State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 10/21)

Notice: Use this form to request **a written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Public Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This from should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf"

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name		
Tracy	Jeff		Geosyntec Consultants, Inc		
Mailing Address			City	State	ZIP Code
309 N. Water Street, Suite 350			Milwaukee	WI	53202
Phone # (include area code)	Fax # (include area code)		Email		
(414) 918-7481			jtracy@geosyntec.com		

The requester listed above: (select all that apply)

- ☐ Is currently the owner
- ☐ Is considering selling the Property
- ☐ Is renting or leasing the Property
- ☐ Is considering acquiring the Property
- ☐ Is a lender with a mortgagee interest in the Property
- ☒ Other. Explain the status of the Property with respect to the applicant:

  Environmental Contact for Copper Industries, LLC (Potential Responsible Party (PRP) Group for the FF/NN Landfill).

Contact Information (to be contacted with questions about this request)

☒ Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name		
Tracy	Jeff		Geosyntec Consultants, Inc		
Mailing Address			City	State	ZIP Code
309 N. Water Street, Suite 350			Milwaukee	WI	53202
Phone # (include area code)	Fax # (include area code)		Email		
(414) 918-7481			jtracy@geosyntec.com		

Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Stehn	Andrew	M	TRC Environmental Corporation		
Mailing Address			City	State	ZIP Code
999 Fourier Drive Suite 101			Madison	WI	53717
Phone # (include area code)	Fax # (include area code)		Email		
(608) 807-8112			astehn@trccompanies.com		

Section 2. Property Information

Property Name			FID No. (if known)		
Ripon City LF (FF-NN) (SF NPL)			420013660		
BRRTS No. (if known)			Parcel Identification Number		
02-20-000915					
Street Address			City	State	ZIP Code
N8901 S Koro Road			Ripon	WI	54971
County	Municipality where the Property is located		Property is composed of:		Property Size Acres
Fond Du Lac	○ City ◉ Town ○ Village of		○ Single tax parcel ○ Multiple tax parcels		

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

◯ No ◉ Yes

Date requested by: 07/22/2024

Reason:

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

◉ No. **Include the fee that is required for your request in Section 3, 4 or 5.**

◯ Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:
Section 3. Technical Assistance or Post-Closure Modifications;
Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: [**Numbers in brackets are for WI DNR Use]**

☐ No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - Include a fee of $350. Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.

☐ Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of $700.**

☐ Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of $1050.**

☐ Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of $1050.**

☐ Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of $1050.**

☐ Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of $1050.**

☐ Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of $350**

☐ Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of $425.**

☐ Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of $425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

☐ Schedule a Technical Assistance Meeting - **Include a fee of $700.**

☐ Hazardous Waste Determination - **Include a fee of $700.**

☒ Other Technical Assistance - **Include a fee of $700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

☐ Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of $1050, and:**

- ☐ Include a fee of $300 for sites with residual soil contamination; and
- ☐ Include a fee of $350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Section 4. Request for Liability Clarification

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. **[Numbers in brackets are for DNR Use]**

☐ "Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the real Property, and/or the personal Property and fixtures;

(2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;

(3) the date the environmental assessment was conducted by the lender;

(4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.

(5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.

(6) a copy of the Property deed with the correct legal description; and,

(7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).

(8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292. 21(1)(c)2.,h.-i., Wis. Stats.:

h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.

i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

☐ "Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the Property;

(2) the date of Property acquisition by the representative;

(3) the means by which the Property was acquired;

(4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;

(5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and

(6) a copy of the Property deed with the correct legal description.

☐ Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

☐ hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];

☐ Perceived environmental contamination - [649];

☐ hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or

☐ solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of $700, a summary of the environmental liability clarification being requested, and the following:**

(1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).

(2) current and proposed ownership status of the Property;

(3) date and means by which the Property was acquired by the LGU, where applicable;

(4) a map and the ¼, ¼ section location of the Property;

(5) summary of current uses of the Property;

(6) intended or potential use(s) of the Property;

(7) descriptions of other investigations that have taken place on the Property; and

(8) (for solid waste clarifications) a summary of the license history of the facility.

Section 4. Request for Liability Clarification (cont.)

☐ Lease liability clarification - s. 292.55, Wis. Stats. [646]

- ❖ **Include a fee of $700 for a single Property, or $1400 for multiple Properties and the information listed below:**

(1) a copy of the proposed lease;

(2) the name of the current owner of the Property and the person who will lease the Property;

(3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;

(4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;

(5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and

(6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

- ❖ **Include a fee of $700 and an adequate summary of relevant environmental work to date.**

☐ No Action Required (NAR) - NR 716.05, [682]

- ❖ **Include a fee of $700.**

Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.

☐ Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]

- ❖ **Include a fee of $700.**

- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

☐ Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,

(2) a copy of the Property deed with the correct legal description.

☐ Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,

(2) a copy of the Property deed with the correct legal description.

☐ Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

- ❖ **Include a fee of $1400, and the information listed below:**

(1) a draft schedule for remediation; and,

(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

- ☐ Phase I Environmental Site Assessment Report - Date: _____
- ☐ Phase II Environmental Site Assessment Report - Date: _____
- ☐ Legal Description of Property (required for all liability requests and specialized agreements)
- ☐ Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

☐ Groundwater ☐ Soil ☐ Sediment ☐ Other medium - Describe: _____

Date of Collection: _____

- ☐ A copy of the closure letter and submittal materials
- ☐ Draft tax cancellation agreement
- ☐ Draft agreement for assignment of tax foreclosure judgment
- ☐ Other report(s) or information - Describe: _____

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

- ◯ Yes - Date (if known): _____
- ◯ No

Note: The Notification for Hazardous Substance Discharge Form - Non-Emergency Only (Form 4400-225) is accessible through the RR Program Submittal Portal application. Directions for using the form and the Submittal Portal application are available on the Submittal Portal web page.

Section 7. Certification by the Person who completed this form

- ☐ I am the person submitting this request (requester)
- ☒ I prepared this request for: Jeff Tracy
  Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

Andrew M. Stelzer

Signature

05.22.2024
Date Signed

Project Manager/Senior Project Engineer
Title

(608) 807-8112
Telephone Number (include area code)

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.

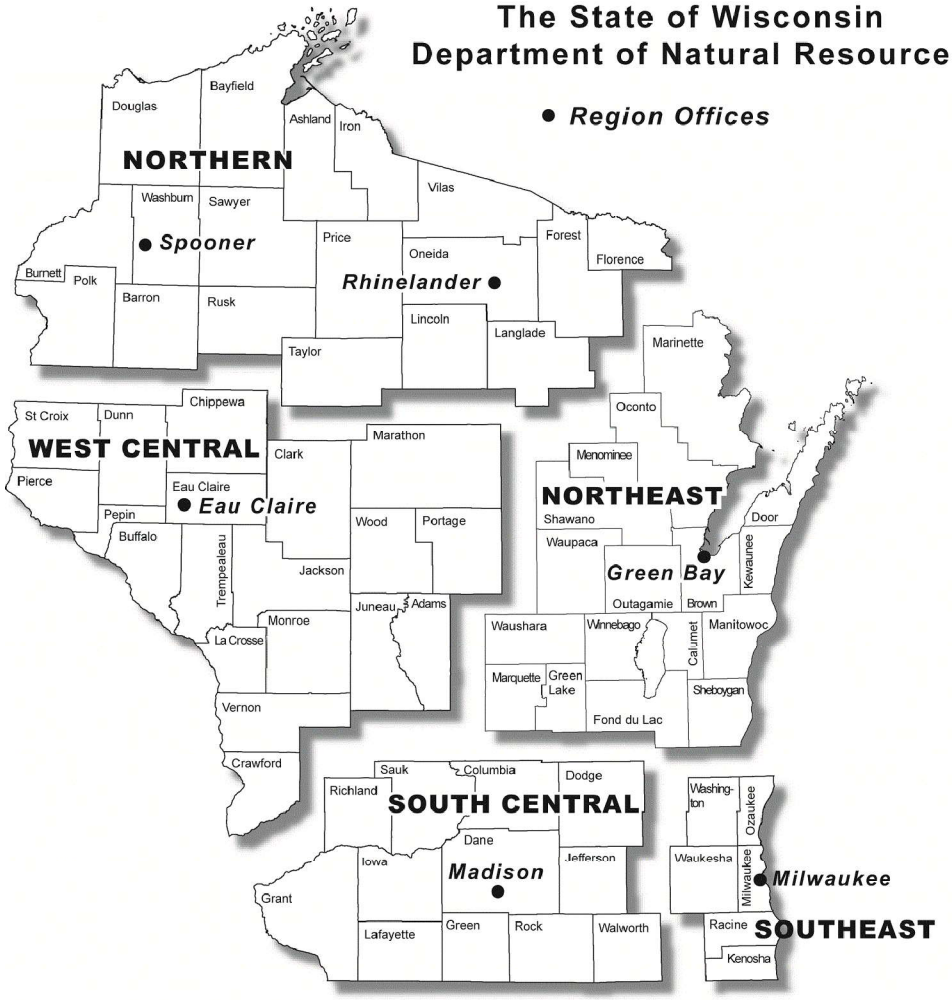
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION
Attn: RR Program Assistant
Milwaukee DNR Office
1027 West St. Paul Ave
Milwaukee WI 53233

DNR WEST CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer	Comments		
Fee Enclosed? ◯ Yes ◯ No	Fee Amount $	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

999 Fourier Dr., Ste. 101
Madison, WI 53717

T 608.826.3600
TRCcompanies.com

May 21, 2024

Mr. Bruce J. LeRoy
Hydrogeologist – Northeast Region Remediation and Redevelopment
Wisconsin Department of Natural Resources
1027 W. St. Paul Ave.
Milwaukee, WI 53233

Subject: FF/NN Ripon Landfill Active Gas Extraction System Performance Evaluation

Dear Mr. LeRoy:

This letter presents a performance evaluation of the active gas extraction system (GES) currently installed at the FF/NN Landfill federal National Priorities List (NPL) Site (Site) in Ripon, Wisconsin (Figure 1). The purpose of this document is to provide an update on the operational status of the GES and request approval to temporarily shut down the active system and evaluate passive venting of the landfill. A summary of recent operational data along with a proposed monitoring plan is discussed in the below sub-sections.

Site Background

The FF/NN Landfill (landfill) is located in Fond du Lac County in the Town of Ripon, Wisconsin and occupies approximately 7.3 acres. The landfill was operated between 1967 and 1983 under multiple leases (including Speed Queen, City of Ripon, and the Town of Ripon) and accepted municipal, commercial, and industrial waste. The site was capped with clay in 1985, following cessation of landfill operations. Currently the City of Ripon owns the property, and the landfill is managed and maintained by the FF/NN Landfill Potential Responsible Party (PRP) Group.

An evaluation of the landfill began in 1982 by the Wisconsin Department of Natural Resources (WDNR) for inclusion on the federal NPL and was officially listed on May 31, 1994. Since this date additional activities have been completed, including feasibility studies, remedial action, landfill gas evaluations, operation and maintenance of the site, and groundwater monitoring. The WDNR issued a Record of Decision (ROD) for the FF/NN Landfill in October of 1995. Two operatable units were selected for the Site remedy which included a source control remedy consisting of a composite landfill cap and passive gas venting system in conjunction with a groundwater monitoring plan. The footprint of the landfill and the layout of the Site features are shown on Figure 2.

A passive gas vent system was installed in conjunction with construction of the final composite landfill cap in 1996. The passive gas vent system includes perforated HDPE gas collection piping constructed above the top of the waste and below the landfill cap. The collection piping was installed as a grid with 12 passive gas vents protruding through the cap to allow venting to the atmosphere. A layout of the passive vent system is shown in Attachment A.

In correspondence dated March 13, 2003, the WDNR stated that the groundwater vinyl chloride plume was expanding, and landfill gas had been detected outside the limits of waste at concentrations above the lower explosive limit (LEL). The WDNR requested that these issues be addressed and suggested consideration of vapor extraction at the landfill to reduce concentrations of volatile organic compounds (VOCs) in groundwater.

Active Gas Extraction System Operation

As a response to observed methane and vinyl chloride concentrations, a pilot test was conducted in June 2005 to demonstrate the feasibility of converting the passive gas venting system to an active GES. Based on the pilot test, an Interim Action gas collection system was installed and started up in March 2006. A trailer mounted blower system was installed, and extraction piping was temporarily run above ground to select passive gas vents and the three leachate head wells. The extraction pipe was later replaced and buried in 2007 to prevent condensate freezing and allow for continuous year-round operation. Overall, the system includes three main extraction lines that connect to select gas vents and/or leachate head wells. The three lines connect to one below-grade main header pipe which is plumbed to a buried condensate tank. An above-grade section of pipe then runs between the below-grade tank and connects to the system trailer which contains a knockout tank and a blower. Extracted gas is exhausted through a stack that is routed to the atmosphere above the trailer. The GES collection points, below grade features, and above grade features are shown on the Figure in Attachment A.

A performance evaluation of the active GES was completed, and a summary report was submitted in July 2007 by GeoTrans, Inc. The report concluded:

- Active gas extraction operation had reduced the landfill methane gas concentrations outside the limits of fill to below the LEL (5% by volume),
- Methane concentrations measured within the landfill had been reduced from an average of approximately 52% methane in 2006 down to 11.4% in June 2007,
- Vinyl chloride concentrations within the landfill gas had been reduced in nearly all gas extraction vents and leachate wells, and
- Vinyl chloride concentrations in groundwater indicated decreasing or stable trends in nearly all groundwater monitoring wells.

The active GES has operated at different performance levels since 2007 based on observed gas concentrations in the landfill. Since 2007 select extraction points have been shut off based on low methane concentrations and higher oxygen concentrations.

Initially, gas vents (Figure 2) GV-1, GV-4, GV-6, GV-7, GV-9 and GV-12 and leachate head wells LC-1, LC-2, and LC-3 were connected to the system. However, following system startup in 2006, gas vents GV-1, GV-4, GV-7, GV-9, and GV-12 were taken offline between June and August 2007 based on observed methane and oxygen concentrations. Since 2007, landfill gas has primarily been extracted from gas vent GV-6 and the three deeper leachate head wells (LC-1, LC-2, and LC-3). On September 5, 2019, GV-4 was reconnected to the system to reduce methane concentrations observed at gas probe GP-2 located to the west/northwest of the landfill. The other gas vents have remained closed to prevent elevated oxygen levels.

Active Gas Extraction System Recent Modifications and Repairs

Since 2019, multiple repairs and modifications have been required to maintain continuous operation of the active GES. The below sub-sections outline observed issues and modifications/repairs conducted between 2019 and 2024.

2019

The blower trailer system modem and controller malfunctioned and went offline during the Fourth Quarter of 2018. A temporary replacement modem and controller were obtained from the system manufacturer (EOS) in January 2019; however, the system could not be reconfigured using the temporary modem. The system was operational, but if the system went offline, personnel did not receive remote notifications indicating the system was down. This resulted in periods of the system being down during the month of January.

During February 2019, the blower motor stopped operating. The blower was rebuilt by Sabel Mechanical of Fond du Lac, Wisconsin and replaced on March 19, 2019. However, the blower continued overloading and shutting off the system. The system was not operational during most of February, March, April, and May 2019.

In May 2019, a new cellular wireless blower modem was purchased and after installation and download of appropriate software, the system was remotely restarted. Following network program error corrections, the system was restarted and operational.

In 2018, Tetra Tech noted a change in the oxygen, carbon dioxide, and methane concentrations, which were indicative of a potential leak at LC-1. An evaluation of LC-1 was completed between 2018 and 2019 and it was determined that low vacuum was being applied to LC-1 which was due to a break in the extraction line. Once the extraction line was repaired and vacuum was reestablished to the collection well, a leak was observed at the wellhead. The wellhead leak was repaired on August 20, 2019. The repairs at the piping and at the wellhead immediately reduced the oxygen and increased the methane recovery at extraction well LC-1.

2020

In 2020 a suspected leak was observed in the below-grade condensate tank and vault located just upgradient of the blower system. Surface water from rain events and/or snowmelt were thought to be filling the tank through a breach. The accumulated water in the below-grade tank would then be drawn into the knockout tank in the system trailer, causing frequent system shutdowns. Due to this issue, a 3-way position valve was added on April 28, 2020, to the piping entering the below-grade tank to allow the tank to be bypassed. Water at times will accumulate in the below-grade tank but appears to be surface water runoff entering and is not associated with GES operations. This modification was found to successfully allow the blower system to continuously run as significant water no longer was accumulating in the knockout tank leading to system shutdowns.

In addition to the tank modifications, the extraction headers for LC-1, LC-2, LC-3, GV-6, and GV-4 were modified to incorporate a gate valve and two sample ports. The valve allows for vacuum extraction to be adjusted as needed during biweekly monitoring. Sample ports were added on each side of the valve to monitor vacuum on the header and well side. Overall, the improvements increased the ability to adjust the GES allowing for continuous operation.

2023

The GES was shut down on February 8, 2023, by the City of Ripon due to vacuum loss to the well field. TRC mobilized to the Site on February 13, 2023, to assess the problem. During the site visit, the belt

on the blower was replaced and the system was restarted. Once restarted it was observed that water was surging in the extraction lines which was reducing the ability for vacuum to be applied to the well field. TRC attempted to drain water from the system to reestablish vacuum to the well field but gravity draining was not sufficient to remove water from the extraction lines.

TRC and the City of Ripon (City) were onsite multiple times between March 21 and June 1, 2023, to assess the extraction piping between the blower and the buried well field headers and to assess each individual extraction line leg. Based on water observed, there appeared to be a potential leak somewhere in the system allowing surface water to enter one or more of the three main extraction lines. The GES blower was utilized to attempt to pull the water from the lines to the buried condensate tank and the tank was pumped out on multiple occasions during onsite troubleshooting. Water was hauled and disposed at the City's wastewater treatment plant. Following water extraction, an attempt to reestablish vacuum to the well field was made. Vacuum was temporarily reestablished on multiple occasions but after a short period of time water slowly drained into the extraction line between the header manifold and blower trailer, restricting vacuum and flow from the extraction points. Following water removal and further troubleshooting, it was found that extraction lines 1 and 3 had been cleared and that extraction line 2 contained additional water causing vacuum and flow restrictions on the system.

On June 1, 2023, a camera inspection of extraction line 2 was conducted to inspect the extraction line and to remove water and sediment as needed. During the camera inspection, it was observed that extraction line 2 (which connects the blower to LC-2 and GV-6) contained sediment build up and water, and pipe sagging was observed along portions of the line. In addition, a portion of the extraction line previously connected to GV-7 was found to contain a break at a 90-degree fitting. It appeared that stormwater and sediment had entered the extraction line at this point. The break in the pipe at GV-7 was repaired and the system was restarted on June 1, 2023.

The GES operated continuously until October 27, 2023, when surging was observed at the extraction points. Upon inspection, water was observed in the main header line causing vacuum loss and surging of the system. Between October and December 2023, multiple attempts to remove water and reestablish vacuum to the well field were made. It was determined that surface water may be entering extraction lines 1 and/or 2 causing the main header to fill with water, causing a loss of vacuum to all three extraction lines. Extraction line 3 remained operable through the end of 2023; however, due to water intrusion, extraction lines 1 and 2 have remained closed since October 27, 2023, with the exception of troubleshooting efforts through December 2023.

2024

The GES was operated with extraction line 3 open and 1 and 2 closed through April 11, 2024. During a biweekly Site visit in April 2024, vacuum at extraction line 3 was lost and water was observed in the line. The blower system was shut down due to the vacuum loss and is currently off.

Gas Monitoring Summary

There are 11 gas probes constructed around the landfill waste limits and four shallow groundwater monitoring wells located near or within the limits of waste (MW-101, MW-102, MW-103, and MW-104) used for monitoring landfill gas. The locations of each probe and well are shown on Figure 2. One gas probe (GP-8) was lost between the 2018 and 2019 monitoring events. The gas probes and monitoring wells are monitored using a field instrument for methane, carbon dioxide, and oxygen. The monitoring

frequency depends on the gas probe or well and ranges between biweekly, monthly, quarterly, and annually depending on historical data and the location of the probe. A summary of the landfill gas data from 2019 to 2024 is included in Table 1 and historical methane gas readings collected from these monitoring points are summarized as follows:

- The methane concentration at gas probe GP-1 (east/northeast of landfill) has showed variability with concentrations above the LEL (5% by volume) prior to operation of the active GES and at times during operation. However, detections above the LEL were last observed in 2012. Methane has been observed at a concentration above 25% of the LEL (1.25% by volume) intermediately with the active GES in operation to date but no trends due to operation were observed. In review of recent data between 2023 and 2024, when system operation was reduced due to water intrusion in the extraction lines, methane within GP-1 showed some variability but concentrations were reported below the LEL and generally below 25% of the LEL.
- The methane concentration at gas probe GP-2 (west/northwest of landfill) was observed above the LEL (5% by volume) around the startup (2006) and operation of the active GES, but concentrations dropped shortly after full-scale operation was implemented. Concentrations remained below 25% of the LEL until 2019 when system operation was limited due to blower issues and extraction line limitations. Following system repairs in 2019, offsite methane in GP-2 was reduced below 25% of the LEL and has remained below that threshold despite current operational limitations. Methane was recorded by the City of Ripon field technician at a concentration of 1.9% by volume (38% of the LEL) with oxygen at 0.1% on April 11, 2024. However, due to instrument complications during the April 11, 2024 event, TRC collected a second reading on April 15, 2024 which reported no methane and an oxygen concentration of 20.6%. The gas probe was again checked on May 8, 2024, and no methane was observed and oxygen was at 19.5%. Based on the results of the follow up readings, the methane reading at GP-2 on April 11, 2024 appears to be an instrument error.
- The methane concentration in gas probes GP-3, GP-4, GP-5, GP-7, GP-8, GP-11, and GP-12 and monitoring well MW-101 was observed either above the LEL or 25% of the LEL in 2006 during initial operation of the active GES; however, since 2006 no exceedances of the 25% LEL threshold have been reported.
- The methane concentration in gas probe GP-10 and monitoring wells MW-102 and MW-103 has never been observed above 25% of the LEL.
- The methane concentration in monitoring well MW-104 which is located within the limits of the landfill was observed either above the LEL or 25% of the LEL in 2006 during initial operation of the active GES. December 14, 2022 was the first time since 2006, that an exceedance of the 25% LEL threshold was reported with methane recorded at 3.7% by volume (74% of the LEL). Methane was detected at a concentration of 3.9% methane by volume (78% of the LEL) and oxygen at 6.6% on March 25, 2024. However, a second reading was collected approximately 1.5 hours later and reported methane at a concentration of 0.2% by volume (4% of the LEL) and oxygen was 19.6%. Therefore, the initial elevated methane reading was not confirmed. Subsequent monitoring was conducted on April 15, 2024, and May 8, 2024, and no methane was detected and oxygen was recorded above 20%.

Although the GES was fully operational for only a few months in 2023, GP-1 was the only gas probe or monitoring well with a confirmed methane detection greater than 25% of the LEL during 2023 through May 2024. During the same period, methane was not detected at eight of the gas probes, including GP-5 and GP-12 which serve as step-out locations from GP-1. Methane detections above the 25% LEL threshold at GP-2 on April 11, 2024, and at MW-104 on March 25, 2024, were not confirmed. Due to observed instrument complications and subsequent monitoring events, it does not appear methane is present above the 25% LEL threshold at these locations. These results indicate that methane has not readily migrated from the landfill during recent system shutdowns or during limited operation periods in 2023 and early 2024.

Methane is also monitored in the landfill as part of the GES operations and system adjustments are made based on the methane and oxygen concentrations. In recent years, the three leachate head wells (LC-1, LC-2, and LC-3) contained the highest concentrations of methane and the two gas vents (GV-4 and GV-6) were generally lower. However, based on 2023 and 2024 operational data, it has been observed that methane gas concentrations increase in the landfill when the active system is not fully operational. Tables 2 and 3 provide a summary of readings collected in January and February of 2024. Despite the increase in methane within the landfill, methane concentrations in the surrounding gas probes and shallow monitoring wells remain below 25% of the LEL, indicating that methane is not migrating offsite under the recent limited operation of the GES.

Groundwater Monitoring Summary

There are five shallow groundwater monitoring wells located near or within the limits of waste (MW-101, MW-102, MW-103, MW-104, and MW-112). Historical vinyl chloride concentrations in these wells are summarized in Table 4 and as follows:

- MW-101 (upgradient) and MW-102 (sidegradient): Vinyl chloride was not detected during any sampling event through April 2012. MW-101 and MW-102 were removed from the sampling program after the April 2012 event.
- MW-103 (downgradient): Vinyl chloride concentrations decreased from >200 micrograms per liter (µg/L) in 1997 to 7.9 µg/L in October 2004. Following startup of the active GES in March 2006, vinyl chloride concentrations continued to decline, and vinyl chloride has not been detected in groundwater samples from MW-103 since 2007.
- MW-104 (within the limits of waste): Vinyl chloride concentrations ranged from 1.1 µg/L to 20 µg/L between 1997 and 2005. Following startup of the active GES in March 2006, vinyl chloride concentrations in groundwater samples from MW-104 have ranged from 1.1 µg/L in April 2006 to <0.019 ug/L in 2021.
- MW-112 (downgradient): Vinyl chloride concentrations ranged from <0.17 µg/L to 56 µg/L between 1997 and February 2006. Following startup of the active GES in 2006, vinyl chloride concentrations in groundwater samples from MW-112 declined and vinyl chloride has not been detected in groundwater samples from MW-112 since 2020.

MW-104 is the only shallow groundwater monitoring well near the landfill waste in which vinyl chloride is still detected in groundwater samples, and MW-104 is located within the horizontal limits of waste and screened in the shallow aquifer below the waste. Vinyl chloride is no longer detected in groundwater samples from the other shallow wells surrounding the waste limits. These results indicate

that remediation efforts at the site (capping, passive venting, and active gas extraction) have been effective at reducing groundwater contamination at the landfill.

Recommendations

The PRP Group is requesting approval to temporarily shut down the active GES and evaluate passive venting of the landfill. The active GES was not included in the ROD; therefore, a return to passive venting does not conflict with the approved remedy for the site as long as the original goals of the GES continue to be met. The active GES was installed to achieve two specific goals:

- Reduce risk associated with potential methane migration.
- Reduction of vinyl chloride concentrations in groundwater, specifically below and immediately downgradient of the landfill.

Performance monitoring will be implemented to assess whether these two goals can be achieved through passive venting rather than continued active gas extraction.

Performance Monitoring

To evaluate the performance of passive venting, the PRP Group recommends temporarily shutting down the active GES and converting the system back to a passive venting system for a period of 1 year. During this evaluation time the following performance monitoring will be completed:

- Bi-monthly perimeter gas probe monitoring
- Bi-monthly landfill gas vent monitoring.
- Quarterly groundwater monitoring for VOCs at monitoring wells MW-103, MW-104, and MW-112.

Corrective Actions

- In the event that methane concentrations in any of the perimeter gas probes (except GP-1, see below) exceeds 25% of the LEL, two additional readings within a one-month period will be completed to confirm gas concentrations. If migration of methane at concentrations greater than 25% of the LEL is confirmed, the PRP Group will repair the GES and re-establish the active system operation as needed to reduce the observed migration.
- Methane and oxygen gas concentrations have historically fluctuated at GP-1 with or without the GES operating. Gas probes GP-5 and GP-12 serve as step-out locations from GP-1 and demonstrate that methane detected at GP-1 is generally limited in extent. For example, methane has been detected at GP-1 numerous times since 2019, while methane has not been detected at GP-5 and was detected only once at GP-12 during the same period (Table 1). Due to the presence of GP-5 and GP-12 as step-outs from GP-1, methane concentrations at GP-1 are not proposed as an indicator of the need to re-establish the active GES.

- Gas readings will continue to be collected from monitoring wells MW-101, MW-102, MW-103, and MW-104 in conjunction with the 11 gas probes, however based on MW-104 being constructed within the limits of the closed landfill, corrective action will not be required based on gas measurements from MW-104.
- In addition to the regular groundwater monitoring program, groundwater samples will be collected from MW-103, MW-104, and MW-112 quarterly for VOCs analysis during the one-year period and evaluated following each monitoring event. Given the generally low and/or decreasing vinyl chloride concentrations at MW-103, MW-104, and MW-112 at the time of the GES system startup in 2006, it is not anticipated that groundwater concentrations will increase as a result of GES shutdown. However, if vinyl chloride concentrations are detected in groundwater samples from one of these three wells at concentrations exceeding the maximum concentration at each well since system startup (2.2 µg/L at MW-103, 1.1 µg/L at MW-104, and 2.8 µg/L at MW-112) during two consecutive sampling events, the PRP Group will repair the GES and re-establish active system operation. Other monitoring wells at the site are deeper, further downgradient, and/or have never had vinyl chloride detections, and therefore, are not positioned to respond to changes in GES operation.

Based on the current operational status of the active GES at the FF/NN Landfill and review of historical monitoring data, the PRP Group requests WDNR approval to shut down the GES and restore passive venting for a one-year period. Performance monitoring and corrective action will be taken as outlined in this letter. If corrective action is not required during the one-year monitoring period, the PRP Group will submit a revised performance monitoring plan for continued passive venting and monitoring.

We appreciate your prompt attention and review of this submittal and please do not hesitate to contact Andrew Stehn (TRC) at 608-807-8112 or Jeff Tracy (Geosyntec) 414-918-7481 with any comments or questions.

Sincerely,

TRC

Andrew Stehn, P.E.
Project Manager/Senior Project Engineer

Steve Sellwood, P.G.
Senior Hydrogeologist

Attachments:
Table 1: Historical Gas Probe Field Parameter Monitoring Results
Table 2: Gas Extraction Field Monitoring Data - January 2024
Table 3: Gas Extraction Field Monitoring Data - February 2024
Table 4: Vinyl Chloride Groundwater Concentrations
Figure 1: Site Location Map
Figure 2: Site Layout Map
Attachment A: Active Landfill Gas Extraction System Layout and Gas Monitoring Locations

cc: Jeff Tracy, Geosyntec Consultants, Inc. (electronic copy only)
Adam Sonntag, City of Ripon (electronic copy only)

Tables

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
FF/NN Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-1	13:12	1/3/2019	0.0	0.0	20.9	79.1	First Reading
	14:12	1/3/2019	0.0	0.0	20.9	79.1	Second Reading
	9:54	2/7/2019	0.0	0.2	20.9	78.9	First Reading
	10:57	2/7/2019	0.0	0.0	20.9	79.1	Second Reading
	13:26	5/10/2019	0.0	0.0	20.9	79.1	First Reading
	14:26	5/10/2019	0.0	0.0	20.9	79.1	Second Reading
	--	6/13/2019	0.0	0.0	20.9	79.1	First Reading
	7:38	6/13/2019	0.0	1.2	19.2	79.6	No time recorded - second reading noted
	7:45	6/25/2019	0.0	1.6	17.6	80.8	First Reading
	8:45	6/25/2019	0.0	0.0	20.9	79.1	Second Reading
	7:18	7/9/2019	0.0	5.4	9.4	85.2	
	8:18	7/9/2019	0.0	9.0	2.4	88.6	
	7:18	7/23/2019	0.4	7.2	8.1	84.4	First Reading
	8:18	7/23/2019	0.4	7.8	7.1	84.7	Second Reading
	7:27	8/15/2019	0.9	7.8	6.3	85.1	First Reading
	8:27	8/15/2019	0.9	7.6	6.7	84.8	Second Reading
	7:56	8/20/2019	0.1	7.9	8.5	83.5	
	10:09	8/20/2019	0.0	8.4	7.1	84.5	
	7:07	9/5/2019	0.1	7.4	10.6	81.9	
	10:04	9/9/2019	1.0	7.4	8.0	83.7	First Reading
	11:14	9/9/2019	1.3	8.8	6.4	83.5	Second Reading
	8:42	9/17/2019	0.0	5.1	10.8	84.1	
	9:36	9/17/2019	0.0	6.1	9.1	84.8	
	10:48	10/7/2019	0.0	0.9	20.2	78.9	
	11:50	10/21/2019	0.0	4.8	8.8	86.4	
	8:17	11/5/2019	0.0	0.7	19.3	80.0	
	13:08	11/20/2019	0.0	0.3	20.5	79.2	
	9:32	12/5/2019	0.0	0.5	20.7	78.8	
	10:01	12/19/2019	0.0	0.3	21.4	78.3	
	13:10	1/10/2020	0.0	0.0	20.9	79.1	
	14:11	1/10/2020	0.0	0.2	20.9	78.9	
	13:06	1/24/2020	0.0	0.0	20.9	79.1	
	14:06	1/24/2020	0.0	0.2	20.9	78.9	
	13:03	2/7/2020	0.0	0.0	20.9	79.1	
	14:06	2/7/2020	0.1	0.2	20.9	78.9	
	9:31	2/17/2020	0.0	2.1	14.8	83.1	
	10:45	2/26/2020	0.0	2.3	14.2	83.5	
	13:27	3/6/2020	0.0	0.6	19.4	80.0	
	14:27	3/6/2020	0.0	0.8	18.9	80.3	
	13:34	4/1/2020	0.0	0.0	20.9	79.1	
	14:37	4/1/2020	0.0	0.0	20.9	79.1	
	14:13	4/17/2020	0.0	0.0	20.9	79.1	
	15:13	4/17/2020	0.0	0.0	20.9	79.1	
	9:12	4/28/2020	0.0	3.3	13.1	83.6	System shutdown after testing and extraction header replaced.
	4/29/2020						System restarted, see Footnote 1
	11:15	5/1/2020	0.0	0.8	19.2	80.0	
	12:17	5/1/2020	0.0	0.8	18.8	80.4	
	7:53	5/5/2020	0.0	3.2	13.4	83.4	
	8:57	5/5/2020	0.0	3.4	13.3	83.3	
	13:22	5/14/2020	0.0	4.4	11.0	84.6	
	14:26	5/14/2020	0.0	4.8	10.3	84.9	
	10:24	6/1/2020	0.0	0.2	20.9	78.9	
	11:27	6/1/2020	0.0	0.4	20.9	78.7	
	13:21	6/10/2020	0.0	7.4	4.7	87.9	
	14:23	6/10/2020	0.0	7.2	4.9	87.9	
	13:38	6/25/2020	0.0	8.4	5.5	86.1	
	14:40	6/25/2020	0.0	8.2	5.2	86.6	
	13:02	7/9/2020	0.0	6.8	12.0	81.2	
	14:19	7/14/2020	0.0	10.1	5.1	84.8	
	15:06	7/24/2020	0.0	9.4	8.0	82.6	
	13:24	8/7/2020	0.5	11.0	5.6	82.9	
	14:25	8/7/2020	0.4	11.0	5.3	83.4	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
FF/NN Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-1 (continued)	11:34	8/10/2020	0.0	10.4	5.3	84.3	
	12:36	8/10/2020	0.0	10.8	5.0	84.2	
	14:03	8/19/2020	0.5	9.2	6.5	83.8	
	15:05	8/19/2020	0.6	12.4	2.4	84.6	
	14:05	8/21/2020	0.1	10.6	7.1	82.2	
	14:39	8/31/2020	0.0	7.6	6.8	85.6	
	13:40	9/11/2020	0.0	7.6	7.8	84.6	
	14:42	9/11/2020	0.0	8.2	7.1	84.7	
	7:39	9/23/2020	0.0	8.7	8.5	82.8	Intake valve added to blower to regulate overall system vacuum.
	--	9/23/2020	0.0	9.3	7.5	83.2	Reading collected after system modification made.
	13:11	9/25/2020	0.0	9	6.6	84.4	
	14:12	9/25/2020	0.0	8.6	6.6	84.8	
	13:50	10/13/2020	0.0	7.8	8.3	83.9	
	14:51	10/13/2020	0.0	7.8	8.0	84.2	
	10:59	10/28/2020	0.0	3.2	16.4	80.4	
	13:47	11/6/2020	0.0	0.2	20.8	79.0	
	14:50	11/6/2020	0.0	0.4	20.9	78.7	
	11:31	11/11/2020	0.0	0.9	20.1	79.0	
	13:21	11/18/2020	0.0	0	20.9	79.1	
	14:44	11/18/2020	0.0	0.2	20.9	78.9	
	13:46	12/9/2020	0.0	3.6	9.7	86.7	
	14:46	12/9/2020	0.0	3.6	9.7	86.7	
	10:04	12/11/2020	0.0	3.8	9.6	86.6	
	11:04	12/11/2020	0.0	3.8	9.6	86.6	
	13:47	12/17/2020	0.0	3.0	11.4	85.6	
	14:47	12/17/2020	0.0	3.4	11.0	85.6	
	13:41	12/22/2020	0.0	3.8	9.4	86.8	
	13:15	1/7/2021	0.0	3.0	12.4	84.6	
	9:51	1/21/2021	0.0	2.8	11.2	86.0	
	10:52	1/21/2021	0.0	3.4	11.5	85.1	
	13:21	2/2/2021	0.0	2.2	13.2	84.6	
	14:21	2/2/2021	0.0	2.4	13.2	84.4	
	8:43	2/18/2021	0.0	2.9	12.8	84.3	
	10:03	2/18/2021	0.0	3.0	12.5	84.5	
	13:40	2/22/2021	0.0	3.0	11.8	85.2	
	14:40	2/22/2021	0.0	3.0	12.0	85.0	
	13:20	3/3/2021	0.0	3.0	11.1	85.9	
	14:20	3/3/2021	0.0	3.0	11.4	85.6	
	13:43	3/17/2021	0.0	2.0	15.2	82.8	
	14:43	3/17/2021	0.0	2.0	15.3	82.7	
	13:32	4/9/2021	0.0	3.0	14.7	82.3	
	14:33	4/9/2021	0.0	3.0	14.3	82.7	
	13:11	4/20/2021	0.0	3.4	13.0	83.6	
	14:11	4/20/2021	0.0	3.6	13.3	83.1	
	13:13	5/6/2021	0.0	4.8	10.8	84.4	
	14:13	5/6/2021	0.0	4.8	11.2	84.0	
	13:29	5/20/2021	0.0	5.4	8.4	86.2	
	14:29	5/20/2021	0.0	5.8	8.3	85.9	
	13:37	6/4/2021	0.0	7.4	5.0	87.6	
	14:37	6/4/2021	0.0	7.2	4.8	88.0	
	11:33	6/17/2021	1.2	10.3	1.0	87.6	
	13:28	6/17/2021	1.2	10.3	0.8	87.8	
	13:31	7/2/2021	0.7	10.2	1.7	87.5	
	14:31	7/2/2021	0.7	10.2	1.8	87.4	
	-	7/8/2021	0.3	11.4	2.9	85.4	
	13:24	7/15/2021	1.4	8.4	5.8	84.5	
	14:24	7/15/2021	1.3	8.6	5.5	84.6	
	13:49	8/2/2021	0.6	11.4	1.6	86.5	
	14:49	8/2/2021	0.5	11.2	1.6	86.7	
	13:56	8/18/2021	0.0	12.0	2.2	85.8	
	14:56	8/18/2021	0.0	12.0	2.1	85.9	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
FF/NN Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-1 (continued)	13:53	9/3/2021	2.7	12.6	1.5	83.2	
	14:53	9/3/2021	2.8	12.8	1.4	83.1	
	9:38	9/8/2021	1.6	14.6	0.1	83.7	
	12:13	9/8/2021	1.2	14.4	0.2	84.3	
	10:59	9/17/2021	1.1	13.2	1.7	84.1	
	11:59	9/17/2021	1.0	13.2	1.7	84.1	
	10:46	9/29/2021	2.7	13.0	0.8	83.6	
	11:46	9/29/2021	2.6	13.0	0.8	83.6	
	10:06	10/15/2021	2.3	14.0	1.4	82.4	
	11:06	10/15/2021	2.2	14.4	1.5	82.0	
	10:14	10/27/2021	1.1	10.2	0.5	88.2	
	11:17	10/27/2021	1.2	10.2	0.6	88.0	
	14:05	11/10/2021	0.0	8.6	7.1	84.3	
	15:06	11/10/2021	0.0	8.8	7.0	84.2	
	10:30	11/16/2021	0.0	8.6	7.0	84.4	
	11:27	11/16/2021	0.0	8.7	6.8	84.5	
	13:17	12/3/2021	0.0	9.0	6.9	84.1	
	14:17	12/3/2021	0.0	9.4	7.3	83.3	
	13:02	12/17/2021	0.0	6.6	15.0	78.4	
	14:03	12/17/2021	0.0	7.2	15.2	77.6	
	13:34	12/29/2021	0.0	7.6	9.7	82.7	
	14:34	12/29/2021	0.0	7.6	9.9	82.5	
	13:13	1/13/2022	0.0	7.2	11.0	81.8	
	14:13	1/13/2022	0.0	7.2	11.2	81.6	
	13:38	1/24/2022	0.0	8.0	10.4	81.6	
	14:38	1/24/2022	0.0	8.4	10.4	81.2	
	13:02	2/9/2022	0.0	7.8	8.7	83.5	
	14:02	2/9/2022	0.0	8.2	8.6	83.2	
	12:55	2/24/2022	0.0	6.4	12.3	81.3	
	13:57	2/24/2022	0.0	6.2	12.2	81.6	
	13:27	3/10/2022	0.0	4.6	9.8	85.6	
	14:27	3/10/2022	0.0	4.6	10.0	85.4	
	10:31	3/22/2022	0.0	3.8	10.6	85.6	
	11:17	3/22/2022	0.0	3.8	10.5	85.7	
	13:14	4/1/2022	0.0	2.2	14.6	83.2	
	14:14	4/1/2022	0.0	1.6	16.8	81.6	
	13:08	4/29/2022	0.0	2.4	15.6	82.0	
	14:08	4/29/2022	0.0	2.4	16.0	81.6	
	12:41	5/13/2022	95.5	1.2	17.8	-	Meter error observed for initial reading.
	13:31	5/13/2022	0.0	0.6	19.8	79.6	Meter reading normally for second reading.
	12:51	5/26/2022	0.0	5.8	11.3	82.9	
	13:51	5/26/2022	0.0	3.8	14.8	81.4	
	12:55	6/10/2022	0.0	5.0	11.1	83.9	
	13:55	6/10/2022	0.0	3.6	13.9	82.5	
	7:38	6/22/2022	0.0	8.1	10.1	81.8	
	13:06	7/8/2022	0.0	11.2	3.3	85.5	
	13:54	7/8/2022	0.0	11.6	3.2	85.2	
	7:40	7/22/2022	0.0	10.0	6.2	83.8	
	8:22	7/22/2022	0.0	10.2	6.1	83.7	
	9:55	8/4/2022	0.0	12.4	5.9	81.7	
	10:33	8/4/2022	0.0	12.6	5.9	81.5	
	10:02	8/18/2022	0.0	13.8	1.8	84.4	
	10:42	8/18/2022	0.0	13.8	1.5	84.7	
	13:03	9/1/2022	0.2	14.4	5.3	80.2	
	13:40	9/1/2022	0.2	14.6	5.5	79.7	
	13:03	9/15/2022	0.2	14.4	5.3	80.2	
	13:45	9/15/2022	0.1	14.0	2.4	83.5	
	8:44	9/27/2022	0.0	12.5	4.4	83.1	
	12:10	10/13/2022	0.0	11.6	9.6	78.8	
	13:07	10/13/2022	0.0	11.8	9.6	78.6	
	10:31	10/27/2022	0.0	9.6	9.1	81.3	
	11:05	10/27/2022	0.0	9.8	8.8	81.4	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
FF/NN Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-1 (continued)	10:19	11/10/2022	0.0	8.2	7.5	84.3	
	10:57	11/10/2022	0.0	8.2	7.5	84.3	
	13:15	11/28/2022	0.0	8.0	8.5	83.5	
	13:51	11/28/2022	0.0	8.0	8.5	83.5	
	11:37	12/14/2022	0.0	6.5	9.0	84.5	
	12:30	12/14/2022	0.0	6.4	9.0	84.6	
	12:40	12/29/2022	0.0	5.8	12.8	81.4	
	13:17	12/29/2022	0.0	5.8	12.9	81.3	
	13:12	1/13/2023	0.0	5.6	10.2	84.2	
	13:53	1/13/2023	0.0	5.8	10.6	83.6	
	10:09	1/27/2023	-	-	-	-	Sample port was frozen.
	13:09	2/8/2023	0.0	4.8	11.4	83.8	Shut off blower
	13:59	2/8/2023	0.0	5.4	11.2	83.4	Shut off blower
	8:30	3/21/2023	0.0	0.3	20.4	79.3	
	9:37	5/9/2023	0.0	3.8	10.3	85.9	
	8:01	6/21/2023	0.4	11.0	1.8	86.8	
	11:24	7/5/2023	0.4	13.2	1.9	84.5	
	12:24	7/5/2023	0.4	13.2	2.1	84.4	
	9:30	7/19/2023	0.0	10.8	8.2	81.0	
	10:30	7/19/2023	0.0	10.8	8.2	81.0	
	9:58	7/31/2023	2.0	13.4	2.4	82.2	
	10:58	7/31/2023	2.0	13.8	2.2	82.0	
	11:32	8/15/2023	0.6	15.2	2.9	81.3	
	12:41	8/15/2023	0.6	15.2	2.9	81.3	
	11:05	8/28/2023	1.4	15.6	1.9	81.1	
	12:05	8/28/2023	1.4	16.0	1.9	80.7	
	10:38	9/15/2023	0.2	15.0	2.7	82.1	
	11:40	9/15/2023	0.3	15.0	2.8	82.0	
	11:23	9/18/2023	0.0	13.4	4.2	82.4	
	8:43	9/29/2023	2.5	19.8	0.0	77.8	
	9:43	9/29/2023	2.5	20.4	0.0	77.1	
	9:16	10/27/2023	0.0	11.4	7.9	80.7	
	10:16	10/27/2023	0.0	11.7	6.7	81.6	
	10:56	12/6/2023	0.0	9.4	8.5	82.1	
	11:49	1/31/2024	0.0	9.1	6.3	84.6	
	14:22	2/16/2024	0.0	5.0	13.1	81.9	
	10:49	2/29/2024	0.0	4.9	13.4	81.7	
	10:09	3/25/2024	0.0	2.7	17.3	80.0	
	9:21	4/15/2024	0.0	2.4	14.9	82.7	
	8:55	5/8/2024	0.0	0.4	20.5	79.1	
GP-2*	9:47	8/20/2019	2.2	8.5	11.7	77.6	
	9:49	8/20/2019	11.6	20.6	0.3	67.5	
	9:55	8/20/2019	12.3	21.0	0.0	66.7	
	9:47	8/21/2019	1.2	5.6	15.2	78.0	
	13:52	8/22/2019	0.0	2.4	19.0	78.6	
	13:45	8/23/2019	12	1.6	19.5	66.9	
	11:12	8/26/2019	4.3	10.8	8.0	76.9	
	11:15	8/26/2019	9.0	19.6	0.7	70.7	
	11:25	8/27/2019	10.5	17.4	2.3	69.8	
	13:52	8/28/2019	9.0	20.0	0.3	70.7	
	13:58	8/29/2019	9.5	19.4	0.7	70.4	
	11:32	8/30/2019	6.5	1.0	19.0	73.5	
	11:20	9/3/2019	7.0	19.6	0.5	72.9	
	12:57	9/4/2019	2.2	17.4	2.0	78.4	
	6:34	9/5/2019	0.1	3.6	17.5	78.8	
	14:02	9/5/2019	6.2	20.2	0.1	73.5	
	13:25	9/6/2019	1.1	16.2	2.6	80.1	
	10:58	9/9/2019	0.0	10.4	9.6	80.0	
	11:22	9/10/2019	0.0	11.8	7.7	80.5	
	10:57	9/11/2019	0.4	12.6	5.2	81.8	
	11:04	9/12/2019	0.05	10.4	9.4	80.2	
	13:09	9/13/2019	0.2	12.6	5.1	82.1	
	14:37	9/16/2019	3.25	11.4	6.5	78.9	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
FF/NN Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-2* (continued)	9:12	9/17/2019	0.0	0.6	19.9	79.5	
	11:25	10/7/2019	0.0	0.2	20.6	79.2	
	13:58	10/21/2019	0.0	0.6	20.7	78.7	
	13:21	11/5/2019	0.0	0.9	19.1	80.0	
	14:17	11/20/2019	0.0	0.6	20.0	79.4	
	10:29	12/5/2019	0.0	0.2	20.9	78.9	
	11:17	12/19/2019	0.0	0.5	20.5	79.0	
	14:18	1/10/2020	0.0	0.0	0.6	99.4	
	-	1/24/2020	-	-	-	-	Connection Frozen Shut
	-	2/7/2020	-	-	-	-	Connection Frozen Shut
	10:37	2/17/2020	0.0	7.5	13.4	79.1	Unthawed sample port
	11:14	2/26/2020	0.0	0.0	20.8	79.2	
	14:34	3/6/2020	0.0	0.0	20.9	79.1	
	14:41	4/1/2020	0.0	3.8	16.6	79.6	
	14:24	4/17/2020	0.0	6.6	14.0	79.4	
	8:26	4/28/2020	0.0	0.1	20.7	79.2	System shutdown after testing and extraction header replaced.
			4/29/2020				System restarted, see Footnote 1
	11:28	5/1/2020	0.0	1.4	19.5	79.1	
	8:05	5/5/2020	0.0	0.0	20.9	79.1	
	13:33	5/14/2020	0.0	0.0	20.9	79.1	
	10:32	6/1/2020	0.0	1.8	18.2	80.0	
	13:29	6/10/2020	0.0	0.4	20.6	79.0	
	13:45	6/25/2020	0.0	1.2	18.8	80.0	
	-	7/9/2020	-	-	-	-	RKI Eagle Instrument stopped working, reading could not be collected.
	14:44	7/14/2020	0.0	0.3	19.8	79.9	
	15:17	7/24/2020	0.0	0.1	20.0	79.9	
	13:35	8/7/2020	0.0	0.0	20.9	79.1	
	11:45	8/10/2020	0.0	0.6	20.3	79.1	
	14:13	8/19/2020	0.0	3.2	16.2	80.6	
	13:50	9/11/2020	0.0	3.6	14.9	81.5	
	8:09	9/23/2020	0.0	0.1	20.9	79.0	Intake valve added to blower to regulate overall system vacuum.
	--	9/23/2020	0.0	2.9	16.3	80.8	Reading collected after system modification made.
	13:23	9/25/2020	0.0	3.0	16.0	81.0	
	14:02	10/13/2020	0.0	5.2	13.7	81.1	
	11:27	10/28/2020	0.0	5.6	14.0	80.4	
	14:01	11/6/2020	0.0	4.4	13.6	82.0	
	11:57	11/11/2020	0.0	2.3	17.5	80.2	
	13:33	11/18/2020	0.0	6.6	10.7	82.7	
	13:55	12/9/2020	0.0	0.6	20.7	78.7	
	10:16	12/11/2020	0.0	0.0	20.9	79.1	
	13:59	12/17/2020	0.0	0.4	20.9	78.7	
	13:53	12/22/2020	0.0	3.4	14.9	81.7	
	13:30	1/7/2021	0.0	4.8	13.1	82.1	
	10:04	1/21/2021	0.0	3.8	14.6	81.6	
	13:35	2/2/2021	0.0	4.8	12.0	83.2	
	11:17	2/18/2021	0.0	5.0	11.1	83.9	
	13:34	3/3/2021	0.0	0.0	20.9	79.1	
	13:55	3/17/2021	0.0	4.2	11.7	84.1	
	13:42	4/9/2021	0.0	0.4	20.9	78.7	
	13:24	4/20/2021	0.0	1.8	16.7	81.5	
	13:25	5/6/2021	0.0	5.0	11.7	83.3	
	13:42	5/20/2021	0.0	0.6	19.8	79.6	
	13:53	6/4/2021	0.0	4.8	12.0	83.2	
	11:11	6/17/2021	0.0	2.5	16.5	81.0	
	13:42	7/2/2021	0.0	4.8	12.2	83.0	
	13:42	7/15/2021	0.0	4.2	13.3	82.5	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
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Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-2* (continued)	14:05	8/2/2021	0.0	7.6	9.4	83.0	
	14:14	8/18/2021	0.0	1.6	18.7	79.7	
	14:19	9/3/2021	0.0	5.0	13.9	81.1	
	12:23	9/8/2021	0.0	5.5	13.0	81.5	
	11:11	9/17/2021	0.0	0.6	20.2	79.2	
	11:03	9/29/2021	0.0	0.4	20.8	78.8	
	10:23	10/15/2021	0.0	0.2	20.9	78.9	
	10:44	10/27/2021	0.0	6.6	12.0	81.4	
	14:15	11/10/2021	0.0	6.0	11.6	82.4	
	12:29	11/16/2021	0.0	10.0	7.0	83.0	
	13:05	11/16/2021	0.0	9.8	7.0	83.2	
	13:33	12/3/2021	0.0	1.2	19.3	79.5	
	13:25	12/17/2021	0.0	2.4	17.1	80.5	
	-	12/29/2021	-	-	-	-	Protective cover frozen
	13:33	1/13/2022	0.0	6.4	12.0	81.6	
	13:55	1/24/2022	0.0	0.6	20.9	78.5	
	13:20	2/9/2022	0.0	5.8	12.5	81.7	
	-	2/24/2022	-	-	-	-	Frozen Sample Connection
	13:42	3/10/2022	0.0	6.4	10.7	82.9	
	12:17	3/22/2022	0.0	1.2	19.0	79.8	
	13:30	4/1/2022	0.0	0.4	20.8	78.8	
	13:21	4/29/2022	0.0	6.4	10.9	82.7	
	13:09	5/13/2022	0.0	5.8	12.3	81.9	
	13:01	5/26/2022	0.0	3.2	16.1	80.7	
	13:06	6/10/2022	0.0	7.4	10.3	82.3	
	8:20	6/22/2022	0.0	3.6	15.7	80.7	
	13:27	7/8/2022	0.0	0.0	20.9	79.1	
	7:55	7/22/2022	0.0	0.6	20.7	78.7	
	10:10	8/4/2022	0.0	0.0	20.9	79.1	
	10:19	8/18/2022	0.0	7.6	11.3	81.1	
	13:16	9/1/2022	0.0	6.4	13.4	80.2	
	13:19	9/1/2022	0.0	5.6	14.6	79.8	
	9:49	9/27/2022	0.0	0.0	20.8	79.2	
	12:49	10/13/2022	0.0	9.0	11.0	80.0	
	10:43	10/27/2022	0.0	0.0	20.9	79.1	
	10:33	11/10/2022	0.0	3.8	15.6	80.6	
	13:27	11/28/2022	0.0	8.0	8.5	83.5	
	13:26	12/14/2022	0.0	1.8	18.3	79.9	
	-	12/29/2022	-	-	-	-	Sample port was frozen.
	13:25	1/13/2023	-	-	-	-	Sample port was frozen.
	-	1/27/2023	-	-	-	-	Sample port was frozen.
	13:29	2/8/2023	0.0	6.2	11.7	82.1	Shut off blower
	9:08	3/21/2023	0.0	0.1	20.7	79.2	
	10:09	5/9/2023	0.0	0.6	20	79.4	
	8:31	6/21/2023	0.0	0.0	20.8	79.2	
	11:44	7/5/2023	0.0	0.0	20.9	79.1	
	9:58	7/19/2023	0.0	8.4	10.4	81.2	
	10:25	7/31/2023	0.0	0.0	20.9	79.1	
	12:57	8/15/2023	0.0	0.0	20.9	79.1	
	12:09	8/28/2023	0.0	0.6	20.7	78.7	
	11:32	9/15/2023	0.0	0.4	20.9	78.7	
	12:53	9/18/2023	0.0	0.5	20.2	79.3	
	9:50	9/29/2023	0.0	0.0	-	-	
	10:00	10/27/2023	0.0	0.6	19.7	79.7	
	10:37	12/6/2023	0.0	2.1	18.2	79.7	
	10:24	1/31/2024	0.0	2	17.6	80.4	
	14:34	2/16/2024	0.2	10.8	1.9	87.1	
	11:04	2/29/2024	0.0	2.4	17.6	80.0	
	9:45	3/25/2024	0.0	2.4	16.6	81.0	
	8:46	4/15/2024	0.00	0.3	20.6	79.1	
	9:36	5/8/2024	0.00	1.1	19.5	79.4	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
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Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-3	10:25	8/20/2019	0.0	0.8	19.0	80.2	Fix breach in system piping 8/20/19.
	6:13	9/5/2019	0.0	1.0	20.3	78.7	Reconnect GV-4 to the extraction system.
	8:30	9/17/2019	0.0	0.0	20.4	79.6	
	14:21	10/21/2019	0.0	4.3	15.0	80.7	
	13:32	11/5/2019	0.0	0.4	20.0	79.6	
	10:41	12/5/2019	0.0	0.3	20.8	78.9	
	11:07	2/17/2020	0.0	4.9	14.6	80.5	
	11:27	2/26/2020	0.0	0.2	20.7	79.1	
	8:41	4/28/2020	0.0	0.1	20.5	79.4	
	15:02	7/14/2020	0.0	0.1	20.6	79.3	
	11:31	10/28/2020	0.0	3.9	16.5	79.6	
	12:07	11/11/2020	0.0	0.1	20.8	79.1	
	12:42	2/18/2021	0.0	4.8	14.2	81.0	
	10:51	6/17/2021	0.0	0.6	20.0	79.4	
	10:42	9/8/2021	0.0	0.2	20.5	79.3	
	12:36	11/16/2021	0.0	3.8	15.4	80.8	
	12:21	3/22/2022	0.0	2.4	17.8	79.8	
	8:24	6/22/2022	0.0	0.0	20.8	79.2	
	9:56	9/27/2022	0.0	0.0	20.8	79.2	
	13:39	12/14/2022	0.0	3.9	15.7	80.4	
	9:25	3/21/2023	0.0	0.2	20.6	79.2	
	10:55	5/9/2023	0.0	0.0	20.8	79.2	
	8:36	6/21/2023	0.0	0.1	20.7	79.2	
	13:14	9/18/2023	0.0	0.4	20.2	79.4	
	10:00	12/6/2023	0.0	2.6	18.6	78.8	
	10:45	1/31/2024	0.0	4.4	16	79.6	
	12:20	2/29/2024	0.0	3.3	16.4	80.3	
	10:52	3/25/2024	0.0	4.3	15.8	79.9	
	10:02	4/15/2024	0.0	0.2	20.7	79.1	
	10:13	5/8/2024	0.0	0.1	20.7	79.2	
GP-4	10:30	8/20/2019	0.0	2.2	17.6	80.2	Fix breach in system piping 8/20/19.
	6:23	9/5/2019	0.0	2.3	19.6	78.1	Reconnect GV-4 to the extraction system.
	8:34	9/17/2019	0.0	1.3	18.7	80.0	
	14:25	10/21/2019	0.0	2.9	17.5	79.6	
	9:48	11/5/2019	0.0	0.9	20.3	78.8	
	10:45	12/5/2019	0.0	0.7	20.5	78.8	
	11:14	2/17/2020	0.0	1.5	19.2	79.3	
	11:33	2/26/2020	0.0	0.7	19.9	79.4	
	8:57	4/28/2020	0.0	1.5	19.2	79.3	
	15:05	7/14/2020	0.0	1.5	18.8	79.7	
	11:41	10/28/2020	0.0	2.7	18.3	79.0	
	12:14	11/11/2020	0.0	0.6	20.4	79.0	
	12:51	2/18/2021	0.0	0.4	20.6	79.0	
	10:45	6/17/2021	0.0	1.2	19.0	79.8	
	10:31	9/8/2021	0.0	0.2	18.3	81.5	
	12:43	11/16/2021	0.0	2.7	17.2	80.1	
	12:25	3/22/2022	0.0	1.3	19.7	79.0	
	8:30	6/22/2022	0.0	1.6	19.6	78.8	
	10:10	9/27/2022	0.0	0.5	20.3	79.2	
	13:36	12/14/2022	0.0	2.5	18.0	79.5	
	9:44	3/21/2023	0.0	0.8	19.9	79.3	
	11:03	5/9/2023	0.0	0.8	19.7	79.5	
	8:44	6/21/2023	0.0	1.0	20.7	78.3	
	13:18	9/18/2023	0.0	1.1	19.8	79.1	
	9:48	12/6/2023	0.0	1.2	19.9	78.9	
	0:00	1/31/2024	0.0	1	20	79.0	
	12:25	2/29/2024	0.0	0.6	18.9	80.5	
	10:56	3/25/2024	0.0	0.8	20.2	79.0	
	10:10	4/15/2024	0.0	0.9	20.2	78.9	
	10:17	5/8/2024	0.0	1.3	19.5	79.2	
GP-5	10:01	8/20/2019	0.0	9.4	10.8	79.8	Fix breach in system piping 8/20/19.
	7:13	9/5/2019	0.0	8.7	14.1	77.2	Reconnect GV-4 to the extraction system.
	8:44	9/17/2019	0.0	5.9	14.7	79.4	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
FF/NN Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-5 (continued)	11:52	10/21/2019	0.0	5.5	14.2	80.3	
	8:24	11/5/2019	0.0	3.5	17.0	79.5	
	9:36	12/5/2019	0.0	3.8	18.2	78.0	
	9:46	2/17/2020	0.0	2.5	18.8	78.7	
	10:48	2/26/2020	0.0	2.5	18.8	78.7	
	9:15	4/28/2020	0.0	2.4	17.0	80.6	
	14:23	7/14/2020	0.0	7.1	12.2	80.7	
	11:31	8/10/2020	0.0	6.2	14.8	79.0	
	14:07	8/21/2020	0.0	4.4	17.0	78.6	
	14:41	8/31/2020	0.0	4.8	14.4	80.8	
	14:08	9/11/2020	0.0	7.8	11.8	80.4	
	8:25	9/23/2020	0.0	8.2	12.7	79.1	
	11:03	10/28/2020	0.0	5.9	14.3	79.8	
	11:34	11/11/2020	0.0	3.4	16.7	79.9	
	10:07	2/18/2021	0.0	2.8	18.1	79.1	
	11:29	6/17/2021	0.0	6.8	12.2	81.0	
	-	7/8/2021	0.0	7.2	12.7	80.1	
	13:31	7/15/2021	0.0	8.4	9.0	82.6	
	13:55	8/2/2021	0.0	7.6	10.3	82.1	
	13:58	8/18/2021	0.0	8.8	10.5	80.7	
	14:02	9/3/2021	0.0	10.0	9.2	80.8	
	9:42	9/8/2021	0.0	9.5	10.6	79.9	
	11:00	9/17/2021	0.0	9.4	11.7	78.9	
	10:52	9/29/2021	0.0	8.6	12.9	78.5	
	10:08	10/15/2021	0.0	6.8	13.9	79.3	
	10:18	10/27/2021	0.0	7.6	13.8	78.6	
	11:59	11/16/2021	0.0	6.7	15.8	77.5	
	11:47	3/22/2022	0.0	1.6	18.9	79.5	
	7:40	6/22/2022	0.0	7.2	10.5	82.3	
	10:32	8/23/2022	0.0	8.8	12.7	78.5	
	13:43	9/1/2022	0.0	7.4	14.6	78.0	
	-	9/15/2022	0.0	7.0	14.6	78.4	
	9:03	9/27/2022	0.0	7.4	14.0	78.6	
	12:36	12/14/2022	0.0	3.2	18.5	78.3	
	8:34	3/21/2023	0.0	1.6	18.2	80.2	
	9:40	5/9/2023	0.0	1.7	17.5	80.8	
	8:05	6/21/2023	0.0	5.9	11.9	82.2	
	12:06	9/18/2023	0.0	6.6	15.3	78.1	
	10:53	12/6/2023	0.0	4.7	17.8	77.5	
	11:53	1/31/2024	0.0	3.2	18.8	78.0	
	10:53	2/29/2024	0.0	3.2	18.7	78.1	
	10:12	3/25/2024	0.0	2.5	19.3	78.2	
	9:25	4/15/2024	0.0	3.3	17.2	79.5	
	8:59	5/8/2024	0.0	3.9	16.2	79.9	Blower is off
GP-6	10:20	8/20/2019	0.0	1.8	17.8	80.4	Fix breach in system piping 8/20/19.
	6:04	9/5/2019	0.0	2.3	19.1	78.6	Reconnect GV-4 to the extraction system.
	8:24	9/17/2019	0.0	0.9	19.3	79.8	
	14:36	10/21/2019	0.0	0.1	20.1	79.8	
	9:40	10/21/2019	0.0	2.7	18.2	79.1	
	10:57	12/5/2019	0.0	1.7	19.9	78.4	
	10:51	2/17/2020	0.0	2.4	17.9	79.7	
	12:10	2/26/2020	0.0	0.9	20.2	78.9	
	8:50	4/28/2020	0.0	1.5	18.7	79.8	
	14:57	7/14/2020	0.0	1.3	18.6	80.1	
	11:53	10/28/2020	0.0	3.3	17.2	79.5	
	12:26	11/11/2020	0.0	0.7	20.2	79.1	
	13:10	2/18/2021	0.0	3.1	19.4	77.5	
	10:40	6/17/2021	0.0	0.6	19.6	79.8	
	10:56	9/8/2021	0.0	1.5	18.5	80.0	
	12:52	11/16/2021	0.0	2.5	17.9	79.6	
	12:41	3/22/2022	0.0	1.3	19.9	78.8	
	8:41	6/22/2022	0.0	1.1	19.2	79.7	
	10:23	9/27/2022	0.0	0.5	20.3	79.2	
	13:55	12/14/2022	0.0	2.9	17.6	79.5	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
January 2019 - May 2024
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Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-6 (continued)	10:00	3/21/2023	0.0	1.5	18.5	80.0	
	10:19	5/9/2023	0.0	0.6	20.1	79.3	
	8:55	6/21/2023	0.0	0.6	20.1	79.3	
	13:07	9/18/2023	0.0	0.9	20.0	79.1	
	9:36	12/6/2023	0.0	1.6	19.9	78.5	
	10:39	1/31/2024	0.0	1.6	19.5	78.9	
	12:58	2/29/2024	0.0	1.4	19.8	78.8	
	11:17	3/25/2024	0.0	0.3	20.5	79.2	
	10:24	4/15/2024	0.0	1.4	19.4	79.2	
	10:32	5/8/2024	0.0	1.3	19.0	79.7	
GP-7	10:16	8/20/2019	0.0	1.0	18.9	80.1	Fix breach in system piping 8/20/19.
	5:59	9/5/2019	0.0	2.3	19.1	78.6	Reconnect GV-4 to the extraction system.
	8:19	9/17/2019	0.0	0.1	20.4	79.5	
	14:31	10/21/2019	0.0	0.2	20.1	79.7	
	9:36	11/5/2019	0.0	0.1	20.7	79.2	
	10:52	12/5/2019	0.0	0.3	20.8	78.9	
	10:46	2/17/2020	0.0	4.1	15.4	80.5	
	12:06	2/26/2020	0.0	0.2	20.7	79.1	
	8:47	4/28/2020	0.0	0.1	20.6	79.3	
	14:54	7/14/2020	0.0	0.6	19.6	79.8	
	11:50	10/28/2020	0.0	4.2	16.4	79.4	
	12:22	11/11/2020	0.0	0.2	20.7	79.1	
	13:04	2/18/2021	0.0	5.2	17.4	77.4	
	10:36	6/17/2021	0.0	1.8	18.3	79.9	
	10:52	9/8/2021	0.0	0.3	20.1	79.6	
	12:49	11/16/2021	0.0	4.5	14.3	81.2	
	12:31	3/22/2022	0.0	3.5	16.3	80.2	
	8:38	6/22/2022	0.0	0.2	20.5	79.3	
	10:19	9/27/2022	0.0	0.0	20.8	79.2	
	13:50	12/14/2022	0.0	4.1	15.6	80.3	
	9:56	3/21/2023	0.0	0.0	20.8	79.2	
	10:15	5/9/2023	0.0	0.0	20.8	79.2	
	8:52	6/21/2023	0.0	0.0	20.8	100.0	
	13:04	9/18/2023	0.0	0.4	20.4	100.0	
	9:32	12/6/2023	0.0	1.7	19.2	79.1	
	10:33	1/31/2024	0.0	3.6	17.1	79.3	
	12:52	2/29/2024	0.0	3.7	17	79.3	
	11:12	3/25/2024	0.0	0.2	20.6	79.2	
	10:20	4/15/2024	0.0	0.2	20.7	79.1	
	10:28	5/8/2024	0.0	0.1	20.7	79.2	
GP-8							
GP-10	9:43	8/20/2019	0.0	5.8	12.4	81.8	Fix breach in system piping 8/20/19.
	6:42	9/5/2019	0.0	6.0	14.6	79.4	Reconnect GV-4 to the extraction system.
	9:08	9/17/2019	0.0	0.6	12.8	86.6	
	14:09	10/21/2019	0.0	6.3	12.1	81.6	
	9:20	11/5/2019	0.0	6.1	13.7	80.2	
	10:22	12/5/2019	0.0	5.6	16.5	77.9	
	10:04	2/17/2020	0.0	3.4	18.0	78.6	
	11:07	2/26/2020	0.0	3.4	17.9	78.7	
	8:30	4/28/2020	0.0	2.7	18.8	78.5	
	14:11	7/14/2020	0.0	4.3	12.8	82.9	
	8:06	9/23/2020	0.0	6.2	11.5	82.3	
	11:17	10/28/2020	0.0	5.5	12.4	82.1	
	11:54	11/11/2020	0.0	4.5	13.3	82.2	
	11:04	2/18/2021	0.0	4.7	11.4	83.9	
	11:07	6/17/2021	0.0	2.1	18.2	79.7	
	10:02	9/8/2021	0.0	6.4	7.6	86.0	
	12:25	11/16/2021	0.0	4.0	15.8	80.2	
	12:02	3/22/2022	0.0	3.9	12.7	83.4	
	7:57	6/22/2022	0.0	3.6	13.5	82.9	
	9:22	9/27/2022	0.0	0.0	20.8	79.2	
	13:20	12/14/2022	0.0	4.7	12.6	82.7	

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Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-10 (continued)	9:04	3/21/2023	0.0	1.7	15.4	82.9	
	10:00	5/9/2023	0.0	2.4	13.5	84.1	
	8:29	6/21/2023	0.0	4.2	14.5	81.3	
	12:45	9/18/2023	0.0	1.9	15.9	82.2	
	10:33	12/6/2023	0.0	0.7	20.2	79.1	
	10:18	1/31/2024	0.0	4.4	14.5	81.1	
	11:12	2/29/2024	0.0	4.1	14.9	81.0	
	10:45	3/25/2024	0.0	2.7	16.2	81.1	
	9:38	4/15/2024	0.0	3.6	17	79.4	
	9:31	5/8/2024	0.0	4.1	12.1	83.8	
GP-11	9:30	8/20/2019	0.0	3.7	17.4	78.9	Fix breach in system piping 8/20/19.
	6:53	9/5/2019	0.0	2.5	19.4	78.1	Reconnect GV-4 to the extraction system.
	9:00	9/17/2019	0.0	2.4	18.0	79.6	
	13:21	10/21/2019	0.0	3.2	18.3	78.5	
	9:05	11/5/2019	0.0	2.5	19.4	80.2	
	10:15	12/5/2019	0.0	2.4	19.6	78.0	
	10:12	2/17/2020	0.0	2.7	18.5	78.8	
	10:58	2/26/2020	0.0	1.8	19.1	79.1	
	8:19	4/28/2020	0.0	2.2	18.6	79.2	
	14:39	7/14/2020	0.0	3.1	17.3	79.6	
	8:03	9/23/2020	0.0	2.7	18.9	78.4	
	16:05	10/28/2020	0.0	3.0	19.0	78.0	
	11:46	11/11/2020	0.0	2.2	19.5	78.3	
	10:37	2/18/2021	0.0	3.3	16.6	80.1	
	10:58	6/17/2021	0.0	2.6	18.0	79.4	
	10:08	9/8/2021	0.0	3.2	17.9	78.9	
	12:13	11/16/2021	0.0	2.6	18.2	79.2	
	12:07	3/22/2022	0.0	2.7	17.6	79.7	
	8:02	6/22/2022	0.0	2.1	19.1	78.8	
	9:35	9/27/2022	0.0	2.3	19.0	78.7	
	13:00	12/14/2022	0.0	3.3	17.5	79.2	
	8:47	3/21/2023	0.0	2.5	18.3	79.2	
	11:08	5/9/2023	0.0	2.5	17.6	79.9	
	8:17	6/21/2023	0.0	2.1	18.8	79.1	
	12:31	9/18/2023	0.0	2.1	19.3	78.6	
	10:05	12/6/2023	0.0	2.4	19.1	78.5	
	10:59	1/31/2024	0.0	2.5	18.1	79.4	
	12:32	2/29/2024	0.0	2.0	18.4	79.6	
	10:35	3/25/2024	0.0	3.6	16.6	79.8	
	9:42	4/15/2024	0.0	2.6	18.6	78.8	
	10:02	5/8/2024	0.0	3.6	16.4	80.0	
GP-12	10:04	8/20/2019	0.0	3.2	17.4	79.4	Fix breach in system piping 8/20/19.
	7:01	9/5/2019	0.0	3.4	18.4	78.2	Reconnect GV-4 to the extraction system.
	8:55	9/17/2019	0.0	1.7	18.5	79.8	
	11:56	10/21/2019	0.0	5.6	14.9	79.5	
	8:13	11/5/2019	0.2	5.6	14.2	80.0	
	9:04	12/5/2019	0.0	5.4	15.2	79.4	
	9:52	2/17/2020	0.0	5.2	16.0	78.8	
	10:53	2/26/2020	0.0	2.4	18.6	79.0	
	9:19	4/28/2020	0.0	2.1	18.0	79.9	
	14:30	7/14/2020	0.0	1.6	18.3	80.1	
	11:28	8/10/2020	0.0	1.8	19.2	79.0	
	14:02	8/21/2020	0.0	1.8	20.1	78.1	
	14:34	8/31/2020	0.0	1.6	18.8	79.6	
	14:10	9/11/2020	0.0	2.2	18.5	79.3	
	8:29	9/23/2020	0.0	2.3	18.6	79.1	
	11:11	10/28/2020	0.0	6.3	14.2	79.5	
	11:39	11/11/2020	0.0	5.7	14.5	79.8	
	10:21	2/18/2021	0.0	4.4	15.6	80.0	
	11:20	6/17/2021	0.0	1.4	19.4	79.2	
	-	7/8/2021	0.0	1.6	19.1	79.3	
	13:28	7/15/2021	0.0	2.8	17.4	79.8	

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Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-12 (continued)	13:51	8/2/2021	0.0	1.6	18.3	80.1	
	13:52	8/18/2021	0.0	1.6	18.9	79.5	
	13:57	9/3/2021	0.0	2.4	17.8	79.8	
	9:50	9/8/2021	0.0	2.0	18.5	79.5	
	10:56	9/17/2021	0.0	2.2	18.7	79.1	
	10:49	9/29/2021	0.0	2.2	18.6	79.2	
	10:04	10/15/2021	0.0	2.8	18.3	78.9	
	11:20	10/27/2021	0.0	3.6	17.4	79.0	
	12:02	11/16/2021	0.0	3.8	16.8	79.4	
	11:54	3/22/2022	0.0	1.5	19	79.5	
	7:50	6/22/2022	0.0	1.4	19.0	79.6	
	10:26	8/23/2022	0.0	2.2	18.8	79.0	
	13:46	9/1/2022	0.0	2	19.2	78.8	
	-	9/15/2022	0.0	2.2	19.0	78.8	
	9:16	9/27/2022	0.0	3.3	17.7	79.0	
	12:52	12/14/2022	0.0	3.2	17.8	79.0	
	8:41	3/21/2023	0.0	2.8	17.6	79.6	
	11:16	5/9/2023	0.0	3.0	17.4	79.6	
	8:13	6/21/2023	0.0	1.5	19.4	79.1	
	12:26	9/18/2023	0.0	2.5	18.6	78.9	
	10:45	12/6/2023	0.0	3.7	17.1	79.2	
	11:41	1/31/2024	0.0	3.9	16.3	79.8	
	12:52	2/29/2024	0.0	3.7	17.1	79.2	
	10:20	3/25/2024	0.0	0	20.9	79.1	
	9:32	4/15/2024	0.0	2.3	18.2	79.5	
	9:06	5/8/2024	0.0	1.9	18.8	79.3	
MW-101	12:11	10/28/2020	0.0	2.1	18.5	79.4	
	11:50	11/11/2020	0.0	0.2	20.8	79.0	
	10:41	2/18/2021	0.0	4.0	15.1	80.9	
	11:01	6/17/2021	0.0	0.1	20.7	79.2	
	10:11	9/8/2021	0.0	0.3	20.1	79.6	
	12:17	11/16/2021	0.2	1.5	18.3	80.0	
	12:12	3/22/2022	0.0	1.0	19.8	79.2	
	8:07	6/22/2022	0.0	0.0	20.8	79.2	
	9:41	9/27/2022	0.0	0.2	20.6	79.2	
	13:05	12/14/2022	0.3	2.3	18.3	79.1	
	8:51	3/21/2023	0.0	0.4	20.3	79.3	
	11:12	5/9/2023	0.0	0.5	20.1	79.4	
	8:22	6/21/2023	0.0	0.1	20.6	79.3	
	12:35	9/18/2023	0.0	0.3	20.4	79.3	
	10:09	12/6/2023	0.1	1.2	19.4	79.3	
	11:05	11/31/2024	0.0	1.7	18.9	79.4	
	12:36	2/29/2024	0.0	0.8	20.0	79.2	
	10:39	3/25/2024	0.0	2.1	18.8	79.1	
	9:46	4/15/2024	0.0	0.2	20.6	79.2	
	10:06	5/8/2024	0.0	0.2	20.6	79.2	
MW-102	--	10/28/2020	0.0	1.5	18.1	80.4	
	11:36	11/11/2020	0.0	1.7	19.0	79.3	
	10:02	2/18/2021	0.0	0.9	19.5	79.6	
	11:25	6/17/2021	0.0	0.6	19.1	80.3	
	9:45	9/8/2021	0.0	3.7	13.9	82.4	
	11:57	11/16/2021	0.0	3.3	17.9	78.8	
	11:49	3/22/2022	0.0	0.9	19.9	79.2	
	7:43	6/22/2022	0.0	0.9	18.8	80.3	
	9:06	9/27/2022	0.0	3.1	16.7	80.2	
	12:33	12/14/2022	0.0	2.2	18.5	79.3	
	8:37	3/21/2023	0.0	0.3	20.3	79.4	
	11:16	5/9/2023	0.0	0.4	20.2	79.4	
	8:07	6/21/2023	0.0	0.5	19.5	80.0	
	12:09	9/18/2023	0.0	2.8	17.7	79.5	
	10:51	12/6/2023	0.0	2.9	18.7	78.4	

Table 1: Historical Gas Probe Field Parameter Monitoring Results
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Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
MW-102 (continued)	11:56	1/31/2024	0.0	1.9	19.5	78.6	
	10:56	2/29/2024	0.0	1.6	19.4	79.0	
	10:15	3/25/2024	0.0	1.1	20.1	78.8	
	9:28	4/15/2024	0.0	0.7	19.6	79.7	
	9:02	5/8/2024	0.0	0.7	19.9	79.4	
MW-103	11:36	10/28/2020	0.0	0.2	20.9	78.9	
	12:11	11/11/2020	0.0	0.3	20.5	79.2	
	12:48	2/18/2021	0.0	10.4	3.1	86.5	
	10:48	6/17/2021	0.0	0.1	20.6	79.3	
	10:35	9/8/2021	0.0	0.0	20.8	79.2	
	12:39	11/16/2021	0.0	2.0	17.7	80.3	
	12:47	3/22/2022	0.0	0.1	20.7	79.2	
	8:28	6/22/2022	0.0	0.3	20.2	79.5	
	10:06	9/27/2022	0.0	0.0	20.8	79.2	
	13:33	12/14/2022	0.0	0.4	20.1	79.5	
	9:40	3/21/2023	0.0	0.0	20.8	79.2	Open to ATM
	10:58	5/9/2023	0.0	0.0	20.8	79.2	
	8:41	6/21/2023	0.0	0.3	20.4	79.3	
	13:25	9/18/2023	0.0	1.6	18.3	80.1	
	9:52	12/6/2023	0.0	2.0	18.5	79.5	
	10:55	1/31/2024	0.0	2.5	17.7	79.8	
	12:28	2/29/2024	0.0	1.2	18.1	80.7	
	11:00	3/25/2024	0.0	0.0	20.9	79.1	
	10:14	4/15/2024	0.0	0.4	20.5	79.1	
	10:21	5/8/2024	0.0	0.1	20.7	79.2	
MW-104	12:06	10/28/2020	0.0	13.6	2.9	83.5	Open to ATM
	12:03	11/11/2020	0.0	0.5	20.5	79.0	
	9:21	2/18/2021	0.0	0.4	20.5	79.1	
	10:55	6/17/2021	0.0	0.1	20.6	79.3	
	10:38	9/8/2021	0.0	2.9	17.3	79.8	
	12:09	11/16/2021	0.8	15.4	0.7	83.1	
	13:01	3/22/2022	0.0	8.0	10.7	81.3	
	8:13	6/22/2022	0.0	0.5	20.3	79.2	
	10:45	9/27/2022	0.0	0.0	20.8	79.2	
	11:59	12/14/2022	3.7	15.9	0.1	80.3	
	9:18	3/21/2023	0.0	0.0	20.8	79.2	
	11:21	5/9/2023	0.0	0.0	20.8	79.2	
	9:00	6/21/2023	0.0	0.8	19.2	80.0	
	13:45	9/18/2023	1.0	12.2	1.7	85.1	
	10:15	12/6/2023	0.4	11.7	3.6	84.3	
	11:22	1/31/2024	0.9	13.8	1.8	83.5	
	12:42	2/29/2024	0.0	5.9	12.4	81.7	
	10:26	3/25/2024	3.9	11.5	6.6	78.0	
	12:05	3/25/2024	0.2	1.6	19.6	78.6	
	9:52	4/15/2024	0.0	0.4	20.3	79.3	
	9:14	5/8/2024	0.0	0.1	20.8	79.1	

Notes:

Updated By: M. Wagler 5/9/2024

Checked By: L. Berg 5/9/2024

CH_4 = Methane

CO_2 = Carbon Dioxide

O_2 = Oxygen

N = Nitrogen

% = Percent

- = no measurement recorded, see comments.

Footnotes:

(1) The GES was restarted on April 29, 2020, following system repairs and modifications, restart data is include in Appendix A of the 2020 Second Quarter Report

Table 2: Gas Extraction Field Monitoring Data - January 2024
FF/NN Landfill
Ripon, Wisconsin

TECHNICIAN(S): J. Roelke/A. Stehn

GAS/INSTRUMENT TYPE: GEM 2000
SERIAL NO.: 11668
DATE LAST CALIBRATED: 1/31/2024
METHOD: Standard Calibration Gases
PRESSURE INSTRUMENT: Dwyer Manometer
Dwyer Anemometer

DATE: 1/31/2024
START TIME: 11:10 AM
END TIME: 1:45 PM
WEATHER CONDITIONS: cloudy
TEMPERATURE : 36 **(°F)**
BAROMETRIC PRESSURE : 29.04 **(in. Hg)**
BAROMETRIC Pr. TREND : Falling
GROUND CONDITIONS: Frozen
WATER LEVEL IN KNOCKOUT TANK NM **(ft)**

Well No.	Time	Available Header Pressure (in. W.C.)	Applied Well Pressure (in. W.C.)	Methane (% LEL)	Methane (%, by vol.)	Carbon Dioxide (%, by vol.)	Oxygen (%, by vol.)	Initial Valve Setting (# Turns)	Final Valve Setting (# Turns)	Final Header Pressure (in. W.C.)	Final Well Pressure (in. W.C.)	(1) Final Applied Air Velocity (ft/min)	(1) Final Applied Air Flow (cfm)	Comments
Background	10:00	NA	NA	0	0.0	0.0	20.8	NA	NA	NA	NA	NA	NA	
GV-1	13:27	NM	NM	100	23.1	19.5	0.4	NA	NA	NA	NA	NA	NA	Small hole in stick up pipe
GV-2	11:25	NM	NM	100	28.3	21.8	0.7	NA	NA	NA	NA	NA	NA	
GV-3	11:19	NM	NM	100	28.0	25.8	0	NA	NA	NA	NA	NA	NA	
GV-4	11:11	0.04	0.06	100	27.7	20.6	0.6	NM	NM	NA	NA	NA	NA	L1 currently closed to well field.
GV-5	13:35	NM	NM	100	22.4	19.3	0	NA	NA	NA	NA	NA	NA	
GV-6	13:33	NM	NM	100	35.1	22.3	0	NA	NA	NA	NA	NA	NA	
GV-7	13:32	NM	NM	100	30.8	21.1	0	NA	NA	NA	NA	NA	NA	Small hole in stick up pipe
GV-8	13:30	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA	NA	NA	No port or opening to monitor.
GV-9	13:45	NM	NM	100	15.2	17.1	0	NA	NA	NA	NA	NA	NA	
GV-10	13:42	NM	NM	100	26.3	18.2	0	NA	NA	NA	NA	NA	NA	
GV-11	13:40	NM	NM	100	22.9	20.7	0	NA	NA	NA	NA	NA	NA	
GV-12	13:37	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA	NA	NA	No port or opening to monitor.
LC-1	11:14	0.05	0.14	100	50.6	28.5	0.9	/12	/12	NM	NM	NM	NM	L1 currently closed to well field.
LC-2	13:41	NM	NM	100	56.3	32.1	1	NA	NA	NA	NA	NA	NA	
LC-3	11:28	-17.61	-5.49	100	34.9	26.4	2.4	/12	/12	NM	NM	NM	NM	
BLOWER INLET	12:00	-20.6	NA	14	0.7	0.9	20.2	NA	NA	NM	NA	NA	NA	
DILUTION VALVE	12:02	-7.51	NA	0	0.0	0.1	20.7	/12	/12	NM	NA	NA	NA	
EXHAUST	12:04	-0.26	NA	14	0.7	0.8	20.3	NA	NA	NM	NA	NA	NA	

Notes:
Checked By: M. Wagler 2/12/2024

1. Air velocity is measured with an Anemometer.
2. Technician to inspect each wellhead for leaks and provide notes in comment section.
3. NM=Not Measures, NA=Not Applicable

Table 3: Gas Extraction Field Monitoring Data - February 2024
FF/NN Landfill
Ripon, Wisconsin

TECHNICIAN(S): J. Roelke

GAS/INSTRUMENT TYPE: GEM 2000
SERIAL NO.: 11668
DATE LAST CALIBRATED: -
METHOD: Standard Calibration Gases
PRESSURE INSTRUMENT: Dwyer Manometer
Dwyer Anemometer

DATE: 2/29/2024
START TIME: 9:38 AM
END TIME: 1:30 PM
WEATHER CONDITIONS: Clear
TEMPERATURE : 34 **(°F)**
BAROMETRIC PRESSURE : 30.56 **(in. Hg)**
BAROMETRIC Pr. TREND : Rising
GROUND CONDITIONS: Frozen
WATER LEVEL IN KNOCKOUT TANK NM **(ft)**

Well No.	Time	Available Header Pressure (in. W.C.)	Applied Well Pressure (in. W.C.)	Methane (% LEL)	Methane (%, by vol.)	Carbon Dioxide (%, by vol.)	Oxygen (%, by vol.)	Initial Valve Setting (# Turns)	Final Valve Setting (# Turns)	Final Header Pressure (in. W.C.)	Final Well Pressure (in. W.C.)	(1) Final Applied Air Velocity (ft/min)	(1) Final Applied Air Flow (cfm)	Comments
GV-4	10:29	0	0	56	2.8	3.8	17.6	NM	NM	NA	NA	NA	NA	
GV-6	11:04	-0.03	-0.02	100	8.3	13.1	6.7	NA	NA	NA	NA	NA	NA	
LC-1	10:37	0	0	100	45.8	26.1	1.9	/12	/12	NM	NM	NM	NM	
LC-2	10:09	0	0	100	24.4	16.8	10.7	NA	NA	NA	NA	NA	NA	
LC-3	10:19	-17.79	-5.59	100	37.0	27.3	1.3	0.5/9	0.75/9	NM	-5.85	NM	NM	
BLOWER INLET	9:51	-21.13	NA	16	0.8	0.9	20.3	NA	NA	NM	NA	NA	NA	
DILUTION VALVE	9:59	-7.7	NA	0	0.0	0.1	20.8	/12	/12	NM	NA	NA	NA	
EXHAUST	10:00	-0.29	NA	16	0.8	0.9	20.4	NA	NA	NM	NA	NA	NA	

Notes:
1. Air velocity is measured with an Anemometer.
2. Technician to inspect each wellhead for leaks and provide notes in comment section.
3. NM=Not Measures, NA=Not Applicable

Created By: M. Wagler 3/2/2024
Checked By: L. Berg 3/15/2024

Table 4: Vinyl Chloride Groundwater Concentrations
FF/NN Landfill
Ripon, Wisconsin

Date	MW-101	MW-102	MW-103	MW-104	MW-112
5/12/1997	<0.46	<0.46	230	4.5	2.2
10/26/1997	<0.46	<0.46	220	18	<0.46
4/13/1998	--	<0.46	--	17	12
10/13/1998	<0.46	--	45	15	25
4/7/1999	<0.25	--	47	6.1	7.9
10/27/1999	<0.25	--	48	2.8	<0.25
5/2/2000	<0.25	--	60	1.1	<0.25
5/9/2001	<0.25	--	46	8.6	0.98
2/5/2002	<0.17	--	40	13	<0.17
12/4/2002	--	--	--	--	56
4/22/2003	--	--	--	6.5	45
10/23/2003	<0.18	--	21	8.6	51
4/28/2004	<0.18	--	6.7	8.7	9.9
7/23/2004	--	<0.18	--	--	31
10/13/2004	<0.18	<0.18	7.9	20	25
1/26/2005	--	--	--	--	27
8/3/2005	--	--	--	--	1.5
10/25/2005	--	<0.18	--	13	1.4
2/1/2006	--	--	--	--	4.9
4/28/2006	<0.18	<0.18	1.8	1.1	2.8
7/27/2006	--	--	--	--	1.7
11/1/2006	--	<0.18	--	<0.18	1.7
2/1/2007	<0.18	--	0.34 J	--	2.5
5/1/2007	<0.18	<0.18	0.75	<0.18	2.6
8/14/2007	--	--	--	--	1.8
10/18/2007	--	--	2.2	<0.18	1.2
4/8/2009	<0.18	<0.18	<0.18	<0.18	<0.18
10/29/2009	<0.18	--	<0.18	--	--
2/25/2010	--	--	<0.18	--	--
5/25/2010	<0.18	--	<0.18	--	--
10/4/2010	<0.18	--	<0.18	--	--
4/11/2011	<0.18	<0.18	<0.18	<0.18	<0.18
7/11/2011	--	--	<0.18	--	0.27
10/19/2011	--	--	<0.18	<0.18	<0.18
1/24/2012	--	--	<0.18	--	<0.18
4/3/2012	<0.18	<0.18	<0.18	<0.18	<0.18
7/25/2012	--	--	<0.18	--	<0.18
10/17/2012	--	--	<0.18	<0.18	<0.18
1/16/2013	--	--	<0.18	--	<0.18
4/24/2013	--	--	<0.18	<0.18	<0.18
10/24/2013	--	--	<0.18	--	<0.18
4/16/2014	--	--	<0.18	<0.18	<0.18
10/23/2014	--	--	<0.18	--	<0.18
4/28/2015	--	--	<0.18	<0.18	<0.18
10/28/2015	--	--	--	--	<0.18
4/12/2016	--	--	<0.18	<0.18	<0.18
10/27/2016	--	--	<0.18	--	<0.18
4/5/2017	--	--	<0.18	<0.18	<0.18
10/18/2017	--	--	<0.18	--	<0.18
6/4/2018	--	--	<0.019	0.041 J	<0.019
10/31/2018	--	--	<0.019	--	0.024 J
5/22/2019	--	--	<0.019	0.72	0.031 J
7/22/2019	--	--	<0.019	--	0.04 J
4/28/2020	--	--	<0.013	<0.013	0.025 J
7/14/2020	--	--	<0.013	--	<0.013
6/18/2021	--	--	<0.019	<0.019	<0.019
9/8/2021	--	--	<0.019	--	<0.019
6/21/2022	--	--	<0.019	0.045 J	<0.019
9/27/2022	--	--	<0.019	--	<0.019
6/20/2023	--	--	<0.019	0.35	<0.019
9/18/2023	--	--	<0.019	--	<0.019

Notes:

Created by: S. Sellwood, 3/12/2024

All concentrations are micrograms per liter (ug/L).

Checked by: M. Wagler, 3/14/2024

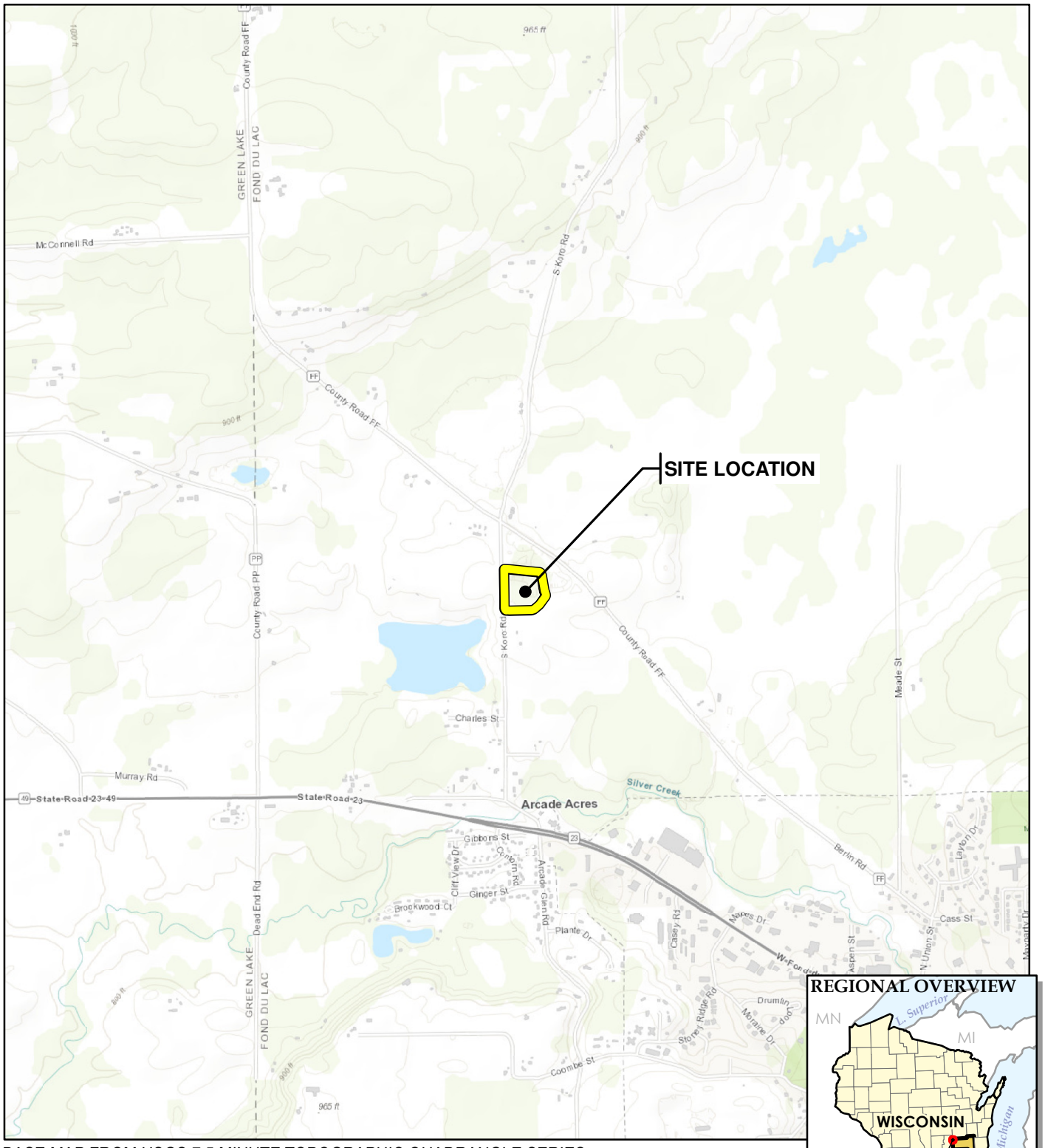
Concentrations are provided for the five shallow monitoring wells closest to the limits of waste.

Sample dates represent multi-date sampling events.

-- = not sampled

J = Detection is considered estimated.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC

708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com

TRC - GIS

PROJECT:

FF/NN LANDFILL NPL SITE
RIPON, WI

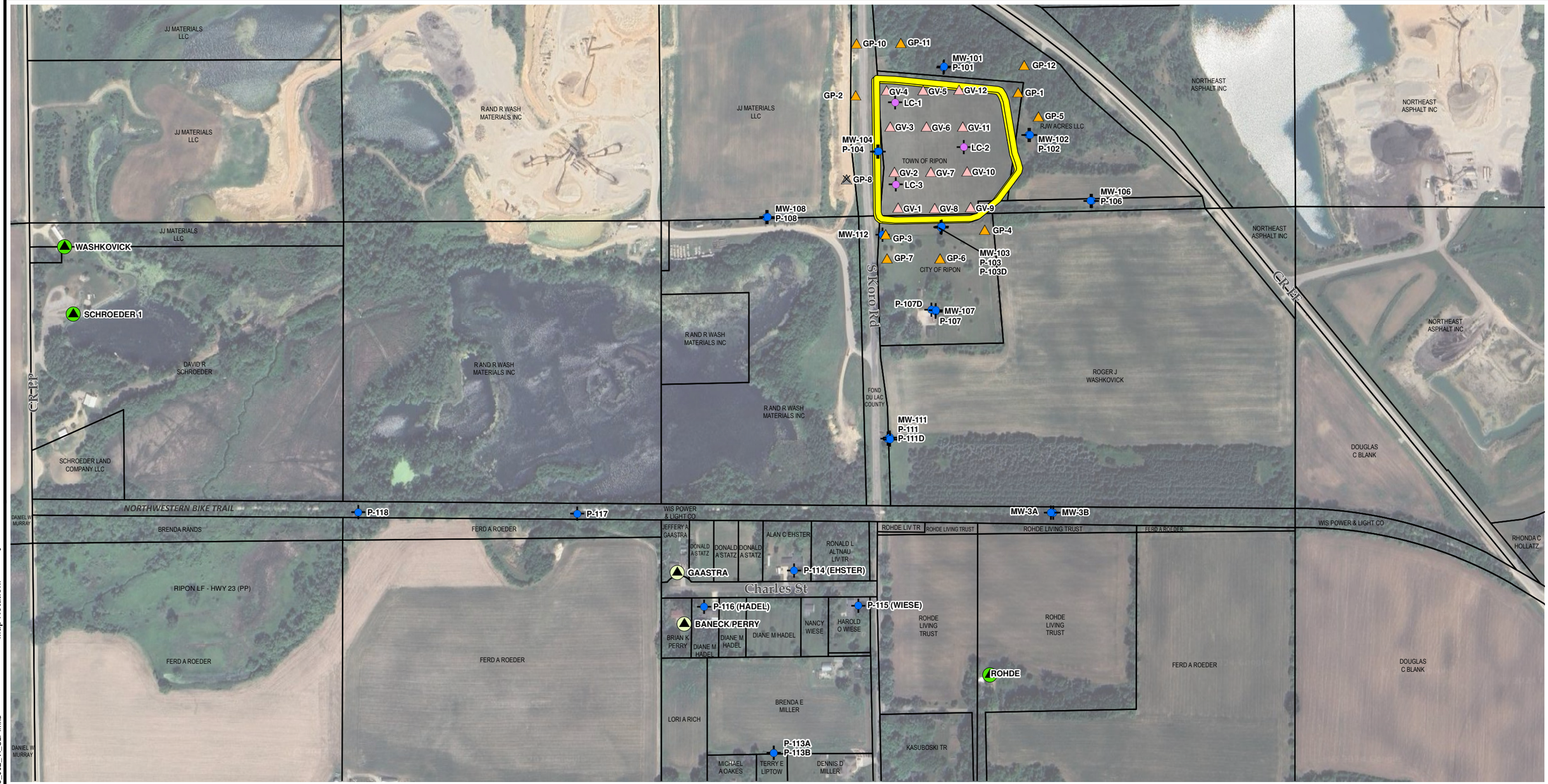
TITLE:

SITE LOCATION MAP

DRAWN BY:	A. ADAIR
CHECKED BY:	S. SELLWOOD
APPROVED BY:	A. STEHN
DATE:	MARCH 2024
PROJ. NO.:	538168
FILE:	538168_001_SLM.mxd

FIGURE 1

T:\1-PROJECTS\Ripon\2024_538168\MXD\538168_001_SLM.mxd -- Saved By: AADAIR on 3/20/2024, 09:17:00 AM



LEGEND

- GAS PROBE
- GAS PROBE (LOST)
- GAS VENT
- LEACHATE HEAD WELL
- MONTIORING WELL, PIEZOMETER LOCATION
- PRIVATE WELL USED FOR POTABLE PURPOSES
- PRIVATE WELL NOT USED FOR POTABLE PURPOSES
- RIPON FF/NN LANDFILL SITE

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO., (6/19/2023).

N

0 200 400 Feet

1 " = 400 '

1:4,800

PROJECT:
FF/NN LANDFILL NPL SITE
RIPON, WI

TITLE:
SITE LAYOUT MAP

DRAWN BY:	A. ADAIR	PROJ. NO.:	538168
CHECKED BY:	S. SELLWOOD		
APPROVED BY:	A. STEHN		**FIGURE 2**
DATE:	MARCH 2024		

TRC
708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com

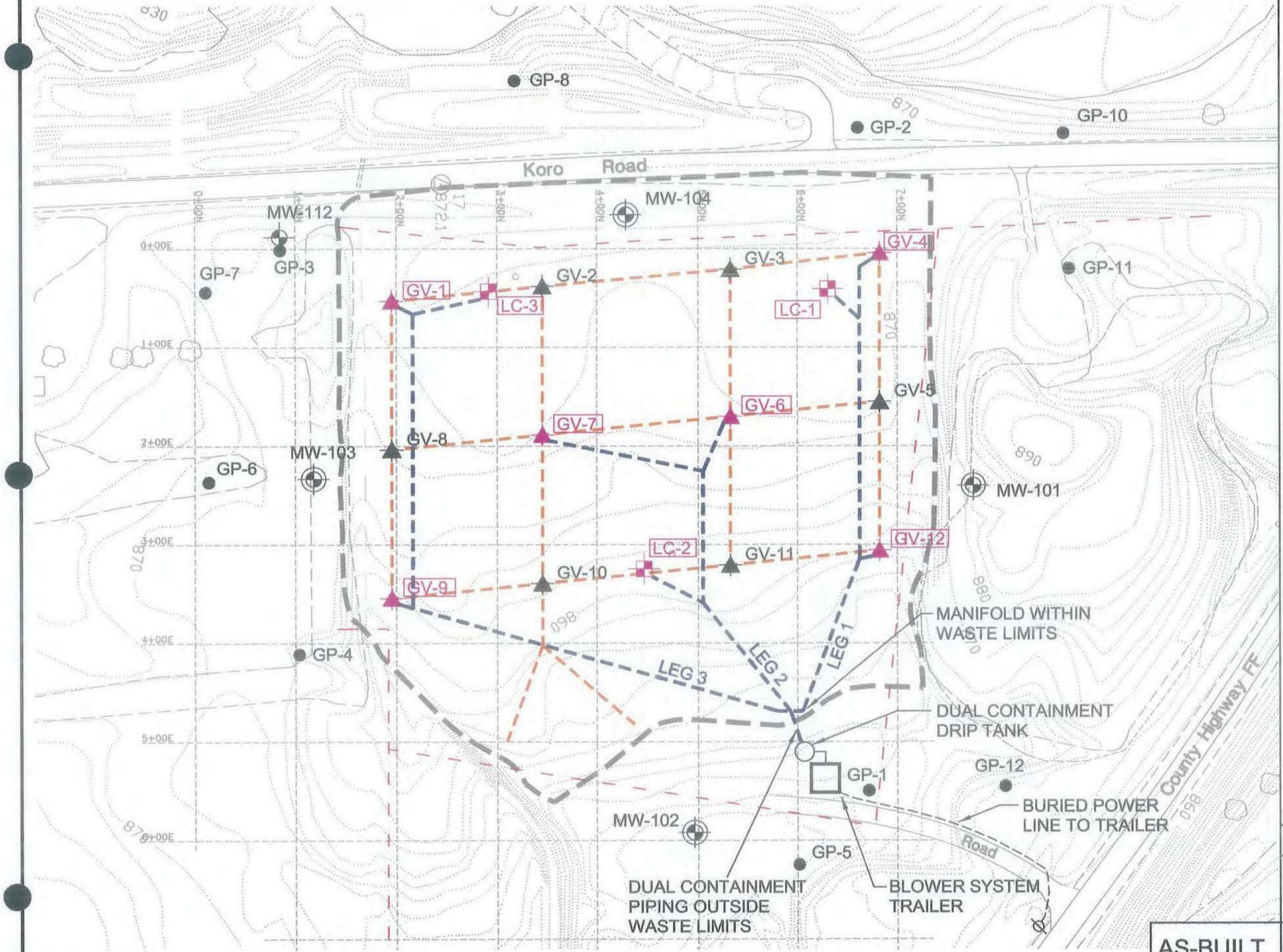
FILE NO.: 538168_002_VI_SLP.mxd

Plot Date: 3/20/2024, 09:27:14 AM by AADAIR -- LAYOUT: ANSI B (11"x17")
Path: T:\1-PROJECTS\Ripon\2024_538168\MXD\538168_002_VI_SLP.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US)
Map Rotation: 0

TRC - GIS

Attachment A

Active Landfill Gas Extraction System Layout and Gas Monitoring Locations



EXPLANATION

- MW-104 — MONITOR WELL LOCATION, DESIGNATION
- LC-2 — LEACHATE HEAD WELL LOCATION, DESIGNATION
- PROPERTY LINE
- OUTLINE OF CLOSED LANDFILL
- GP-1 — GAS PROBE LOCATION AND DESIGNATION
- GV-9 — GAS VENT LOCATION AND DESIGNATION
- 4" DIAMETER BURIED PASSIVE GAS COLLECTION SYSTEM PIPING
- 3-INCH DIAMETER BURIED GAS CONVEYANCE PIPING
- GV-1 — ACTIVE LANDFILL GAS EXTRACTION POINT

NOTES:

1. CONTOURS ON LANDFILL DO NOT REFLECT CURRENT TOPOGRAPHY.
2. 3" BURIED CONVEYANCE PIPING ROUTE FOLLOWS NATURAL SLOPE DOWNWARDS TO EQUIPMENT TRAILER TO DRAIN PROPERLY.

N

SCALE

0 200

Feet

FF/NN LANDFILL
RIPON, WISCONSIN

ACTIVE LANDFILL GAS EXTRACTION SYSTEM LAYOUT AND GAS MONITORING LOCATIONS

DATE:	6/29/07
DESIGNED:	DLM
CHECKED:	DLM
APPROVED:	DLM
DRAWN:	HJW
PROJ.:	1011.005

AS-BUILT

GeoTrans, Inc. A TETRA TECH COMPANY

Figure 1

S:\CAD\Ripon\1011.005\As-Builts\1011005Fig1.dwg 06/29/2007 10:56:52