed or are planned to mitigate the compliance level exceedance(s);
- Implement monthly monitoring of the affected probes until such time as three consecutive months have passed during which the methane gas concentration in the affected probes has been less than the methane compliance limit. In the event an on-site or off-site structure designed for human occupation is determined to be impacted, monitoring of the structure once the initial methane gas has been dispersed will be implemented with one, or more, real-time continuous ambient gas monitoring devices, as determined by the site engineer. The monitoring devices shall be equipped with a visual or audible alarm system that is designed to activate at 10% of the LEL for methane (0.5 percent by volume).
- In the event that a subsurface conduit, excluding conduits associated with the facility's leachate collection and LFG collection systems, has been impacted,

monitoring of the ambient headspace within the conduit shall be conducted monthly, with more frequent monitoring performed as required by the site engineer in the event that access is required to the conduit by utility, contract, or site workers. Monitoring of the conduit will be conducted until three consecutive monthly readings with no exceedances of the methane regulatory limit have been recorded; and,

- Within 90 days of identifying the compliance level exceedance(s), implement a remediation plan for the methane gas releases and submit it to the MDE for approval and amendment of the facility's permit. The plan shall describe the nature and extent of the problem and the proposed remedy.

11.4.3 Landfill Gas Remediation Plan Requirements

Pursuant to industry standards, the *Landfill Gas Remediation Plan* shall identify the nature and extent of the landfill gas impacts and describe the proposed remedial action for mitigating the impacts. Gas control systems proposed in a *Landfill Gas Remediation Plan* shall be designed to:

- Prevent methane accumulation in on-site structures;
- Prevent methane compliance level exceedances at the facility boundary;
- Provide for the collection, treatment, and destruction/disposal of decomposition gases and condensate; and,
- Comply with Clean Air Act requirements, as applicable.

11.5 Gas Control System

Pursuant to COMAR 26.04.07.03B(9), an active LFG extraction system including ninety-nine (99) active gas wells is proposed to be constructed in the landfill rubble waste mass for the purpose of collecting and controlling landfill gas. As shown on Drawings 86 and 87, the landfill is separated into a West Section and an East Section that contain rubble cells 1 through 10 and 11 through 16 respectively. Details of the system design are presented on Drawing 86 through 88, as described in the following sections.

11.5.1 Gas Well Construction Specifications

All landfill gas extraction (LFGE) well borehole locations will be surveyed prior to construction for accurate placement and calculation of drilling depths. Boreholes for construction of the gas wells will be advanced using a 36-inch-diameter borehole. The boreholes will extend from the landfill surface to 10 feet above the low permeability components (i.e., geomembrane) of the liner system. A preliminary table of the gas well construction is provided as Table 11-1.

LFGE wells will be constructed from 6-inch diameter SDR-11 high density polyethylene (HDPE) pipe and will be screened from 10 feet below the landfill surface to 1 foot above the bottom of the borehole. If wells are constructed in a closed area, the casings will be extended through the 40-mil closure system geomembrane and sealed with a manufactured or field fabricated geomembrane boot. The annular space around the well screen will be backfilled with 1" to 3" washed gravel to approximately 9 feet below the landfill surface. The remaining annular space will be backfilled on top of a geo-fabric donut with a bentonite seal 2 feet thick and clean backfill to grade. The wells' casings will be extended to a minimum of 4 feet above the landfill surface, and will then be tied into the header/lateral system using a well head equipped with sample ports and a control valve as depicted on Drawing 88.

Following completion of the gas wells, the gas wells will be surveyed and a well construction log for each gas well (identifying the method of borehole advancement, subsurface materials, excavated waste temperatures, and well construction details) will be prepared by the Quality Assurance Contractor for gas well construction.

11.5.2 Construction Schedule

The construction of gas wells will follow filling operations of areas brought to or near design grades. The owner, at his/her discretion, may expand the gas system as they find necessary provided the rubble waste is of sufficient thickness for gas well installation.

11.6 Blowers and related equipment

The centrifugal blower system acts as the driving force to transfer the landfill gas from the interior of the landfill through the piping network and into the flare system for subsequent combustion. The blower system is equipped with two parallel blowers that may be operated independently to provide backup should the operating blower fail or operated together to provide increased capacity.

11.6.1 Blower Sizing

Each blower shall be specified to transfer 4,472 SCFM of landfill gas (total of 8,944 SCFM) from the extraction wells to the flare unit for combustion. The required size of the blower is determined by the total head loss (measured in inches of water column) generated from the friction encountered to remove and transfer the landfill gas through the piping network and into the flare unit. Microsoft Excel spreadsheet implementing Darcy-Weisbach equation for head loss was created to calculate the total head loss to determine the required vacuum. EPANET was used to model the piping network to understand the volume of LFG flow in each lateral and header as an input parameter in the Darcy-Weisbach equation. The model output is provided in Attachment 11B. The blower shall be sized to provide a vacuum of approximately 50 inches of water column at 87° F.

11.6.2 Blower Construction

The blowers shall be centrifugal type blowers. The advantages and specific design features of this type of blower are listed below:

- Constant efficiency; little wearing of internal parts; ample clearance throughout the blower.
- Since the centrifugal blowers all have outboard mounted bearings, no chance exists for lubricant to contaminate the air stream.
- Variable volume at constant speed - power varies directly with air volume requirement. No special bleed off devices are needed.
- Relatively constant pressure at constant speed.
- Centrifugal blowers produce unusually low noise; silencers are usually not required.
- Relatively lightweight; no special foundation is required.
- Centrifugal blowers produce a smooth non-pulsating air flow when operating at any point beyond the surge limit.
- Since horsepower is in direct proportion to the volumetric demand, an ammeter can be calibrated in CFM to indicate air flow when required.

11.7 Flare System

The flare system for the gas collection control system shall be a unit that meets the requirements of the Code of Federal Regulations, Title 40, Chapter 1, Section 60.18, 40 CFR 60.18. The flare shall guarantee over 98% destruction efficiency of NMOCs, and ensure a maximum exit velocity of 100 ft/sec. The flare is to be equipped with thermocouples mounted near the exit to monitor the flue LFG temperature and detect the presence of a flame. A flame arrestor will be installed in the landfill gas stream leading into the flare to prevent the flame from traveling upstream. The unit will be equipped with a fail-closed valve, which is actuated when a flame is not detected. Other features for the flare include:

- A temperature recorder;
- A flow meter and recorder; and,
- Propane pilot ignition system.

11.8 Landfill Gas System Operation

Operation of the LFGE system will consist primarily of regulating and adjusting the amount of vacuum available at each extraction well through the use of valves. This adjustment of vacuum, and therefore flow rate, is referred to as “balancing” or “tuning” the LFG system. A balanced system is one in which each well is adjusted to extract the maximum amount of LFG possible without causing excessive amounts of air to be pulled through the landfill cover and into the extraction system. Some of the tests performed to balance and ensure the efficient operation of the landfill gas system are:

- Flow rate into the flare;
- Percentage methane into the flare;
- Landfill gas temperature at the moisture separator;
- Percentage methane at each well;
- Vacuum at each well;
- Landfill gas temperature at each well; and,
- Flow rate at each well.

The proposed LFG system for the landfill will operated continuously, 24 hours a day, 365 days a year. A qualified operator will monitor the system operation as well as perform the testing, sampling, and adjustment as detailed on an item by item basis.

11.8.1 Wells

Because methane production in the landfill is dependent upon many factors, the amount of vacuum required to extract the LFG will vary by well and by time during the landfill life cycle. Generally, the vacuum is adjusted to maintain a level at or just below zero (i.e., from -1.0” wc to 0” wc).

In order to achieve and maintain a well-balanced system, vacuum, gas concentration, and LFG temperature are measured monthly at each well. In addition to these monthly tests, flow rates are to be periodically measured to help establish the correlation between vacuum and flow rate at each individual well.

Because LFG is generated at a mixture of approximately 40% methane, methane concentrations of less than 25% may be indicative of excessive air intrusion through the landfill cover. Conversely, high methane concentrations indicate that more landfill gas is being generated than is being extracted by the well. Therefore, methane concentration is the primary test used to determine if the flow rate should be increased or decreased. Oxygen levels shall be maintained below 3% and wellhead temperatures maintained below 130°F.

Vacuum is measured to establish its relationship with gas concentration and extraction rate at each well. Records are kept of these relationships to aid in determining the optimal flow rate to maximize landfill gas extraction and minimize air intrusion at each well. Instantaneous vacuum readings are to be used to correctly adjust the wellhead valve to the desired vacuum. Abnormal vacuum readings are indicative of and will be used to locate pipe blockages or restrictions caused by pipe failure or water blockage.

Temperature of the LFG will be measured and recorded quarterly at each extraction well to help detect the onset of air intrusion and the corresponding possibility of spontaneous combustion within the landfill. Although temperatures will vary for each LFGE well, they should remain

reasonably stable at a particular well. A sharp increase in landfill gas temperature accompanied by a decrease in methane concentration is indicative of combustion within the landfill.

11.8.2 Piping and Condensate Management

Due to the extremely corrosive conditions of the landfill environment, all underground laterals and headers are to be constructed of SDR-11 HDPE or SDR-17 HDPE pipe, or equivalent, piping. HDPE is resistant to the corrosive nature of the LFG and its associated condensate. Also, because of its' flexibility and durability, HDPE is well-suited to withstand the stresses imposed by differential settlement within the landfill.

Valves are located in the header pipe to isolate areas of the system when maintenance, repairs, or new construction is required. This allows the other portions of the system to continue to operate as normal, thereby minimizing system downtime.

Condensate sumps or leachate collection system tie-ins, located in the low spots of the piping system, are designed to collect and dispose of the condensate created as a result of the LFG cooling as it travels through the pipeline. These sumps are co-located at a leachate collection sump where condensate can be drained into the leachate collection system.

11.8.3 Blowers and Flare Equipment

A moisture separator is an expansion chamber located just upstream of the blowers. As LFG flows through the moisture separator, the decrease in pressure and the subsequent cooling of the LFG allows any remaining water vapor to condense. A liquid level switch on the moisture separator indicates when the liquid must be drained.

Operation of the blowers will be in accordance with the manufacturers recommended procedures and is to be controlled by switches on the flare control panel and valves located next to each blower unit. The redundant capacity of the blowers will allow the system to continue operating in the event of a mechanical problem in one of the blowers.

11.8.4 Flare System Operation

The system start-up will begin with a timed air purge cycle to remove any hydrocarbons from the flare enclosure. After the purge cycle is completed, the pilot flame is lit by an electrical spark. Upon proving the pilot flame with the thermocouple, the LFG fail-closed valve is opened and the LFG blower is started, allowing the LFG to flow into the flare enclosure. This allows the use of landfill gas for system warm-up.

After the LFG fail-closed valve has been opened, the pilot gas will then shut off to limit the propane usage. If a flame is still detected on the main burner, the system will continue operation; however, if a flame is not detected, the system will shut down due to flame failure.

The system temperature will be monitored by a thermocouple. If the thermocouple detects a temperature outside a specified operating range, the system will shut itself off. When the blower shuts off, the fail-closed valve is automatically closed to prevent the release of landfill gas from the system. Under normal operating conditions, the system may be set up to attempt to restart automatically. In the event of a failure, the flare will be equipped with a remedial action (i.e., auto-dialer) that will notify the Owners specified officer, to respond within 24 hours of flare failure.

11.9 Maintenance

11.9.1 Wells

All wells are to be inspected quarterly during normal testing as follows:

- Proper operation of valves;

- Leaks in exposed piping, valves, and fittings;
- Settling around wells; and,
- Water buildup in the piping.

11.9.2 Laterals and Headers

Laterals and headers will be inspected yearly by the Owner. There are several issues that can affect the flow of LFG through the piping system. Typical issues are leaks, breaks, and water blockage. If any issues are discovered through testing, sight, or sound, they are to be repaired as soon as possible.

11.9.3 Moisture Separator

The moisture separator shall be designed with a removable top. The top is to be removed every six months and the inside of the moisture separator inspected for corrosion and dirt buildup. Moisture separator fittings and pipe connections are to be inspected quarterly for signs of leakage and repairs made as soon as possible. The fluid level of the moisture separator will be checked quarterly, and the moisture separator will be emptied, if needed.

11.9.4 Blower Maintenance

Two blowers are to be installed to create a redundant capacity in the event that one should fail. Some of the important maintenance items are:

- Lubrication of bearings and motors;
- Inspection of bearing wear;
- Proper valve operation;
- Check for leaks in piping connections and valves;
- Check for vibrations and loose connections;
- Check electrical connections on blower motors and control panel; and,
- Other periodic maintenance recommended by manufacturer.

11.9.5 Flare

The maintenance required for the flare will normally be limited to checking and repairing any items that fail to function properly. The pilot fuel is to be checked monthly to ensure that an adequate supply is always available. If compressed gas is used to actuate the fail-closed valve, the gas valve and the tank pressure will also be checked monthly.

11.10 References

EPA (United States Environmental Protection Agency), 1991. *Air Emissions from Municipal Solid Waste Landfills - Background Information for Proposed Standards and Guidelines*. EPA/450/3-90/011A. March 1991, 544 pages.

EPA, 2005. *Landfill Gas Emissions Model (LandGEM) Version 3.02 User's Guide*. EPA-600/R05/047. May.

NIOSH (National Institute for Occupational Safety and Health), 1997. *NIOSH Pocket Guide to Chemical Hazards*. United States Department of Health and Human Services, 440 pages.

COMAR (Relative Sections)

Revised Report Text Section 12
Operations Plan (Revised May 4, 2024)

**SECTION 12.0
OPERATIONS PLAN**

**FOR
CHESAPEAKE TERRACE RUBBLE LANDFILL
ANNE ARUNDEL COUNTY, MARYLAND**

PREPARED FOR:

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**PROJECT NO. 2018-3854
JULY 2020
(Revised May 4, 2024)**

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LIST OF ATTACHMENTS

Attachments

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12B	-	Asbestos Waste Management
12C	-	Safety Plan
12D	-	Emergency Response Plan
12E	-	Alternative Daily Cover Fabric – Manufacturer’s Information

12.0 OPERATIONS MANUAL

12.1 General

The purpose of this Operation Manual is to serve as a guide for the daily operations, the training of landfill personnel, emergency procedures and the construction of future disposal areas for the National Waste Manager's, Inc. (NWM), Chesapeake Terrace Rubble Landfill.

This Operation Manual was prepared using the Maryland Department of the Environment (MDE) Code of Maryland Regulations (COMAR) Regulations 26.04.07.16 and 26.04.07.18. Sound engineering judgment and accepted solid waste landfilling techniques are the basis for the procedures outlined in this manual.

NWM is the Operator of this facility. For the purpose of this document, the term "Operator" refers to the person, persons, or entity responsible for daily operations at the facility. NWM is the owner of the facility and permits associated with the facility are maintained in the owner's name.

12.2 Purpose of the Manual

This Manual is designed to be the reference book for the personnel who operate or supervise the Chesapeake Terrace Rubble Landfill. It addresses rubble waste placement in the landfill.

The sections that follow present project operating instructions and include:

- Design criteria;
- Project facilities description;
- Normal operating procedures;
- Waste placement procedures;
- Leachate management;
- Safety and security programs;
- Monitoring requirements;
- Maintenance programs; and,
- Procedures for responding to emergencies that may arise in conjunction with landfill operations.

In addition, the NWM has developed guidelines, procedures, forms, and plans that support the operation of the facility and are included as Appendices A through D as follows:

Attachment 12A	Equipment and Personnel Requirements
Attachment 12B	Asbestos Waste Management
Attachment 12C	Safety Plan
Attachment 12D	Emergency Response Plan
Attachment 12E	Alternative Daily Cover Fabric

12.3 Service Information

The Chesapeake Terrace Rubble Landfill is located in Anne Arundel County Maryland. The rubble landfill will accept the types of rubble waste listed in the COMAR 26.04.07.13 summarized in Section 12.7.

The Chesapeake Terrace Rubble Landfill has a total design capacity of approximately 9.3 million cubic yards (MCY) (8.4 MCY compacted rubble, 0.9 MCY cover material). The average daily rubble intake used for calculating the life of the Landfill is 1,602 tons per day. At the average daily rubble intake rate and 5-day per week operation, the life of the Chesapeake Terrace Rubble Landfill facility is 12 years. The average daily rubble intake is used for estimating purposes and the actual rubble intake rate may lead to a different facility life span. The landfill will be operated until the design capacity has been reached, or the life allowed under the special exception has expired.

At that time, the landfill will be closed, maintained, and monitored according to the COMAR regulations and the facility's Closure and Post Closure Plan.

12.4 Personnel

12.4.1 Manpower

The manpower present at the landfill will vary according to the rate rubble waste is being accepted. The landfill operational staff shall consist of a minimum of a landfill manager, a scale operator, and two (2) equipment operators. The landfill manager and scale house operator will be in charge of the day-to-day operations including inspecting, monitoring, and recording incoming loads and directing traffic to the working face. Ultimate responsibility for accepting/rejecting waste shall rest with the landfill manager. The manpower presented in Attachment 12A is for several filling rate ranges of 500 to 7,500 tons of rubble waste per day. If filling rates increase or decrease, equipment and manpower will be altered accordingly.

12.4.2 Training

All employees will be trained for the jobs that they will be expected to perform at the landfill. The facility will have an Operator certified as a Manager of Landfill Operations (MOLO) through the Solid Waste Association of North America (SWANA). In addition, on-the-job training will be provided by NWM for all employees. The training will emphasize the safe and environmentally sound operation of the landfill.

All employees will be given safety training covering the equipment and systems that they will be expected to operate on a daily basis. The dangers associated with heavy equipment operation, truck traffic, waste unloading, use of personal protective equipment, methane gas and leachate handling, and the handling and precautions associated with special wastes such as asbestos will also be included in the safety training. Documentation of the employee's participation in the safety training will be maintained in the employee's personnel file and/or on-site files.

A training program for the more specific tasks, e.g., scale operator, will be documented with written records of meetings and types of instruction. This instruction will include identification of special wastes and unacceptable wastes; emergency procedures in case of fire, spill or injury; confined space entry; respirator use and fit testing; and other issues that could potentially arise from time to time. Documentation will also be kept on file at the main personnel office and reviewed annually for any necessary updates.

12.5 Site preparation

12.5.1 Specifications

Various aspects of the construction of the landfill disposal areas will be performed by the landfill personnel. Construction will have to be in compliance with the approved MDE permit and supporting construction documents. A copy of the Phase I, Phase II, and Phase III Permit

Applications and final state permit that includes the design report and engineering drawings shall be kept at the landfill site as reference documents to assist in construction activities and for daily operational questions. The Phase III Permit Application includes technical specifications, quality assurance/quality control plan, and other essential information describing construction activities.

Phase III Permit Application Technical Specifications

<u>SECTION</u>	<u>TITLE</u>
02100	Site Preparation
02110	Site Clearing and Grubbing
02125	Erosion and Sedimentation Control
02130	Monitoring Well Abandonment
02140	Construction Dewatering
02150	Shoring and Bracing
02220	Excavation
02223	Structural/General Fill
02224	Intermediate Cover
02225	Prepared Subbase Soil
02227	Articulating Concrete Mats
02231	Subsurface Drainage System
02232	Leachate Collection Layer
02233	Coarse Aggregate
02234	Protective Cover
02235	Vegetative Support Layer
02271	Stone Riprap
02402	Liquids Handling and Disposal
02418	Geocomposite Drainage Layer
02530	Geosynthetic Clay Liner
02595	Geotextile
02597	High Density Polyethylene (HDPE) Geomembrane
02598	Linear Low Density Polyethylene (LLDPE) Geomembrane
02607	Air Release and Check Valve Vaults
02612	Reinforced Concrete Pipe
02614	PE Drainage Pipe
02615	HDPE Pipe
02650	Leachate Collection & Removal System (LCRS)
02652	Leachate Side Slope Pumps
02653	Leachate Storage Facilities
02831	Chain Link Fence and Gates
02936	Seeding
03100	Concrete Formwork
03200	Concrete Reinforcement
03300	Cast-In-Place Concrete
13211	Bolted Steel Waste Water Tanks
13214	Leachate Pumping and Storage Controls System
13215	Pumps and Controls
15250	Leachate Pump House
15251	Pipe Insulation and Heat Tracing
16050	Basic Electrical Requirements

12.5.2 Quality Assurance and Control

Parameters used for quality control for the landfill disposal cells are included in the Phase III Report, the Construction Quality Assurance Plan, and the Technical Specifications. Refer to these documents for the quality control requirements. Reference is made to the facility's Closure and Post-Closure Plan for the quality assurance program and Technical Specifications specific to closure activities.

12.5.3 Timetables

Construction of the Chesapeake Terrace Rubble Landfill includes the development of 21 individual cells as shown on the Subgrade Grading Plans of the drawings (Drawings 10 and 11). Operation of the Chesapeake Terrace Rubble Landfill is expected to begin upon completion of Cell 11 construction and will last 12 years at an average rubble intake rate of 1,602 tons per day. Filling will begin in the East Section in Cell 11 and proceed as described on Drawing 63. When rubble reaches grades in an approximate 5 to 10 acre area, Closure Cap installation within that area will commence.

12.6 Operational Conditions

12.6.1 Operational Facilities and Services

As shown on the Drawings, operational support facilities include a scale house for vehicle weighing, a maintenance building for equipment storage and office facilities, and access roads. Support services include communication systems, water supply, and sanitary sewerage systems.

Potable Water	A well will be developed for drinking water and washroom facilities at the scale house.
Sanitary Facilities	Toilet facilities will be provided in the scale house building, and a septic system will be installed to provide on-site wastewater disposal.
Telephone	Telephone service will be provided in the scale house building – emergency telephone numbers and contact persons for fires, medical emergencies, spills of hazardous materials or other emergency situations shall be listed at this location at all times.
Communications	Landfill personnel will utilize portable 2-way radios (or other proven technology) to communicate between the scale house and the working face, or other on-site remote locations. Internet access will be available at the Scalehouse.
Other Facilities	Buildings will be provided near the scale house to serve as vehicle/equipment maintenance and equipment storage facilities. The landfill offices are located inside the maintenance building. Potable water supply and restroom facilities for landfill personnel shall be provided in accordance with applicable Anne Arundel County and State of Maryland regulations.

12.6.2 Site Access

12.6.2.1 Hours of Operation

In accordance with the Permit granted by Anne Arundel County, the landfill can be operated during the following times:

Monday through Friday	7:00 AM to 5:00 PM
Saturday and Sunday	No Operation

These hours may be amended as agreed by MDE and Anne Arundel County. The hours of operation will be posted at the entrance(s) to the facility.

Some non-operational type activities, such as leachate removal/transport, equipment maintenance, cell construction grading and capping, and general site maintenance and upkeep may be performed on weekends, however; no waste acceptance or disposal activities may occur on Saturdays or Sundays.

If demand for disposal of rubble waste increases, NWM may pursue a change in the hours of operation with MDE and Anne Arundel County.

12.6.2.2 Site Access Control

Site access will be controlled by surveillance using rubble landfill personnel. Persons on-site without the Owner's permission or legitimate business will be asked to leave the premises or risk arrest for trespassing. Access to the site will be limited to:

- Rubble fill and other Owner personnel.
- Customers depositing waste.
- State and local authorities.
- Persons with legitimate on-site business.
- Others as permitted by the Owner.

There is no public access to the site. As part of the construction, a new site security fence will be constructed around the entire proposed limits of disturbance.

With this security fence in-place, access to the site by the public will be limited to those times when authorized personnel are on duty at the facility. A locking gate will be provided across the entrance road(s) to prevent after-hours site access. At all times, the site will be fenced as required to prevent illegal dumping. Unauthorized persons are not permitted to enter the site at any time. Domestic animals will be excluded from the site.

12.6.2.3 Optional North and South Entrances

Over the life of the facility, the site will be accessed by up to three asphalt-paved entrance roads; one originating from Patuxent Road and two from Conway Road as shown on Drawing 2. The assumed East Entrance is the entrance approved by Anne Arundel County. In the event that the East Entrance is not constructed, the Optional North Entrance or Optional South Entrance may be constructed.

An emergency vehicle lane for the assumed East Entrance and allowance for emergency vehicle movement through the Operational North or South Entrance is also provided, whichever is approved at the time of construction. The site will be fenced with a locking gate across the access road(s) that will prevent after-hours access and illegal dumping. After entering the site, the vehicles will proceed to the scale area, where they will be weighed. The vehicles will then proceed to the appropriate unloading area. Vehicles without a documented tare weight, will be weighed as they leave the site, after dumping their load at the working face. Inspection of incoming waste will be performed at the unloading area.

It is anticipated that the facility will accept rubble waste at the rate of approximately 1,602 tons per day delivered to the site by semi-trailers. Under the assumption that each semi-trailer delivers 20 tons of waste to the site, 80 semi-trailers per day would be required to meet 1,602 tons per day throughput. It is expected to require approximately two minutes processing per vehicle to move a vehicle from the truck scale onto the landfill perimeter access road. During an 8-hour day with 1,602 tons per day, the average arrival rate of semi-trailers at the site would be approximately 6 minutes. In addition to waste disposal traffic, vehicles transporting recycled or reclaimed material from the site is expected. The number of loads per day will be a function of the amount of material recycled and reclaimed. If the proportion of such materials can achieve a level of 30% the number of additional vehicles would be 24 (assuming none of the trucks delivering waste are used for transport from the site, and all loads are made with 20 ton semi-trailers). In addition, the facility is expected to generate up to an average of 15 tanker truck loads of leachate per day that will be removed from the site.

In addition to queue lane provision (per Sections 3.4 of the Phase III Report), to accommodate any peak flow traffic events for any site entrance, inbound and outbound traffic will be controlled and given direction verbally, with signage, or other appropriate method. One outbound traffic lane will remain open for outbound trucks.

All vehicles traveling to the working face will drive down the access road to a landfill perimeter road and subsequently on an internal road to an active cell working face. These internal cell roads will be temporary and will move as the working face moves. Empty vehicles will exit the cell through internal roads to the perimeter road then exit the landfill via the entrance road. The entrance road is surfaced with asphalt pavement and crushed stone, as required by the Anne Arundel County Special Exception Permit for this landfill construction.

During wet weather when mud could be a problem on vehicle tires, all vehicles will be required to pass through the wheel wash. This wheel wash together with the paved access road are intended to eliminate tracking mud from the landfill perimeter access roads to off-site. Every effort shall be made to keep the entrance roads free of mud and dust.

In dry periods, water or other dust-inhibiting agents will be applied to the roads to keep dust to a minimum. When needed, additional gravel or other appropriate road materials will be applied to keep roads passable under all conditions. All roads will be constructed with a cross slope to ensure drainage from the roadway surface.

All visitors will report to the gate attendant or administrative staff on duty, sign in, and park in the designated area indicated by the attendant. No unauthorized visitors will be allowed on the site for any reason. Visitor parking spaces near the gate attendant are provided. A designated employee parking area is also provided near the landfill entrance.

12.6.3 Inclement Weather

In the event of inclement weather conditions, landfill design considerations will permit the continued operation of the landfill. Daily cover material will be stockpiled adjacent to the working face. The access roads will be kept passable at all times. In wet conditions, additional road base will be available to stabilize soft spots in the landfill's internal roads. During cold weather, salt and/or sand shall be applied to icy spots or access roads to ensure adequate traction. During windy weather, portable litter fences will be utilized at the working face to control blowing litter (See section 12.7.2 for additional detail).

12.7 Waste handling

12.7.1 Types of Waste

The landfill will accept only those wastes permitted in a rubble landfill as described by COMAR 26.04.07.13. Those materials area as follows:

- Land Clearing Debris, includes the following:
 - Earth material such as clays, sands, gravels, and silts;
 - Topsoil;
 - Tree Stumps;
 - Root Mats;
 - Brush and Limbs;
 - Logs;
 - Vegetation; and,
 - Rock.
- Demolition Debris, includes the following:
 - Acceptable demolition debris associated with the razing of buildings, roads, bridges, and other structures includes structural steel, concrete, bricks (excluding refractory type), lumber, plaster and plasterboard, insulation material, cement, shingles and roofing material, floor and wall tile, asphalt, pipes and wires, and other items physically attached to the structure, including appliances if they have been or will be compacted to their smallest practical volume.
- Unacceptable demolition debris includes industrial waste or byproducts, any waste materials contained within a structure or on the grounds of the structure being demolished that are not physically part of the structure, or which are comprised of or contain materials that pose an undue risk to public health or the environment.
- Construction Debris, includes the following:
 - Acceptable construction debris is structural building materials, including cement, concrete, bricks (excluding refractory type), lumber, plaster and plasterboard, insulation, shingles, floor, wall and ceiling tile, pipes, glass, wires, carpet, wallpaper, roofing, felt, or other structural fabrics.
 - Paper or cardboard packaging, spacing, or building materials, provided that they do not exceed 10 percent by volume of the waste, may be accepted at the rubble landfill.

- Paint containers, caulk containers, or glaze containers are acceptable, provided that they are empty and any residual material that is dried before acceptance at the rubble fill, and further provided that this waste category does not exceed 1 percent by volume of the waste accepted at the rubble landfill.
- Unacceptable construction debris includes commercial, domestic, or industrial wastes or byproducts, paint, tar or tar containers, caulking compounds, glazing compounds, paint thinner or other solvents or their containers, creosote or other preservatives or their containers, tile, paneling, or carpet cement or other adhesives, and other solid waste which may contain an unacceptable waste or substance as may be determined by the approving authority to be unacceptable.
- Tires. Scrap tires may be accepted at the facility and managed in accordance with the requirements of a scrap tire collection facility license issued under COMAR 26.04.08. Disposal of tires in a landfill is prohibited.
- Asbestos Waste. Asbestos waste is acceptable provided that the material that is received is packaged and labeled as specified in COMAR 26.04.07.13, and is managed in the following manner:
 - Prior notification to the landfill manager is required;
 - The waste asbestos is unloaded carefully to prevent emission of fibers into the air;
 - The area used for burial of asbestos shall be restricted to the working face of the landfill, or a separate cell dedicated solely to asbestos disposal;
 - The waste shall be completely covered with earth, other rubble, or alternate daily cover materials, and may not be compacted or driven over until sufficient cover has been applied to prevent the release of asbestos fibers to the atmosphere during compaction or application of other cover material; and,
 - Operators at the landfill shall be appropriately trained and wear respiratory protection approved by the National Institute for Occupational Safety and Health for protection against asbestos fibers, and protective clothing when considered necessary.
- Household Appliances and White Goods. Household appliances and white goods are acceptable provided that any refrigerant is removed from the appliances before burial in the landfill and is managed in accordance with §608 of the Federal Clean Air Act (42 U.S.C. §7671g).
- Processed Debris. Processed debris is acceptable because the facility is a rubble landfill having a liner and leachate collection system constructed to the standards as specified in MDE COMAR Regulations 26.04.07.16.
- Other Waste Materials. Waste materials not specifically listed in this section may not be disposed of in a rubble landfill before receiving written approval of the Approving Authority.

The proposed facility will not receive or dispose of hazardous waste.

12.7.2 Litter Control

Every effort shall be made to prevent litter from being blown off the landfill site. All vehicles shall be covered while on site to prevent loose waste from being blown out of the vehicles. Litter control fencing will be placed downwind from the working face to prevent litter from being blown away if blowing material becomes a persistent problem. All rubble waste will be covered as quickly as possible on windy days to prevent blowing wastes from leaving the working area. Daily cover will be applied at the minimum of the close of every third operating day to further control litter. Fences and site perimeters will be policed daily and collected litter will be deposited in the cell area being worked. Work areas and access roads will be kept clean by use of a street sweeper, tank truck and litter patrol.

12.7.3 Noise, Dust, Odor, and Vector Control

Noise

Noise levels are regulated by the State of Maryland. It is expected that the surrounding woodland vegetation and topographic conditions will limit the exposure of the neighbors to landfill operations. All vehicles associated with the landfill operation will meet OSHA standards for noise levels. Operation of site equipment that contributes to excessive noise shall be limited to operating only during approved hours for landfill operation and during landfill cell or cap construction efforts or noise mufflers will be added to the equipment.

If landfill personnel observe that mufflers fitted to equipment are damaged, personnel shall report the need to repair the equipment to the Landfill Manager who will schedule the required repairs, as soon as possible. If this damaged muffler results in the noise exceeding regulated levels, the affected equipment will be removed from service until repairs have been completed.

If noise levels recorded at the site boundary are determined to be above State of Maryland limits, the Landfill Manager (or his designee) will work with equipment manufacturers to further muffle equipment noise or upgrade equipment. The Landfill Manager may also choose to adjust his landfill operations to assure that noise levels do not exceed state limits.

Dust

Dust and airborne particulate matter are regulated by the State of Maryland. Levels of such matter will be in compliance with Maryland and local regulations, if applicable. Dust is created by excavating operations, hauling cover from stockpiles and covering/filling operations. Vehicular traffic along the aggregate portion of the access roads may raise dust during dry periods and in the summer. Dust will be controlled by sprinkling working areas with water. Stockpiles and excavation areas will be sprinkled periodically while being worked. During dry periods and in the summer, a water truck equipped with pump and hose will be available to add moisture when dust conditions arise. All paved roads will be swept or washed when dirt and mud have accumulated on them. Outgoing trucks will be routed through the wheel wash to limit the amount of mud tracked out of the landfill property during wet conditions. Water utilized for dust suppression outside of active waste disposal areas will be obtained from stormwater ponds and collection points that are also located outside the active waste disposal areas, and when such water is not available will be obtained from an on-site production well expected to be installed when the site is developed. Dust suppression within the active waste disposal areas may be performed utilizing stormwater runoff collected within the active cells, from stormwater ponds and collection points outside the active waste disposal area and/or from the on-site production well.

Odor

Odors are generally not a problem at rubble landfills, due to the nature of the waste materials accepted. All waste will be covered at 3-day maximum intervals or daily as required to control odor. The proposed design includes an active gas extraction system to mitigate decomposition gases (primarily methane) that can create odor issues.

Vector Control

Vector prevention can be accomplished by limiting the size of the working area, keeping waste confined and compacted, and providing the specified depth of cover. Special attention must be given to eliminating voids associated with bulky wastes. Excess cover will be added to fill up voids created by bulky waste and sufficient cover will be added to obtain compaction over this waste. If vector activity becomes a problem, a vector control program will be implemented through the County Health Department or through a licensed pest control/exterminator contractor.

Mosquitoes breed during spring and fall in this area. Eggs are laid in water or places that flood. In warm weather, the eggs of most species hatch in two to three days; eggs of other species require a drying period, and may remain dormant for months and hatch within minutes after being flooded by a spring or summer rain. Larvae (wigglers) that hatch from the eggs feed mainly on bits of organic matter in the water. Standing water and depressions will be eliminated by maintaining positive grading to prevent ponding, which will reduce the areas where mosquitoes may breed.

Flies and other insects are usually associated with municipal solid waste rather than rubble waste due to the non-organic nature of the rubble waste. Various species of bees, wasps and ants are present on the site and will be in close proximity during the entire operation. These insects cannot be entirely controlled because their habitat exists on the site and in close proximity to the site. Control of these insects at rubble landfills is possible at or near the operational area by keeping the area clean of vegetation and accumulation of organic debris outside the working face.

12.7.4 Open Burning

Open burning will not be permitted at the landfill. Burning of rubble waste is not allowed except as permitted by MDE and the local Health Department.

12.7.5 Placements of Waste in State Waters

No wastes of any kind are to be deposited in any state waters.

12.7.6 Salvaging

Salvaging of recyclable materials is to be permitted at the landfill site only by authorized personnel. No lead batteries or waste oil are to be deposited in the landfill cells. Waste tires and other unacceptable items will be separated from approved waste, segregated/staged in a designated area and then disposed off-site at appropriately licensed disposal or recycling facilities.

12.7.7 Filling Operation

Waste filling will be by the area method. Wastes shall be deposited in lifts in order to achieve the maximum practical density. Wastes will generally be deposited at the bottom of the lift in layers that are approximately 8 feet thick. For safety reasons, vehicles entering the waste deposition area will be segregated between small vehicles (pickup trucks and single axel dump trucks) and large transport vehicles, with small vehicles unloading at one end of the working face and large vehicles unloading at the other, or one type of vehicle going to one active cell area and the other going to another active cell area. (The procedures for unloading will be the same for both types of vehicles

with material being deposited at the bottom of the working face and then spread/compacted by the landfill equipment.) The waste will then be spread in subsequent, uncompacted layers of 8 to 10 feet thick and compacted by at least 3 to 5 passes (dependent on waste type) with a landfill compactor that provides the compactive effort of a Caterpillar 836, or other equipment that provides a greater compactive effort. The compacted lift shall have a maximum thickness of 8 feet.

The liner system includes a 48-inch thick layer of Select Waste over the 24-inch thick leachate collection layer. NWM shall notify MDE prior to placement of the Select Waste. The Select Waste shall contain no long pipes, boards, or other objects judged by the operator to be detrimental to the underlying liner system or leachate collection system. The protective layer may be spread in layers as thin as 24-inch thick for the initial lift and 12 inches for subsequent lifts (to facilitate inspection and removal of objects detrimental to the leachate collection system or liner), but the protective layer shall not be compacted until it has achieved a thickness of 48-inches.

If detrimental objects are found and removed, the operator will ensure that the object has not punctured the filter layer. Any detected punctures or penetrations will be repaired. The working face is to be kept as small as possible to ensure adequate compaction and to limit the amount of exposed waste. The maximum truck unloading area width is not expected to exceed 250 feet. This will allow adequate room for the anticipated peak traffic loading. A smaller working face may be technically possible, but this width is preferred by NWM for the safety of its employees and clients.

Due to occasional operational situations, NWM may rotate operations between three filling areas, each with an approximate area of 1-acre. During the rotation of operations among multiple filling areas, the total area will not exceed the 3-acres, and NWM will operate with the required number of equipment at each filling area to support the activities being performed, as specified in Attachment 12A. The operational situations that may necessitate multiple filling areas include, but are not limited to, rubble placement on side-slopes, placement of rubble to final grades, operation in a new cell, waste placement for an access road inside the landfill, or rubble placement during inclement weather.

NWM anticipates that the working face will rotate among these filling areas based upon the nature of the material being disposed. Due to the potentially diverse nature of material being disposed, NWM anticipates that no more than two filling areas will be designated as active working face on any given day. NWM envisions reserving the third filling area for placing select rubble fill or steep side slopes, building an internal access road in the landfill footprint, or other temporary condition.

At the end of each third operational day not less than six inches of compacted soil ("periodic cover material") or approved cover material shall be deposited on any exposed waste in the area of the working face, including the area of other dumping or push platforms. If a fabric-type alternate daily cover is used, the cover shall be deployed over the deposited solid waste in the working face at the end of each day by pulling the cover into position by the available heavy equipment and anchoring by placing soil over the corners of the fabric.

The fabric type cover(s) are not expected to exceed 150 feet by 150 feet in size and can be easily placed by the available personnel and equipment. Prior to depositing waste the next working day, the cover will be pulled from the waste with the available heavy equipment and stored in accordance with the manufacturer's recommendation. Refer to Section 12.7.8 for a discussion of alternate daily cover material (ADCM).

Intermediate cover of 12-inches (an additional six inches to the periodic cover material placed every third day) of compacted soil shall be applied on areas that will not have additional wastes deposited

for 30 days or more. Twelve inches of compacted soil cover will be utilized as intermediate cover in areas that have used approved alternate daily cover materials. The intermediate cover shall be graded to minimize infiltration and erosion, while not exceeding the maximum permitted final cover slope or 25%, whichever is less. Additional cover shall be applied or reworked on a weekly basis to any waste filled areas over which the cover is cracked, eroded or uneven.

Previously placed cover materials may not be reused.

As part of the operations when moving into a new cell, NWM will strip intermediate cover prior to placing waste along the interface between the two cells. The removed intermediate cover will be blended and spread within the waste lift. The removed intermediate cover may not be reused as cover materials. The maximum area that will be stripped at one time will be equal to the maximum working face specified in Attachment 12A and any exposed waste will be covered by six inches of compacted periodic cover at a minimum frequency of every 3 days. After the intermediate soil is stripped, the surface will be scarified to mix any remaining soil with the waste and to promote bonding between the new rubble and the existing rubble. Scarifying will be accomplished by “ripping”, back-dragging, tilling, disking, harrowing, or other methods to sufficiently scarify the surface.

12.7.8 Alternate Periodic Cover Material

Alternative Periodic Cover Materials (APCM) may be in use at site, with prior approval of MDE. For this project, the APCM being considered are as follows:

- Fabric-type alternate daily covers

The following table provides a summary of how fabric type covers meet the requirements outlined in COMAR 26.04.07.18.

APCM		Fabric-type Alternative Periodic Covers
May not contain free liquids, putrescibles, or toxic materials		The nature of this material prevents it from absorbing free liquids.
May not create a dust or odor problem		A fabric material will not contribute to dust generation nor will it emit odors.
May not attract or harbor vectors		By nature of this material (it does not contain putrescibles); it does not attract or support vectors.
May not impede compaction with standard compaction equipment		This material can be placed, then removed and reused. This material will minimize the amount of airspace lost to daily cover,

		thereby extending the life of the landfill.
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Manufacturer's information for fabric-type alternate daily covers is included in Attachment 12E to this Manual.

12.7.9 Handling of Special Waste

In the daily operation of the landfill, there will be waste types that require special handling. Examples of these wastes are bulky items, tires, and asbestos containing materials. The Chesapeake Terrace Rubble Landfill may accept these wastes when handled and/or treated as specified in the following paragraphs. No hazardous wastes are to be accepted at this landfill.

12.7.9.1 Bulky Wastes

Bulky wastes such as furniture or appliances need special handling to ensure proper compaction and placement in the working face. Bulky waste should be crushed on solid ground before placement in the working area, if possible. If not, the items should be deposited near the working face and run over with the compaction equipment until it is of suitable size. The item should then be buried in the toe of the working face and covered with waste. If any depressions are formed, they also should be backfilled with waste.

12.7.9.2 Asbestos Containing Material

Asbestos waste is acceptable provided that the material that is received is packaged and labeled as specified in COMAR 26.04.07.13 and is managed in the following manner:

- Prior notification to the landfill manager is required;
- The waste asbestos is unloaded carefully to prevent emission of fibers into the air;
- The area used for burial of asbestos shall be restricted to the working face of the landfill, or a separate cell dedicated solely to asbestos disposal;
- The waste shall be completely covered daily with earth or other rubble and may not be compacted or driven over until sufficient cover has been applied to prevent the release of asbestos fibers to the atmosphere during compaction or application of other cover material; and,
- Operators at the landfill shall wear respiratory protection approved by the National Institute for Occupational Safety and Health for protection against asbestos fibers, and protective clothing when considered necessary.

12.7.9.3 Tires

Scrap tires may be accepted at the facility and managed in accordance with the requirements of a scrap tire collection facility license issued under COMAR 26.04.08. Disposal of tires in a landfill is prohibited. The technical and operational standards as described in COMAR 26.04.08.17 include the following:

- Designation of Scrap Tire Storage Areas. For those scrap tire facilities that will store scrap tires, a scrap tire storage area shall be used. Only scrap tires, including processed portions and raw material, may be stored in the designated scrap tire storage area. This area shall be maintained free of excessive vegetation or other flammable materials.

- Scrap tires shall be stored indoors or outdoors under the specifications described in the "Standard for Storage of Rubber Tires", NFPA 230 (2003 Edition), National Fire Protection Association (NFPA), Batterymarch Park, Quincy, Massachusetts, which is incorporated by reference. A copy of this publication shall be maintained at the facility.
- NFPA Standards are superseded if they conflict with or are less stringent than:
 - Applicable State or local fire and zoning regulations or statutes; or
 - Provisions of these regulations.
- The Department may impose additional requirements on a scrap tire facility that stores scrap tires, including adequate on-site fire control equipment, based on the unique characteristics of a site that may affect the facility's potential to endanger the public health and safety, or the environment.
- A scrap tire facility that stores scrap tires shall be operated and maintained in a manner that controls mosquitoes and other insects or vermin to prevent public nuisances or health hazards.
- The site shall be engineered and constructed to keep any liquid runoff from entering waters of the State in the event of a tire fire.
- For those scrap tire facilities that store scrap tires, an up-to-date emergency preparedness manual shall be maintained at the facility at all times. This manual shall be submitted to the MDE for approval at the time the facility applies for a license or otherwise seeks authorization. Once accepted, the manual becomes part of the authorization. This manual shall be updated if a change in the operations of the scrap tire facility occurs, or if the Department requests an update. This emergency preparedness manual shall, at a minimum, contain:
 - A list of names and telephone numbers of persons to contact in the event of a fire, flood, or other emergency involving the facility;
 - A list of emergency response equipment present at the facility or available for use at the facility, the location of the equipment, and how it should be used in the event of a fire or other emergency;
 - The procedures to be followed by facility personnel from discovery of an emergency until the situation is corrected, including the measures that shall be taken to minimize the occurrence, recurrence, or spread of fires, explosions, and releases;
 - The location of known water supplies, fire hydrants, dry chemical extinguishers, or other materials that may be used for fire fighting purposes;
 - Provision for reporting emergency situations to the Department without delay; and,
 - Provision for familiarizing all employees with the requirements of the emergency preparedness manual.
- An emergency preparedness manual may not be approved by the MDE unless the applicant demonstrates that police and fire protection services are available for the facility.

12.7.9.4 Hazardous Waste

No hazardous wastes are to be accepted at this landfill. If they are identified at the time of delivery they shall remain on the truck and the truck and NWM shall reject the load, notify the transporter or generator of the reason for rejection.

If hazardous waste is identified in an accepted load, NWM shall separate and handle the waste material in accordance with COMAR 26.13.02 Disposal of Controlled Hazardous Substances; notify MDE via phone within 2 hours of discovery. Within 5 days, the facility shall prepare and submit a written report containing the following information:

- Name of the source (if known)
- Name of the transporter (if known)
- Circumstances of discovery
- Description of efforts to secure and control the waste and any releases of pollutants from the waste.
- The current location.
- Final disposition of the waste (if known)

12.8 Equipment and Equipment Maintenance

The landfill is to be equipped with several pieces of heavy equipment and various pieces of support equipment. The heavy equipment is used for compaction of the rubble waste and excavation of cover materials. There are various pieces of support equipment used for mowing, maintenance work and other related tasks. Appendix A lists the equipment that should be available for landfill use. The actual equipment used will vary as new and improved equipment becomes available or the waste stream quantity and composition changes. Equipment breakdown will not be an operational problem providing backup is available. In the event of equipment breakdown, NWM will make every effort to obtain rental equipment or a replacement if necessary for normal operations within 24 hours.

The guardhouse, leachate storage controls and equipment, and leachate collection and conveyance system shall be equipped with sufficient standby backup power to operate those systems during a power outage. The capacity and configuration of the backup power supply shall be detailed in the electrical Building Permit application submitted to the County. The facility shall also maintain at least one towable generator power lighting tower at the site for emergency use.

12.9 Compaction and Cover

12.9.1 Compaction

After the rubble waste is deposited at the base of the working face, the waste shall be spread out in approximate 8-foot thick layers and run over by the compactor with at least 3 to 5 passes depending on waste type. This operation of placement and compaction shall continue until the desired lift height has been reached.

12.9.2 Lifts

The height of the compacted lifts shall be limited to 8 feet. This will ensure that the waste is properly compacted. The maximum 8-foot compacted lift is dictated by COMAR Sec. 26.04.07.18(E). Based on the anticipated waste generation rates and the approximately 250 foot width of the working face, the amount of cover material needed will also be minimized. The surface

of the lifts shall be sloped and compacted to prevent runoff to completed fill areas (i.e. areas protected by Final Cover or Closure Cap), or to areas beyond the limits of the liner system. The periodic and intermediate cover layers should be graded and compacted to minimize infiltration and erosion prevent standing water at the working face. The limit of the liner system during stages of construction shall be defined by the completed anchor trench in the perimeter berm or the inter-cell berm (Drawing 14). The runoff from within the active filling areas is intended to enter the leachate collection system and flow to the cell sump, where it will be removed by the submersible pump and conveyed through the double containment piping system to the leachate tanks. The inter-cell berm also functions to prevent the inflow of clean runoff from the adjacent undeveloped or unfilled areas. Water from outside the waste disposal area is not allowed to flow into the waste disposal area. Once waste placement begins within a cell, all runoff occurring in the cell must be handled and disposed as leachate.

12.9.3 Periodic Cover

By the end of the third day's operation, or more frequently if required, the working face and any other exposed wastes will be covered by a minimum of six inches of uniform compacted clean soil. The cover soil will be graded to minimize infiltration and erosion, and prevent ponding of water at the working face. compacted by a bulldozer or compactor. This will help reduce litter, odor, fire hazard, and vectors. Cover for asbestos waste in the specially designated asbestos waste disposal area is discussed in the Asbestos Management and Disposal Plan (Appendix B).

Cover soil will not:

- Contain free liquids, decaying or toxic materials. Moisture present in the cover material solely as a result of precipitation is not free liquid.
- Create a dust or odor problem.
- Attract or harbor animals or insects.
- Impede compaction with standard landfill equipment

If a fabric-type alternate periodic cover is approved by MDE, the cover shall be deployed over the deposited rubble waste (including exposed waste at the tipping area and other dumping or push platforms) by pulling the cover into position by the available heavy equipment and anchoring by placing soil over the corners of the fabric. The fabric type cover(s) are not expected to exceed 150 feet by 150 feet in size and can be easily placed by the available personnel and equipment. Prior to depositing solid waste the next working day, the cover will be pulled from the waste with the available heavy equipment and stored in accordance with the manufacturer's recommendation.

12.9.4 Intermediate Cover

Weather permitting, intermediate cover of compacted soil will be provided over the waste disposal areas not to be used for a period of 30 days or more. Intermediate cover will be compacted by a bulldozer. The intermediate cover shall be graded to minimize infiltration and erosion, while not exceeding the maximum permitted final cover slope or 25%, whichever is less. The intermediate cover layer shall have a minimum thickness of twelve (12) inches. The intermediate cover shall be graded to prevent ponding and promote positive drainage away from the waste cell and working areas.

A 12-inch layer of intermediate cover is also required after each 8-foot lift is placed.

12.9.5 Final Cover

Not later than ninety (90) days following the completion of filling operations as indicated on the Final Grading Plan drawings, Final Cover layer must be applied. Final Cover will consist of a uniform compacted layer of earthen material not less than 2-feet thick. The Final Cover layer supports the 40-mil LLDPE, a geocomposite drainage layer components of the Closure Cap.. No slopes shall be more than 25% or less than 4%. Cross slopes across the surface of the Cover Soil layer beneath terraces and cap access roads shall be 7%. All depressions and low spots shall be filled and the cover graded to promote drainage away from the cell to the proper drainage controls.

12.9.6 Closure Cap

The Closure Cap is installed over the Final Cover Layer. Closure Cap installation must be started within 24 months after reaching top of waste elevations, and be completed within 36 months of reaching top of waste elevations. The Closure Cap consists of a 40 mil geomembrane (textured on both sides), geocomposite drainage layer, 18-inches of Protective Cover Soil and 6-inch thick Vegetative Cover Layer.

12.9.6.1 Closure Cap Geosynthetics

The Closure Cap geosynthetics consist of a geocomposite drainage layer, with a triplanar drainage net and 8 oz./s.y. nonwoven geotextile heat-bonded to both sides; and a 40-mil textured on both sides, linear low density polyethylene (LLDPE) geomembrane with a permeability less than or equal to 1×10^{-10} cm/sec.

12.9.6.2 Protective Cover Layer

The protective cover layer component of the Closure Cap consists of the following components:

12.9.6.3 Vegetative Cover

After the final cover has been applied, a vegetative cover must be established on the cell to prevent erosion. The final grading and landscaping shall be as designated in the final Closure and Post-Closure Plan and drawings. Lime and fertilizer will be applied as necessary to ensure that the vegetative cover is well established. Specifications for seeding of the final cover are attached to the Closure and Post-Closure Plan. Specifications for seeding in other disturbed areas are contained in the Phase III Permit Application.

The final vegetative support layer shall be planted with grass after installation. Ground cover must be maintained by cutting and repairing damaged or eroded areas. Slopes must be maintained by grading and filling to eliminate ponding and to correct for settlement. All seed and mulch, topsoil, fertilizer, lime, sod and all other landscaping items shall conform to and be installed in accordance with the Anne Arundel County Soil Conservation District Specifications. For problem erosion areas, use of a synthetic soil stabilizer is recommended. As part of the closure cap construction, installation of stormwater management terraces and downchutes will be constructed as shown on the Drawings 32 and 33.

12.9.6.4 Protective Cover Soil

The Closure Cap includes a 24-inch thick layer of soil placed on top of the geosynthetic cap components. The uppermost 6-inch thick layer of protective cover soil is the vegetative support layer. Approved materials are defined in the Specification (Section 14.0) and included topsoil reserved from the landfill cell construction, imported topsoil materials, or other material capable of supporting vegetation. The 18-inches of protective cover soils underlying the topsoil and setting directly on the

cap geosynthetics shall have a permeability not exceeding 1×10^{-5} cm/sec and meet the other requirements described in Specification Section 02234.

Cracks or fissures, caused by dry soil, may occur in intermediate cover, Final Cover and Protective Cover layers. This condition, which allows water to enter the fill, shall be corrected by regrading and revegetating the cover.

12.9.7 Stockpiles

Soil shall be stockpiled to ensure there is enough material for approximately nine days worth of cover soil. The stockpiles shall be as designated on the Design Plans or in other suitable areas. Proper erosion control devices shall be implemented for all stockpile areas.

12.9.8 Alternate Periodic Cover

- Fabric: Section 12.7.8 describes the use of a fabric-type periodic cover.

12.10 Safety

Attachment 12C contains the Safety Plan that describes safety procedures to follow for work at the Chesapeake Terrace Rubble Landfill. Attachment 12D contains the Emergency Response Plan developed to assist the personnel at the Chesapeake Terrace Rubble Landfill in the event of an emergency. The safety plans are in compliance with state and local ordinances as well as requirements of the Occupational Safety and Health Act of 1970 (OSHA). Records are to be maintained to verify attendance of safety and training meetings.

12.11 Inspection Plan

An inspection plan shall be implemented to ensure that all of the major aspects of the facility are in compliance with the COMAR regulations for rubble landfills. The major areas requiring inspection are incoming rubble waste, leachate collection, conveyance and storage system, storm water conveyance system, erosion and sedimentation controls, roads and facility structures, equipment used in operations, landfill gas management system, and groundwater monitoring system. Records are to be kept of the inspections and made part of the facility operating record.

The Inspection Checklist included in the Closure and Post-Closure Plan may serve as a guide for inspecting and monitoring on-site systems during active landfill activities as well.

12.11.1 Incoming Rubble Waste Inspection Plan

The incoming rubble waste to the landfill shall be visually inspected by the landfill manager or scale operator to ensure that it does not contain any undesirable waste. The landfill manager or scale operator will keep records of all incoming materials and ascertain whether the material will be accepted or rejected. Operational personnel will be trained to recognize and identify prohibited and hazardous waste. Vehicles shall be inspected at the scale house and by the operators who will be coordinating the placement of waste and visually inspecting all incoming waste as it is unloaded. If undesirable waste is encountered, the load should be isolated and the driver and waste generator's driver's license number recorded. Unless a safety concern exists, the driver shall remain with the vehicle on the site until the landfill manager or his designee can examine the load and determine the proper course of action. If the waste is determined to be regulated, the MDE and the owner of the facility are to be notified immediately (See Section 12.7.9).

12.11.2 Leachate Collection System Inspection Plan

The leachate collection system consists of many different parts, including the piping, sideslope risers, leachate sumps, the force-main, various pumps, manholes, and storage facilities. All of the portions of the leachate collection system that are to remain under the rubble waste shall be checked before any rubble waste is placed in a cell to be sure that the pumps are operating properly and that there are no blockages of the piping.

After the initial startup and inspection, a yearly visual inspection and cleaning of the line (if necessary) should be performed by the landfill manager. All pumps are to be pulled yearly and serviced/inspected. All the manufacturers' recommended periodic maintenance shall be performed at this time. This shall include replacement of the pumps, if necessary. The force-main shall have the same maintenance as the leachate piping and pumps. The storage facilities shall be inspected on a regular basis to check for leakage or other defects.

When inspecting the leachate collection system, be especially careful as methane can be trapped in manholes or other places and could cause explosions. Leachate is of unknown content, so caution should be taken in handling leachate. Protective clothing should be worn whenever working with the leachate collection system, and confined space entry procedures shall be used when appropriate.

If leachate seeps are observed during the leachate collection system inspection, the following steps will be taken to correct the seep:

- Excavate the area around seep down to source if possible;
- If source cannot be found, excavation shall be deep enough to direct leachate down towards leachate collection system;
- Backfill excavation with excavated waste and daily cover material; and,
- Repair intermediate cover layer, as necessary.

The landfill manager shall inspect the repaired area after the repair to ensure that the seep has been eliminated.

12.11.3 Stormwater Conveyance System Inspection Plan

The stormwater conveyance system consists of sediment basins, pipe, and ditches. Quarterly inspections should be performed by the landfill manager to ensure that pipes and ditches are free of obstructions and that there is no visible damage to the system. In addition, the storm water conveyance system will be inspected immediately after major storm events, defined as 0.5-inches, or more, of rainfall in a 24-hour period. If culverts have been used, check to see that the ends are still open and, if they have been crushed, repair or replace them. Periodically regrade the roadside ditches to prevent standing water and ensure adequate capacity. If sediment has accumulated in stormwater conveyance structures to a depth greater than one foot, they should be cleaned out in an appropriate manner. The sediment basin should be cleaned out when sediment has accumulated to the clean out level.

Sediment control and stormwater management devices in-place at the beginning of construction shall be operational throughout the life of the landfill or as detailed on the final sediment control plans, and therefore must be repaired or replaced as required. Particular attention shall be directed to earth dikes and diversion ditches, to prevent surface water from entering the fill. Basins shall be cleaned of sediment when cleanout elevations are reached.

Generally, all exposed earth surfaces that show signs of erosion must be restored and protected with seed and mulch, mulch only, riprap or a synthetic stabilizer, depending on the location and severity.

12.11.4 Erosion and Sedimentation Control Inspection Plan

The erosion and sedimentation control devices will be inspected concurrently with the stormwater conveyance system inspection. If any of the control devices are found to be damaged, they are to be repaired or replaced or upgraded with a more robust control device, as soon as possible. Whenever sediment accumulation in a sediment basin exceeds one-half of the ponds storage capacity, the operator shall remove the accumulated sediment to restore the pond to its design storage capacity.

12.11.5 Roadways and Facility Structure Inspection Plan

Roadways are to be kept clear of mud and dust, and kept in passable condition at all times. Roadways shall be inspected monthly by the landfill manager. New surface gravel/stone will be applied to gravel/stone roads to keep them in passable condition. Potholes and ruts should be filled as soon as they occur. Roads shall be periodically regraded to maintain a cross slope and to keep water from ponding on the roadway surface.

Access to the working face will be provided by temporary cell access roadways, which will be a minimum of 12-inch thick compacted dense graded aggregate, with a minimum width of 24 feet. The temporary access roadways within the cells shall be designed with turning radii adequate for the hauler trucks; vertical grades shall not exceed 15%. All aggregate roads shall be maintained to continuously provide a compacted surface suitable for truck traffic. An aggregate stockpile shall be placed on the site to provide replacement material, as necessary.

All facility structures shall be inspected on a routine basis as determined by the landfill manager. Repairs will be performed whenever necessary to preserve the integrity of the facility.

12.11.6 Equipment Inspection Plan

The equipment used at the landfill shall be inspected each day of operation by the respective operators for any visible signs of deterioration or malfunction. Any daily required maintenance shall be performed as required and the fluid levels checked. This shall include any attachments or accessories that will be used with the equipment. Equipment is to be serviced routinely as suggested in the service manual for each piece of equipment. During routine maintenance, equipment shall be steam- or high-pressure water cleaned, at designated areas (like the wheel wash building) to facilitate inspection of the equipment for signs of wear or deterioration that is not easily visible to the operator. Proper records of all maintenance are also required for each piece of equipment.

12.11.7 Areas Subject to Spills Inspection Plan

A Stormwater Pollution Prevention Plan (SWPPP) is in the process of being prepared and will be submitted to MDE under separate cover. The SWPPP will contain requirements for conducting site operations in a manner to limit impacts to stormwater runoff and prevent spills and releases. The fuel storage area, equipment maintenance area, generators, leachate transmission lines and flare paddock are all facilities subject to spillage that could have significant adverse consequences. Details related to routine inspection, record keeping and responses to releases related to spill prevention will also be provided in the SWPPP.

The fuel storage area will consist of an aboveground tank, waste oil tank and possible used battery storage. These facilities will be surrounded by an earthen containment of adequate capacity to hold the entire contents of the tanks should a spill occur. If a leak occurs, it will be observed during the daily usage of the fuel tank. If this happens, the spilled fuel in the containment will be pumped into a tanker truck, and the tank will be emptied and repaired.

The leachate force main be contained in double-wall pipe where it is outside the landfill liner system. This double-wall pipe will be checked at the cleanout vaults for leakage between the inner and outer liner on a monthly basis.

12.11.8 Gas Management System Inspection Plan

The gas management system will be inspected as described in the Landfill Gas Management Plan (LFGMP) (Section 11.0 of the Phase III Permit Application). The landfill gas extraction (LFGE) system will be monitored monthly and the gas monitoring system will be monitored quarterly by qualified personnel. Refer to the Landfill Gas Management Plan for more details.

12.11.9 Groundwater Monitoring System Inspection Plan

Groundwater monitoring wells are used to measure groundwater levels and as sampling stations to test groundwater quality. A detailed groundwater monitoring plan is provided in Section 17.0 of the Phase III Permit Application. Certain elements of the groundwater monitoring system will require periodic inspections. The inspection of the groundwater monitoring system will be performed concurrently with the collection of samples and the results provided in the respective groundwater monitoring report. All wells are to be inspected as follows:

- Well casings are to be checked for signs of damage;
- The cover of the wells will be examined for signs of cracks or other deterioration that would prevent a weather tight seal;
- The lock should be checked for proper operation and replaced if necessary;
- The concrete base around the well should be examined for cracks and to ensure that it repels water from around the base of the well. Look for signs of erosion that could undermine the base;
- All components of the well should be checked for signs of deterioration and replaced or repaired if necessary;
- Examine the inside of the well for signs of plugging or other foreign objects; and,
- Check the immediate area of the well for visual signs of possible contaminants.

Any portions of the groundwater monitoring system that are found to be deficient shall be repaired or replaced as soon after detection as possible.

The perimeter monitoring probes will remain in-place indefinitely but some monitoring wells will be removed prior to placing waste in the area occupied by the device. Removal of monitoring wells must be performed by a well driller licensed in the State of Maryland in accordance with the provisions of COMAR 26.04.04. Monitoring wells remaining in place must be protected and maintained throughout the landfill operation and beyond.

12.11.10 Safety Equipment Inspection Plan

Various pieces of safety equipment will be specifically available for use by personnel. Other pieces of equipment will be standard on certain pieces of machinery and in designated buildings. Inspections shall be performed monthly and in accordance with manufacturer's specific instructions and frequencies. Below is a list of some of the equipment requiring periodic inspection.

12.11.10.1 Fire Extinguisher

Check periodically to ensure they are in the designated locations. Check the individual extinguisher for proper charge and to ensure they have no visual defects. Fire extinguishers on landfill operations equipment shall be checked daily prior to operating the landfill equipment or whenever the equipment is used. A check of the fire extinguisher on each piece of landfill equipment is included on the mechanic's/operator's daily inspection checklist. Be sure to follow the manufacturer's maintenance schedule.

12.11.10.2 First Aid Kits

Check to ensure they are in the required locations. Inspect each kit on a monthly frequency to ensure that all items are properly supplied and that no items have passed their expiration date. Re-supply as needed.

12.11.10.3 Personal Protective Clothing

Check for signs of deterioration and tears. Check to see that there is ample supply for all personnel and that appropriate sizes are available. For eye wear, check lens for scratches or cracks and replace as needed. These checks shall be performed monthly and whenever the item is used.

12.11.10.4 Respirators

Perform inspections per the manufacturer's specifications before each use. If using a cartridge-type respirator, be sure that any cartridges being used are of the correct type for the anticipated environment.

12.11.10.5 Detection Devices

On a monthly basis, inspect visually for signs of worn or broken pieces. If the device must be calibrated by the manufacturer, check to see that the calibration certification has not expired.

12.11.10.6 Emergency Lighting

On a monthly basis, check to see that the lights are operational and are in good repair. Any safety equipment found to be deficient shall be repaired or replaced immediately. A Site Safety Plan is provided in Attachment 12C.

12.12 Control and Monitoring of Liquids and Gas

12.12.1 Leachate Management

12.12.1.1 Handling of Leachate

Care must be exercised when handling leachate. All personnel that will be engaged in the handling of leachate will be specifically trained in the use and operation of the leachate management system, including pumps, pipes, valves, storage tanks, personnel protective equipment, loading and unloading of leachate, and spill prevention techniques.

12.12.1.2 Collection

Leachate from the Chesapeake Terrace Rubble Landfill is collected via the leachate collection layer and subsequently flows to the leachate collection sumps. The leachate collection system is designed to operate automatically to remove leachate present in the sump so that it does not exceed one foot of head over the liner system. Pumps in the leachate collection sumps will automatically pump the leachate to the leachate Force Mains. Once in the Force Main, the leachate will be routed to one of two leachate storage facilities described in Section 12.12.1.2.2 of this Plan.

12.12.1.2.1 Leachate Pumps

The submersible pumps and accessories for each landfill sump will be manufactured by EPG Companies or engineer-approved equivalent. Existing electrical power supply for pump operation is located near the site in Patuxent Road and Conway Road rights-of-way.

Prior to beginning the landfill operation in each new cell, the operator will ensure that both pumps (primary and redundant) are installed in the cell sump and fully operational.

A level sensor for each submersible pump is included in all cell sumps. The leachate levels are monitored at the pump control panel, mounted on the Pump House wall (see Drawing 26). The level sensor pump-off position will be set at 6-inches above the sump floor. The pump-on position will be 12-inches above the sump floor, and pump high-level alarm will be set at 16-inches above top of sump. Drawing 19 includes the materials that are included in the cell sumps.

To ensure that the pump alarm will not be activated in cell sumps containing two pumps, a lead/lag system will be provided. This system includes a pump focused control panel at each cell pumphouse and a master control panel at each Leachate Storage Facility Pump House (see Drawing 10 leachate storage facility control building locations) with duplicate controls for the pumps discharging to that location.

The cell pump control panel is designed to operate one pump. The cell sump sideslope riser pipes are designed to allow the addition of a second pump in the second sideslope riser pipe and be connected to the master control panel, so the two pumps can operate in a lead/lag arrangement, if the cell is actively filling during a particularly wet year or the operator wishes to install the “spare” pump to reduce wear and tear on the primary single, pump.

In the lead/lag, the lead pump starts at the pump start level set point and continues to run until the liquid level decreases to the pump stop level set point as programmed in the level control meter. The lag pump will start after the lead pump starts if the liquid level continues to rise above the pump start level set point and both pumps will continue to run until the liquid level decreases to the pump stop level set point as sensed by the pressure transmitter. If the liquid level rises to the high level alarm set point, a high level alarm will be annunciated. If a motor trips while running due to an overload condition, the other pump will start automatically.-

The control panel will monitor and record leachate levels in the landfill cells. In the event of high level alarm occurrence, a light at the Pump Control Panel will be activated. During landfill operating hours, the alarm signal will be electronically transmitted to the Scale House. During all landfill non-operation hours, the Landfill Manager and Superintendent will receive a high level alarm signal, via electronic telemetry from the Pump Control Panel.

12.12.1.2.1.1 Pump Access and Maintenance

Access to pumps within 24-inch HDPE sideslope riser pipes is provided by means of stainless steel pulling cables as shown on Drawing 19. The Landfill Perimeter Berm and Pump House, shown on Drawing 23, are designed to provide equipment access, as necessary to install and remove pumps. An aluminum roll-up door, or wide swing doors, allows access to both pump sideslope riser pipes and the Landfill Perimeter Berm top width is designed to allow access for Pump Installation and Removal Equipment (i.e., equipment mounted with boom and winch, with steel cable for attachment to the pumps stainless steel pulling cable).

12.12.1.2.1.2 Force Main Access and Maintenance

Force Mains and Laterals are readily accessible for construction equipment trenching excavation, during the life of the landfill operation. The location of the leachate force mains are shown on Drawings 17 and 18, and the force main profiles are shown on Drawings 24 and 25. A majority of Leachate Force Mains are buried at minimum 3.5 feet depth in the Landfill Perimeter Access Road as shown on Drawings 22 and 23. Leachate Force Mains exceed minimum depth burial as required for crossings at Storm Drains and Landfill Perimeter Channel. Construction equipment access across Landfill Perimeter Channels will be provided by placement of permanent pre-cast concrete spans to provide ready and immediate access to the pump houses.

Force Main cleanouts are provided at minimum 400 feet intervals as noted on Drawings 17, 18, 24 and 25. Flow in the Force Main will be checked at each cleanout at a minimum of once per year. The Force Main will be cleaned out at the appropriate cleanouts if flow is observed to be restricted.

Check Valve Vaults and Air Release Valve Vaults (per Details on Drawing 22) are 6 feet minimum from bottom of precast concrete top slab to concrete base slab floor. Steps beneath manhole covers, centered on 2'-0" top slab openings are provided. The vaults will be inspected at least once per year. Any damage to the vault, access, ladder, or brackets shall be repaired at that time. Check valves and Air release valves will be inspected as suggested by the manufacturer or at least once per year, whichever is more frequent. Maintenance, repair, or replacement of the valves as required in the manufacturer's recommendations will be performed at that time.

12.12.1.2.2 Leachate Storage

Leachate from the entire landfill is conveyed to two storage areas, each with two 45-foot diameter, glass coated bolted steel Aquastore Tanks with a storage capacity of 500,000 gallons. The storage tanks are located inside a concrete secondary containment area designed for 500,000 gallons containment capacity, with 1-foot freeboard to top of berm.

The Master Control Panel at each Leachate Storage Facility will monitor and record leachate levels in the storage tanks to prevent storage tank overflow. In the event that the storage tanks become tank filled to near capacity, an alarm is activated and all leachate pumps are automatically shut down.

Each secondary containment structure is equipped with a sump from which uncontaminated rainwater can be pumped. The containment structure is also equipped with a load-out pad where leachate can be transferred from the storage tanks to tank trucks for transport to the wastewater treatment facility. The load-out pad is equipped to drain into the secondary containment in the event of spillage and rainwater that falls on the load-out pad.

Transport and disposal of leachate will be performed on a daily or near-daily basis, while the landfill is in operation. The average daily generation rate for the landfill is projected to be on the order of

85,000 gallons, at its highest production rates. This will equate to an average of 17 truckloads every day. NWM shall maintain normal tank levels below 25% capacity (i.e. at least 750,000 gallons of available capacity), to help ensure that adequate capacity is available to manage spikes in flow associated with heavy rain events.

Depending on chemical makeup of the leachate the tanks may represent an odor source. The design requires the installation of dynamic mixers in the leachate inflow line inside the leachate tank containment area between the 1-inch sample port and the 6-inch solenoid valves (see Drawing 28). The chemical inflow line to the mixer will be capped when initially installed but when/if tank odor becomes a problem the mixers will be utilized to feed an oxidant into the leachate lines before they discharge to the tanks. The specific type of oxidant will be determined based on the source of odors, but expectations are that any significant odor concerns will be sulfur based (hydrogen sulfide, mercaptans, or disulfides) and that the most logical oxidant will be H_2O_2 , permanganate or a proprietary compound. Dosing rates will also be a function of the concentrations present in the leachate and flow rates. These are typically addressed through a combination of head space testing (in the tanks) and monitoring the effect from different dosing rates.

12.12.1.2.2.1 Leachate Storage Tank Access and Maintenance

Access to the leachate storage facilities is provided via leachate storage facility access roads, as shown in the Drawings 10 and 11. Sediment levels in the tanks should be monitored on a monthly basis. When sediment accumulation exceeds 2.0 ft (approximately 5% of tank height) sediment shall be removed. Sediment removals shall be performed by appropriately trained and qualified environmental contractors. Removal techniques will be determined by the contractor, but are expected to use a combination of vacuum trucks and hand removal. Sediment shall be tested for hazardous characteristics prior to removal and if determined to be hazardous the removed material shall be sent for off-site hazardous waste disposal. For sediment testing non-hazardous the material placed in the on-site disposal cells.

12.12.1.3 Leachate Disposal

From the leachate storage tanks, the leachate will be hauled off-site for disposal. We have received a favorable response from VLS Environmental Solutions (formerly Environmental Recovery Corporation (ERC) of Maryland), located in Baltimore, MD and Lancaster, PA that they do receive rubble landfill leachate and they have provided a preliminary quote for disposal of the leachate from our site.

Depending on the nature of the waste disposed, the levels of contaminants in the leachate, and the volume of leachate produced (which is directly linked to the amount of rainfall), the owner may choose, in the future to develop an on-site wastewater treatment plant to treat leachate and obtain a NPDES discharge permit.

12.12.2 Leachate Record Keeping

Records will be kept on the amount of leachate being generated in each sump and the amount of leachate being loaded onto tanker trucks for off-site disposal at the storage tank locations. The generation rate of leachate from the collection sumps will be recorded by means of a flow meter incorporated into the discharge line for the collection sump leachate pumps. Quantities of leachate

load out on tanker trucks will be measured by the number and capacity of tanker loads transported off-site.

12.12.3 Gas Migration Monitoring

Pursuant to 26.04.07.21(5) of the COMAR, solid waste disposal facilities are required to maintain a gas monitoring network capable of detecting the presence of decomposition gas in the vadose zone at the facility property boundary. Methane gas monitoring probes will be located on approximate 500-foot centers near the property line surrounding the facility. Gas probes will be monitored quarterly to ensure that the concentration of landfill gas at the property boundary does not exceed 100 percent of the lower explosive limit, and does not exceed 25 percent of the lower explosive limit in facility structures. In addition, assessment of monitoring data will help determine the effectiveness of the gas system. The Gas Monitoring Plan is provided in Section 11.0 of the Phase III Permit Application.

12.12.3.1 Landfill Gas Collection System

An active landfill gas collection system will be installed at the landfill, if required based on the results of landfill gas monitoring. During construction associated with installation of the landfill gas collection system, there is a potential for the generation of odors. The following preventative measures will be taken as necessary in order to minimize the potential for these odors:

- Drilling and trenching activities will be suspended during adverse weather conditions (i.e., rain conditions);
- Suitable odor control products may be applied directly to and in the general vicinity of all work where the intermediate cover soil layer is breached and the underlying waste is exposed (i.e., well drilling and lateral trenching) to minimize and control any odors associated with the exposed waste;
- At the completion of well installation activities, the well will either be capped or connected to a utility flare (temporary) or to the landfill gas extraction system (permanent). A permanent connection to the landfill gas extraction system will be made as soon as possible; and,
- Trenching may be limited to only that amount which can be completed by the contractor within a day (or less in sensitive areas). All transmission pipelines will be temporarily sealed at the end of the workday.

12.12.3.2 Operation Modifications

The following equipment and working face procedures will be employed to minimize odor migration:

- The amount of exposed waste on the working face will be minimized by applying daily cover to finished areas during the course of the working day;
- Waste vehicles waiting to unload waste and untarp will be queued away from areas adjacent to public roads;
- The facility may use a water truck equipped with water cannons to spray odor control products directly onto the working face during waste disposal, if necessary;
- Vaporization equipment may be used to reduce water consumption as compared to atomization
- A portable / mobile boom trailer using a proprietary natural, carbon-material odor control product may be available to be placed where needed; and,

- A supply of granular odor control products may be maintained on site to provide odor control in localized areas.

12.12.3.3 Response Actions

Upon the identification of an odor outside the property line of the landfill as a result of an inspection or odor complaint, the General Manager or designee, shall take the following actions:

- Landfill staff will attempt to identify the source of the odor that has been detected off-site;
- Upon identifying that the landfill is the odor source, the Staff shall take appropriate action to minimize and control the odor as follows:
 - If the source of the odor is landfill gas, as the situation dictates, the Staff can increase the vacuum to the gas collection system, add additional cover material, repair any leaks to wells or exposed piping, or apply an odor control product; and,
 - If the source is the working face, the Staff can deploy any of the odor control product dispensing equipment that is not in use or increase the concentration of the products already in use. If the source of the odor is identified as a particular waste stream, the Staff can direct the working face operators to bury the waste as quickly as possible. In the latter case, the Staff should contact the generator of the offending waste to coordinate future disposal.

12.12.4 Groundwater Protection and Monitoring

12.12.4.1 Groundwater Protection

Protection of groundwater at the disposal facility is accomplished by the construction of a composite liner system for the Chesapeake Terrace Landfill cells that incorporates a leachate collection system. The liner system consists of, from top to bottom:

- Four feet of Select Waste;
- 10 ounce per square yard (oz./s.y.) nonwoven geotextile for layer separation and visual indicator if breached;
- Two feet of leachate collection layer, comprised of locally mined sandy soils;
- A geocomposite drainage layer (GDL), consisting of a tri-planar drainage net with a minimum 8 oz./s.y. nonwoven geotextile heat-bonded to both sides;
- 60-mil high density polyethylene geomembrane with a permeability less than or equal to 1×10^{-10} cm/sec; and,
- 24-inch thick prepared subbase soil layer with permeability $< 1 \times 10^{-5}$ cm/sec.

The Chesapeake Terrace Landfill design maintains a minimum three-foot buffer between the bottom of the prepared subbase and the highest predicted/observed groundwater level.

A comprehensive groundwater monitoring program has been developed for the facility. The monitoring program involves collecting and analyzing samples of groundwater semi-annually from wells strategically placed at the site, and the monitoring of the groundwater gradient to document the direction of hydraulic movement.

12.12.4.2 Groundwater Monitoring

Groundwater monitoring wells are used to measure groundwater levels and as sampling stations to test groundwater quality. A detailed groundwater monitoring plan is provided in Section 17.0 of the Phase III Permit Application. This plan includes installation of monitoring wells, sampling and testing procedures, and the evaluation program. Monitoring wells remaining in place must be protected and maintained throughout the landfill operation and beyond.

12.13 Records and Measurements

Records shall be kept on a daily basis of the weight of all rubble waste brought to the landfill. These records will be used to monitor the amount of waste being deposited in each cell. They will also be used to project future waste generation rates for projecting the life of future cells.

A record of the nature and quantity of asbestos waste and its source shall be maintained.

Records shall also be kept for the amount of leachate being generated. Copies all groundwater monitoring and landfill gas monitoring results shall be retained. A complete discussion of groundwater monitoring is included in the groundwater monitoring plan section of this application. Copies of all records shall be retained in the main office and at the scale house. Appropriate copies shall be sent to the required state agencies.

The rubble waste will be measured in place by field and/or aerial survey as required to prepare as-built documents, in compliance with MDE regulations. Each day each delivery of waste will be categorized and measured by the scale house operator. The waste will be weighed at the scale house and will be classified based upon the source of the material. At the end of each day, the scale house operator will summarize the day's deliveries, by category of waste type (based upon source) and the received tonnage of each waste type. This information will be used to provide annual reports and to estimate remaining cell life. The annual report will include the following:

- Quantity of solid waste received each month (c.y.) during the calendar year of the report;
- Percentage of the projected total rubble landfill capacity used annually, and to date;
- Projected rubble landfill completion date, and a description of the basis for this projection; and,
- Type and quantity of materials received each month.

12.14 Closure and Post-Closure Care

For a detailed description of the closure procedure and post-closure care, refer to the Chesapeake Terrace Landfill Closure and Post-Closure Plan.

12.15 Recycling and Salvage

Pursuant to Anne Arundel County requirements, National Waste Manager (NWM) will achieve a target recycling/salvaging rate of 30% by weight. The recycling process will initially target uncontaminated concrete rubble (includes concrete, masonry, rock, etc.), and steel. Additional waste streams may also include wood, plastic, paper/cardboard and/or used tires. Permits associated with recycling and salvaging operations will be obtained as necessary when specific opportunities are identified.

The recycling/salvaging process will begin when vehicles are inspected at the scale house. Those vehicles containing predominantly or exclusively materials being recycled and salvaged will be directed to the active processing. Mixed waste vehicles will be sent to the landfill working face where personnel and equipment are available to segregate/remove the materials for recycling/salvage from the other material being disposed for transport to the processing areas. Metal, plastics, tires, white good, etc. will be picked at the working face and placed into roll-off containers, bins or stockpiles until a full load is accumulated and the materials can be sent off-site for appropriate recycling. White goods that typically contain refrigerants (refrigerators, air conditioners, dehumidifiers, etc.) will be segregated and set aside for refrigerant removal, either on-site or off-site, in accordance with Section 608 of the Clean Air Act.

Concrete rubble is expected to be the predominant waste stream being recycled. The general process will involve performing initial sizing to facilitate handling, loading into crushing equipment, and screening the crushed materials to meet customer specifications. During the landfill construction process, NWM will identify the exact type of equipment to be used for processing and file for required permits to construct and operate the associated crushing and screening operations.

The concrete rubble processing area will be situated within the proposed landfill footprint. It is expected to be situated at or adjacent to the fill face. Processed material will subsequently be transported to stockpile area. Stockpiles for processed material are expected to be situated within the Cell 15 footprint on/adjacent to the 2.9-acre stockpile area. During Stages E or F of the landfill operating life the stockpile area is expected to be relocated to the stockpile area in Cell 7.

Finished product will be managed in stockpiles sorted based on size for subsequent loading and shipment. The concrete processing area, associated haul roads and equipment will be subject to dust control measures similar to landfill haul roads and associated operations. Water utilized for dust suppression shall be clean storm water (i.e accumulated stormwater collected from outside the limits of waste disposal activities) or well water. Water will be applied utilizing tank trucks or spray heads. Specific details will be defined in the concrete processing permit. Noise is expected to be similar in nature to other landfill operations which are limited to strict working hours and days of the week. Processing equipment will be required to be maintained in good working order, including requiring that any factory installed emissions and noise control devices (i.e. mufflers) are fully functional.

The quantity of materials recycled/salvaged will be track by weight. All loads of such materials existing the site will be weighted at the scale house. The percentage of materials recycled/salvaged relative to materials received will be tracked and included in the annual operating report. If NWM is not achieving the targeted rate of 30% efforts and possibly targeted waste streams will be increased. Those activities requiring permits will be permitted before commencement of such operations.

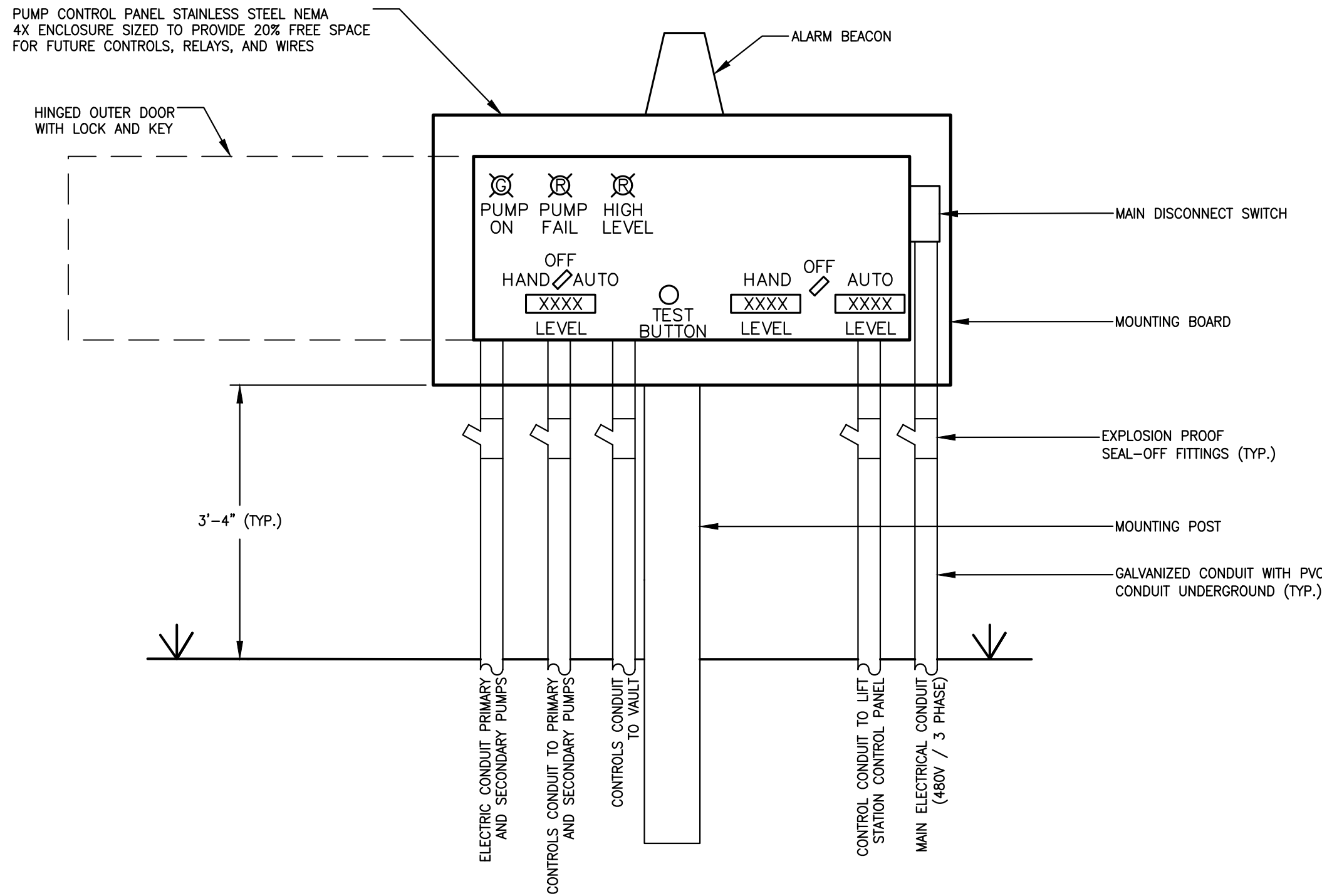
DRAWINGS

Drawing 27 – Leachate Control Panel Layout

Drawing 28 – Leachate Storage Tank Details (1 of 2)

Drawing 63 – Sequence and General Notes for Construction

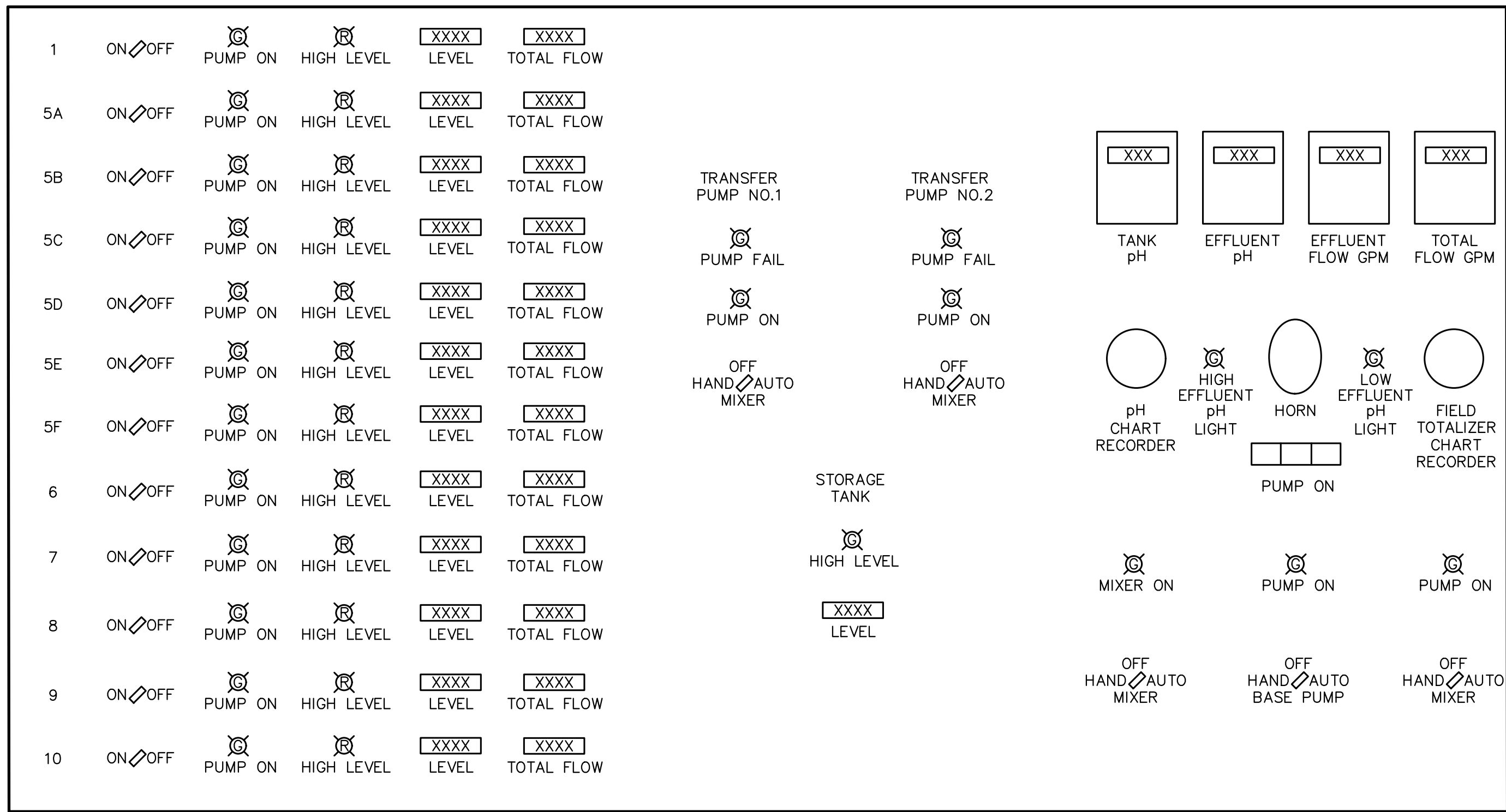
N:\Project\2018\20183834 - Chesapeake Terrace LEACHATE STORAGE FACILITY No. 2 - Phase II Application\Drawings\Final\20183834_8027 - LEACHATE CONTROL PANEL LAYOUT.dwg



1 27

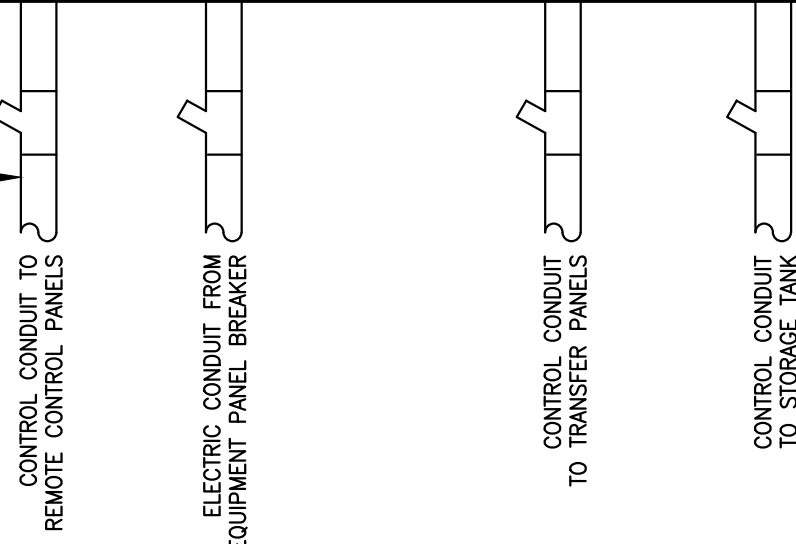
LEACHATE CONTROL SUMP PUMP CONTROL PANEL AT EACH CELL

NOT TO SCALE



EXPLOSION PROOF SEAL-OFF FITTINGS (TYP.)

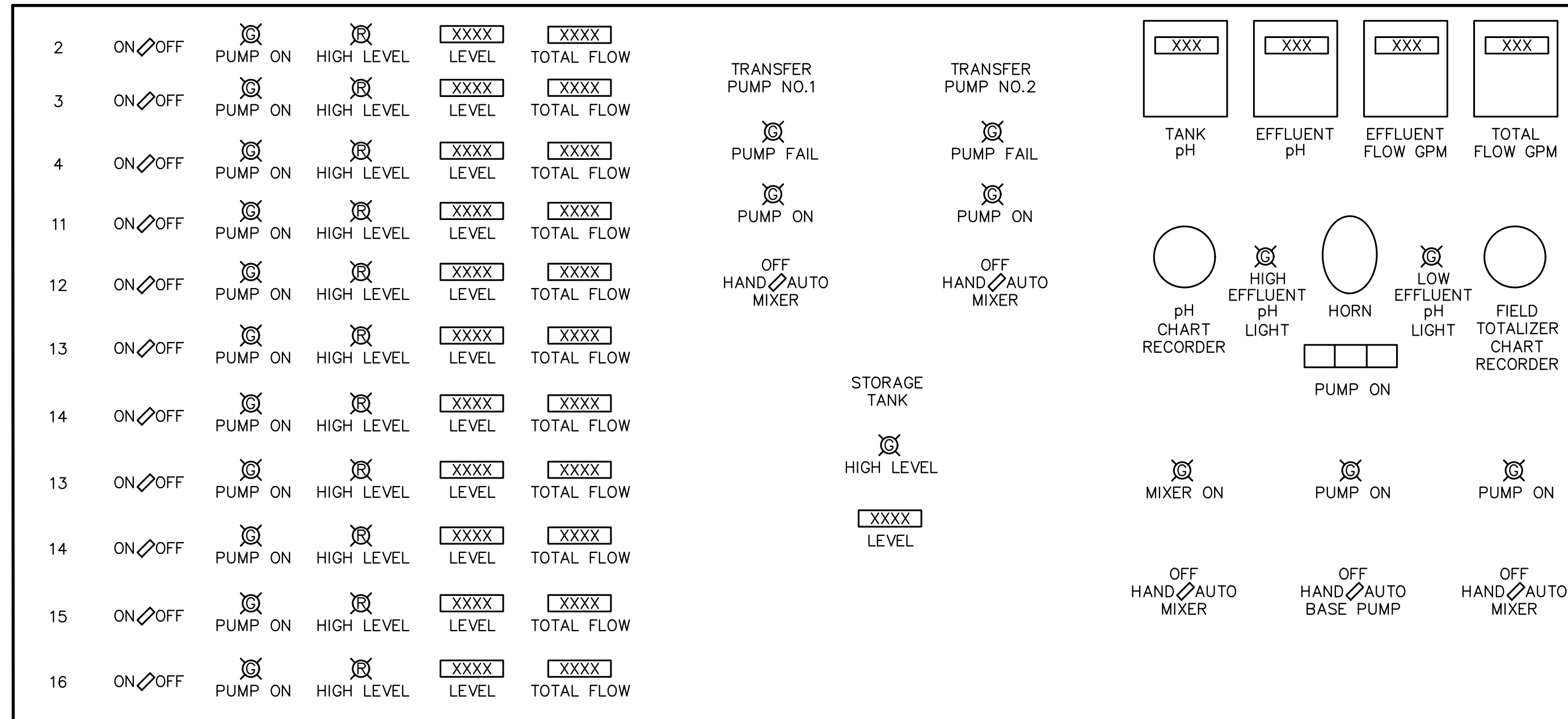
GALVANIZED CONDUIT WITH PVC CONDUIT UNDERGROUND (TYP.)



3 27

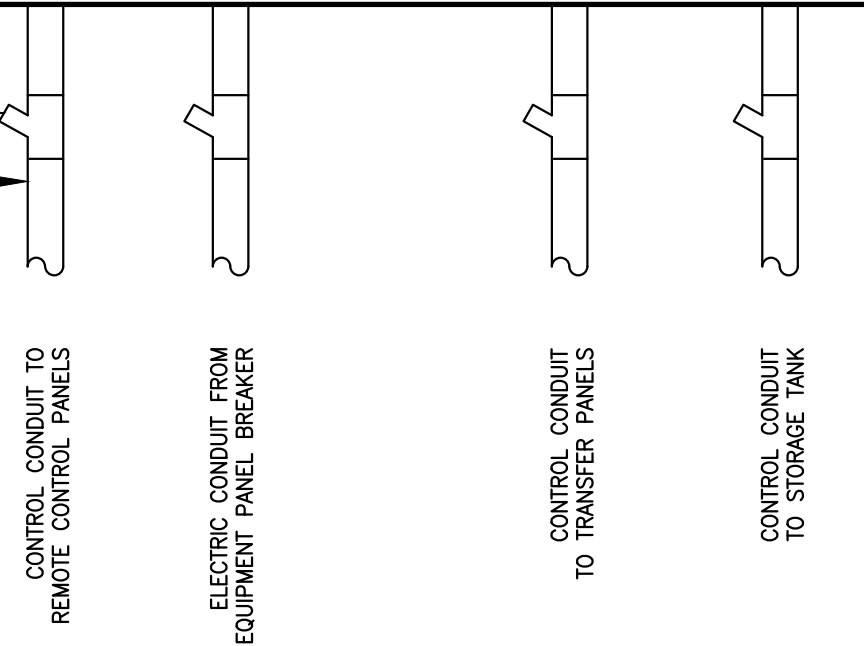
MAIN CONTROL PANEL AT LEACHATE STORAGE FACILITY No. 2

NOT TO SCALE



EXPLOSION PROOF SEAL-OFF FITTINGS (TYP.)

GALVANIZED CONDUIT WITH PVC CONDUIT UNDERGROUND (TYP.)



2 27

MAIN CONTROL PANEL AT LEACHATE STORAGE FACILITY No. 1

NOT TO SCALE

SUMP	Peak Flow Rate (GPM) from cell	Total Head (ft)	Specified Pump in Design
1	91.9	124.0	Model 18-4, HP 5.0
2	54.5	55.5	Model 18-2, HP 3.0
3	34.4	37.6	Model 18-1, HP 1.5
4	38.2	34.9	Model 18-1, HP 1.5
5A	39.5	101.5	Model 18-2, HP 3.0
5B	23.9	93.2	Model 18-2, HP 3.0
5C	31.5	92.0	Model 18-2, HP 3.0
5D	21.4	87.6	Model 18-2, HP 3.0
5E	23.3	87.0	Model 18-2, HP 3.0
5F	12.8	87.4	Model 18-3, HP 5.0
6	40.8	111.7	Model 18-3, HP 5.0
7	53.4	125.8	Model 18-3, HP 5.0
8	43.3	109.7	Model 18-3, HP 5.0
9	29.4	102.4	Model 18-3, HP 5.0
10	68.2	122.9	Model 18-4, HP 5.0
11	53.4	69.8	Model 18-2, HP 3.0
12	47.1	68.4	Model 18-2, HP 3.0
13	24.4	60.9	Model 18-2, HP 3.0
14	29.6	59.1	Model 18-2, HP 3.0
15	35.2	57.0	Model 18-2, HP 3.0
16	34.8	61.2	Model 18-2, HP 3.0

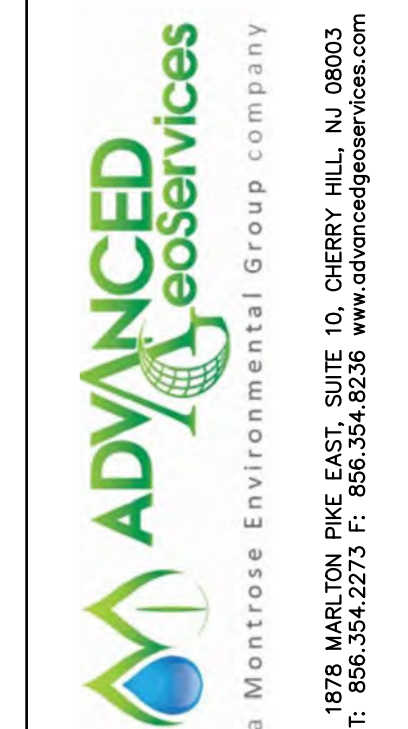
NOTES

- FOR PUMP SPECIFICATIONS, REFER TO TECHNICAL SPECIFICATION SECTION 02652.
- THE MAIN CONTROL PANELS AT EACH LEACHATE STORAGE FACILITY SHALL BE LOCATED IN A SMALL BUILDING TO PROVIDE SHELTER DURING INCLEMENT WEATHER AND STORAGE OF BACKUP PUMPS AND RELATED EQUIPMENT.



DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND ASD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE
4/25/2024	REVISED TO SUBMIT 2024 MDE COMMENTS

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND



PROJECT MANAGER:	SCALE AS NOTED
PGS	2018 - 3854
CHECKED BY:	PROJECT NUMBER:
KHF	2018 - 3854
DRAWN BY:	DATE:
	09/03/2021



LEGEND

	1" SAMPLE PORT
	2" CHECK VALVE
	FLOW METER
	2" GATE VALVE
	2" INLET SOLENOID VALVE (V-104)
	4" DRAIN, FLANGED BALL VALVE (TYP.)
	4" OUTLET SOLENOID VALVE (V-205)
	OVERFLOW ALARM
	4" FLANGED OUTLET
	6" STAINLESS (31G) IN-LINE DYNAMIC MIXER

NOTES

- 1.) ALL PIPING FROM SITE CELL PUMPING STATIONS TO LEACHATE TANKS, FARM CONFINEMENT WALL TO 6" HDPE, SDR-17, THEN FLANGED CONNECTED TO PVC SCH 80 PIPE TO STORAGE TANKS.
- 2.) STORAGE TANKS HAVE DESIGN STORAGE VOLUMES OF APPROXIMATELY 500,000 GALLONS EACH. THE SYSTEM FLOW RATES ARE DESIGNED FOR AN AVERAGE FLOW OF 82,000 GPD. THE OVERTFLOW IS DESIGNED FOR A PEAK RATE OF 41,000 GPD.
- 3.) SEAL OFF PVC PIPE PENETRATION THROUGH SECONDARY CONFINEMENT FROM TRUCK LOADING GOLF COURSE.
- 4.) STORAGE TANK OUTLET QUICK DISCONNECT FITTING TO MATCH TANKER TRUCK FITTING.
- 5.) SEE DRAWING 10 & 11 FOR SITE PLAN LAYOUT.
- 6.) ANY PIPING LESS THAN 3.5 FEET BELOW GROUND SURFACE, SHALL BE HEAT TRACED AND INSULATED.
- 7.) LEVEL INDICATOR TO BE INSTALLED IN FRONT OF STORAGE TANKS. SIGNAGE, IN SIGN OF OFFICIAL LOADING SAME.
- 8.) STRUCTURAL ENGINEER WILL BE REQUIRED TO DEVELOP THE STRUCTURAL DESIGN OF CONCRETE SECONDARY CONFINEMENT RELATIVE TO REINFORCEMENT, TYPE, SIZE, AND LOCATION WITHIN THE CONCRETE SLAB.

DRAWING	28
LEACHATE STORAGE TANK DETAILS (SHEET 1 OF 2)	
PROJECT NUMBER:	PQS SCALES AS NOTED
CHECKED BY:	KHF
DRAWN BY:	
 ADVANCED Geoservices A Montrose Environmental Group company 1879 MARLBOROUGH PIKE EAST SUITE 10 CHERRY HILL NJ 08003 TEL: 856-354-2273 FAX: 856-354-8238 www.advancedgeoservices.com	
NATIONAL WASTE MANAGERS PHASE III APPLICATION CHESAPEAKE TERRACE RUBBLE LANDFILL PATUXENT ROAD, ODONTON ANNE ARUNDEL COUNTY, MARYLAND	
DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND ASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE
4/25/2024	REVISED TO SUBMIT 2024 MDE COMMENTS
STATE OF MARYLAND DEPARTMENT OF THE ENVIRONMENT PROTECTION DIVISION OFFICE OF SOLID WASTE MANAGEMENT DATE: 4/25/2024	

N:\Projects\2018\20183834 - Chesapeake Terrace LEACHATE\DWG\02-08-2018\3834-0603 - CONSTRUCTION SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION.dwg

SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION

I. OVERVIEW

A. LANDFILL SITE ENTRANCES

THREE SITE ENTRANCES (I.E., EAST, NORTH, AND SOUTH ENTRANCES) ARE SHOWN IN THESE PERMIT DRAWINGS. CONSTRUCTION OF ONLY ONE SITE ENTRANCE (COMPRISED OF ACCESS ROAD, SCALE HOUSE, TRUCK SCALES, MAINTENANCE BUILDING, WHEEL WASH, AND CONCRETE CLEANOUT) IS REQUIRED FOR RUBBLE LANDFILL OPERATION. SITE ENTRANCE DESCRIPTION IS PROVIDED IN PHASE III REPORT SECTION 3.4. THE EAST ENTRANCE IS REQUIRED FOR USE BY ANNE ARUNDELE COUNTY.

REGARDLESS OF THE SITE ENTRANCE CONSTRUCTED, AN AUXILIARY ROAD (WITHOUT SCALES, SIGNS, AND WITH A REDUCED WIDTH) WILL BE CONSTRUCTED. THIS ROAD WILL PROVIDE INGRESS/EGRESS IN THE EVENT ENTRANCE IS BLOCKED OR COMPROMISED, REQUIRING SITE EVACUATION OR ACCESS BY EMERGENCY FIRST RESPONDERS. THE ACCESS POINTS DESIGNATED FOR THE AUXILIARY ROAD IS THE NORTH OR SOUTH ENTRANCE ACCESS.

B. LANDFILL CELL CONSTRUCTION

THE SITE FOR THE PROPOSED LANDFILL IS COMPRISED OF AREAS PREVIOUSLY MINED FOR SAND AND GRAVEL. PRIMARY LANDFILL AREAS ARE REFERENCED AS EAST SECTION (CELLS 11-16) AND WEST SECTION (CELLS 1-10) ON THE DRAWINGS. EACH SECTION IS SUBDIVIDED INTO CELL AREAS; EACH CELL AREA IS LINED AND SLOPED IN ACCORDANCE WITHCODE OF MARYLAND (COMAR) REGULATIONS, AS NECESSARY TO CREATE A SUMP FOR COLLECTION OF LEACHATE (I.E., STORM WATER PERCOLATION THROUGH RUBBLE WASTE PLACED IN THE CELL).

TWO LEACHATE STORAGE FACILITIES WILL BE CONSTRUCTED TO PROVIDE TEMPORARY STORAGE OF LEACHATE FROM THE LANDFILL CELLS. IN EACH LEACHATE STORAGE FACILITY, TWO 500,000 GALLON TANKS WILL BE INSTALLED WITHIN AN AREA SURROUNDED BY A CONCRETE SECONDARY CONTAINMENT WALLS. THERE ARE FIFTEEN CELLS (EACH WITH SUBMERSIBLE PUMPS IN A LEACHATE COLLECTION SUMP) IN THE WEST SECTION AND SIX CELLS (EACH WITH SUBMERSIBLE PUMPS IN A LEACHATE COLLECTION SUMP) IN THE EAST SECTION. LEACHATE FROM THREE CELLS IN THE WEST SECTION AND ALL CELLS IN THE EAST SECTION WILL BE PUMPED TO FORCE MAIN LINES CONNECTED TO LEACHATE STORAGE FACILITY NO. 1. FORCE MAIN TRUNK LINES FOR THE REMAINING CELLS IN THE WEST SECTION ARE CONNECTED TO LEACHATE STORAGE FACILITY NO. 2.

CELLS ARE NUMBERED, BEGINNING IN THE WEST SECTION. CELLS 2 THROUGH 4 AND 11 THROUGH 16 CONNECTED TO LEACHATE STORAGE FACILITY NO. 1. CELLS 1, 5A THROUGH 5F AND 6 THROUGH 10 ARE CONNECTED TO LEACHATE STORAGE FACILITY NO. 2.

FOUR STORMWATER MANAGEMENT BASINS WILL SERVE AS SEDIMENT CONTROL AND STORMWATER MANAGEMENT STRUCTURES FOR THE RUBBLE LANDFILL CONSTRUCTION AND OPERATION THROUGHOUT THE LIFE OF THE FACILITY. UNDER THE ULTIMATE DEVELOPED LANDFILL CONDITION,

- BASIN NO. 1 SHALL PROVIDE SEDIMENT CONTROL FOR THE ENTIRE WEST SECTION;
- BASIN NO. 2 SHALL PROVIDE SEDIMENT CONTROL FOR OFF-SITE DRAINAGE AREA AND LEACHATE STORAGE FACILITY NO. 1;
- BASIN NO. 3 SHALL PROVIDE SEDIMENT CONTROL FOR THE MAJORITY OF THE EAST SECTION CONSTRUCTION;
- BASIN NO. 4 ADDRESSES RUN -ON FROM UPGRADIANT OFF-SITE AND UNDISTURBED ON-SITE AREAS;
- A SEDIMENT TRAP AND SILT FENCE ENSURE THAT SEDIMENT FROM DISTURBED AREAS, OUTSIDE BASIN DRAINAGE AREAS IS CONTAINED ON-SITE.

PRIOR TO BEGINNING LANDFILL CONSTRUCTION IN ANY GIVEN AREA, ALL SEDIMENT BASINS AND PERIMETER CONTROLS SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND INDICATED UNDER ITEM II, "SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS."

AS SPECIFIED IN THE SEQUENCE, EACH BASIN SHALL BE COMPLETELY CONSTRUCTED (I.E., TOPSOIL SHALL BE CLEARED AND STRIPPED, CUT-OFF TRENCH SHALL BE INSTALLED, SPILLWAY, EXCAVATION, AND EMBANKMENT CONSTRUCTION SHALL BE PERFORMED). PRIOR TO BEGINNING CONSTRUCTION, ALL CONSTRUCTION MATERIALS FOR THE BASIN MUST BE ON-SITE. BASINS WILL BE DEWATERED PER DETAILS ON THE DRAWINGS.

COMPOSITE VIEW OF ALL LANDFILL CELLS AT TOP OF SUBBASE GRADE IS PROVIDED ON DRAWINGS 10 AND 11 GRADES ON CELL SUBBASE PLANS INDICATE THAT EACH CELL WILL BE GRADED TO A SINGLE SUMP, IN WHICH SUBMERSIBLE PUMPS WILL BE INSTALLED IN A SUMP RISER PIPE, AS SHOWN ON DRAWINGS AND DETAILS. THE EMBANKMENT THAT RUNS PERPENDICULAR TO THE SUMP, COUPLED WITH COMPLETELY CONSTRUCTED GRADES IN THE CELL ASSURES POSITIVE DRAINAGE TO THE SUMP AND SEDIMENT CONTAINMENT WITHIN A CELL UNDER CONSTRUCTION. STORM WATER IMPOUNDED IN A CELL UNDER CONSTRUCTION SHALL BE PUMPED THE PERIMETER CHANNEL, WHICH IN TURN DISCHARGES DRAINAGE TO A SEDIMENT BASIN IS PROVIDED.

RUBBLE WASTE MAY NOT BE PLACED IN ANY CELL UNTIL THE CORRESPONDING LEACHATE STORAGE AREA AND FORCE MAIN PIPING SYSTEM TO THE CELL HAVE BEEN COMPLETELY CONSTRUCTED AND TESTED. VEHICULAR ACCESS TO THE STORAGE TANK FOR LOADING AND TRANSPORT OF LEACHATE MUST BE PROVIDED AND MAINTAINED. UPON COMPLETION OF CONSTRUCTION OF THE ACCESS ROAD, FINISHED GRADING FOR A GIVEN CELL, CELL CONSTRUCTION MATERIAL TESTING (INCLUDING PUMP AND FORCE MAIN), AND CONNECTION OF THE FORCE MAIN SYSTEM TO THE STORAGE TANK, WASTE PLACEMENT IN THE CELL MAY BEGIN. AT ALL TIMES DURING THE LIFE OF THE FACILITY, RUBBLE WASTE SHALL BE PLACED IN A MANNER THAT ENSURES COLLECTION OF LEACHATE IN THE CELL SUMP AREA. DAILY AND INTERMEDIATE COVER SHALL BE PLACED IN ACCORDANCE WITH MDE REFUSE DISPOSAL PERMIT STIPULATIONS.

TO SUMMARIZE AND CLARIFY EVENTS THAT OCCUR CHRONOLOGICALLY (ON A CELL-BY-CELL CONSTRUCTION BASIS), ITEM II, "SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS", STIPULATES CONDITIONS UNDER WHICH THE LANDFILL WILL BE CONSTRUCTED. SEE DRAWINGS 64 THROUGH 81----- FOR INTERMEDIATE CONSTRUCTION STAGE PLANS, WHICH ILLUSTRATE SEQUENCE OF FILLING AND OF THE LANDFILL CONSTRUCT FROM BEGINNING TO END OF CONSTRUCTION.

UNLESS OTHERWISE APPROVED BY MDE AND ANNE ARUNDEL SOIL CONSERVATION DISTRICT (AASCD), LANDFILL CELL SEQUENCE OF CONSTRUCTION WILL BE PER INTERMEDIATE STAGE CONSTRUCTION DRAWINGS, REFERENCED UNDER ITEM II(B). CELLS WILL BE CONSTRUCTED INDIVIDUALLY OR IN GROUPS, PER THE CHRONOLOGICAL REQUIREMENTS UNDER ITEM II(E), "LANDFILL CONSTRUCTION CHRONOLOGY". VARIANCE FROM CELL SEQUENCE OF CONSTRUCTION IS REFERENCED UNDER ITEM III. TIME FRAMES FOR CONSTRUCTION DURING THE LIFE OF THE LANDFILL OPERATION ARE GIVEN UNDER ITEM V, "ESTIMATED CELL CONSTRUCTION AND WASTE PLACEMENT SCHEDULE".

RUBBLE FILL OPERATION MAY PROCEED IN ANY GIVEN COMPLETED CELL AT ANY TIME THROUGHOUT THE LIFE OF THE FACILITY, PROVIDED THAT: SEDIMENT CONTROLS FOR THE DISTURBED AREA ARE IN-PLACE AND MAINTAINED; LEACHATE IS PROPERLY COLLECTED AND DISPOSED; AND ALL OTHER CONDITIONS OF THE MDE REFUSE DISPOSAL PERMIT ARE MET.

II. SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS

UNLESS "VARIANCE FROM SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS" IS OBTAINED, PER ITEM III, THE LANDFILL WILL BE CONSTRUCTED IN ACCORDANCE WITH CRITERIA PROVIDED HEREUNDER. "SURFACE RUNOFF/SEDIMENT CONTROL" SHALL BE PROVIDED PER ITEM II(A), ITEM II(B), "DESCRIPTION OF INTERMEDIATE CONSTRUCTION STAGE PLANS" AND ITEM II(C), "ASSUMPTIONS FOR DEVELOPMENT OF LANDFILL SEQUENCE OF CONSTRUCTION" DESCRIBE SITE CONDITIONS AND ASSUMPTIONS UNDER WHICH THE LANDFILL SEQUENCE OF CONSTRUCTION WAS DETERMINED. ITEM II(D), "INTERMEDIATE CONSTRUCTION STAGE PLAN DEPICTION" INDICATES CONSTRUCTION REQUIREMENTS CONSISTENT WITH DEPICTION ON EACH INTERMEDIATE CONSTRUCTION STAGE PLAN. ITEM II(E), "LANDFILL CONSTRUCTION CHRONOLOGY" LISTS THE SEQUENCE OF CONSTRUCTION SPECIFIED IN THESE PERMIT DRAWINGS.

A. SURFACE RUNOFF/SEDIMENT CONTROL

AS REFERENCED UNDER THE SEQUENCE OF CONSTRUCTION OVERVIEW ABOVE, ALL CELLS WILL BE CONSTRUCTED IN A MANNER THAT WILL CREATE A SUMP, AND SHALL BE LINED WITH MATERIAL SPECIFIED ON THESE PERMIT DRAWINGS. CLEAN SURFACE RUNOFF FROM ADJACENT UNDISTURBED AREAS WILL BE DIVERTED AROUND THE CELL CONSTRUCTION AREA, TO THE EXTENT PRACTICABLE. DURING CONSTRUCTION, CLEAN SURFACE RUNOFF IMPOUNDED IN CELL SUMPS WILL BE PUMPED TO A CONSTRUCTED PERMANENT PERIMETER CHANNEL OR TEMPORARY DITCH, AS REQUIRED, TO ENSURE THAT ALL WATER PUMPED FROM CELLS UNDER CONSTRUCTION WILL DRAIN TO A SEDIMENT BASIN.

CONSTRUCTION OF ACCESS ROADS AND PERIMETER CHANNEL ADJACENT TO CELL AREAS IS REFERENCED UNDER THE SEQUENCE OF CONSTRUCTION ON EACH INTERMEDIATE STAGE CONSTRUCTION DRAWING. IN CELL CONSTRUCTION AREAS WHERE THE PERIMETER CHANNEL IS TO BE CREATED BY FILL, THE MINIMUM WIDTH PERIMETER BERM AT THE TOP OF THE LANDFILL EMBANKMENT SIDE SLOPE SHALL BE PART OF THE CONSTRUCTION.

AS PRACTICABLE, TO REDUCE SEDIMENT LADEN SURFACE RUNOFF TO SEDIMENT BASINS THROUGHOUT THE LIFE OF THE CONSTRUCTION, THE LANDFILL OPERATOR SHALL ATTEMPT TO MINIMIZE UN-VEGETATED DISTURBED AREAS THAT DRAIN DIRECTLY TO A SEDIMENT BASIN (VIA EXISTING DRAINAGE SWALES, CONSTRUCTED PERIMETER CHANNEL, OR TEMPORARY MEASURES). PERMANENT OR TEMPORARY VEGETATIVE STABILIZATION, AS APPLICABLE, SHALL BE APPLIED ON DISTURBED AREAS, PER MDE REFUSE DISPOSAL PERMIT STIPULATION, BEFORE OTHER CONSTRUCTION PROCEEDS.

B. DESCRIPTION OF INTERMEDIATE CONSTRUCTION STAGE PLANS

INTERMEDIATE CONSTRUCTION STAGE PLANS (DRAWINGS 64---- THROUGH 81-----) DEPICT CONSTRUCTION OF THE LANDFILL FROM BEGINNING OF CONSTRUCTION THROUGHOUT AND CLOSURE OF THE LANDFILL.

THE FOLLOWING SITE CONDITIONS WERE CONSIDERED IN DETERMINING SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS, ILLUSTRATED ON INTERMEDIATE CONSTRUCTION STAGE PLANS.

1. INTERMEDIATE CONSTRUCTION STAGE PLANS WERE PREPARED ASSUMING DAILY OR WEEKLY COVER SOILS WOULD BE OBTAINED FROM THE NEARBY CELL TO BE CONSTRUCTED TO ALLOW BENEFICIAL USE OF ON-SITE EXCESS SOIL MATERIALS. WHERE ALLOWED BY MDE, ALTERNATE DAILY COVER MATERIALS WILL BE USED, WHEN AVAILABLE. SO THEN ON-SITE SOILS CAN BE USED FOR CLOSURE CONSTRUCTION, WHERE ON-SITES MEET THE CLOSURE MATERIALS SPECIFICATIONS.
2. THE PRIMARY MEANS OF SEDIMENT CONTROL FOR CONSTRUCTION OF THE SITE IS BY PERIMETER CHANNEL DRAINAGE TO SEDIMENT BASINS. NATURAL AND CONSTRUCTED DRAINAGE SWALES FROM THE FORMER SAND AND GRAVEL MINING AREAS CONVEY SURFACE RUNOFF THROUGH THE SITE IN A PREDOMINANTLY NORTHERN DIRECTION. ONCE SEDIMENT CONTROLS ARE IN-PLACE, AS CELL CONSTRUCTION PROCEEDS, CLEAN SURFACE RUNOFF DRAINAGE WILL BE DIVERTED AROUND CONSTRUCTION AREAS, TO THE EXISTING SWALES. UNTIL PRECLUDED BY CELL CONSTRUCTION, EXISTING SWALES WILL CONVEY CLEAN SURFACE RUNOFF TO PERIMETER DITCHES AND SEDIMENT BASINS, AS SHOWN ON INTERMEDIATE CONSTRUCTION STAGE PLANS.

C. ASSUMPTIONS FOR DEVELOPMENT OF LANDFILL SEQUENCE OF CONSTRUCTION

BASED ON THE ABOVE SITE CONDITIONS, AND ITEMS II(B)(1) AND II(B)(2), THE FOLLOWING ASSUMPTIONS WERE USED TO DEVELOP THE LANDFILL SEQUENCE OF CONSTRUCTION, DEPICTED ON INTERMEDIATE CONSTRUCTION STAGE PLANS IN THESE PERMIT DRAWINGS.

1. AS PART OF THE INITIAL CONSTRUCTION SEDIMENT BASINS 2, 3, AND 4 WILL BE CONSTRUCTED INITIALLY.
2. LANDFILL CELLS 2 THROUGH 4 AND 11 THROUGH 16, WHEREBY LEACHATE IS PUMPED TO LEACHATE STORAGE FACILITY NO. 1, SHALL BE CONSTRUCTED PRIOR TO CELLS 1, 5A THROUGH 5F AND 6 THROUGH 10, WHERE BY LEACHATE IS PUMPED TO LEACHATE STORAGE FACILITY NO. 2. WITH RESPECT TO LANDFILL OPERATION, CONSTRUCTION OF LANDFILL CELLS 2 THROUGH 4 AND CELLS 11 THROUGH 16, PRIOR TO CONSTRUCTION OF CELLS 1, AND 5 THROUGH 10, IS ALSO THE MOST DESIRABLE SEQUENCE OF CONSTRUCTION FOR THE LANDFILL, DUE TO CLOSE PROXIMITY OF CELL CONSTRUCTION TO SEDIMENT BASINS AND THE EAST ENTRANCE.
3. STOCKPILES SHALL BE WITHIN DRAINAGE AREAS TO EXISTING SEDIMENT BASINS THROUGHOUT THE LIFE OF LANDFILL CONSTRUCTION AND OPERATION.
4. THREE SITE ENTRANCES TO THE LANDFILL ARE DEPICTED ON DRAWING 3. MDE REQUIRES ONLY ONE ENTRANCE, AND THE LEAST DESIRABLE OF THE THREE. THE EAST ENTRANCE, ONE OF THE THREE SITE ENTRANCES, BECAUSE IT IS REMOTE FROM LANDFILL CELLS THAT SHOULD BE CONSTRUCTED AND FILLED WITH RUBBLE WASTE INITIALLY.
5. NORTH AND EAST ENTRANCES ARE, IN CLOSE PROXIMITY TO CELLS DESIGNATED FOR INITIAL CONSTRUCTION, ARE THE MOST DESIRABLE SITE ENTRANCE OPTIONS. ASSUMPTION USED TO DEVELOP THE SEQUENCE OF CONSTRUCTION INDICATED ON INTERMEDIATE CONSTRUCTION STAGE PLANS (DRAWINGS 64 THROUGH 81) IS THAT RUBBLE WASTE HAUL TO THE SITE WILL BE VIA THE COUNTY ROAD TO THE EAST ENTRANCE.
6. VARIANCE FROM THE SEQUENCE OF CONSTRUCTION IN THESE PERMIT DRAWINGS MUST BE APPROVED BY MDE, PER ITEM III HEREON. CONTRACT DOCUMENTS FOR INTERMEDIATE STAGE CONSTRUCTION MUST BE PREPARED AND APPROVED BY MDE, PER ITEM VI(B). THOSE DOCUMENTS WILL PRESENT DESIGN DETAILS AT A SCALE OF 1"=50' OR LARGER, AND SHOW SEDIMENT AND EROSION CONTROL MEASURES.

D. INTERMEDIATE CONSTRUCTION STAGE PLAN DEPICTION

SEQUENCE OF CONSTRUCTION FOR EACH INTERMEDIATE CONSTRUCTION STAGE IS PROVIDED ON DRAWING 64 THROUGH 81. THE FOLLOWING LIST IDENTIFIES CONSTRUCTION REQUIREMENTS, METHODOLOGY ASSOCIATED WITH DEPICTION OF FEATURES ON INTERMEDIATE CONSTRUCTION STAGE PLANS, AS-BUILT SURVEY AND QUALITY ASSURANCE CRITERIA.

1. PERIMETER ROADS: TEMPORARY CONSTRUCTION ROADS INITIALLY USED FOR CONSTRUCTION EQUIPMENT ACCESS SHALL HAVE A SURFACE SUFFICIENT FOR SUCH USE. PERMANENT PERIMETER ROAD SURFACE FOR WASTE HAULERS SHALL BE AS SHOWN ON DRAWINGS 10 AND 11. TEMPORARY ACCESS ROADS FOR WASTE HAULERS IN CELL AREAS AND ON RUBBLE WASTE SHALL HAVE AN ALL WEATHER DURABLE SURFACE SUITABLE FOR SUCH USE.
2. PERIMETER CHANNELS: PERIMETER CHANNELS SHALL INCLUDE LINING PER THE TABULATION ON DRAWING 42. TEMPORARY BERMS, RIPRAP CHANNELS AND DITCHES ADJACENT TO TEMPORARY ROADS SHALL BE SUFFICIENT TO CONVEY SURFACE RUNOFF AROUND CELL CONSTRUCTION AND WASTE PLACEMENT AREAS AS SHOWN.
3. SEDIMENT BASINS: INITIAL CONSTRUCTION STAGE INCLUDES CONSTRUCTION OF SEDIMENT BASINS AND PERIMETER CHANNELS ASSOCIATED WITH EACH STAGE, AS NEEDED TO PROVIDE SURFACE RUNOFF TO BASINS, CONSISTENT WITH BASIN DESIGN CRITERIA. FOLLOWING THIS CONSTRUCTION, STOCKPILES SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE AND DRAINAGE AREA TO A SEDIMENT BASIN, THROUGHOUT THE LIFE OF LANDFILL CONSTRUCTION AND OPERATION.
4. PROPOSED CONTOURS: FOR CLARITY, PROPOSED CONTOURS REQUIRED TO IMPLEMENT CONSTRUCTION STAGE AND INTERMEDIATE STAGE ARE SHOWN IN BLUE ON INTERMEDIATE CONSTRUCTION STAGE PLANS AND PREVIOUSLY CONSTRUCTED ELEMENTS ARE SHOWN IN LIGHT GRAY. TEMPORARY ACCESS ROADS AND DITCHES FOR CELL CONSTRUCTION WILL BE GRADED PER INTERMEDIATE CONSTRUCTION STAGE PLANS AND DETAILS, PER CONDITIONS SPECIFIED UNDER ITEM II, "SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS", ITEM III, "VARIANCE FROM SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS" AND ITEM VI, "GENERAL NOTES FOR LANDFILL CELLS AND APPURTENANT CONSTRUCTION" ON THIS DRAWING.
5. CONSTRUCTED CONTOURS ADJACENT TO TEMPORARY ROADS AND DITCHES REPRESENT GRADING REQUIREMENTS FOR CONSTRUCTING CELLS AND ACCESS ON EXISTING GROUND PRIOR TO LANDFILL CONSTRUCTION. PER ITEM 6 BELOW, STOCKPILES OR BORROW AREAS MAY EXIST IN SOME LOCATIONS SHOWN AS EXISTING GROUND ON INTERMEDIATE CONSTRUCTION STAGE PLANS.
6. STOCKPILE/BORROW AREAS: ALL AREAS WITHIN THE BOUNDARY OF THE LANDFILL MAY BE USED FOR STOCKPILE AND BORROW AREAS FOR LANDFILL OPERATION THROUGHOUT THE LIFE OF THE FACILITY. STOCKPILES AND BORROW SOURCES MAY BE WITHIN AREAS ADJACENT TO TEMPORARY ACCESS ROADS AND CHANNELS FOR CELL CONSTRUCTION (SEE ITEM 4 ABOVE) AT TIME OF CONSTRUCTION. SUFFICIENT SPACE FOR CELL ACCESS AND SURFACE RUNOFF DIVERSION AROUND CELL CONSTRUCTION AND WASTE PLACEMENT SHALL BE PROVIDED THROUGHOUT THE LIFE OF THE FACILITY.
7. INTER-CELL ACCESS: INTER-CELL ACCESS FOR CELL CONSTRUCTION OR WASTE PLACEMENT SHALL BE VIA TEMPORARY ACCESS ROADS OR OVER COVERED RUBBLE WASTE IN ACTIVE CELLS.
8. AS-BUILT SURVEY: THROUGHOUT THE LIFE OF LANDFILL CONSTRUCTION AND OPERATION, FIELD RUN AND AERIAL TOPOGRAPHIC AS-BUILT SURVEY FOR ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS, CONSTRUCTION QUALITY, ASSURANCE PLAN, AND LANDFILL OPERATIONS PLAN.
9. QUALITY ASSURANCE: ALL CELL CONSTRUCTION MATERIAL (INCLUDING LEACHATE COLLECTION SYSTEM) SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONSTRUCTION CERTIFICATIONS BY A MARYLAND CERTIFIED PROFESSIONAL ENGINEER (AS REQUIRED BY THE CONSTRUCTION QUALITY ASSURANCE PLAN) MUST BE SUBMITTED TO AND APPROVED BY THE MDE PRIOR TO WASTE PLACEMENT.

E. LANDFILL CONSTRUCTION CHRONOLOGY

PRIOR TO ANY CONSTRUCTION, PERMANENT GROUNDWATER MONITORING WELLS SHALL BE INSTALLED, AS SHOWN ON "GROUNDWATER MONITORING PLAN" IN PHASE III REPORT SECTION 16.0.

PER CRITERIA AND ASSUMPTIONS UNDER ITEMS II(A), II(B), II(C) AND II(D) ABOVE, LANDFILL CONSTRUCTION CHRONOLOGY DEPICTED ON INTERMEDIATE STAGE CONSTRUCTION DRAWINGS 64 THROUGH 81 IS AS FOLLOWS:

1. INITIAL CONSTRUCTION (ACCESS ROAD, PERIMETER ACCESS ROAD, BERMS, SEDIMENT BASIN NOS. 2 THROUGH 4, SWALES, AND LEACHATE STORAGE FACILITY NO. 1) (STAGE A)
2. CELL 11 (STAGE A AND B)
3. CELL SEPARATION BERM FOR CELLS 12 THROUGH 16
4. CELL 16 (STAGE C)
5. CELLS 12 THROUGH 15, RESPECTIVELY (STAGES C, D, E, F, AND G)
6. CELLS 2, 3, 4, 1, 5F, 5E, AND BASIN NO. 1 AND LEACHATE STORAGE FACILITY NO. 2 (STAGES H, I, J, AND K)
7. CELL 10 AND 5D (AND SURFACE RUNOFF IMPOUNDMENT IN CELL 9 AREA)
8. CELLS 9 AND 5C; 8, 5A AND 5B; AND CELL 6 AND 7, IN THAT ORDER

III. VARIANCE FROM SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS

AS REFERENCED UNDER ITEM II(C)(5), SEQUENCE OF CONSTRUCTION IS BASED ON SITE ACCESS VIA THE EAST ENTRANCE. IF THE NORTH ENTRANCE IS CONSTRUCTED IN LIEU OF THE EAST ENTRANCE, THE SEQUENCE OF CONSTRUCTION WILL BE IDENTICAL, EXCEPT THAT THE PERIMETER ACCESS ROAD BETWEEN THE NORTH AND EAST ENTRANCES AND PERIMETER CHANNEL NO. 8 WILL NOT BE CONSTRUCTED, UNTIL NECESSARY FOR CONSTRUCTION OF CELLS 12 THROUGH 15. IF THE LANDFILL NORTH ENTRANCE IS CONSTRUCTED IN LIEU OF THE EAST ENTRANCE, THE SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS SHALL REMAIN AS DESCRIBED IN THESE PERMIT DRAWINGS, VARIANCE FROM THE SEQUENCE OF CONSTRUCTION HEREIN IS NOT REQUIRED. IF THE SOUTH ENTRANCE IS THE ONLY SITE ACCESS THAT IS ULTIMATELY CONSTRUCTED, THE SEQUENCE OF CONSTRUCTION WILL BE REVISED AND MUST BE APPROVED BY ANNE ARUNDEL SOIL CONSERVATION DISTRICT (AASCD) AND MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE).

IV. SEQUENCE OF RUBBLE WASTE PLACEMENT OPERATION

SEQUENCE OF RUBBLE WASTE PLACEMENT IS AS FOLLOWS.

1. FOR EACH INTERMEDIATE STAGE OF CONSTRUCTION PREPARE THE TOP OF CELL SUBGRADE (I.E. BOTTOM OF SUBBASE) ACCORDANCE WITH CONTRACT DOCUMENTS (SEE ITEM VI(B) HEREON) AND REQUIREMENTS OF THE REFUSE DISPOSAL PERMIT.
2. CONSTRUCT THE RUBBLE LANDFILL PER INTERMEDIATE CONSTRUCTION STAGE DRAWINGS 64 THROUGH 78. PLACE WASTE IN INDIVIDUAL CELLS IN EAST AND WEST SECTIONS AS SHOWN. AS RUBBLE WASTE PLACEMENT PROGRESSES, PROVIDE DAILY AND INTERMEDIATE COVER PER THE LANDFILL OPERATIONS AND MAINTENANCE PLAN (SEE SECTIONS 12 OF THE PHASE III PERMIT) AND THE REFUSE DISPOSAL PERMIT REQUIREMENTS.
3. WHEN RUBBLE WASTE FILLING IS AT A LEVEL ABOVE THE LANDFILL PERIMETER BERM, PROVIDE COVER AND VEGETATION IN A MANNER THAT PROMOTES SURFACE RUNOFF FROM SOIL COVER OVER THE RUBBLE, ACROSS THE PERIMETER BERM TO A PERIMETER CHANNEL (AS DESCRIBED IN THE LANDFILL OPERATIONS AND MAINTENANCE PLAN).
4. CONTINUE THE RUBBLE WASTE PLACEMENT OPERATION TO FINAL GRADE. ESTIMATED LIFE EXPECTANCY OF THE RUBBLE WASTE PLACEMENT OPERATION IS 12 YEARS. FINAL GRADES SHOWN ON THE PLANS REPRESENT THE TOP ELEVATION FOR THE LANDFILL CLOSURE CAP. FINAL COVER AND CLOSURE CAP SHALL BE INSTALLED PER MARYLAND REGULATIONS. FINAL SIDE SLOPES SHALL BE 4:1, WITH STORMWATER MANAGEMENT TERRACES AND DOWNCHUTES INSTALLED PER PLANS AND DETAILS.
5. WHEN FINAL GRADES ARE VEGETATED PER THE PLANS, SEDIMENT BASINS SHALL BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES.

V. ESTIMATED CELL CONSTRUCTION AND WASTE PLACEMENT SCHEDULE

PRIOR TO BEGINNING ANY WASTE PLACEMENT, PERMANENT GROUNDWATER MONITORING WELLS SHALL BE INSTALLED, AS SHOWN ON "GROUNDWATER MONITORING PLAN" IN PHASE III REPORT SECTION 16.0.

IN ACCORDANCE WITH ALL CONDITIONS SPECIFIED ON THIS DRAWING, THE LANDFILL SHALL BE CONSTRUCTED. INTERMEDIATE CONSTRUCTION STAGE PLANS (DRAWINGS 64 THROUGH 81) DEPICT CONSTRUCTION OF THE LANDFILL FROM BEGINNING OF CONSTRUCTION THROUGHOUT CONSTRUCTION OF THE SEQUENCE OF CONSTRUCTION OF THE LANDFILL IS PROVIDED ON EACH INTERMEDIATE CONSTRUCTION STAGE PLAN. ESTIMATED TIME FRAME FOR CELL CONSTRUCTION AND WASTE PLACEMENT IS PROVIDED HEREUNDER.

PRIOR TO BEGINNING ANY OTHER ON-SITE CONSTRUCTION, INTERMEDIATE CONSTRUCTION INITIAL STAGE, PER PLANS ON DRAWINGS 64 AND 65, SHALL PROCEED. UNDER INITIAL CONSTRUCTION, BASINS NO. 2, 3 AND 4, AND LEACHATE STORAGE FACILITY NO. 1 WILL BE CONSTRUCTED, AREAS OUTSIDE THE LIMIT OF DISTURBANCE FOR INITIAL CONSTRUCTION MAY BE USED TO STOCKPILE EXCAVATED MATERIALS. CONSTRUCTION OF THE LANDFILL CLOSURE CAP, AS APPROVED BY THE AASCD SEDIMENT CONTROL INSPECTOR. EXCLUDING ACCESS ROADS, DRAINAGE CHANNELS, AND ENTRANCE INFRASTRUCTURE, ALL DISTURBED AREAS SHALL BE VEGETATED FOR STABILIZATION.

BASED ON THE ANTICIPATED VOLUME AND DENSITY OF RUBBLE WASTE TO BE PLACED IN THE FACILITY ON A DAILY BASIS, DURING 5 DAYS PER WEEK OPERATION, THE ESTIMATED LIFE EXPECTANCY OF THE LANDFILL WASTE PLACEMENT OPERATION IS 12 YEARS.

A. CONSTRUCTION REQUIREMENTS

THE FOLLOWING CONSTRUCTION REQUIREMENTS AND ASSUMPTIONS WERE USED TO GENERATE THE "SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT", UNDER ITEM B BELOW.

1. LANDFILL WASTE PLACEMENT OPERATION DURATION IS 12 YEARS UNLESS MODIFIED THROUGH REGULATORY OR LEGAL PROCESSES. INITIAL CONSTRUCTION PRIOR TO THE START OF WASTE PLACEMENT IS NOT SUBJECT TO THE 12 YEAR TIME FRAME.
2. COMPLETION OF ANY FINAL CLOSURE CAP CONSTRUCTION OF THE FACILITY (I.E., THE CONSTRUCTION OPERATION ASSOCIATED WITH INSTALLATION OF LANDFILL CLOSURE CAP MATERIAL, PER COMAR REGULATIONS) IS NOT INCLUDED IN THE "SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT".
3. CONSTRUCTION OF CELL INFRASTRUCTURE (I.E., ACCESS ROADS, PERIMETER DITCHES, STORM DRAINS, AND FORCE MAINS) AS REQUIRED TO SUPPORT ONGOING LANDFILL CELL CONSTRUCTION. CELL INFRASTRUCTURE CONSTRUCTION SHOULD BE SCHEDULED AND COMPLETED AS NECESSARY TO ALLOW WASTE PLACEMENT IN ANY GIVEN CELL, IMMEDIATELY FOLLOWING CELL CONSTRUCTION COMPLETION.

B. SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT

PRIOR TO BEGINNING WORK FOR ANY INTERMEDIATE STAGE OF CONSTRUCTION (AS SHOWN ON DRAWINGS 64 THROUGH 81 AND SPECIFIED UNDER ITEM VI(B) HEREON), ANNE ARUNDEL COUNTY PLANNING AND CODE ENFORCEMENT (PACE) INSPECTIONS AND PERMITS (410-222-7450) SHALL BE NOTIFIED. ALL PROPOSED STOCKPILE AREAS (INCLUDING TEMPORARY SEDIMENT CONTROL MEASURES) SHALL BE PER AASCD SEDIMENT CONTROL INSPECTOR'S APPROVAL.

BASED ON INDIVIDUAL CELL AIR SPACE (PRORATED PER TOTAL LANDFILL CELL ACREAGE) AND INTERMEDIATE CONSTRUCTION STAGE PLANS ON DRAWINGS 64 THROUGH 81, THE "SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT" IS AS FOLLOWS.

1. COMPLETE CONSTRUCTION OF BASIN NOS. 2, 3, AND 4 AND LEACHATE STORAGE FACILITY NO. 1 INITIAL STAGE, AS SHOWN ON DRAWINGS 3, 11, AND 64. CONSTRUCT EAST ENTRANCE ACCESS ROAD AS SHOWN ON DRAWING 3. EAST ENTRANCE AND BASIN NO. 4 AS SHOWN ON DRAWINGS 5, 5D, AND 64 AND THE PERIMETER ACCESS ROAD AS SHOWN ON DRAWINGS 64. CONSTRUCTION OF ALL BASINS SHALL COMPLY WITH THE FOLLOWING.

2 YEARS⁽¹⁾

 - ALL MATERIALS FOR BASIN CONSTRUCTION SHALL BE ON-SITE PRIOR TO COMMENCEMENT OF WORK.
 - PRIOR TO COMMENCEMENT OF WORK, AREAS FOR CLEARING, STRIPPING AND STOCKPILING TOPSOIL OR ANY IMPORTED BORROW, AND ANY ON-SITE BORROW AREAS (INCLUDING TEMPORARY SEDIMENT CONTROL MEASURES, SUCH AS SILT FENCE, ETS) SHALL BE PER APPROVAL OF THE AASCD SEDIMENT CONTROL INSPECTOR.
 - BASINS WILL BE CONSTRUCTED PER APPROVAL BY MDE AND AASCD, UNDER THESE PERMIT DRAWINGS. CONSTRUCTION OF THE CUT-OFF TRENCH, PRINCIPAL AND EMERGENCY SPILLWAYS, AND ALL OTHER ASPECTS OF EMBANKMENT CONSTRUCTION, SHALL BE INSPECTED BY A PROFESSIONAL GEOTECHNICAL ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.
2. CONSTRUCT EAST SECTION (30.8 ACRES AIR SPACE) PER ITEM II(E) HEREON. COMPLETE WASTE PLACEMENT, PLACE INTERMEDIATE COVER, AND VEGETATE (I.E., 2 FEET BELOW CLOSURE CAP FINISHED GRADE).

3.5 YEARS⁽²⁾
3. CONSTRUCT WEST SECTION CELLS 1 THROUGH 10 (83.6 ACRES AIR SPACE) PER ITEM II(E) HEREON. CONSTRUCT LEACHATE STORAGE FACILITY NO. 2 WHEN REQUIRED FOR CELLS 1, 5A THROUGH 5F, AND 6 THROUGH 10. COMPLETE WASTE PLACEMENT TO FINAL COVER ELEVATION IN WEST SECTION.

8.5 YEARS⁽²⁾
4. FOLLOWING PERMANENT VEGETATIVE STABILIZATION OF THE LANDFILL CLOSURE CAP (CONCEPTUAL CAP DETAIL ONLY SHOWN ON THESE PERMIT DRAWINGS) IN EITHER BASIN NO. 1, BASIN NO. 2 OR BASIN NO. 3 CONTRIBUTING DRAINAGE AREA, THE APPLICABLE BASIN SHALL BE CONVERTED TO A STORMWATER MANAGEMENT POND AS SPECIFIED ON DRAWING 54.

⁽¹⁾NOT PART OF 12-YEAR WASTE PLACEMENT OPERATION

⁽²⁾BASED ON PRORATED CELL ACREAGE OVER 12-YEAR TIME FRAME

VI. GENERAL NOTES FOR LANDFILL CELLS AND APPURTENANT CONSTRUCTION

A. VARIANCE FROM LANDFILL SEQUENCE OF CONSTRUCTION

UNLESS OTHERWISE APPROVED BY AASCD AND MDE, THE RUBBLE LANDFILL AND ALL APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS AND DETAILS ON THESE PERMIT DRAWINGS. CHRONOLOGICAL SEQUENCE OF CONSTRUCTION SHALL BE PER ITEM II(C) (PER INTERMEDIATE CONSTRUCTION STAGE DRAWINGS 64 THROUGH 81). VARIANCE FROM SEQUENCE OF CONSTRUCTION MAY OCCUR, PER ITEM II HEREON.

B. PREPARATION OF CONTRACT DOCUMENTS FOR INTERMEDIATE STAGE CONSTRUCTION

PRIOR TO BEGINNING CONSTRUCTION FOR EACH INTERMEDIATE CONSTRUCTION STAGE (EXCLUDING CONSTRUCTION REQUIRED FOR BASINS AND STORMWATER MANAGEMENT/SEDIMENT CONTROL MEASURES) CONSTRUCTION DRAWINGS AND CONSTRUCTION SPECIFICATIONS (I.E., CONTRACT DOCUMENTS) SEALED BY A PROFESSIONAL ENGINEER, REGISTERED IN MARYLAND, SHALL BE PREPARED AND SUBMITTED TO MDE FOR APPROVAL. CONSTRUCTION OF THE SITE'S FOUR BASINS, SEDIMENT TRAP AND OTHER STORMWATER MANAGEMENT/SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AS APPROVED BY MDE AND AASCD, UNDER THESE PERMIT DRAWINGS.

PRIOR TO BEGINNING ANY WASTE PLACEMENT, PERMANENT GROUNDWATER MONITORING WELLS SHALL BE INSTALLED, AS SHOWN ON "GROUNDWATER MONITORING PLAN" IN PHASE III REPORT SECTION 16.0. INTERMEDIATE CONSTRUCTION STAGE CONTRACT DOCUMENTS SHALL INCLUDE OFF-ROAD ACCESS (I.E. WIDENED PERIMETER ACCESS ROAD FOR PARKING, ETC.) TO PERMANENT GROUNDWATER MONITORING WELLS.

PRIOR TO BEGINNING WHEEL WASH AND CONCRETE CLEAN-OUT INSTALLATION, CONSTRUCTION DRAWINGS AND SPECIFICATIONS (SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND) AS REQUIRED TO CONSTRUCT AND MAINTAIN THE WHEEL WASH AND CONCRETE CLEAN-OUT, INCLUDING ALL APPURTENANCES (I.E., INTERCONNECTING PIPING AND SPECIFICATIONS FOR REMOVAL AND DISPOSAL OF ACCUMULATED WATER AND SEDIMENT FROM THE CONCRETE CLEAN-OUT, ETC.) SHALL BE APPROVED BY MDE.

PRIOR TO BEGINNING CONSTRUCTION OF THE SITES LEACHATE STORAGE FACILITIES, CONSTRUCTION DRAWINGS AND SPECIFICATIONS (SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND), INCLUDING ALL APPURTENANCES (I.E., 500,000 GALLON STORAGE TANKS, SECONDARY CONTAINMENT AREA, LOAD-OUT PAD WITH STORAGE TANK, ETC.) SHALL BE APPROVED BY MDE.

MINIMUM REQUIREMENTS REGARDING CONTENT OF THE CONTRACT DOCUMENTS ARE AS FOLLOWS:

1. ALL CONSTRUCTION DRAWING PLAN VIEWS SHALL BE PREPARED AT MINIMUM 1" = 50' SCALE.
2. COORDINATE GEOMETRY SHALL BE ANNE ARUNDEL COUNTY GRID, PER COORDINATES SHOWN ON THE PERMIT DRAWINGS.
3. SITE ENTRANCE ROAD(S) AND INFRASTRUCTURE (I.E., SCALE HOUSE, TRUCK SCALES, MAINTENANCE BUILDING, WHEEL WASH AND CLEANOUT) SHALL CONFORM TO THE PLANS SHOWN ON DRAWINGS 4 THROUGH 7. MINIMUM TRACTOR TRAILER TURNING RADIUS SHALL BE 55 FEET. MINOR FIELD ADJUSTMENT TO THE LAYOUTS MAY BE MADE AS NECESSARY, AND ADDITIONAL DIMENSIONS TO ACCOMMODATE AS REQUIRED TO ENSURE PROPER CONSTRUCTION, IN CONFORMANCE WITH TRACTOR TRAILER MOVEMENT ON TRUCK SCALES AND WHEEL WASH, AND OPERATIONAL EQUIPMENT MOVEMENT WITHIN AND ADJACENT TO THE MAINTENANCE BUILDING.
4. BASE LINE FOR CONSTRUCTION OF LEACHATE STORAGE FACILITIES SHALL BE CENTERLINE OF ALL ACCESS ROADS THAT SURROUND THE AREAS, AS SHOWN ON PERMIT DRAWINGS. EACH LEACHATE STORAGE FACILITY INCLUDES A SECONDARY CONTAINMENT STRUCTURE, DESIGNED TO PROVIDE 500,000 GALLONS CONTAINMENT CAPACITY FOR LEACHATE STORAGE TANK LEAKS, WITH 1 FOOT FREEBOARD FROM LIQUID LEVEL TO TOP OF BERM (SEE DRAWINGS 10, 11, 28, AND 29). MINOR ADJUSTMENT TO LEACHATE STORAGE FACILITY HORIZONTAL AND VERTICAL ALIGNMENT (I.E., ADJUSTMENTS TO ACCOMMODATE TANKER TRIMTOW MOVEMENT AND INSTALLATION OF STORAGE TANKS, SECONDARY CONTAINMENT BERM, ETC.) SHALL BE MADE, AS NECESSARY. LEACHATE STORAGE FACILITIES SHALL NOT BE SMALLER THAN AREAS DEPICTED ON PERMIT DRAWINGS.
5. BASE LINE OF CONSTRUCTION FOR THE LANDFILL CELLS SHALL BE THE PERIMETER ACCESS ROAD CENTERLINE, AS SHOWN ON THESE PERMIT DRAWINGS. PRECISE CURVILINEAR AND VERTICAL ALIGNMENT FOR THE ROAD SHALL BE COMPUTED BASED ON PROPOSED ALIGNMENT AND ELEVATIONS SHOWN. ANY DISCREPANCY BETWEEN THE ROAD SHOWN ON LANDFILL PLANS, AND SEDIMENT BASIN PLANS ON DRAWINGS 45 THROUGH 50, SHALL BE GOVERNED BY THE LANDFILL PLANS.
6. PERIMETER ACCESS ROAD CENTERLINE SHALL BE USED TO DEVELOP ROAD CENTERLINE PROFILES ON CONSTRUCTION DRAWINGS. PROFILES SHALL BE PREPARED AT MINIMUM 1" = 50' HORIZONTAL AND 1" = 5' VERTICAL SCALE. MINOR ADJUSTMENTS TO ROAD HORIZONTAL AND VERTICAL ALIGNMENT MAY BE MADE AS NECESSARY. PERIMETER ACCESS ROAD SHALL BE CONSTRUCTED PER THE BASE LINE FOR CONSTRUCTION, CENTERLINE PROFILES AND THE CROSS SECTIONS ON THESE PERMIT DRAWINGS.
7. HORIZONTAL LOCATION OF LANDFILL CELL SEPARATION BERMS AND PUMP STATIONS SHALL BE PER DEPICTION ON PERMIT DRAWINGS.
8. LANDFILL SIDE SLOPES AND CELL GRADES AT TOP OF PREPARED SUBBASE ELEVATION SHALL BE PER DEPICTION ON PERMIT DRAWINGS. LEACHATE COLLECTION SYSTEM LINER MATERIAL AND DIMENSIONAL CRITERIA SHALL BE PER PERMIT DRAWING DETAILS.
9. CONSTRUCTION OF LANDFILL PERIMETER CHANNEL AND STORM DRAIN PIPES, PERIMETER BERM, LEACHATE PUMP STATIONS, CARRIER PIPES AND LEACHATE SUMPS SHALL BE PER DIMENSIONAL CRITERIA, AS SHOWN ON PERMIT DRAWING DETAILS. BASE LINE OF CONSTRUCTION (I.E., THE PERIMETER ACCESS ROAD CENTERLINE) SHALL BE THE REFERENCE FOR ALL DIMENSIONS SHOWN.
10. CONSTRUCTION OF LEACHATE FORCE MAIN SYSTEMS SHALL BE PER PERMIT DRAWING PLANS AND SECTIONS. CONSTRUCTION DRAWINGS SHALL INCLUDE PROFILES OF THE FORCE MAIN, AT MINIMUM 1" = 50' HORIZONTAL AND 1" = 5' VERTICAL SCALE.
11. STORM DRAIN PIPE HEADWALLS SHALL BE PER "ANNE ARUNDEL COUNTY STANDARD DETAILS FOR CONSTRUCTION". TO ACCOMMODATE HEADWALL CONSTRUCTION, PERIMETER DITCHES WILL BE WIDENED AS NECESSARY. DETAILS FOR CONSTRUCTION OF PUMP STATIONS, MAINTENANCE BUILDING, AND OTHER APPURTENANCES (I.E., TRUCK SCALES, SCALE HOUSE, STORAGE TANK RING WALLS, ETC.) SHALL BE PROVIDED ON CONSTRUCTION DRAWINGS.
12. CONSTRUCTION SPECIFICATIONS THAT SPECIFY MATERIALS AND INSTALLATION REQUIREMENTS (INCLUDING QUALITY ASSURANCE/QUALITY CONTROL FOR LEACHATE COLLECTION SYSTEM (INCLUDING LINING AND TESTING) FOR EACH CONSTRUCTION ITEM ASSOCIATED WITH CONSTRUCTION OF LANDFILL CELLS AND ALL APPURTENANCES SHALL ACCOMPANY CONSTRUCTION DRAWINGS FOR EACH INTERMEDIATE STAGE OF CONSTRUCTION. ALL ITEMS ASSOCIATED WITH LANDFILL OPERATION (I.E., PUMPS, VALVES, ELECTRICAL WIRING, MONITORING DEVICES, ETC.) SHALL BE INCLUDED IN CONSTRUCTION SPECIFICATIONS.
13. GENERAL SPECIFICATIONS (INCLUDING BUT NOT LIMITED TO THE FOLLOWING) SHALL BE PROVIDED.
 - SUMMARY OF WORK
 - MEASUREMENT AND PAYMENT
 - SCHEDULE OF VALUES
 - APPLICATIONS FOR PAYMENT
 - PROJECT COORDINATION
 - FIELD ENGINEERING/SURVEYING
 - PROJECT MEETINGS
 - SUBMITTALS
 - QUALITY ASSURANCE
 - TESTING/LABORATORY SERVICES
 - CONSTRUCTION FACILITIES
 - JOB SITE SECURITY
 - DUST CONTROL
 - HEALTH AND SAFETY SPECIFICATIONS FOR CONSTRUCTION
 - SITE ACCESS AND TRAFFIC PLAN
 - CONTRACT CLOSEOUT
 - PROJECT RECORD DOCUMENTS
 - WARRANTIES

REVISION:

DATE:

NATIONAL WASTE MANAGERS

PHASE III APPLICATION

CHESAPEAKE TERRACE RUBBLE LANDFILL

PATUXENT ROAD, ODENTON

ANNE ARUNDEL COUNTY, MARYLAND



SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION

GENERAL NOTES

FOR CONSTRUCTION

PROJECT MANAGER: PMS

CHECKED BY: PMS

DRAWN BY: KHF

SCALE(S) NOTED

PROJECT NUMBER: 2018 - 3854

DATE: 09/03/2021

Response to Comment 1

Signed Professional Geologist Certification Page dated May 4, 2024

**PHASE II PERMIT APPLICATION
HYDROGEOLOGIC REPORT
FOR
CHESAPEAKE TERRACE RUBBLE LANDFILL
ANNE ARUNDEL COUNTY, MARYLAND**

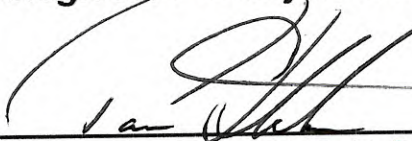
PREPARED FOR:

**National Waste Managers, Inc.
2900 Linden Lane
Silver Spring, MD 20910**



PREPARED BY:

The Phase II Permit Application (April 2019) and subsequent revisions, including those issued in January 2022, November 2021 and September 2021 were prepared by and under the direct supervision of Paul G Stratman, P.E., P.G., a licensed Professional Geologist in Pennsylvania and Delaware.



Paul G. Stratman, P.E., P.G.

5/4/24

Date:

Response to Comment 2
Redline Text Attachment 12B – ACM Waste Management Plan
(Revised May 4, 2024)

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1.0 DEFINITIONS

"Asbestos" means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

"Asbestos-containing waste materials (ACM)" means mill tailings or any waste that contains commercial asbestos. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing waste material and materials contaminated with asbestos including disposable equipment and clothing.

"Asbestos waste generator" means any owner or operator of a source covered by the Code of Federal Regulations (CFR), Title 40, Part 61 (40 CFR 61), *National Emission Standards for Hazardous Air Pollutants (NESHAP)*, Subpart M, *National Emission Standard for Asbestos* whose act or process produces asbestos-containing waste material.

"Category I nonfriable asbestos containing material (ACM)" means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the polarized light microscopy method specified in 40 CFR 763, Subpart E, Appendix E.

"Category II nonfriable asbestos-containing material (ACM)" means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the polarized light microscopy methods specified in 40 CFR 763, Subpart E, Appendix E, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

"Commercial asbestos" means any material containing asbestos that is extracted from ore and has value because of its asbestos content.

"Friable asbestos" means any material containing more than one percent asbestos as determined using the polarized light microscopy methods specified in 40 CFR 763, Subpart E, Appendix E, which is capable of being crumbled, pulverized or reduced to powder by hand pressure.

"Leak-tight" means that solids or liquids cannot escape or spill out. It also means dust-tight.

"Natural barrier" means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.

"Regulated asbestos containing material (RACM)" means:

- Friable asbestos material;
- Category I nonfriable ACM that has become friable;
- Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; and,
- Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

For the purposes of this definition **"renovation"** means altering an installation, structure or building or any part of such installation, structure or building in any way, including the stripping

or removal of RACM. Operations in which load-supporting structural members are wrecked or taken out are **"demolitions."**

"Resilient floor covering" means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in 40 CFR 763, Subpart E, Appendix E.

"Waste shipment record" means the shipping manifest, required to be originated and signed by the asbestos waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

2.0 APPLICABLE ASBESTOS WASTE GENERATION PROCESSES

The standards contained herein apply to the management of all asbestos-containing materials (ACM) generated by asbestos mills, by manufacturing, fabricating, and spraying operations, and ACM generated in the course of demolition and renovation of installations, structures or buildings, or other waste generating activities.

3.0 PRE-ACCEPTANCE PROCEDURES

In order for ACM to be accepted for disposal site at the Chesapeake Terrace Rubble Landfill site, the asbestos waste generator shall follow the pre-acceptance procedures described in this section.

3.1 PACKAGING

The generator shall conform to all packaging requirements contained in 40 CFR 61.149 and 40 CFR 61.150.

All ACM generated in a manufacturing, fabrication, or spraying operation and all regulated ACM generated in a demolition or renovation operation shall be placed in leak-tight containers while wet. Materials that will not fit into containers without additional breaking shall be put into leak-tight wrapping, consisting of 6-mil double "bladder" for bulky wastes, taped shut. The containers shall meet federal DOT standards 49 CFR 173.216. Materials placed in double, 6-mil thick plastic bags and sealed will conform to the above requirements when transported in motor vehicles that are loaded by and for the exclusive use of the consignor and unloaded by the consignee. To ensure that the personnel at the disposal facility can verify that the material has been placed in double bags, the outer bag should be transparent.

The containers or wrapped materials specified in 9 VAC 20-80-640, Section C.1.a shall be labeled using warning labels specified by Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(j)(3) or 1926.1101(k)(7). The labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible and shall contain the following information:

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

For materials transported off-site, label containers or wrap materials with a name of the waste generator and the location at which the waste was generated.

Category I nonfriable ACM and Category II nonfriable ACM generated in a demolition or renovation operation that do not meet the definition of regulated ACM need not meet the requirements of 9 VAC 20-80-640, sections C.1.a, b, and c.

3.2 MARKING

Conform to all marking requirements contained in COMAR 26.04.07.13 for vehicles used to transport ACM during loading and unloading of wastes.

3.3 IDENTIFICATION

As part of identification of ACM transported to the disposal facility, the generator shall submit to National Waste Managers, Inc. (NWM) the appropriate Waste Characterization Data Forms and a copy of the waste manifest shipment record described above at the same time the ACM is delivered to the disposal site. The Waste Characterization Data Forms shall contain the following information:

- The name, address, and telephone number of waste generator;
- The name and address of the state NESHAP office; Maryland Department of the Environment, Air & Radiation Management Administration; Division of Asbestos Licensing & Enforcement; 1800 Washington Blvd., Suite 725 Baltimore MD 21230-1720
- The approximate quantity in cubic meters (cubic yards);
- The name and telephone number of the disposal site operator;
- The date transported;
- The name, address, and the telephone number of the transporters; and,
- A certification that the contents of the consignment are fully and accurately described by proper shipping name and classified, packed, marked, and labeled, and in all respects in proper condition for transport by highway according to applicable international and government regulations.

4.0 TRANSPORTATION OF ASBESTOS RELATED MATERIAL

NWM requires the transporter of asbestos related material to conform to the requirements set forth in COMAR 26.04.07.13. All asbestos-containing materials shall be properly packed for transportation in accordance with these requirements. Asbestos-containing waste materials shall be accompanied by the waste shipment manifest record.

5.0 DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

NWM shall comply with the requirements of this section at the Chesapeake Terrace Rubble Landfill site. All asbestos-containing materials generated in a manufacturing, fabrication, or spraying operation and all regulated ACM generated in a demolition or renovation operation shall be disposed in a designated area of the Chesapeake Terrace Rubble Landfill. When Category I and Category II nonfriable ACM is disposed in the landfill advanced notice shall be required and other pertinent requirements of this part shall be met.

5.1 UNLOADING OF ACM

Upon arrival at the Chesapeake Terrace facility, the vehicles used to transport ACM shall be marked during the unloading process so that the signs are visible. The markings shall:

- Be displayed in such a manner and location that a person can easily read the legend;
- Conform to the requirements for 20 inches by 14 inches upright format caution signs specified in 29 CFR 1910.145(d)(4);
- Display the following legend with letter sizes and styles of a visibility at least equal to those specified in the following table. Spacing between any two lines shall be at least equal to the height of the upper two lines.

Legend	Notation
DANGER	1-inch Sans Serif, Gothic or Block A
ASBESTOS DUST HAZARD	1-inch Sans Serif, Gothic or Block A
CANCER AND LUNG DISEASE HAZARD	3/4-inch Sans Serif, Gothic or Block A
Authorized Personnel Only	14-point Gothic

5.2 PLACEMENT OF ACM

Asbestos-containing waste materials shall be segregated in designated areas and not disposed of on the active work face with other solid wastes. An initial lift of 10 feet of rubble waste will be placed in the designated asbestos disposal area. The boundaries of the asbestos area will then be clearly marked and signs posted in the appropriate manner. Prior to receipt of asbestos containing waste shipment, an excavator will dig a trench in the solid waste that will be able to contain all the asbestos waste scheduled for that day plus the one-foot of soil cover. The depth of the trench will be approximately six feet but no greater than 8 feet. Once the first lift in the designated asbestos area is completely full and the 1 foot of soil cover applied, an additional 10 feet of solid waste will be placed over the designated disposal area for the future placement of asbestos waste. This process will continue until the maximum height of the landfill is achieved. Asbestos containing waste will not be placed within 15 feet of the intermediate cover or of the cell's final elevation.

The waste shall either be hand placed in the excavated trench or deposited by means of slowly unloading the asbestos containing wastes. Either placement method will ensure that the integrity of bags, wrapping or containers are not punctured or damaged.

The waste shall not be compacted until a sealing layer of soil has been placed over the waste and great care is taken to prevent the breaking of bags or wrapping. All accidentally broken materials shall be covered with 12 inches or more of soil immediately. A cell that has been completely covered with soil, at least one foot thick may be compacted.

All waste shall be covered with at least one foot of soil at the end of each day of operation. A final cover of 3 feet of soil shall be placed over all areas that have not been in use or will not be used for more than 30 days. Areas that will not or have not been used for one year, in addition to final soil cover, shall be graded for erosion prevention and revegetated.

5.3 ACCESS CONTROL

The entire landfill will have access control and site security. As such an internal fence is not required. The entrance and asbestos waste boundary line shall be clearly marked. Permanent

warning signs shall be provided at all entrances and at intervals of 330 feet or closer around the waste boundary line. The warning signs shall:

- Be posted in such manner and location that a person can easily read the legend;
- Conform to the requirements for 20 inches by 14 inches upright format caution signs specified in 29 CFR 1910.145.d.4;
- Display the following legend with letter sizes and styles of a visibility at least equal to those specified in the following table. Spacing between any two lines shall be at least equal to the height of the upper two lines.

Legend	Notation
ASBESTOS WASTE DISPOSAL AREA	1-inch Sans Serif, Gothic or Block
DO NOT CREATE DUST	3/4-inch Sans Serif, Gothic or Block
Breathing Asbestos is Hazardous to Your Health	14-point Gothic

The asbestos area within this secure sanitary landfill will not be located closer than 50 feet to the property boundary or occupied building or structure.

5.4 RECORDKEEPING AND REPORTING

5.4.1 Waste Shipment Records

For all ACM received, NWM shall follow the following requirements regarding waste shipment records:

- Complete each waste shipment record submitted by the asbestos waste generators for each shipment received by the Chesapeake Terrace facility by noting shipment discrepancies and dating and signing the waste shipment record. The discrepancies will include:
 - The presence of improperly enclosed or uncovered waste, or any ACM not sealed in leak-tight containers or wrappings; and,
 - A discrepancy between the quantity of waste designated on the waste shipment record and the quantity actually received.
- Send a copy of the signed waste shipment record to the waste generator as soon as possible and no longer than 30 days after receipt of the waste;
- Upon discovering the discrepancy in the shipment quantity, attempt to reconcile such discrepancy with the generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report it in writing to the Maryland Department of the Environment, Air & Radiation Management Administration; Division of Asbestos Licensing & Enforcement; 1800 Washington Blvd., Suite 725 Baltimore MD 21230-1720 at the above address. Describe the discrepancy and the attempts to reconcile it, and submit a copy of the waste shipment record along with the report; and

- Retain a copy of all records and reports required at least two years.

5.4.2 Disposal records

NWM shall follow the following requirements regarding disposal records:

- Initiate and maintain, until closure, records of the location, depth and area, and quantity in cubic yards of ACM within the Chesapeake Terrace site on a map or diagram of the disposal area;
- Submit to the Director of the MDE, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities; and,
- Furnish upon request by the director of the MDE, and make available during normal business hours for inspection, all records required by the regulations.

5.4.3 Safety and Health Program

NWM shall institute an occupational safety and health program required under 29 CFR 1910.1001 or 29 CFR 1910.1101, as applicable.

5.4.4 Closure and Post-Closure Care

In addition to the closure and post-closure care requirements for the facility, NWM shall follow the following requirements if the facility receives ACM materials:

- Within 60 days of the closure of the Chesapeake Terrace site, record with the Anne Arundel County Clerk's office a notation on the deed to the facility property or any other document that would normally be examined during a title search that will in perpetuity notify any purchaser of the property that:
 - The property has been used for the disposal of ACM; and,
 - The copy of the survey plat and the record of location and quantity of ACM disposed are attached to the notation.

Response to Comment 3
Revised Table A – Attachment 5B – Cell Life Estimates

Attachment 5B, TABLE A

Revised May 4, 2024

CELL LIFE ESTIMATES

Cell	Total Cell Area (AC)	Avg Top of Waste Elev. (ft)	Avg Top of LCL Elev. (ft)	Avg Waste Thickness (ft)	Avg Number of 8-ft Lifts (ea)	Estimated Cell Life (3) (months)	Cell Life (4) (months)
1	13.2	175	120	55	6.9	14.5	15
2	7.5	168	104	64	8.0	9.6	10
3	4.9	169	113	56	7.0	5.5	6
4	5.5	158	117	41	5.1	4.5	5
5A	5.6	202	126	76	9.5	8.5	9
5B	3.4	191	128	63	7.9	4.3	4
5C	4.4	192	130	62	7.8	5.5	6
5D	2.9	170	130	40	5.0	2.3	2
5E	3.2	162	128	34	4.3	2.2	2
5F	1.7	162	128	34	4.3	1.2	1
6	5.2	209	118	91	11.4	9.5	10
7	6.7	207	112	95	11.9	12.7	13
8	6	204	120	84	10.5	10.1	10
9	4	203	120	83	10.4	6.6	7
10	9.6	186	122	64	8.0	12.3	12
11	7	140	84	56	7.0	7.8	8
12	6.7	135	87	48	6.0	6.4	6
13	3.4	130	87	43	5.4	2.9	3
14	4.3	140	89	51	6.4	4.4	4
15	4.7	148	91	57	7.1	5.4	5
16	4.5	154	90	64	8.0	5.8	6
				Total Months		141.9	144.0
				Total Years			12

1. LCL = Top of Leachate Collection Layer

2. HELP = Hydrologic Evaluation of Landfill Performance

3. Estimated cell life based on 5.0 day/week operations at 1,602 tons/day, 44 lbs/cf, and 4.8 days/acre of 8 ft thick lift

4. Rounded to the nearest Month.

Response to Comment 4
Response-MDE-Question 4

CHESAPEAKE TERRACE QUESTIONS FOR APPLICANT

4. In the Phase II Report, page 50, Section 10.0 Ecological Considerations states that “protection measures for rare species habitats should be addressed during the detailed engineering design.”. The text references correspondence with Katherine McCarthy of the Maryland Department of Natural Resources. Ms. McCarthy stated in correspondence dated October 21, 2003 and included in Appendix L of the Phase II Report that “In preparation for the next phase, the Natural Heritage Program recommends that either habitat assessment or species surveys be conducted for the following rare plant species currently known to occur in the vicinity of the project: State endangered Velvety sedge (*Carex vestita*), State threatened Featherbells (*Stenanthium gramineum*), and the State endangered extirpated Water-plantain spearwort (*Ranunculus ambigens*). Ms. McCarthy also expressed concern for the state endangered fish (*Etheostoma vitreum*) which inhabits the Little Patuxent River. These ecological concerns were not addressed in the Phase III Report. Please address.

Response to Question No. 4 is attached.

Milton McCarthy addressed this question previously and submitted response June 9, 2004. Attached is his response.

McCARTHY & ASSOCIATES, INC.

REGULATORY and ENVIRONMENTAL
CONSULTANTS

June 9, 2004

HAND DELIVERED

Ms. Katharine McCarthy
Department of Natural Resources
Wildlife & Heritage Service
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

Re: Chesapeake Terrace Rubble Landfill

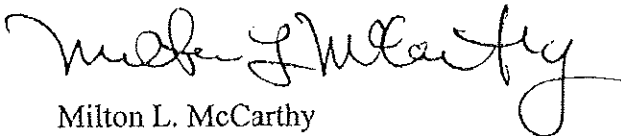
Dear Ms. McCarthy:

Attached please find a copy of the rare plant survey conducted by Mr. Brent Steury at Chesapeake Rubble Landfill on June 5, 2004. The area surveyed is based on your request during the meeting at Maryland Department of the Environment in May of this year.

Attached to the report is an 8 ½ x 11-inch map showing the area in which the survey was conducted. You will note that the conclusion reached in the report states that there are no state-mapped threatened or endangered species of plants located on the project site.

If you have any questions, please do not hesitate to contact me at your earliest convenience.

Very truly yours,



Milton L. McCarthy

Enclosure

cc:

Mr. Steve Flcischman (Halle Enterprises, Inc.)
Mr. Andy Chisholm (J.A. Chisholm, P.E., LLC)
Mr. Robert Cooper (MD Dept. of the Environment)

McCARTHY & ASSOCIATES, INC.

REGULATORY and ENVIRONMENTAL
CONSULTANTS

July 26, 2004

CERTIFIED MAIL NUMBER 7002 0860 0006 3073 1351

Ms. Katharine McCarthy
Maryland Department of Natural Resources
Wildlife & Heritage Service
580 Taylor Avenue
Annapolis, Maryland 21401

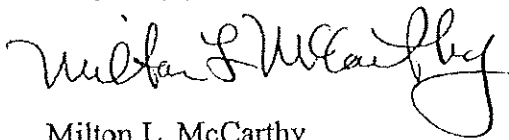
Re: Chesapeake Terrace Rubble Landfill

Dear Ms. McCarthy:

As a follow-up to our meeting on Chesapeake Terrace Rubble Landfill on Thursday, July 22, 2004, I am providing you with one copy of the Erosion Sediment Control Plans for Chesapeake Terrace compensatory wetland mitigation. You will notice on the plans, prepared by J.A. Chisholm, P.E., LLC that the mitigation is to take place north of Patuxent Road and south of Little Patuxent River.

After you have reviewed these plans, if you have any questions, please do not hesitate to contact me.

Very truly yours,



Milton L. McCarthy

Enclosure(s)

cc:

Mr. Steve Fleischman (Halle Enterprises, Inc.)
Mr. Andy Chisholm (J.A. Chisholm, P.E., LLC)
Mr. Mark Shultz

14458 Old Mill Road • #201
Upper Marlboro, MD 20772

Phone: 301-627-7505 • Fax: 301-627-5571

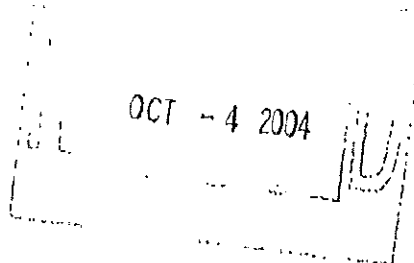
**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

1800 Washington Boulevard, Suite 605 • Baltimore MD 21230-1719

410-537-3000 • 1-800-633-6101

Robert L. Ehrlich, Jr.
GovernorKend P. Philbrick
SecretaryMichael S. Steele
Lt. Governor

October 1, 2004

Jonas A. Jacobson
Deputy SecretaryMr. Warren Halle, President
The Halle Companies
2900 Linden Lane, Suite 300
Silver Spring MD 20910

Dear Mr. Halle:

On December 9, 2003, the Maryland Department of the Environment (the "Department") received two copies of the Phase II additional geohydrologic report entitled "Appendice A-M, Phase 2 Addendum for Chesapeake Terrace Rubble Landfill", submitted in response to our August 5, 2002 comment letter on your behalf by Mark Schultz Associates of Annapolis, Maryland. The proposed landfill is to be located south of Odenton, in Anne Arundel County, Maryland.

The Department has completed its review of the Phase II geohydrologic Addendum report. The following comments are presented based on our review of your responses and comments received by the Department concerning the proposed landfill. The Phase II Report will not be considered complete until these comments are addressed and submitted to the Department for review and approval.

1. The Phase II report on groundwater quality did not characterize water quality to establish site specific baseline background groundwater quality for future monitoring of the proposed site. This is a requirement of the Code of Maryland Regulations (COMAR) 26.04.07.15A(8) and (9).
2. The report should include time series analysis data, and the analytical data from each well must be presented in a numerical table so that all the water quality data for each well can be observed simultaneously in the report and emphasize the analytes above the reporting limit for the groundwater samples collected. Also, the parameters measured should be analyzed to their Practical Quantitation Limits (PQL).
3. It appears that perched and/or confined water bearing zones are to be encountered on this site, particularly in areas B and TA. There appears to be no hydraulic monitoring of the perched zones in area B. These saturated zones may impact the sidewall or floor of the periphery of the proposed cell. The saturation of the subbase or underlying materials could negatively impact the stability of the liner system during and after construction of the landfill. Therefore, please evaluate the data to identify areas where such zones are likely to be encountered, and the amount of liquid that may have to be managed through a designed structure to insure that the integrity of the liner system is maintained. Also, please insure that the Phase III design of the facility includes drainage systems or other means necessary to meet this stability requirement.

Mr. Warren Halle
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4. Portions of the proposed landfill, in particular area TA, are identified as a transition area where the geologic facies change from sandy deposits in Area A to fine-grained deposits in Area B. Areas TA and B are described as having surficial sand with perched water tables that will be drained when the overlaying overburden is removed during the construction of the rubble fill, and the liner installation may reduce amounts of recharge. It is noted that perched groundwater in hydrologic Areas B and TA are identified as the main source of drinking water for the citizens whose wells are screened in this water table and there have already been identified a number of domestic wells which are located hydraulically downgradient of the proposed site that could be affected by piezometric or quality changes. Therefore, you must address the impacts of overburden removal and landfill lining and other activities on the sources of drinking water supply for the nearby residents. This evaluation must also include an evaluation of the hydraulic impacts of proposed site activities on any wetlands area, which depend on springs or nonpoint groundwater discharges. Also, please propose a means of providing alternative water supplies to any potentially impacted parties as part of the Phase III report.
5. Removing overburden may dewater water supplies in shallow wells located to the south of the site along Conway Road. It is our understanding that you have already contacted the Department's Water Management Administration regarding this requirement.
6. Areas TA and B are underlain by fine-grained materials of variable occurrence of clay soils consistency. Clays often exhibit greater porosity and plasticity than coarser sediments, and may subsequently be compressed to a greater extent than silts or sands when subjected to dewatering, vibration caused by traffic, and/or long-term increased loading such as would be expected under the proposed landfill area. Please evaluate the extent to which these areas may be subject to differential settlement due to these factors, model the extent to which differential settlement may occur, and include any necessary engineering corrections required for the design of the landfill. In particular, please insure that the liner and leachate collection system will not be subject to undue deflective stress, suffer damage, or exhibit a decrease in performance due to changes in grade.
7. It is noted that the original Phase II report identified certain volatile organic substances such as benzene and toluene in the groundwater beneath the site at trace levels. You are advised that should the site be permitted, additional background sampling will be required to more fully characterize the occurrence of these trace values before the site is put into operation.
8. On August 5, 2002, the Department transmitted to you its comment letter along with copies of comments received from other individuals and agencies for your use in developing an acceptable response addressing the issues raised. To date, we have not received your responses to the following comments:
 - a. Comments from the Department's Water Management Administration;

Mr. Warren Halle
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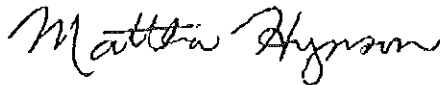
- b. Comments from Mr. Ray C. Dintaman, Jr., Director of the Maryland Department of Natural Resources' Environmental Review Unit (DNR), and other commentators. Copies of these comments are enclosed for your use in developing an acceptable response addressing the issues raised;
 - c. There is also the issue of endangered species that have been known to occur in the vicinity of the site, as is described in greater detail in the attached documents. We anticipate that to properly address these issues, the occurrence of the identified species in the area will require further definition, and means to protect any species that exist in areas which may be impacted by the intended activities must be proposed. Please contact DNR concerning these issues, and keep us advised of your activities to address the issues raised;
 - d. The Department received a letter dated January 21, 2002, from former Senator Robert Neall of Anne Arundel County, which refers to issues previously raised in a letter dated June 20, 1996 from the late Senator John A. Cade. The former Senator is concerned about several environmental issues regarding the proposed Chesapeake Terrace Rubble Landfill. The letter expresses concern that the proposed landfill would have an effect on the rare Clustered Bluets (*Oldenlandia uniflora*) plant along the Patuxent Community Pond and the stream that supports the State-endangered glassy darter (*Etheostoma vitreum*). His concern is that the proposed landfill will result in a decline in the water quality of the pond and thus be detrimental to the rare species; and
 - e. We have also received a letter dated June 17, 2002, from Mr. Richard Klein, that contains comments concerning water level variations that support our own analysis. While at this time we do not necessarily agree with all of the conclusions and recommendations contained in that letter, we do recommend that you address the issues raised.
9. Issues outstanding from Phase I. We have received the required documentation of local approval from Anne Arundel County that is required by law for us to process the permit application, and we are so doing. However, the County has indicated that the applicant must acquire the area of the required access road to the site in fee simple as required by the zoning decision. Please update the Department regarding the access issue.
10. The Phase III Engineering Report that we have on file was submitted before the current requirements for a liner and leachate collection system were promulgated in 1997. In light of the additional information and documentation that we have requested, much of which is necessary to insure that the design to be proposed will be acceptable, we recommend that you withhold submission of the revised Phase III report until the requested information for Phase II has been submitted and assimilated. However, at your risk, you may submit 12 complete copies of the Phase III engineering plans and specifications report in accordance with COMAR 26.04.07.16.

Mr. Warren Halle
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11. Please note that any submittal must address all of the regulatory requirements of COMAR 26.04.07, and specifically address the issues identified in this letter as they pertain to design elements (e.g., stability, differential settlement, monitoring system design, cell floor elevation and buffer, floodplain definition, etc.). Lastly, please ensure that the design submitted conforms to the requirements of the Anne Arundel County zoning determination that is applicable to this site with respect to those elements that may impact the design and operation of the facility (e.g., hours of operation and location of the access road).

We look forward to working with you during the application review process. Please refer to the document control number 1993-WRF-0225 when writing the Department regarding this application. If you have any questions concerning this matter, please contact Mr. Kassa Kebede, Project Manager, or myself at (410) 537-3424.

Sincerely,



Martha Hynson, Chief
Field Operations & Projects Division

MH:KK:af

Enclosures

cc: Mr. Ray Dintaman
Mr. Mark Schultz
Mr. Robert Summers
Mr. Horacio Tablada

**Floristics Survey of the proposed Chesapeake Terrace Rubble Fill,
Anne Arundel County, Maryland**

Surveyed by Brent Steury, June 5, 2004

On June 5, 2004 the wetland areas within the proposed Chesapeake Terrace Rubble Fill located on Patuxent Road, in Odenton, Anne Arundel County, Maryland were surveyed for the presence of rare, threatened and endangered vascular plants. The red dashed line on Map I indicates the approximate route taken within the survey area.

The survey focused on trying to locate populations of three Maryland State listed species; *Carex vestita*, *Ranunculus ambigens*, and *Stenanthicum gramineum*. No populations of these three species or any other Maryland State listed species were found during the survey.

The site contained two types of wetlands. Forested wetlands exist along Patuxent River Road and ponds created from the abandon gravel mine are scattered over areas further west. The forested wetlands contained a high diversity of wetland species but the pond areas appeared to be newly created and had few wetland obligate species.

The canopy of the forested wetland area was dominated by tree species such as *Acer rubrum*, *Liquidambar styraciflua*, *Nyssa sylvatica*, *Quercus phellos*, *Platanus occidentalis*, and *Liriodendron tulipifera*. Understory woody species included *Lindera benzoin*, *Vaccinium corymbosum*, *Betula nigra*, *Clethra alnifolia*, *Viburnum dentatum*, *Viburnum nudum*, *Ilex verticillata*, *Magnolia virginiana*, and *Lyonia ligustrina*.

Large patches of the fern *Thelypteris noveboracensis* were common among other ferns such as *Osmunda cinnamomea*, *Onoclea sensibilis*, *Woodwardia areolata*, and *Athyrium filix-femina*. Tufts of sedges were also very common, especially *Carex lurida*, but also included *Carex crinata*, *Carex debilis*, *Carex albolutescens*, *Carex intumescens*, *Carex annectens*, *Carex frankii*, *Carex folliculata*, *Carex seorsa*, *Carex atlantica*, *Carex tribuloides*, *Carex laevivaginata*, *Carex scoparia*, *Carex canescens*, *Scirpus georgianus*, *Scirpus cyperinus*, and *Eleocharis obtusa* along with the grasses and rushes *Glyceria striata*, *Juncus acuminatus*, and *Juncus effusus*.

Herbs found in the forested wetlands were *Boehmeria cylindrica*, *Viola primulifolia*, *Viola lanceolata*, *Arisaema triphyllum*, *Hypericum mutilum*, *Galium triflorum*, *Lysimachia ciliata*, *Impatiens capensis*, *Alisma subcordatum*, *Sagittaria* sp., *Lycopodium virginicum*, *Lycopodium americanum*, *Polygonum sagittatum*, *Symplocarpus foetidus*, *Ludwigia alternifolia*, and *Iris versicolor*. The non-native species *Lonicera japonica* and *Microstegium vimineum* were also often seen on the site.



Robert L. Ehrlich, Jr., Governor

Michael S. Steele, Lt. Governor

C. Ronald Franks, Secretary

October 21, 2004

Mr. Kassa Kebede
Solid Waste Program
Waste Management Administration
1800 Washington Blvd., Suite 605
Baltimore, MD 21230-1719

RE: Chesapeake Terrace Rubble Fill, Anne Arundel County

Dear Mr. Kebede:

In response to my requests, consultants for the applicants have provided further data regarding the potential impacts of the rubble fill on the hydrology of the Patuxent Ponds wetland of special state concern and on rare species known to occur in the vicinity of the proposed rubble fill.

Mr. Mark Schultz, a hydrologist with Mark Schultz Associates, provided a preliminary assessment of the potential hydrologic impacts. Staff of Maryland Geological Survey reviewed his report and concur that his finding of minimal impact is reasonable. Therefore, the Wildlife and Heritage Program will voice no further concern regarding the potential hydrologic impacts of the project to the adjacent wetland of special state concern.

Mr. Brent Steury conducted a survey for rare plant species within the footprint of the proposed rubble fill and found no rare species. While we had originally requested that the survey include adjacent land outside the limit of disturbance, we accept the findings of this survey because the hydrologic assessment indicates minimal impact to the adjacent areas. The Wildlife and Heritage Program has no further concern regarding the potential impacts of this project to rare species.

In order to conserve habitat quality for the state threatened fish, Glassy darter (*Etheostoma vitreum*), in the adjacent Little Patuxent River, please provide special attention to erosion control and to the maintenance of water quality in the Little Patuxent River and its tributaries. As a condition for authorization, please require assurances that sediment and erosion control measures will be strictly enforced and rigorously maintained.

Response to Comments 6 & 7
Leachate Letter Comments 6 and 7 from VLS Environmental
April 26, 2024



April 26, 2024

Ruth Baker

Montrose Environmental Group, Inc
4 Park Plaza #790
Irvine, CA 92614

Re: Disposal of C&D Leachate in new constructed Maryland Landfill

VLS Location(s): Baltimore, MD; Lancaster, PA

Dear Mrs. Baker,

Thank you for your interest in partnering with VLS Environmental Solutions for your leachate disposal needs. Per our facility operating permits, we are unable to make commitments on receiving waste streams without following the proper testing & approval process. The testing & approval process would be held to our VLS acceptance parameters as well as any federal, state, and local regulations that would be in effect at the time of the leachate production. Each facility has its own unique acceptance parameters based on the facility's permit & processing capabilities. VLS Environmental Solutions would like to assist Montrose Environmental Group Inc throughout the process of design regarding constructing a plan to keep the leachate in non-hazardous waste compliance. Currently, VLS Baltimore can accept 40,000 gallons of non-hazardous wastewater per day, and VLS Lancaster can accept 110,000 gallons of non-hazardous wastewater per day.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mike Mulrine", is positioned above a horizontal line.

Director of Environmental
Mike.Mulrine@vlse.com
(717)393-2627

Response to Comment 12
Leachate Sump Pump Sizing Summary Table

Leachate Sump Pump Sizing Summary Table **Chesapeake Terrece Rubble Landfill, Odenton, Maryland**

SUMP	Sump Inv. (Elev (ft))	Elevation of Crest of Perimeter Berm (ft)	Perimeter Road Elev at Sump	Elevation of Tank At Base (ft)	Elevation of Inflow Pipe at Tank	Leachate Storage Area	Length of 6-inch pipe Sump to Tank	Equivalent 6- inch Pipe Length (ft) (notes 1 & 2)	Force Main No.	Peak Flow Rate (GPD) from cell	Peak Flow Rate (GPM) from cell	Static Head Sump Inv to Top of tank (ft)	Dynamic Head Loss (ft) at Peak Flow in Equiv 6" pipe	Equiv. Length of 2" Pump Discharge (ft) (notes 1 & 3)	Dynamic Head Loss (ft) at Peak Flow in 2" pipe from pump	Total Head (ft)	Specified Pump in Design	Is Specified Pump Still Adequate?
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(h1)	(i)	(j)	(k)	(l)	(m)	(o1)	(o2)	(n)		
1	103	130	127	164	207	2	2400	2576	2	132,192	91.8	104	2.0	110	18.0	124.0	Model 18-4, HP 5.0	Y
2	88	118	102	92	135	1	780	824	3	78,912	54.8	47	1.2	117	7.4	55.6	Model 18-2, HP 3.0	Y
3	100	110	82	92	135	1	1620	1708	3	49,104	34.1	35	0.9	65	1.7	37.6	Model 18-1, HP 1.5	Y
4	102.5	114	82	92	135	1	2000	2132	3	54,864	38.1	32.5	0.3	65	2.1	34.9	Model 18-1, HP 1.5	Y
5A	115	156	156	164	207	2	2200	2332	1	59,616	41.4	92	4.1	155	5.8	101.9	Model 18-2, HP 3.0	Y
5B	118.5	148	148	164	207	2	3000	3176	1	20,880	14.5	88.5	3.0	125	0.7	92.2	Model 18-2, HP 3.0	Y
5C	120	142	142	164	207	2	3345	3565	1	45,360	31.5	87	2.5	110	2.5	92.0	Model 18-2, HP 3.0	Y
5D	121.5	134	132	164	207	2	3800	4064	1	29,232	20.3	85.5	1.3	72	0.7	87.5	Model 18-2, HP 3.0	Y
5E	121.5	134	122	164	207	2	4100	4408	1	33,840	23.5	85.5	0.6	72	0.9	87.0	Model 18-2, HP 3.0	Y
5F	120	134	120	164	207	2	4500	4852	1	16,848	11.7	87	0.1	65	0.2	87.3	Model 18-3, HP 5.0	Y
6	109	174	174	164	207	2	1500	1588	1	58,752	40.8	98	4.5	252	9.2	111.7	Model 18-3, HP 5.0	Y
7	102	172	172	164	207	2	300	344	1	76,896	53.4	105	1.6	320	19.2	125.8	Model 18-3, HP 5.0	Y
8	108	155	155	164	207	2	750	794	2	62,496	43.4	99	3.5	177	7.3	109.7	Model 18-3, HP 5.0	Y
9	111.2	150	150	164	207	2	1100	1188	2	41,328	28.7	95.8	3.5	155	3.0	102.3	Model 18-2, HP 3.0	Model 18-3, HP 5.0
10	103	140	140	164	207	2	1800	1932	2	98,208	68.2	104	4.2	155	14.6	122.9	Model 18-3, HP 5.0	Model 18-4, HP 5.0
11	73	88	88	92	135	1	660	704	4	76,896	53.4	62	2.1	95	5.7	69.8	Model 18-2, HP 3.0	Y
12	73.5	91	84	92	135	1	1425	1513	4	64,512	44.8	61.5	2.4	95	4.1	68.0	Model 18-2, HP 3.0	Y
13	77	88	84	92	135	1	2280	2412	4	39,600	27.5	58	1.8	80	1.4	61.2	Model 18-1, HP 1.5	Model 18-2, HP 3.0
14	79	91	91	92	135	1	2880	3056	4	34,416	23.9	56	1.2	95	1.3	58.4	Model 18-1, HP 1.5	Model 18-2, HP 3.0
15	82	102	102	92	135	1	3500	3720	4	54,576	37.9	53	0.6	125	4.0	57.5	Model 18-2, HP 3.0	Y
16	80	140	138	92	135	1	1250	1294	5	47,952	33.3	55	0.2	222	5.6	60.7	Model 18-1, HP 1.5	Model 18-2, HP 3.0

Note 1: Equivalent Pipe Length developed using Crane Technical Paper No. 409, Engineering Division, 1942.

Note 2: 6" check valve = 40', 6" Gate Valve = 4.0' Each Valve Vault Contains 1-6" CV and 1-6" GV=44' Equivalent

Note 3: 2" Std Elbow = 5.5', 2" 45° Elbow = 2.5', 2" to 6" Transition = 3.5'
 Each Connection contains 2 Std Elbows, 2-45° elbow and 1 transition = 19.5 ft Equivalent

Response to Comment 13
Attachment 10I – Force Main Sizing Calculation

ATTACHMENT 10I

FORCE MAIN SIZING CALCULATION

(formerly “Sideslope Riser and Force Main Loading Calculations”)

(Revised May 4, 2024)

ATTACHMENT 10I

FORCE MAIN SIZING CALCULATION

Description of Approach:

Attachment 10I, formerly referred to as the "Sideslope Riser and Force Main Loading Calculations" has been revised to evaluate the adequacy of a 6-inch HDPE pipe for the force main carrying leachate from the landfill cells to the leachate tanks. For the purposes of completing this demonstration that the force main is adequate in size we looked at the flow for each section of force main as it passes each cell sump. The flow from each sump is added to the inline flow as if all sumps were pumping at the same time and contributing flow to pipe.

Hazen Williams Formula is utilized to calculate the additional head loss that would occur in each section pipe from the additive flow. As an example: in Force Main 1 the most distance sump is 5F. The force main section from 5F to 5E is approximately 400 feet and the only flow that section would experience is the flow from 5F (12.8 gpm). When it passes sump 5E the 12.8 gpm will combine with the flow from 5E (36.1 gpm) and the combined flow travels through the 455 feet section from 5E to 5D. The increased friction head experienced in each section is shown in the column "Add'l Head Loss when all flows in 6" pipe occur simultaneously". We added the increased head to the Total Head for Single Sump Flow and compared and then evaluated the adequacy of the specified pump at each sump for the flow at each sump and the Max TDH Loss. None of the specified pumps was deemed inadequate and therefore the 6-inch HDPE force main was deemed acceptable.

SUMP	Force Main No.	Incremental Length Between Cells (ft)	Peak Flow Rate (GPM) from cell	Max Flow In Force Main (GPM)	Add'l Head Loss when all flows in 6" pipe occur simultaneously (ft)	Total Head (ft) for Single Sump Flow	Max TDH Loss Assuming all Sumps Flowing at Maximum Flow (ft)	Carrier Pipe (in)	Specified Pump
7	1	300	53.4	246.6	2.2	125.8	128.0	6	Model 18-3, HP 5.0
6	1	1200	40.8	193.2	5.7	111.7	117.4	6	Model 18-3, HP 5.0
5A	1	700	39.5	152.4	2.1	101.5	103.6	6	Model 18-2, HP 3.0
5B	1	800	23.9	112.9	1.4	93.2	94.6	6	Model 18-2, HP 3.0
5C	1	345	31.5	89	0.4	92.0	92.4	6	Model 18-2, HP 3.0
5D	1	455	21.4	57.5	0.2	87.6	87.8	6	Model 18-2, HP 3.0
5E	1	300	23.3	36.1	0.1	87.0	87.1	6	Model 18-2, HP 3.0
5F	1	400	12.8	12.8	0.0	87.4	87.4	6	Model 18-3, HP 5.0
8	2	750	43.3	232.8	5.0	109.7	114.7	6	Model 18-3, HP 5.0
9	2	350	29.4	189.5	1.6	102.4	104.0	6	Model 18-3, HP 5.0
10	2	700	68.2	160.1	2.4	122.9	125.2	6	Model 18-4, HP 5.0
1	2	600	91.9	91.9	0.7	124.0	124.7	6	Model 18-4, HP 5.0
2	3	780	54.5	127.1	1.7	55.5	57.2	6	Model 18-2, HP 3.0
3	3	840	34.4	72.6	0.7	37.6	38.2	6	Model 18-1, HP 1.5
4	3	380	38.2	38.2	0.1	34.9	35.0	6	Model 18-1, HP 1.5
11	4	660	53.4	189.7	3.0	69.8	72.8	6	Model 18-2, HP 3.0
12	4	765	47.1	136.3	1.9	68.4	70.3	6	Model 18-2, HP 3.0
13	4	855	24.4	89.2	1.0	60.9	61.9	6	Model 18-2, HP 3.0
14	4	600	29.6	64.8	0.4	59.1	59.4	6	Model 18-2, HP 3.0
15	4	620	35.2	35.2	0.1	57.0	57.2	6	Model 18-2, HP 3.0
16	5	1250	34.8	34.8	0.2	61.2	61.5	6	Model 18-2, HP 3.0

The C=150 for HDPE pipe. ID of SDR-11 = 5.35"

Response to Comment 21
Section 02652 Leachate Side Slope Pump System
(Revised May 4, 2024)

PART 1 GENERAL

1.1 Description of Work

- A. The CONTRACTOR shall provide all labor, materials, and equipment to install the following:
 - 1. Pump, complete with specified accessories.
 - 2. Control panel, mounting, necessary conduits and controls.
 - 3. All related electrical works, including wire and conduit, necessary to provide power to the pump control panel.
 - 4. All related mechanical components, including hose, valves, and fittings necessary to provide a connection from the pump to the leachate force main.
 - 5. Test and demonstrate operation of system.
 - 6. Submit operation and maintenance manuals, and warranties.
- B. The leachate side slope pump system shall consist of pump, hose, controls, valves, fittings, and related electrical and mechanical works necessary to pump the side slope riser (riser provided by others) to the leachate force main. The pumping system shall be of material and construction to be compatible with the material (leachate) to be pumped. This Specification and the Drawings detail the requirements for the construction of the leachate sump pump system. The leachate side slope pump and controls shall be compatible with the system constructed for each cell.

1.2 Submittals

- A. *Pumps and Motors:*

The CONTRACTOR shall submit product data for the pump and motor to the QAC, as specified in Part 2.0 and as shown on the Drawings. Pump data shall include, but is not limited to, characteristic curves, dimensional drawings, and materials of construction for all wetted parts, mechanical seals, packings, and shafts. Pump curves shall indicate efficiency, horsepower, proposed number of impeller stages, and electrical characteristics of the motor. The motor data shall include, but is not limited to, motor manufacturer, motor horsepower, rated speed, service factors, voltage, maximum amperage draw, and phase.
- B. *Control Panel:*

The CONTRACTOR shall submit detailed panel layout and electrical diagrams showing the panel enclosure, panel face, and wiring diagrams to the QAC for approval. The CONTRACTOR shall also submit product data for transformers, relay modules, motor controllers and starters, circuit breakers, level switches and related controls, receptacles and devices, and other items as specified in Part 2.0, and as shown on the Drawings.

C. *Piping and Related Works:*

The CONTRACTOR shall submit to the QAC product data for all hose, piping, fittings, valves, check valves, and other piping related materials as specified in Part 2.0, and as shown on the Drawings. The product data shall include, but not limited to, materials of construction, pressure ratings, flow ratings, and physical dimensions.

D. *Electrical Works:*

The CONTRACTOR shall submit to the QAC product data for all wire, conduit, breakers, explosion proof fittings, sealing compounds, and other materials as specified in Part 2.0 and as shown on the Drawings

E. *Operation and Maintenance Data:*

The CONTRACTOR shall provide three (3) sets of operation and maintenance (O&M) manuals for the leachate sump pumping system. The O&M manuals shall include at a minimum, all drawings, equipment lists (with manufacturer's name and model number), equipment manuals, recommended spare parts inventory, detailed description of controls sequence of operation, and troubleshooting guide.

1.3 Codes and Regulations

A. Comply with the latest editions of following works, including all supplements thereto and any other authority having jurisdiction within requirements of this specification.

1. Local Codes
2. National Electrical Code, as amended (NFPA No. 70, 71, 72, 72C)
3. Occupational Safety and Health Administration (O.S.H.A.)
4. BOCA Code
5. ASME and ASTM Standard for Materials of Construction.

B. In the event the Drawings or Specification require materials, workmanship, arrangement or construction of higher standard or larger size than is required by codes and regulations, the Drawings and Specifications shall take precedence.

C. Except as described in 1.3.B, should there be direct conflict between above-mentioned regulations and Drawings or Specifications, regulations shall govern.

D. All electrical materials and equipment shall bear the label of Underwriters Laboratories' listed by them in their list of electrical fittings; and approved by them for which they are to be used, unless material and equipment is of type for which Underwriter's Laboratories do not list or provide label.

1.4 Quality Assurance

The CONTRACTOR shall provide a one (1) year warranty on all products.

PART 2 PRODUCTS

2.1 General

- A. These Specifications provide an outline of the general requirements for the Work. The CONTRACTOR shall submit to the QAC for approval all necessary product data for the material proposed, for the construction and installation of the leachate Pumping System as described, and as shown on the Drawings.

2.2 Pump and Motor

- A. *Pump Models.* The CONTRACTOR shall furnish and install one (1) submersible, pump and motor, suitable for side slope riser installation, capable of delivering the flow rate at the specified total head in Table 1 below. Submersible electric motor shall be suitable for operating on 3-Phase, 460 Volt, 60 Hz service with 100-feet of power cable. CONTRACTOR shall also provide one spare pump and motor of same model described here.

TABLE 1 – LEACHATE SUMP PUMPS

Cell or Sub-cell	Total Head (feet)	Selected Pump EPG Models	Cell or Sub-cell	Total Head (feet)	Selected Pump EPG Models
1	124	Model 18-4 HP 5.0	7	125.8	Model 18-3 HP 5.0
2	55.5	Model 18-2 HP 3.0	8	109.7	Model 18-3 HP 5.0
3	37.6	Model 18-1 HP 1.5	9	102.4	Model 18-3 HP 5.0
4	34.9	Model 18-1 HP 1.5	10	122.9	Model 18-3 HP 5.0
5A	101.5	Model 18-2 HP 3.0	11	69.8	Model 18-2 HP 3.0
5B	93.2	Model 18-2 HP 3.0	12	68.4	Model 18-2 HP 3.0
5C	92.0	Model 18-2 HP 3.0	13	60.9	Model 18-2 HP 3.0
5D	87.6	Model 18-2 HP 3.0	14	59.1	Model 18-2 HP 3.0
5E	87.0	Model 18-2 HP 3.0	15	57.0	Model 18-2 HP 3.0
5F	87.4	Model 18-3 HP 5.0	16	61.2	Model 18-2 HP 3.0
6	111.7	Model 18-3 HP 5.0			

- B. Each unit shall be fitted with 100-feet (minimum), more as needed, of stainless steel lifting cable of sufficient strength to permit the removal of the unit.
- C. *Design Parameter:*
- The pump shall be capable of pumping leachate.
 - The pump shall permit the unit to operate on a slope of three (3) feet horizontal to one (1) foot vertical.
 - The pump shall be able to “pump down” to within 0.5 vertical foot of the sump bottom without any loss in performance or damage to the pump.

4. Pump unit, including guide wheels shall not exceed 15.5-inches in diameter.
- D. *Materials of Construction:*
 1. Major components shall be manufactured of 304 stainless steel, seal rings shall be made of Teflon. All fasteners shall be 304 stainless steel.
- E. *Check Valve:*
 1. Each unit shall include an integral check valve. The check valve housing and disc shall be constructed of 304 stainless steel and the check valve seat shall be constructed of Teflon.
- F. *Shaft:*
 1. The pump shaft shall be constructed of 304 stainless steel and rotate on product lubricated bearings.
- H. *Diffuser Chamber:*
 1. Diffuser chamber for each impeller shall be constructed of 304 stainless steel and fitted with Teflon impeller seal rings.
- I. *Impeller:*
 1. The impeller shall be a closed design and constructed of 304 stainless steel.
- J. *Motor:*
 1. The motor shall be a submersible, hermetically sealed motor manufactured by Franklin Electric, or approved equivalent. The motor shall be designed for continuous duty, capable of sustaining up to 300 starts per day. The motor shall be connected to the pump via a motor adapter and coupling in 304 stainless steel. The motor shall have thermal protection in the motor windings to protect the windings from overload. The unit will restart automatically after the motor cools down.
- K. *Motor Lead Wire:*
 1. The lead wire shall contain no splices, be Teflon coated, and be of the length specified previously. The motor leads shall be a minimum copper wire size of AWG #10.
- L. *Cathodic Protection:*
 1. Pumps shall be provided with a replaceable cathodic protection system.

2.3 Controls Panels and Controls

- A. Complete automatic pump control system shall be furnished by the pump manufacturer or certified representative and installed near the top of the side slope riser by the CONTRACTOR as shown on the Drawings and specified herein. The control system shall consist of a pump control panel for housing the controls for the side slope riser pump over a range of 0 to 12.5 feet of leachate depth. The CONTRACTOR shall provide all materials for mounting and wiring the pump control panel.
- B. *Level Control System:*
1. The level control system shall be a point measurement system using a level sensor transducer. Level sensor shall be a fully submersible pressure transmitter.
 2. The level sensor shall be 316 stainless steel, compatible with leachate, mounted on the pump carriage.
 3. The system shall be easy to maintain and not require recalibration or specialty equipment to maintain.
 4. The cable shall be severe duty rated, oil and water resistant, jacketed for submergence in leachate
 5. Chemical resistant atmospheric pressure compensating vent tube. The level transducer shall be equipped with 75-feet of continuous, without splices, control cable.
 6. Range: 0 – 15 Feet W.C. (0-7 PSIG).
 7. Accuracy: 1.25% of operating range.
 8. Manufacturer: EPG Level Master, or approved equivalent.
- C. *Control Panel:*
1. The pump controls and electrical equipment shall be housed in a NEMA 4X enclosure. The enclosure shall be equipped with an inner door, stainless steel drip shield, and lock. Two milled keys shall be furnished with each lock. All indicating lights, switches, and indicators shall be mounted on the inner door. The enclosure shall be sized and assembled to provide 20% free space for future controls relays and wires. All components shall be clearly identified by suitable name plates.
 2. Control panel shall designed for 3-phase; 460 volts; 60 hertz with conductors sized to accommodate the pump motor and auxiliary usage. Phase monitor lighting and surge suppression shall be installed on all incoming power lines to protect the control panel equipment. The control panel shall be equipped with a main disconnect and fuses/circuit breakers to de-energize the complete control panel, including controls. The control panel enclosure shall be designed to allow access to indicating lights, breakers, receptacles and meter without de-energizing the control panel. The control panel shall include separate auxiliary circuit breakers for pump, alarm and control circuits, GFCI receptacle and space for one (1) future 120 volt breaker.

3. Controls - The pump shall be operated by a HOA selector switch and related controls. The controls shall include a "soft start" motor starter with overload relays with ambient compensated, quick trip characteristics with manual reset and shall be sized for the motor being used. Each starter shall have a minimum of two auxiliary contacts. Panel shall include an anticondensation heater. The panel shall include all necessary relays, low voltage power supplies, transformers and interlocks required for operation of the system as described above.

The control panel shall include an intrinsically safe level control system to start and stop the leachate pump as required and for high level alarm indication or pump seal failure. The level control system shall maintain the leachate level in the bottom of the side slope riser at below 12 inches. When leachate levels reach 12-inches above the bottom of the sump the pump shall automatically be activated. When leachate levels reach 6-inches above the bottom of the sump the pump shall automatically be shut off. If leachate levels reach 16-inches above the bottom of the sump a red alarm light will be activated and the system will trigger an auto-dialer to notify a landfill on call employee.

4. Lights/Indicators
The control panel shall include:
 - a) Pump "running" light;
 - b) Pump "fault" light;
 - c) Pump "leakage" light;
 - d) Leachate level indicator;
 - e) Resettable elapsed pump run time meter;
 - f) NEMA 4 amber flashing alarm light mounted on top of the control panel (100 Watts) shall illuminate on "High Leachate Level".
 - g) Audio alarm for "High Leachate Level"

2.4 Electrical Works

- A. The CONTRACTOR shall provide electric service to the pump panels from the existing service panels by means of underground conduit, cables and connections.
- B. The CONTRACTOR shall provide all conduit, cables, enclosures and terminations as shown on the contract documents or as required in this specification.
- C. Wire
 - a) All wiring with the exception of motor lead wires of the submersible pump, shall be Type THWN copper wire having 600 volt insulation. Wiring for light or power shall be not smaller than #12 AWG. The main electrical service shall be sized as appropriate. Aluminum wire shall not be allowed. All main feeders and branch circuits shall be color coded as required by Code. Wire shall be as manufactured by Phelps-Dodge, General Cable, Triangle, Crescent Insulated Wire and Cable Company or

- Essex Wire & Cable Co. Wire to the pumps and level controls shall be submersible as provided by the pump manufacturer.
- b) Properly identify and tag all mains, feeders, and branch circuits in all pull boxes, gutters, troughs, junction boxes, etc., in which they connect. Similarly, identify and tag wires where two or more circuits run to or pass through the same outlet or junction box.
 - c) On all circuit wiring, allow sufficient slack at splices and outlets to permit connections without straining, generally not less than 6" of slack in junction or outlet boxes and 10" in ducts, troughs or pull boxes. Joints and splices shall only be made in pull boxes, junction boxes and outlet boxes in a mechanically and electrically secure manner using only approved solderless connectors, lugs, etc., as approved by Code.
 - d) Grounding and bonding shall be in accordance with the NEC and with the requirements of the local Utility Company. All exposed non-current carrying metallic parts of the electrical equipment, and neutral conductor of wiring systems shall be grounded. All grounding conductors shall be of copper. The CONTRACTOR shall provide test results that demonstrate that the resistance to ground for the grounding system is not more than 15 ohms.

D. Conduit

Rigid nonmetallic conduit, PVC Schedule 40, may be used underground and under slabs. All PVC conduit passing under roadways shall be Schedule 80. All exposed conduit and upturn elbows and conduit passing through the ground or masonry shall be rigid galvanized steel conduit. Exposed conduit fittings shall be hot-dip galvanized malleable iron fittings, for elbows, unions, and switch boxes; type FS or FD, manufactured by Appleton or Crouse-Hinds. When entering boxes, fittings or cabinets the fittings shall be double-lock-nut-and-bush except at threaded hubs. All conduit, fittings, connections, etc. shall be water tight. Bushings larger than 1" shall be insulating type with plastic, fiber, or bakelite insulating rings molded into hot-dip galvanized malleable iron threaded bushings. All conduit and fittings from the pump control panel down to the pumping area shall conform to Class 1, Division I standards with explosion proof seal off fittings for conduit entrance into the control panels. Conduit size shall be as shown on the contract documents and at a minimum 3/4" in diameter. Where required for proper execution of work, provide all junction and/or pull boxes, each of proper size, gauge and type for location and use, complete with screw covers of size convenient and adequate for proper installation of required number of cable or wires; to conform with code requirements.

PART 3 EXECUTION

- A. All installation procedures for the specified pumping system component including but not limited to pumps, couplings, flow meters, valves, controls, and electrical equipment shall be installed per manufacturer's recommendations and instructions.
- B. The CONTRACTOR shall utilize a licensed electrician to make all electrical power and control wiring connections between all new and existing electrical distribution equipment, control panels and equipment as specified in this specification and as shown on the Drawings. All power and control conduit runs between control panels and the pumps and level controls located in the Side Slope Riser shall include seal fittings for hazardous locations. The seal fittings shall be properly installed and sealed in accordance with relevant electrical codes for a Class 1, Division I location to prevent the migration of landfill gas (methane) into the Control Panels. These wiring connections shall utilize explosion proof junction boxes or other equipment as required and shall be located to allow disconnection and removal of the pump and level control equipment without entering the Side Slope Riser.
- C. Upon completion of the installation, the CONTRACTOR shall test all circuits, control systems and devices, including all condition signals, in the Presence of the OWNER's Representative. All apparatus shall be cleaned, adjusted and made ready for operation after testing. The CONTRACTOR shall make such changes in wiring or connections and such adjustments, repairs or replacements as are necessary to make the circuits, device or control system to function as specified and otherwise comply with the specifications or data on Drawings. The CONTRACTOR shall supply all necessary material labor and equipment for these tests. The pump shall be tested in the presence of the OWNER's Representative to insure that the pumps are adjusted and in proper running order and that said pumps will meet the rated capacities specified. The field test shall include pumping at least three cycles at normal starting levels to check the operation of the pump. Pump tests shall include plotting of pump curve based on field data for each pump. Points on pump curve shall include shutoff head and three (3) other points. During pump testing, inspections shall be performed in the presence of the OWNER's Representative to insure free passage of liquid into the force main. Any problems shall be promptly repaired at the CONTRACTOR's expense.

***** END OF SECTION *****

Response to Comment 21
Section 02653 Leachate Storage Facility (Revised May 4, 2024)

PART 1 GENERAL

1.1 Description of Work

- A. The CONTRACTOR shall furnish and install two leachate storage facilities as shown on the Contract Drawings and described herein. Each leachate storage facility shall consist of, but not be limited to the following:
1. Two 500,000 gallon leachate storage tanks.
 2. Secondary containment area shall be concrete floor and walls as specified in the Contract Drawings.
 3. Loadout pad for tanker trucks that pump leachate from the storage tanks shall be provided on the leachate facility access roads shown on Permit Drawings.
 4. Master Pump Control Panel in site entrance maintenance building area (see Contract Drawings for depiction of site entrances).
 5. Pipe and pipe fittings, including bends, tees, check valves, shut-off valves and all other pipe appurtenances, as required.
 6. All related electrical work and accessories.
- B. Master Pump Control Panel shall be provided by the manufacturer of submersible pumps in cell sumps.

1.2 System Operation

- A. *Submersible Pumps in Cell Sumps*
1. Submersible pumps are equipped with level sensors to measure the depth of leachate in each cell sump.
 2. When the leachate depth reaches 12 inches above the bottom of the sumps, the submersible pump will automatically be activated.
 3. When the leachate level reaches a depth of 6 inches above the bottom of cell sump, the pump will automatically shut off.
 4. If leachate reaches 16-inches above the bottom of the cell sumps, a red alarm light shall be activated, and the system will trigger an auto-dialer to alert a landfill on-call employee.
- B. *Leachate Storage Tanks*
1. Leachate storage tanks will be equipped with a float system to monitor the liquid level in each tank.
 2. When the level in a tank with an overflow pipe connection to a full tank reaches the depth at the top of the overflow pipe, a red alarm light will be activated, submersible pumps will automatically shut off, and an auto-dialer will alert a landfill on-call employee.
 3. The landfill manager shall be apprised and shall assess the actions needed to assure adequate containment of the leachate, and implement such actions.
- C. *Secondary Containment Area*

1. If leachate spills into the secondary containment area, the leachate must be removed and properly stored. The containment area must then be cleaned by pressure washing. The wash water must be pumped to a leachate storage tank.
2. Clean precipitation that accumulates within the secondary containment area shall be pumped to an adjacent perimeter ditch.

D. *Leachate Storage Facility Access Road*

1. A tanker truck loadout pad and appurtenant pumping equipment is provided via leachate storage facility access roads.
2. A landfill staff member shall select the leachate tank to be pumped at the master pump control panel, where opening of piping valves required to pump the tank is activated.
3. Once the tanker truck is filled, the piping valves shall be closed at the master pump control panel.

1.3 Submittals

A. *Shop Drawings*

Submit the following Shop Drawing information to the DESIGNER for approval, prior to fabrication.

1. Leachate Storage Facilities
 - a. The CONTRACTOR shall submit detailed drawings showing Leachate Storage Facility layout. Detailed layout shall include leachate storage tanks, secondary containment areas, and all appurtenances required to operate the leachate storage system.
 - b. Submit Tank Manufacturer's Literature, including but not limited to:
 - i. Tank Construction Drawings
 - ii. Tank Construction Specifications
2. Master Pump Control Panel
 - a. The CONTRACTOR shall submit a detailed panel layout and electrical diagrams showing the panel enclosure, panel face and wiring diagrams to the DESIGNER for approval prior to fabrication. Detailed wiring diagrams shall show point-to-point wiring information, including wire and terminal numbering system. Field connections shall be clearly denoted. Submit detailed layout of panel face and internals. Detailed layout shall indicate the location of each control and electrical component, including relays, transformers, panel displays, controllers, breakers, and other required items.
 - b. Submit supplier's product data for all controls and electrical components including:
 - i. Panel displays.
 - ii. Relays.
 - iii. Power conditioners.
 - iv. Control power transformers.
 - v. Panel heaters.
 - vi. Circuit breakers.

- vii. Switches, push buttons, lights, etc.
 - viii. Panel Enclosures
 - ix. Other electrical components as specified in Section 16050.
 - 3. Piping and Valves
Submit supplier's product data including:
 - a. Ball valves, check valves, electric actuators.
 - b. Piping, tees, all fittings.
- B. *Submit in accordance with Section 01300.*

PART 2 PRODUCTS

2.1 Leachate Storage Tanks

Leachate Storage Tanks shall be 45-foot diameter, 47-foot height glass coated, bolted steel tanks, manufactured by Aquastore., or similar. Refer to Technical specification Section 13211.

2.2 Master Pump Control Panel

Master Pump Control Panel shall be provided by the manufacturer of submersible pumps in cell sumps.

PART 3 INSTALLATION

3.01 General

- A All installation for leachate storage tanks, pumps, valves, controls, pipe, and electrical equipment shall be per manufacturer's recommendations.
- B. Install pipe, fittings, and all appurtenances in accordance with recognized industry practices achieving permanently leak-proof piping systems, capable of performing each indicated service without piping failure. All joints shall be installed in accordance with the following:
 - i. Welds shall be sound and free from embedded scale of slag, have tensile strength across weld not less than that of thinner of connected sections, and be watertight.
 - ii. Use butt-welds for welded joints in the pipe assemblies and fabrication of bends and other specials.
 - iii.. Use filled welds for flange attachment, in accordance with AWWA C207.
 - iv. Conform field welding of joints and preparation of pipe ends to AWWA C206 and ASTM A139.

- C. The CONTRACTOR shall make all electrical power and control wiring connections between all new and existing electrical distribution equipment, control panels, and equipment. All work shall be performed in accordance with all applicable Codes and Regulations. The CONTRACTOR shall schedule all required inspections, and obtain all required permits.
- D. All piping shall be pressure tested in accordance with Section 02650.
- E. Upon completion of the installation, all circuits, control systems and devices, including pumps, sensors, and all alarm condition signals, shall be tested in the presence of the QAC by the CONTRACTOR. All apparatus shall be cleaned, adjusted, and made ready for operation after testing. The CONTRACTOR shall make such changes in wiring or connections and such adjustments, repairs or replacements as are necessary to make the circuits, device or control system to function as specified and otherwise comply with the specifications or data on Permit Drawings. The CONTRACTOR shall supply all necessary material, labor, and equipment for these tests.

***** END OF SECTION *****

Response to Comment 21
Section 13214 Leachate Pumping and Storage Control System
(Revised May 4, 2024)

PART 1 GENERAL

1.1 Description of Work

This specification defines the sequence of operation and controls required for the leachate pumps and storage tanks.

PART 2 PRODUCTS

- 2.1 This specification provides only performance criteria. Contractor shall provide actual system components.
- 2.2 Contractor shall provide 5 copies of submittals of all system components for review and approval by the Engineer.
- 2.3 Contractor shall coordinate with Owner and install power supply to the cell leachate sump pumps, the leachate storage tanks, the operations office, and the leachate control building.
- 2.4 All products, system components, and assembled systems shall be in conformance with all applicable local, State, and Federal regulations, ordinances, codes, laws, and industry standards.

PART 3 GENERAL SYSTEM COMPONENTS AND OPERATION REQUIREMENTS

3.1 Leachate Sumps at Landfill Cells

A system control panel shall be provided at each of the leachate riser location that have the following general components:

- A. Time and Date display;
- B. Flow meter that displays current and totalized leachate flow;
- C. Manual pump on/off control switch; and,
- D. Red alarm light display.

3.2 Leachate Sumps Flood Lights

- A. Contractor shall provide a flood light near the control panels at the leachate riser locations that have the following general components:
 - 1. The flood light shall be of a pole type arrangement approximately 12 feet in height or per manufacturer's requirements. The flood light shall operate on 120 VAC and be provided with automatic dusk-to-dawn operation, high pressure sodium and mercury-vapor lights at 150 watts.
 - 2. Flood light shall be McMaster-Carr part number, 1643K85 or equivalent.
 - 3. The contractor shall provide a step down transformer of 120 volts in the control panel at each of the leachate riser locations.

3.3 Leachate Pump House

- A. Contractor shall provide a minimum 10' x 20' leachate pump house at the top of the Leachate Side Slope Risers to each cell.
- B. This pump house will provide shelter to workers servicing and monitoring the pumps operation at each cell sump.
- C. The pump house shall have temperature controls to maintain temperatures above 50-degrees Fahrenheit and below 90-degrees Fahrenheit year-round.
- D. Methane detectors with alarms shall be located in the building.
- E. An overhead door will be provided to heavy equipment (e.g., heavy-duty pickup truck, D-3 bulldozer, etc.) can drive into the pump house to support pump serving and removal, as well as leachate line cleanout efforts, as needed.

3.4 Leachate Storage Tanks

- A. A system control panel shall be provided at leachate load-out pad that has the following general components:
 - 1. Time and Date display;
 - 2. Liquid level in each leachate storage tank and the sump tank;
 - 3. Flow meter that displays current and totalized leachate flow (pumped out);
 - 4. Manual cell leachate sump pump on/off control switches; and,
 - 5. Red alarm light display.

3.5 Leachate Storage Facility Control Building

- A. Contractor shall provide a minimum 30'x20' prefabricated building with concrete slab at each Leachate Storage Facility, to contain the main leachate control panel. This building shall be appropriately heated, cooled, ventilated, and secured. The leachate control building shall have a master control panel that allows for full and complete control of the leachate pumping and storage system, associated with that leachate storage facility.
- B. The master control panel shall have the following components:
 - 1. Time and Date display;
 - 2. Liquid level in each leachate storage tank and the sump tank;
 - 3. Flow meters that display current and totalized leachate flows into and out of leachate tanks;
 - 4. Manual cell pump on/off control switches; and,
 - 5. Red alarm light display.

3.5 System Operation

- A. *Leachate Sump Pumps*
 - 1. The leachate pumps shall be equipped with transducers to measure the depth of leachate build-up in the cell sump.

2. When the depth measured in the cell sump reaches a depth of 1.0 feet, the leachate pump shall automatically be turned on.
3. If the depth measured in the cell sump reaches a depth of 16-inches, a high-level alarm will be triggered and the autodialer will contact the landfill manager.
4. When the leachate level in the sump reaches a depth of 6 inches, the leachate pumps shall be automatically turned off.
5. If automatic pump on and off events fail, the red alarm light shall turn on, and the system shall activate an auto-dialer to alert a landfill on-call employee by pager or cell phone.

B. Leachate Tanks

1. The leachate tanks shall be equipped with a float system to monitor the liquid level in each tank.
2. When the level in either tank reaches a depth of 33 feet, the red alarm light shall light, and the system shall activate an auto-dialer to alert a landfill on-call employee by pager. This is the High Level Alarm.
3. When the level in either tank reaches a depth of 37 feet, the red alarm light shall light, the leachate pumps shall automatically be turned off, and the system shall activate an auto-dialer to alert a landfill on-call employee by pager. This is the High-High Level Alarm.
4. When the level in either tank reaches a depth of 40 feet, the red alarm light shall light, the leachate pumps shall automatically be turned off, and the system shall activate an auto-dialer to alert a landfill on-call employee by pager. This is the Overflow Level Alarm.

***** END OF SECTION *****

Response to Comment 24 – Exhibit List

Exhibit A: Zoning Decision

Exhibit B: Office and Planning and Zoning, Suzanne Schappert

June 8, 2006

Exhibit List

Response to MDE Question No. 24

1. Exhibit A – Zoning Decision
2. Exhibit B – Office of Planning and Zoning, Suzanne Schappert, June 8, 2006
3. Exhibit C – John Fury Transcript, August 15, 2013
4. Exhibit D – Second Supplemental Memorandum of Opinion,
December 1, 2022
5. Exhibit E – Circuit Court Decision, Judge Trunnel, May 26, 2021
6. Exhibit F - Circuit Court Decision, Judge Trunnel, January 26, 2024

EXHIBIT A

Zoning Decision

1993 Special Exception

Board of Appeals – Memorandum of Opinion

December 23, 1993

RE: An Appeal for Special : BEFORE THE
Exceptions and a Variance to :
the Zoning Regulations : COUNTY BOARD OF APPEALS

HALLE COMPANIES/CHESAPEAKE : OF ANNE ARUNDEL COUNTY
TERRACE, :
Petitioners : CASE NOS: BA 120-90S (Halle),
BA 26-91S/BA 27-91V
: (Chesapeake Terrace)
:
: Hearings: April 28, 1992;
May 6, 1992; June 22, 1992;
: June 24, 1992; July 15, 1992;
July 16, 1992; August 25, 1992;
: August 31, 1992; October 22;
1992, November 4, 1992;
: November 17, 1992; November 24,
1992; May 25, 1993; July 28,
: 1993; August 26, 1993;
September 8, 1993

MEMORANDUM OF OPINION

SUMMARY OF PLEADINGS

This is an appeal from the denial of two special exceptions and a variance: for the Halle Companies (BA 120-90S), this is an appeal from the denial of a special exception to permit a sand and gravel operation in an RA district on property comprising 107.99 acres, located 695 feet along the south side of Patuxent Road, 1500 feet west of Bragers Road, Odenton; for Chesapeake Terrace (BA 26-91S/BA 27-91V) these are appeals from the denial of a special exception to permit a rubble landfill in an RA district and from the denial of a variance to permit a landfill closer to a residential area and closer to a property line than allowed for property comprising 481.6 acres (including the 107.99 acres for BA 120-90S) located 4300 feet along the southwest side of Patuxent Road, 1500 west of Bragers Road, Odenton.

SUMMARY OF EVIDENCE

J. A. Chisholm, an engineer, testified for the Petitioners. He stated the location and zoning of the property, the amount of acreage and testified as to the previous use of the property, which is currently unused. He stated that plans have been submitted to the state and to the Soil Conservation District for sediment control and discussed the setbacks of the sand and gravel operation from wetlands, the Patuxent Ponds, and dwellings in the area. He stated that two alternative accesses to the site are proposed: one which would route traffic on Conway Road to the site, and the second which would route traffic on Patuxent Road to the site. The Petitioners want the option to use either access, but believe that the Conway Road access would have less impact on homes. He stated the proposed hours of operation and that material mined would be needed for the Petitioners' construction projects in Anne Arundel County. Truck trips per day would average 20; a maximum would be 60 trucks per day. He described the machinery which would be used, the buildings located on the site, and the employees which he anticipated would be needed. Wetlands on the site have been identified and noted by the Department of Natural Resources, the Army Corps of Engineers, and the Planning and Zoning Office. He described the buffers surrounding the site and stated that the sand and gravel operation was no more objectionable than farming or

other permitted uses. After closure of the operation, the area would be much improved from its present condition. He discussed the improvements to the roads in the area, but stated that there had been no improvements to roads past the Patuxent intersection. He indicated that the access to the operations by Conway Road was not described in the special exception applications. Some stockpiling of material would occur at the site, but would be no taller than existing trees (40 feet). Approximately five acres of wetland would be removed. He named the other sources of sand and gravel in the area and what roads were used by the trucks. He described what efforts had been made to acquire necessary properties for the Conway Road access. He stated that the sand and gravel operation is within a resource extraction area of the county and an existing special exception for a sand and gravel operation has been in place since 1989.

With regard to the rubble landfill operation, he described the location and acreage of the site, which is adjacent to the 108 acre site for the sand and gravel operation. He gave the history of the site and stated that the site has been mined off and on for 40 years. The photographs submitted into evidence show debris, deep ravines, and erosion. The variance is need to the required 1000 foot setback to restore the area. Many areas are mined up to the property line and have not been restored. It is necessary to

restore the area before buffering can occur. The areas which the Petitioners propose to restore are within the 100 foot setback area which is required by the Code. He explained the three-phase permit process before a rubble landfill is approved. Rubble landfills are regulated by state law and the information is reviewed by the Department of the Environment, the County Health Department, the Department of Natural Resources, the Soil Conservation District, the Army Corps of Engineers, and the local zoning authority. Prior to issuing the rubble landfill permit, the state holds a public hearing. He stated that environmental concerns have been taken into consideration and he placed into evidence a map showing wetlands and the floodplain of the Patuxent River. He reiterated that the variances were necessary to reclaim the property; it would not be reasonable to reclaim the interior of the property and not the perimeter. He explained the steps which would be taken to minimize the impact on the surrounding properties. The operation would be sequential with only 30 acres of area proposed to be active at any given time. He described the 16 wells drilled on-site to allow the Petitioners to detect if there were anything in the wells due to the operation. He described the sediment control plan and the capping process. The rubble landfill does not take household trash, and the materials which it can take are controlled by state regulations. He stated the proposed hours and explained

the inspection techniques for materials coming into the rubble landfill. He described the on-site machinery and stated that in his opinion, the equipment operated on-site would not cause more noise, vibration nor fumes and would not be more objectionable than permitted uses because of the buffer and berm. He placed into evidence a report which outlined the site conditions and the plans for the proposed rubble landfill. As for need, 18,000 dwelling units are proposed to be built within 10 to 15 miles of the site. This number of units will generate significant rubble material. He named the other existing rubble landfills in the area. He described the methods of controlling waste and stated that the operation would be regularly monitored by a number of agencies. He described the hazard control located at the site: for a fire, there is a tank truck on-site and bulldozers to use dirt to cover. The rubble material should not be able to be scattered by the wind and would be covered every third day. The end result of the site is that it would be used as open space and conveyed to Anne Arundel County or the state. The final cells would be covered by four feet of fill and planted. Sediment basins would be removed and the site would be subject to monitoring by the state for five years. He explained the correlation between the rubble fill use and the sand and gravel use: the sand and gravel operation is for the 108 acre tract east of the rubble landfill site. He believes they are

complementary uses of the site. Rubble from out-of-state will not be solicited, but it will not be turned away. The Petitioners will not have control of the number of trucks coming to the facility to deposit rubble; therefore, they cannot estimate how many truck trips per day will occur. Upon cross-examination, he stated that the rubble landfill would be located 240 feet from the closest residence and the closest house would be 40 feet from the restoration area. There is a natural clay liner under the site, and the Petitioners are not proposing that a manmade liner be installed. The area of acreage proposed for the rubble landfill is 150 acres.

Mark Schultz, a hydrogeologist, testified for the Petitioners. He prepared the report required by the Code of Maryland Regulations (COMAR) for the Department of the Environment. He discussed the well inventory which was prepared and stated there would be no impact on local wells because most of the wells obtain their water from below the clay layer. There is no public water in the area. The existing wells were located by a door-to-door survey. He stated where the monitoring wells would be sited. There would be no rubble filling within three feet of the water table. A groundwater discharge permit would be required and water must be monitored to assure drinking quality. He stated that there would be no adverse impact on the groundwater supply and submitted the well inventory list into evidence. Wells which were shown to be 12

to 30 feet deep are considered to be shallow. The study relates to water supply but not to leachate. The monitoring wells establish baseline conditions before work at the site begins. There are no wells within 100 feet of the line of the disturbance. Monitoring reports are sent to the Department of the Environment. There are a maximum of 1 to 6 shallow wells that could be affected by the operation.

Joseph Berg testified for the Petitioners that he had investigated the wetlands on the site and had prepared a wetlands plan. Five acres of wetlands will be disturbed. The Petitioners met the Army Corps of Engineers' test of minimizing the disturbance of wetlands. It is their plan to replace two acres for every one acre of disturbed area with a result of a net increase of wetlands.

David Santoro, an engineer, next testified for the Petitioners regarding the government regulations for rubble landfills. The Maryland Department of the Environment is involved in the permit stage, the operation and the closure of the landfill. It is also regulated by the Soil Conservation Service, Inspections and Permits, and other federal, state and local agencies. The groundwater discharge permit has been received. Monitoring of the site during the operation is done by a number of agencies. He discussed the design and operation of the facility and stated that the life of the operation was from 10 to 20 years. The base

grading plan which was placed into evidence showed the design. He explained the sequencing as to how a "cell" is created and then filled, compacted, then capped. The operation will have a five year renewable permit. He stated that leachate occurs from water and waste degrading. Because this is a rubble landfill, there should be no problem with leachate. He stated that in his opinion, the operation would not be detrimental to the health, safety and welfare of the public. The Petitioners will meet all state and local requirements and the facility is above the 100 year flood plain. He described what materials could be used as fill and described the closure plan.

Wes Guckert, a traffic and transportation planner, testified next for the Petitioners. He prepared a traffic analysis according to the Anne Arundel County guidelines and the Adequate Public Facilities ordinance. He made projections for the generation of traffic, checked intersections and reviewed the County's staff report. He prepared an intersection study of Route 424 and Route 3 showing morning and evening peak hour traffic. Although the current service level is C and D, with traffic added from approved subdivisions, which have not been built, the service level would be F. However, improvements would mitigate that problem. For the study, he assumed 300 trucks a day to the site, which is probably a high assumption. He prepared a chart of the roadway conditions

along Patuxent and Conway Roads showing the width of the lanes and the shoulders. He stated that with the improvements made by the Petitioners, the roadways, both Patuxent and Conway, could meet the criteria established by the county. From a traffic engineering viewpoint, the Conway Road access is the best alternative. At the intersection of Maryland Route 3 and Route 424, the critical lane volumes increase as the result of the building of other subdivisions as much as 66 to 70%. The impact of traffic from the proposed operations is only 2 to 4%. The mitigating improvement will decrease the lane volumes by 7 1/2 to 13%, which creates a surplus improvement. He described the proposed improvements and improvements which were made to the road network in 1992. The Petitioners propose the construction of an additional eastbound lane along Conway Road which he believes will more than offset the impact of the truck traffic on Conway Road. He stated that the proposed use would not be detrimental to the health, safety and welfare of the public with the improvements planned. Upon cross-examination, he stated that the additional lane for Conway Road would begin about 500 feet west of Route 3 and is subject to approval by the County and State Highway Administration. The additional lane would be a right turn lane only and the addition of this lane would be a substantial improvement over the impact which would be caused at the intersection by the additional truck traffic.

Gary Westholm, an expert in the areas of land use, zoning and real estate appraisal, testified for the Petitioners regarding the criteria of Article 28, §12-104. In his opinion, granting the special exceptions would not be detrimental to the public health, safety or welfare. For water, one must consider both the quantity and quality. The method used to check the water quality on-site and the monitoring system proposed would assure no negative impact. As to water quantity, there are six shallow wells which potentially could be affected. As to the location, nature, and height of buildings for the proposed use and their effect on the orderly development of the neighborhood, he identified the neighborhood and stated that the area is not fully developed and contains a number of sand and gravel operations. The sanitary landfills in Annapolis and Millersville have not stopped development in their neighborhoods. He stated that the operations are no more objectionable with regard to noise, fumes, vibration, and light than permitted uses. The area is zoned RA and the hours of operation are to be 7:00 a.m. to 5:00 p.m., Monday through Friday. The noise would be low, infrequent, and would be buffered. He considers the noise insignificant because the noise is to occur during the day as opposed to during the evening or night. As for fumes, he compared the operations to permitted uses such as farming operations, where unenclosed storage of manure is permitted. No vibrations are

expected, so that should not pose a problem. There should not be light emitted in the daytime, but if so, it would be shielded by the trees which will buffer the area. As to rehabilitation of the pitted area, he has not appraised the property nor appraised any property in the immediate area. However, the present condition would cause a downward adjustment which goes beyond the physical appearance. The proposed use on the subject site is positive as opposed to non-use, where people come on to the site illegally. Upon cross-examination, he stated that he keyed the neighborhood to the Conway/Patuxent intersection. Once the project is completed, the value of the property will go up. He based his statements regarding the health, safety and welfare on the previous testimony. He has had experience with other landfills in the area.

A.J. Chisholm was recalled as a witness and entered exhibits which were illegible in a previous report. He stated that the service road from Patuxent Road to the landfill is in most places at least 10 feet above the flood plain. There has been no flooding from the 100-year flood plain in the area. He stated he is involved with the state permit process and has reviewed the COMAR regulations found in Title 26 for a rubble landfill. A three-phase submittal is required which normally takes 2 1/2 to 3 years to go through the entire process. Phase 1 of the process has been completed and in February, 1989 a letter was issued allowing the

Petitioners to move to a Phase 2 report. A meeting was held in May, 1990 at the Department of the Environment to see if the petitioners could go to Phase 3. They have finished Phase 3, but the Department of Environment will not review until the Petitioners get the proper special exceptions. Even if the Board grants the special exceptions, the Petitioners must still have the plans reviewed and approved by the State, and a public hearing is held by the Department of the Environment. There are currently two rubble landfills in Anne Arundel County and both are under closure plans. A third is under the permit process and may not be permitted to be opened. The final step is the Phase 3 approval and obtaining the grading permit.

Stephen Fleischman, a vice-president of the Halle Company, has been involved in the project working on operational procedures with regard to assurance that no improper material will come in to the rubble landfill. He explained the methods which would be used, including a "gantree" and a gas analyzer, which is used by the EPA. He explained that both visual inspection and filming would occur and that a full-time county employee would be paid by the Petitioners to be on the site. The inspectors and bulldozer operators would be trained as to the COMAR regulations and would know what is authorized and unauthorized. There is a plan to have someone on-site 24 hours a day for security. As to need, there are 4500

residential units being developed within a few miles of the site. The sand and gravel operation would bring materials into the site. They anticipate that the Petitioners will be a major user. As for need for the rubble landfill, in the west county area, Al-Ray will be closed within a year. There is a real need in the area. The Conway Road access is preferred because it is a shorter run and affects fewer people. There are two owners of property on Conway Road, and both have been in contact with the Petitioners. If the special exception is granted, the owners will grant the Petitioners the necessary property to get access to the site. As for the quantity and quality of the wells, the Petitioners will replace any wells which are affected by their operation. The monitor well reports are a public record and they will furnish those reports to adjacent property owners at their request. If there is any contamination, the Petitioners would be required to do the cleanup, so they want to make sure that it doesn't occur. As to questions about the financial security of the company, the state requires a bond before the opening of the landfill. The bond stays in place until five years after the landfill closes. For the rubble landfill, the Petitioners intend to fill 150 acres; for the sand and gravel operation, they intend to mine 35 acres. --

Russell Meyer, president of the Forks of Patuxent Community Association, testified as a Protestant. He believes the special

exceptions should be denied because the area is environmentally sensitive. He described the area and the location of rivers and streams in location to the site. He believes that a pond referred to as a sediment control pond is actually an area where an old stream had run. He discussed the various environmental features of the site. In 1980, Patuxent Road was redesigned and raised because of the many flooding problems. He showed a video of the subject property which included commentary. He has not complained about the 4-wheel drive vehicles which go on the site, but is worried about the rifle shooters and the safety aspects.

Sally Meyer, secretary of the Forks of Patuxent Community Association, put into evidence a resolution which opposes the rubble landfill and which states their concerns.

Marsha Perry testified as a Protestant. She stated her concerns for the Patuxent River and that this is a terrible location for a landfill. A study of rubble landfills in Maryland in 1991 shows the types of substances in the leachate. Carcinogens were found in rubble landfills in Maryland; therefore, hazardous leachate could end up in the Patuxent River. The landfill should be double-lined and a plan developed to handle any leachate. Her concern is that environmental damage from leachate will cause damage to the Patuxent River and the Bay. This rubble landfill will adversely affect a scenic river, which is in contradiction to

Maryland law. The site often floods; Hurricane Agnes flooded 80% of the site. The wetlands should not be threatened because they are habitat in the area for heron and bald eagles. If the landfill would catch on fire, the taxpayers would have to pay.

Betty Judd testified as a Protestant. She has lived in the area for 45 years and owns 480 acres adjacent to the site. She is opposed to the landfill and wants residential developments in the area. The proposed operations will devalue her land. She fears the impact of leachate and contamination of wells as well as the impact of truck traffic on safety.

Eugene Turner, Bonita Truesdale, Joe Bryant and Ray Murdoch, all Protestants and all owners of adjacent or nearby properties, object to the granting of the special exceptions. They voiced concern regarding traffic, contamination of the water in the wells and river, flooding, and dust and noise from the operations.

Jack Meyer testified as a Protestant. He stated that there is too much truck traffic on the road already, and that the county could not keep out-of-state haulers from using the landfill. He placed into evidence a number of photographs showing flooding and the bad turns on Conway Road. He discussed the problems at the Route 3/424 intersection, and the amount of time that it took to get through the intersection, as well as the problems caused by not being able to see over or around the large trucks.

Erica Ihrig testified as a Protestant, stating she opposed the rubble landfill because of fear of contamination of wells and that land values would be decreased.

Burt Rice, representing the Greater Odenton Improvement Association, voiced five concerns which caused them to oppose the special exceptions: the Corps hasn't approved the grading of wetlands; there is a deep clay base but this is an environmentally sensitive area with periodic flooding; the effect of noise, traffic, and lack of buffering on residences; the truck traffic demands on the intersection at Route 3; and, there is no guarantee that out-of-state debris won't be accepted into the landfill.

Larry Nowottnick lives adjacent to the site and opposes the special exceptions because of the noise and the truck traffic.

Bob Scott testified as a representative of the Greater Crofton Council. They have concerns because of traffic and the health, safety and welfare issues. They see no urgent need because there are many sand and gravel operations already. They are concerned because of the environmental impact on the property.

Edwin F. Dosek testified in opposition to the special exceptions in his personal capacity and as president of Crofton Civic Association. He stated that he did not believe it was likely that well water would be contaminated but was concerned about the Patuxent and Little Patuxent Rivers and their contamination. He is

chairman of the Patuxent Wastewater Facility Advisory Committee and is concerned about the harsh impact of the addition of contaminants into the Patuxent River and the surrounding marsh. His main concern is regarding traffic. Conway Road is a country road which is narrow with very small shoulders and is rutted by excessive truck traffic. It is travelled daily by many Crofton residents going to work or to various facilities. He has personally had difficulty making the left turn onto Conway Road at the Route 3/424 intersection. He does not agree with the testimony of Mr. Guckert, the Petitioners' traffic expert, and using Exhibit No. 20, he determined that there would be 6.95 vehicles per minute at the intersection. He believes it is a genuine issue as to the health, safety and welfare of the public.

Juanita Truesdale submitted into evidence a letter from Jean Creek, NAACP representative.

Jerome Poore testified in opposition to the landfill. He lives at the corner of Conway and Meyers Station Road and the fumes from the trucks cause a steady haze. He confirmed the flooding on Patuxent Road.

Kevin Dooley, a zoning analyst with the Office of Planning and Zoning, testified for the County. He reviewed the site plans for the original applications and reviewed comments from public agencies, particularly for the landfill. The sand and gravel and

rubble landfill applications have separate standards. Also, for the rubble landfill, the Petitioners requested variances to two locational standards: one, a variance of 760 feet to the 1,000 foot setback from a residence or institutional building, and two, a variance of 100 feet from the required 100 foot setback to deposit fill. When he reviewed the site plan, he determined that if the area for extraction was outside 1,000 feet, it would comply with the special exception. He cannot make a positive recommendation and does not have information regarding the final grading. For the rubble landfill, the special exception can comply with all the standards except for filling within 100 feet of the property line. There are a lot of houses close to heavy activity. Although there are eroding slopes, they can be stabilized with material other than rubble fill. Because of the close proximity of the work area to the residences, he cannot support the request. From conversation with the Department of Public Works, he was aware that the proposal for alternative access to the site was to be made, although it was not part of the original application. Aside from the site plan, he had concerns regarding the special exception because of the impact on the local roadways. With the amount of additional truck traffic proposed, the roads would need to be improved with shoulders. However, because the roads are so narrow, it is impossible to make those improvements. Also, the intersec-

tion of Conway Road and 424 is projected to be a failing intersection; unless it were upgraded to an acceptable level of service, he could not approve the request. Because of the road situation in the area, both of the special exceptions should be denied. He discussed the agency comments and stated that the Department of Public Works had determined that from a technical standpoint, the proposal was acceptable. Upon cross-examination, he testified that assuming the variances for the rubble landfill were granted, the proposal meets the other special exception criteria. If the site plan were redrafted to show no work within the 1,000 foot setback, the proposal could comply with the special exception criteria. For the sand and gravel operation, the plan was adjusted to meet the 1,000 foot setback, and thus meets the special exception criteria. The Chesapeake Terrace site was used for years as a sand and gravel operation and was also mined by the State Highway Administration. If clean fill dirt were used in the area within the 100 foot setback, no variance would be needed. He stated that in his opinion, this proposal does not comply with the Adequate Facilities ordinance for the roads. The roads will work better with the improvements the Petitioners are willing to make, but will still have a failing level of service.

Testifying on rebuttal was Wes Guckert, the Petitioners' traffic engineer. The current law requires the state to go to the

first intersection of the arterial, then to the next arterial intersection. Conway Road is the arterial, not roads to the west of Patuxent Road. There are very few regional roadways. Thousands of units have been approved in Crofton; 70% of the trips will go north along Route 3 and will not adversely affect the rest of the road network.

After the passage of Bill 12-93, the Petitioners were permitted to give additional testimony to attempt to meet the new criteria for a rubble landfill.

J. A. Chisholm again testified for the Petitioners. He drew new site plans which comply with the provisions of Bill 12-93 as to the depth of excavation and the height of rubble. He submitted a map of the tract boundary showing the 100 year flood plain and the wetlands. The actual area of operation does not go into the flood plain. He submitted a declaration of covenants as a draft document which is not yet executed. The covenants will be entered into between National Waste Management and Anne Arundel County. He discussed the various criteria and stated that the Petitioners would do what was required to meet the regulations. He indicated that the Petitioners had already complied with many of the requirements. Upon cross-examination, he stated that as the fill operation moves upward, the berm will move upward. As the fill increases in height, the berm will continue to be 25 feet above it.

The berm also moves as the operation increases. In compliance with Bill 12-93, the highest elevation in the disturbed area had to be reduced.

Mark Schultz, the hydrogeologic expert for the Petitioners, prepared well completion reports to 3/4 of a mile as required and tabulated the data. A map was entered into evidence showing the location of wells within 3/4 mile of the site. The wells were sampled as required and the groundwater under the site is in compliance with drinking water. Quarterly reports will be obtained. The Petitioners will install at least 10 perimeter wells around the site. They will routinely test the water. The reports will be filed either with the Health Department or with the Department of Natural Resources. Upon cross-examination, he stated that for older wells, he could not find the well tag numbers. Although he did not believe they missed any wells, he might not know the depth of the well. If a well was drilled before 1960, it was not required to be tagged. He stated that he has not put together a comprehensive plan for monitoring groundwater; however, he will put one together for the Health Department and the Maryland Department of the Environment.

James E. Irre testified for the Petitioners regarding forest conservation plans. He is a certified forest land delineation expert. He visited the site and found much undisturbed forest that

had been subjected to mining. Based on information from aerial photographs, there is approximately 300 acres of undisturbed forest; approximately 32 acres of this will be disturbed by the operation. He prepared a report regarding the computation of the significant forested areas to comply with Bill 12-93.

Milton McCarthy testified for the Petitioners as a certified wetland delineation expert. He was originally retained in 1988 to do a wetland delineation and later returned to work on the wetland permit process for the federal and state permits. He computed the acreage of wetlands and showed which are affected by the proposal on a map entered as Exhibit No. 66. Other wetlands are mature forested wetlands. The quality of the wetlands to be displaced is minimal because they are fairly new, only 20 to 30 years old. A total of five acres of wetlands is to be impacted. The wetlands will be placed on another section of the property on a 1:1 ratio and an additional two acres of wetlands will be created for a total of seven acres. He prepared a wetlands mitigation report which he submitted into evidence. He stated that the site is not located within the critical area nor the 100 year flood plain. The wetlands on the site have been artificially created from past mining. Water bodies exist on the property but are well outside the project site. He stated that the new wetlands contiguous to

the Patuxent River are a more than adequate trade-off. There will be no impact on streams in the area.

Kenneth Frampton testified for the Petitioners as an expert in acoustical engineering. He prepared a study with respect to the criteria in Bill 12-93 and researched the typical noise level of equipment at the landfill. From his study, he recommended the increase in the height of the berm to 25 feet from 15 feet which would cause the Petitioners to be able to meet the noise code. This is necessary where dwellings are within 1,000 feet; otherwise, it is not necessary. He stated that the Petitioners would be able to comply with all of the noise requirements found in the bill. Upon cross-examination, he stated that he used previous research available to him to calculate the anticipated noise quantity. He used measures of specific pieces of excavation equipment in the act of excavating and assumed certain kinds of vehicles which are used at this type of facility. He testified that the berm is not unbroken for the entire circumference and there are regions of the landfill where there are no berms if there are no dwellings within 1,000 feet.

Bonita Truesdale and Emily Ihrig testified as Protestants stating that they were not contacted by the Petitioners' witness although their names are on the well inventory list which was submitted into evidence.

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Russell Meyer testified again as a Protestant, stating that Bill 12-93 required that no stream on the property be affected. He was concerned about the stream that feeds the pond and stated that it is not from water sitting on top of the clay.

Kevin Dooley again testified for the County and submitted into evidence a letter from the director of the Department of Public Works regarding the condition of Conway Road from the intersection with Patuxent Road to the proposed entrance of the site. The letter stated that Conway Road did not meet the current county standards for a collector road.

Robert R. Strott testified as a Protestant. He is one of the developers of Piney Orchard and does not believe the Petitioners have met the criteria of Bill 12-93 because they have not shown the location of other landfills in the area and have not given records of annual volume for the last five years. Also, the Petitioners have not given records certified by the Department of Public Works showing the total volume of rubble for the next three years.

Richard Klein testified for the Protestants regarding the aquatic environment. He stated that there are four aquatic resources at risk and the greatest impact is from the leachate. He put into evidence a table of rubble landfill leachate compiled from rubble landfills in Maryland. The table shows that dangerous substances are released from landfills that are toxic to aquatic

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life. He also put into evidence geologic cross sections he prepared which show the underlying clay material. He stated that the groundwater flows toward the Little Patuxent River. He stated that the facility has received a groundwater discharge permit which protects drinking water, but not aquatic life, which has higher standards. Since the project will have a net negative impact upon aquatic life, the Petitioners cannot meet the showing required in Bill 12-93.

Called as a rebuttal witness, Mark Schultz again testified for the Petitioners as an expert in hydrogeology. He explained how he prepared his report regarding the well inventory and how he conducted the research. He referred to Petitioners' Exhibit No. 28 regarding the water quality certificate. He stated that there was very little potential for contaminated water to reach the Little Patuxent River; the water has to meet drinking water standards, so it would be of a very high quality. The wells would be monitored throughout the time of the landfill.

All testimony was stenographically recorded and the recording is available to be used for the preparation of a written transcript of the proceedings.

FINDINGS AND CONCLUSIONS

In this case, the Board is asked to grant special exceptions for sand and gravel and rubble landfill operations. For the rubble landfill, the Board is further asked to grant variances to two locational requirements: first, a 760 foot variance to the requirement that the rubble landfill operation be located 1,000 feet from residences and institutions (§12-242(b)(8)); and second, a 100 foot variance from the requirement that the fill area be located at least 100 feet from any neighboring property (§12-242(b)(9)).

To make this case even more difficult, legislation for new special exception criteria regulating rubble landfills was proposed while the hearings on this matter were before the Board. Bill 12-93 passed and took effect on April 12, 1993. Section 5 of the bill requires any special exception granted after January 19, 1993 for a rubble landfill be governed by Bill 12-93. Although the hearing process had ended prior to the January date, the Board deliberations were not concluded by that time. Hence, this Board believes that the special exception request comes under the new legislation. In fairness to the Petitioners, the Board reopened hearings to permit the Petitioners to offer additional testimony to demonstrate their ability to comply with the new regulations.

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After an on-site inspection, no fewer than 16 hearing dates,
and numerous meetings for deliberation, this Board has concluded,
with the conditions which it will impose, that the Petitioners are
capable of meeting all of the performance standards for the sand
and gravel operation as required in §12-212 of Article 28 of the
County Code and for the rubble landfill as required in Bill 12-93,
which will be codified as §12-242 of Article 28. The Board also
believes that the Petitioners have met their burden of showing the
necessity for the requested variances and thus will grant those
variances as well.

Because the sand and gravel and rubble landfill operations
will occur on the same property, and most of the opposition stems
from the general standards for granting a special exception, the
Board will first address those standards. Section 12-104 of
Article 28 states eleven findings which must be made in the
affirmative prior to addressing the specific performance standards
for a given special exception. This Board believes that the
testimony regarding the facilities to be needed or used at the site
prove that they are adequate to handle the proposed operations.
The testimony of J. A. Chisholm regarding the site plans adequately
explained the operations to the Board, and the Board believes that,
because of the location of the site, the use will be compatible
with the appropriate and orderly development of the district in

which it is located. The areas of concern for both the Protestants and the County center on the public health, safety and welfare. Of particular concern are well, river and bay contamination from leachate; traffic, particularly along Patuxent Road, Conway Road, and the intersection of Maryland Route 424 and Route 3; and the environmental impact on the wetlands located on the site and on the Patuxent River watershed.

This Board believes that the concerns raised by the Protestants and the County are certainly legitimate concerns; however, it also believes that, with the conditions the Board will impose on the granting of the special exceptions and variances, the Board adequately addresses those concerns.

As to the concern about water quality, particularly the shallow wells located near the site, the Board believes that the expert testimony of the Petitioners' hydrogeologist was convincing that the clay layer is sufficiently established to provide for blockage of any leachate. However, the Board will require the Petitioners to notify all property owners within a three-quarter mile distance from the property to offer the replacement -- at the Petitioners' expense -- of an existing shallow well located within that area, since the Protestants voiced concern about leachate contamination of wells which do not have the depth now mandated by the County Health Department. Concerns about the wetlands and the

Patuxent River watershed should be alleviated by positioning the entrance to the operations on Conway Road; this Board will prohibit the use of Patuxent Road for the entrance to the site. Although the County argues that the Petitioners could not suggest this alternative entrance after filing the initial appeal (an argument which this Board rejects), the County also indicated in its closing argument that the Conway Road entrance is a much better choice because it avoids the wetlands and heavier traffic on Patuxent Road as well as directing the traffic further from the Patuxent River.

This Board has often accepted modifications to an initial plan when the modifications were offered during the hearing process. There does not appear to be any reason that the proposed use of the Conway Road entrance must be rejected by this Board.

As well as addressing concerns about the environment, the use of Conway Road also addresses a number of traffic concerns. However, the Board acknowledges that the use of Conway Road also presents some concerns. The Board will condition the granting of the special exceptions to require improvements to Conway Road to bring the road to County standards. Travel lanes shall be 12 feet in width, and there shall be 8 foot shoulders where County right-of-way exists. The Board notes that it is a problem that the County does not own the right-of-way along the entire affected length of Conway Road. Although the Board does not believe that it

can compel the Petitioners to have eight foot shoulders where they cannot obtain the right-of-way from private property owners, it strongly encourages the Petitioners to use their best efforts to obtain such rights-of-way to construct the eight foot shoulders.

Another area of concern is the intersection at Conway Road and Maryland Route 3. The Board will require the Petitioners to construct a right turn lane on eastbound Conway Road at Maryland Route 3; the turn lane shall have a minimum length of 500 feet. The Board believes that imposing these conditions will assure that the health, safety and welfare of the citizens will be protected.

Although the Board is very concerned about problems of traffic, the only expert testimony before this Board regarding traffic issues was offered by the witness for the Petitioners, who testified that the traffic problems would be mitigated by the proposed improvements and would thus meet the necessary criteria.

This Board also finds that operations related to the sand and gravel and rubble landfill uses will be no more objectionable with regard to noise, fumes, vibration, or light to nearby properties than operations in permitted uses. A farming operation, which would be a permitted use in a RA zoned district, would offer a comparable amount of noise, fumes and vibration because of farm machinery and animals. Light does not appear to be an issue with these operations. To help to alleviate the noise issue and traffic

during a portion of the peak afternoon period, the Board will limit the hours of both operations from 7:00 a.m. to 5:00 p.m. Also, on weekends when families are home during the day, neither operation will be permitted to be open for business.

Another health, safety and welfare issue which the Board has addressed is to require the Petitioners to fence the area of active operation with a fence at least six feet in height and to allow access through one lockable gate only.

The County voiced concerns that the Petitioners will use an existing rail line to transport rubble to the site and questions the ability to monitor rail transport in the same fashion that truckloads of rubble are monitored. This Board will neither approve nor prohibit rubble to arrive at the site by rail; however, it will require the Petitioners to notify the County if they intend to implement rail transport, and to obtain the appropriate approvals for rail transported rubble from the County and other agencies which monitor rubble landfills.

This Board must also find that the Petitioners have presented sufficient evidence of public need for the proposed uses. We find that the evidence presented by the Petitioners indicates a need for sand and gravel for the Petitioners' construction projects throughout the county. There is also a public need for a rubble landfill. Although operations such as landfills are virtually

always unpopular within a community because of the health and safety concerns, it is an unfortunate fact that such operations continue to be needed to deal with the wastes which our society creates. The Petitioners' witnesses testified that thousands of dwelling units are scheduled to be built, which will increase the need for the rubble landfill.

As to the specific performance standards for a sand and gravel operation as found in Article 28, §12-212 of the County Code, this Board finds that the Petitioners have offered testimony and evidence which convinces the Board that they will be able to meet all of the necessary standards.

As to the performance standards for a rubble landfill, as determined by Bill 12-93 (codified as Article 28, §12-242), the Board also finds that the Petitioners are capable of meeting the standards, except for the locational standards for which the Petitioners have requested variances. In order to grant the requested variances, the Petitioners must meet the standards found in §11-102.1 of Article 28. This regulation requires the Board to find either unique physical conditions or exceptional circumstances other than financial considerations prior to granting the variances. From the Board's observations at its on-site inspection of the property, the Board believes that there are exceptional topographical conditions peculiar to this particular site. Because of

previous mining which has occurred on this property, the land is cratered virtually up to the property line. The purpose of granting the variances would be to permit the Petitioners to fill in these areas so that the dangerous and eroding conditions no longer exist. In this Board's opinion, filling in this area is part of the reclamation of the area which must be accomplished. Because of concerns as to what materials will be used to fill the area, the Board will condition the grant of the variances to require the fill to be of the same material which must be used for the construction of a berm pursuant to Bill 12-93, which requires: "rock and similar irreducible materials such as concrete, non-refractory brick, and asphalt created as a result of construction activities, mining, or regrading projects without limit as to size, provided voids are not formed into which overlaying soils may be washed; and topsoil intermittently layered with non-organic soil." Since these are the only materials which may be used to fill the area, the Board believes that granting the variances will not be detrimental to the public welfare. The variances are the minimum variances necessary to afford relief, because the number of feet of the requested variances is dictated by the location of the area which must be filled. This Board further finds that granting the variances will not alter the essential character of the neighborhood or district in which the site is located. Once the fill of

this area has been completed, it will be a benefit to the community over the existing conditions. For the same reason, the Board finds that granting the variances will not substantially impair the appropriate use or development of adjacent property. Since all activity will take place on the Petitioners' property and it will be a matter of filling an eroding area, the eventual effect on the neighboring property will be positive. The Board does not need to address the Critical Area criteria for granting variances since the property is not located within the Critical Area.

ORDER

For the reasons set forth in the foregoing opinion, it is this 23rd day of December, 1993, by the County Board of Appeals of Anne Arundel County, ORDERED that the appeals are hereby granted as follows:

Special Exceptions

The special exceptions for a sand and gravel operation and rubble landfill operation are granted with the following conditions:

1. Patuxent Road shall not be used as an entrance to the operation.
2. Conway Road is to be used as the entrance to the operations, with the following conditions:

a. A right turn lane shall be constructed on eastbound Conway Road at Maryland Route 3 to a minimum length of 500 feet. ✓

b. From the intersection of Patuxent Road and Conway Road to the entrance of the site, the road shall be improved with 12 foot travel lanes and 8 foot shoulders improved to county standards (pursuant to Article 26, §3-202(d), Anne Arundel County Code) where the county right-of-way exists. Additionally, the Petitioners shall pursue a diligent course to obtain the right-of-way from private property owners where possible. ✓

c. The road improvements on Conway Road from Route 3 to Patuxent Road shall be constructed before any rubble landfill or sand and gravel operation begins; road improvements from the intersection of Conway Road and Patuxent Road to the entrance of the site are to be completed within one year of the start of operations. ✓

d. The access obtained to the site from Conway Road shall be through a fee-simple right-of-way, not through an easement. ✓

3. The life of the landfill operation, from the beginning of waste collection to the final waste acceptance, shall be limited to 12 years.

4. The hours of operation for both the rubble landfill and sand and gravel operations shall be limited to 7:00 a.m. to 5:00 p.m. Monday through Friday (no weekend hours).

5. The Petitioners are to notify all land owners within three-quarters of a mile that they can opt to have the Petitioners replace a shallow well at the Petitioners' expense prior to and up until 12 months after commencement of the operations. The Petitioners are to notify all property owners within three-quarters of a mile within 60 days after Board approval of the operations. Commencement is defined as the onset of operations to begin work on the landfill.

6. The granting of the special exceptions neither approves nor denies railroad operations to bring rubble fill to the site. If a rail operation is to be used, the Petitioners shall receive further approvals from the County and other monitoring agencies.

7. Fencing shall be erected around the active operations to a height of six feet with only one lockable gate.

Variances

A variance to Article 28, §12-242(b)(13) is granted, establishing a variance of 760 feet; a variance to Article 28, §12-242(b)(14)(viii) is granted, establishing a variance of 100 feet.

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Both variances are subject to the following condition:

1. The fill used in the area requiring the variance shall be that which must be used for construction of a berm pursuant to Bill 12-93, (§12-242(b)(14)(vi)1.a & b), which reads:

Each berm shall be constructed with acceptable fill material limited to:

a. Rock and similar irreducible materials such as concrete, non-refractory brick, and asphalt created as a result of construction activities, mining, or regrading projects without limit as to size, provided voids are not formed into which overlaying soils may be washed; and

b. Topsoil intermittently layered with non-organic soil.

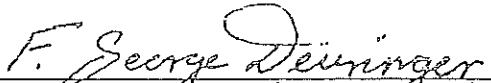
Any appeal from this decision must be in accordance with the provisions of Section 604 of the Charter of Anne Arundel County, Maryland.

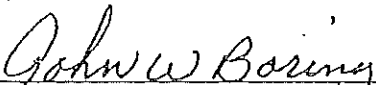
If this case is not appealed, exhibits must be claimed within 60 days of the date of this Order; otherwise they will be discarded.

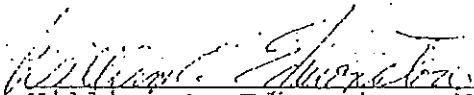
Any notice to this Board required under the Maryland Rules shall be addressed as follows: Anne Arundel County Board of Appeals, Arundel Center, P.O. Box 2700, Annapolis, Maryland 21404, ATTN: Mary M. Leavell, Clerk.

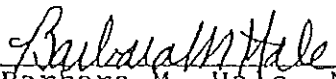
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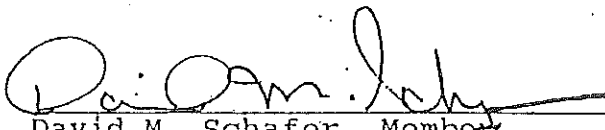
COUNTY BOARD OF APPEALS
OF ANNE ARUNDEL COUNTY


F. George Deuringer, Chairman


John W. Boring, Vice Chairman


William C. Edmonston, Member


Barbara M. Hale, Member


David M. Schafer, Member

(Joseph A. Johnson, Member,
did not participate in this
appeal.)

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DISSENT

The undersigned Board member dissents from the majority on the granting of the special exceptions and variances. I would vote to deny all of the appeals.

As to the special exceptions, I believe that both fail in terms of the general standards for granting a special exception, specifically with regard to §12-104(1), pertaining to the public health, safety and welfare; §12-104(3), pertaining to noise and fumes; and §12-104(4) pertaining to the requested use conflicting with an existing road.

My concerns which cause me to deny the special exceptions focus mainly on traffic issues: the adequacy of Conway Road, the amount of truck traffic with its attendant noise and fumes, and the inability of the existing road network to handle the traffic generated by the operations. Conway Road west of Patuxent Road is unquestionably a focus of concern. This portion of Conway Road is a winding country road with narrow lanes and narrow shoulders. The projected 300 to 600 truck trips per day (per the testimony of the Petitioners' expert) and the number of trucks on this section of Conway Road would definitely create a safety problem. One of the Protestants testified that there have been two fatal accidents which have already occurred on this road. The size of the trucks

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and the number of trips per day would certainly make this a health and safety issue.

With the number of trucks which will be required to carry the materials and the amount of noise, smoke and fumes created by the trucks, I believe these operations are more objectionable than permitted uses. Because the trucks will cause this situation the length of Conway Road, the noise and fumes are not limited to affecting only the most immediate neighbors surrounding the site.

In my opinion, the operations also will conflict with the existing road network. Petitioners' Exhibit No. 29 confirms that the intersection of Maryland Route 3 and Route 424 already has failing levels of background traffic for the morning peak and evening peak hours. I am not convinced from any testimony before the Board that the Petitioners can mitigate this problem to the extent that granting the special exceptions will not have an adverse impact on the intersection. County law requires the traffic to be above a "D" level of service; the critical lane analysis which was prepared does not indicate that the steps taken will raise the traffic above that level.

I also believe that the Petitioners have not met the burden of proof on the issue of need. There are other sand and gravel operations in this area of the county. Although there may be an

overall need for sand and gravel materials, I do not believe there is sufficient need in the site area.

Addressing the specific criteria for a rubble landfill as found in Bill 12-93, specifically Section 12-242(b)(20), the access to the operation is to be provided from a collector road, an arterial road, or a major highway. However, Conway Road remains the problem. There is no question that from Route 3 to Patuxent Road, Conway Road meets the definition of a collector road. Although the General Development Plan map refers to the entire length of Conway Road as a collector road, the portion west of Patuxent Road does not meet the current county standards for a collector road. This was confirmed by the director of the Department of Public Works in a letter dated August 24, 1993 (County Exhibit No. 8). The on-site inspection of this property and the surrounding road network confirms for this Board member that this portion of Conway Road is inadequate. The law does not state that a road is sufficient if it has a potential of becoming a collector road; the road should now meet the current county standards for a collector road if it is to be used by the number of trucks with the number of trips which are projected. The failure of Conway Road to meet the collector road definition using current county standards is a further reason that these appeals must fail. This issue relates again to the general standards found in §12-

104(1) and (4), pertaining to safety issues and conflict with the existing road network.

The Petitioners have also failed to meet requirements regarding noise, specifically, §12-242(b)(14)(iii) and (b)(14)(viii). Although I will address my remarks about §12-242(b)(14)(viii) during my discussion regarding the variances, (b)(14)(iii) requires that noise levels "shall be measured at the highest normally accessible location of each affected dwelling to a maximum height of 30 feet above grade." (emphasis added) The testimony of the Petitioners' acoustical engineer was that the Petitioners could meet this requirement; however, he stated that he used previous research available to him and did not make actual noise measurements at the site. I believe that this section of Bill 12-93 requires such site measurement, and thus has not been met.

As to the variances which the Board has also granted, I believe that they should also be denied. I agree with the County's argument that if the Petitioners would use clean fill to restore the damaged and eroding areas, there would be no need for a variance. Furthermore, the Board has chosen to consider the granting of the variance to also act as a variance to the requirement in Bill 12-93 that noise abatement activity be located 300 feet from any dwelling and 100 feet from the property line (§12-

242(b)(14)(viii)). Since the Petitioners chose to use a berm as their noise abatement method, noise abatement activity will be within 200 feet of the closest residence. The Petitioners have not requested a variance to that Code section and I do not believe that the Board acted properly by using the requested variance to also grant the variance to setbacks for noise abatement activity. Furthermore, any hardship which exists was self-imposed by the Petitioners because of their decision as to where to place the noise abatement berm. In their attempt to meet §12-242(b)(14)(ii), which requires peak sound levels not to exceed 60 DBA and average sound levels not to exceed 55 DBA between 7:00 a.m. and 5:00 p.m., the Petitioners have encroached into the required 300 foot setback; therefore, the hardship created was self-imposed by the encroachment. I believe that the Petitioners did not produce any evidence to support the variance to the locational setbacks and the Board erred in granting this additional variance pertaining to noise abatement activity.

Although at the meeting which took place on October 4, 1993, I voted to grant the special exceptions and variances, I voiced at that time my concern about several issues and stated that I would make my final decision based on the language of the written opinion. The Board's opinion has not answered my concerns. It is not clear to me how much of Conway Road will be improved; the

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language in the condition urging the Petitioners to use "due diligence" to obtain privately owned right-of-way is not sufficient. I believe Conway Road should be improved to county standards the entire distance from the Patuxent Road intersection before these operations are permitted to begin.

For all of these reasons, I respectfully dissent from the majority opinion.


Anthony V. Lamartina, Member

EXHIBIT B

**Office and Planning and Zoning,
Suzanne Schappert**

June 8, 2006

FINDINGS AND RECOMMENDATION

Office of Planning and Zoning
Anne Arundel County, Maryland

APPLICANT: Chesapeake Terrace
National Waste Managers, Inc.

ASSESSMENT DISTRICT: Fourth

CASE NUMBER: 2005-0155-V & 0156-V
Board of Appeals BA 7-06V & 8-06V

COUNCILMANIC DISTRICT: Fourth

HEARING DATE: October 27, 2005
Board of Appeals June 8, 2006

PREPARED BY: Suzanne Schappert
Planner III

REQUEST

The applicant is requesting variances to permit an extension in time for the implementation and completion of previously approved special exceptions and variances for a rubble landfill and a sand and gravel operation for property located in the Odenton area.

LOCATION AND DESCRIPTION

The rubble landfill site is located on the southwest side of Patuxent Road, west of Bragers Road and consists of 481.6 acres. The sand and gravel site is located on the south side of Patuxent Road, west of Bragers Road and consists of 107.99 acres. The sites are designated as Parcels 20 & 117 in Block 08 on Tax Map 36.

The current RA-Agricultural Residential classification of the site was received as a result of the Small Area Planning Process for the Odenton area effective, June 21, 2004.

APPLICANT'S PROPOSAL

The applicant has requested variances for both sites to extend the time for implementation and completion of the previously approved special exceptions and variances, Case Numbers BA120-90S, BA26-91S and BA27-91V.

REQUESTED VARIANCE

Section 12-107 of the Anne Arundel County Zoning Ordinance provides that a special exception is rescinded by operation of law if action to implement the use is not begun within one year after the decision of the approving authority and the use is not completed and in operation within two years after the decision.

2005-0155-V & 0156-V

Section 11-102.2 (a) provides that a variance becomes void unless a building permit is obtained within one year of the grant and construction completed within two years.

The Court of Special Appeals ruled on this matter on December 6, 2000, and the Court of Appeals denied appellate review on April 13, 2001. The applicants, Chesapeake Terrace/National Waste Managers, Inc. has been pursuing this project approval through the Maryland Department of the Environment since the original approval in 1993. However, the State permitting process takes a minimum of three (3) years and at times longer to complete. No permit has been issued at this time.

An extension in time for two (2) years was granted by the Board of Appeals on April 16, 2004 in Case Number BA 62-03V & BA 63-03V. This extension in time will end on April 16, 2006. The applicants requested an additional two (2) years extension in time for the implementation and completion of a special exception to operate a sand and gravel mining operation and a rubble landfill before the Administrative Hearing Officer on October 27, 2005 which was approved on January 4, 2006.

A variance of two (2) additional years in time is requested to implement and complete the approved special exception.

RECOMMENDATION

With regard to the standards by which a variance may be granted as set forth under Section 11-102, the Office would offer the following:

The Maryland Department of the Environment indicated in a letter to The Halle Companies dated June 15, 2005 that the applicant is currently in Phase III of the application review process and the copies of the letter and the Phase III Report are being transmitted to all interested agencies for their review and comments.

Although the applicant has stated they have been diligently pursuing this project approval through the Department of the Environment since the original approval, a permit has not yet been issued.

The Health Department comment dated June 17, 2005 stated they reviewed the request and has no objections.

Soil Conservation comment dated May 24, 2005 stated they reviewed the request and the District has no objection to permit an extension in time.

The Department of Recreation and Parks commented in a memo dated June 14, 2005 that the entrance road is proposed within a County owned parcel and they have not been contacted regarding the proposed roadway and is strongly opposed to the construction of this road. They

2005-0155-V & 0156-V

recommend the variances be denied until such time as a suitable alternative access to this facility is identified and permission of all impacted property owners is acquired.

The Development Division of the Office of Planning and Zoning reviewed the request and offered no objection. Although the access road at some point will be an issue, it is not an issue for a time extension.

Provided the applicant demonstrate they have diligently been pursuing the permit through the Maryland Department of the Environment, it would appear exceptional circumstances exist to warrant variance relief, and that the variance is necessary to avoid a practical difficulty to enable the applicant to continue with the permitting process. The variance requested in this instance is the minimum necessary to afford relief.

Accordingly, the Office of Planning and Zoning would offer no objection to an additional two (2) year extension in time.

Suzanne Schappert

Suzanne Schappert, Planner III

June 5, 2006

Date

Lois Villemaire

Lois Villemaire, Asst. Planning and Zoning Officer

6/5/2006

Date

Response to Comment 24

Exhibit C: John Fury Transcript, August 15, 2013

Exhibit D: Second Supplemental Memorandum of Opinion, December 1, 2022

EXHIBIT C

John Fury Transcript

August 15, 2013

1

BEFORE THE ANNE ARUNDEL COUNTY BOARD OF APPEALS

IN THE MATTER OF:

NATIONAL WASTE MANAGERS,

INC./CHESAPEAKE TERRACE

:
:
:
CASE NOS. BA 12-13V
BA 13-13V
:
:
:

Thursday, August 15, 2013

Pursuant to Notice, the above-entitled
hearing was continued before Chairman Knight, at the
Arundel Center, 44 Calvert Street, Annapolis,
Maryland 21401, commencing at 5:30 p.m., there being
present on behalf of the respective parties:

ON BEHALF OF THE PETITIONER:

SUZANNE K. HENLEY, ESQUIRE

ON BEHALF OF THE PROTESTANT:

P. TYSON BENNETT, ESQUIRE

ON BEHALF OF THE COUNTY:

JOHN FURY

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1 CHAIRMAN KNIGHT: Anything further for this
2 witness?

3 MR. BENNETT: No, thank you, sir.

4 CHAIRMAN KNIGHT: Mr. Pumphrey, you're
5 excused as a witness.

6 THE WITNESS: Thank you.

7 CHAIRMAN KNIGHT: Do you have another
8 witness?

9 MR. BENNETT: I do not, Mr. Chairman.

10 CHAIRMAN KNIGHT: We move to the county,
11 swear you in, Mr. Fury.
12 Whereupon,

13 JOHN FURY,
14 a witness, called for examination, was duly sworn, and
15 was examined and testified as follows:

16 THE CLERK: And I think I know who you are.

17 MR. FURY: For the record, Mr. Chairman, John
18 Fury with Planning and Zoning.

19 Let me first just with your permission, and I
20 have copies, I think, here for counsel, submit the
21 department's staff report and various exhibits.
22 There's copies for counsel, several copies for you.

23 In it, you'll find a copy of the departmental
24 staff report, copies of the variance -- subject
25 variance application.

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1 CHAIRMAN KNIGHT: Do we want to make this all
2 one exhibit?

3 MR. FURY: Yes, sir, if we can.

4 CHAIRMAN KNIGHT: All right. The staff
5 report with attachments, and tell me what those
6 attachments are again.

7 MR. FURY: Yes, sir. We have the staff
8 report on top. The variance application follows that,
9 a copy of the deed, a couple of deeds actually, quit
10 claim deed also which goes with that, and this is an
11 older deed immediately behind it, and a copy of a
12 Maryland Department of the Environment correspondence
13 dated Thursday, December 20th, 2012 from Mr. Dexter to
14 Ms. Henley with regard to stat -- current status, then
15 current status of the project, copy of the Health
16 Department's memorandum of no objection, and a copy of
17 the interoffice memorandum from the County Department
18 of Recreation and Parks with regard to the application.

19 That's it in the packet. If there's no
20 objection, I'll continue.

21 MS. HENLEY: I have no objection.

22 MR. BENNETT: No objection.

23 CHAIRMAN KNIGHT: All right. That's County's
24 1 is the staff report with the -- with those
25 attachments.

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1 (Whereupon, the documents were marked
2 for identification as County Exhibit No. 1 and received
3 in evidence.)

4 MR. FURY: Thank you, Mr. Chairman.

5 I won't rehash a lot of what you already
6 know. The case concerns a site with a very long zoning
7 history, probably the longest active case on the books
8 that I know of in the Office of Planning and Zoning.
9 The original special exception and variance approval is
10 dated back to 1993. The site was formerly the same
11 ground lot (indiscernible) going way -- way back,
12 probably the World War II period.

13 Shortly after the 1993 approval -- I'm not
14 sure of the after, but the applicant entered into MDE
15 review in the mid '90s with this project.

16 As has been testified to, you're aware that
17 this project is under judicial review due to primarily
18 issues related to the site's omission from the county's
19 solid waste management plan in 2003, the 2003 plan.

20 It was in the courts for several years and
21 finally -- that took a lot of time and obviously the
22 MDE review -- the case was reactivated. The laws
23 changed with regard -- state law changed with regard to
24 landfills and permitting process during that time
25 slowed the applicant down which this office, of course,

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1 understood and deferred to in the prior time extension
2 applications, and this is the fourth time extension
3 application to come before our office.

4 It's difficult to apply the variance
5 standards to something like this, but clearly we think
6 that in light of the circumstances of this application
7 that the variance should be granted. It is a case of
8 exceptional circumstances.

9 Just the situation and time periods, the
10 history of this case is exceptional and that's been
11 such a longstanding case, let alone the MDE review
12 process of which I -- I know little more than what has
13 been explained in the hearings that I've been involved
14 with here at the Board.

15 The office in general feels that a denial of
16 the variance would constitute an unwarranted hardship
17 to the applicant in use of the subject project as they
18 have had an approved special exception and variances
19 going back to 1993.

20 In this case, the hardship is neither self-
21 created nor is it financial, but rather due principally
22 to the MDE permit process for rubble landfills which
23 is, as has been testified to by Mr. Dexter and others,
24 is quite onerous and extensive from an engineering
25 perspective. It takes several years to complete even

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1 in the best of circumstances which you may or may not
2 say has happened in this case.

3 As has been testified to by -- by protestant
4 and the applicant, the MDE permit is one part of the
5 puzzle as far as what approvals would be required for
6 this facility. There are county permits, mainly a
7 building permit that must be obtained. Site
8 development plan review will have to occur. Storm
9 water management will have to occur, be reviewed and
10 approved.

11 Those laws and applicable sections of the
12 code changed subsequently since 1993, most recently
13 just last year, Article 16. I am not aware of whether
14 this project would be grandfathered or not with regard
15 to storm water management, so it's quite possible that
16 the new regulations would affect this project. We
17 don't -- I don't have any knowledge as to whether that
18 would be the case specifically.

19 It was also testified to that a traffic
20 impact study was part of the original special exception
21 approval because at that time, a traffic impact study
22 was a requirement, was a zoning requirement. That, of
23 course, has been taken out of the code for special
24 exceptions. Traffic impact studies are no longer
25 reviewed at the zoning level for a special exception

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1 but are deferred to the site development plan process
2 of Article 17.

3 So having said that, it would be a safe
4 assumption on my part that a updated traffic impact
5 study would be required by the Planning and Zoning
6 officer for this project once it goes through or begins
7 the site development plan process. With the last TIS
8 that occurred or occurring about 20 years ago, I think
9 that's a safe -- long enough period to request a new
10 traffic impact study.

11 Certainly for other projects and -- and
12 projects that the Board is familiar with, there have
13 been traffic impact studies requested for time periods
14 of much less than 20 years between.

15 I can think of one off the top of my head
16 involving the Patel property which was a special
17 exception for a child care center that this Board just
18 recently approved. It had a prior traffic impact study
19 from a former application dating I think three years
20 prior to the subject application and the Planning and
21 Zoning officer required an updated traffic impact
22 study.

23 So that's a three-year time period. I can
24 only imagine how quickly that letter would go out once
25 this project is in for site development plan approval.

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1 I would concur generally with the testimony
2 or the proffered testimony of Mr. Pumphrey stating that
3 it would take in his estimation more like three years
4 for the project to go through county building permit
5 process and other approvals for roads, et cetera.

6 Knowing what I know about the process
7 currently and the involvements of the development
8 division and the site development plan and process as
9 it stands, I would -- it would be my opinion that it
10 would take more like four years for this project to go
11 through those processes just because, if for nothing
12 else, because of the substantial amount of road
13 improvements that are necessary.

14 Storm water management, that is questionable
15 whether we're going under old -- new or old codes, et
16 cetera. It's going to take quite a bit of time from
17 this point irrespective, I suppose, of the -- well, of
18 the MDE permit. Of course, they need that, but there
19 are a lot of county approvals to go.

20 So having said that, the Office of Planning
21 and Zoning would respectfully request that the Board
22 grant the variance as proposed for a two-year time
23 extension of the approved special exception and
24 variance for this site in order to allow MDE to
25 complete its review.

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1 And that would conclude my direct
2 presentation.

3 CHAIRMAN KNIGHT: Cross-examination, Ms.
4 Henley?

5 CROSS-EXAMINATION

6 BY MS. HENLEY:

7 Q Mr. Fury, isn't it true that we -- you and I
8 met at the time I submitted this application?

9 A Yes, we did.

10 Q And isn't it true that you specifically asked
11 that the applicant limit it to a two-year request for
12 extension of time?

13 A That has been consistent with the prior --
14 with the prior extension requests, yes.

15 Q And the applicant did comply with that
16 request?

17 A That's correct, yes.

18 Q And so at this point, we're here asking the
19 Board for a two-year extension of time?

20 A That's correct.

21 Q Okay. And as part of your consideration in
22 recommending that this be approved, you have considered
23 the letter of Mr. Dexter saying that the applicant has
24 been diligently pursuing this project?

25 A Yes, we did.

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1 Q Are you aware if any permits have actually
2 been issued to this applicant, and I'm talking about
3 soil con -- conservation permit, groundwater -- storm
4 water management permit?

5 A I'm not aware of any active permits for this
6 project, but it certainly doesn't mean that they don't
7 exist.

8 MS. HENLEY: Okay. I don't have any further
9 questions.

10 CHAIRMAN KNIGHT: Cross, Mr. Bennett?

11 MR. BENNETT: Thank you, sir.

12 CROSS-EXAMINATION

13 BY MR. BENNETT:

14 Q Mr. Fury, you said you don't know if new
15 county requirements after 1993 will be applied to this
16 project?

17 A That's correct.

18 Q I don't mean this critically in any way, but
19 before this hearing, did you ask for guidance from the
20 county attorney's office on that issue?

21 A We discussed -- this has been an ongoing, of
22 course, case and ongoing discussions with the Office of
23 Law with regard to procedure. We did not get into a
24 discussion of really what amounts to site development
25 matters which would be subject to any zoning approval.

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1 That was effectively tabled for in my opinion the site
2 development planning process should the application get
3 that far.

4 Q Now, there have been new county laws and
5 requirements that have been passed and imposed since
6 1993, right?

7 A Oh, absolutely, yes.

8 Q Okay. I -- I apologize for not having
9 understood your testimony clear, but are you saying
10 that the applicant will have to comply with those new
11 requirements or won't have to comply or might have to
12 comply with some but not others?

13 A Correct. It depends on -- with regard to
14 storm water management and the storm -- the new storm
15 water management regulations, it depends on how that
16 was codified in the ordinance.

17 And this would be in Article 16 whether there
18 is a grandfathering provision for applications that
19 have either already obtained permit or -- permit
20 process pipeline which means they've applied but
21 haven't been approved or for projects that have -- that
22 have already obtained zoning approval.

23 That would be in this case. I don't -- I am
24 not aware nor did I research this which I probably
25 should have, but I am not aware of a grandfathering

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1 provision in Article 16. But if there is one, I would
2 most certainly imagine it would apply to this project
3 just because of the fact that the original special
4 exception was granted so long ago.

5 Q And in that 20 years, there have been many
6 new obligations imposed on those who develop property?

7 A Absolutely.

8 Q Particularly property that would be within
9 the critical area?

10 A Absolutely. Most definitely.

11 Q And, again, I'm -- trust me, I'm not -- I'm
12 not trying to be critical, but are you saying that at
13 this point, you're not sure whether grandfathering
14 would apply to this applicant or not?

15 A Correct. I am not aware of whether or not
16 they would be considered grandfathered in, what they
17 may or may not be grandfathered for. They may be
18 grandfathered for storm water management but not
19 grandfathered for critical area.

20 It really depends on how -- how everything is
21 codified currently and if there is any policy, and that
22 is another thing, if there's policy in place for
23 facilities such as this or for applications that
24 predate -- I mean, in this case, this application
25 predates the last three codifications of the zoning

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1 ordinance by -- by -- by quite a long time.

2 I mean, that was done in 2005 and this
3 application was approved in 1993. So just for the --
4 with respect to the zoning ordinance, you know, we've
5 had a whole zoning ordinance since this application was
6 originally approved.

7 MR. BENNETT: Thank you, Mr. Fury.

8 I won't ask any other questions, Mr.

9 Chairman.

10 CHAIRMAN KNIGHT: Questions from Board
11 members?

12 Mr. Breitenbach.

13 EXAMINATION BY THE BOARD

14 BY MR. BR:

15 Q I'm just trying to understand. When -- when
16 -- I know there was four -- granting four extensions.

17 A This is the fourth one, yes.

18 Q This is the fourth one?

19 A There were three prior --

20 Q Three --

21 A -- three time extensions prior to this one.

22 Q So we had nine -- we had 1993, previous
23 members of this Board granted special exceptions?

24 A That's right.

25 Q And then ten years later is when the court

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1 case started?

2 A It was in -- it was in the courts until, I
3 believe, at least 2001, and I'm going to have to look
4 at my time.

5 Q Okay. So the court cases started --

6 A Yeah.

7 Q -- the court case --

8 A That was before I became involved with it.

9 Q I thought the test -- I thought your
10 testimony was that in 2003, it wasn't included in the
11 map.

12 A That's right. It was -- it was left off of
13 the county's solid waste management plan which is a
14 ten-year document. That was the 2003 solid waste
15 management plan.

16 Q So at that -- was that when the court case
17 started?

18 A No. It was before that period.

19 Q Okay.

20 A It would have been before that.

21 Q It was prior --

22 A We just did another one 2013 and, of course,
23 I was just -- this is anecdotally, I guess, and I was
24 asked, of course, to review it for zoning. What we --
25 the first thing we did after we checked to make sure

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1 that all the zoning sections were correctly listed was
2 that to make sure the Chesapeake Terrace was included
3 in the 2013 maps and solid waste management plan which
4 I'm happy to say that it is. So that's just for the
5 record.

6 Q And then when was the first extension
7 granted?

8 A Well, 2003 or '4. Let me look at my notes
9 'cause I have it in here. If the third extension was
10 2011, then the second extension would have been --

11 Q '9.

12 A -- '9. That's right. Then the first
13 extension would have been '7.

14 Q '7?

15 A Yeah, or thereabouts.

16 Q So --

17 A You got to remember there is a little bit of
18 --

19 Q In essence --

20 A -- overlap, yeah.

21 Q In essence, they had 14 years of working on a
22 project, fighting for a project or whatever you want to

23 -

24 A Well, they weren't doing much work on the MDE
25 side during -- when it was in court. But, yeah, it's

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1 been -- it's been a long time.

2 Q Nothing that said that they couldn't?

3 A It's been a long time.

4 Q They just didn't?

5 A Right.

6 Q I mean, what -- at what point does the county
7 not agree with an extension?

8 A I mean --

9 Q It almost sounds -- it really does feel like
10 to me that we granted this extension, maybe not these
11 same members, but this Board is hearing this in two
12 more years.

13 I mean, if somebody had come to me and told
14 me they had a five-lot subdivision that they wanted to
15 do in Anne Arundel County, I wouldn't tell them that
16 they could get that done in two years.

17 I don't understand how realistically somebody
18 could come in with a project of this magnitude and
19 really feel that they can complete it in a two-year
20 time frame.

21 A If you want me to comment on that, I guess I
22 sympathize with that. I look at this project and see a
23 lot of obstacles that are still ahead of the applicant.
24 This is one piece of it. The MDE approval is one piece
25 of it. I don't know when, quite frankly, the county

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1 would -- will say or when it will be said enough is
2 enough, but it hasn't been reached yet. I can tell you
3 that.

4 Q Was that part of the discussion with this --

5 A I didn't discuss that angle of it. I was --
6 my review was more or less in line with what has been
7 done pre -- in the last several time extensions.

8 Now, whether the applicant had been or
9 whether it can be proven through factual evidence,
10 documentary evidence that the applicant had been
11 pursuing the MDE permit, that's what we limit it to at
12 this point. We didn't bring in all of the other
13 elements.

14 And I think part of that is why -- part of
15 the reason for that is due to the fact that a lot of
16 this would have to be dealt with at site development.

17 Q Now, to get to the point of the
18 responsiveness of the -- of the application through
19 MDE, I mean, the county feels that a response that
20 takes over a year to respond to comments is -- is
21 diligent?

22 A Well, we don't condone or we don't appreciate
23 some of the length of time it took for individual
24 comments. I think in the whole and in the total period
25 of time that we're looking at between time extension

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1 requests, we would agree that there has been diligent
2 pursuit.

3 It looks like there's been
4 applicant's part to keep up with as
5 as reasonably can be kept up with
6 considering the fact that the engi
7 project personnel changed.

79 high
~~yes~~ diligent

8 And then there were I'm -- as I'm sure -- I
9 don't believe he testified to it, but I know in
10 previous hearings that I've been involved with, and
11 I've been involved with this case for going back to
12 2007 now, so I've been around for a while myself, Mr.
13 Dexter had a lot of staffing changes and personnel
14 changes and shortfalls and budgetary matters in his own
15 office.

16 So all of these things in the whole, it's
17 hard for us to say that the applicant has not been
18 pursuing it. Could it -- could it have been -- could
19 it have been a little faster or a little bit more
20 expeditious, probably. Would it have changed anything
21 really, would it have gotten the permit quicker, I
22 don't think so, not judging after what I -- not from
23 what I've heard.

24 Q They might -- might have been able to
25 realistically get it in the next two years?

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1 A Possibly.

2 Q Thank you.

3 A You're welcome.

4 BY CHAIRMAN KNIGHT:

5 Q Well, I won't ask the same question that Mr.
6 Breitenbach asked, but maybe just a little differently,
7 and that is, is there some kind of -- is there a reason
8 other than I would imagine the county wants to keep
9 their thumb on this, why don't they just look at a
10 five-year extension and be done with it, because to me,
11 and I've been on and off this Board for a long time,
12 seen a lot of these cases, it goes without saying none
13 to equal this for voting something that we know is not
14 going to be made, you know, a dead -- a deadline is not
15 going to be made? What's their logic?

16 A Quite frankly, I don't know. I can give you
17 my opinion on it --

18 Q Go ahead.

19 A -- on that line, on the line that you're --
20 yeah. I think you -- yeah. I think you may want to
21 know, and I'd be happy to tell you, I think that
22 sometimes you as an agency, I think, and I don't think
23 this is a far stretch to make, consistency takes over,
24 the -- the -- the desire for consistency.

25 And in this application, every time extension

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1 request has been a two-year period and all of the prior
2 reviews within a two-year period as far as with regard
3 to that extension, that time period. To expand that
4 period departs from something that's been going on for
5 several years now.

6 There may have been a little -- I think there
7 may have been blinders on with -- in that respect and
8 that, well, this has been two years from the beginning.
9 The original code looked at it in terms of two-year
10 time periods for the approvals. Of course, that was
11 changed to 18. So let's just stick with two years.

12 Okay. Having heard what you've all heard, is
13 two years enough time? Well, I don't -- I don't think
14 so. I think they'll be back here most definitely.
15 They may be back in four. I don't know. Would it be
16 appropriate to consider a longer block of time, I think
17 probably yes. Did I have the authority to recommend
18 that to them, no. Can you as the Board grant them a
19 long period of time, yes.

20 CHAIRMAN KNIGHT: Did you want to say
21 something to me? Let me just ask a couple of last
22 questions.

23 First of all, let me just ask, has there ever
24 been any variances granted to this site other than time
25 variances?

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1 THE WITNESS: Other than the original
2 approvals which included a variance -- a couple of
3 variances, no.

4 BY CHAIRMAN KNIGHT:

5 Q The original approval for the special --

6 A Back in 1993.

7 Q Well, where do they stand now?

8 A They're all -- everything that was approved
9 under the 1993 application, cations plural, has been
10 tolled to this point and it's all subject to the
11 present or instant time extension request. So it's all
12 tolled up until now and subject to what happens here.

13 Q So these variances that were granted and --

14 A Special exception and variances, yes, sir.

15 Q Yeah. So they just will say bootstrap on to
16 the special exception where had it been just a
17 variance, they would have expired and --

18 A That's right.

19 Q -- and depending on what this Board does with
20 this extension, they may still expire?

21 A That could --

22 Q Then they go back and fight that original
23 variance again?

24 A That would be correct. They would have to --
25 in that case, they would have to start all over again.

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1 Q And when you -- and you heard some of the
2 things that Mr. Bennett was going to ask Mr. Pumphrey
3 from everything from building permits to acquiring
4 property and all.

5 And then I'm going to say what I thought I
6 heard Ms. Foster say. The reason they don't do that
7 concurrently is because of the cost of it. If they
8 don't think -- if they don't know if they're going to
9 get their MDE approval, then they don't want to get
10 started in -- in that.

11 Well, what is the county's opinion on or
12 procedure on requiring them to do it anyhow?

13 A Well, they have to do it. The county has
14 already stip -- through the -- the Board -- the Board
15 stipulated that the only access to this facility to be
16 from Conway Road. It has to be in fee simple. That
17 was a condition of the special exception and variance
18 approvals this Board placed on this applicant back in
19 1993.

20 So this facility won't operate, cannot get a
21 permit to do anything, county permit, until all of
22 those conditions have been satisfied including the fee
23 simple ownership of an access road originating from
24 Conway Road.

25 Q But, see, what I'm hearing from the

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1 petitioner is they haven't even started that process.
2 So why can't it be or why isn't it required to be
3 concurrent with the MDE -- I can hear their argument is
4 we don't -- we don't want to go there because it would
5 -- might prove unnecessary, a lot of wasted time. Why
6 don't -- why doesn't the county require them to do
7 that?

8 A Well, I don't think a -- I think just
9 requiring it, it -- the requirement that the Board
10 placed was beyond what the county would have obviously
11 -- what the county had the authority to do at the time.
12 That was a condition placed by the Board of Appeals.

13 So to my knowledge, there has been no policy
14 or procedure with respect to that and how and what type
15 of time table the applicant chooses to go about doing
16 that provided they have -- they're not in for a
17 building permit.

18 Once they came in for a building permit, they
19 better show that they have all of these things or
20 they're not going to get the permit issued. It's all
21 tied with the permit ultimately, the building permit at
22 the end of the day.

23 Q I don't know. Maybe it's just me that can't
24 get this through my head.

25 A It's pretty confusing, Mr. Chairman.

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1 Q But why do they want to -- you know, why are
2 we looking at an extension for MDE and then after a
3 couple of years, two to maybe four years, they get that
4 approval, then they're going to start the process for
5 purchasing this property and getting these right-of-
6 ways or whatever the next step is to say nothing of
7 road improvements? I heard something about scenic and
8 rural highway.

9 A It's a scenic and historic road, that's
10 correct.

11 Q And, you know, that may require a variance.

12 A It's possible that there could be some
13 modifications at a minimum which is a way --

14 Q I think I said this the very first night.
15 There is -- where is -- where does this end, you know?
16 And now we're saying, well, the storm water management
17 laws have changed which I'm aware of. But by the time
18 we get down to the -- five or six years down the road,
19 storm water may change again or --

20 A It could change again.

21 Q -- the zoning code may be changed. How does
22 it end? I mean, maybe it's a little bit -- the word
23 I'm thinking of -- it's a legitimate question. I'm
24 asking you. How does -- how does it end?

25 A It is a legitimate question and I -- I wish I

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1 had a legitimate answer for you. I don't know. I
2 don't know when it ends. We haven't been instructed
3 otherwise with regard to our opinion with respect --
4 this is our -- this is the position.

5 At this point, we're going to recommend this
6 request be approved. I can't tell you that in two
7 years or however long we'll come back and have that
8 same position. It may very well change. And, quite
9 honestly, it looks like it's going to be quite a bit of
10 time before they have a permit.

11 Q I probably --

12 A I can't give you the answer you really want.

13 Q Yeah, really. I hear you. And I'd probably
14 better ask this of our attorney. But has this '93
15 opinion -- is that in the exhibits now? I don't --
16 looking through, I don't have it.

17 A It is. I think that was the first exhibit
18 the applicant --

19 Q So '93 was the first --

20 A It is in your packet.

21 MS. HENLEY: It is in your packet and you
22 also have the decisions on the previous extensions of
23 time.

24 CHAIRMAN KNIGHT: I saw those, but I didn't
25 see the '93. That was --

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1 MS. HENLEY: It's -- it's -- it's the fat
2 Number 1.

3 CHAIRMAN KNIGHT: Oh, I see it now. All
4 right. Right there on the top.

5 Ms. Strothman has questions for you.

6 THE WITNESS: Yes.

7 BY MS. STROTHMAN:

8 Q Mr. Fury, good evening.

9 A Good evening.

10 Q Since you were talking about the county's
11 policy or some of the standard county position on
12 certain things, what is the -- can you address what the
13 county's position is on -- on -- you had a special
14 exception and under the law, it -- you know, you must
15 get your permit and move forward within -- is it three
16 years?

17 A Eighteen months generally for --

18 Q Eighteen months. Okay. So there's a limit.

19 A Yeah.

20 Q Is there a county position on the
21 justification for that limit?

22 A Nothing in a policy document or anything that
23 I can recall or point you toward. I can't recall
24 anything to that effect. I think that if anything, it
25 had been extended. In the original code, I think it

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1 was 12 months going back to the '52 and the '71 codes.

2 And then it was lengthened, I guess, to
3 obviously the development process taking a lot longer
4 than -- in 1972 than it probably did in 1952. So, no,
5 there's nothing to that effect, no.

6 Q Because I'm curious, it sounds like the
7 county is only looking at whether or not the applicant
8 had been working diligently and not whether or not
9 their -- the reasoning for the limit -- the time
10 limitation to begin with is being served by the
11 granting of a variance for an extension. That doesn't
12 seem to come into the county's process at all.

13 A I think you're right. I don't think it did.
14 I think we were looking at it strictly in terms of the
15 MDE review process which has been the case for the last
16 several time extension requests. They've been couched
17 together, if you will. And I've been involved with
18 them going back to 2007, so I can speak at least to
19 that far -- that far back.

20 Q Well, I guess I'll ask the -- your opinion.
21 Do you think that the -- what -- whatever you deemed to
22 have been the purpose for the limitation to begin with,
23 is it served by these rolling extensions?

24 A No. Well, as far as the spirit and intent of
25 the code, the zoning code is concerned?

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1 Q Yes.

2 A I mean, the idea is that ultimately the
3 project will be implemented. You have a special
4 exception use. You want that use to be implemented in
5 a timely manner because namely among other things, you
6 know, things change. Traffic changes, demographics
7 change, subdivisions go in, you know, buildings or
8 businesses open, businesses close.

9 We've had 20 years, a long time here.
10 There's been a lot of change in this area since this
11 original approval. It's not lost on our office, but
12 we're stuck in this, I guess, kind of a grasp of
13 administrative and legal opinions going up before other
14 courts, coming back, and now dealing with the MDE
15 permit process which is completely out of my office's
16 control.

17 I think in this case, the hardship of denying
18 -- denying the variance with respect to that outweighs
19 this type of a time extension and the number, time
20 extension requests being contrary to the spirit of the
21 code which we do feel to an extent it's getting to be
22 because you want a use to be implemented. You don't
23 want a use to be on the shelf for this long.

24 Q Okay. So you do think at some point, the
25 county might choose to consider that the original

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1 spirit of the code supporting the code having a time
2 limitation is not served by yet another extension?

3 A That's correct. It's not. As you --
4 because, again, you undermine -- you're undermining the
5 code. You're undermining the whole point of having --
6 having time extensions. You just keep granting them at
7 will.

8 In this case, the exceptionality or the
9 exceptional circumstances rest principally in this MDE
10 review process. Now, having said that, there are a lot
11 of other processes that have to occur. We know that.
12 But we're looking at it in terms of what is involved
13 for an MDE rubble landfill property.

14 Q Okay. And then -- and I guess this is
15 conjecture and you can choose not to answer it. But
16 would the county looking forward consider the fact that
17 it was a financial decision of the applicant not to
18 pursue these items concurrently that -- that they --
19 let's even -- let's assume that the MDE permit could be
20 granted in two years and they're back asking for yet
21 another extension because they haven't pursued these
22 other things.

23 A Uh-huh.

24 Q Would you consider it relevant to the
25 decision of whether to grant yet another extension that

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1 they made the decision for financial reasons not to
2 concurrently pursue those other items and, therefore,
3 find themselves, once they finally have their MDE
4 permit, still unable to proceed?

5 A That's a tough one. I mean, I think it plays
6 -- I think the -- it could play into it. But as you
7 know, granting variances one way or the other, granting
8 or deny variances based on financial considerations is
9 expressly prohibited in the code. So we try not to
10 look at financial, although the applicant obviously is.

11 We're looking at county processes and how
12 long it's going to take to get through those processes
13 after the MDE permit process. That's a substantial
14 amount of time as has already been testified to.
15 There's no way around that. If they started -- if they
16 started today, the likelihood is they're still going to
17 need another time extension down the road even if they
18 get the state permit in a timely manner.

19 It's one of those cases. It's -- it's
20 confounding to us planners because you want to see
21 things -- who just want to see things move along. You
22 know, this has been in the solid waste management plan
23 for a long time. You know, the county basically
24 considers it a facility and, yet, it's not there. It
25 has special exception variances for 20 years. It's

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1 very unusual.

2 Q Okay. Thank you.

3 A You're welcome.

4 CHAIRMAN KNIGHT: Ms. Henley, recross of this
5 witness?

6 MS. HENLEY: Yes.

7 RECROSS-EXAMINATION

8 BY MS. HENLEY:

9 Q In light of your question about what the
10 original variance pertained to, are you aware what the
11 original variance with the special exception pertained
12 to?

13 A I have a copy of it somewhere. I mean, I've
14 looked at. I haven't read it lately.

15 Q Are you aware that this piece of property is
16 an unreclaimed sand and gravel operations from the '30s
17 or '40s?

18 A Yeah. It dates way back to I heard World War
19 II, but I guess that would be right.

20 Q And do you recall in reading through the past
21 records that in order to build this landfill, the only
22 unreclaimed sand and gravel pit at one point came right
23 up to the property line?

24 A I believe I read that.

25 Q And that it would be necessary to fill in the

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1 land between there and the setbacks before you could
2 construct the landfill?

3 A I don't recall specifically, but I do recall
4 something about it going up to the property line. Of
5 course, back in those days, there were no zoning
6 regulations. So it was a different world back then.

7 Q Right. They didn't reclaim sand and gravel
8 pits then, did they?

9 A No, they didn't do that either to my
10 knowledge.

11 Q Okay. But Ms. Dippenderver (phonetic) of
12 your office was originally involved in this project?

13 A Yes, she was. That's right.

14 Q Okay. And I would just draw your attention
15 to the picture that's kind of folded up that I gave
16 you. I mean, it is an old re -- unreclaimed sand and
17 gravel pit that literally --

18 MR. BENNETT: Objection. Is that a question?

19 CHAIRMAN KNIGHT: Right now we're cross-
20 examining --

21 MS. HENLEY: Okay.

22 CHAIRMAN KNIGHT: -- this witness.

23 BY MS. HENLEY:

24 Q Based on your participation in these
25 hearings, do you believe that it is possible to get MDE

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1 approval of a rubble landfill within the 18 months that
2 the county sets forth?

3 MR. BENNETT: Now I'm going to object because
4 whether it's possible or not --

5 CHAIRMAN KNIGHT: Rephrase the question.

6 BY MS. HENLEY:

7 Q Based on your participation since 2007, has
8 the applicant continued to move forward to try to get
9 the MDE approval at all times?

10 A Yes.

11 Q Is it possible for the applicant to get a
12 building permit for a landfill facility if it doesn't
13 have MDE approval?

14 A No.

15 Q So if the applicant was to apply now for that
16 building permit, it wouldn't be processed?

17 A It wouldn't be accepted.

18 Q Okay. So they have to have MDE approval
19 first before they can do that?

20 A That's correct.

21 MS. HENLEY: I have no further questions.

22 CHAIRMAN KNIGHT: Cross-examination?

23 MR. BENNETT: I only have one, Mr. Chairman.

24 .

25 .

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CROSS-EXAMINATION

BY MR. BENNETT:

Q Mr. Fury, there is no reason why the applicant can't file a building permit application even without MDE approval, is there? There's no law that prohibits them from doing that?

A A building permit application for any --

Q For -- for a -- a landfill.

A I -- there's no law that says they can't attempt to file the application. I don't know if it would be accepted or not.

Q Okay. Now, if they did file an application and they hadn't obtained MDE approval, isn't it correct that what would happen is that the county would advise them you need MDE approval before we could process your application?

A Absolutely. If it were accepted, that would be the -- that would be the immediate comment.

MR. BENNETT: Okay. I have no other questions.

CHAIRMAN KNIGHT: Questions from Board members?

(Whereupon, there was no response.)

CHAIRMAN KNIGHT: Anything further for this witness?

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1 Anything you want to -- final words?

2 MR. FURY: No, sir, Mr. Chairman. I think
3 it's, you know --

4 CHAIRMAN KNIGHT: We'll get to closing.

5 MR. FURY: Yeah. We'll just save it for
6 closing, yes, sir.

7 CHAIRMAN KNIGHT: Does that conclude the
8 county's case?

9 MR. FURY: Yes, sir, it does.

10 CHAIRMAN KNIGHT: Is there anyone in the
11 hearing room who has not previously testified who would
12 like to do so?

13 (Whereupon, there was no response.)

14 CHAIRMAN KNIGHT: And let the record show
15 there's no response.

16 Do you have rebuttal?

17 MS. HENLEY: No, Your Honor.

18 CHAIRMAN KNIGHT: Here's how we're going to
19 do this. This case is continued until October the 15th
20 at 6:30, a Tuesday. Again, October the 15th, 2013
21 again in these chambers, and we'll conclude the closing
22 arguments.

23 MR. FURY: Thank you, Mr. Chairman.

24 MR. BENNETT: What time will that be, Mr.
25 Chairman?

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1 CHAIRMAN KNIGHT: At 6:30, a Tuesday, 6:30,
2 October the 15th, 2013, and we'll limit it to closing
3 arguments.

4 Does anybody have anything they want to
5 comment about before we bang the gavel?

6 (Whereupon, there was no response.)

7 MR. BENNETT: Thank you, Mr. Chairman.

8 (Whereupon, at 7:35 p.m., the above-
9 entitled hearing was concluded.)

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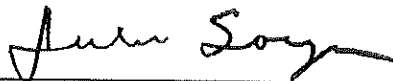
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CERTIFICATE OF NOTARY

I, JULIE SOUZA, the officer before whom the foregoing testimony was taken, do hereby certify that the testimony of said parties was taken by me by stenomask means and thereafter reduced to typewriting by me or under my direction; that said testimony is a true record of the testimony given by said parties; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this testimony is taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

This certification is expressly withdrawn and denied upon the disassembly or photocopying of the foregoing transcript of the proceedings or any part thereof, including exhibits, unless said disassembly or photocopying is done by the undersigned court reporter and/or under the auspices of Hunt Reporting Company, and the signature and original seal is attached thereto.



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EXHIBIT D

Second Supplemental Memorandum of Opinion December 1, 2022

**RE: An Appeal from a Decision of the
Administrative Hearing Officer**

**NATIONAL WASTE MANAGERS, INC.
AND CHESAPEAKE TERRACE**

Petitioners

*** BEFORE THE**

*** COUNTY BOARD OF APPEALS**

*** OF ANNE ARUNDEL COUNTY**

*** CASE NO.: BA 12-13V, BA 13-13V
* (2012-0300-V & 2012-0301-V)**

*** Hearing Dates¹: October 27, 2021
* January 25-27, 2022
* March 1-2, 2022

SECOND SUPPLEMENTAL MEMORANDUM OF OPINION

Summary of Pleadings

This matter is before this Board as a remand from Circuit Court of Anne Arundel County in Case No. C-02-CV-18-003469. This is an appeal of the conditional granting of a variance to allow an extension in the time required for the implementation and completion of a previously approved special exception and variance for a rubble landfill and an appeal of the conditional granting of a variance to allow an extension in the time for the implementation and completion of a previously approved special exception for a sand and gravel operation, for property known as 515 Patuxent Rd., Odenton.

Summary of Evidence

Mr. Paul Stratman, an expert registered professional engineer and professional geologist, has worked on 15 landfill projects. He has been involved with this landfill since April 2019. The site comprises approximately 480 acres and was formerly operated as a sand and gravel quarry. The remnants of that operation are still obvious. The landfill is going to cover about 114 acres. There are areas where the quarry operations removed the sand and gravel, and clay is exposed.

¹ Hearing dates on this matter also include, June 6, 2013, August 14-15, 2013, October 15, 2013 and July 25, 2018.

The Maryland Department of the Environment ("MDE") refuse disposal permit application has three key steps. Phase I is the general approval of the site. Phase II is the detailed evaluation, including the geology and the hydrogeology. Phase III is the detailed engineering portion, including grading plans and calculations. Once those are approved by MDE, the draft permit is issued. The public review process follows MDE review. He described the review process with MDE which was lengthened by additional geologic/hydrologic testing/review, the hiatus in review caused by litigation, and the impacts of COVID on the review. The landfill plan was revised to elevate the project's liner above the first groundwater zone to protect the integrity of the underground water system. In July 2020, the Phase III plan was submitted to MDE. He received comments a year later in July 2021. MDE had suspended review of the project for a portion of that year. He explained that the landfill is developed in lined cells of 4 to 13 acres. At any point in time there are a few cells open. The whole 114 acres is never fully open and exposed. The individual components, including the descriptions of how waste is handled and how the leachate collection operates, is driven by the State regulations. The specific design, the size of the cells, the sequencing of construction, those are up to the engineer to develop and to make sure that they are consistent with those regulations. The comment letter from MDE to National Waste Managers ("NWM"), dated July 27, 2021, included 108 comments. Mr. Stratman's team completed their responsive submission in five weeks. The closure plan is to cap the landfill. The cap is a composite that consists of a vegetative layer on the surface, about two feet of soil, including a layer that is topsoil or some sort of material to support vegetation, a drainage layer, a 40-mil geomembrane, which is an impervious cover, and then a two-foot final cover layer that is covering the top of the waste and represents the underside of the membrane. The purpose of the cover is to prevent direct contact with any materials that are disposed in the

landfill and to prevent the infiltration of precipitation and moisture into the waste itself. On questioning, Mr. Stratman described the access roads to the facility, including an access road from Conway Road to the east, an optional north entrance, and an optional south entrance. There is typically one main entrance with a backup or an emergency entrance.

Mr. Edward Dexter, an expert geologist in solid waste management and the Administrator of the Solid Waste Program for MDE, testified that he works on landfill permits and monitoring of operating landfills. Landfills are required to have groundwater and often soil gas monitoring programs. The landfills are also monitored under periodic unexpected inspections, at least monthly. With rubble landfills, MDE has taken a more aggressive stance towards them and they must have the same liner and collection system as a municipal waste or an industrial waste landfill. Mr. Dexter described the phases of review, and the way landfills are constructed. The permits are typically reviewed in 3-7 years. The witness explained the many starts and stops associated with the review of this landfill. The applicant has been responsive to the MDE requests on a continuing basis. There was a dispute for a while concerning the shallow ground on the western side. Finally, the applicant agreed to raise the elevation. So that changed the configuration of drainage for the area, and they had to redraw an entire blueprint and recalculate. He is not aware if the Petitioners provided any evidence that they have property rights to use the access from Conway Road. It is not something that MDE would have required; it's a requirement of the County. The time this project has taken has made things more difficult. There were reviewers that came and went so they would have to bring new people up to speed. The regulations have changed over time.

Mr. John Andrew Chisholm testified on behalf of the Petitioners. He worked for the Halle Company until he started his own firm and has worked with the Halle Company as a

consultant. He worked on this project for 32 years and was working on this project when it was originally submitted for the special exception. The property comprises approximately 480 acres, with 320 acres zoned RA and the remainder zoned Open Space. To the north, the property is primarily floodplain. The portions of the site to the south of Patuxent Road contain the remnants of previous sand and gravel and mining operations. The applicant has been pursuing the refuse disposal permit since 1993. The actual landfill design is not part of his expertise. They need to have the MDE permit in hand before they pursue access.

Mr. Jon Arason, the Petitioners' expert in land use planning and zoning, has visited the site a couple of times. He reviewed the special exception opinion from 1993 and he read the applicable Court cases. He described the neighborhood as a mix of uses from rural residential and industrial land uses to the modern, thriving Two Rivers development and heavily wooded areas on Patuxent Road. Based on his review of all the documents, multiple extensions of time have been needed because time keeps running out. It takes a lot of time to process permits before MDE and the changing regulations have required redesign. The County has also acted to stop MDE review. There has been no lack of diligence on the part of NWM to obtain MDE approval. The road and traffic issues were decided at the time of the special exception approval. This particular use has been part of the character of the neighborhood since its approval. It's hovering a foot or two above the land just waiting to get the final approval. The extension won't affect the character of the neighborhood. Any major decision on development in this area would have been made with the knowledge that there was an approved special exception for a landfill in the area. With respect to public welfare, the previous decisions said that a temporal variance will not have an adverse impact on public welfare. The decisions do not talk about traffic, or the entrance being required for the extension. This extension of time will have no impact on public welfare or

the character of the neighborhood. All the issues related to public welfare were addressed with the granting of the special exception. The extension of time does not create traffic. The extension of time does not create noise. The extension of time does not create odor. An applicant would not make road improvements to a road until the County processes the permits required for the use. Public welfare is typically road impacts, impacts on crime, public safety, schools, things that generally contribute to someone's quality of life. Traffic and wetlands are considerations in the special exception. The Board's original decision prohibited entry along Patuxent Road and required entry from the improved Conway Road. The public can review the conditions of approval and view that access will be on Conway Road. The Petitioners have fee simple access on Conway Road. On questioning from the County, he explained that if the access was at the west end of Conway Road by the church, approximately one additional mile of Conway Road would be improved. Mr. Arason described the truck traffic through Two Rivers now because of the development. The landfill will be operating for only 12 years and will, therefore, represent temporary land use in the community. The Petitioners could buy other properties along Conway Road. Halle has not done that because there is no final permit to operate the landfill.

Mr. Shep Tullier, the Protestants' expert in land planning, testified that he reviewed the County Code, relevant case law, the original 1993 Board of Appeals' decision and excerpts of transcripts from the 1993 hearing (Mr. Chisholm and Mr. Stephen Fleischman) in preparation for this hearing. He was trying to understand the applicants' position with respect to complying with the standards. The witness discussed the original case, and the access road issues on appeal immediately thereafter. In his opinion, the entrance from Conway Road was to protect the public's health, safety, and welfare. He described the ownership of the properties between the landfill property and Conway Road through the years. Currently, there is a parcel owned by the

Board of Education and an elementary school is planned. Dump trucks or tractor trailers accessing the landfill would not be in the public welfare. There is no other entrance that is allowed by the 1993 Board's decision. If there is a school operating, there would be no way NWM could operate using that property. Mr. Tullier urged the Board to deny the requested variance. He believes the variance would be contrary to the public's health, safety and welfare. Also, if the variance is granted, the character of the neighborhood is changed. Both Patuxent Road and Conway Road are scenic and historic roads. Those two roads are significant in the County's inventory of scenic and historic roads. Many things have changed since the applicant received approval in 1993. The Two Rivers community is new, and the comprehensive rezoning enabled the subdivision. The master plan was modified to allow sewer service for that development. There are a lot of facts that could not be known in 1993. Granting the variance when so much has changed created the potential for detriment to public welfare. It is his opinion that NWM does not have the ability to satisfy the conditions. If NWM gets additional time, they will continue to go through the rubble landfill permit process with hopes that MDE will grant final approval. However, without the ability to access the site, NWM has no business even if they have the rubble landfill disposal permit.

Ms. Catherine Fleshman testified on behalf of the Forks of the Patuxent Improvement Association. She has lived in the area all her life (75 years). She has appeared and testified in multiple hearings regarding this property over the years. This should be over. Mr. Halle, the original applicant, is a wealthy man and developer. If he had good engineers, they would have been able to acquire the property they need and the permits. When this all started, there were not a lot of homes in the area. That is not the case now. She does not see a landfill having a place in the area now.

Ms. Margaret Farrell has been a resident of Two Rivers since 2019. The new school is part of the future character of the neighborhood. If the Petitioners are granted an extension of time, she wonders whether the County would build the school or wait. The lack of a new school would impact the neighborhood. She was not aware of the landfill application in process. She is a career environmental engineer and a breast cancer survivor. Her family would not have purchased their home in Two Rivers if they had known about the potential landfill. The impact on public welfare is ongoing stress. She is also concerned with the value of homes, about the potential release of the asbestos fibers into the wind, and about potential liner failure.

Mr. Robert Konowal, a planner for the Office of Planning and Zoning, explained that he has been assigned to this case within the last six months. He reviewed the case file. The approved access for the project was designed to protect environmental features to the north and the then existing small residential community to the south. It was chosen to ensure that heavy commercial trucks do not traverse the center of the low-density residential neighborhood and that a shorter section of public road would be utilized. The residential community has grown since 2017 making the realization of the fee simple access more crucial so that the landfill does not alter the essential character of the neighborhood. It has become apparent that the applicant cannot secure the land needed. Therefore, the applicant cannot ensure that the use will not alter the essential character of the neighborhood and negatively impact the appropriate use or development of adjacent property and the public welfare. The lands necessary for a fee simple road have since passed from private parties to the County for a park and the Board of Education for a school. Over the past 25+ years, the applicant has repeatedly presented to the MDE plans showing access points that were not approved by the Board of Appeals' decision. The current submission to the MDE again shows three access points; two were not included in the original

decision. Given that the applicant has not demonstrated that they will be able to comply with the 1993 conditions, there is no practical purpose in proceeding further. It would be irresponsible to approve. There is no opportunity to modify the previous special exception use because it is no longer allowed in the Code. There are no exceptional circumstances that would warrant the requested relief. The applicant, by their own actions, or lack thereof, has lost the opportunity to develop the site for a rubble landfill, making any time extensions pointless. Any hardship at this point has been self-created. The Board of Education has submitted building and grading permit applications for a two-story elementary school. The rubble landfill permit must be issued to get the permits for access and building permits.

Mr. Richard Bock, a resident of the Two Rivers community, testified in opposition to the requested variance. In 1993, the neighborhood was zoned RA District and was comprised of about 125 residents. The neighborhood is now zoned R2 District and includes an additional 2,000 residents. He was unaware of the landfill when he bought his home. There is an operating landfill one mile from this project. Their way of life is threatened by this project. The extensions create unwarranted hardships and stress for the residents.

Mr. Bill Radlinski, a resident of Two Rivers and a member of the Two Rivers Landfill Opposition Committee, explained that the passage of time has resulted in monumental change in the neighborhood. The extension of time has consequences. He is concerned about traffic and believes that a special exception would not have been granted for the area as it looks today.

Ms. Cathleen Buckman is opposed and has lived in Two Rivers since 2017. She never saw any signs regarding the landfill when she was looking into Two Rivers. She would not have purchased a home in Two Rivers if she knew about the landfill. She estimates that there are about 4,000 people in Two Rivers. The area needs road updates and she is concerned that the

County will not address the road conditions while the landfill is pending. She also expressed her concerns about the landfill's impact on the historic value of the area, air quality, her health, and home values.

Ms. Judith Wagner has lived in Two Rivers since 2020 and was not aware of the landfill. She is concerned about the safety issues on Conway Road and the delays to improvements that the extension may impact. She is concerned the requested time extension may delay the construction of the school. This is all stressful and affects the health of the residents.

Mr. Richard Talbot testified in opposition to the request. He has a PhD in environmental engineering. He believes there are three requirements of the special exception that are not being met: height, slope, and operating hours. There is a lack of diligence in the Petitioners' design, and it is incorrect. He is opposed to the project even if the numbers are corrected.

Ms. Jeni Thomas has lived in Two Rivers since 2020. She never saw signs posted regarding the landfill. She works in residential real estate. She has never seen or imagined where an established residential neighborhood would have to endure a landfill being built in the community. The landfill will have a huge negative impact on home values. She read a study that home prices could drop as much as 12.9%. Their biggest investment is their home, and she cannot afford that type of loss. On questioning by the Board, she doesn't see home prices falling now, but if the extension is granted, she sees that happening.

Ms. Sharlee Fleshman, the current President of the Forks of Patuxent Improvement Association, testified in opposition to the request. She has lived on Meyers Station Road for over 14 years. The Forks of Patuxent community is 108 homes. Back in 1993, their community was the sole residential area. There is no reason to approve another time extension when NWM has no ability to fulfill the Conway Road access condition.

Mr. Nicholas Levandoski testified in opposition and is a resident of the Cascades portion of Two Rivers. He has children and one will attend the new school. He is concerned the time extension will delay the opening of the school.

Mr. Ed Riehl testified that the neighborhood has landfill fatigue. He agrees with the Petitioners that the Board of Appeals' 1993 decision did not explicitly state that there was one specific access on Conway Road. However, there is evidence regarding access through the several properties in question. He believes that NWM will be unable to comply with the 1993 Board decision. This Board can make this entire thing go away.

Mr. Mauricio Lainez, a community resident, is opposed to the request. The landfill would be in his front yard. The outcome of this request is very important to everyone. If the Petitioners are granted an additional two years it would be a dark cloud hanging over all Two Rivers residents. When he walks his son, he thinks about all the trucks going back and forth. He is worried about the kids at the bus stop and dump trucks. He moved into his house in April 2021 and knew nothing about the landfill.

Mr. Michael Djangali, an audience member, is opposed to the request. He is a teacher and concerned about the potential delays in building the school. By the time a school is built, it is usually already overpopulated. Larger classroom size affects kids negatively.

Ms. Christie Roberts, a resident of Two Rivers, testified in opposition. She believes that the variance is a waste of time and money because the project cannot meet the conditions of the 1993 decision. She works in an office right next to a landfill. The roads must be repaved regularly to deal with the constant stream of dump trucks. There is noise and traffic. These are all factors that the Board of Appeals took into consideration in 1993 when it limited access to the lower part of Conway Road.

Ms. Jan Randall, an audience member, is opposed to the request. She moved to Two Rivers from New Mexico to be near her children. She did her due diligence and there were no red flags. She was never told about the landfill. She is in her 70's and moving was very stressful. She doesn't want to move again and is worried that her home would decline in value. The uncertainty of it all gnaws at her daily. An extension would be two more years of worry and stress for her. The Petitioners have not done what was needed to complete the project. This is a case of big business treading on homeowners in the County.

Mr. John Chisholm testified on rebuttal as the representative for National Waste Managers. He presented the Board with a copy of the surface mining license.

Mr. Jon Arason was recalled for rebuttal on behalf of the Petitioners. The County's position has been a complete reversal of their consistent position from 1993 to 2013. Looking at the various staff reports, they consistently applied law and policy in their review and analysis of requests for extensions, under what must have been pressure from many administrations since 1993. The Office of Planning and Zoning has been consistent in finding extraordinary circumstance, exceptional hardship, and the access issue not being part of their consideration for a variance for temporal extension. The latest staff report is a complete reversal of that position. The question of access comes at the time of permitting. In the interim, the County has acquired lands that prevent the property owner from obtaining the fee simple driveway that was shown in 1993. Access A from 1993 would not have been doable under fee simple ownership because of the BGE right of way. It also crosses a County owned property, and the Department of Recreation and Parks has consistently objected to access across the B&A Trail. There is some discussion in the 1993 application about bringing in refuse by rail. The Petitioners have options. The temporal extension will have no impact because it does not create any activities. The only

obligation of NWM is to post for hearings, not to advise all prospective buyers that there is an approved special exception for the landfill. The approval for the landfill is in the public domain at the State and County levels.

All testimony was stenographically recorded and the recording is available to be used for the preparation of a written transcript of the proceedings.

Findings and Conclusion

The Petitioners require a variance to Anne Arundel County Code ("Code"), Section 18-16-405(a)-(b), which states,

(a) A variance or special exception that is not extended or tolled expires by operation of law unless the applicant within 18 months of the granting of the special exception (1) obtains a building permit or (2) files an application for subdivision. Thereafter, the special exception shall not expire so long as (1) construction proceeds in accordance with the permit or (2) a record plat is recorded among the land records pursuant to the application for subdivision, the applicant obtains a building permit within one year after recordation of the plat, and construction proceeds in accordance with the permit.

(b) In deciding an application for a special exception use, the Administrative Hearing Officer may extend the time periods set forth in subsection (a) for the use and any variance granted in connection with it when the application includes a phasing plan or sets forth facts that demonstrate other good cause why the time periods set forth in subsection (a) reasonably cannot be met.

Section 18-16-405 permits an applicant to file an application for a variance to extend the time periods set forth in subsection (a). The Petitioners have requested, and the Board has granted time extensions in 2004, 2006, and 2011.

On December 7, 2012, the Petitioners submitted their 4th variance application for a time extension. The Board of Appeals heard testimony and accepted evidence on June 6, 2013, August 14 and 15, 2013, and October 15, 2013. After a review of the testimony and evidence, on December 27, 2013, the Board issued a split decision to deny a two-year time extension

request, effectively denying the Petitioners' requests. A timely Petition for Judicial Review to the Circuit Court for Anne Arundel County, Maryland (hereinafter, "Circuit Court") was filed on January 2, 2014.

Following argument from the parties, the Circuit Court issued an Order and Memorandum Opinion on February 19, 2015, concluding that the matter was remanded to the Board of Appeals for further proceedings consistent with the reasons set forth in its Memorandum Opinion. A Motion to Alter and Amend Judgment and Response to the same was considered by the Circuit Court and denied on April 6, 2015. An appeal to the Court of Special Appeals was noted on May 5, 2015.

On October 25, 2016, the Court of Special Appeals vacated the judgment of the Circuit Court and remanded the matter to the Circuit Court for the purposes of remanding the matter to the Board of Appeals, consistent with the reported opinion of the Court of Special Appeals. See, *Forks of the Patuxent v. Nat'l Waste Mgrs*, 230 Md. App. 349 (2016). A Writ of Certiorari was filed and granted by the Court of Appeals on February 3, 2017. The Court of Appeals issued a reported opinion on June 21, 2017 (*Nat'l Waste Mgrs, Inc. v. Forks of the Patuxent Improv. Assoc.*, 453 Md. 423 (2017)) vacating the judgment of the Court of Special Appeals and remanding the matter with instructions to vacate the judgment of the Circuit Court, and remand to the Board of Appeals for further proceedings in conformance with the Court of Appeals' opinion. The Court of Appeals held that the split decision of the Board was a denial of the requested extension. However, the Court determined that the findings of the denying members of the Board regarding the Petitioners' diligence in pursuing the MDE and County permits were unsupported by substantial evidence, and were, thus, arbitrary and capricious; that the findings regarding whether the requested time extension was the minimum necessary to afford relief were legally erroneous; and, their findings regarding the impact of the extension on the surrounding

neighborhood and adjacent property were based on an erroneous standard. Further, the Court of Appeals directed the Board of Appeals to resolve whether, in 2013, "what impact, if any, the requested two-year extension to 2015 would have on the character of the neighborhood, the appropriate use or development of adjacent property, or the public welfare, accepting as fact that there was no lack of diligence on the part of [the Petitioners] or adverse impact on the neighborhood or adjacent property warranting a rejection of an extension as of the Board's decision in 2011."

On October 19, 2018, the Board issued its Supplemental Memorandum of Opinion granting the Petitioners' request for a two-year time extension. A timely appeal was filed, and on June 19, 2019, the Circuit Court remanded the Supplemental Decision to the Board of Appeals ordering same "to take into account the impact, if any, of the requested extension beyond 2017 on the character of the neighborhood, the appropriate use or development of adjacent property, and the public welfare." Said order was appealed by the Petitioners to the Court of Special Appeals. By Opinion dated October 2, 2020, the Court of Special Appeals affirmed the Circuit Court and found the Board's supplemental decision was incomplete: "Having decided that tolling applies, and thus extending the approvals beyond 2017, the Board must 'take into account' the 'impact' of tolling, that is, the effect that such an extension will [have] 'on the character of the neighborhood, the appropriate use or development of adjacent property, or the public welfare[.]'" *Nat'l Waste Managers, Inc. v. Forks of the Patuxent Improv. Assoc.*, No. 1327, Sept. Term, 2019, 2020 WL 5870525 (Md. October 2, 2020) at *5.

The Board of Appeals, having reviewed the evidence and testimony presented in 2013 and 2018 and having heard oral argument/testimony on October 27, 2021, January 25-27, 2022, and March 1-2, 2022, continues to find that the Petitioners' request for a two-year time extension should be granted. In keeping with the narrow direction of the Court, we examined whether the

extension variance will: (1) alter the essential character of the neighborhood, (2) substantially impair the appropriate use or development of adjacent properties, and (3) be detrimental to the public welfare.

As an initial matter, there was much discussion and testimony pertaining to the restrictive conditions in the original 1993 order, and whether the Petitioners can still meet condition 2.d., namely: "The access obtained to the site from Conway Road shall be through a fee-simple right-of-way, not through an easement." The testimony showed that the land to the east of the site toward Conway Road is not owned by the Petitioners. Some of the land is owned by the County and used as a park. Some of the land is owned by BGE, there are parcels of private property, and there is a new elementary school site owned by the Anne Arundel County Board of Education. The County and the Protestants asserted that it is impossible for the Petitioners to secure the land needed for the access required by Condition 2.d. The County's planner, Mr. Konowal, testified that it would be "irresponsible" to recommend a time extension when the use can never be implemented. The County urged this Board to deny the time extension against a backdrop of perceived futility and lack of viable path to full implementation of this special exception. The Protestants argued that due to the Petitioners' failure to obtain the property rights required for the mandated Conway Road access the time extension must be denied. The Petitioners' witnesses asserted, just as strongly, that fee simple access is available along Conway Road to the south of the site and left open the possibility of acquiring access to Conway Road through the tangle of land ownership to the east of the site, and/or operating by the railroad, which binds the site on the west. While the County may be correct that the Petitioners are "grasping at straws" by arguing that "it is not beyond the realm of possibility [they] may someday obtain title" to the County park property and the BOE school property" (County's Closing Memo, p.13.), the parties'

arguments on the road access are not germane to the matters before us. The Petitioners may never operate the special exception on this site, or they may gain all approvals necessary to meet Condition 2.d. Those matters are for another time, before another Board. Ultimately, however, our mandate here is quite narrow. The Board has only before it the questions of what, if any, negative effects an extension will have on the character of the neighborhood, the appropriate use and development of adjacent properties, and the public welfare. To those questions we now turn.

The instant request would grant the Petitioners additional time to obtain the necessary approvals from the Maryland Department of the Environment ("MDE") and the County. The rubble landfill cannot commence operations without those approvals. Thus, nothing happens on this site until MDE grants approval, and the County issues building and grading permits and the full panoply of permissions required for a project such as this. The grant of the Petitioners' request for an extension of time merely permits continuation of the status quo ante—nothing more, nothing less.

The Petitioners must show that the requested variance to the time limits for the implementation and completion of the previously approved special exception and variance will not alter "the essential character of the neighborhood." Anne Arundel County Code, § 3-1-207(e)(2)(i). We find that the existing circumstance, wherein no landfill use on this site since 1993 has occurred, would not negatively impact the character of the neighborhood. As described by Mr. Arason and others, this area of the County contains a mix of uses, including park land, a railroad, church, a planned school, commercial uses, residential subdivisions, and rural residential parcels. Continuing the static condition of Petitioners' properties, while further governmental reviews occur, will not change the character of this community. Indeed, the

proposed landfill has been part of this community since 1993 and the more recent development has been approved and accomplished under the inescapable pall of the instant project.²

Despite having no burden to do so, the Protestants and County argued and proffered evidence to support a contention that the time extension holds "this issue" over their heads and extends the uncertainty of whether the landfill will ever open. Perhaps so. But, even if true, it is unclear to this Board how these assertions alter the essential character of the neighborhood. The neighborhood will continue to have a mix of land uses and this unused parcel. The County argued that "[a]llowing [the Petitioners] to seek an alternative access other than the one approved would alter the essential character of the neighborhood." (County's Closing Memo, p.12.) This statement is nonsense. While *granting* the Petitioners alternative access *may* alter the essential character of the neighborhood, merely "seeking" alternative access does not.

In addressing the actual issue, potential alteration to the essential character of the neighborhood, the facts are as follows: (1) the character of the neighborhood is a mix of uses that range from rural residential to commercial resources for the community; (2) the Petitioners have an approved, lawful special exception on this site; and (3) the approved use of this property as a rubble landfill is, and has been, known within the community, and so, is part of the character of the community. Permitting an additional two-year extension will therefore not alter the character of the neighborhood in any manner whatsoever. The current extension variance does nothing more than give the Petitioners additional time to finalize State approval and obtain County permits, if the same are ever forthcoming. Therefore, we find that the time extension variance will not alter the essential character of the neighborhood.

² The Petitioners, in their closing remarks, chastised the County for failing to show how an *extension* of time would negatively affect the character of the neighborhood. However, we note that the County is under no burden of proof or persuasion. It is solely the burden of the Petitioners to carry the day.

Next, the Petitioners must show that the requested variance to the time limits for the implementation and completion of the previously approved special exception and variance will not substantially impair the appropriate use or development of adjacent properties. Anne Arundel County Code, § Section 3-1-207(c)(2)(ii). This site has been approved for use as a rubble landfill since 1993. In the intervening years, the community has been extensively developed around the Petitioners' property. The adjoining properties to the east are in County and Board of Education ownership. One parcel is used as a park and the other is now in the permitting process for a school. While we are sympathetic to the voices of the new residents in the Two Rivers community that their homebuilder failed to tell them that a rubble landfill was possible, the County was fully aware of the approved landfill and approved the developer's Two Rivers subdivision nonetheless.

The County argued that the variance would substantially impair the appropriate use or development of adjacent properties because "the substantial development that has occurred along Conway Road was undertaken with knowledge of the one and only access point for the landfill." (County's Closing Memo, p.12.) Here, again, the County steadfastly strives to put before the Board matters that are not within its purview. The access point is not at issue here, merely the time extension. It is unclear, and the County has failed to show, how said extension will impair the appropriate use or development of adjacent properties in any way, let alone substantially. On the contrary, and as has already been proven through multiple extensions over the years, the adjacent properties can continue to be used and developed without impairment during the extension period requested. We have ample history that the previous extensions did not substantially impair the appropriate use or development of adjacent properties. We find that the requested extension will not impair the appropriate use or development of adjacent properties.

Finally, the Petitioners must show that the requested variance to the time limits for the implementation and completion of the previously approved special exception and variance will

not be detrimental to the public welfare. Anne Arundel County Code § Section 3-1-207(e)(2)(v). The Protestants expressed various overarching concerns about how the time extension might affect future, unplanned traffic studies, potential, yet-to-be proposed improvements to Conway Road, and the underway school construction. However, these anxieties were not supported by any convincing data. Instead, since the County/Board of Education was aware of the Petitioners' plans when it purchased the land for the school, there is no reason to believe that the construction of the school will not proceed in its normal course without regard to the progress of the landfill. Indeed, the grading and building permit applications for the school were pending during the testimony portion of this appeal. It seems inconceivable that the County and the Board of Education would have proceeded with plans to develop a park and a school if the time extension had any negative consequences for the public welfare. Granting the time extension will not change traffic, impact water, or have any effect on public welfare. It will only provide time for the Petitioners to finalize the MDE permit review process and perhaps initiate the County building/grading permit process. We find that the extension of two years for the Petitioners to implement and commence these uses will not be detrimental to the public welfare. The original 1993 decision determined that these uses have public benefit and are needed. We offer no opinion on the relative merit of the underlying special exception, the conditions imposed therein, and associated variances. Here, we confine ourselves to only that narrow issue of whether the Petitioners are entitled to a time extension variance since, because of myriad reasons completely beyond their control, they have not been afforded the opportunity to receive a final determination of the required State/County permits for a rubble landfill.

While the Protestants and County encourage this Board to find that the Petitioners have not acted with diligence, such a finding (or even an analysis on this subject) directly contradicts the Court of Appeals' clear instruction that the Board "accept[] as fact that there was no lack of diligence on the part of National." *Nat'l Waste Managers*, 453 Md. at 446, 162 A.3d at 887. We

agree with the Petitioners that any finding to the contrary would thus invite reversible error. All arguments regarding the Petitioners' lack of diligence must be rejected.

The Court also directed the Board to consider the impact of tolling; that is, the effect that such an extension will have on the character of the neighborhood, the appropriate use or development of adjacent property, or the public welfare beyond the Court of Appeals' 2017 decision. Pursuant to this directive, the Board heard the parties' evidence and testimony as to conditions existent in the area through the Board's 2022 re-hearing. We also heard from any interested member of the general public, including residents *in situ* since 1993, along with homeowners from the recently developed Two Rivers community. After carefully considering the evidence thus presented, the Board gained much-needed clarity into the conditions well beyond 2017 and finds no impact arising from a grant of the time extension variance. Therefore, the Board intends this grant of the Petitioners' requested extension to run for two years from the date of this opinion.

Having carefully considered the exhaustive testimony presented over six days of hearings, this Board concludes that the extension of time will put not a single vehicle on the road, displace not one drop of water, create no noise, emit no fumes, and will have no impact on the community. Someday, far in the future, the actual landfill may create some impact, but the potential for impact was decided in 1993. Neither the County nor the Protestants will get a bite at that 1993 apple today.

ORDER

For the reasons set forth in the foregoing Memorandum of Opinion and this Supplemental Memorandum of Opinion, it is this 1st day of DEC., 2022, by the County Board of Appeals of Anne Arundel County, ORDERED, that the Petitioners' request for a variance for a two-year

extension of time for the implementation and completion of a previously approved special exception and a variance for a two-year extension for previously approved variances for a rubble landfill and for a sand and gravel operation is hereby **GRANTED**.

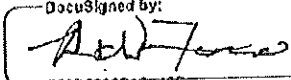
Any appeal from this decision must be in accordance with the provisions of Section 604 of the Charter of Anne Arundel County, Maryland.

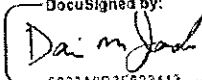
If this case is not appealed, exhibits must be claimed within 90 days of the date of this Order; otherwise, they will be discarded.

Any notice to this Board required under the Maryland Rules shall be addressed as follows: Anne Arundel County Board of Appeals, Arundel Center, P.O. Box 2700, Annapolis, Maryland 21404, ATTN: Deana L. Bussey, Clerk.

NOTICE: This Memorandum of Opinion does not constitute a building or grading permit and may be valid for a limited time period. In order for the applicant to construct or retain any structures allowed by this opinion, or to perform or retain any grading allowed by this opinion, the applicant must apply for and obtain the necessary building or grading permit and any other approval that may be required to perform the work described herein within the time allotted by law or regulation.

COUNTY BOARD OF APPEALS
OF ANNE ARUNDEL COUNTY

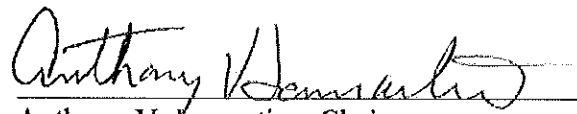
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Richard Forgo, Member

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Darrin Michael Jacobs, Member

(John R. Fury, Member, and Maria K. Patterson, Member, did not participate in this appeal.)

CONCURRING

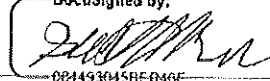
Nearly 30 years after I voted to deny the original special exception request, I find myself faced with a far different query now. With the passage of time, my review of the instant appeal has been narrowly focused by order of the Court. I have been ordered to determine only whether the extension of time will negatively impact the character of the neighborhood, the appropriate use or development of adjacent property, and the public welfare. Accordingly, I agree with my members on this Board, that the grant of a time extension will grant the Petitioners no use of this site. But rather, the grant of this extension will simply continue the status quo until the Petitioners receive further approval or fail. I have no crystal ball to consult to determine whether a rubble landfill will ever operate on the subject parcel; and it is not within the Court's carefully drawn question for me to do so now.


Anthony V. Lamartina, Chair

DISSENT

We find persuasive the arguments of the County and the Protestants that the request for additional time will negatively impact the character of the neighborhood and, most acutely, will impact the public health. We find no need to impose the pall of this doomed project on a community further and would deny the Petitioners' request for an extension of time.

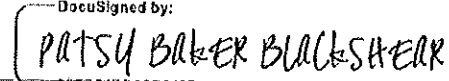
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Scott MacMullan, Vice Chair

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Patsy Baker Blackshear, Member

Response to Comment 24

Exhibit E: Circuit Court Decision Judge Trunnel, May 26, 2021

Exhibit F: Circuit Court Decision Judge Trunnel, January 26, 2024

EXHIBIT E

Circuit Court Decision

Judge Trunnel

May 26, 2021

NATIONAL WASTE MANAGERS, INC. * IN THE
Plaintiff * CIRCUIT COURT FOR
v. * ANNE ARUNDEL COUNTY
ANNE ARUNDEL COUNTY, ET AL. * MARYLAND
Defendants * Case No.: C-02-CV-20-002291

* * * * *

ORDER

UPON CONSIDERATION of Plaintiff National Waste Manager's Motion for Summary Judgment, Defendant County's Cross Motion for Summary Judgment, and Defendant MDE's Motion to Dismiss, and all responses thereto, it is hereby:

ORDERED that MDE's Motion to Dismiss is **DENIED**; and it is further

ORDERED that the County's Cross Motion for Summary Judgment is **DENIED**; and it is further

ORDERED that NWM's Motion for Summary Judgment is **GRANTED IN PART**; and it is further

ORDERED that the letter sent to MDE by County Executive Steuart Pittman on August 31, 2020 was unlawful and now **VOID**; and it is further

ORDERED that the letter sent to MDE by County Attorney Gregory Swain on October 2, 2020 was unlawful and now **VOID**; and it is further

ORDERED that MDE shall continue its Phase III review of NWM's permit application to operate the Chesapeake Landfill; and it is further

05/26/2021 CS

ORDERED that given the Court's ruling, all open issues are now resolved and therefore
the case is now CLOSED.

5/25/21

Date

RR Trunnell

RICHARD R. TRUNNELL, Judge
Of the Circuit Court for Anne Arundel County, MD

05/25/2021 3:40:21 PM

Richard Trunnell



NATIONAL WASTE MANAGERS, INC. * IN THE
Plaintiff * CIRCUIT COURT FOR
v. * ANNE ARUNDEL COUNTY
ANNE ARUNDEL COUNTY, ET AL. * MARYLAND
Defendants * Case No.: C-02-CV-20-002291

* * * * *

MEMORANDUM OPINION

05/26/2021 CS
This matter came before the Court on April 19, 2021 for a motions hearing. Plaintiff, National Waste Managers, Inc. ("NWM"), filed a Motion for Summary Judgment, Defendants Anne Arundel County, Steuart Pittman, Gregory Swain, and Steve Kaii-Ziegler (collectively the "County") filed a Cross-Motion for Summary Judgment, and Defendants Maryland Department of the Environment and Andrew Grenzer (collectively "MDE") filed a Motion to Dismiss. The issues and arguments from each party are closely intertwined. Therefore, for the purpose of procedural expedience and judicial economy, the Court heard all pending motions at the same time.

Upon consideration of the record, arguments of the parties, testimony taken, evidence presented, and all pending motions and responses thereto, the Court makes the following conclusions.

BACKGROUND

This case concerns the continuous efforts of NWM to develop the Chesapeake Terrace Rubble Landfill (the "landfill") in Anne Arundel County. Since first filing for its permit in December 1988, NWM has been in near constant litigation with the County for the past 30 years. The issues involved around the landfill permit application process have been brought before the

Anne Arundel County Circuit Court, Court of Special Appeals, and Court of Appeals involving multiple separate cases. The crux of this 30-year endeavor has revolved specifically around the special exception that was granted to NWM by the Anne Arundel County Board of Appeals (the "Board") which allows NWM to continue the permit process. Below is a brief summary of the procedural history.¹

In December 1988 NWM applied for a refuse disposal permit from MDE to construct and operate the landfill. In 1990 NWM sought a special exception and variance from the County because the district was zoned for rural agricultural usage. A County Administrative Hearing Officer initially denied the request, but on appeal the Board granted the special exception. The Board stated that the exception is contingent on NWM using a portion of Conway Road as the entrance to the landfill and NWM must purchase the land used as the access point in fee simple. The Board specified that the land must be purchased before beginning "operations."

The County appealed the Board decision while also refusing to include the landfill in their Solid Waste Management Plan ("SWMP") as well as refusing to send a letter to MDE stating that NWM is in conformance with all local zoning regulations. This letter of compliance is required by Section 9-210(b) of the Environment Article of the Maryland Code to continue the application process. In 1995 the Court of Appeals affirmed the Board's decision to grant the special exception. *See Halle Companies v. Crofton Civic Ass'n*, 339 Md. 131 (1995).

The County continued its resistance against NWM and still refused to send the conformance letter or include the landfill in the SWMP. NWM then filed a Complaint in the

¹ The factual background and procedural history of this action, which are well known to the parties, will not be repeated here in detail. To the extent necessary for the Court to rule on the motions, any facts set forth in this Memorandum Opinion are as alleged in the Plaintiff's Complaint, Defendants' Answers, Plaintiff's Motion for Summary Judgment, Defendant County's Cross-Motion for Summary Judgment, and Defendant MDE's Motion to Dismiss, and all responses thereto.

Anne Arundel Circuit Court seeking a mandamus and declaratory judgment. Partial summary judgment was granted for NWM and the County once again refused to issue a conformance letter or include the landfill in the SWMP. NWM then filed for contempt and in 1997 the Court issued a Contempt Order fining the County \$250,000.00 and stating that they can purge the contempt by issuing the conformance letter and including the landfill in the SWMP. The Contempt Order also stated that NWM met all zoning regulations even though the property for the access point was owned by third parties and that NWM did not have to purchase the property for the entrance until landfill operations began.

The County finally complied with the numerous Court Orders and sent the conformance letter on August 4, 1997. However, three months later the County sent another letter to MDE stating that the exception had expired. In 2000 the Court of Special Appeals held that the deadline for the exception was tolled during litigation. *See Nat'l Waste Managers, Inc. v. Anne Arundel Cty.*, 135 Md. App. 585 (2000). Following the Court of Special Appeals' decision, the County sent another conformance letter in 2001 and added the landfill to the SWMP.

The Anne Arundel County Code requires NWM to continually request an extension for their special exception. Anne Arundel, Md., Administrative Hearings § 18-16-405(a). The Board has granted an extension to the special exception three times. In 2013 the Board denied the fourth extension with a 2-2 vote and NWM appealed. In 2017 the Court of Appeals remanded the case back to the Board. *See Nat'l Waste Managers, Inc. v. Forks of the Patuxent Improvement Ass'n, Inc.*, 453 Md. 423 (2017). The Board then granted the extension in 2018. In response, the County appealed the Board decision and in October of 2020 the Court of Special Appeals remanded the case back to the Board once again for further consideration. *See Nat'l Waste Managers, Inc. v. Forks of the Patuxent Improvement Ass'n*, 2020 WL 5870525 (Md. Ct. Spec.

App. Oct. 2, 2020). The Board has not yet made their decision regarding the fourth extension. A hearing is currently scheduled for June 23, 2021. NWM has also applied for a fifth extension.

The impetus of this current litigation occurred in March 2020 when the County purchased three parcels of land for the alleged purpose of constructing a school. The land acquired is part of the access point that NWM would need to acquire to comply with the special exception. The County has repeatedly stated they have no intention of selling the property to NWM. Additionally, the County owns the WB&A Trail which runs across the access point and the County believes the trail cannot be used for the purpose of the landfill.

The County then proceeded to send two letters to MDE stating that NWM was no longer in conformance with the special exception and the permit process should be halted. One letter was sent by County Executive Steaurt Pittman on August 21, 2020 and a second letter was sent by County Attorney Gregory Swain on October 2, 2020. Upon receiving the letters, MDE stopped NWM's application process. NWM once again filed a Complaint for declaratory relief and mandamus requesting the Court to declare the landfill to be in compliance, to declare the County has a statutory duty to issue a written statement to MDE certifying compliance, to declare that MDE violated its statutory duty by halting the review process, and issue an injunction ordering that the County send the conformance letter and ordering MDE to continue the permit application review process.

NWM filed a Motion for Summary Judgment, MDE filed a Motion to Dismiss, and the County filed a Cross Motion for Summary Judgment. After a hearing on April 19, 2021, the Court held the matter *sub curia*.

STANDARD OF REVIEW

In order to withstand a motion to dismiss, the Complaint must "allege facts which, if proven, would entitle the plaintiff to relief." *Dick v. Mercantile-Safe Deposit & Trust Co.*, 63 Md. App. 270, 272 (1985) (quoting *Tadger v. Montgomery Cnty.*, 61 Md. App. 492, 502-03 (1985) (internal brackets in original removed)). Where the facts and allegations, even if proven, would nonetheless fail to afford the plaintiff relief, dismissal is proper. See *Bd. of Educ. v. Browning*, 333 Md. 281, 286 (1994). In reviewing the Complaint, "courts must assume the truth of all well-pleaded facts in the complaint, along with any reasonable inferences derived therefrom." *Allied Inv. Corp. v. Jasen*, 354 Md. 547, 555 (1999).

On a motion pursuant to Md. Rule 2-501, summary judgment is only appropriate "where there is no dispute as to any material fact and the moving party is entitled to judgment as a matter of law." *Nationwide Mut. Ins. Co. v. Scherr*, 101 Md. App. 609, 694 (1994). A material fact is one "which will somehow affect the outcome of the case." *Lynx, Inc. v. Ordnance Prods., Inc.*, 273 Md. 1, 8 (1974). In determining whether a genuine dispute of material fact exists, "the court examines the pleadings, admissions, and affidavits, etc., resolving all inferences to be drawn therefrom against the moving party." *Gross v. Sussex, Inc.*, 332 Md. 247, 256 (1993). "In order for there to be disputed facts sufficient to render summary judgment inappropriate, 'there must be evidence on which the jury could reasonably find for the plaintiff.'" *Homes Oil Co. v. Maryland Dep't of Env't*, 135 Md. App. 442, 454 (2000). "[T]he mere existence of a scintilla of evidence ... is insufficient to preclude the grant of summary judgment...." *Beatty v. Trailmaster Prod., Inc.*, 330 Md. 726, 738 (1993).

DISCUSSION

The main issue for this Court to determine is whether the County had the authority to send the two letters of non-conformance to MDE. The sole issue for Defendant MDE's Motion to Dismiss concerns whether they have a legal duty to cease the application process upon receiving said letters from Mr. Pittman and Mr. Swain.

I. Authority to Send the Letters

NWM argues that Mr. Pittman and Mr. Swain had no authority to send the letters to MDE demanding that the application process be ceased because the Planning and Zoning Officer had already stated in 2001 that NWM is in compliance with all zoning regulations. They further state that there is no statute or regulation that allows the County to change the status of NWM's conformity with the zoning regulations unless a motion is filed with the Board. The County contends that it is incumbent on County officials to notify MDE when a property is not in compliance. The County also states that the Planning and Zoning Office is under the authority of Mr. Pittman and the County is the final authority to declare if property is in compliance with any zoning regulations. Further, they argue that the letters were not making demands, but rather simply informing MDE of the facts of the case.

The Court disagrees with the County and finds that County Executive Steuart Pittman and County Attorney Gregory Swain overstepped the bounds of their authority by sending letters to MDE demanding they halt NWM's application process to operate the landfill. The Court explains its reasoning below.

First, the Court finds that the County's letters were in fact a demand to stop the application process and not merely comments as the County contends. Not only did Mr. Pittman and Mr. Swain make specific requests of MDE, they also stated conclusions of law in an attempt

to persuade MDE. In Mr. Pittman's letter he states, "The proposed project has, in point of fact, *not* satisfied all applicable county zoning and land use requirements." Mr. Pittman then continues with the reasoning for his legal conclusion, "because the applicant has *not* acquired access to the site as required by a special exception that is now more than 26 years old."

Further, Mr. Swain's letter contains even more demands and legal conclusions that the Court finds problematic. Mr. Swain states:

[T]he County Office of Planning and Zoning . . . advised that the zoning compliance was conditioned on the applicant securing specified fee simple access to the site, and nineteen years later . . . this condition has still not been satisfied. *For this reason*, the site does not have the necessary zoning approval.

(emphasis added). Mr. Swain continues, "This letter is to *request* that, at a minimum, MDE follow State law and cease processing this permit application until the statutory zoning prerequisite is satisfied." (emphasis added). Mr. Swain concludes by requesting that the entire application be denied. "Furthermore, in light of the applicant's continued failure to satisfy the zoning condition regarding access, the application should be denied. It is simply not fair to the public to allow the application to proceed under these circumstances."²

In addition to the excerpts above, MDE itself viewed the letters as an order. MDE states both in their pleadings and during the hearing that the sole reason they halted the application was due to the two letters. Further, the entire basis of their Motion to Dismiss is that they had a non-discretionary duty to simply blindly follow the County's instructions, without any analysis of the issues, and halt the application process.

The Court additionally does not find compelling the County's arguments regarding the County Executive's authority over the Planning and Zoning Office and that the County has final

² The Court finds it especially problematic and concerning that a county official would attempt to not only halt the application process, but pressure MDE to completely end NWM's application without any due process.

authority on all zoning regulations. The issue in this case is not whether Mr. Pittman has the authority to approve zoning regulations, but rather whether he has the authority to rescind or modify that approval. It is undisputed that in 2001 the Planning and Zoning Officer, Denis Canavan, sent a letter to Barry Schmidt, MDE Administrator, explicitly stating NWM "meets all applicable county zoning and land use requirements subject to the performance of the conditions required by the special exception approval" This letter clearly fulfilled the requirements of Environment Article Section 9-210(a)(3) of the Maryland Code requiring the County to provide MDE with a written statement of conformance. If the County now believes that the conditions of the special exception cannot be performed, that is a matter solely for the County Board of Appeals to determine.

The Anne Arundel County Code is clear that the proper method to suspend or rescind a zoning application with a special exception is through the Board. "On motion of the County . . . approval of an application for a . . . special exception shall be rescinded, suspended, or modified if the Administrative Hearing Officer determines, *after a hearing*, that . . . the use of the property deviates from . . . any conditions imposed." Anne Arundel, Md., Administrative Hearings § 18-16-404 (emphasis added). Additionally, the Court has not found, and the County has not provided, any cases, statutes, rules, or regulations that allow a County Executive to circumvent the processes of the Board and order that a permit application be rescinded or halted.³ Therefore, the Court finds that the letters sent by Mr. Pittman and Mr. Swain overstepped the bounds of their authority and violated the due process rights of NWM.

Maryland common law takes seriously the fundamental rights and obligations of landowners and their ability to acquire, use, and maintain their land as permitted within the

³ During the hearing, after being explicitly asked by the Court, the County stated that they were not aware of any cases or statutes that allowed Mr. Pittman or Mr. Swain to send the letters to MDE.

confines of their property interest. The County has no authority to unilaterally decide that NWM no longer has a right to develop the property without a proper hearing by the Board. To do so would place the County as the sole arbiter in determining the rights of landowners seeking a special exception and completely invalidate the right to a hearing as put forth in the Anne Arundel County Code. NWM must be given the opportunity to plead their case before the Board and the County cannot unilaterally ignore NWM's procedural due process right to a hearing by sending what the Court sees as demand letters to MDE.

Finally, during the hearing the County additionally argued that the fourth extension period for the special exception has ended and will only be tolled if the Board makes that decision during their June 23, 2021 meeting. The Court does not find this argument compelling. On October 19, 2018 the Board granted NWM a fourth extension for two years while stating that the extension is tolled during litigation. The County appealed the Board's decision and the Court of Special Appeals remanded the issue and reaffirmed the Board's decision to have the fourth extension remain tolled. *See Nat'l Waste Managers, Inc. v. Forks of the Patuxent Improvement Ass'n*, 2020 WL 5870525 (Md. Ct. Spec. App. Oct. 2, 2020). The Board will not make their decision on the fourth extension until the June meeting and thus the Court agrees with the Board and the Court of Special Appeals that the fourth extension is tolled until then. Therefore, the County's argument is moot.

II. MDE's Motion to Dismiss

In support of their Motion to Dismiss, Defendant MDE argues that they were simply following the letter sent from Mr. Pittman that stated NWM was not in compliance with the proper zoning regulations. MDE points to Environment Article 9-210(b) which requires them to cease processing the application after the initial Phase I until they receive a written statement

from the County. Additionally, MDE states that they do not have the authority to make any determination regarding the legal arguments of NWM or the validity of the County's statements.

The Court does not find MDE's arguments persuasive. While the Court agrees that MDE should cease the application process until the County provides a written statement of compliance, it is undisputed that the County already did in fact send a written statement of compliance per Mr. Canavan's letter in 2001. As previously stated, the County has no authority to unilaterally rescind their statement of compliance and halt the application process. Nevertheless, the Court does recognize that MDE has a non-discretionary duty to follow the information given to them. However, MDE also has a duty to know and follow the proper procedure, and this duty takes precedence to any attempts of the County to skirt the due process rights of landowners.

III. Other Pending Issues

In addition to the letters sent to MDE, the parties have brought forth other issues regarding whether the special exception is still applicable given the current state of affairs. The Court shall not make a determination concerning any other pending issues in this matter. As repeatedly stated, the Court finds that the Board is the proper avenue to consider any and all modifications or rescissions to NWM's special exception. If the Court made a ruling on any other issues besides the authority of the letters, the Court would be allowing the County to go around a Board hearing, which we have already iterated is a crucial procedure in the due process rights of NWM and other landowners.

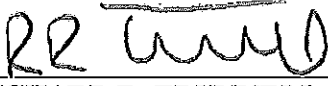
CONCLUSION

The Court finds that County Executive Steuart Pittman and County Attorney Gregory Swain had no authority to send letters to MDE demanding that NWM's permit application process be halted after a letter of compliance was previously sent by the Planning and Zoning

Office. Further, any issues concerning the relevancy, applicability, or conformity of the special exception should be brought before the Board using the proper procedures as set forth in the Anne Arundel County Code. Finally, the Court does not find it proper to issue an injunction to the County to send a new letter of conformance. Instead, the letters shall be deemed unlawful and void and the Court shall issue an injunction to MDE. The status quo shall be returned to before the letters were sent, and as agreed to, MDE will continue NWM's permit application process.⁴

For the reasons stated in this Memorandum Opinion, the Court shall enter the Order attached hereto.

5/25/21
Date


RICHARD R. TRUNNELL, Judge
Of the Circuit Court for Anne Arundel County, MD
05/25/2021 3:33:44 PM **Richard Trunnell**

⁴ During the hearing counsel for MDE stated that if the Court ordered MDE to disregard the letters, they would continue NWM's permit application.

EXHIBIT F

Circuit Court Decision

Judge Trunnel

January 26, 2024

NATIONAL WASTE MANAGERS,
INC.

Plaintiff

v.

ANNE ARUNDEL COUNTY

Defendant

*

IN THE

*

CIRCUIT COURT FOR

*

ANNE ARUNDEL COUNTY

*

MARYLAND

*

Case No.: C-02-CV-20-002291

* * * * *

ORDER

UPON CONSIDERATION of Plaintiff's Supplemental Motion for Attorney's Fees, filed July 19, 2023, and any opposition thereto, and after a hearing on the same, held on October 2, 2023, it is hereby:

ORDERED that the Plaintiff's Motion is **GRANTED**; and it is further

ORDERED that the amount of attorney's fees awarded shall be held sub curia pending Plaintiff's supplemental filings reflecting reasonable time spent on the litigation and any response thereto.

01/22/2024 12:29:11 PM

Date



RICHARD R. TRUNNELL, Judge
Circuit Court for Anne Arundel County
Richard Trunnell

civil filed 1/26/24 MD

NATIONAL WASTE MANAGERS,
INC.

Plaintiff

v.

ANNE ARUNDEL COUNTY

Defendant

* IN THE
* CIRCUIT COURT FOR
* ANNE ARUNDEL COUNTY
* MARYLAND
* Case No.: C-02-CV-20-002291

* * * * *

MEMORANDUM OPINION

This matter came before the Court on October 2, 2023, for a motions hearing. Plaintiff, National Waste Managers, Inc. (“NWM”), filed a Motion for Attorney’s Fees against Defendants Anne Arundel County, Steuart Pittman, and Gregory Swain (collectively the “County”), who filed an Opposition. Upon consideration of the record, all memoranda filed by Plaintiff and Defendants, and any oral arguments, the Court reaches the following conclusions.

BACKGROUND

This case comes from decades-long continuous litigation between NWM and Anne Arundel County based on efforts of NWM to construct and operate the Chesapeake Terrace Rubble Landfill (“Landfill”). NWM first applied for a refuse disposal permit from the Maryland Department of Energy (“MDE”) in 1988 and since that time, the parties have been in near constant litigation. The issues have been heard before the Anne Arundel County Circuit Court, the Court of Special Appeals (now the Appellate Court of Maryland), and Court of Appeals (now the Supreme Court of Maryland) involving multiple separate cases.¹

The most contentious issue between the parties followed a special exception granted to NWM in 1993 by the Anne Arundel County Board of Appeals (the “Board”) which allowed

¹ The factual background and procedural history of this action will not be repeated in detail for efficiency purposes. To the extent necessary for the Court to rule on the motion, any facts set forth in this Memorandum Opinion are as alleged in the Parties’ filings in all present and former related cases and relevant to the pending motion.

operation of the Landfill contingent on NWM purchasing in fee simple a portion of Conway Road as the entrance to be used as the main access point. The County appealed the Board decision and refused to include the Landfill in their Solid Waste Management Plan ("SWMP"). The County also refused to send a letter to MDE advising that NWM met all local zoning regulations as is required by Section 9-210(b) of the Environment Article of the Maryland Code to continue the application process. In 1995 the Court of Appeals affirmed the Board's decision to grant the special exception. *See Halle Companies v. Crofton Civic Ass'n*, 339 Md. 131 (1995).

The County continued its resistance and NWM filed a Complaint in the Anne Arundel Circuit Court seeking mandamus and declaratory judgment. Partial summary judgment was granted for NWM and the County once again refused to issue a conformance letter or include the landfill in the SWMP. NWM then filed for contempt and in 1997 the Court issued an Order fining the County \$250,000.00 with a purge provision to issue the conformance letter and include the Landfill in the SWMP. The Contempt Order also stated that NWM met all zoning regulations even though the property for the access point was owned by third parties and that NWM did not have to purchase the property for the entrance until landfill operations began. Over the years, NWM has requested and been granted multiple extensions for their special exception despite appeals from the County. After nearly 30 years of litigation and appeals over the special exception, it was ultimately upheld and continues to remain in effect.

By 2020, NWM was nearing the final stages of MDE's permitting process. During that time, the County purchased three parcels of land for the represented purpose of constructing a school including the land necessary for NWM to satisfy the condition of the Special Exception. The County has repeatedly stated they have no intention of selling the property to NWM.

Following the purchase of the land, in August and October of 2020, the County Executive and County Attorney, respectively, sent letters to MDE stating that NWM was no longer in compliance with the special exception and the permit process should be halted. Accordingly, MDE ceased processing the application and denied the permit, citing the letters as the basis for doing so. In a letter to the County, NWM informed the County that its position in the letters was incompatible with the special exception and in violation of NWM's due process rights. After the County refused to rescind the letters or adjust its position, NWM filed another Complaint in the Anne Arundel County Circuit Court for declaratory relief and mandamus against both the County and MDE to resume reviewing the application.

A hearing was held on April 19, 2021, and this Court granted summary judgment for NWM, holding in a written opinion that the actions of the County had overstepped their bounds and violated the Due Process rights of NWM and directing MDE to continue its review. NWM filed a Motion for Attorney's fees based on bad faith and/or lack of substantial justification of the County to which the County responded. The County appealed the decision of the Circuit Court, and NWM motion for attorneys' fees was stayed pending the appeal. The Appellate Court of Maryland upheld the Circuit Court decision in an unreported opinion filed December 8, 2022. Appellants filed a writ of certiorari to the Supreme Court of Maryland, which was denied on March 27, 2023. NWM filed a Supplemental Motion for attorneys' fees, which the County again opposed. A hearing was held on October 2, 2023, regarding the same.

STANDARD OF REVIEW

In considering a motion for attorney's fees, Md. Rule 1-341, which governs bad faith and unjustified proceedings in a civil action, states

“... if the court finds that the conduct of any party in maintaining or defending any proceeding was in bad faith or without substantial justification, the court, on motion by

an adverse party, may require the offending party or the attorney advising the conduct or both of them to pay to the adverse party the costs of the proceeding and the reasonable expenses, including reasonable attorneys' fees, incurred by the adverse party in opposing it." Md. Rule 1-341(a).

Before imposing sanctions for maintaining or defending a proceeding in bad faith or without substantial justification, the trial judge must make two separate findings. First, the court must find that it was maintained in bad faith or without substantial justification. *Inlet Associates v. Harrison Inn Inlet, Inc.* 324 Md. 254, 264 (1991). In bad faith means vexatiously, for the purpose of harassment or unreasonable delay or for other improper reasons. *Christian v. Maternal-Fetal Med. Assocs. of Maryland, LLC*, 459 Md. 1, 20 (2018). For a claim or litigation position to lack substantial justification, a party must have no "reasonable basis for believing that the claims would generate an issue of fact for the fact finder," *Inlet Assocs.*, 324 Md. 254, 268. The claim or litigation position must not be "fairly debatable, [must] not [be] colorable, or [must] not [be] within the realm of legitimate advocacy." *URS Corp. v. Fort Myer Constr. Corp.* 452 Md. at 72–73. In determining whether a case has been litigated "without substantial justification," within meaning of the attorney fees rule, the Maryland federal district courts have reviewed the fact, the law and the circumstances to ascertain whether there was at least some basis in law or fact for the action of the potential offender. *Brady v. Hartford Fire Ins. Co.*, 610 F.Supp. 735 (D. Md. 1985).

Second, the court must also find that bad faith and/or lack of substantial justification merits assessment of costs and/or attorney fees. *Inlet*, 324 Md. at 264. A finding of bad faith or lack of substantial justification should be supported by a brief exposition of the facts. *URS Corp.* 452 Md. at 72–73. Upon review, the evidence is viewed "in a light most favorable to the prevailing party." *Liberty Mut. Ins. Co. v. Md. Automobile Ins. Fund*, 154 Md. App. 604, 609 (2004). A litigant ought not be penalized for innovation or exploration but an award if justified if

such exploration is frivolous. *Edward A. Dent v. Luis R.S. Simmons*, 61 Md.App. 122, 129 (1984). An action is frivolous if the lawyer is unable to either make a good faith argument on the merits or to support the action taken by a good faith argument. *Inlet Assocs.*, 324 Md. 254 at 268.

“[I]t is clear from the history of the Rule, and the case law interpreting it, that Rule 1–341 was intended to function primarily as a deterrent” against abusive litigation. *Worsham v. Greenfield*, 435 Md. 349, 369 (2013). Sanctions for bad faith maintenance or defense of a proceeding, or maintenance or defense of proceeding without substantial justification, are judicially guided missiles pointed at those who proceed in courts without any colorable right to do so. *Parler & Wobber v. Miles & Stockbridge*, 359 Md. 671 (2000). Despite its capacity as a deterrent, Rule 1–341 is not intended as a punishment but merely as a mechanism to place “the wronged party in the same position as if the offending conduct had not occurred.” *Major v. First Virginia Bank–Central Md.*, 97 Md. App. 520, 530 (1993). “[T]he court must be guided by the principle that ... despite our occasional use of the word ‘sanction,’ [Rule 1–341] is not punitive but is intended merely to compensate the aggrieved party for their reasonable costs and expenses, including reasonable attorney's fees[.]” *Beery v. Md. Med. Laboratory, Inc.*, 89 Md. App. 81, 102 (1991). Because the rule serves as a deterrent and is intended to compensate, an award of attorney's fees is considered “an ‘extraordinary remedy,’ which should be exercised only in rare and exceptional cases.” *Barnes v. Rosenthal Toyota, Inc.*, 126 Md. App. 97, 105 (1999). “Rule 1–341 represents a limited exception to the general rule[.]” *Legal Aid Bureau, Inc. v. Farmer*, 74 Md. App. 707, 722 (1988).

The objective of the Rule is to fine-tune the judicial process by eliminating the abuses arising from ... litigation that is clearly without merit. The inherent danger ... is that [overzealous] pursuit of the objective may result in ... stifling the enthusiasm or chilling the creativity that is

the very lifeblood of the law. *Needle v. White*, 81 Md. App. 463, 470–71 (1990). A party possessing a colorable claim must be allowed to assert it without fear of suffering a penalty more severe than that typically imposed on defeated parties. *Id.* Therefore, judges have the responsibility of properly applying the rule to calibrate its application such that abusive practices are deterred, and aggrieved parties are compensated without stunting the development of the law. *Christian*, 459 Md. 1, 20 (2018). Although the purpose of the rule awarding costs and reasonable expenses for conduct that amounts to bad faith or conduct that lacks substantial justification is to prohibit pleading that is labeled for one purpose but in fact is filed for delay, the rule is not intended to penalize a party and/or counsel for averring colorable claims or defenses. *Johnson v. Baker*, 84 Md.App. 521 (1990). The action must be viewed at the time it was taken, not from judicial hindsight, in determining whether to award attorney fees under rule permitting award of attorney fees for party's conduct in maintaining or defending any proceeding in bad faith or without substantial justification. *Garcia*, 155 Md.App. at 634 (2003). If trial judge finds that proceeding was maintained or defended in bad faith and/or without substantial justification, court may order offending party to reimburse aggrieved party for attorneys' fees incurred as result of opprobrious behavior. *Major*, 97 Md.App. at 520 (1993).

“Maryland law requires that the award of attorney’s fees be reasonable, but little guidance is given in Maryland cases regarding reasonableness in calculating the award.” *Brady* 610 F. Supp. at 741 (D. Md. 1985). When requesting attorneys’ fees based in bad faith or lack of substantial justification, the moving party must submit a statement in support of the request which shall set forth “(i) a detailed description of the work performed, broken down by hours or fractions thereof expended on each task; (ii) the amount or rate charged or agreed to in writing by the requesting party and the attorney; (iii) the attorney's customary fee for similar legal

services; (iv) the customary fee prevailing in the attorney's legal community for similar legal services; (v) the fee customarily charged for similar legal services in the county where the action is pending; and (vi) any additional relevant factors that the requesting party wishes to bring to the court's attention." Md. Rule 1-341(3)(A). The Court of Special Appeals has held that it was appropriate to deviate from the locality factor in the customary fee determination when local Anne Arundel County counsel was not "readily available." *In Estate of Castruccio v. Castruccio*, 247 Md. App. 1, 233 A.3d 175 (2020).

DISCUSSION

The issue for this Court to consider is whether the County acted in bad faith or without substantial justification in defending this action in violation of Md. Rule 1-341. Further, if the Court determines that the County defended the action in bad faith or without substantial justification, the Court must then consider what amount of attorneys' fees would be reasonable.

I. Rule 1-341 Sanctions are Available Because the Court Considers Bad Faith or Lack of Substantial Justification Upon the Filing of a Motion.

The County contends in its memoranda that this Court has not previously found that the case was defended in bad faith or without substantial justification. They argue further that there was no evidentiary hearing or previous finding by this Court that the County's defense asserting its ownership of the land which prevented zoning compliance for the landfill was without substantial justification. The County contends that because there have been no previous findings of bad faith or lack of substantial justification, National Waste Managers is not entitled to recover fees under Md. Rule 1-341.

The Court disagrees with the County based on a plain reading of the rule. Under Rule 1-341, the Court may require the offending party to pay attorneys' fees if the court finds that the

conduct of any party was in bad faith or without substantial justification “*on motion by an adverse party*”. Md. Rule 1-341(A) (emphasis added). Prior to NWM’s filing of the current motion, the Court did not consider those issues and would not have investigated or made a finding of bad faith. Since NWM has filed the motion seeking attorneys’ fees, the Court will now review the actions of the County for bad faith or lack of substantial justification at the time they were taken.

II. The Court Must Review the Facts, Law, and Surrounding Circumstances of the Parties, Including the History Alleged in the Pleadings.

Before the Court may consider whether the actions of the County were taken in bad faith or without substantial justification, it must be clarified which actions the Court may consider. At the hearing, the County argued that the Court could not take into consideration past actions of the County or previous relationship of the parties prior to the filing of this action. NWM contends that Md. Rule 1-341 allows the court to take all contents of this proceeding into account including any motions and the facts and history therein. It is noteworthy that this Court took judicial notice of the parties’ extensive history in this case during the October 2, 2023, hearing.

As interpreted by the Maryland federal courts, to determine whether a party has acted in bad faith or without substantial justification within the meaning of the rule, “Maryland appellate courts have reviewed the fact, the law, and the circumstances to ascertain whether there was at least some basis in law or fact for the action of the potential offender.” *Brady*, 610 F.Supp. 735 (1985). Maryland courts have held consistently that the purpose of Rule 1-341 is to prevent parties from abusing the judicial process by filing or defending actions and proceedings without substantial justification or in bad faith. *Johnson v. Baker*, 84 Md. App. 521 (1990). The Federal Bankruptcy Court in Maryland has similarly found that references to bad faith in the context of

Rule 1-341 “reflect inquiries into the subjective state of mind of the actor and inherently speak to an intent to inflict harm.” *Chaires*, 249 B.R. 101, 106 (Bankr. D. Md. 2000).

It would not then follow that this Court would be bound to only consider the instant litigation in determining bad faith, particularly when the surrounding circumstances have been so clearly laid out in the pleadings. To ascertain whether there was some basis for the litigation in law or fact and to understand the purpose of the litigation, the Court must be able to consider all of the facts and the subjective state of mind of the County in choosing to defend the case. It would be difficult, if not nearly impossible to determine if the County justifiably defended the action without first looking to the County interests. There is no indication in the case law cited in both parties’ memoranda that the Court is bound to only consider the relationship of the parties from the time of filing the complaint. Rather, the case law cited, particularly in *Christian v. Maternal-Fetal Medicine Associates of Maryland, LLC*, the Court took into consideration evidence that the employee brought suit against the employer only after negotiations regarding higher compensation broke down. *Christian*, 459 Md. 1, 27.

The Court does not agree with the County’s argument that it may not consider the history of the parties as it has been so clearly laid out throughout this litigation. To only consider the immediate action with no context as to why it was brought or defended, would undermine the purpose of the rule. While the Court will not consider any actions not clearly alleged within the pleadings, the surrounding circumstances and relationships of the parties are an essential part of this review, and the Court cannot accept the argument that it must be blinded to any actions taken by the County prior to the filing of this action to discern the subjective intent of the County.

III. The County's Defensive Posture Does Not Allow Them to Escape Attorney's Fees Under Rule 1-341.

During the hearing, the County pointed out that they did not initiate the instant litigation, but rather, were served with a summons and merely responded. They further this argument by stating that the County was not necessary to the case because MDE had the sole authority to halt or continue review, but NWM chose to unnecessarily name the County as a defendant, which then required them to defend themselves. The County states that it would not be reasonable to find that because a defendant thinks that there is no claim, they should have to accept judgment. NWM responds that they had no choice but to bring the case to protect their property and due process rights after bringing the issue to the County's attention and the County's refusal to retract the letters.

While the Court understands that the County did not initiate the case, the County's defensive posture in the matter has little to no bearing on whether the County acted in bad faith or without substantial justification. As the County contended, the rule applies to cases "maintained or defended" in bad faith. Therefore, the County's "mere response" to the summons and continued defense in the litigation, if the Court finds was maintained in bad faith or without substantial justification, would warrant fees. Simply because the County has never seen a case where the Defendant has been required to pay fees does not mean that there is no situation in which it would be required. To the contrary, the rule provides a remedy for the exact purpose of requiring a defendant to pay fees when such situation merits it. The County was an essential party in this case as evidenced by the Court's findings that the letters sent were not mere advice and forced MDE to halt its review. The County's suggestion that it was a mere bystander forced into this case is simply not accurate.

While defendants have a right to defend themselves, that right is not without bounds. The County's statement that all Defendants with no claim should not have to accept judgment simply does not comport with the law. The purpose of the courts is to protect individuals' rights, and that purpose would be frustrated if courts allowed governments to unreasonably infringe on rights without any substantial justification for doing so and then required the party to pay extensive litigation costs to get them back. As NWM contends, the entirety of the litigation could have been avoided simply by the County retracting the letters and allowing MDE to continue its review of the application. Without filing the complaint, NWM would have no remedy for the clear infringement of their due process rights given the County's unwillingness to retract the letters. The County, on the other hand, would have suffered no loss by retracting the letters and raising their claims before the Board as is required by the County Code. If the County acted in bad faith or without substantial justification, the Court is unwilling to allow the infringement on NWM rights solely based on the County's defensive posture in the case.

IV. The County Acted in Bad Faith or Without Substantial Justification by Defending its Clearly Erroneous Actions with No Evidence of Legal Merit.

A. Bad Faith

The County argues that there was no bad faith and distinguishes the instant case from *Inlet Associates v. Harrison Inn Inlet, Inc.* (holding that the trial judge did not abuse his discretion in finding that under the circumstances, the Plaintiff acted in bad faith through the mailing of a draft complaint and a letter stating to drop the lawsuit was an act of intimidation). They support this argument based on the consented expedited schedule, stating that the County was amenable to resolving the case quickly and efficiency.

In its citation of Maryland case law of the definition of bad faith, the County distinctively failed to include that bad faith was defined to include when “a party litigates vexatiously for the purpose of harassment, unreasonable delay, or *for other improper reasons.*” Md. Rule 1-341 (emphasis added). Courts have held that the purpose of the rule is to prohibit pleading that is labeled for one purpose but is in fact filed for delay. While the County is correct in stating that its agreeability to the expedited schedule indicates an interest in timely litigation, which likely decreased the amount of time and attorney’s fees spent, NWM was still required to bring the suit and litigate in turn, accumulate attorney’s fees.

If the County chose to defend a suit without a colorable basis for doing so, based on the parties’ longstanding history, it can easily be inferred that the only purpose of the County’s defense of clearly indefensible actions would be to impute additional delays onto NWM’s efforts to obtain a permit to operate the Landfill that has been ongoing for over 30 years. If the County’s sole interest was to voice concern with the project meeting the requirements under the special exception, it had a clear avenue to do so by filing a motion with the Administrative Hearing Office. Anne Arundel County Code § 18-16-404. Rather, the County chose to expedite the process by sandbagging the project and going to MDE directly without an opportunity for NWM to respond. Based on the surrounding circumstances of the parties and the County’s inability to provide any rational basis in fact or law for why they chose to send the letters and then refused to retract them leaves only one possibility. The Court finds that the County’s actions in choosing to send the letters which the County clearly knew would lead to this litigation and the continued resistance to NWM in this action despite any legal basis for doing so, is indicative of bad faith.

B. Substantial Justification

Additionally, the County argues that nothing was done without substantial justification and rely heavily on the appellate court's holding in *Dent v. Simmons* (holding that there was no lack of substantial justification based solely on the trial court's finding that there was no current legal justification for the action to be brought). The County contends that there is a reasonable basis as to the impossibility argument raised. They further state that their arguments of impossibility and that the special exception was better reserved for the Board were still considerable as evidenced by this Court holding the matter sub curia.

In the hearing with this Court to argue the parties' motions to dismiss, the County argued that the issue of impossibility was reserved for the Board and could not be considered, despite the fact that the Board had already considered and denied that argument. The County correctly points out that a novel argument cannot be the sole basis for a finding of bad faith or lack of substantial justification. While the argument of impossibility may be novel, it was not an argument considered by this Court. As discussed at length by the Appellate Court of Maryland, the County clearly waived the impossibility argument in the motions hearing before the Court. As the County contended, the issues of impossibility and the special exception should have been brought before the Board, which would not have required intervention by this Court, if the County had retracted its letters which halted the application's review. We now turn to review the defense of sending of the letters to determine if there was a substantial justification for doing so.

The County's subsequent argument was that the letters sent were merely advice rather than a directive for MDE to halt NWM's application review, which was within the scope of the County Executive's duties. NWM states that this was not a case of first impression with regard to the Anne Arundel County Code. Rather, the code was enacted by the County itself, and clearly

states that the avenue for a rescission of modification is through the Board as laid out in §18-16-404. They further point out that the County has offered no case law or other legal justification offered by the Defense as to why they would think that the County Code would not apply as it is so clearly written.

To lack substantial justification, the party must have no reasonable basis for believing that the claims would generate an issue of fact. If the defense was maintained without substantial justification, it never should have been defended, in turn costing NWM attorney's fees which should not have been necessary.

While this Court does not believe that the actions of the County Executive and County Attorney before the filing of the suit cannot, by themselves, be grounds for attorney's fees, the action of sending the letters led NWM to file a claim to pursue their due process rights, of which the County's subsequent conduct can and will be reviewed for bad faith or lacking substantial justification. The argument that the County could not have known that sending the letters was not the legal process because laws regarding landfills is undeveloped is wholly unconvincing. The County Code unambiguously states the process for rescission, suspension, or modification of a special exception as "[o]n motion of the County or an aggrieved party, or on the Administrative Hearing Officer's own initiative, approval of an application for a rezoning, variance or special exception shall be rescinded, suspended, or modified if the Administrative Hearing Officer determines, *after a hearing*." Anne Arundel County Code § 18-16-404 (emphasis added). Even with "very little guidance" as to how to proceed, the County has no basis for believing that the correct legal avenue would be writing a letter to MDE and completely circumventing the Board or the hearing process. The County claims that these letters were merely advice, while also stating that it was reasonable to think that the County Executive, who appoints the Planning and

Zoning Officer, would be able to send the letter advising them that the application should be halted for failure to obtain the necessary fee simple access. By the County's own argument, MDE would clearly not have taken the letters as mere advice, given the apparent authority, as the Court's 2021 Memorandum Opinion discussed at length.

The County chose, in spite of the notice given to them by NWM, to defend the actions of the County Executive and County Attorney regardless of a complete lack of legal basis for doing so. As this Court noted in its Memorandum Opinion, the arguments made by the County were not compelling and failed to assert any basis in the law for their contentions, which has been upheld by the Appellate Court.

The other arguments brought before the Court, i.e., that the letters were mere advice and the right of the Executive to send the letters, do not have any legally cognizable basis, and fail to assert any fairly debatable, colorable, or legitimate argument for the Court to consider. Without a substantive basis that would allow the Executive to send letters to MDE providing advice despite the clear requisite that all applications go through the Board, there is no indication that would allow the County to reasonably believe that sending the letters was within the scope of the Executive's duties and would not cause this exact type of litigation. The Court can find no evidence of merit or legal basis in the arguments furthered by the County and therefore finds that the defense of the instant litigation lacks substantial justification.

V. The Lack of Substantial Justification in Defense of the County's Actions Merit an Award of Attorney's Fees to NWM.

Defense counsel relies upon courts' findings that sanctions are "limited to those situations without colorable merit" and should not be imposed simply because a cause of action avows misconceived legal basis on which relief is sought or urges a legal theory which was not adopted by the court. Maryland courts have made clear that sanctions are not intended to punish a party

opponent for not being successful. As discussed at length, the County failed to rely on any legal basis which would provide a colorable or meritorious defense. Further, the only legal theory offered by the County was that of impossibility, which was waived during the hearing on the motions to dismiss.

The County argues that they should not be penalized simply for losing based on a novel argument, but the arguments advanced by the County are not novel, they are illusory. NWM gave the County the opportunity to rescind the letters which would have allowed MDE to continue its review and negated all due process violations. The County went against its own distinct procedures by sending the letters and subsequently defending the actions by stating that it was unclear what the rules required. This Court noted in its Memorandum Opinion that "the County has not provided any cases, statutes, rules, or regulations that allow a County Executive to circumvent the processes of the Board and order that a permit application be rescinded or halted." Mem. Op. at 8. The arguments are not colorable or novel, but simply lack any merit and are clear attempts to further prevent NWM from obtaining the permit that they applied for over 30 years ago. The search for a legal basis during the litigation by defending a case in which the County knew they had gone outside of the bounds of their own regulations amounts to a no less than a serious abuse of the judicial process, the type of which Rule 1-341 is specifically intended to deter.

Rule 1-341 is not intended to punish legitimate advocacy. However, based on the history of the parties, it is clear that the County has been using the judicial process to defend an action which they knew was not substantiated and could have been remedied upon first notification by NWM that their actions were in violation of NWM's due process rights. While this Court understands that attorneys' fees are only to be granted in extraordinary circumstances, the Court

finds that the County purposefully blocking property and due process rights by defending illegal actions is clearly an extraordinary circumstance.

While the County minimized the amount of attorney's fees NWM was required to expend by agreeing to the expedited schedule and waiver of trial, NWM still incurred costs, which would not have been necessary if not for the County's insistence in defending its action without one supporting example to provide a legal basis. The County's continued persistence in deterring NWM's progress in operating the Landfill is certainly a rare and exceptional situation, in which NWM has been required to expend substantial costs and attorney's fees simply to obtain the same due process rights as any other landowner in the County. The lack of substantial justification in this case warrants attorney's fees to compensate NWM for being forced by the County to file and litigate this action against a meritless defense simply to receive the due process rights which they are rightfully owed.

VI. Reasonable Attorneys' Fees

While the Court agrees that NWM is due attorney's fees under Rule 1-341, the amount requested is, as stated by the County, beyond the pale. The Court is not impressed with the request for over \$1.7 million dollars based on majorly redacted billing records quoting over one thousand five hundred (1500) hours by Quinn Emmanuel alone. NWM contends that they should be compensated at eight hundred and seventy-five dollars (\$875.00) an hour but gives no compelling arguments as to why the Court should deviate from the locality factor required by the rule. As the Court indicated at the motions hearing on October 2, the parties shall submit supplemental filings of attorney's fees within 15 days of the docketing of this Memorandum providing a clearer basis as to the work done at a reasonable local rate to be considered by the Court.

01/22/2024 2:09:41 PM

Date


RICHARD R. TRUNNELL, Judge
Circuit Court for Anne Arundel County
Richard Trunnell

Response to Comment 24
Response-MDE-Question 24

CHESAPEAKE TERRACE QUESTIONS FOR APPLICANT

24. The Special Exception granted by the AA Board of Appeals provides for an entrance only along Conway Road. The proposed East Entrance from Conway Road constitutes a risk to human health and safety. Please provide an alternative entrance, approved by AA BOA, which does not intersect or adjoin the West County Elementary School parcel.

Response to No. 24 is attached.

Response No. 24

The Maryland Department of Environment (“MDE”) requests an alternative entrance, approved by the Anne Arundel County Board of Appeals, as a condition of approval of the refuse disposal permit. Procedurally, this cannot be done. The Anne Arundel County Board of Appeals is an appellate agency created by statute to hear appeals from rulings, decisions, and orders of Anne Arundel County departments and administrative and adjudicatory orders. This includes orders relating to zoning. See Section 602, Anne Arundel County Charter, County Board of Appeals. This Board does not hear matters of first impression; only appeals from Anne Arundel County departmental determinations. The county agency which makes initial rulings on permitting improvements, related to an approved special exception to operate a rubble landfill is the Anne Arundel County Office of Planning and Zoning. The regulations for zoning are contained in Article 18 of the Anne Arundel County Code.

With respect to the merits of the request from MDE to provide an alternative access to the facility as part of the State of Maryland refuse disposal permitting process for a rubble landfill; this request violates the statutory requirements in the State of Maryland providing for dual regulation of proposed rubble landfill operations between the local county zoning authority and the State. Under Maryland Code, Local Government, § 10-305, it is the county that enacts local laws relating to zoning and planning to protect and promote public safety, health, and welfare. It is the policy of the State that orderly development and use of land and structures requires comprehensive regulation through local government. The county in which the landfill is located determines where a rubble

landfill use can be located and may place conditions on that use to protect the public health, safety, and welfare. In defining the role on issuing refuse disposal permits for a designated rubble landfill site, the Maryland Code, Environment Article, § 9-210 (a) (3) plainly states that the “county” is the one to review whether the site meets all applicable zoning requirements. The county in which the proposed landfill is located must submit to MDE a written statement that the site meets all applicable zoning requirements and that the site is included in its solid waste management plan before MDE may continue its five-step permitting process beyond its Phase I Preliminary Information studies. Only after it receives this statement from the county can MDE proceed to consider the Phase II Geology and Hydrogeology; Phase III Engineering, Design, and Operations of the facility, Phase IV Internal Review; Phase V Public Hearing; and Final Determination on the permit. It is the function of MDE to permit the facility to protect the public by closely addressing the geology, hydrology, engineering, and the operations of the facility’s internal operations.

Throughout these distinct permitting phases, MDE and the county maintain separate and distinct roles. Once a letter of compliance with local zoning regulations is issued by the local county zoning authority, there is no requirement of updated written compliance from the county, despite the passing of perhaps years in the permitting process. Notably, the plain language of Environment § 9-210 (a) (3) does not require or permit MDE to evaluate a facility’s compliance with local zoning and land use codes. No evaluation or factual determination on the part of MDE is required by the statute, except to determine whether it has received the statement. Piney Orchard Community Association v Maryland Department of the Environment, 231 Md. App 80, 100, 149 A. 3rd 1175 (2016).

The county's right to enact and enforce zoning regulations was not preempted by the State statute governing landfills; the legislature made it clear through Environment § 9-204 and § 9-210 (a)(3)(1) to locate environmental permitting with the Maryland Department of Environment and zoning with the local county government. Md Reclamation Associates v. Harford County, 414 Md. 1, 994 A2d 842 (2010). In this question MDE is attempting to regulate zoning issues that are by statute reserved to the local county government. It is respectfully requested that this issue be withdrawn.

Chesapeake Terrace History

In this case, the applicant purchased the Chesapeake Terrace site, a severely eroded un-reclaimed sand and gravel site, best described as a "moonscape," with the intent to construct and operate a rubble landfill on the property. In order to do so, the applicant needed zoning approvals from Anne Arundel County to locate the facility at the Odenton, Anne Arundel County site; the applicant also needed to obtain a refuse disposal permit from the Maryland Department of Environment. In 1988, the applicant began this process to obtain from Anne Arundel County a special exception to permit a special exception rubble landfill use on the Chesapeake Terrace, Odenton Maryland site with a variance to permit the filling and reclamation of excavation and erosion areas from the previous use that were closer to the property set back line than were allowed under the landfill use. The applicant also filed with MDE Refuse Disposal Permit Application and Phase I report for the proposed Chesapeake Terrace Rubble Landfill.

On December 23, 1993, after sixteen hearing dates spanning one and a half years, covering all aspects of the proposed use including traffic, noise, vibrations, fumes, compatibility with the neighborhood, health, safety and welfare of the public, the Board of Appeals of Anne Arundel County, considering all testimony, exhibits, and expert studies, granted an approval for a special exception rubble landfill use under Article 28, Section 12-242 of the Anne Arundel County Code. Copy of Board of Appeals decision attached as Exhibit A. The Board of Appeals found that the applicant had shown itself capable of meeting all of the particular and rigorous zoning standards for the rubble landfill as required by Section 12-242; that the use would not endanger the public health, safety, and welfare; and that the use would be compatible with the neighborhood. Considering the evidence and testimony presented to them over these sixteen hearings, the Board attached conditions to the special exception use concerning access and road improvements consistent with its powers under local zoning regulations to monitor road access, to require road improvements, and to issue grading and building permits within the county as follows:

Special Exceptions

The special exceptions for a sand and gravel operations and rubble landfill operation are granted with the following conditions:

1. Patuxent Road shall not be used as an entrance to the operation.
2. Conway Road is to be used as the entrance to the operations, with the following conditions:
 - a. A right turn lane shall be constructed on eastbound Conway Road at Maryland Route 3 to a minimum length of 500 feet.
 - b. From the intersection of Patuxent Road and Conway Road to the entrance of the site, the road shall be improved with 12-foot travel lanes and 8-foot shoulders improved to county standards (pursuant to Article 26, §3-202(d), Anne Arundel County Code) where the county right-of-way exists. Additionally, the Petitioners shall pursue a diligent course to obtain the right-of-way from private property owners where possible.

c. The road improvements on Conway Road from Route 3 to Patuxent Road shall be constructed before any rubble landfill or sand and gravel operation begins; road improvements from the intersection of Conway Road and Patuxent Road to the entrance of the site are to be completed within one year of the start of operations.

d. The access obtained to the site from Conway Road shall be through a fee-simple right-of-way, not through an easement.

The issues of road access and road improvements are clearly a function of county local zoning authority. See Opinion, Attachment A, pp. 34-35.

MDE had begun to process the Phase I geological and other studies for the refuse disposal permit, but stopped pending receipt of statement from the County stating that the proposed facility is in compliance with the county zoning regulations and was included in the county's solid waste management plan which is required under Environment Article § 9-210 (b) to continue the application process.

The Board of Appeals decision was appealed, and the County refused to include the landfill in their Solid Waste Management Plan as well as refused to send a letter to MDE stating that the applicant is in conformance with all local zoning regulations. In 1995, the Court of Appeals affirmed the Board's decision to grant the special exception. See Halle Companies v. Crofton Civic Association, 339 Md 131 (1995).

The County continued its resistance against the applicant and still refused to send a letter of conformance or include the landfill in its Solid Waste Management Plan. The applicant filed Complaint in the Anne Arundel County Circuit Court seeking a mandamus and declaratory judgment. Partial summary judgment was granted for applicant and the County once again refused to issue conformance letter or to include the facility in its Solid Waste Management Plan. The applicant filed for contempt and in 1997 the Court issued a

Contempt Order fining Anne Arundel County \$250,000.00 and stating that they can purge the contempt by issuing a conformance letter and including the landfill in its Solid Waste Management Plan.

The County finally complied with the numerous Court Orders and sent the conformance letter on August 4, 1997. Three months later, the County sent another letter to MDE stating that the special exception had expired. In 2000, the Court of Special Appeals held that the deadline for the exception was tolled during litigation. See National Waste Managers, Inc. v. Anne Arundel County, 135 Md App. 585 (2000). (Cert. denied 2001).

Notice from Anne Arundel County Office of Planning and Zoning to MDE that the facility meets all applicable county zoning and land use requirements and included the facility in the County Solid Waste Management Plan was sent June 20, 2001. This litigation and the resulting delay caused the applicant to become subject to significant regulatory changes introduced in 1997, including the requirement of landfill liners, additional hydrology studies, and other engineering factors. The applicant virtually had to start the permitting process over again with MDE.

Upon receipt of the compliance letter from the County in 2001, MDE immediately began to process the Phase II and Phase III submittals by the applicant. These hydrogeological, engineering, and operational approvals are complicated, and involve a back and forth, interactive, process designed to protect the public from dangers which might be caused by the internal operations of the rubble landfill use. Again, there were intermittent delays related to the County's continuing obstructiveness and litigation related

to protestant's appeals. See, e.g., National Waste Managers, Inc. v. Forks of the Patuxent Improvement Association, 453 Md 423 (2017).

During this time that MDE was conducting permit review on the applicant's submittal, Anne Arundel County requires the applicant to continually request an extension of time for their special exception. The County's regulations require a special exception to be implemented and operational within two years of the granting of the special exception. The applicant therefore has been back to the County for extensions of time on four occasions under which extensions of time have been granted: 2004, 2005, 2011, and 2022. During each of these hearings, the applicant had to show that the extensions of time were required by unusual circumstances caused by the lengthy MDE permitting process, and that the extension of time would be compatible with the neighborhood; would not adversely affect neighboring properties; and would not be detrimental to the public welfare. See Anne Arundel County Code § 18-16-105.

During each of these proceedings for extension of time, the issue of access to the approved landfill site was raised. From the beginning of these extensions, first in 2003, it has been the County's position that the road access will be addressed as part of the County permitting process only after the applicant receives final refuse disposal permit from the State. It is not an issue for an extension of time. See report of Suzanne Schappert, Planner III, Office of Planning and Zoning, Findings and Recommendations dated June 8, 2006, p. 3, Exhibit B.

This policy continued and was again addressed by John Fury, Planner, Office of Planning and Zoning, during testimony at extension hearing on August 15, 2013. John

Fury, Planner, Office of Planning and Zoning during testimony at extensions of time hearing on August 15, 2013, transcript Exhibit C, explained.

.... The Board stipulated that the only access to this facility to be from Conway Road. It has to be fee simple. That was a condition of the special exception and variance approvals this Board placed on this applicant back in 1993.

So, this facility won't operate, cannot get a permit to do anything, county permit, until all of those conditions have been satisfied including the fee simple ownership of an access road originating from Conway Road. pp. 88-84.

When asked why the applicant can't file a building permit application even without MDE approval, John Fury responded that if the applicant were to file to get County permitting approvals for this facility, they would not be accepted or processed; that the applicant would have to have MDE approvals first before the Office of Planning and Zoning before they could process such a permitting request, p. 94, John Fury transcript.

This issue was most recently addressed by the Board of Appeals in its Second Supplemental Memorandum of Opinion dated December 1, 2022, attached as Exhibit D, a continuation of the 2013 and 2018 hearings on this request granting the most recent fourth extension of time, after two appeals, as follows:

"The instant request would grant the Petitioners additional time to obtain the necessary approvals from the Maryland Department of Environment ("MDE") and the County. The rubble landfill cannot commence operations without these approvals. Thus, nothing happens on this site until MDE grants approval, and the County issues building and grading permits and the full panoply of permissions required for a project such as this.... p. 16.

And concluded by granting the variance.

"It will only provide time for the Petitioners to finalize the MDE permit review process and perhaps initiate the County building/granting permit process." p. 19.

It is significant that in the summary, the Board of Appeals referred to testimony at hearing of Edward Dexter, Administrator of the Solid Waste Program, MDE, after being questioned about the road access from Conway Road, his response was “it is not something that MDE would have required; it is a requirement of the County.” Opinion, id., p. 3. MDE clearly knows the location and entrance to the approved special exception are Anne Arundel County local land use issues.

In considering the criteria for the variance necessary for the extension of time to implement the use under Anne Arundel County Code, §18-16-405 (a), the Board of Appeals also addressed whether the variance would alter the essential character of the neighborhood; substantially impair the development/or use of adjacent properties or will be detrimental to the public welfare. Their findings are reflection of the Board’s position on these issues in 2022.

“In addressing the actual issue, potential alternates to the essential character of the neighborhood, the facts are as follows: (1) the character of the neighborhood is a mix of uses that range from rural residential to commercial resources for the community; (2) the Petitioners have an approved landfill special exception on this site; and (3) the approved use of this property as a rubble landfill is and has been known to the community, and so, is part of the character of the neighborhood,” p. 17.

This site has been approved as a landfill since 1993. In the intervening years, the community has been extensively developed around the Petitioner’s property. The adjoining properties to the east are in County and Board of Education ownerships. One parcel is used as a park and the other is now in the permitting process for a school. While we sympathize to the voices of new residents in the Two Rivers community that their home builders failed to tell them that a rubble landfill was possible, the County was fully aware of the approved landfill and approved the developer’s Two Rivers subdivision nonetheless.” Opinion Id, at 14-15.

The Board concluded that the variance would not change the character of the neighborhood; would not impair the appropriate use of adjacent properties and will not be detrimental to the public welfare, concluding “the original 1993 decision determined that these uses have public benefit and are needed.” Opinion, Id at 19. The Board of Appeals granted this fourth extension of time on December 1, 2022, and within this Opinion, the Board of Appeals refused to consider the issue of road access, stating that the access matters are for another time, before another Board.” P. 16. The Board of Appeals clearly considers the road access to be a local county issue.

During the pendency of the judicial and administrative review on the fourth extension of time to enable the applicant to continue with State and County permitting processes, the County addressed correspondences to MDE, one by County Executive Steuart Pittman on August 21, 2020, and a second by County Attorney Gregory Swain on October 2, 2020, stating that the applicant was no longer in conformance with the special exception and that the permit process should be halted due to their interpretation of the required access for the landfill. Upon receiving these letters, MDE stopped the application process.

The applicant filed for declaratory relief and mandamus. Circuit Court for Anne Arundel County, Case No. C-02-CV-20-00229, *National Waste Managers, Inc. vs. Anne Arundel County, et al* against the County and MDE on May 26, 2021. The Circuit Court determined that the County Executive and County Attorney overstepped the bounds of their authority by sending the letters to MDE demanding they halt the permit application processing. After hearing in the Circuit Court for Anne Arundel County, Case No. C-0-

CV-20-002291, captioned National Waste Managers, Inc. v. Anne Arundel County, dated May 26, 2021, copy attached as Exhibit E, the Court explained,

“It is undisputed that in 2001, the Planning and Zoning Officer, Dennis Caravam, sent a letter to Barry Schmidt, MDE Administrator, explicitly stating NWS (Applicant) meets all applicable county zoning and land use requirements subject to the conditions required by the special exception approval” This letter clearly fulfilled the requirements of Environment Article Section 9-210 (a)(3) of the Maryland Code requiring the County to provide MDE with a written statement of conformance. If the County now believes that the conditions of the special exception cannot be performed, that is a matter solely for the County Board of Appeals to determine.”

The court continued, the Anne Arundel County Code is clear that the proper method to suspend or rescind a zoning application with a special exception is through the Board. “On motion of the County Approval of an application for a Special exception shall be rescinded suspended, or modified if the administrative Hearing Officer determines, after hearing, thatthe use of the property deviates fromany conditions imposed.” Anne Arundel Code, Administrative Hearings, §18-16-404.

The Court concluded that there were no avenues that would allow the County Executive to circumvent the processes of the Board and order that a permit application be rescinded or halted. The Court found that the letters sent by Messrs. Pittman and Swain overstepped the bounds of their authority and violated the due process rights of the applicant. P.8. The Court concluded while the County decides zoning issues, these fundamental rights and obligations of landowners and their ability to acquire, use and maintain their land within the confines of their property interest must be respected and their rights to be heard honored.

In this case, the applicant continues to have a lawfully approved special exception to operate a rubble landfill at the Chesapeake Terrace site. The conditions in that 1993 determination are that access be from Conway Road, fee simple. There have been no changes to that special exception nor has the County requested any change to that special exception.

Based on these letters from the County MDE halted processing the refuse disposal permit.

MDE was included as a party, Defendant, to this litigation. While the Court recognized that MDE has a non-discretionary duty to follow the information given to them by the County under Environment Code 9-210, MDE also has a duty to know and follow proper procedure, and this duty takes precedence to any attempts by the County to skirt the due process rights of landowners. Opinion P. 10. After recognizing that the 2001 letter of compliance remained in effect, the Court ordered that the letters of county executive and county attorney were void, the court ordered MDE to continue its review of the applicant's permit application to operate the Chesapeake Terrace landfill.

This decision was appealed by Anne Arundel County and affirmed. Case unreported decision dated December 8, 2022, Case No. 0565, September Term 2021, Court of Special Appeals. MDE did not appeal the decision indicating to the court and applicant that it would follow the determination of the Circuit Court for Anne Arundel County.

In the case of Anne Arundel County, the Circuit Court considered motion for attorney's fee under Maryland Rule 1-341 which governs bad faith and unjustified proceedings in a civil action. This Rule states.

.. if the Court finds that the conduct of any party in maintaining or defending any proceeding was in bad faith or without substantial justification, the court, on motion by adverse party, may require the offending party ... to pay to the adverse party, the costs of the proceeding and the reasonable expenses, including reasonable attorneys' fees ...

After extensive review of the purpose of the bad faith Rule to eliminate the abuses of litigation that is clearly without merit, the Circuit Court, by decision dated January 26, 2024, found that the County's actions in choosing to send the letters in an effort to force MDE to halt its review and to delay, perhaps forever, the refuse disposal permitting process, were sent in bad faith and that the ensuing litigation was pursued without substantial justification, meriting an award of attorney's fees under this statute. The amount of the attorney's fees award remains under consideration by the Court. Copy of Circuit Court decision attached as Exhibit F.

MDE remains under Order from the Circuit Court to continue to process the application for a refuse disposal permit filed by this applicant by virtue of the May 26, 2021 orders of the Circuit Court. MDE sent a letter to the applicant on June 16, 2020, stating that the Phase II Geological and Hydrogeological Report is approved. On January 12, 2022, MDE sent a letter to the applicant stating that the responses to Phase III Engineering Plans and Specifications Report is satisfied and requested applicant to submit the final submission of the Phase III report. On March 11, 2022, MDE sent a letter to the applicant stating that the Phase III report is complete. On March 25, 2022 MDE received a declaration of covenant for the landfill property. On June 15, 2022, MDE received the Surety Bond necessary to the landfill use under COMAR 26.04.07.09. MDE concluded its Phase IV

Internal Review and issued draft Refuse Disposal Permit No. 1993-WRF-0225. A public hearing on the draft permit was scheduled and held, on February 23, 2023.

In early May, 2023, MDE advised the applicant that the United States Fish and Wildlife Service and Corps of Engineers had submitted comments that there was concern about the project interfering with the habitat of an endangered species, the Northern Long-Eared Bat, and that a study would have to be done to resolve the issue. After months of consultation with those federal agencies, a resolution of the issue was reached under which the applicant agreed to limit the months during which clearing of the property could be performed and the federal agencies submitted statement, on November 8, 2023, that the project would be unlikely to substantially impair the habitat of that species concerned.

It is significant that at no point in the 35 plus years during which this State permitting process for a refuse disposal permit has MDE ventured or asserted any right to control the location of the approved facility, the site, access, or road improvements. The county, state, and courts have repeatedly acknowledged that the location and road access issues are zoning issues, exclusively, within the authority of the local county agency. Under Environment Code §9-210 these matters remain as the exclusive purview of the local zoning authority. The County determines the site for this special exception use including the health, safety, and welfare of its residents. MDE does not control the location of the use which it now threatens to do.

While the expansion of MDE's role in permitting facilities to address environmental justice evaluations of certain permit determinations has been under consideration by the

Maryland State legislature, those proposals, House Bill 24 and Senate Bill 96, have not been passed. Location of permitted facilities for landfills remains a County determination.

CONCLUSION

The Board of Appeals of Anne Arundel County has already considered the access to the rubble landfill facility, and the public health, safety, and welfare, when they granted the special exception for the use in 1993. The Board placed conditions on the special exception. The owner would not be allowed to access from Patuxent Road. The owner would be allowed to access from Conway Road through fee simple entrance. This is an approved facility with those conditions and only the listed access conditions on the use.

MDE in Question No. 24 requests that the applicant provide an alternative entrance, approved by the Board of Appeals which does not intersect or adjoin the West County Elementary School parcel. This is a school use initiated by the Board of Education and Anne Arundel County within the past four years on property adjacent to the approved landfill site, with full knowledge of the approved landfill use. Anne Arundel County conducted an environmental assessment and feasibility study for the property per Anne Arundel County Resolution dated March 3, 2020, and approved the location for use as a school in 2020 with knowledge that the previously approved landfill use would put truck traffic on nearby roads. The entrance to the landfill is the sole concern of Anne Arundel County who alone determines appropriate uses within the county. This request by MDE to demand a change to an approved special exception entrance requirements is an improper attempt to interfere with the authority of the local zoning authority, Anne Arundel County,

to determine zoning issues within its boundaries. The County was fully aware of any health, safety, and welfare concerns which might present when it transferred the West County Elementary School property to the Board of Education for use as an elementary school. The Board of Education must have considered the location safe in constructing a school at that location. This request to require alternate road access, citing safety concerns, directly violates the scope of MDE review during the state permitting process. MDE has been provided with statement that this approved landfill use is in compliance with all local zoning regulations as required by Maryland Code, Environment § 9-210. The County decisions to locate an elementary school in 2023 next to an approved special exception for a rubble landfill dated 1993, are purely zoning decisions of local government.

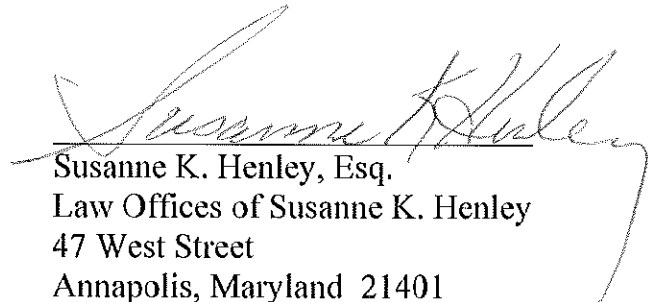
This is both a substantively and procedurally defective request. The Board of Appeals cannot hear such a request; such a request must initiate on permit review with the Office of Planning and Zoning, Anne Arundel County. Anne Arundel County will not process County permit requests for this landfill facility until the applicant has State refuse disposal permit approved. The subject matter is beyond the scope of MDE's permit process; it involves a zoning permit that is impossible to obtain prior to State refuse disposal permit approval.

In light of the inappropriateness of this request, and in light of the applicant's conformance to all applicable zoning laws by virtue of the approved special exception, we request that MDE, by correspondence, withdraw Question No. 24 for response from the applicant. Absent issuing corrective letter, the applicant reserves all rights to point out your contempt of the Order of the Circuit Court for Anne Arundel County dated May 26, 2021,

Case No. C-02-CV-20-002291, directing MDE to proceed processing the refuse disposal permit; a second mandamus action against MDE; and a filing for attorney's fees and costs under Maryland Rule 1-341 for bad faith litigation.

This applicant has been working with MDE and Anne Arundel County for over thirty-five years to obtain all necessary permits for this facility. This about-face by MDE to require alternate access as part of its refuse disposal permit process when all state and county agencies and courts have previously agreed that this is a local county question that cannot be dealt with until after state refuse disposal permit is issued, amounts to unlawful administrative taking of billions of dollars of property rights by a governmental agency.

Please include this request as part of the record on this permit application.



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