



Perinton Conservation Board

July 11, 2024

Mr. Jeff Richardson, Senior District Manager
WMNY, LLC
425 Perinton Parkway
Fairport, NY 14450

Re: Perinton Conservation Board: High Acres Landfill and Recycling Center Annual Compliance Meeting

Dear Mr. Richardson:

Per the stipulations set-forth in Exhibit B (Local O&M Measures) of the current Host Community Agreement between the Town of Perinton and WMNY, LLC as well as certain Conditions of Approval from the Perinton Zoning Board of Appeals related to the issuance of the Special Use Permit renewal for the High Acres Landfill and Recycling Center (HALRC), WMNY is required to meet with the Perinton Conservation Board (PCB) on an annual basis to discuss a variety of matters including, but not limited to, monitoring and emission data, operational updates and intended fill progression plans, waste volumes and restrictions as well as other regulatory compliance items.

The PCB requests your appearance before the Board on August 20th, 2024, at which time the following will be discussed:

1. Provide and discuss calendar year 2023 H2S monitoring data, surface methane emission data, and other Title V related regulatory compliance items.
2. Provide and discuss odor notifications (location, type, and intensity) as well as subsequent verification results for calendar year 2023.
3. Provide and discuss groundwater monitoring results for calendar year 2023.
4. Discuss gas system collection efficiencies, volume collected and how it was managed for calendar year 2023.
5. Discuss the reasons, benefits and/or challenges associated with the implementation of exposed geo-membrane cover on certain portions of the landfill.

6. Provide and discuss rail volume restrictions and tonnage received as well as sludge volumes received and deferred waste reports for aged waste for the 2023 calendar year.
7. Provide and discuss the projected filling sequence for the next 5-years as well as a status update on acres of cover (daily, intermediate, final) as well as the type (earth, enhanced earth, geo-synthetic, etc.).
8. Provide and discuss the wetland monitoring status for the High Acres Nature Area (HANA).
9. Provide and discuss acoustical monitoring reports showing that noise levels emanating from all landfill operations do not exceed regulatory standards for calendar year 2023.
10. Provide closure/post closure construction estimates.

It is likely that the Board will have additional questions, but we feel that the list above will serve as an excellent starting point. If you should have any questions or need clarification regarding any of the items listed above, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Ken Rainis". To the right of the name is a small, stylized drawing of a dollar sign (\$).

Kenneth G. Rainis
Chair, Perinton Conservation Board

- c. Ciaran T. Hanna, Town Supervisor
- Jason R. Kennedy, P.E., Commissioner of Public Works
- Lori Stid. Director of Volunteer Boards
- Greg MacLean, P.E., NYSDEC Material Management Engineer
- Mark Amann, P.E., NYSDEC Environmental Engineer
- PCB Members



Town of Perinton Conservation Board



High Acres Landfill & Recycling Center 2023 Annual Update

August 20th, 2024

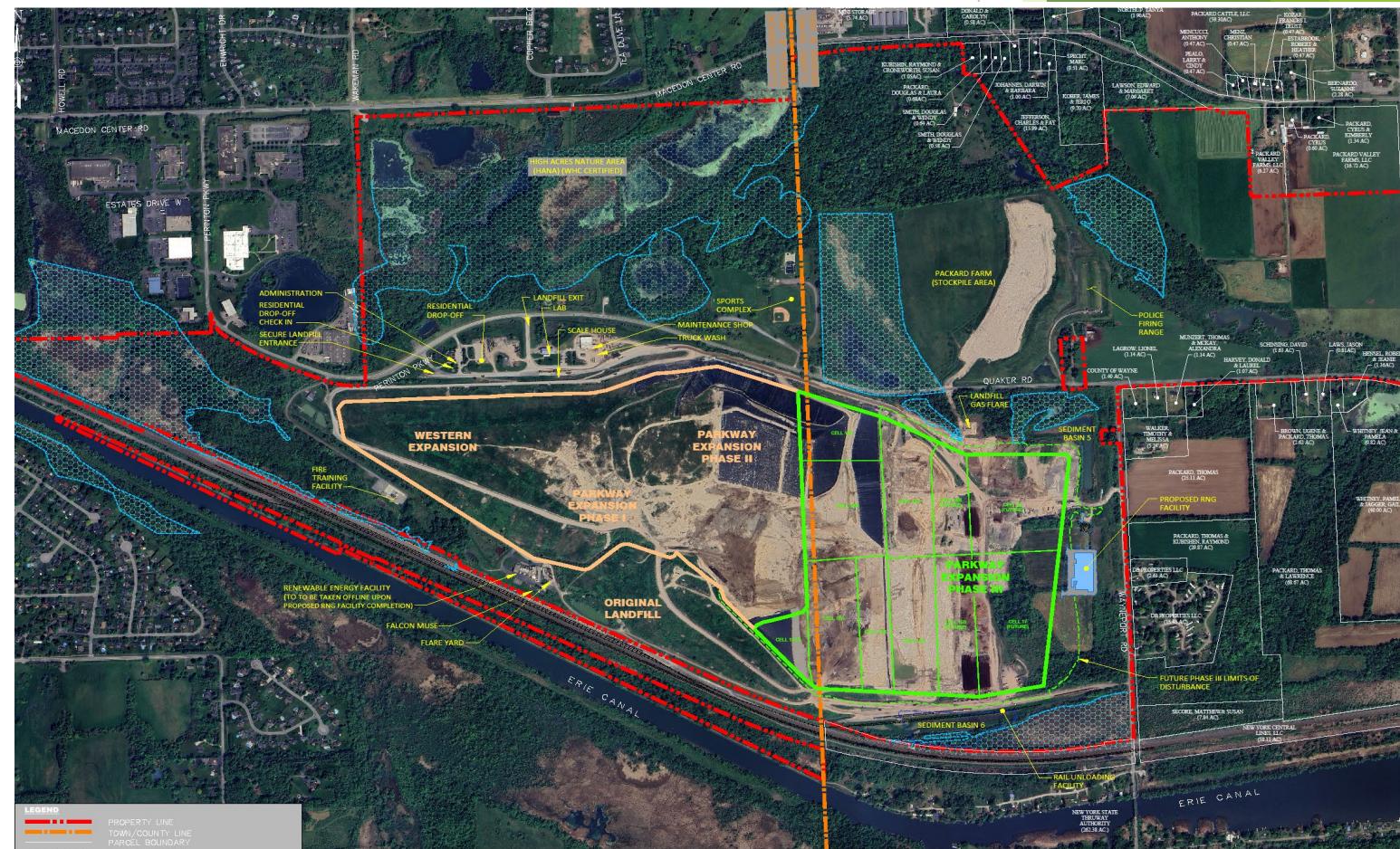
Jeff Richardson | Waste Management of NY, LLC
Tom Hasek | Waste Management of NY, LLC
David Cross | Waste Management of NY, LLC
Marc Meyer | Waste Management of NY, LLC
Nicole Simonetti | Waste Management of NY, LLC
Luann Meyer | Barton & Loguidice, D.P.C.
Steven Wilsey | GHD Services, Inc.
Bryan Szalda | GHD Services, Inc.





High Acres Landfill & Recycling Center Complex

- ▶ Organics Composting
 - ▶ St. John Fisher, U of R, Nazareth
- ▶ Yard Waste Compost facility
- ▶ 9.6-MW Onsite Renewable Energy Facility
 - ▶ 10,000 homes powered by facility
- ▶ 250 Acres Award Winning Nature Area includes 4 miles of hiking trails
 - ▶ RIT Outdoor Classroom
 - ▶ Wildlife Habitat Council Certifications
- ▶ First Responders and Law Enforcement Training Facilities
- ▶ Residential Drop-off Facility
- ▶ High Acres Sports Complex



Facility Regulatory Permits/Approvals

- ▶ 6 NYCRR Part 360 - Solid Waste Management Facilities (DEC)
- ▶ 6 NYCRR Part 200 - Prevention and Control of Air Contamination and Air Pollution (DEC)
- ▶ 6 NYCRR Part 612, 613, 614 - Petroleum Storage and Handling (DEC)
- ▶ 40 CFR Part 61 - National Emissions Standards for Hazardous Air Pollutants (DEC)
- ▶ Town of Perinton Special Use Permit
- ▶ Town of Macedon Special Use Permit
- ▶ State Pollutant Discharge Elimination System Permit (SPDES) (DEC)
- ▶ Sewer Use Permit (Monroe County Department of Environmental Services - Division of Pure Waters)
- ▶ Air Permits 6 NYCRR Part 201 and USEPA Title V
- ▶ Freshwater Wetlands Permit and 401 Water Quality Certification (DEC)
- ▶ Section 404 Wetland Permit (U.S. Army Corps of Engineers)
- ▶ Full Time NYSDEC on-site monitor who oversees the operation and provides a daily inspection report. Daily reports submitted to Towns).

47-151A (1/95) (Automated 6/07)

**NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS
6 NYCRR Part 360-2**

SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT
(For use at Mixed Solid Waste Landfills, Industrial/Commercial Waste Monofills, or Ash Residue Monofills)

FACILITY NAME: High Acres Landfill	LOCATION: Perinton(T), Monroe(C)	FACILITY ID#: 28 S 32	DATE: 02/09/23
INSPECTOR'S NAME: Dave Kay	CODE: M	PERSONS INTERVIEWED Pat O'Dell	TIME:
REGION: 8	WEATHER CONDITIONS: CL, rain, 30°-40°F E, W: 5-10 ESE,E,SE	DEC PERMIT NUMBER 8-9908-00162 / 00032	
1 OF 2	CONTINUATION SHEET <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PART(S) 360- attached	

Violations of Part 360 are subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in DEC Article 71 and as Appropriate, the Clean Water and Air Act. Additional and/or Multiple Violations May be Described on This Form. Any Violation Described on This Form is Considered to have occurred in the Field at the time of Inspection.

PART 360 PERMIT ORDER ON CONSENT REGISTERED EXEMPT COMPLAINT CLOSED

Y N F M C A D B E G H I J K L P Q R S T U V W X Z

1. Solid waste management facility is authorized and management occurs within approved area. 360-1.7(a) (1), (b); 360-1.8(h) (5)

2. Incoming waste is monitored by a control program for unauthorized waste and solid waste material accepted are approved for management at the facility. 360-1.4(a)(1)

3. Hazardous Low Level Radioactive Waste 360-1.6(b); 360-2.17(m)

4. On-Site Vector Populations are prevented or controlled. 360-1.14(d)

5. Department Approved Facility for Specific Wastes. 360-1.14(r)

6. Bulk Liquids 360-2.17 (k)

7. Lead Acid Batteries 360-2.17 (w)

8. Adequate Equipment for Facility Components and equipment in accordance with the permit and their intended use. 360-1.4(f) (1), 360-2.17 (h), (u)

9. Adequate Equipment for 1401

10. On-Site vector populations are available where required:

- a. Unauthorized Solid Waste Records. 360-1.14(i) (1)
- b. Solid Waste Application Records. 360-1.14(i) (2)
- c. Solid Waste Progression Records. 360-1.14(i) (3)
- d. Facility Operator Records. 360-1.14(u) (1)
- e. FILL Progression Records. 360-2.9(e)
- f. General Information on Solid Waste Removal System Logs 360-2.9(j) (3)
- g. Asbestos Waste Site Plan 360-2.17(g) (2)

11. On-Site vector population inspection records 360-2.17(h)

12. Solid Waste, including breaking litter, is sufficiently compacted to achieve 360-1.14(j)

13. On-Site vector populations are prevented or controlled so that they do not constitute a nuisance. 360-1.14(o)

14. On-Site vector populations are prevented or controlled and vector breeding areas are prevented 360-1.14(q)

15. On-Site vector populations are effectively controlled so that they do not constitute a nuisance. 360-1.14(m)

16. Solid Waste is minimally through drainage convey or other means and is prevented from entering surface waters. 360-1.14(b) (2); 360-2.17(g)

17. On-Site roads are passable. 360-1.14(m); 360-2.17(o)

18. Access to the facility is strictly and continuously controlled by fencing, gate signs, natural barriers, or other suitable means. 360-1.14(d)

19. Solid Waste is spread in layers 2 feet or less in thickness, proper compaction is achieved with 3 passes of appropriately sized equipment and the working face area is the practical practice. 360-2.17(b) (1)

20. Proper compaction of solid waste is at least 34 percent and no more than 33 percent, and wastes are placed and graded in accordance with fill progression plan 360-2.17(b) (2)

21. On-Site vector populations are prevented or controlled and vector breeding areas are provided:

- a. Stabilized/decreased species 360-2.17(n)
- b. Asbestos Waste 360-2.17(g) (2)

22. Cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required to control vectors, fires, odors, blowing litter, and scavenging 360-2.17 (c)

23. Final cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required 360-2.17 (d)

24. Final cover material is intact. 360-2.17 (a); 360-2.11(b) (8) (v); (2) (1)

25. Decomposition gasses are monitored and controlled 360-2.17(f); 360-6.3 (c)

26. OTHER

On Continuation Sheet identify any other violations

I Herby Acknowledge receipt of the Facility Copy of this report
Please Print _____ Not Requested DK _____
Signature _____



Operations Update



- ▶ Landfill permitted footprint: 320.4 acres
- ▶ 3,500 tons per day- Permitted Capacity
- ▶ “No Aged waste” placed in Perinton in 2023
- ▶ Remaining Projected Site Life 32 years (2056)

Landfill (in Town of Perinton) Airspace Summary as of Dec 31st, 2023	
Total Permitted Capacity (CY)	30,823,531
Airspace Consumed (CY)	23,551,500
Airspace Remaining (CY)	7,229,800

▶ 2023 Operations

2023 Operations		
Tons of solid waste managed	1,071,114	-
Tons of solid waste managed by rail	530,245	-
Tons of Biosolids managed	35,926	3.35%
Tons of yard waste managed	13,533	
Tons of organics managed	374.12	
Gallons of Leachate collected and discharged to MCPOTW	40,576,732	
Total Landfill Gas Flared (MCF)	2,483,687 MCF	
Landfill gas beneficially used to produce green energy (SCFM)	1,554,781 SCFM	





VOLUME (tons)

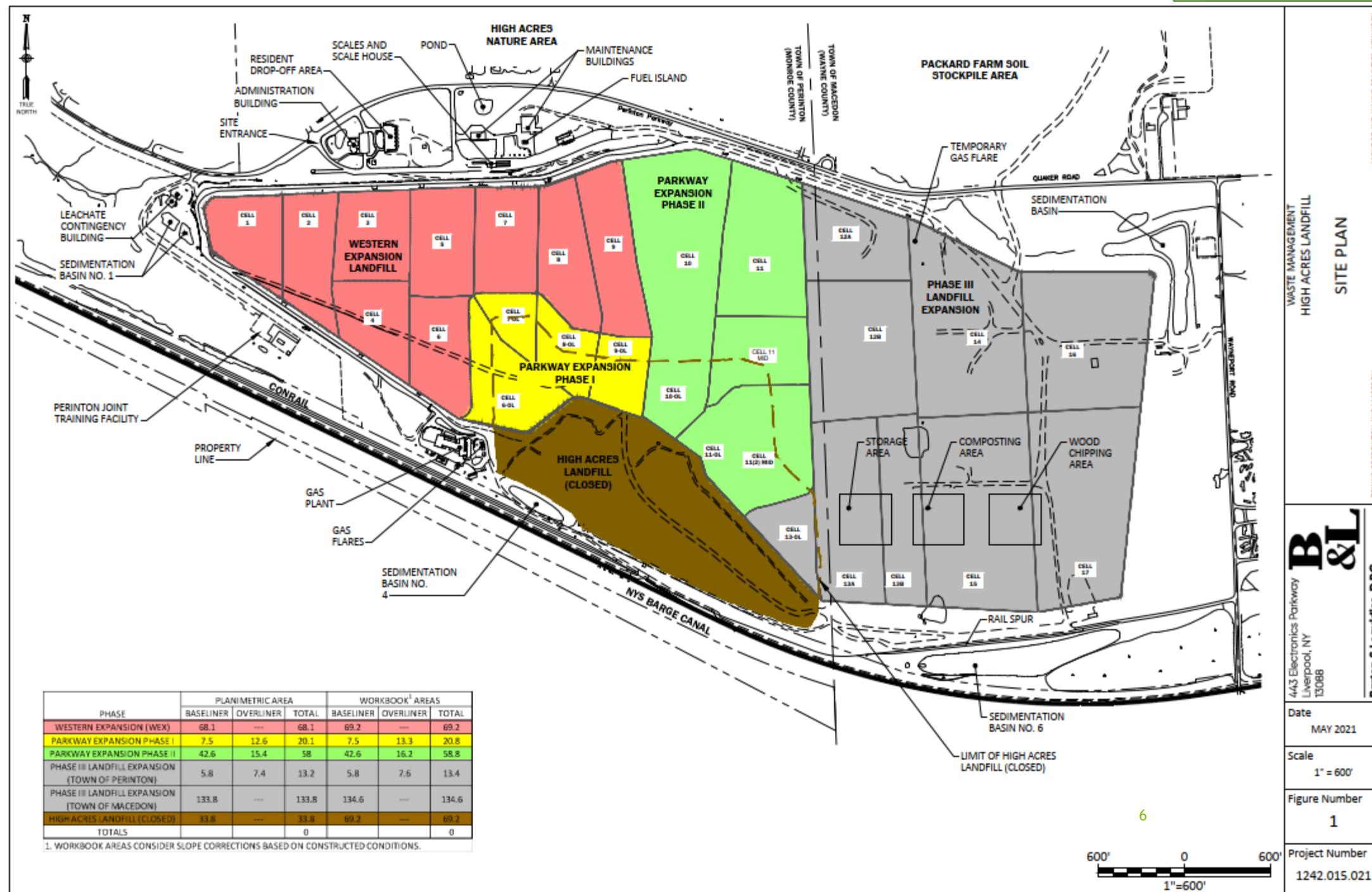
High Acres NYSDEC
Permitted Capacity;

MSW- 3,500 TPD x 307
days= 1,074,500

RGC- 1,050 TPD x 307
days= 322,350

530,245 tons MSW via Rail

2023	MSW	RGC	TOTAL
Q1	240,893	48,922	286,816
Q2	255,347	53,013	308,360
Q3	309,382	68,649	378,031
Q4	265,493	98,302	363,875
<u>TOTAL</u>	<u>1,071,114</u>	<u>268,886</u>	<u>1,337,082</u>



1. WORKBOOK AREAS CONSIDER SLOPE CORRECTIONS BASED ON CONSTRUCTED CONDITIONS.

1"=600

Project Number
1242.015.021

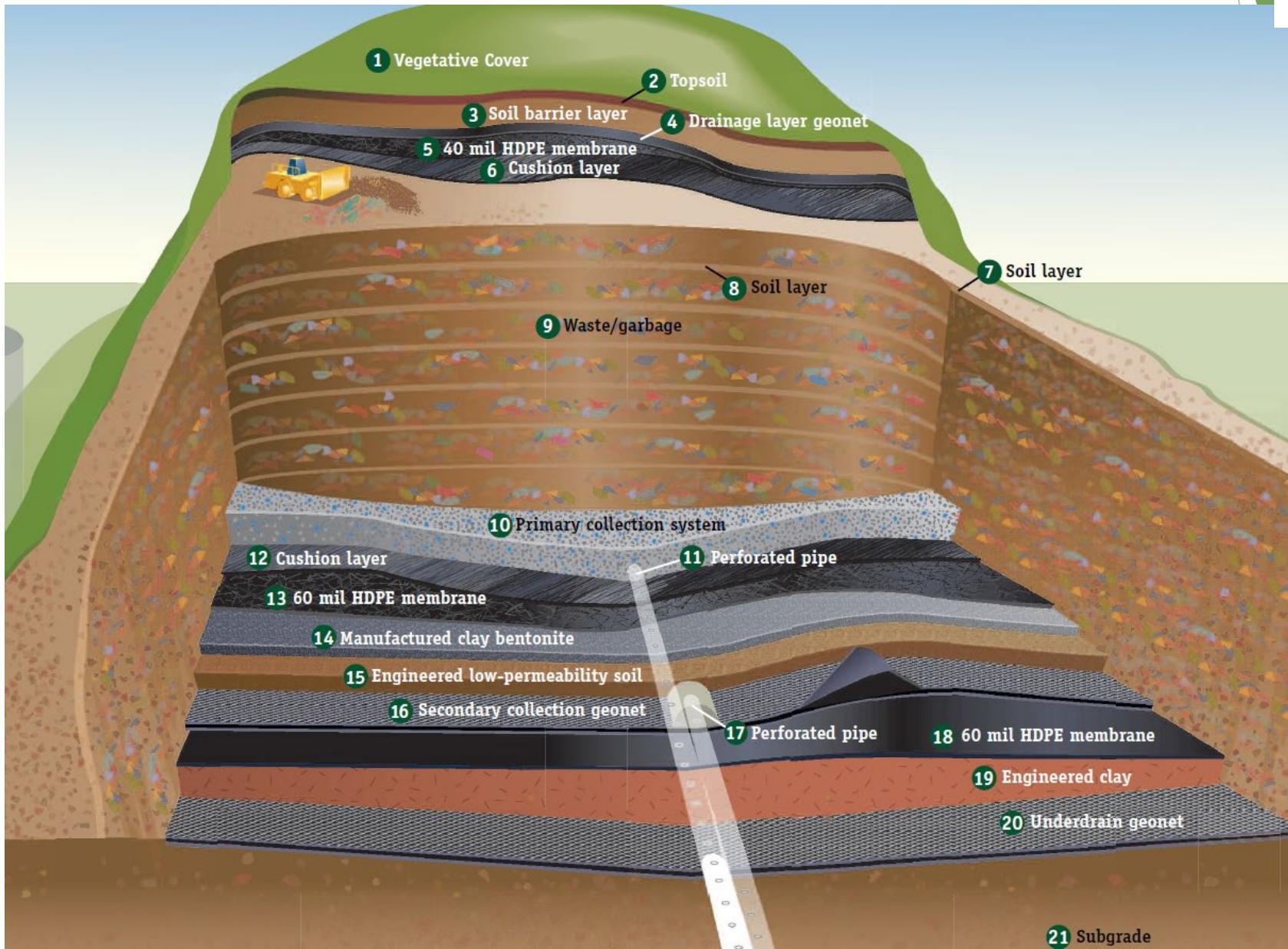


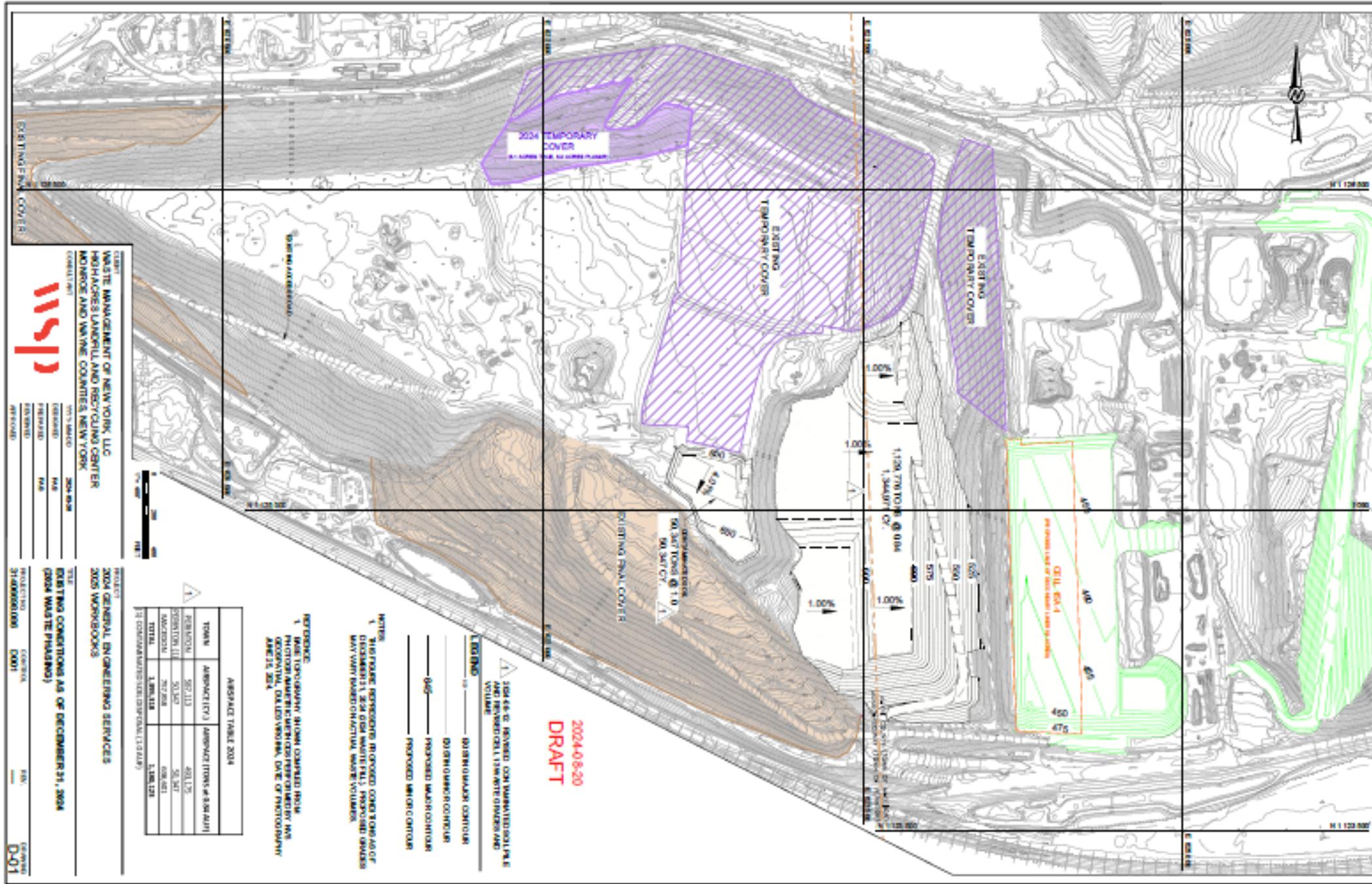
Landfill Development History

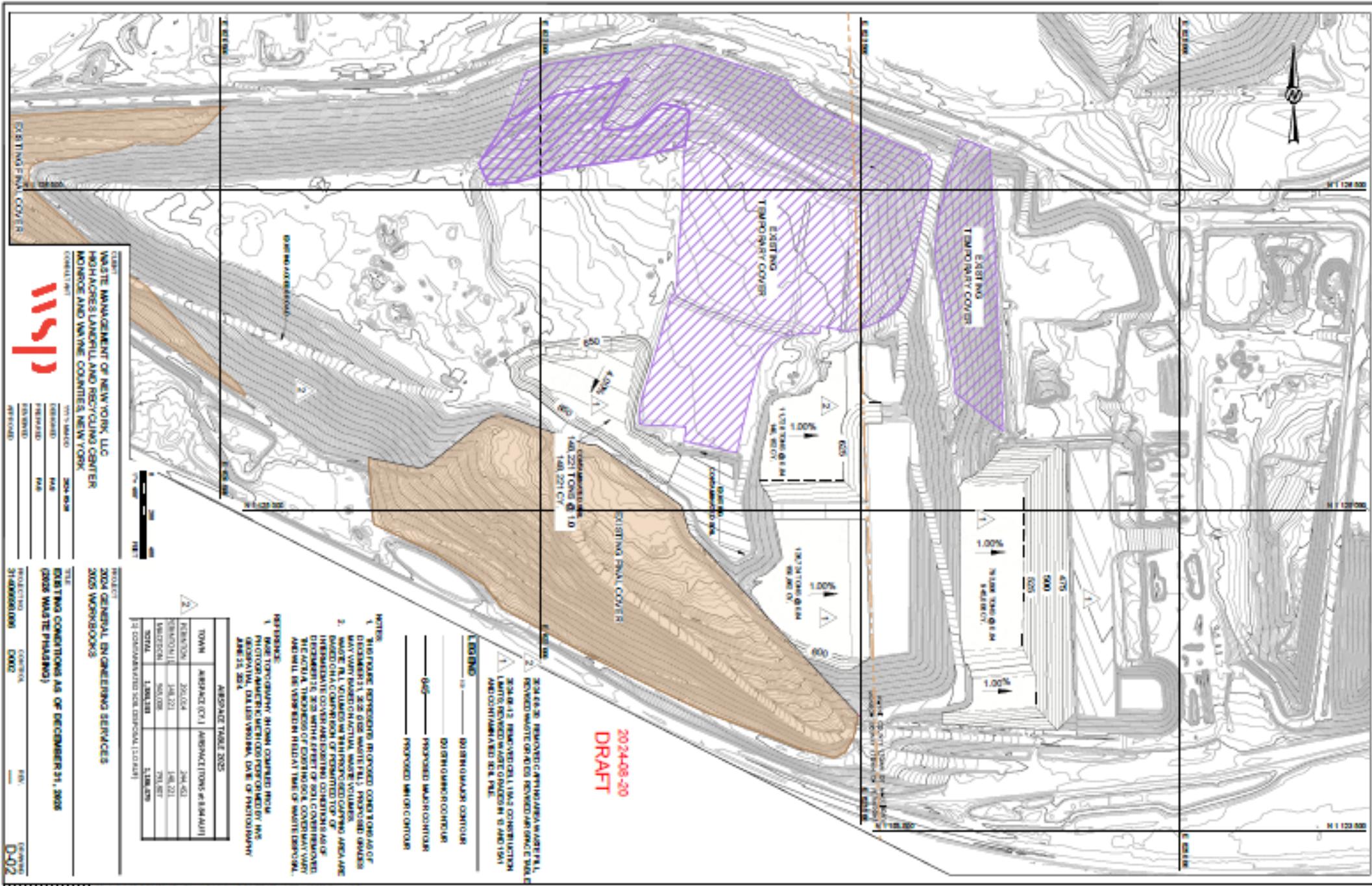


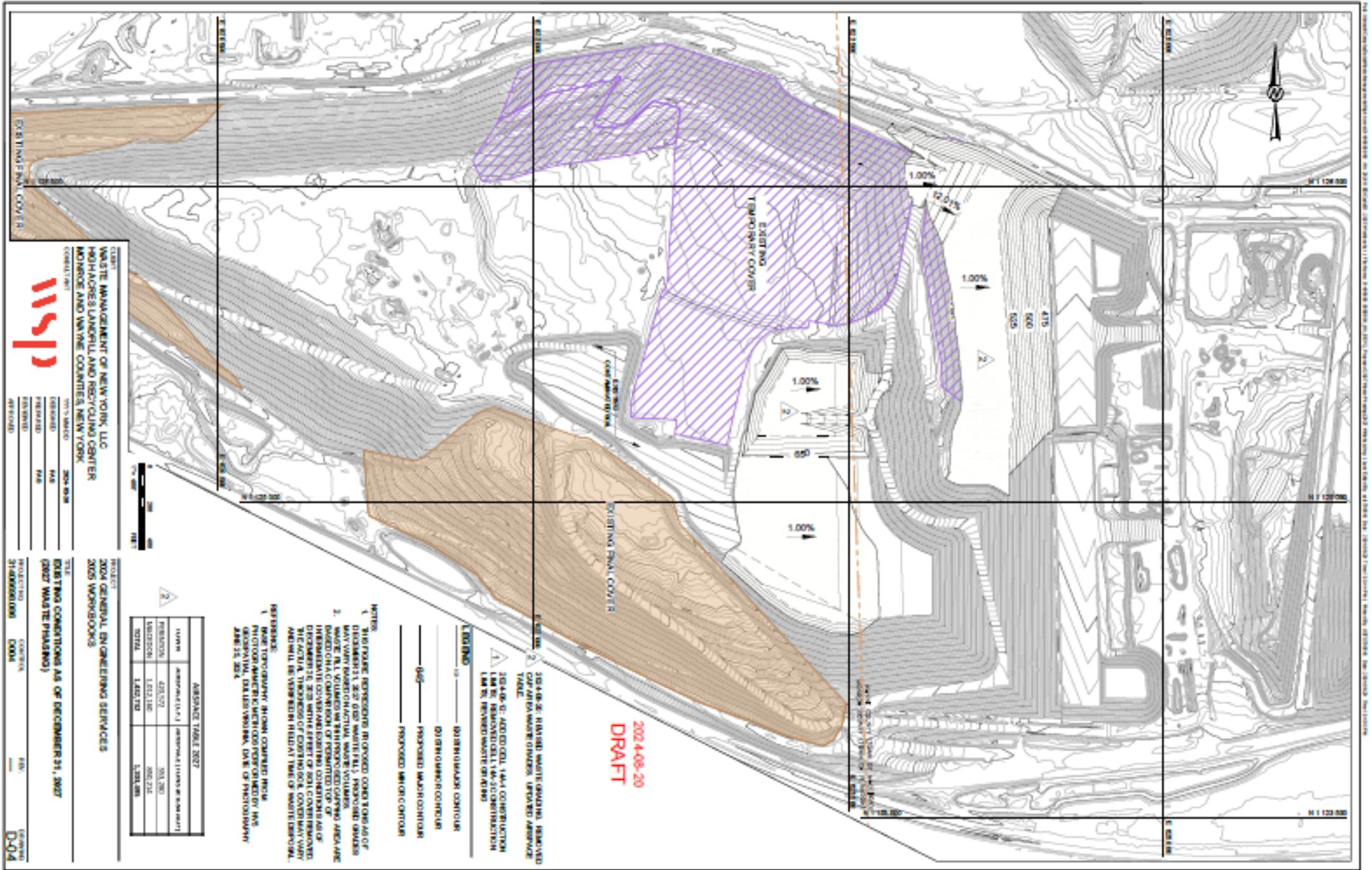
Landfill Area	Landfill Area Acreages			Cell Designation (refer to Fig. 1)	Year Constructed
	Baseliner	Overliner	Total		
Closed Landfill Area	-	-	-	N/A	1972
Western Expansion (WEX)	68.1	N/A	68.1	1	1994
				2	1995
				3	1996
				4	1997
				5	1999
				6	1998
				7	2000
				8/9	2001
Parkway Expansion Phase I	7.5	12.6	20.1	6-OL	2002
				7-OL	2002
				8/9-O/L	2003
Parkway Expansion Phase II	42.6	15.4	58.0	10, 10-OL	2008
				11, 11-OL	2019 Currently operating in Cells 11 and 11-OL
Parkway Expansion Phase III (Town of Perinton)	47.9	4.6	52.5	12, 13, 13-OL	2017-2023 Currently operating in Cells 12, 13, 13OL

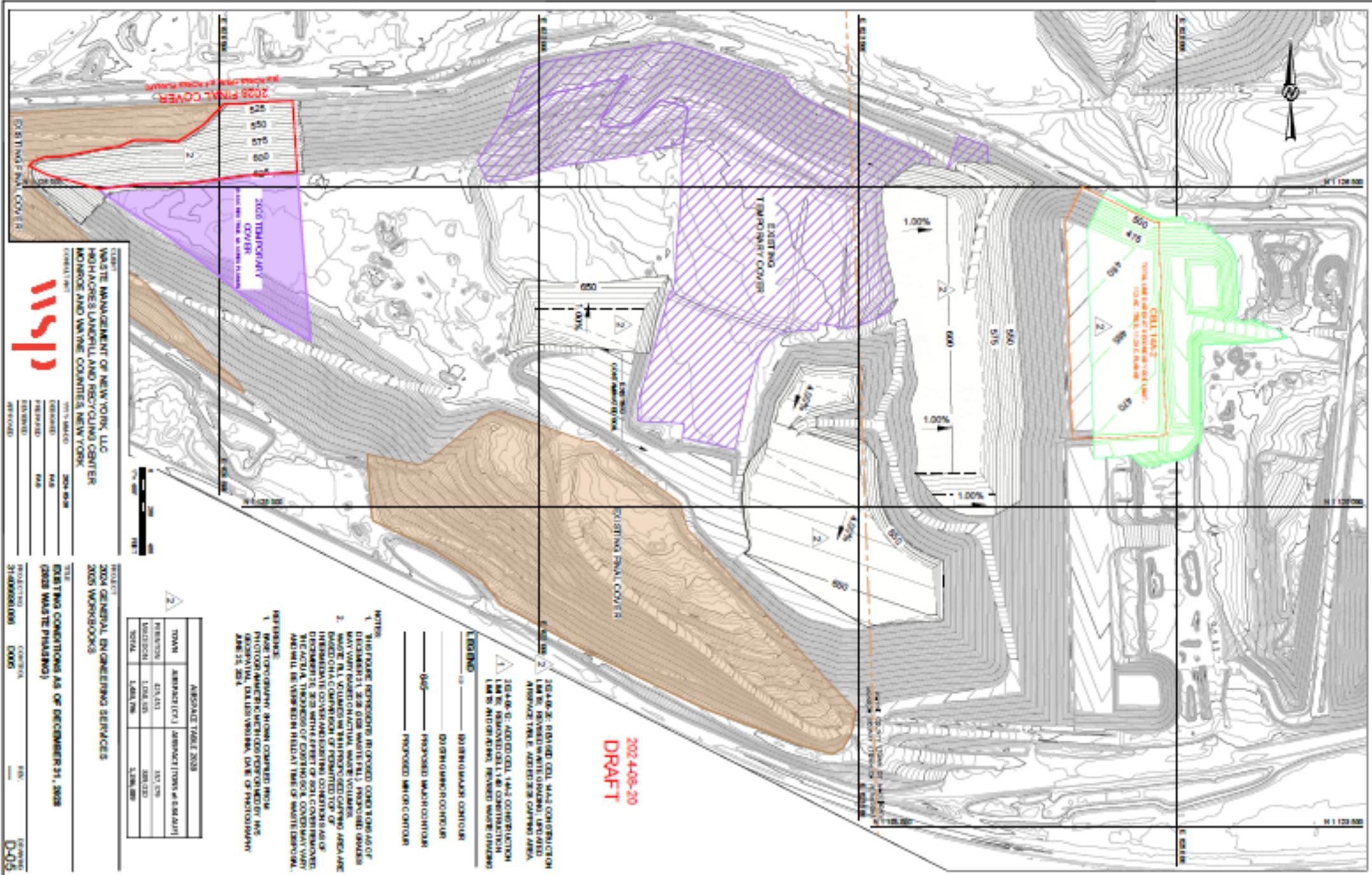
Liner Construction













Surface Emissions Monitoring Methodology

Readings Above 500 ppm Threshold

- ▶ NSPS procedures followed
 - ▶ Location is recorded and flagged, site personnel notified
 - ▶ Each location is evaluated and corrective action program is implemented
- ▶ **Follow-up monitoring conducted to confirm remedy is successful**
 - ▶ Within 10 days of initial exceedance
 - ▶ 1 month after initial exceedance



Readings Above 200 ppm Threshold (Perinton Special Use Permit Requirement)

- ▶ 2.5x more stringent than the regulatory standard
- ▶ Same procedures as above followed except only 1 successful follow-up reading required
 - ▶ Within 1 month after initial exceedance

Monthly Cover Integrity Program

- ▶ Surface inspected monthly and corrective actions made as necessary



Surface Emissions Monitoring Methodology

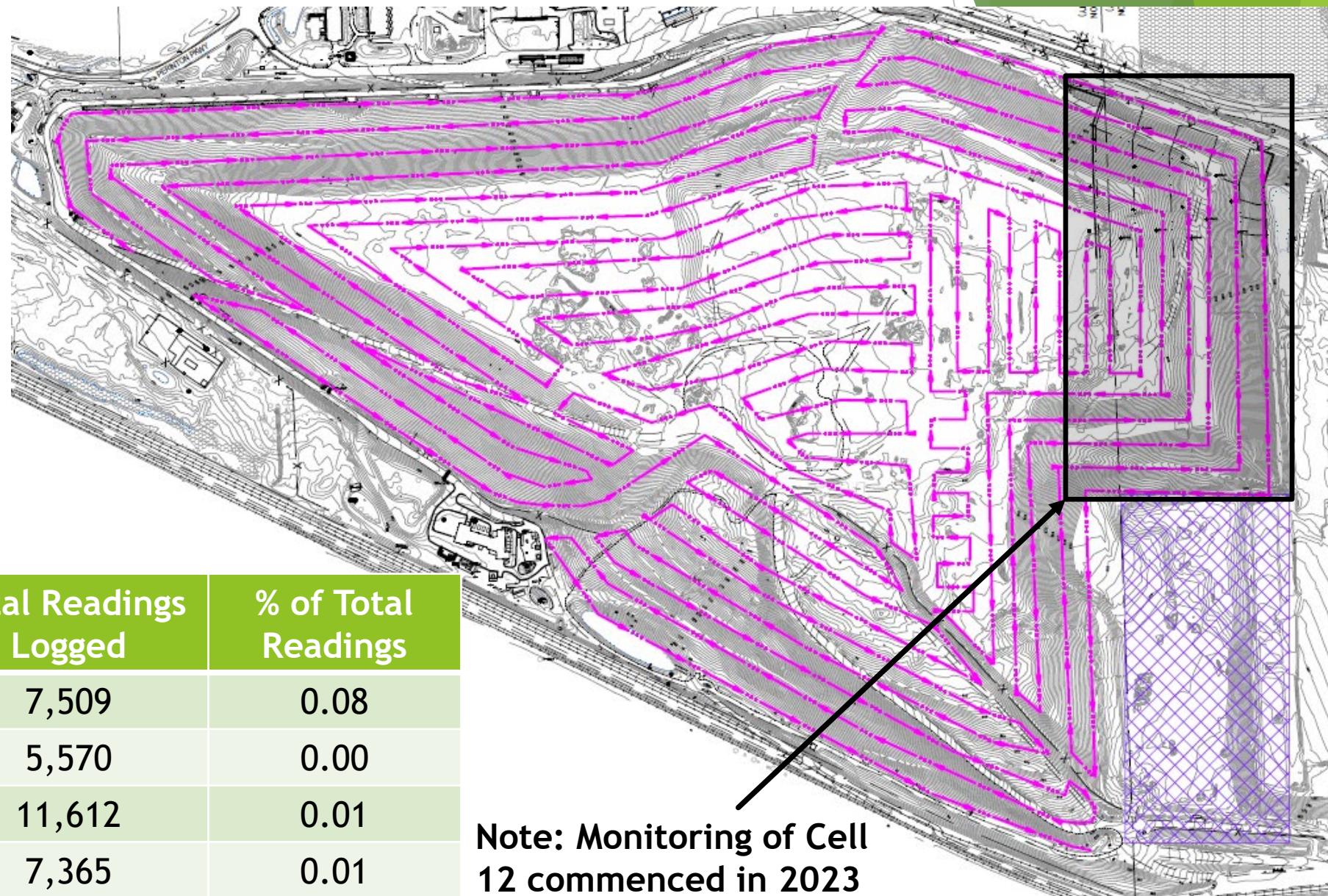
Monitoring in Accordance with Work Plan and New Source Performance Standards (NSPS)

- ▶ **Monitoring Path = 30-meter serpentine path beginning at perimeter of the landfill**
- ▶ **Extension probe held at 2 to 4 inches above surface of the landfill while traversing**
 - ▶ Readings logged into SEM5000 instrument (date, time, reading and GPS coordinates logged)
- ▶ **Technician also inspects landfill surface and will temporarily deviate from monitoring path to undertake sampling when encountering:**
 - ▶ Surface penetrations such as landfill gas wells, risers, or other collection components
 - ▶ Areas with distressed vegetation
 - ▶ Areas with cracks/seeps in the cover
- ▶ **In accordance with Federal regulations and site permit conditions, if unsafe conditions are encountered Technician evaluates options to safely conduct the monitoring. If a safe option cannot be established, such areas are highlighted in the reports and areas are evaluated during future events. Examples of such areas include:**
 - ▶ Active and construction areas that have large trucks and equipment operating
 - ▶ Steep slopes with exposed geomembrane liner (slip /trip/ fall) and/or with problematic weather conditions
- ▶ **Regulations do not require monitoring of areas with waste less than 5 years old (or within 2 years of an area being closed or reaching final grade) in accordance with NSPS rules**
 - ▶ On occasion areas not required to be monitored by regulation may be monitored.



2023 Surface Monitoring Data - Path Monitoring

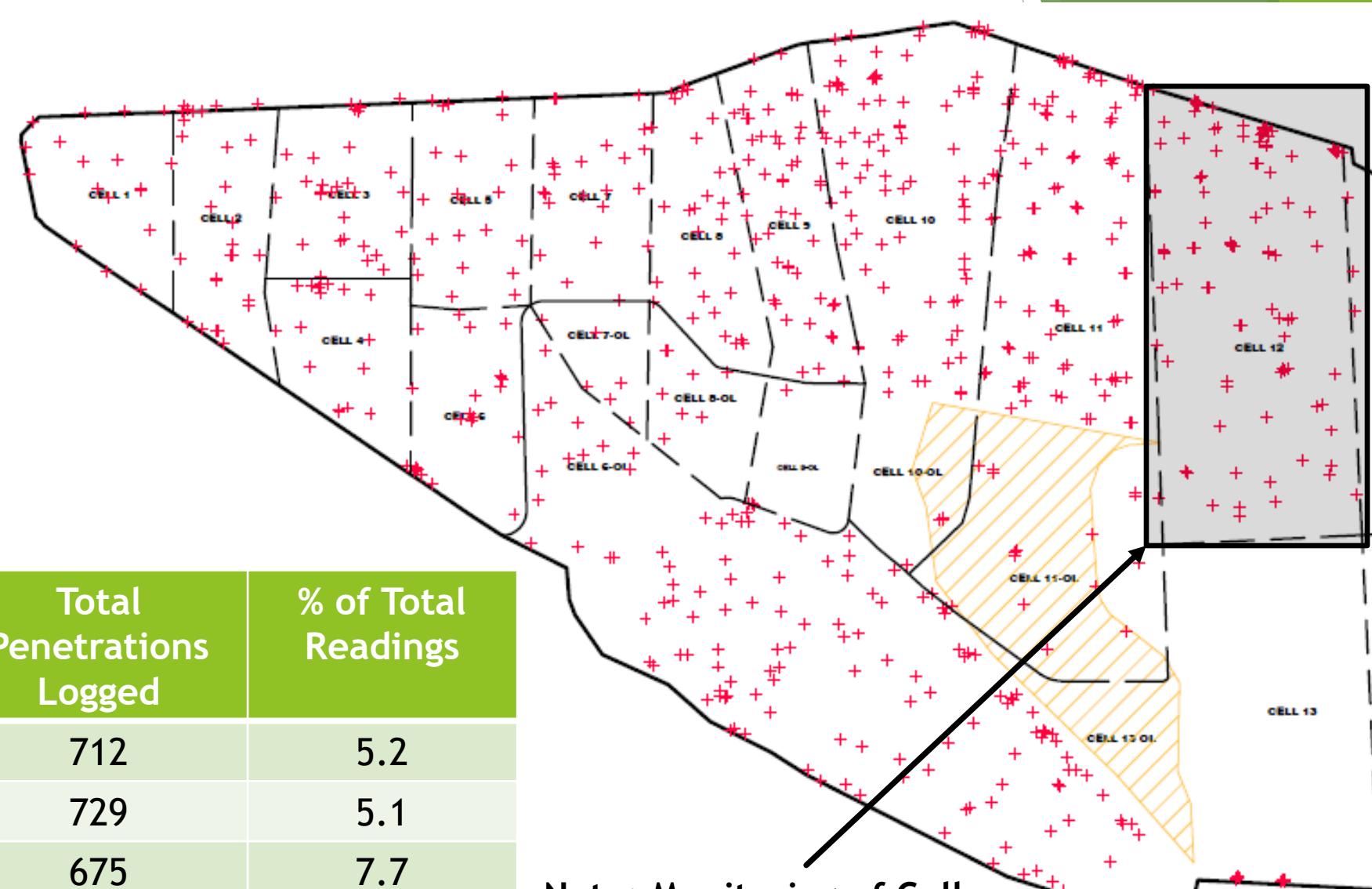
- ▶ Technician monitors surface along 18.7-mile path (except dangerous areas)
- ▶ Readings auto-log every 1-15 seconds
- ▶ Technician flags locations > 200 ppm
- ▶ Corrective action and follow-ups commence



2023 Surface Monitoring Data - Penetration Monitoring

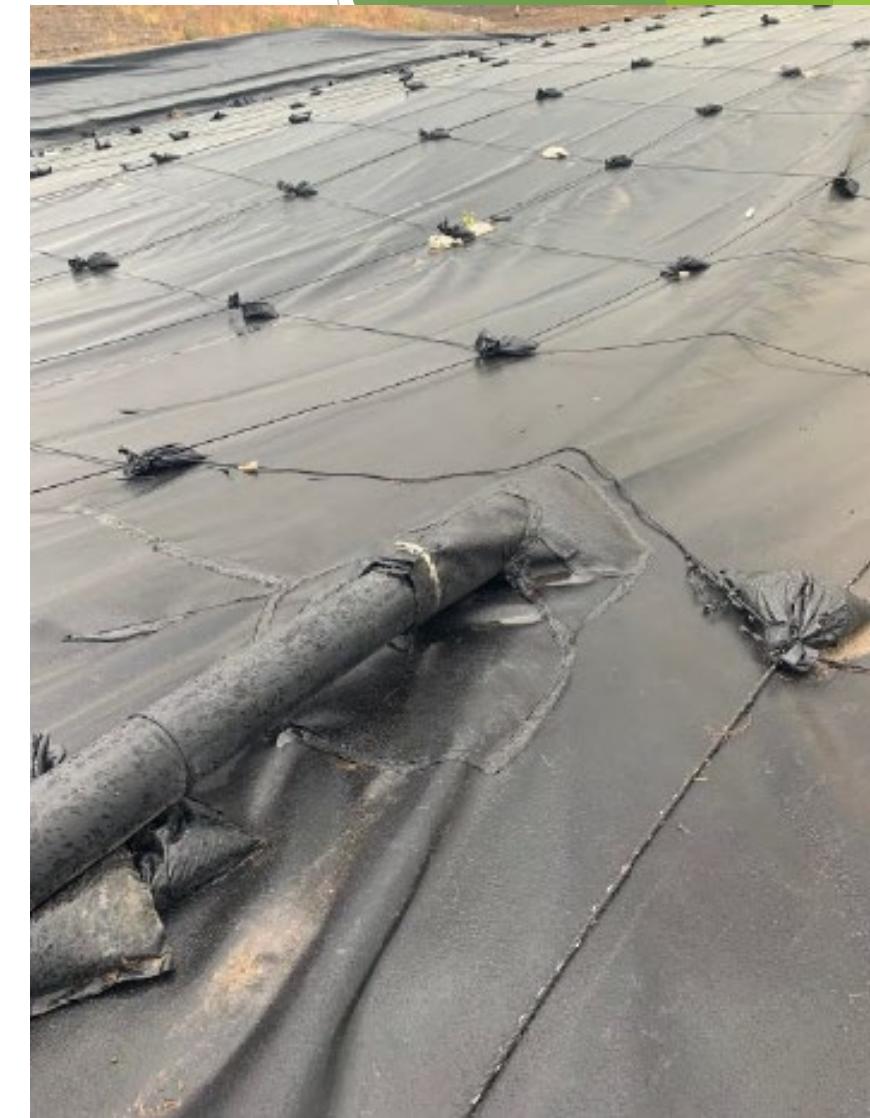
- ▶ Technician monitors ~ 700 penetrations each quarter (except dangerous areas)
- ▶ Technician flags locations > 200 ppm
- ▶ Corrective action and follow-ups commence

Period	# Locations > 200 PPM	Total Penetrations Logged	% of Total Readings
2023 Q1	37	712	5.2
2023 Q2	37	729	5.1
2023 Q3	52	675	7.7
2023 Q4	47	699	6.7



Note: Monitoring of Cell 12 commenced in 2023





USEPA Inspection of SEM Program

- ▶ EPA conducted SEM inspection at High Acres on August 29-30, 2023
 - ▶ EPA reviewed previous reports, monitoring data, monitoring runs, component leak histories, leak repair procedures, calibration gas certificates of analysis, calibration logs, calibration precision testing, and calibration response time testing.
 - ▶ EPA observed GHD perform calibration of instrument according EPA RM 21
 - ▶ EPA and GHD conducted side-by-side SEM monitoring of landfill over 2-day period:
 - ▶ 24 total locations > 500 ppm identified; Corrective actions initiated at all 24 locations and follow-up monitoring results were reported to EPA (report dated 10/26/23)
- ▶ From EPA Leak Detection and Repair (LDAR) Inspection Report dated 11/7/23:
 - ▶ “Omer Sohail, EPA, reviewed the Quarter 1 2023 and Quarter 2 2023 Surface Emissions Monitoring Reports. All reports were found to be satisfactory.”
 - ▶ “EPA observed GHD conduct calibration of the Landtec SEM5000. All calibration procedures were found to be satisfactory. GHD’s calibration gasses, air zero and 500 ppm methane, were inspected and found to be satisfactory.”





Summary of Surface Monitoring Results



- ▶ Purpose of surface emissions monitoring program is to evaluate the effectiveness of the gas collection and cover systems and provide ongoing corrective action/ remedy programs
- ▶ As long as corrective measures are implemented within the required timeframes, the facility is in compliance with Work Plan (local), Title V Permit (state) and NSPS rules (federal)
- ▶ All results are reported to NYSDEC and Town on a quarterly basis

Based on our review of records over the last 5 years, all follow up procedures, including corrective action and follow up monitoring, were completed within the required timeframes, and in many cases corrective actions were implemented well before required (often times within the same day).



High Acres H₂S Monitoring Program

- ▶ Monitoring Instrument: Acrulog PPB
- ▶ Detection limit: 3 parts per billion (ppb)
- ▶ Instrument Range: 3 - 2,000 ppb
- ▶ Reading taken and logged every 10 minutes
 - ▶ 3-minute sampling period
 - ▶ 7-minute zero / purge period





0 1500' 3000'

LEGEND

① AMBIENT AIR MONITORING LOCATION



WASTE MANAGEMENT OF NEW YORK - HIGH ACRES LANDFILL
FAIRPORT, NEW YORK
Q2 2021 SURFACE EMISSION MONITORING
AMBIENT AIR MONITORING LOCATIONS

FIGURE 2



Summary of H₂S Monitoring Results

- ▶ **Original Work Plan dated March 2, 2018**
 - ▶ Data Collection Period: March 6, 2018 - June 9, 2019
 - ▶ Continuous data collection at all 5 stations
 - ▶ Reports provided every week initially and every 2 weeks thereafter
- ▶ **Revised Work Plan dated April 30, 2019**
 - ▶ Data Collection Period: July 9, 2019 - Present
 - ▶ Data collected quarterly at 4 perimeter stations for 1 week during surface scan
 - ▶ Quarterly reports provided
 - ▶ Continuous data collection at School during school year
 - ▶ Monthly reports provided

Station Name	# Readings Collected	% Non-Detections (% of Total Readings)
West Monitoring Station (WMS)	166,674	99.8
North Monitoring Station (NMS)	262,986	99.6
East Monitoring Station (EMS)	164,072	99.8
South Monitoring Station (SMS)	191,779	99.7
School Monitoring Station (School)	274,263	99.5
Grand Totals	1,059,774	99.7

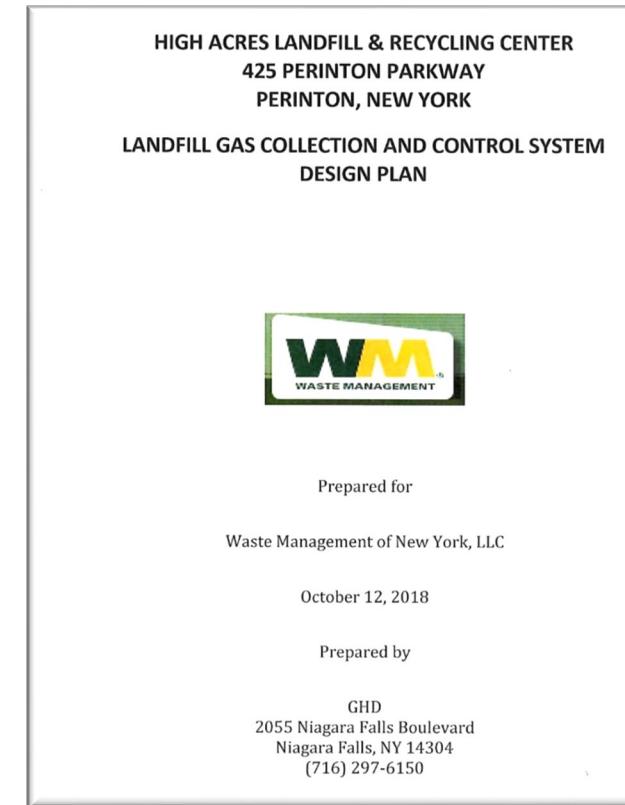


Since March 6, 2018, there have been no exceedances of the 1-hour standard for H₂S attributable to the landfill.²⁴

High Acres Gas System Collection, Conveyance, Cover, Control (4C's)

GCCS Plan (GHD Plan -updated 10/12/18)

- ▶ Roadmap for all landfill gas system development criteria for all design/operational rationale (current conditions through site closure)
- ▶ Gas Emissions Model (Land GEM) - provide information for gas generation by year, peak flow, system sizing, gas well spacings (ROI), infrastructure needs, operational considerations.
- ▶ Site monitoring, testing, and reporting.



* USEPA developed monitoring procedures to determine active LFG collection system's effectiveness



4C's Components

Collection

- ▶ Vertical Gas Wells (*Slip Form Style*)
- ▶ Horizontal Gas Collectors
- ▶ Base Grid System
- ▶ Agru Under Liner Collectors (*Under Temp Cap Areas*)

Conveyance

- ▶ Headers
- ▶ Laterals/Sub Headers
- ▶ Blowers
- ▶ Infrastructure

Cover

- ▶ Soils
- ▶ AOC's
- ▶ EPI Cover System
- ▶ Exposed Geomembranes
- ▶ Final Cover System

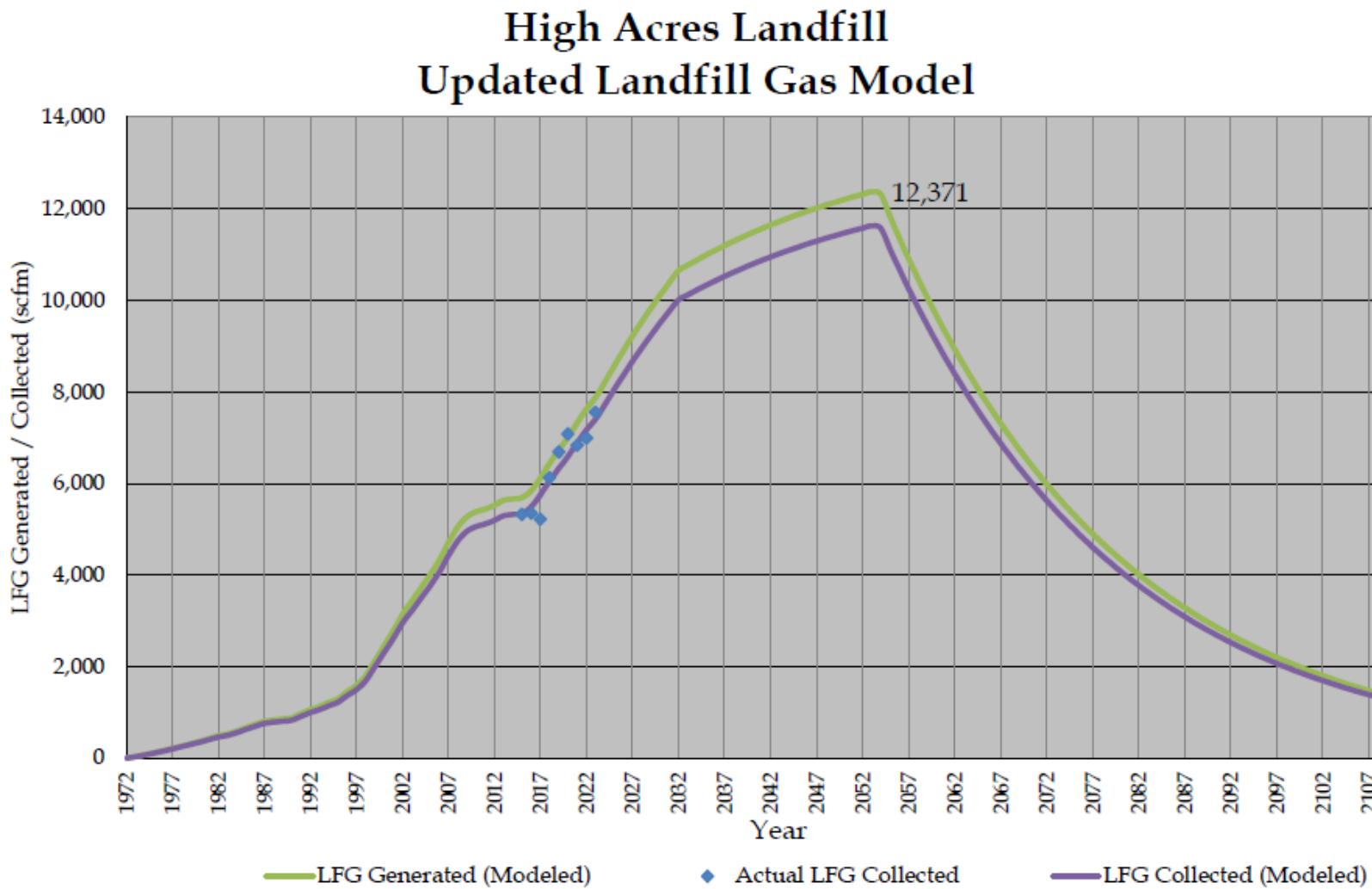
Controls

- ▶ Enclosed Flares
- ▶ Open Flare
- ▶ Gas-To-Energy Plant

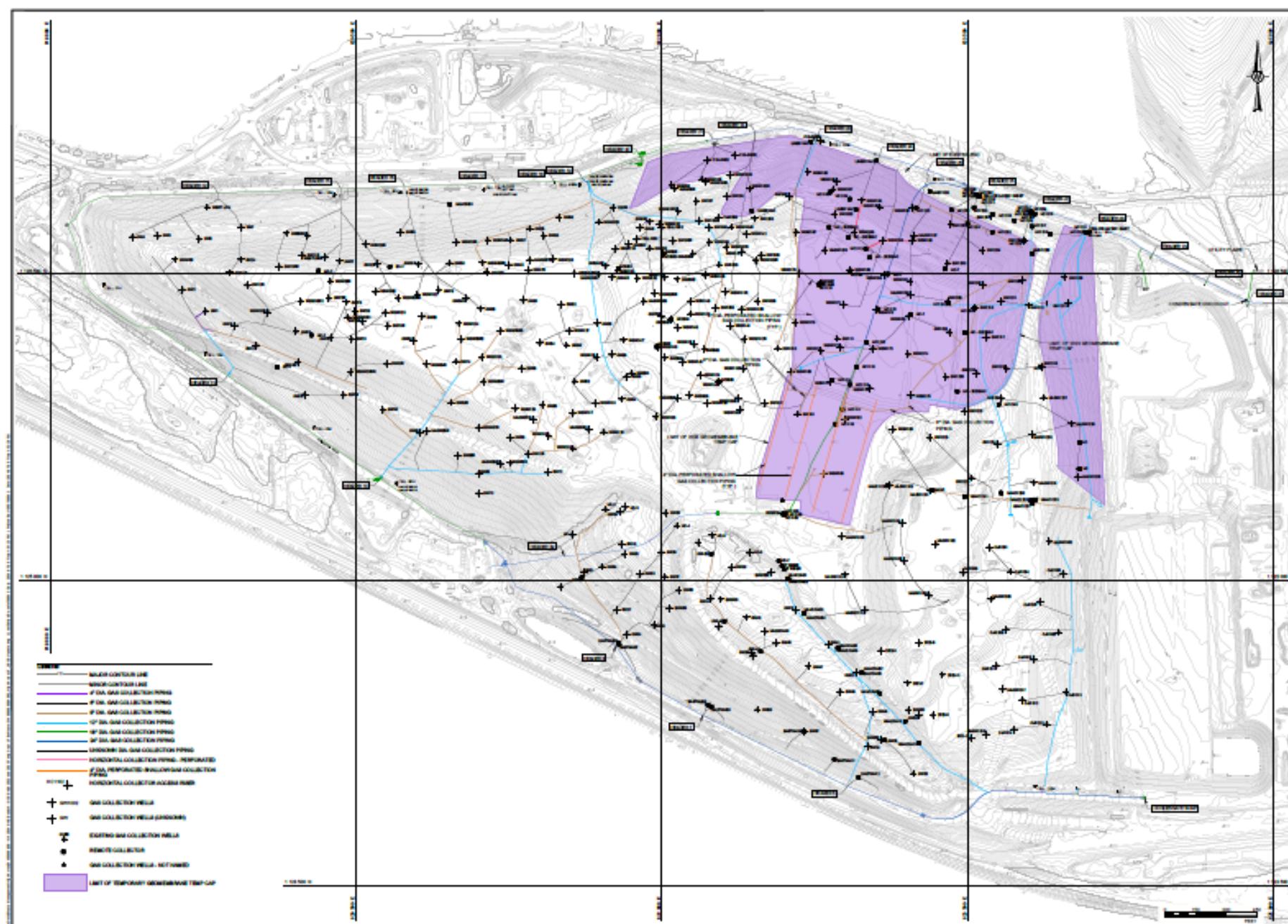


Updated Landfill Gas Model

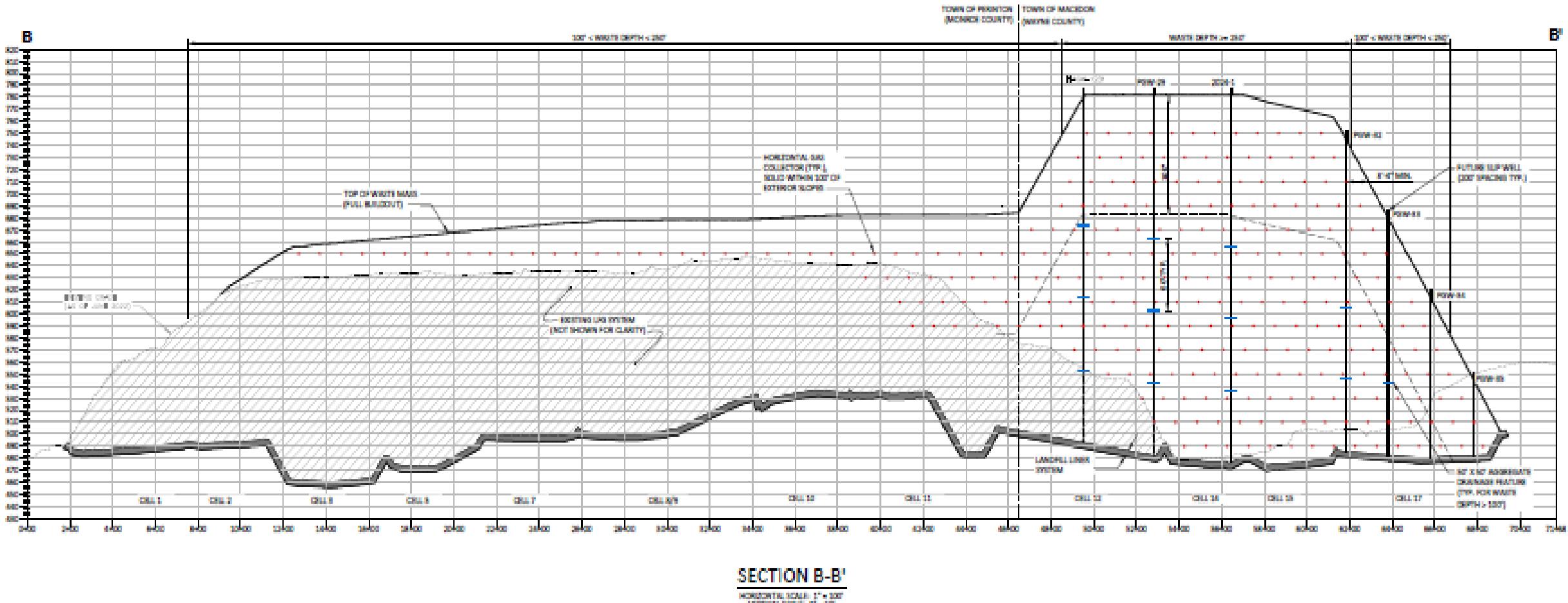
LFG Model Parameters
AP-42 Model ($Lo = 100 \text{ m}^3/\text{Mg}$, $k = 0.04 \text{ yr}^{-1}$)
100% putrescible waste for 1972 - 2031
80% putrescible waste for 2032 - 2053



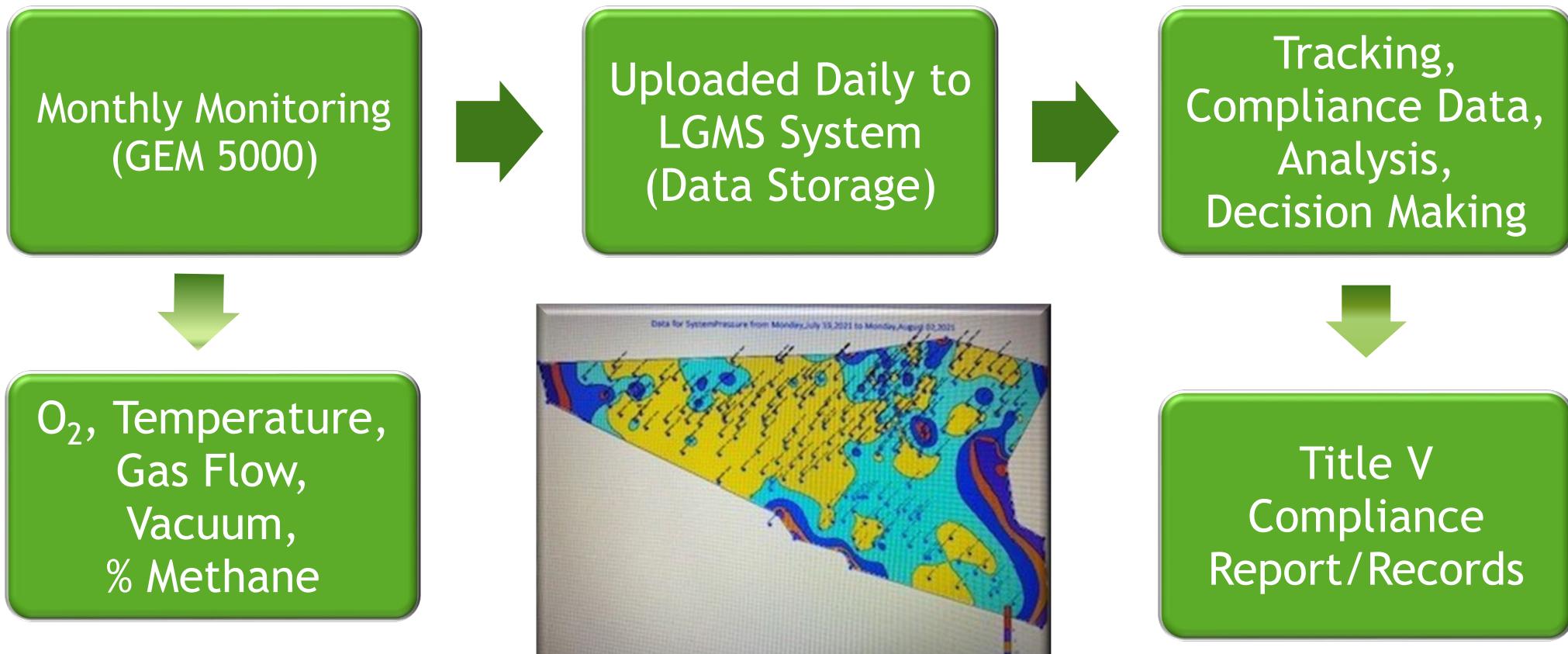
Gas Collection Existing Systems



Landfill Horizontal Gas Collectors

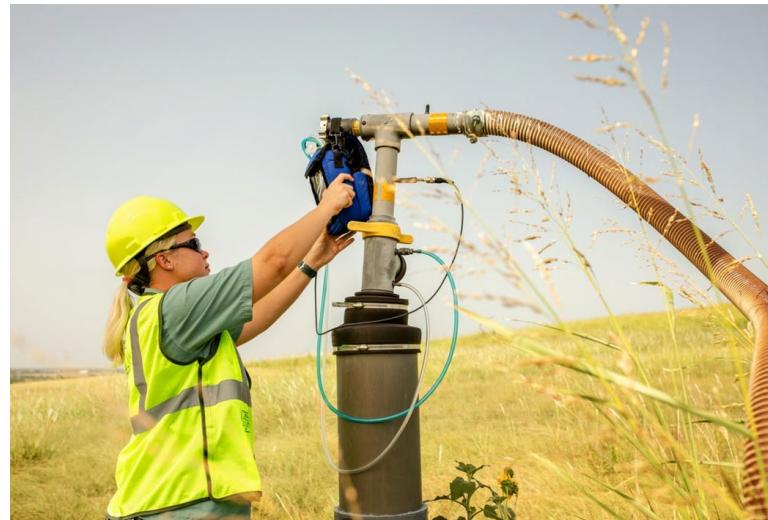
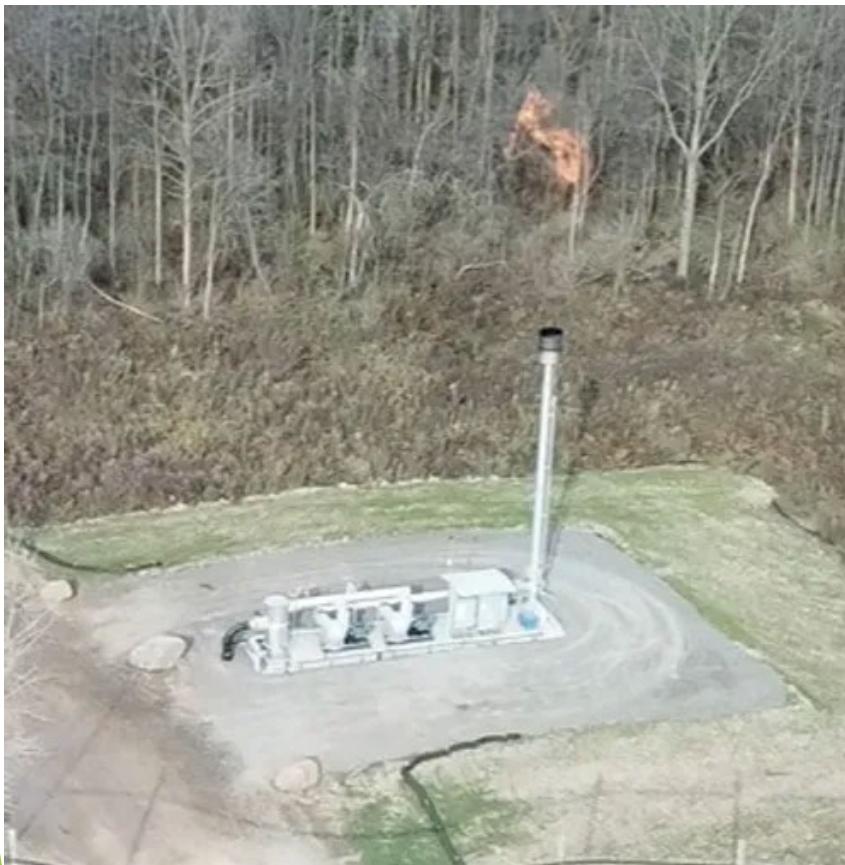


Landfill Gas Well Field Data Management





Landfill Gas Infrastructure - Control



WM

Landfill Gas Infrastructure - Cover



Landfill Gas Infrastructure - Cover EPI EnviroCover Membrane Systems



Geomembrane Temporary Cap

- 7.6 Acres in 2023 (*top right*)
- Total Temp. cap YTD (44.2 acres)
- Total Enhanced Soil Cover YTD (88 acres)
- Additional 6 acres of projected coverage in 2024 (*bottom right*)



2023 Landfill Gas Summary



Collection/Conveyance

- ▶ Approximately 422 gas collection vertical wells
 - ▶ 360 vertical, 62 horizontal
- ▶ 30 header locations monitored weekly and 105 wells read at least twice per month
- ▶ Miles of horizontal gas collects
- ▶ Miles of laterals, vacuum lines, headers
- ▶ 99.95% Runtime

2 Enclosed Flares
+ 4500 CFM
+ 6000 CFM

1 Open Flare
+ 3500 CFM

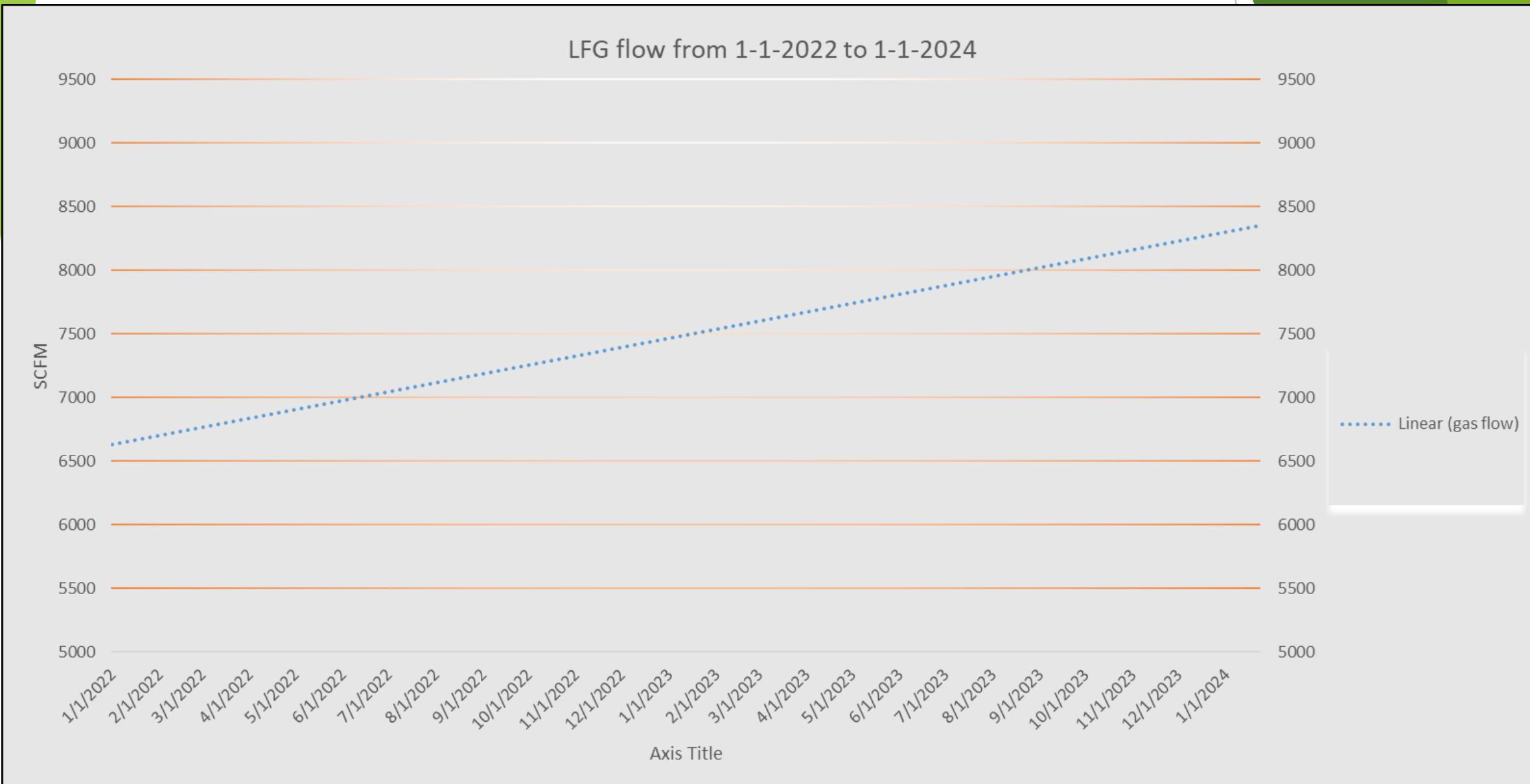
8 CAT Engines (Gas-To-Energy)
 $(4) - 3516 = 1320 \text{ CFM}$
 $(4) - 3520 = \frac{1800}{3120} \text{ CFM}$

Gas Flared
2,483,687 MCF

Gas Utilized
1,554,779.3 MCF

Gas Quality = 50%
(Good Well Field Indicator)

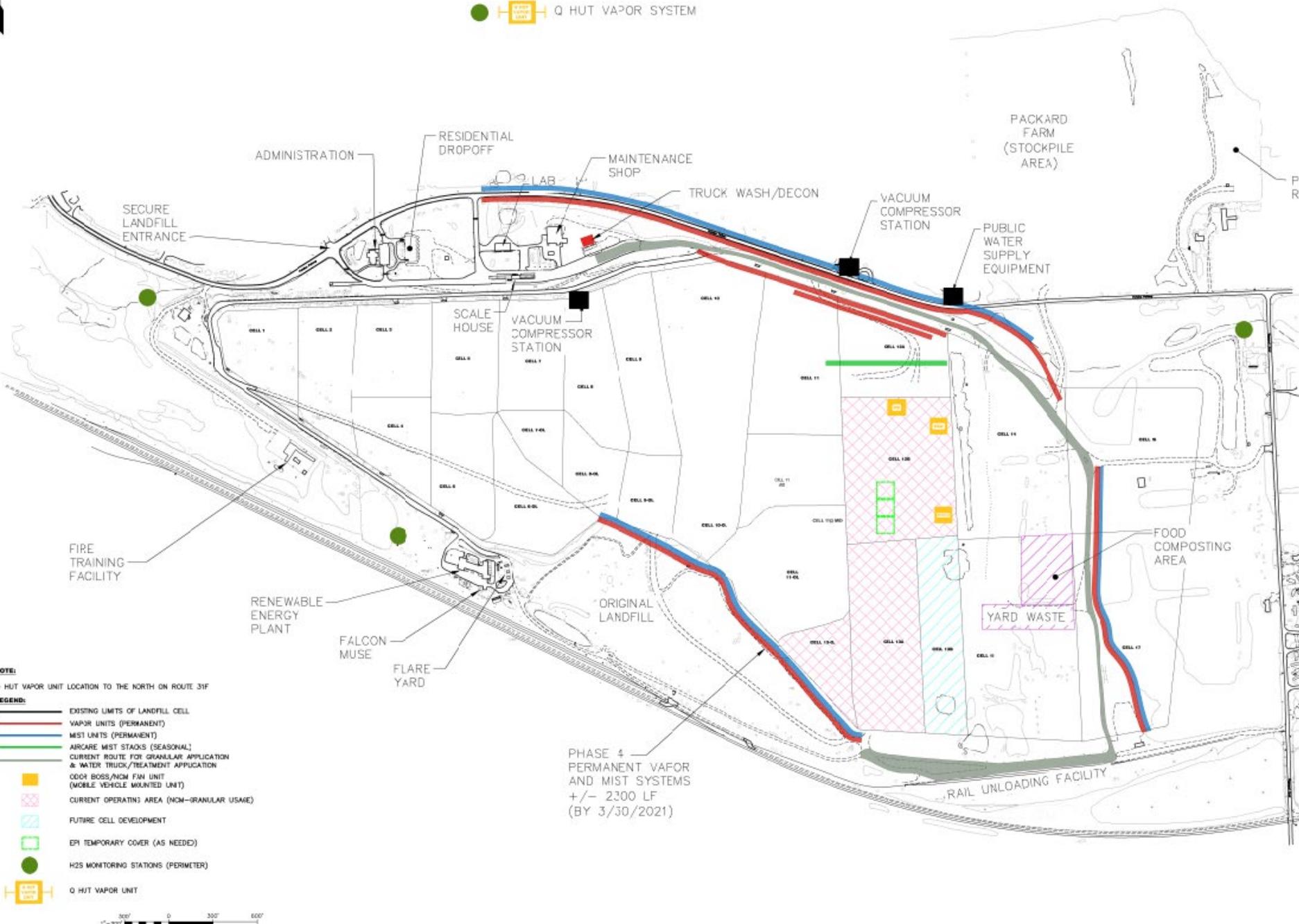
2023 Landfill Gas Flow Summary





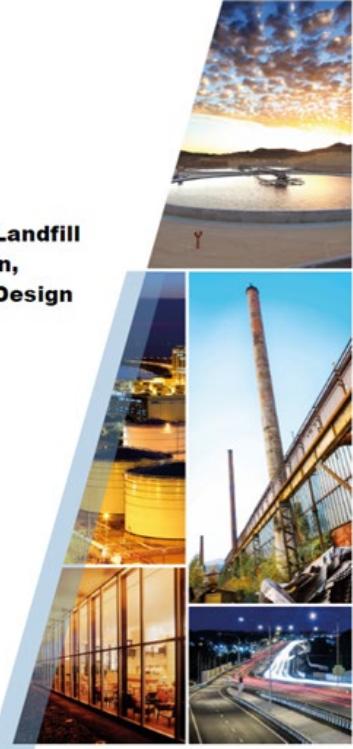
Onsite Odor Management: NYSDEC Approved- a proprietary blend of plant-based oils, natural extracts, trace elements, fragrances, scents, and surfactants.





Comprehensive Landfill Odor Control Plan, Evaluation, and Design Basis Report

Waste Management
High Acres Landfill



GHD | 2000 Niagara Falls Blvd Niagara Falls NY 14054 | 800.865.1018 | Report No. 22 | January 7, 2016



Four C's

- Control Devices (Flares/Engines)
- Convenience
- Collection
- Cover



Control Devices-

(Guarantee available vacuum with redundancy)

- 3516 Powerplant
- 3520 Powerplant
- Enclosed Flare 1
- Enclosed Flare 2
- Open Flare

Well Field (Collection and Conveyance)

- 400 +- Vertical Wells
- Miles of horizontals installed every 20ft vertically and 100ft horizontally
- Well points monitored either 1x or 2x per month
- All data logged into LGMS
- Demonstrates negative pressure on entire waste mass (Radius of Influence)

Surface Emissions Scans

- 3rd party contractor walks the facility in a serpentine pattern 4x/year scanning the surface of the landfill for potential gas emissions
- Scan at 2.5x regulatory requirement or 200ppm vs 500ppm
- No regulatory violations

Perimeter H2S Monitoring

- H2S monitoring stations at 5 locations, North, South, East, West, and Northside Dudley School
- Since 2018, more than 1,000,000 samples with no landfill-related exceedances



NYSDEC 24-hr Notification/Verification System

Third party company of trained and certified inspectors

- ▶ 24-hour service, trained odor investigators, provides a convenient, rapid and actionable method of investigating and corroborating/validating reported concerns
- ▶ Responders trained in investigation techniques using n-Butanol reference scale (measure of odor intensity)
- ▶ As part of the odor investigation, temperature, wind strength and direction, precipitation, and cloud cover are recorded
- ▶ Conducts *two types* of investigations related to odors:
 - 1.) Routine monitoring- surveying of surrounding roads/neighborhoods through the community conducted 2x/day- 7days/week (AM/PM), measuring the intensity and extent of any odor detected
 - 2.) Hotline Response - Towpath also responds and investigates the intensity and extent of the odor calls received by the NYSDEC hotline⁴⁰

To reach the hotline, call 585-453-2416.

Odor Science & Engineering Training



OS&E Odor Monitoring and Odor Complaint Investigation Techniques Course Outline

Introduction

1.0 The Properties of Odor

- 1.1 Odor Concentration
- 1.2 Odor Intensity
- 1.3 Odor Character
- 1.4 Hedonic Tone

2.0 Odor Measurement Methodology

- 2.1 Source Emission Sampling
- 2.2 Measurement of Odor Concentration by Dynamic Dilution Olfactometry
- 2.3 Measurement of Ambient Odor Concentrations by Scentometer/Nasal Ranger
- 2.4 Measurement of Odor Intensity
- 2.5 Instrumental Analysis (Jerome H₂S Analyzer)

3.0 Meteorological Factors Affecting Odor Dispersion

- 3.1 Atmospheric Stability
- 3.2 Influence of Local Terrain
- 3.3 Source Characteristics

4.0 Odor Monitoring/Complaint Response Protocol

- 4.1 Odor Monitoring Procedures and Forms
- 4.2 Odor Complaint Investigation Procedures and Forms

5.0 Olfactory Screening of Course Participants

6.0 Training on the use of the n-butanol Odor Intensity Scale

7.0 Field Training

NYSDEC 24-hr Notification/Verification System

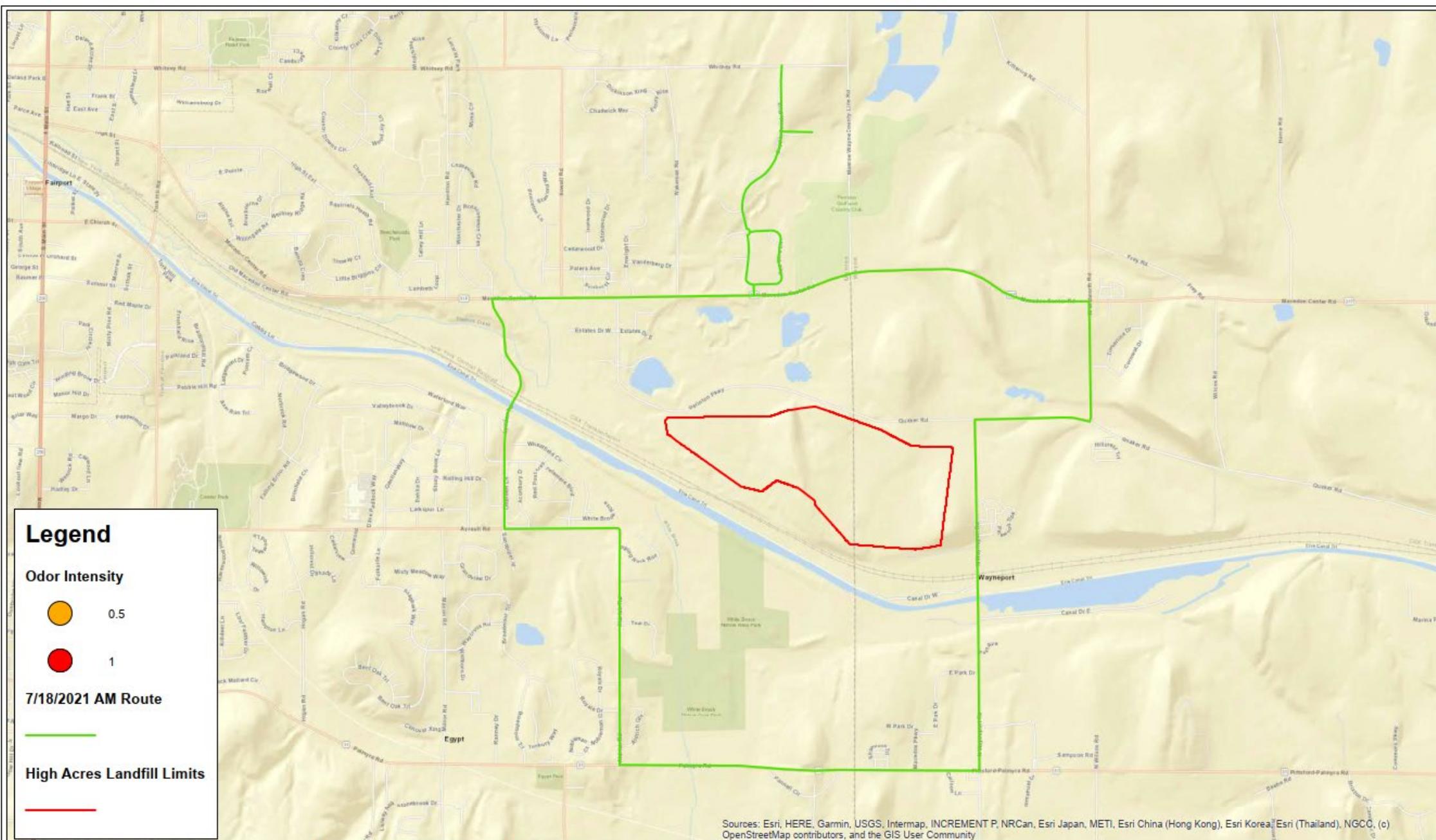
Third party company of trained and certified inspectors



n-butanol Intensity Level (0-8) ASTM E544-10	Description of Perceived Odor
0.5 - 1	Very Faint: An odor that would ordinarily not be noticed by the average person, but could be detected by the experienced inspector or a hypersensitive individual.
1-2	Faint: An odor so weak that the average person might detect if his attentions are called to it, but that would not otherwise attract his attention.
3	Distinct, Easily Noticeable: An odor of moderate intensity that would be readily detected and might be regarded with disfavor. (A possible nuisance in inhabited areas.)
4 and higher	Strong, Decided: An odor that would force itself upon the attention and that might make the air very unpleasant (a probable nuisance, if found in inhabited areas.)

42





Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

**Barton
&Loguidice**

ROUTE MILEAGE: 11.1 MILES

1 inch = 2,000 feet



**Routine Investigation Locations
Odor Mapping High Acres
Landfill & Recycling Center**
Monroe & Wayne Counties Sunday AM
7/18/2021 New York

Project No.
1242.019.01B

NYSDEC 24-hr Notification/Verification System

Third party company of trained and certified inspectors

Details | Edit | Basemap | Share | Print | Directions | Measure | Find address or place |

Odor Points | World Street Map

Odor Points (Features: 12, Selected: 0)

Date	OdorStrength	Odor_Character	Frequency	Wind_Speed	Wind_Direction	Temp_F	Cloud_Cover	Precipitation	Odor_Source	Investigator_Initials	Comments
7/29/2021, 6:29 AM	0			1	SSE	60	83	None		JPC	AM odor mo run- start. M noted at thi:
7/29/2021, 6:32 AM	0.5	Garbage odor	Faint	1	SE	62	86	None	High Acres	JPC	Faint garba noted at thi:
7/29/2021, 6:41 AM	0			1	S	62	86	None		JPC	No odor not location
7/29/2021, 6:43 AM	0			2	SSE	62	100	None		JPC	AM odor mo run- comple odor noted : location

Trust Center | Contact Esri | Report Abuse

2023 NYSDEC Odor Hotline Statistics

(1/1/23-12/30/23)

NYSDEC Hotline Data Collection Summary YTD (1/1/2023 – 12/30/2023):

270	Total number of calls
46	Total number of individual callers
37.9%	Percent of Investigated Hotline Calls (102) with no odor detected
58.7%	Percent of Investigated Hotline Calls with Confirmed Off-Site landfill Odors (158) Scaled at 0.5, 1
3.7%	Percent of Investigated Hotline Calls with Confirmed Off-Site landfill Odors (10) Scaled at 1.5, 2
40.4%	Percent of Hotline Calls (109) received from Magnolia Manor
90%	Calls represented by top 20 callers

In 2023, *1 individual made 156 hotline calls, which is 58% of the hotline calls*

	2022	2023
Total number of calls	732	270
Total number of individual callers	128	46
Percent of Investigated Hotline Calls with no odor detected	46%	37.9%
Percent of Investigated Hotline Calls with Confirmed Off-Site landfill Odors Scaled at 0.5, 1	53%	58.7%
Percent of Investigated Hotline Calls with Confirmed Off-Site landfill Odors Scaled at 1.5, 2	1%	3.7%
Percent of Hotline Calls received from Magnolia Manor	40%	40.4%
Percent of Calls represented by top 20 callers	78%	90%

NYSDEC Hotline

- 3rd party contractor certified and trained in the use of the N-butanol scale (Towpath)
- Trained in types of odor ex: garbage, gas, wetland, and other
- **2023- 96% of any confirmed odors were not LFG related**



Daily Perimeter Odor Monitoring

- 2x/day Towpath drives a predetermined route around the entire vicinity of the facility to evaluate the presence of odors
- Towpath records weather conditions, route of travel and whether odors do or do not exist
- In the event an odor is present, Towpath records the type of odor, strength and location
- **2023- 96% of any confirmed odors were not LFG related**

NYSDEC Monitor

- Full-time NYSDEC monitor issues the facility a daily report card
- Monitor also drives perimeter of the facility and adjacent neighborhoods to evaluate odors/LFG NYSDEC findings consistent with Towpaths

47

To reach the hotline, call 585-453-2416.

Environmental Monitoring Program Summary

- ▶ Outline:
 - ▶ Introductions
 - ▶ Environmental Monitoring Program
 - ▶ Monitoring Results Summary



Third Party Environmental Monitoring - Sampling, Analysis, and Reporting

GEI Consultants

Manages landfill environmental monitoring program and reporting

Barton & Loguidice, Inc.

Conducts field sampling for environmental monitoring program

Eurofins - TestAmerica Buffalo

NYSDOH ELAP certified laboratory in accordance with the NYSDEC's ASP – Laboratory analysis

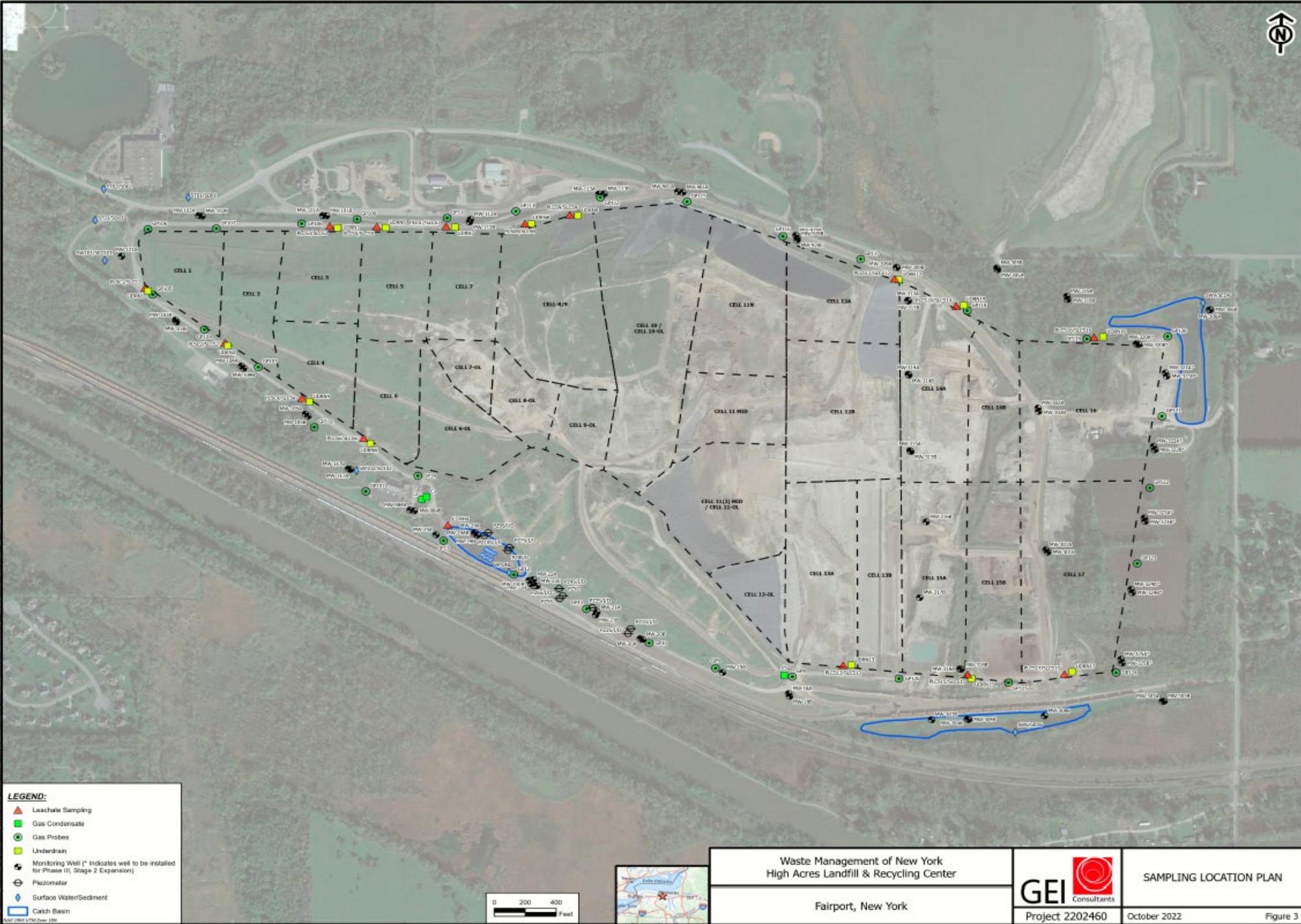
EMP (cont'd): Media Sampled/Monitored Quarterly

- ▶ Each quarter we collect over 50 surface water and groundwater samples and analyze for up to 150 constituents.
- ▶ Groundwater
 - ▶ 50 Total wells
 - ▶ 23 wells (Western/Phase I/II Parkway Area)
 - ▶ 12 wells (Phase II Parkway Area)
 - ▶ 15 wells plus hydraulic monitoring of 28 piezometers (Closed Landfill Area)
 - ▶ On-site groundwater suppression systems
- ▶ Surface Water/Sediment
 - ▶ 3 locations (Off-site stream)
 - ▶ 5 On-site detention ponds

EMP (cont'd): Media Sampled/Monitored

- ▶ **Landfill Systems**
 - ▶ Leachate
 - 13 Leachate samples at individual landfill cells and 1 Closed landfill
 - 13 samples of liquid in secondary systems
- ▶ **Landfill Gas Monitoring (in-situ)**
 - ▶ 23 perimeter locations

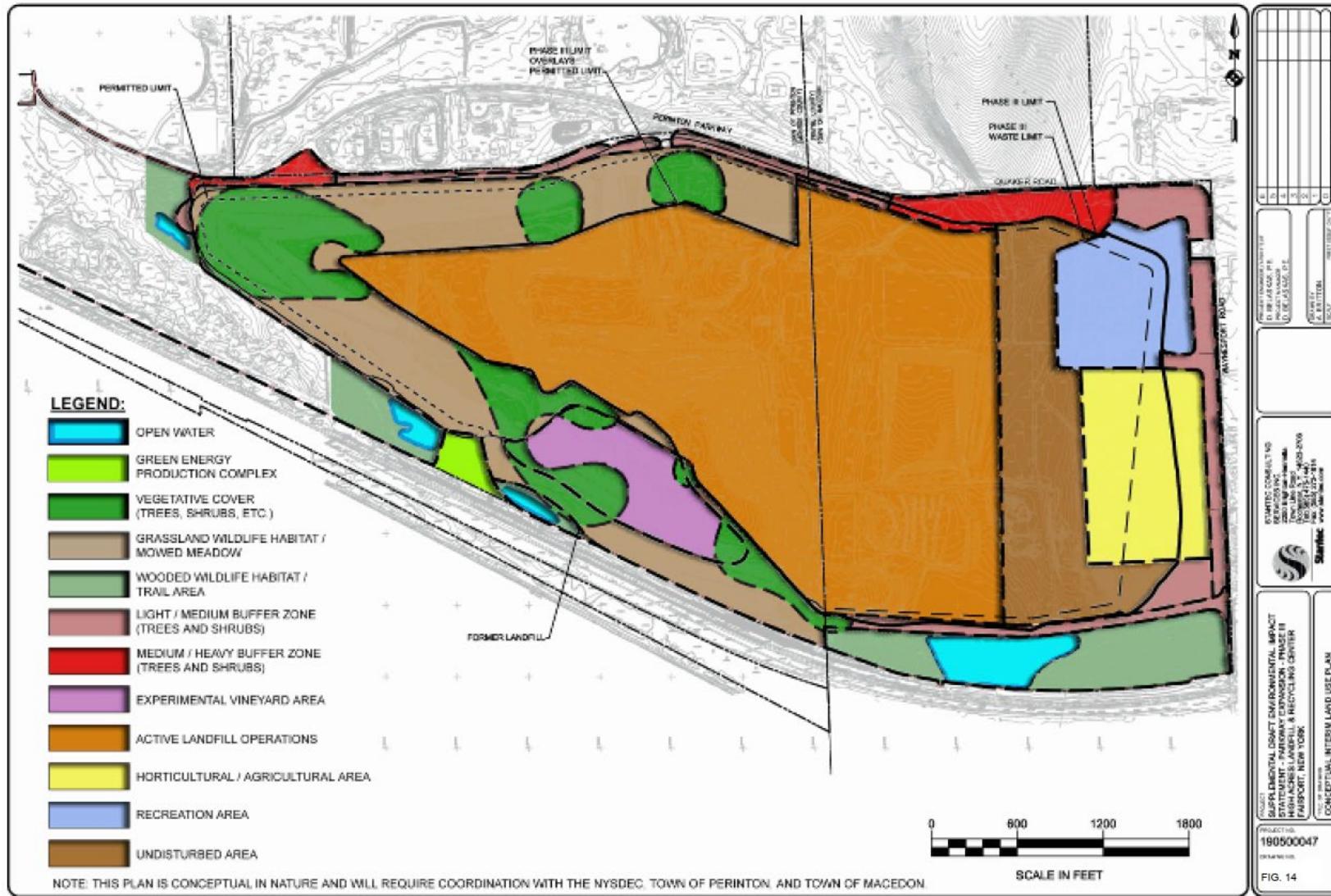
Sampling Location Plan



Environmental Monitoring Summary/Conclusions

- ▶ 2023 to date - Sampling and analysis indicates active landfill operations (Western and Parkway Landfill Areas) have not impacted groundwater or surface water flow or quality.
- ▶ Consistent with historic trends - Groundwater monitoring at the Closed Landfill area identified landfill gas impacts at two well locations. Continues to be monitored and reported to the NYSDEC.
- ▶ Seasonal fluctuations or increasing trends in concentrations of chloride and sodium are attributed to roadway safety de-icing activities.
- ▶ Leachate conveyed to the Monroe County Pure Waters WWTP was in compliance with permit conditions.
- ▶ Explosive gas was not detected.

Landscape Plan - Interim Plan



Landscape Plan Status

- The landscaping efforts on the landfill are a work in progress and require continual monitoring and adjustments.
- The goal of creating a view of High Acres that is similar in texture and feel of the surrounding topography remains.
- The success of the naturally occurring vegetation (i.e, poplars and black locust trees, etc.) has been very successful and WM intends to encourage this type of growth.
- Minimal plantings will be completed over the next few years given the future fill progression and given the success of the natural successional growth versus installing new plantings.
- Rotational mowing continues to occur on the interim cover portions of the landfill to break up the surface of the landfill and allow ground nesting birds to thrive.



Landscape Plan - Current Conditions - Summer '24



Landscape Plan - Current Conditions



2023 HANA Wetland Monitoring

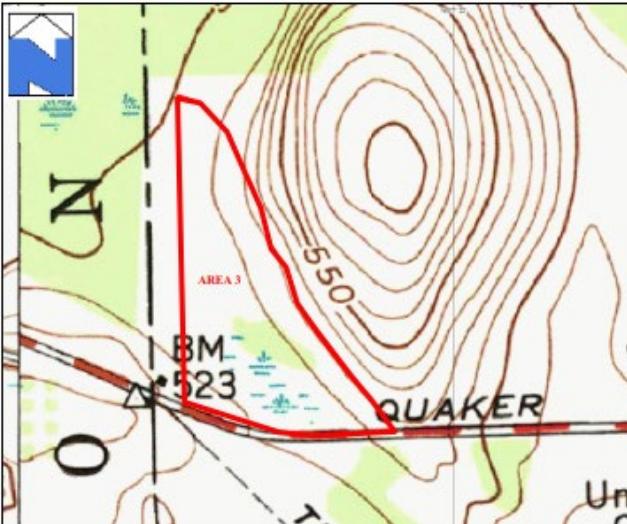
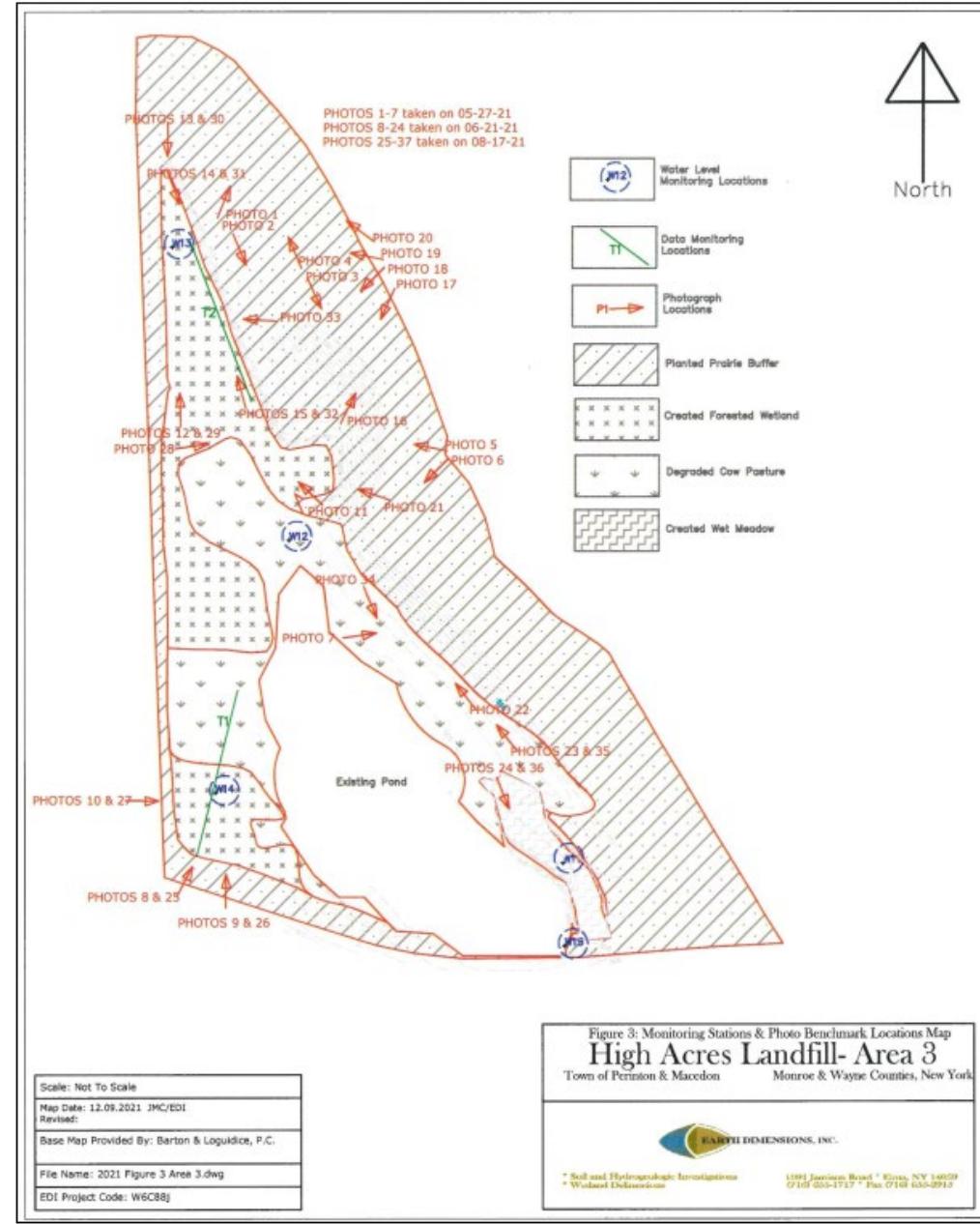


Figure 1: USGS 7.5 Minute Topographical Map, Fairport Quadrangle GPSExpert



Figure 2: 2013 Aerial Photograph.
Courtesy of GPSExpert



2023 SITE PHOTOS



Photo 1: 06-26-2023; facing east from near the southwestern corner of the mitigation area.



Photo 2: 06-26-2023; facing northeast from the southwestern corner of the mitigation area.



Photo 3: 06-26-2023; facing north from the southwestern corner of the mitigation area.



Photo 4: 06-26-2023; facing east along the north end of the existing pond in the central portion of Area 3.



Photo 5: 06-26-2023; facing south from near W12 in the central portion of the mitigation area.



Photo 6: 06-26-2023; facing north from near W12 in the central portion of the mitigation area.

2023 HANA Wetland Remedial Efforts

- ▶ Herbivore-exclusion experiments
- ▶ Tree and shrub survivability surveys
- ▶ Continuation of experimental compost additions
- ▶ Removal of old tree tubes
- ▶ Monitoring of soil characteristics and microbes
- ▶ Hand-cutting of invasive plants
- ▶ Removed mature cattails seed heads
- ▶ Herbicide application
- ▶ Seeds dispersed on-site
- ▶ Continuation of RIT students' invasives species control, monitoring, and research

Date	EPA #	Product Name	Quantity Used	Units	Dosage rate	Method of Application	Target Organism	Place of application
6/21/2023	62719-556	Accord XRT II	2.88	fl oz	1.5%	Foliar Spray	Black Swallow-wort (<i>Cynanchum louiseae</i>)	High Acres Area 3
8/22/2023	62719-37	Garlon 3A	11.5	fl oz	1.5%	Foliar Spray	Purple Loosestrife (<i>Lythrum salicaria</i>)	High Acres Area 3
9/25/2023	62719-34	Rodeo	87	fl oz	4.0%	Low volume directed spray	Reed Canary Grass (<i>Phalaris arundinacea</i>), Cattail (<i>Typha spp.</i>), Common Reed (<i>Phragmites australis</i>)	High Acres Area 3
9/26/2023	62719-34	Rodeo	32	fl oz	50.0%	wicking/wiping	Reed Canary Grass (<i>Phalaris arundinacea</i>), Cattail (<i>Typha spp.</i>), Common Reed (<i>Phragmites australis</i>)	High Acres Area 3



Summary of 2023 HANA Wetland Monitoring

- ▶ Constructed wetlands are developing toward a sustainable wetland system
 - ▶ Wetlands are already inhabited by numerous wildlife species
- ▶ Area 3 progressing toward meeting permit criteria with the wet meadow portion of Area 3 meeting permitted criteria
- ▶ ***2023 we met our compliance requirements***



REPLY TO
Regulatory Branch

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
478 MAIN STREET
BUFFALO, NEW YORK 14202

June 7, 2024

SUBJECT: Compensatory Mitigation Compliance Review, Department of the Army Permit No. LRB-1995-98513

Mr. David Cross
Waste Management of New York, LLC
425 Perinton Parkway
Fairport, New York 14450

Dear Mr. Cross:

This pertains to your Department of the Army (DA) permit No. LRB-1995-98513 and the required terms and conditions you agreed to associated with the expansion of the High Acres Landfill and Recycling Center, located in the Town of Perinton, Monroe County, New York. More specifically, this is in regards to Mitigation Area 3, as required in the "ADDENDUM High Acres Mitigation Area 3; Ecological Restoration, Monitoring & Management Plan" dated July 26, 2012, as listed in Special Condition No. 2 of your permit modified on August 21, 2012.

I have reviewed the 2023 compensatory mitigation monitoring report for Mitigation Area 3 and concur with the results reported. After review of the complete administrative record, I have determined you have fulfilled the compensatory mitigation requirements for your permit issued on May 7, 2009 and modified on August 21, 2012. No further action is required.

Questions pertaining to this matter should be directed to me at (716) 879-4191, by writing to the following address: U.S. Army Corps of Engineers, Regulatory Branch, 478 Main Street, Buffalo, New York 14202, or by e-mail at: david.w.leput2@usace.army.mil

Sincerely,

David Leput 2024.06.07
10:39:34 -04'00'

David Leput
Biologist, Monitoring & Enforcement Section

Copy:
Ms. Jody Celeste (Earth Dimensions, Inc.)
Mr. Steve Miller (NYSDEC)



2023 Annual Noise Survey

6 NYCRR Part 360 Section 360-1.19 paragraph (j) states:

- (j) *The owner or operator of a facility must ensure that noise (other than that occurring during construction of the facility) resulting from equipment or operations at the facility does not exceed the following energy equivalent sound levels beyond the property line owned or controlled by the owner or operator of the facility at locations authorized for residential purposes:*

<u>Character of Community within a one-mile radius of facility</u>	<u>L_{eq} Energy Equivalent Sound Levels</u>	
	<u>7:00 a.m.-10:00 p.m.</u>	<u>10:00 p.m.-7:00 a.m.</u>
<i>Suburban</i>	<i>62 dBA</i>	<i>52 dBA</i>

The L_{eq} is the equivalent steady-state sound level which contains the same acoustic energy as the time varying sound level during a one-hour period. It is not necessary that the measurements be taken over a full one-hour time interval, but sufficient measurements must be available to allow a valid extrapolation to a one-hour time interval.

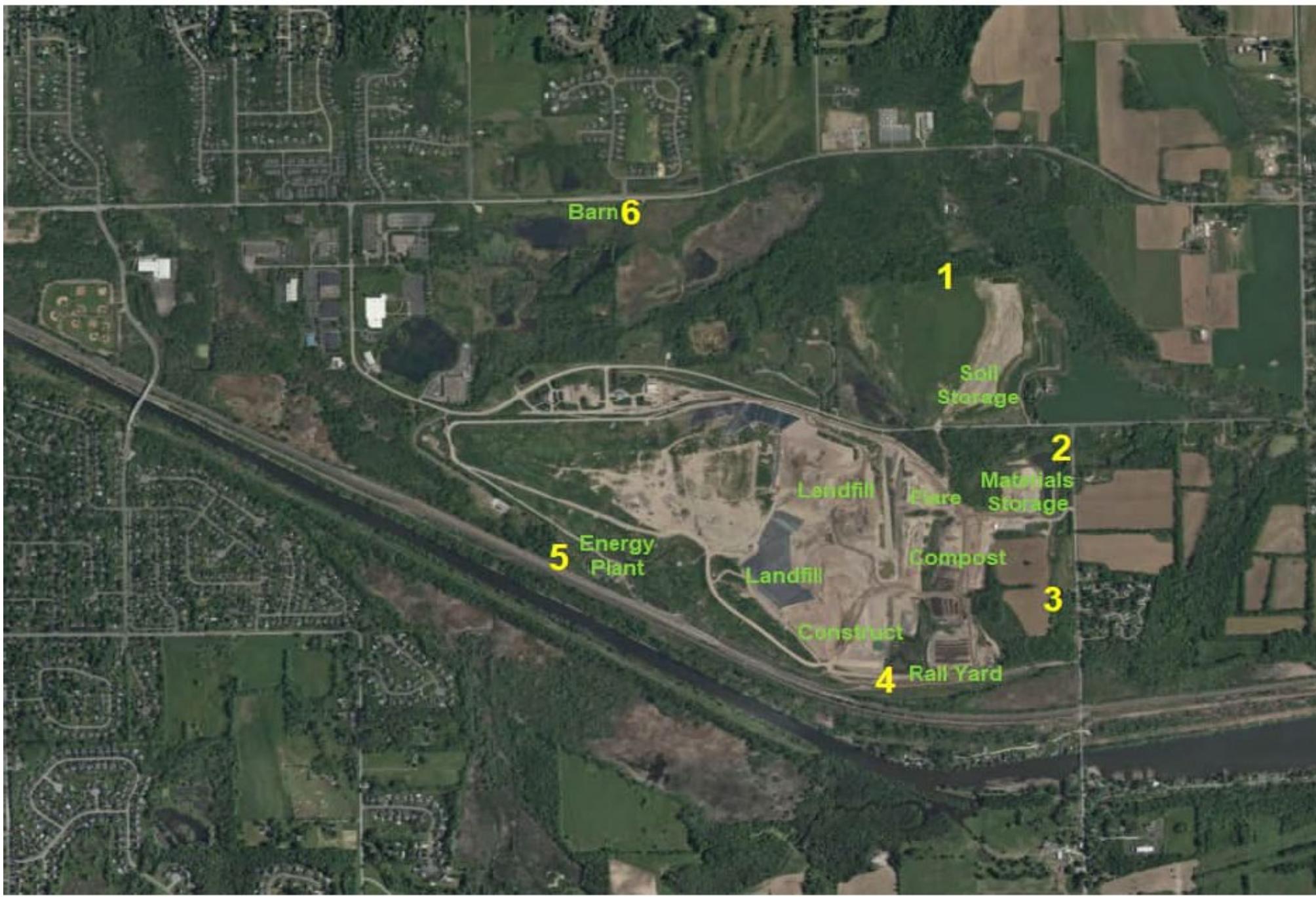


Table 5 2023 Annual Landfill Sound Survey Findings and Noise Compliance Summary

Location	Noise Monitoring Location Description	Background Sound Source & Landfill Operations Audibility and Compliance
Loc. 1	North facility boundary in Town of Macedon, north of boundary of Packard Farm soil storage area, representing residences in agricultural-residential zoning.	<p>Contributing background sources include ambient traffic and environmental sources. Landfill waste transport and placement equipment, yard waste handling operations, and maintenance sources were indistinguishable. Materials handling operations at the northeast were faintly perceptible. Construction activities at the northeast were faintly perceptible, although are not regulated by Part 360 and did significantly contribute to the measured sound levels.</p> <p>Facility sound levels are determined to be acceptable, referencing daytime and nighttime sound level limits for the suburban community character of Part 360 Paragraph 360-1.19 (j).</p>
Loc. 2	East facility boundary in Town of Macedon, along Quaker Road and North Wayneport Road, representing residences in agricultural-residential zoning.	<p>Contributing background sources include traffic on adjoining roadways and environmental sources. Landfill waste transport and placement equipment, yard waste handling operations, and maintenance sources were indistinguishable. Materials handling operations at the northeast were faintly perceptible. Construction activities at the northeast were faintly perceptible, although are not regulated by Part 360 and did significantly contribute to the measured sound levels</p> <p>Facility sound levels are determined acceptable referencing daytime and nighttime sound level limits for the suburban community character of Part 360 Paragraph 360-1.19 (j).</p>
Loc. 3	East facility boundary in Town of Macedon along North Wayneport Road, representing residences in agricultural-residential zoning.	<p>Contributing background sources include traffic on adjoining roadways, train traffic, and environmental sources. Landfill waste transport and placement equipment, and maintenance sources were indistinguishable. Materials handling operations at the northeast and yard waste handling operations were faintly perceptible. Construction activities at the northeast were faintly perceptible, although are not regulated by Part 360 and did significantly contribute to the measured sound levels</p> <p>Facility sound levels are determined acceptable referencing daytime and nighttime sound level limits for the suburban community character of Part 360 Paragraph 360-1.19 (j)</p>

Table 5 2023 Annual Sound Survey Findings and Noise Compliance Summary (cont.)

Location	Noise Monitoring Location Description	Background Sound Source & Landfill Operations Audibility and Compliance
Loc. 4	South facility boundary in Town of Macedon, representing residences to south of rail yard and CSX rail line in manufacturing zoning.	<p>Contributing sources at the facility boundary include rail container unloading and transport operations, container truck pass-bys, maintenance vehicle pass-bys, and train pass-bys. The data were used as reference source levels in modeling predictions to assess acceptability at noncontiguous residential properties. Landfill waste placement equipment, and maintenance sources were indistinguishable. Materials handling operations at the northeast and yard waste handling operations were imperceptible. Construction activities at the northeast were imperceptible. Measured sound levels included sounds of train pass-bys.</p> <p>Modeled sound levels are 50 dBA at the nearest noncontiguous receptor to the south (Loc. 4a). Modeling predicts more than 30 dBA sound attenuation of sound levels from levels measured at Location 4 to Location 4a due environmental propagation factors of distance, screening, and environmental screening and absorption. Facility sound levels sampled at the nearest residence ranged from 44-51 dBA are confirmed to be acceptable.</p> <p>Facility sound levels measured and modeled at the nearest noncontiguous residential property to the south are determined acceptable referencing daytime and nighttime sound level limits for the suburban community character of Part 360 Paragraph 360-1.19 (j)</p>
Loc. 5	South boundary in Town of Perinton, south of power plant and CSX rail line, representing residences in residential zoning.	<p>Contributing sources include power plant operations, train pass-bys, and environmental sources. Sounds of landfill operations and maintenance activities were indistinguishable. Sounds of waste hauler truck traffic on the upper south site road were occasionally faintly perceptible but did not significantly contribute to the average levels. Construction activities were indistinguishable. Train pass-bys dominated the measured daytime and nighttime sound levels.</p> <p>Facility sound levels at the boundary measured without train pass-bys are determined to be acceptable referencing daytime and nighttime sound level limits for the suburban community character of Part 360 Paragraph 360-1.19 (j) and 360-1.19 (j)(1).</p>

Loc. 6	<p>North facility boundary in Town of Macedon, along Macedon Center Road and north, representing residences in residential zoning.</p>	<p>Contributing background sources include highway traffic and environmental sources. Landfill waste transport and placement equipment and yard waste handling operations were indistinguishable. Construction materials handling activities at the northeast and construction activities at the northeast were faintly perceptible but did not significantly contribute to the measured sound levels.</p> <p>Facility sound levels are determined to be acceptable referencing daytime and nighttime sound level limits for the suburban community character of Part 360 Paragraph 360-1.19 (j) and 360-1.19 (j)(1).</p>
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CLOSURE / POST-CLOSURE COST SUMMARY

CLOSURE COSTS

Item	Units	Quantity	Unit Cost	Total
Final Cover Installation Remaining (see notes)	acres	190.9	\$182,269	\$34,795,093
Stormwater Management Features	acres	190.9	\$10,700	\$2,042,630
Groundwater / Surfacewater Monitoring	lump sum	1	\$165,681	\$165,681
Leachate Management	lump sum	1	\$66,617	\$66,617
Landfill Gas and Air	lump sum	1	\$148,106	\$148,106
Exit Closure Costs	lump sum	1	\$308,545	\$308,545
			TOTAL	\$37,526,672
			TOTAL WITH 5% CONTINGENCY	\$39,403,006

POSTCLOSURE COSTS

Item	Total
Leachate Management	\$2,048,112
Landfill Gas Management	\$1,882,558
Operation & Maintenance	\$1,704,414
Groundwater / Surfacewater Monitoring	\$4,048,821
	TOTAL \$9,683,904
	TOTAL WITH 5% CONTINGENCY \$10,168,099

TOTAL FOR FINANCIAL ASSURANCE

\$49,571,105





NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Materials Management, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5411 F: (585) 226-2909
www.dec.ny.gov

SENT VIA E-MAIL (dcross7@wm.com)

December 8, 2023

Closure/Post-Closure NYSDEC Approval

Mr. David Cross
Waste Management of New York, LLC
425 Perinton Parkway
Fairport, NY 14450

Dear Mr. Cross:

Re: Revised Closure and Post-Closure Cost Estimates
High Acres Landfill, Perinton (T), Monroe (C)

The estimated total cost for closure of the landfill and post-closure care, which has increased to \$49,571,105, is hereby approved. Please provide the Department with an executed original surety bond rider or other form of financial assurance acceptable to the Department in the above amount along with an updated Standby Trust Agreement.

Should you have any questions, feel free to call me at (585) 226-5410 or e-mail mark.amann@dec.ny.gov.

Sincerely,

Mark Amann, PE

Ec: G. MacLean – NYSDEC
D. Kay – NYSDEC
J. Richardson – WMNY





Community Outreach



Weekly and Quarterly Operational Updates-



learn more at highacreslandfill.wm.com



Open House- 2025 High Acres



Landfill Tour | Information Fair | Kids Games | Food | Prizes



High Acres Sports Complex



High Acres Nature Area

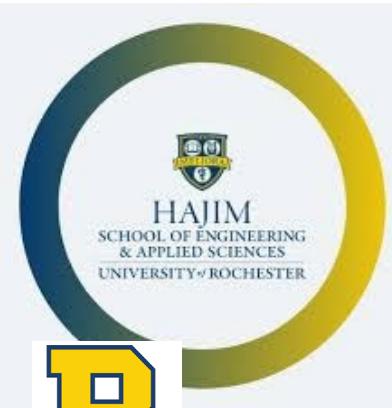
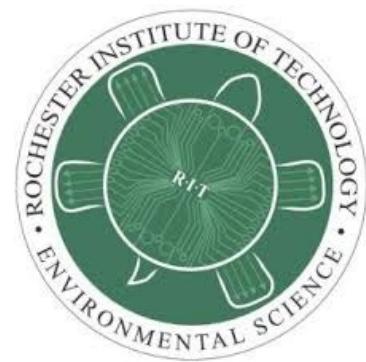


Scout Day- 2025 High Acres





RIT



69



In Closing

- ▶ High Acres remains in compliance with all local, state and federal permits.
- ▶ A review of the site's gas collection and control system, operating records, odor control programs, off-site H2S monitoring data, quarterly surface scans, DEC Hotline notifications and follow up data from a trained odor detection consultant, and DEC inspection reports, all indicate that the Landfill is operating in a manner that minimizes off site odors to the greatest extent practicable.
- ▶ NYSDEC continues to encourage the use of the Hotline as the preferred method of reporting odor notifications.
- ▶ WM remains vigilant in our evaluation and implementation of best management practices and technology to enhance operations.



Thank you

Jeff Richardson | Sr. District Manager | jrichard3@wm.com



<https://highacreslandfill.wm.com/>

