

**2024 ANNUAL LANDFILL INSPECTION REPORT
COAL COMBUSTION RESIDUALS FACILITY**

**EDEM REMEDIATION ONE, LLC
HOLLOW ROCK LANDFILL FACILITY
KNOX TOWNSHIP, JEFFERSON COUNTY, OHIO**

Prepared for:

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Houston, TX 77002

Prepared by:

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Carnegie, Pennsylvania 15106

DECEMBER 2024



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1.0 INTRODUCTION

The United States Environmental Protection Agency (USEPA) Administrator signed the Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014, and it was published in the Federal Register (FR) on April 17, 2015 (40 CFR Part 257, Subpart D, Final CCR Rule). The Final Rule established national regulations to provide a comprehensive set of requirements for the safe disposal of CCRs, commonly known as coal ash, from coal-fired power plants.

1.1. OBJECTIVES

This Annual Inspection Report has been prepared in compliance with the Final CCR Rule (hereinafter referred to by the applicable section of the Final CCR Rule). §257.84(b) requires that an Annual Inspection be completed by a qualified Professional Engineer and §257.84(b)(2) requires that an Annual Inspection Report be prepared. The objective of the inspection and report is to confirm that the design, construction, operation, and maintenance of the CCR facility is in good condition and conforms to standard engineering practices for the type of facility.

Key Environmental, Inc. (KEY) completed the Annual Inspection of the Hollow Rock Landfill Facility (Facility, CCR unit) in Jefferson County, Ohio. As required under the CCR Rule, the inspection included:

- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record; and,
- A visual inspection of the landfill to identify signs of distress or malfunction of the CCR unit.

Documents and data available in the Facility's operating record, and other background information on the facility design, construction, operation, and maintenance were reviewed as part of the inspection process. The visual inspection of the Facility was performed on November 26, 2024, by a qualified professional engineer from KEY.

This Annual Inspection report summarizes the findings of the review of facility documents and data, and the visual inspection of the disposal site, in compliance with §257.84(b)(2). The subsequent sections provide background information on the Hollow Rock Landfill Facility, present the findings of the visual inspection; and report on the following, as required §257.84(b)(2):

- (i) Any changes in geometry of the structure since the previous Annual Inspection;
- (ii) The approximate volume of CCR contained in the unit at the time of the inspection;
- (iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and,

- (iv) Any other change(s) that may have affected the stability or operation of the CCR unit since the previous annual inspection.

1.2. OVERVIEW

The Hollow Rock Landfill Facility is located at 15204 State Route 152, Toronto, Ohio. It is a Class III residual solid waste landfill regulated by the Ohio Environmental Protection Agency (OEPA) that received synthetic gypsum (FGD), purge stream solids, and other approved wastes generated at the W.H. Sammis Plant (Sammis Plant). The Sammis Plant ceased electric energy production in May 2023.

The HRLF currently operates under a Permit to Install (PTI) that was issued by the Ohio Environmental Protection Agency (OEPA) in March 2008. Ownership of the Facility and Sammis Plant was transferred from Energy Harbor Generation, LLC (Energy Harbor) to ETEM Remediation One, LLC (ER1) in September 2023. Since the transfer of ownership, ER1 has completed closure activities at both the Sammis Plant and the Hollow Rock Landfill Facility.

1.3. FACILITY DESCRIPTION

The HRLF was located and constructed in Knox Township, Jefferson County, Ohio on the site of a former surface mine. The Facility design capacity was approximately 26.5 million cubic yards (CY) over 142 acres. The landfill development was to be divided into seven (7) construction phases with each phase being built sequentially and certified prior to the completion of filling the current phase. Currently, Phase 1 (Cells 1 and 2), Phase 2 (Cell 3), Phase 3 (Cell 4), and Phase 4 (Cell 5) have been constructed. Cells 1 through 4 have reached their desired elevation for their respective phases and were covered with an intermediate soil cover. From April to September 2024, Cell 5 received wastes from the Sammis Plant approved under PTI Alteration No. 14 including coal fines, residual soil, and fly ash generated from the Plant closure and decommissioning. The majority of the cell was covered with an intermediate soil cover and seeded in September 2024; however, a small area approximately 2.5 acres in size is currently open to receive any residual wastes.

Stormwater runoff is directed to one of two stormwater ponds (identified as Pond 1 and Pond 2, See Figure 1 in Appendix A). Water from the ponds is routed to unnamed tributaries of Hollow Rock Run and Carter Run respectively via Outfall 001 and Outfall 002 in accordance with the Facility's National Pollutant Discharge Elimination System (NPDES) permit (Permit No. 0IN00261*DD). Currently, the Facility's perimeter drainage channel and Pond 1 and Pond 2 are the only permanent stormwater features constructed.

Leachate that is collected by the Facility's underlying leachate collection/base liner system is pumped through a series of force mains to two (2) existing leachate collection basins that are located northeast of the landfill. There, the leachate is stored and subsequently pumped into tanker trucks and then hauled to the Sammis Plant where it is managed in the North Pond. It should be noted that in September 2024, OEPA approved a PTI Alteration to the Hollow Rock Landfill PTI that was prepared by KEY and Civil and Environmental Consultants, Inc. (CEC) for the

construction of a leachate conveyance pipeline. The pipeline will transport leachate from the Hollow Rock Landfill collection basins directly to the North Pond at the Sammis Plant, following the right-of-way of the existing FGD conveyor system. FTS Construction, Inc. (FTSCO) initiated construction of the pipeline in September 2024, with expected completion in the first quarter of 2025.

1.4. RELATED PERMITS

Related permit information is provided in the table below:

ACTIVITY	PERMITS / APPROVALS	STATUS	PERMIT NUMBER	EFFECTIVE DATE
Gypsum/Purge Stream Solids Placement	Hollow Rock Facility PTI	Issued	06-08263	03/28/2008
Alteration Requests – No. 1 through 12	Alterations to PTI	Approved	06-8263	Various
Alteration Request No. 13 – Salvaging Operations	Alterations to PTI	Approved	06-8263	12/19/2019
Alteration Request No. 14 – Proposed Additional Waste Material Disposal	Alterations to PTI	Approved	06-8263	08/24/2023
Alteration Request No. 15 – Proposed Leachate Conveyance System	Alterations to PTI	Approved	06-8263	09/09/2024
Current Facility-wide E&S Controls and Discharge Outfalls	Individual NPDES Permit	Issued	OH0135356 / 0IN00261*DD	03/01/2024
NPDES Construction Site Stormwater	General Permit – OHC000006	Issued	0GC04401*AG	03/19/2024

2.0 SITE DESCRIPTION

As required by the Final CCR Rule §257.84(b)(1)(i), the existing landfill documentation is to be reviewed. This section provides an overview and summary of this review.

2.1. DESIGN CONFIGURATION

The subgrade and base liner system for Cells 1-5 was constructed in sequence from 2009 to 2016. The subgrade for each disposal cell is constructed at a maximum 33% (3 horizontal to 1 vertical) grade on the perimeter side slopes and a minimum 3.5% grade on the floor of the development phase. The base liner system consists of (from bottom to top): 18 inches of recompacted soil liner (RSL), a geosynthetic clay liner (GCL), a textured 60-mil high-density polyethylene (HDPE) liner, a double-sided geocomposite drainage layer, 12-inches of protective cover, and 18-inches of frost protection. Bottom ash from the Sammis Plant was utilized for both protective cover and frost protection.

The leachate management system consists of a geocomposite drainage layer. The bulk of the leachate generated by the deposited waste is conveyed by this geocomposite layer to a series of six (6) inch diameter perforated leachate collection pipes located along the centerline of each sub-phase and generally along the toes of the 33% internal side slopes. The collection pipes are protected by a mound of filter aggregate with a twelve (12) inch protective cover/drainage layer and drain towards a recessed collection sump located at the low point of each sub-phase area. The collection sumps house a pair of eighteen (18) inch diameter leachate extraction riser pipes. Inside the leachate risers at each sump location are extraction pumps connected to discharge pipe, power lines, and manual/automatic on/off controls. The leachate collected by the landfill cells is pumped via side slope riser pumps to the Facility's leachate storage lagoons located adjacent to the CCR disposal pad. The leachate in these lagoons is currently pumped utilizing an overhead loadout system into tanker trucks for transport; however, a pipeline is currently being constructed to convey the leachate directly to the North Pond at the Sammis Plant. Anticipated completion of that pipeline is in the first quarter of 2025.

In the original approved PTI (last revised in November 2007) for the Facility, two different final cover systems were identified and subsequently approved for use. The first approved final cover system included the use of two (2) feet of compacted clay with 30" of final cover protective soil, with the top six (6) inches capable of supporting vegetation. The second approved final cover system, referred to in the 2007 PTI as the "alternate" cover system, included the use of geosynthetic materials including a 40-mil linear low-density polyethylene (LLDPE) geomembrane liner, a geocomposite drainage layer with geotextiles on both sides and 30" of final cover protective soil, with the top six (6) inches capable of supporting vegetation.

2.2. ON-GOING OPERATIONS

From April to September 2024, waste from the Sammis Plant decommissioning operations was deposited into Cell 5, as permitted under PTI Alteration No. 14, approved August 2023. The final waste disposal design slopes are a maximum 33% (3 horizontal to 1 vertical) and a minimum 5%. Slopes or areas that have been inactive for greater than 180 days receive intermediate cover consisting of twelve (12) inches of cover soil. These intermediate slopes may eventually be overlain by waste from adjacent phase areas.

Additionally, in 2024, ER1 began salvaging operations in the landfill to mine the gypsum material which is permitted under PTI Alteration No. 13, approved December 2019. Exploration borings were completed by ER1 in July 2024 and full-scale removal of the gypsum material began in November 2024, in the southeast edge of Cell 2. The mining operations include removing and stockpiling the temporary cover soil and utilizing hydraulic excavators and off-road trucks to excavate and haul the material to the on-site Gypsum Storage Building.

KEY reviewed documents in the facility's operating record, including weekly inspection reports, as part of the inspection process. The site technician identified no conditions such as cracks or structural instabilities [§257.84(b)(2)(ii)] in the weekly inspections that required any corrective action at the Facility in 2024.

2.3. VOLUME OF CCR

As required by the Final CCR Rule §257.84(b)(2)(ii), an estimate of the volume of CCR in the landfill is to be provided as part of the Annual Inspection Report. To facilitate closure of the Sammis Plant, waste materials including fly ash, coal remnants, and residual soils were placed into active Cell 5. Prior to material placement into the cell, Lennon, Smith, Souleret Engineering, Inc. (LSSE) completed a survey on behalf of Lone Wolf Resources on April 12, 2024, to obtain the pre-construction grades. Following waste material placement activities, LSSE again completed a topographic survey on September 11, 2024, and this topographic data was compared to identify changes in the configuration of the cell and estimate the volume of placed material.

Appendix A provides an aerial image (Figure 1) as well as a volume comparison figure (Figure 2) that presents the approximate location and depths of the material placement into Cell 5 in 2024. Based on surveys provided by Lone Wolf Resources and LSSE, an estimated 58,750 CY of material was placed into the Facility in 2024, including 5,320 CY of soil cover placed onto Cell 5.

As discussed in Section 2.2, gypsum mining operations are presently occurring in Cell 2. Site personnel have indicated that approximately 2,500 tons of gypsum material has been removed from Cell 2 and is staged in the on-site Gypsum Storage Building. Assuming approximately 1.2 tons of FGD material in one CY, the volume of gypsum material removed from the landfill as of December 2024 is approximately 2,083 CY.

According to the 2023 Annual Inspection Report, the Hollow Rock Landfill Facility contained approximately 3,861,105 CY of material. In 2024, there was a net increase of approximately 56,667 CY of waste and soil materials placed into the landfill (58,750 CY placed into Cell 5 and 2,083 CY removed from Cell 2). Therefore, the Hollow Rock Landfill Facility contains approximately 3,917,772 CY of material.

3.0 ANNUAL INSPECTION SUMMARY

As required by the Final CCR Rule §257.84(b)(1)(ii) a visual inspection of the landfill was conducted. This section of the report provides a brief description of the inspection process that was completed.

3.1. INITIAL SITE REVIEW

The Annual Inspection was conducted by Mr. Mark Keck, P.E. of KEY on Tuesday, November 26, 2024. Mr. Keck had reviewed the previous reports, designs, and other reporting files prior to the site inspection.

3.2. INSPECTION SUMMARY

The inspection proceeded in a counterclockwise manner from the southeastern side of the Facility, starting at Cell 2. Appendix B provides the *Landfill Annual Field Inspection Report* (Field Report). Figure 3 in Appendix A accompanies the Field Report and provides the approximate locations of any noted conditions. Appendix C provides a photographic log of the landfill and associated facilities and the photograph location map can be found on Figure 3. The Hollow Rock Landfill is in good structural condition.

Changes in Geometry [§257.84(b)(2)(i)]

There were no changes to slopes in the form of slides, sloughs, or bulges, or other indication of deformation or other indicators of instability.

Structural Weakness [§257.84(b)(2)(iii)]

No indication was found of an actual or potential structural weakness of the CCR unit or any existing condition that was disrupting or had the potential to disrupt the operation and safety of the CCR unit and appurtenant structures.

Other Changes [§257.84(b)(2)(iv)]

No changes were found to the CCR unit that could affect the stability or operation of the Facility since the previous inspection.

4.0 RECOMMENDATIONS

4.1. RECOMMENDATIONS – NORMAL MAINTENANCE

Based on the Annual Inspection, the following regular maintenance items are recommended to be completed as site conditions allow:

- Continue to monitor the woody vegetation on the southeastern slope of Cells 1 and 2 and remove, as necessary;
- Repair the erosion on the haul road to Cell 5 and add additional stormwater diversion controls (i.e., rock check dams), as necessary;
- Continue to monitor the erosion rills including near the northwest Cell 4 access road and on Cell 5's temporary soil cover and repair, as necessary;
- Monitor and repair the leak observed at the Cell 4 sump riser and blind flange;
- Backfill, cover, or visually mark all open boreholes completed for the salvaging operations within the landfill's limit for safety purposes;
- For Pond 1, the brushy vegetation at the emergency spillway should be cut;
- Repair the cut chain-link fence near the outlet structure of Pond 2; and,
- For Pond 2, the discharge end of the outlet pipe should be cleared and the rock apron repaired.

4.2. RECOMMENDATIONS OTHER THAN NORMAL MAINTENANCE

None.

4.3. DEFICIENCIES DISCOVERED

As noted in the Final CCR Rules "If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken" [§257.84(b)(5)].

No deficiencies or releases were observed as part of this Annual Inspection.

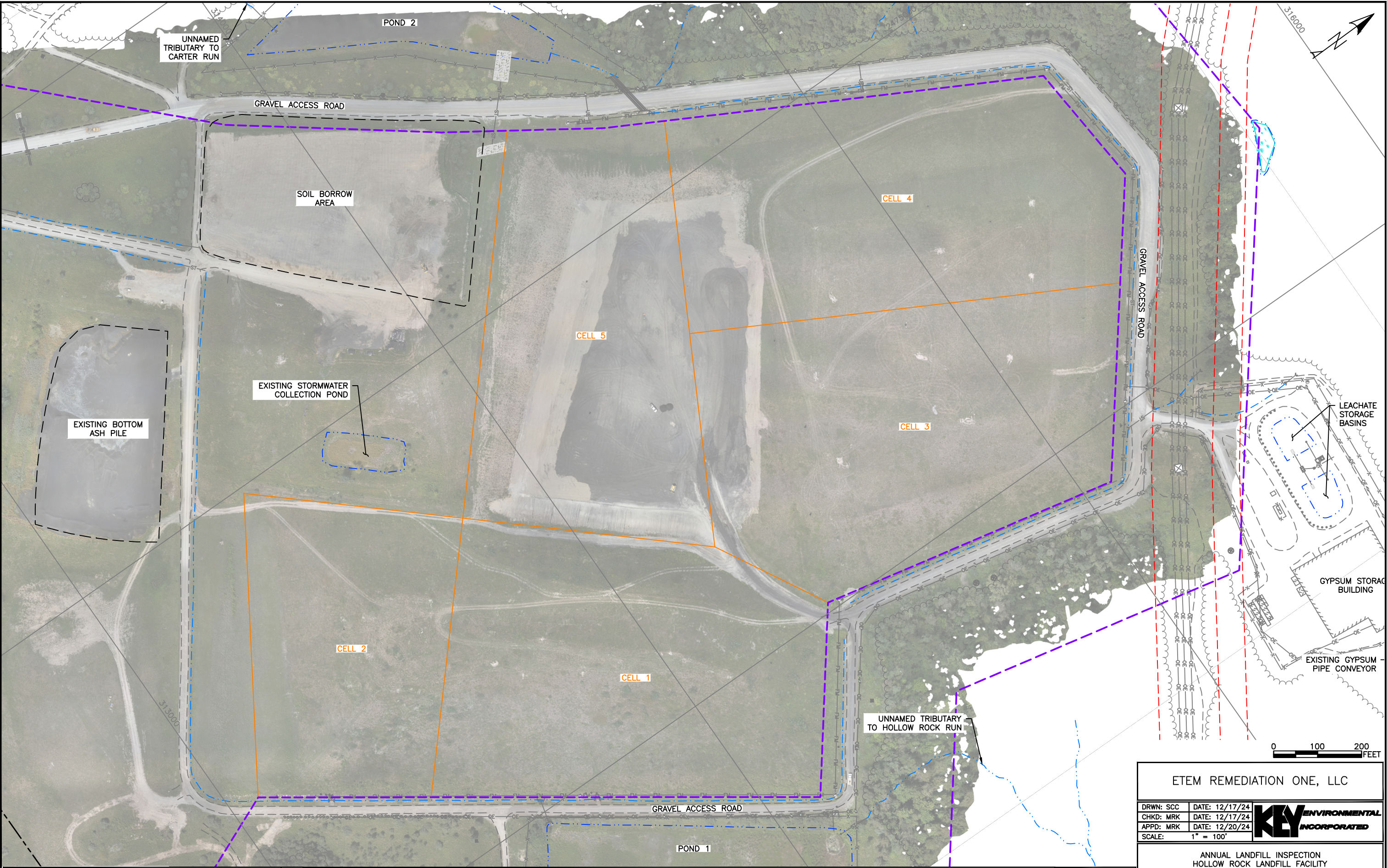
4.4. CORRECTIVE MEASURES

No corrective measures are required based on the observations noted as part of this Annual Inspection.

APPENDIX A

FIGURES

y:\00civil\etem\hollow rock\production drawings\5_annual inspection report\2024\figure 1 - aerial plan.dwg Last Saved By: SComer 12/20/2024 10:15 AM Plotted By: Mark Keck 12/20/2024 10:25 AM Scale: 1:2



REV #	DATE	DESCRIPTION	APPD

REFERENCE: AERIAL PHOTO SHOWN HEREON WERE OBTAINED FROM AERIAL DRONE SURVEYS COMPLETED BY LENNON, SMITH, SOULERET ENGINEERING, INC. (LSSE) ON AUGUST 21, 2024.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

ETEM REMEDIATION ONE, LLC

DRWN: SCC	DATE: 12/17/24
CHKD: MRK	DATE: 12/17/24
APPD: MRK	DATE: 12/20/24
SCALE: 1" = 100'	

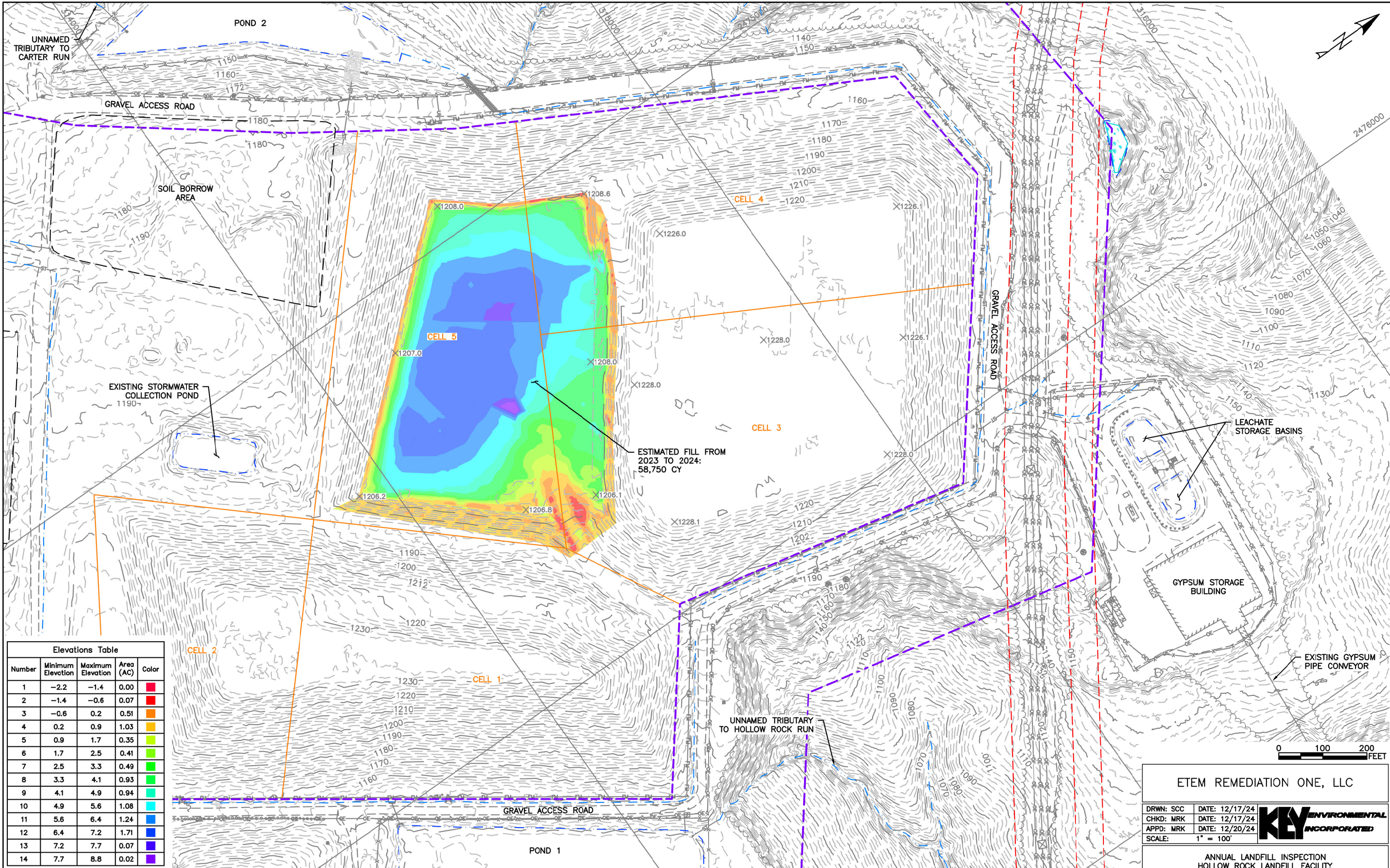
ANNUAL LANDFILL INSPECTION
HOLLOW ROCK LANDFILL FACILITY
KNOX TOWNSHIP, JEFFERSON COUNTY, OHIO

2024 DRONE AERIAL

PROJECT NO: 22-497

FIGURE 1

y:\000\etm\hollow rock\production drawings\5_annual inspection report\2024\Figure 2 - volume analysis.dwg Last Saved By: SConner 12/19/2024 2:47 PM Plotted By: Shelly Conner 12/20/2024 10:07 AM Scale: 1:2



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area (AC)	Color
1	-2.2	-1.4	0.00	Red
2	-1.4	-0.6	0.07	Orange
3	-0.6	0.2	0.51	Yellow
4	0.2	0.9	1.03	Light Green
5	0.9	1.7	0.35	Green
6	1.7	2.5	0.41	Light Blue
7	2.5	3.3	0.49	Blue
8	3.3	4.1	0.93	Dark Blue
9	4.1	4.9	0.94	Very Dark Blue
10	4.9	5.6	1.08	Black
11	5.6	6.4	1.24	Dark Purple
12	6.4	7.2	1.71	Black
13	7.2	7.7	0.07	Black
14	7.7	8.8	0.02	Black

REV #	DATE	DESCRIPTION	APPD

REFERENCE: TOPOGRAPHY SHOWN HEREON WERE OBTAINED FROM AERIAL DRONE SURVEYS COMPLETED BY LENNON, SMITH, SOULERET ENGINEERING, INC. (LSSE) ON APRIL 12 AND AUGUST 21, 2024.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

ETEM REMEDIATION ONE, LLC

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CHKD: MRK
APPD: MRK
SCALE: 1" = 100'

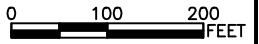
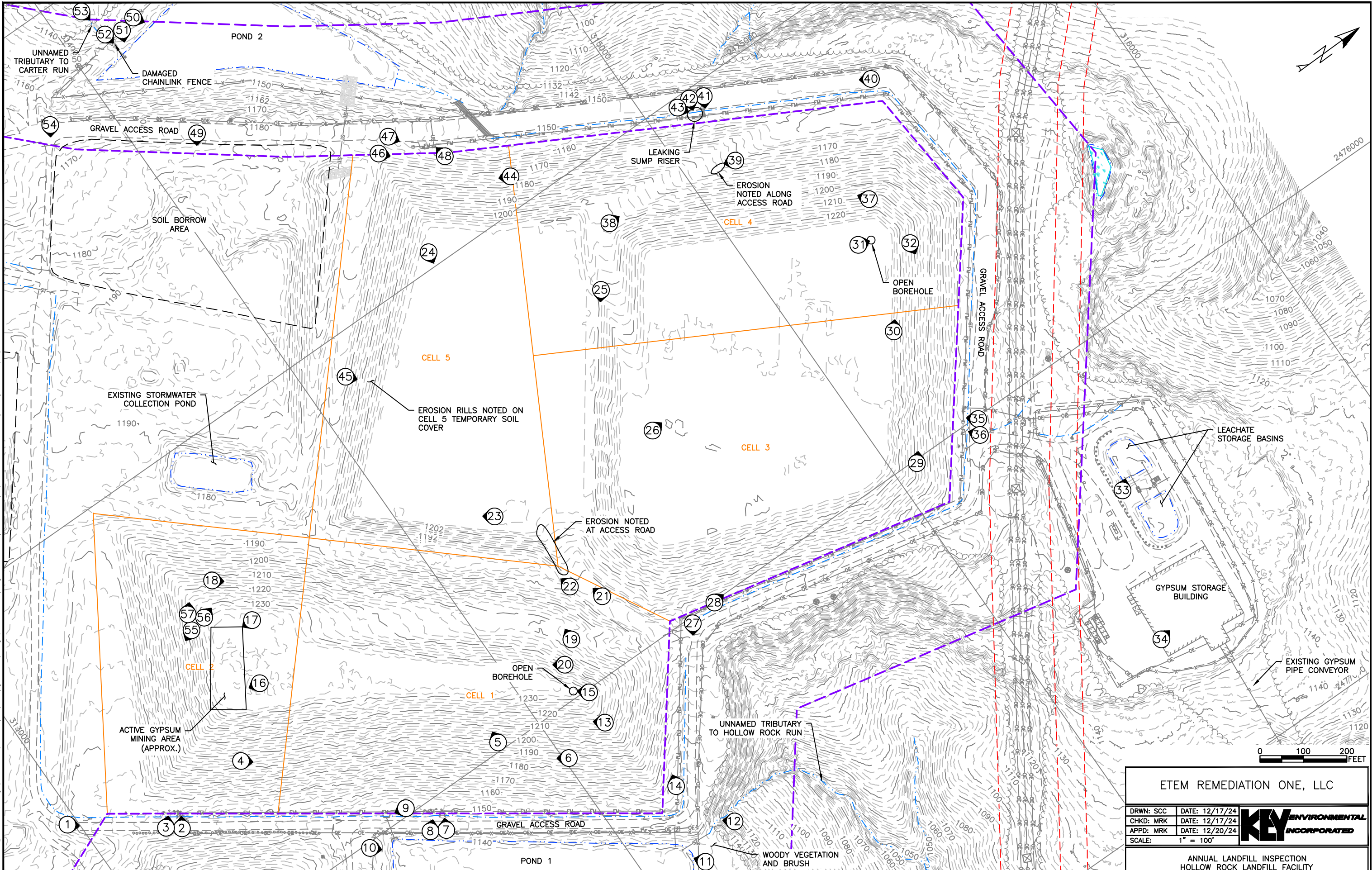
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ANNUAL LANDFILL INSPECTION
HOLLOW ROCK LANDFILL FACILITY
KNOX TOWNSHIP, JEFFERSON COUNTY, OHIO

2024 VOLUME ANALYSIS

PROJECT NO: 22-497
FIGURE 2

v:\000\etm\hollow rock\production drawings\5-annual inspection report\2024\Figure 3 - photograph location mapping Last Saved By: SComer 12/19/2024 3:53 PM Picked By: Shelly Comer 12/20/2024 10:07 AM Scale: 1:2



ETEM REMEDIATION ONE, LLC

DRWN: SCC
CHKD: MRK
APPD: MRK
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DATE: 12/17/24
DATE: 12/20/24



ANNUAL LANDFILL INSPECTION
HOLLOW ROCK LANDFILL FACILITY
KNOX TOWNSHIP, JEFFERSON COUNTY, OHIO

PHOTOGRAPH LOCATION MAP

PROJECT NO: 22-497
FIGURE 3

REFERENCE: TOPOGRAPHY SHOWN HEREON OBTAINED FROM AERIAL DRONE SURVEY COMPLETED BY LENNON, SMITH, SOULERET ENGINEERING, INC. (LSSE) ON AUGUST 21, 2024.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

REV #	DATE	DESCRIPTION	APPD

APPENDIX B
LANDFILL ANNUAL FIELD INSPECTION REPORT

LANDFILL ANNUAL FIELD INSPECTION REPORT

Hollow Rock Landfill Facility

Page 1 of 2

Inspection Date: 11-26-24

Weather Conditions: Cloudy, 45° F

CCR Unit: Hollow Rock Landfill Facility

Original PTI Number: 06-08263

Current Construction / Design Details:

18 inch thick recompacted soil liner, GCL, 60 mil geomembrane, 12 inch protective / drainage layer, 18 inch frost protection layer, gypsum waste material, 12 inch temporary cover soil, and partial grass ground cover.

Action			
None	Monitor	Repair	Engineer

GENERAL CONDITIONS

Access Roads

Fencing - See Note 2

Structures

Groundwater Monitoring Wells

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TEMPORARY COVER SLOPES

Cover Vegetation:

Woody Brush? Describe and Locate: Some trees/woody vegetation on Cells 1 + 2 soil cover

Grass Ground Cover:

Condition: Thick stand of grass on Cells 1-4. Grass starting to establish on some areas of Cell 5

Surface Damage:

Soil Erosion Rills - Noted on Cell 5 temporary soil cover

Bench Channels

Haul Roads - See Note 1

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Slope Instabilities:

Slides / Sloughs

Cracks / Bulges

Water Seeps / Saturated Areas

Other - Open boreholes from drilling operations should be covered or demarcated for safety purposes

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Other

Note 1 - Significant erosion on haul road to Cell 5 between bottom ash road and soil cover.

Note 2 - Fence cut near Pond 2 outlet structure.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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LANDFILL ANNUAL FIELD INSPECTION REPORT

Hollow Rock Landfill Facility

Page 2 of 2

Hydraulic Structures

Leachate Pumping System and Storage Ponds

Sump pumps, manholes and control panels - See Note 3

Visible forcemains, manholes, and cleanouts

Leachate storage pond lining

Leachate loadout equipment and pad

None	Action		
	Monitor	Repair	Engineer

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bench Drains

Grass-lined berm

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Perimeter Channel

10-foot wide grass lined channel of variable slope

Culverts from perimeter channel discharge to riprap - See Note 4

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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Stormwater Pond 1

2-acre pond with grass vegetation

15-foot wide crest berm with 3H:1V side slopes

Broad crested weir emergency overflow spillway - Note 5

Outlet Structure: corrugated metal pipe standpipe

Trashrack and anti-vortex inlet

Discharge conduit: 24-inch diameter HDPE Pipe

Discharge channel: rip-rap lined channel

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Stormwater Pond 2

2-acre pond with grass vegetation

15-foot wide crest berm with 3H:1V side slopes

Broad crested weir emergency overflow spillway

Outlet Structure: corrugated metal pipe standpipe

Trashrack and anti-vortex inlet

Discharge conduit: 24-inch diameter HDPE Pipe - See Note 6

Discharge channel: rip-rap lined channel

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments / Additional Remarks

Note 3 - Minor leaking observed at Cell 4 sump riser and blind flange
 Note 4 - Vegetation/debris cleared from culvert entrances noted from 2023 inspection
 Note 5 - overgrown vegetation should be cleared
 Note 6 - Discharge end of pipe remains buried

Inspector Signature: Mark Keck

Inspector Print Name: Mark Keck

APPENDIX C
PHOTOGRAPHIC LOG

**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 1

Date: 11/26/2024

Description:

Access road southeast of Cell 2.
Photograph is looking northeast.



Photo: 2

Date: 11/26/2024

Description:

Cell 2 sump control panel. Photograph
is looking northwest.



Photo: 3

Date: 11/26/2024

Description:

Cell 2 sump risers and force main
connection. Photograph is looking
northwest.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 4

Date: 11/26/2024

Description:

Southeast slope of Cell 2. Photograph is looking northeast.



Photo: 5

Date: 11/26/2024

Description:

Some woody vegetation was noted on the southeastern slopes of Cell 2 and Cell 1. Photograph is looking northwest.



Photo: 6

Date: 11/26/2024

Description:

Southeast slope of Cell 1. Photograph is looking southwest.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 7

Date: 11/26/2024

Description:

Cell 1 sump control panel. Photograph is looking northwest.



Photo: 8

Date: 11/26/2024

Description:

Cell 1 sump risers and force main connection. Photograph is looking northwest.



Photo: 9

Date: 11/26/2024

Description:

Inlet of concrete channel collection pipes that discharge into Pond 1. Photograph is looking south.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 10

Date: 11/26/2024

Description:

View of Pond 1 from the southwestern edge. Photograph is looking northeast.



Photo: 11

Date: 11/26/2024

Description:

Pond 1 outlet structure with trash rack and anti-vortex device. Photograph is looking southwest.



Photo: 12

Date: 11/26/2024

Description:

Discharge location of the Pond 1 outlet pipe into the downstream channel. Photograph is looking southwest.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 13

Date: 11/26/2024

Description:

Southeast slope of Cell 1. Photograph is looking southwest.



Photo: 14

Date: 11/26/2024

Description:

Northeastern slope of Cell 1. Photograph is looking northwest.



Photo: 15

Date: 11/26/2024

Description:

View of an open bore hole on the top of Cell 1, assumed from the recent gypsum mining activities. All open boreholes should be backfilled, covered, or visually marked for safety purposes.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 16

Date: 11/26/2024

Description:

Open gypsum excavation on the southwest edge of Cell 2. Photograph is looking south.



Photo: 17

Date: 11/26/2024

Description:

Open gypsum excavation on the southwest edge of Cell 2. Photograph is looking south.



Photo: 18

Date: 11/26/2024

Description:

Northern slope of Cell 2. Photograph is looking northeast.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 19

Date: 11/26/2024

Description:

View of southern slope of Cell 5, standing on the northern slope of Cell 1. Note the recent placement of temporary cover and seed. Photograph is looking northwest.



Photo: 20

Date: 11/26/2024

Description:

Northern slope of Cell 1. Photograph is looking southwest.



Photo: 21

Date: 11/26/2024

Description:

Access road into Cell 5, constructed of bottom ash. Photograph is looking west.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 22

Date: 11/26/2024

Description:

Significant erosion noted between the access road and soil covered slope. Erosion should be repaired. Photograph is looking west.



Photo: 23

Date: 11/26/2024

Description:

Northern slope of Cell 5 which had been covered with a temporary cover and seeded in Fall of 2024. Photograph is looking north.



Photo: 24

Date: 11/26/2024

Description:

View of open and active Cell 5 area. Photograph is looking southeast.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 25

Date: 11/26/2024

Description:

Southwest slope of Cell 3. Photograph is looking northwest.



Photo: 26

Date: 11/26/2024

Description:

Top of Cell 3. Photograph is looking north.



Photo: 27

Date: 11/26/2024

Description:

Access road east of Cell 1, looking toward Pond 1. Photograph is looking southeast.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 28

Date: 11/26/2024

Description:

Southeastern slope of Cell 3.
Photograph is looking northeast.



Photo: 29

Date: 11/26/2024

Description:

Northeast slope of Cell 3. Photograph
is looking northwest.



Photo: 30

Date: 11/26/2024

Description:

Top and slope crest of Cell 4.
Photograph is looking north.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 31

Date: 11/26/2024

Description:

View of an open bore hole on the top of Cell 4, assumed from the recent gypsum mining activities. All open boreholes should be backfilled, covered, or visually marked for safety purposes.



Photo: 32

Date: 11/26/2024

Description:

Northeast slope of Cell 4. Photograph is looking east.



Photo: 33

Date: 11/26/2024

Description:

View of the western leachate collection lagoon. Photograph is looking west.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 34

Date: 11/26/2024

Description:

Gypsum material removed from Cell 2 staged onsite in the Gypsum Storage Building. Photograph is looking north.



Photo: 35

Date: 11/26/2024

Description:

Cell 3 sump control panel. Photograph is looking southwest.



Photo: 36

Date: 11/26/2024

Description:

Cell 3 sump risers and force main connection. Photograph is looking southwest.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 37

Date: 11/26/2024

Description:

Northwest slope of Cell 4. Photograph is looking southwest.



Photo: 38

Date: 11/26/2024

Description:

Access road on the northwest slope of Cell 4. Photograph is looking north.



Photo: 39

Date: 11/26/2024

Description:

Erosion noted near the access road on the northwest slope of Cell 4.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 40

Date: 11/26/2024

Description:

Gravel access road northwest of Cell 4.
Photograph is looking southwest.



Photo: 41

Date: 11/26/2024

Description:

Cell 4 sump control panel. Photograph
is looking southeast.



Photo: 42

Date: 11/26/2024

Description:

Cell 4 sump risers and force main
connection. Photograph is looking
southeast.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 43

Date: 11/26/2024

Description:

Water observed leaking from the blind flange at the Cell 4 sump riser.



Photo: 44

Date: 11/26/2024

Description:

Northwest slope of Cell 5, near the toe. Photograph is looking southwest.



Photo: 45

Date: 11/26/2024

Description:

Southwest slope of Cell 5. Erosion rills were observed on much of the slope face. Photograph is looking northeast.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 46

Date: 11/26/2024

Description:

Northwest slope of Cell 5. Photograph is looking northeast.



Photo: 47

Date: 11/26/2024

Description:

Cell 5 sump control panel and sump risers and force main connection. Photograph is looking east.



Photo: 48

Date: 11/26/2024

Description:

Inlet of concrete channel collection pipes that discharge into Pond 2. Photograph is looking west.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 49

Date: 11/26/2024

Description:

View of restored borrow area southwest of Cell 5 from which soil cover for both Hollow Rock and the Sammis Plant was obtained. Photograph is looking southeast.



Photo: 50

Date: 11/26/2024

Description:

View of Pond 2. Photograph is looking northeast.



Photo: 51

Date: 11/26/2024

Description:

Pond 2 outlet structure with trash rack and anti-vortex device. Photograph is looking east.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 52

Date: 11/26/2024

Description:

Chain link fence surrounding Pond 2 was cut, potentially providing site access to trespassers.



Photo: 53

Date: 11/26/2024

Description:

Discharge location of the Pond 2 outlet pipe into the downstream channel. Photograph is looking east.



Photo: 54

Date: 11/26/2024

Description:

Access road at western edge of borrow area. Photograph is looking southeast.



**2024 Annual Landfill Inspection
Hollow Rock Landfill Facility
Knox Township, Jefferson County, Ohio**

Photo: 55

Date: 11/26/2024

Description:

View from top of southwest edge of Cell 2, looking south.



Photo: 56

Date: 11/26/2024

Description:

View from top of southwest edge of Cell 2, looking north toward Cell 5.



Photo: 57

Date: 11/26/2024

Description:

View from top of southwest edge of Cell 2, looking west.

