SIXTH FIVE-YEAR REVIEW REPORT FOR
HECHIMOVICH SANITARY LANDFILL SUPERFUND SITE
DODGE COUNTY, WISCONSIN

Prepared by

Wisconsin Department of Natural Resources
South Central Region
Fitchburg, Wisconsin

5/20/2024

X *for*

Douglas Ballotti, Director
Superfund & Emergency Management Division
Signed by: THOMAS SHORT

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LIST OF ABBREVIATIONS & ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
COC	Contaminant of concern
DCE	Dichloroethene
EPA	United States Environmental Protection Agency
FYR	Five-year review
GRL	Glacier Ridge Landfill
ICIAP	Institutional Control Implementation and Assurance Plan
ICs	Institutional controls
LGRL	Land and Gas Reclamation Landfill
LTS	Long-term stewardship
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and maintenance
OU	Operable unit
PAL	Preventive Action Limit
PFAS	Per- and polyfluoroalkyl substances
PRP	Potentially responsible party
RAO	Remedial action objective
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
Site	Hechimovich Sanitary Landfill Superfund Site (also known as the Land and Gas Reclamation Landfill)
µg/L	Micrograms per liter
UU/UE	Unlimited use and unrestricted exposure
VOC	Volatile organic compound
WDNR	Wisconsin Department of Natural Resources
WMM	WDNR Waste and Materials Management

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The Wisconsin Department of Natural Resources (WDNR) and the United States Environmental Protection Agency (EPA) prepared this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 C.F.R. Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the sixth FYR for the Hechimovich Sanitary Landfill Superfund Site (also known as the Land and Gas Reclamation Landfill, or LGRL) (Site) located in the town of Williamstown, Dodge County, Wisconsin. The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of two operable units (OUs), both of which are addressed in this FYR. OU1 is the source control remedy, and OU2 is the groundwater remedy (long-term monitoring).

The Hechimovich Sanitary Landfill Superfund Site FYR was led by Trevor Bannister, hydrogeologist with WDNR. Participants included Sheila Desai, EPA Remedial Project Manager; Ann Bekta, WDNR engineer; and Mark Peters, WDNR hydrogeologist. GFL Environmental Services USA, Inc., a potentially responsible party (PRP), was notified of the FYR process in June 2023. The review began on 6/9/2023.

Documents used in the development of this FYR are referenced in Appendix A.

Site Background

Site History and Chronology

The Site began as the City of Mayville dump in 1959. Prior to this, the land use was agricultural. From 1959 to 1970, the City of Mayville operated the Site as a licensed landfill that accepted wastes including battery cracking wastes, spent solvents, and waste paints. In the early 1970s, landfill operations were continued by George Hechimovich and the landfill became known as the Hechimovich Sanitary Landfill. During much of the 1970s, the landfill was licensed to accept toxic and hazardous wastes. In 1980, the landfill was no longer permitted to accept hazardous wastes. In July 1985, the landfill's name was changed to LGRL and in October 1986, the landfill was closed to all waste disposal.

Appendix B provides a condensed summary of the chronology of significant events related to the Site.

The Site includes the former LGRL Superfund Site (WDNR License # 1118), which is located on property currently owned by Glacier Ridge Landfill, LLC. The active Glacier Ridge Landfill (GRL) is also located on the Glacier Ridge Landfill, LLC, property, but is not part of the Superfund Site. The active GRL is a lined

Subtitle D landfill (WDNR License # 3068) that includes the closed GRL North Hill and the active GRL South Expansion and Southeast Expansion. Figure 1A in Appendix C shows the Site location and relative positions of the landfill features.

Site Physical Setting

The Site is located in a rural area in the town of Williamstown, approximately 2 miles south of the City of Mayville, and approximately 3.5 miles east of the City of Horicon, Wisconsin. The Site is located in the east one-half of the southwest quarter of Section 35, Township 12 North, Range 16 East, Williamstown, Dodge County, Wisconsin. The current and former use of the Site is a landfill and is anticipated to remain a landfill. Most of the land surrounding the Site is privately owned, generally occupied by single family homes and farmsteads in a rural setting, and wetlands are present to the east, north and south of the Site. See Figure 1A in Appendix C for a Site location map.

The geology in the area of the Site generally consists of unconsolidated glacial till sediments underlain by a sequence of bedrock formations, including (from top to bottom) the Maquoketa Shale, Galena-Platteville Dolomite and the Saint Peter Sandstone. The surface of the Maquoketa Shale is variable in the region, likely reflecting an erosional surface. In contrast, the contact with the underlying Galena-Platteville Dolomite appears relatively uniform. The Saint Peter Sandstone underlies the Galena-Platteville, and generally occurs at depths greater than 400 feet below ground surface. The shallow, unconsolidated aquifer occurs within the glacial till unit and is not known to be used as a source of drinking water in the vicinity of the Site, while the dolomite and sandstone formations comprise the deep bedrock aquifers. Private water supply wells near the Site generally tap localized fracture zones within the dolomite aquifer and/or the sandstone aquifer. The Maquoketa Shale has been regarded as an aquitard, or confining unit, providing physical and hydraulic separation between the overlying unconsolidated aquifer and the bedrock aquifers, though its efficacy as such may be less than previously considered and may vary locally.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Hechimovich Sanitary Landfill		
EPA ID: WID052906088		
Region: 5	**State:** WI	**City/County:** Town of Williamstown, Dodge County
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		

Lead agency: State
Author name (Federal or State Project Manager): Trevor Bannister
Author affiliation: Wisconsin Department of Natural Resources
Review period: 6/9/2023 - 2/7/2024
Date of site inspection: 6/13/2023
Type of review: Statutory
Review number: 6
Triggering action date: 6/10/2019
Due date *(five years after triggering action date)*: 6/10/2024

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The main contaminants of concern (COCs) identified in the 1995 Record of Decision (ROD), based on frequency of occurrence and concentration, included:

Groundwater/Drinking Water

- vinyl chloride;
- trichloroethene;
- 1,2-dichloroethene (DCE);
- 1,1-DCE;
- 1,1-dichloroethane; and
- benzene.

Of these compounds, the first three have come to represent the key COCs at the Site.

The July 1993 Baseline Human Health Risk Assessment conducted for the Site, and referenced in the 1995 ROD, found no human health risks in excess of levels identified by EPA as warranting remedial action (WDNR, 1995). The assessment described ways by which chemicals from the Site might contact potential receptors. This exposure pathway analysis identified four potential mechanisms for exposure:

- direct contact with exposed waste;
- release of waste constituents to the ambient air via volatilization or wind-driven erosion, followed by airborne migration to receptor locations;
- contaminant release to groundwater followed by migration through groundwater to water supply wells; and

- contaminant release to groundwater followed by migration through groundwater to surface water or wetlands.

Of these pathways, groundwater ingestion via water supply wells was identified as the primary pathway of concern.

Response Actions

Pre-ROD Activities: In July 1987, the LGRL Site was the subject of a WDNR state enforcement action, resulting in a Stipulation and Order signed by the Dodge County Circuit Court, which directed George Hechimovich, Hechimovich Sanitary Landfill, Inc., and Land and Gas Reclamation, Inc. to undertake certain actions at the landfill, including the installation of a clay cap and a gas collection system. The court-ordered clay cap was installed, under WDNR supervision and approval, in 1991 and 1992. The installation and operation of these measures were documented and approved as a source control interim action in WDNR's January 1994 ROD, upon which EPA concurred. The enhancement of this gas extraction system is the main activity in the final remedy for the Site.

WDNR nominated the LGRL Site for listing on the NPL, and EPA listed the Site on the NPL as the Hechimovich Sanitary Landfill in March 1989. Based on the information obtained from landfill records in the possession of Daniel and George Hechimovich, WDNR issued special notice letters to fourteen PRPs in August 1990 and special notice letters to two additional PRPs in September 1990.

The PRPs entered into an environmental repair contract with WDNR, which became effective on September 28, 1990, to perform a Remedial Investigation/Feasibility Study (RI/FS). After the environmental repair contract was signed, WDNR decided that, due to the timing of the remedial actions, remediation at the Site should be divided into two OUs: a source control (landfill closure) OU and a groundwater OU.

Remedy Selection:
Following completion of the RI/FS WDNR wrote a Source Control Interim ROD which was signed on January 13, 1994 (WDNR, 1994). This ROD documented the installation of a new clay cap and an active landfill gas extraction system. The final remedy for the Site, documented in a ROD signed on September 6, 1995 (WDNR, 1995), included the existing clay cap and gas extraction system, operational changes to the gas system to emphasize gas removal from those areas of the waste fill believed to be major contributors of contaminants to the groundwater, and long-term groundwater monitoring. EPA concurred with both the 1994 and 1995 RODs.

Remedial action objectives (RAOs) were developed as a result of data collected during the RI work to aid in the development and screening of remedial alternatives. The RAOs were intended to protect human health and the environment and to meet state and federal applicable or relevant and appropriate requirements. The RAOs included:

- Reduce groundwater contaminant concentrations to levels below the Preventive Action Limits (PALs) established in Ch. NR 140, Wis. Adm. Code at the landfill waste edge;
- Maintain human exposure levels to contaminants below state and federal guidelines. These are primarily the state and federal groundwater and drinking water standards. The federal

standards are Maximum Contaminant Levels (MCLs) set in the Safe Drinking Water Act and the state drinking water standards are set in Ch. NR 809, Wis. Adm. Code; and
- Maintain ecological exposure levels to contaminants below potential levels of concern based on state and federal criteria such as the federal surface water quality criteria.

The 1995 ROD indicated that the primary COCs and their cleanup levels based on NR 140 Enforcement Standard are shown in Table 2:

Table 2: Groundwater Cleanup Levels in 1995 ROD

COC	NR 140 Enforcement Standard (ppb)
Vinyl Chloride	0.2
Trichloroethene	5
DCE	100

The major components of the Selected Remedy for the Site included the following:

- Operation, maintenance and monitoring of landfill cap and gas system;
- Groundwater monitoring using existing wells;
- Deed restrictions, as appropriate;
- Restriction on new water supply well construction;
- Use of natural contaminant breakdown;
- New gas extraction wells and enhanced extraction from areas of high contamination;
- Connection of piping from new gas extraction well(s) to existing gas flare system; and
- Specific goals and deadlines set for contaminant breakdown; if not met, additional work may be necessary.

Status of Implementation

OU1 – Source Control: The construction work for OU1 was completed in 1997 (WDNR 1997). However, the configuration of the original LGRL changed substantially within the previous FYR reporting period.

As reported in the June 2019 FYR (EPA 2019), the process of deconstructing the LGRL, which involved the three-phase relocation of waste from LGRL into the active GRL, was completed in March 2016. After each successive phase, the base of the active GRL Southeast Expansion was extended over the footprint of the respective section of the LGRL. This activity effectively removed the LGRL, the original source of the Hechimovich Site contamination. The base of the active landfill has been extended to cover the footprint of the former LGRL. Therefore, the components related to construction, operation and maintenance (O&M) of the LGRL have effectively been rendered moot, as the referenced landfill has been deconstructed and the waste relocated to an active, engineered landfill. A Changed Site Conditions Technical Memorandum (SCS Engineers, Inc., 2021) was submitted in May 2021 and provided further documentation and analysis of this change. A new decision document is needed to document this change in the Site record.

OU2 – Groundwater: In the spring of 2009, well after the risk assessment had been completed, groundwater contamination exceeding state and federal standards was detected in off-site water supply wells drawing water from the deep bedrock aquifer. This development represented an exposure pathway and risk that had not previously been realized.

Following the discovery in 2009 of contamination in the deep bedrock aquifer, the work scope proposed in the April 2012 work plan (SCS BT Squared, Inc., 2012) was implemented and the final phase of the plan was completed in May 2018. Data gaps identified in the June 2019 FYR were addressed through further investigation and with the installation of additional bedrock monitoring wells. The investigations evaluated the vertical, lateral, and downgradient extent and distribution of dissolved volatile organic compounds (VOCs) in the dolomite and sandstone aquifers; the extent of contamination is now reasonably well defined. With the installation of monitoring well P-426SS, the monitoring network now provides information concerning groundwater flow direction within the sandstone aquifer as well as an important groundwater quality monitoring point in the sandstone aquifer north of the former LGRL. Monitoring of groundwater from monitoring wells and private water supply wells in the bedrock aquifers is ongoing.

Monitoring of the VOC plume in the shallow (unconsolidated) aquifer is ongoing, consistent with the existing monitoring program requirements. However, as discussed later in this report, increasing contaminant concentration trends in some monitoring wells screened in the shallow aquifer indicate that the existing shallow groundwater monitoring network is inadequate, and further evaluation and expansion of the monitoring well network may be necessary.

Institutional Controls

Institutional controls (ICs) are non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for exposure to contamination and that protect the integrity of the remedy. ICs in the form of enforceable solid waste landfill regulations are required by the NR 500, Wisconsin Administrative Code series, and outlined in the 1995 ROD for the Site to restrict property use, maintain the integrity of the remedy, and assure the long-term protectiveness for areas which do not allow for UU/UE. A summary of the implemented and planned ICs for the Site is listed in Table 3 and ICs are further discussed below. A map which depicts the current conditions of the Site and areas which do not allow for UU/UE will be developed in the IC follow-up actions discussed below.

Table 3: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)

Engineered Landfill	Yes	Yes	All of the waste disposal area	Prohibition of construction of any sort on the landfill cover without prior approval from WDNR	Wisconsin Administrative Code, Ch. NR 506.085(2), already in effect
Groundwater (shallow, on-site)	Yes	Yes	All of landfill and 1200 feet from the limits of fill	Prohibition of the drilling of water supply wells within 1200 feet of the landfill boundary without prior approval from WDNR	Wisconsin Administrative Code, Ch. NR 812.08(4)(g)1, already in effect
Groundwater (deep, on- and off-site)	Yes	No	Area of potentially contaminated groundwater	Ensure no exposure to contaminated groundwater until cleanup standards are achieved	Planned

Status of Access Restrictions and ICs: Specific to this Site, the applicable ICs are the state prohibition of building on a closed landfill and the state prohibition of drilling a water supply well within 1200 feet of the landfill boundary without permission from WDNR. Both of these prohibitions are set in state administrative code and are enforced by WDNR. Site access restrictions are implemented by the Site owner under the state trespass laws. There is a gate restricting vehicle access to the Site and video surveillance. The private well restrictions are implemented by the state through its regulation of well drillers and through restrictions on the construction of new water supply wells.

Current Compliance: Based on inspections, including the 6/13/2023 FYR Site inspection, and discussions with the Site owner, WDNR is not aware of Site or media uses which are inconsistent with the stated objectives to be achieved by the ICs. The remedy appears to be functioning as intended. No Site uses which are inconsistent with the implemented ICs or remedy IC objectives have been noted during the Site inspection.

IC Follow-up Actions Needed: At this time, IC evaluation activities have determined that while regulations are in place to limit land and groundwater use at and near the Site, it appears that no proprietary controls have been implemented nor are there any groundwater use regulations off-site (beyond 1200 feet of the landfill boundary). To ensure IC effectiveness and long-term protectiveness of the remedy, additional IC activities are required. An Institutional Control Implementation and

Assurance Plan (ICIAP) should be developed by the PRPs in conjunction with WDNR and EPA. The purpose of the ICIAP is to establish and document additional IC evaluation activities to ensure that the implemented ICs are effective, to explore whether additional ICs are needed and ensure their implementation, and to ensure that long-term stewardship (LTS) procedures are in place so that ICs are properly maintained, monitored, and enforced. Specifically, the ICIAP shall explore whether additional ICs are needed to restrict the land and groundwater use on-site and off-site within the area of potential groundwater contamination in the deep bedrock aquifer.

Long-term protectiveness requires continued compliance with the land and groundwater use restrictions to ensure that the remedy continues to function as intended. LTS will ensure that the ICs are maintained, monitored and enforced. The ICIAP will contain LTS procedures for monitoring, maintaining, and tracking compliance with the ICs as well as communications procedures. An annual report should be submitted to WDNR and EPA to demonstrate that the Site was inspected to ensure no inconsistent uses have occurred; that ICs remain in place and are effective; and that any necessary contingency actions have been executed. Results of IC reviews should be provided to WDNR and EPA in an annual ICs report and with a certification that the ICs remain in-place and are effective.

IC evaluation activities will include, as needed, updated maps depicting current conditions in areas that do not allow for UU/UE, and review of recording and title work to ensure the restrictions are still recorded, and that no prior-in-time encumbrances exist on the Site that are inconsistent with the ICs.

Systems Operations/Operation & Maintenance

Since the LGRL has been completely dismantled and the waste relocated to the active GRL, requirements related to monitoring of an active landfill, specifically, O&M of leachate and gas extraction systems, cap maintenance and inspection, and settlement monitoring, no longer apply to the LGRL itself. Monitoring requirements for the GRL are regulated by the WDNR Waste Program. Specifically, as an active landfill, GRL is monitored consistent with Ch. NR 507, Wis. Adm. Code, to measure groundwater levels and quality, water supply well quality, surface water elevations, leachate quantity and quality, gas migration potential, and gas extraction system performance. These changes and monitoring requirements will be discussed in the updated decision document for the site.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 4: Protectiveness Determinations/Statements from the 2019 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Short-term Protective	The OU1 source control remedy currently protects human health and the environment because human and ecological exposures are currently under control, the waste relocation project has been completed, and the waste is now in an

		engineered, lined landfill. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: -the source control remedy will need to be evaluated and a determination made whether any further actions are necessary to ensure long-term protectiveness; -conduct a new assessment of human health and ecological risks; -prepare an ICIAP documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that effective ICs are in place and effective and are monitored, maintained and enforced; -develop and implement long-term stewardship procedures in a LTS Plan or an amendment to the O&M Plan for monitoring and tracking compliance with existing ICs, communicating with WDNR and EPA, and providing an annual certification to WDNR and EPA that the ICs remain in place and are effective; and, -a new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL.
2	Short-term Protective	The OU2 groundwater remedy currently protects human health and the environment because human health and ecological exposures are currently under control. There are no known uses of the shallow aquifer, though additional investigation is recommended to evaluate indications that the plume is expanding and further delineate the downgradient extent of the plume. For the deep bedrock aquifer, the human exposure pathway was eliminated via installation of a treatment system and monthly monitoring for effectiveness of treatment. There are no other known users of the deep aquifer where Drinking

		water standards are exceeded. However, in order for the remedy to be protective in the long term the following actions need to be taken to ensure protectiveness: -conduct a new assessment of human health and ecological risks; -continue monitoring groundwater quality at established monitoring wells and private supply wells under the existing schedule, and expand the investigation and monitoring well network if any adverse changes to groundwater quality are observed; -develop and implement an investigation plan to evaluate VOC groundwater contamination at water supply well PW-J; -conduct a Site-wide evaluation of the existing groundwater monitoring programs; integrate into a single, comprehensive groundwater monitoring and annual summary reporting program for all groundwater issues related to the former LGRL. Evaluate the potential utility of all existing groundwater monitoring points associated with the LGRL and GRL monitoring programs, and the need for installing additional monitoring wells to delineate the plume in the unconsolidated aquifer. Incorporate any new groundwater issues into the comprehensive monitoring, evaluation and reporting program; -prepare an ICIAP documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that ICs are in place and effective and are monitored, maintained and enforced; -develop and implement long-term stewardship procedures in an LTS Plan or an amendment to the O&M Plan for monitoring and tracking compliance with existing ICs, communicating with WDNR and EPA, and providing an annual certification to WDNR

		and EPA that the ICs remain in place and are effective; and, -a new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The presence of a contaminant plume in the deeper bedrock aquifers will require additional investigation and potentially remediation in a part of the groundwater system that was not addressed in previous decision documents. Additional investigation and delineation of extent of contamination will be necessary to support development of the decision document.
Sitewide	Short-term Protective	The Site-wide remedy currently protects human health and the environment because human health and ecological exposures are currently under control. However, in order for the remedy to be protective in the long term the following actions need to be taken to ensure protectiveness: -the source control remedy will need to be evaluated and a determination made whether any further actions are necessary to ensure long-term protectiveness; -conduct a new assessment of human health and ecological risks; -continue monitoring groundwater quality at established monitoring wells and private supply wells under the existing schedule, and expand the investigation and monitoring well network if any adverse changes to groundwater quality are observed; -develop and implement an investigation plan to evaluate VOC groundwater contamination at water supply well PW-J; -conduct a Site-wide evaluation of the existing groundwater monitoring programs; integrate into a single, comprehensive groundwater monitoring and annual summary reporting program for all

		groundwater issues related to the former LGRL. Evaluate the potential utility of all existing groundwater monitoring points associated with the LGRL and GRL monitoring programs, and the need for installing additional monitoring wells to delineate the plume in the unconsolidated aquifer. Incorporate any new groundwater issues into the comprehensive monitoring, evaluation and reporting program; -prepare an ICIAP documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that ICs are in place and effective and are monitored, maintained and enforced; -develop and implement long-term stewardship procedures in an LTS Plan or an amendment to the O&M Plan for monitoring and tracking compliance with existing ICs, communicating with WDNR and EPA, and providing an annual certification to WDNR and EPA that the ICs remain in place and are effective; and, -a new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The presence of a contaminant plume in the deeper bedrock aquifers will require additional investigation and potentially remediation in a part of the groundwater system that was not addressed in previous decision documents. Additional investigation and delineation of extent of contamination will be necessary to support development of the decision document.

Table 5: Status of Recommendations from the 2019 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	1. The original source landfill	Document changes in Site condition. Prepare a	Completed	Submittal of a comprehensive	5/17/2021

	has been deconstructed and the waste source material has been relocated to an engineered lined landfill.	technical memorandum to document and evaluate any observed and anticipated changes or trends in Site conditions resulting from the LGRL waste relocation activities. Assess the effectiveness of changes to the OU1 source control remedy with respect to long-term protectiveness.		*Changed Site Conditions* Technical Memorandum addressed this issue effectively. See below for additional information.	
Sitewide	2. The assumptions used during the development of the baseline risk assessment and the screening ecological assessment may not be valid.	Conduct a new assessment of human health and ecological risks, based on the confirmed presence of contamination in the deeper bedrock aquifers that are used as source of drinking water.	Addressed in Next FYR	Preliminary assessment indicated that ecological risks have not changed with the changes to OU1. The recommendation was updated to include a supplemental assessment of human health risks to support an updated decision document regarding the change in remedy for OU1 and additional ICs for the contamination in the deeper bedrock aquifer.	
2	3. The presence of a previously unknown contaminant plume in the deep bedrock aquifer was discovered in 2009, well after the decision documents were developed.	Continue monitoring groundwater quality at established monitoring wells and private supply wells. Expand the investigation and monitoring well network to evaluate groundwater flow direction and extent of contamination in the bedrock aquifers.	Completed	The scope of the April 2012 work plan (SCS BT Squared, Inc., 2012) was completed and results documented in the May 10, 2018 Phase 3 Investigation Report (SCS Engineers, Inc, 2018). The investigation evaluated the vertical, lateral, and downgradient extent and distribution of dissolved VOCs in the dolomite and sandstone	3/23/2022

				aquifers. With the installation of two additional bedrock monitoring wells, the extent of contamination is reasonably well defined in the dolomite and sandstone aquifer. See Data Review for more details.	
2	4. VOC contamination in former supply well PW-J	Develop and implement an investigation plan to evaluate VOC groundwater contamination at water supply well PW-J.	Completed	The issue of contamination in former supply well PW-J was investigated through geophysical and hydraulic testing of the well and ultimate conversion of the former supply well to monitoring well P430D, which was documented in a March 23, 2022 investigation update report (SCS BT Squared, Inc., 2012). Based on groundwater elevation data from well P430D, contamination at this location is likely not associated with the Site. See Data Review for more details.	3/23/2022
2	5. Develop a new Conceptual Site Model and implement a Site-wide, integrated groundwater monitoring and reporting program that incorporates all	Conduct a Site-wide evaluation of the existing groundwater monitoring programs; integrate into a single, comprehensive groundwater monitoring and annual summary reporting program for all groundwater issues related to the former LGRL. Evaluate the potential utility of all	Completed	Completed with the submittal of the 2019 Annual Report (SCS Engineers, Inc., 2020). See below for additional information.	5/29/2020

	pertinent Site data for analysis and reporting.	existing monitoring points associated with the LGRL and GRL monitoring programs, and the need for installing additional monitoring wells to delineate the plume in the unconsolidated aquifer. Incorporate any new groundwater issues into the comprehensive monitoring, evaluation and reporting program. This program would not preclude the need for interim reporting of individual elements of monitoring and investigations nor replace WDNR Waste Program reporting requirements.			
Sitewide	6. The required ICs have not been fully evaluated on-site and off-site. A review of the ICs is needed to assure that the remedy is functioning as intended with regard to the ICs and to ensure effective procedures are in place for long-term stewardship at the Site.	Prepare an ICIAP documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that effective ICs are in place and effective and are monitored, maintained and enforced.	Addressed in Next FYR	This recommendation has been updated in this FYR to be addressed during the upcoming period. The recommendation has been revised to incorporate LTS procedures into the ICIAP. See below for additional information.	

Sitewide	7. Procedures are not in place to ensure long-term stewardship of ICs at the Site.	Develop and implement long-term stewardship procedures in an LTS Plan or an amendment to the O&M Plan for monitoring and tracking compliance with existing ICs, communicating with WDNR and EPA, and providing an annual certification to WDNR and EPA that the ICs remain in place and are effective.	Addressed in Next FYR	This issue is now combined with the issue and recommendation for the ICIAP and incorporates LTS procedures into that issue.	
Sitewide	8. Both operable units at the Site have changed significantly since the original Site decision documents were developed.	A new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The presence of a contaminant plume in the deeper bedrock aquifers will require additional investigation and potentially remediation in a part of the groundwater system that was not addressed in previous decision documents. Additional investigation and delineation of extent of contamination will be necessary to support development of the decision document.	Addressed in Next FYR	A new decision document (or documents) is currently planned to be developed during the upcoming period to document the change in OU1 regarding the removal of the LGRL waste and relocation to a permitted landfill (GRL). The deeper bedrock aquifer has been investigated and the need for additional ICs is being evaluated. If additional ICs are necessary, they will be documented in a decision document.	

Recommendation #1

The deconstruction of the LGRL and associated waste relocation to the active GRL was completed in 2016. In general, waste was removed from the LGRL, placed into the active GRL, and then during the ensuing construction season the footprint of the active GRL Southeast expansion was extended over the former LGRL footprint.

The Changed Site Conditions report (SCS Engineers, Inc., 2021) reviewed the timeline of the LGRL deconstruction, completed actions that modified Site conditions (i.e., waste removal, soil excavation below waste, and construction of the GRL expansion across the former footprint of the LGRL), and assessed observed changes in site conditions. In general, some minor VOC detections were observed but no significant increases in VOC concentrations or changes in contaminant concentration trends were observed.

The active GRL South and Southeast Expansions were designed with an underdrain system placed below the composite liner. The underdrain is designed to maintain separation between the bottom of the liner and the water table, using drainage piping installed below the liner. The underdrain system drains shallow groundwater from beneath the landfill liner, and also functions as a check on the effectiveness and integrity of the composite liner, as any flow through the liner would be captured by the underdrain. In the area of the former LGRL, installation and operation of a groundwater underdrain system below the GRL liner system removes VOC-impacted groundwater from the source area. The groundwater from the underdrain can be treated by an air stripper, if necessary, and the discharge is covered by a general Wisconsin Pollution Discharge Elimination System permit. In the area of the former LGRL, the underdrain system is monitored at underdrain lift station UDL-1, which discharges into a sedimentation basin near the north end of the former LGRL (see Figure 1B in Appendix C). Between 2015 and 2018, total VOCs detected in UDL-1 decreased from 669.91 micrograms per liter (µg/L) to 10.42 µg/L, and vinyl chloride decreased from 94.9 µg/L in 2015 to 2.5 µg/L in 2018. According to the Changed Site Conditions memo, operation of the underdrain from 2016 through 2020 removed over 82 million gallons of VOC-impacted groundwater and approximately 25 pounds of VOCs.

The Changed Site Conditions tech memo provided the following general protectiveness conclusions:

"The LGRL waste relocation project improved the long-term protectiveness of the OU1 remedy due to several factors, including:

- Removal of 1.3 million cubic yards of municipal and industrial waste from an unlined disposal area.
- Removal of approximately 130,000 cubic yards of contaminated soil below the LGRL waste.
- Removal of an estimated 84,000 pounds of VOCs in waste and soil.
- Construction of a composite liner (60-mil HDPE geomembrane and 4 feet of compacted clay) over remaining VOC-contaminated soil, eliminating recharge
- Installation of an underdrain system below the GRL liner, providing for collection, treatment, and discharge of shallow groundwater impacted with VOCs from LGRL"

Recommendation #5:

The monitoring program for the former LGRL is a combination of required monitoring under the landfill environmental monitoring plan approved by the WDNR Waste and Materials Management (WMM) program for the shallow aquifer, a voluntary monitoring program for the bedrock aquifer investigation being conducted by the PRPs, and data from selected monitoring wells required to be monitored for the active GRL, but which also can provide useful data due to their proximity to the LGRL and/or its

plume. The existing monitoring program for the former LGRL is summarized below. Monitoring well locations are shown on Figure 1B in Appendix C.

The LGRL WMM-required groundwater monitoring program (remaining after completion of the LGRL waste removal) consists of the following:

- Fifteen monitoring wells are monitored semi-annually for inorganics (hardness, alkalinity, chloride, and arsenic) in addition to water elevations and field parameters (i.e., specific conductance, pH, and temperature).
- VOC analyses are conducted semi-annually at seven of these monitoring wells (MW-1RR, MW-1AR, W-3R, W-3AR, MW-210, MW-210A, and MW-210B) and annually in October at four of these monitoring wells (W-163, W-163A, W-214, and W-214A). No VOC analysis is required at the remaining four wells (MW-6R, MW-7R, MW-8R, and MW-203A).
- Three additional monitoring wells (MW-201, MW-201A, and MW-201B) are monitored semi-annually for water elevation and field parameters only.

Monitoring of groundwater conditions in the bedrock aquifers is ongoing; the following provides a summary of the current bedrock monitoring program:

- Semi-annual monitoring of monitoring wells P-401D, P-402E, P-422B, P-423D, P-424D, P424SS, P-426D, P-426SS, P-429SS, and P430D for inorganics (hardness, alkalinity, and chloride), VOCs, water elevations, and field parameters;
- Monthly monitoring of private supply well PW-21RR for VOCs (pre- and post-treatment);
- Semi-annual monitoring of private supply wells PW-19, PW-20, PW-21RR, PW-23, PW-28, PW-32, and PW-38 for inorganics and VOCs; and
- Annual monitoring of private supply wells PW-42, PW-43, and PW-44 for inorganics and VOCs.

Selected monitoring well data from the monitoring of the active GRL are used to supplement LGRL monitoring, including from the following wells:

- MW-008R, MW-309, MW-403, MW-406, MW-428, P-403A, P-406A, P-406B, P-428A, W-009RR, W-010R, W-158, W-159, W-159A, W-160R, W-161R, W-163, and W-163A.

The list of selected GRL wells may vary with time depending on data needs, well condition, other technical issues, etc.

Recommendation #6: With the exception of the governmental ICs that are already in place, as described in Table 2, no other ICs have been executed for this or the surrounding properties. As a Wisconsin licensed landfill, the state has restrictions for any construction on landfills and a prohibition on installing wells within 1,200 feet of a landfill. Furthermore, the Site is the location of an active landfill. It is standard operating procedure to wait to execute on-Site ICs (in the form of deed restrictions) on landfills until after the facility stops accepting waste and is in the process of closure. These specific on-Site ICs are typically a condition of landfill closure.

While special casing requirements (at a minimum) will likely be required in the area of potentially contaminated groundwater off site, no special well casing requirements have been executed due to the lack of information as to the degree and extent of groundwater contamination in the deep aquifers. However, in the interim, the WDNR reviews all applications for new wells and would provide recommendations on any new private drinking water wells in the proximity of the Site. The deep bedrock monitoring is currently generating data that can be used as a framework for evaluating any needed off-Site ICs.

As described above, certain state regulations that govern landfills are in effect; however, an ICIAP and related IC activities will be needed going forward in order to evaluate any additional ICs that may be needed on-Site and off-Site in the future. Also see earlier discussion in the **Institutional Controls** discussion within Section II of this FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

Activities to involve the community in the FYR process were initiated with a public notice published in the local newspaper of record, the "Dodge County Pioneer," on February 8, 2024, stating that there was a FYR in process and inviting interested parties and the general public to submit any comments to WDNR. No comments were received from the public.

Another notice will be placed to notify the public that the review has been completed and the report is available to the public.

The results of the review and the final FYR report will be made available at the Site information repository located at:

Ted & Grace Bachhuber Memorial Library
234 N John Street
Mayville, WI 53050

Further, the results of the review and the final FYR report, along with supporting documents, will be posted on the WDNR's publicly accessible database, at the following address: https://dnr.wi.gov/botw/GetActivityDetail.do?siteId=1757600&adn=0214000906

Site background, current Site status, cleanup information, and Site-related documents can also be found on EPA's web page: www.epa.gov/superfund/hechimovich-landfill.

Data Review

Groundwater monitoring has been conducted at the Site since the early 1980s. However, groundwater quality data collected since the early 1990s are primarily used to make decisions about the condition of

the Site. The shallow groundwater contamination plume was historically regarded as the only significant groundwater migration pathway at the Site due to the characterization (reflected in the 1995 ROD) of the underlying Maquoketa Shale as "massive and very impermeable" and providing a "'bottom layer' through which contaminant migration is restricted" until the discovery in 2009 of groundwater contamination in the deep bedrock aquifer system. The hydraulic relationship between the unconsolidated aquifer and deep bedrock aquifer is not well understood, reflecting uncertainty about hydraulic properties and other characteristics of potential migration pathways through the shale unit. The two primary COCs found above enforcement standards in both the shallow and deep aquifers are DCE and vinyl chloride.

The following sections present significant findings and current understanding from the ongoing investigation and monitoring of the shallow and deep aquifers on- and off-Site. The Annual Reports for both LGRL (Environmental Sampling Corporation, 2021, Environmental Sampling Corporation, 2022, Environmental Sampling Corporation 2023) and GRL (SCS Engineers, 2020, SCS Engineers, 2021b, SCS Engineers, 2022b, SCS Engineers, 2023) were reviewed. The 2022 Annual Report for GRL provides a comprehensive review and summary of recent data within the context of historical Site data. Figures are included in Appendix C and data summary tables are included in Appendix D. Appendix E includes data from selected monitoring wells associated with the active GRL monitoring program. The Annual Report includes more detailed findings and conclusions than those below, some of which are drawn from the report.

<u>Shallow Unconsolidated Aquifer</u>

- A water table map for the shallow unconsolidated aquifer for October 2022 is shown on Figure 6 of Appendix C. The water table map incorporates data from the LGRL and GRL water table monitoring wells. Groundwater flow in the LGRL area is generally to the north-northeast, consistent with historical observations.
- The area of VOC concentrations exceeding enforcement standards in shallow groundwater is limited to the immediate vicinity of LGRL and an area extending to the north through well nests MW-1RR/AR/B, W-3R/AR, MW-210/A/B, and MW-214/A, as shown on Figure 11 in Appendix C. This pattern has remained relatively consistent historically, though ongoing monitoring has indicated some decreasing trends near the source area and an overall reduction in contaminant mass within the shallow groundwater.
- At the two well nests located further downgradient along the axis of the plume from LGRL (MW-210/A/B and MW-214/A), VOCs are generally highest in the mid-depth ("A") wells and the results show the changes in the VOC concentrations with time on Figure G3 of Appendix C. At MW-210A, concentrations of DCE and vinyl chloride have decreased significantly since the 1990s and have been relatively stable since about 2004. At MW-214A, concentrations of vinyl chloride began increasing in about 2007, and in the last 5 years appear to have leveled off at a concentration similar to those observed recently at MW-210A.
- The MW-214/A well nest is the farthest downgradient monitoring location of the plume in the unconsolidated aquifer; thus, the extent of groundwater contamination is not adequately defined in the downgradient direction, to the north-northeast. Furthermore, the MW-214 well nest contains only a water table well and mid-level piezometer, which means that the vertical extent of groundwater contamination is not adequately defined at this downgradient location. The extent of the plume has been interpolated to extend slightly beyond the MW-214 well nest

based on the concentrations of DCE and vinyl chloride in MW-214A. Only vinyl chloride exceeds the enforcement standards at this location. The MW-214 well nest is located about 840 feet downgradient of the former LGRL; the property line is located another 1500 feet downgradient of the MW-214/A nest. It is recommended to add additional monitoring wells to confirm the actual extent of the shallow groundwater plume.

- Still no clear trends in contaminant concentrations have been reported through the LGRL monitoring and reporting that are directly attributable to deconstruction of the LGRL, though minor transient impacts to nearby monitoring wells were reported through monitoring of the GRL. At this time, it appears unlikely that significant detrimental impacts to shallow or deep groundwater will be observed as a result of the LGRL deconstruction and relocation.

Deep Bedrock Aquifer

- The scope of the deep bedrock aquifer investigation, as described in the April 2012 work plan (SCS BT Squared, Inc., 2012), was completed in May 2018. Subsequent investigation intended to address data gaps was completed in March 2022 (SCS Engineers, Inc., 2022), with the installation of two additional bedrock monitoring wells, one in the dolomite aquifer (P430D) and one in the sandstone (P426SS). The addition of the P426SS well in the sandstone aquifer defines the downgradient extent of the deep bedrock plume with the concentrations from 4 rounds of sampling at P426SS consistently below enforcement standards. Groundwater monitoring in the deep bedrock aquifer has been occurring since 2009 and historical sampling results are provided in Appendix C.
- The groundwater flow direction in the dolomite aquifer has historically been toward the northeast, as shown on Figure 7 of Appendix C. This pattern has been relatively consistent historically, though some flattening of the hydraulic gradient has occasionally been observed during the fall monitoring rounds, as shown on Figure 8 of Appendix C. With the installation of monitoring well P-430D within converted supply well PW-J, the hydraulic head of the contaminated zone of the aquifer at this location is shown to be more than 20 feet greater than within the dolomite in the area of the LGRL. This hydraulic relationship suggests a source other than the LGRL for the contamination observed in former supply well PW-J in the past and in P-430D more recently.
- Groundwater flow direction in the sandstone has been monitored since the installation of monitoring well P426SS, which provided a third measurement point within this aquifer. The interpreted groundwater flow direction in the sandstone aquifer has generally been toward the northeast, as shown on Figures 9 and 10 in Appendix C.
- Groundwater occurrence and yield (and likely corresponding transport of contaminants) within the dolomite aquifer are highly variable and appear to be associated with the presence of discrete fracture zones. In the absence of fracture zones, the dolomite is massive and does not yield significant quantities of groundwater.
- The lateral and vertical extent of groundwater contamination within the bedrock aquifer appear to have been defined to a reasonable degree. Figure 12 in Appendix C shows the interpreted extent of VOCs exceeding state groundwater enforcement standards in the bedrock aquifers based on existing data.
- The existing network of monitoring wells and private supply wells appears adequate to monitor for trends within the bedrock aquifers. Any significant changes in VOC concentrations would

indicate the need for a re-evaluation of the monitoring well network and further investigation and delineation of fracture zones in the dolomite aquifer.

- Ten private water supply wells are actively monitored as part of the regular groundwater monitoring program. Private supply well PW-21RR is the only existing drinking water supply well where VOCs are known to have been detected at concentrations exceeding state and federal standards in recent years. This supply well is open to the sandstone aquifer and is the only known monitoring point in the sandstone aquifer where groundwater standards are exceeded. Table 4 of Appendix C shows that vinyl chloride has consistently been detected at concentrations near or exceeding the state enforcement standard (0.2 µg/L) and federal Maximum Contaminant Level Goal (MCLG) (0 µg/L), though not the MCL (2 µg/L). DCE has consistently exceeded the state PAL of 7 µg/L. Vinyl chloride has shown a generally declining concentration trend since about 2012; DCE concentrations have possibly shown a slight decreasing trend since 2017 after rising slowly during preceding years. A treatment system was installed at this well in 2013. Post-treatment groundwater samples have confirmed that the treatment system is effectively removing vinyl chloride and reducing DCE concentrations to well below the state PAL. Well PW-21RR is on a monthly monitoring schedule, wherein both pre- and post-treatment groundwater samples are analyzed.

The review indicated that VOC concentrations within the shallow plume continue to indicate that the overall mass of VOCs in the groundwater has decreased with time, particularly in the source area. Vinyl chloride concentrations at the furthest downgradient mid-depth piezometer (MW-214A) increased beginning in 2008, but now appear to have leveled off, but are still above enforcement standards. It is recommended that additional monitoring wells be installed to confirm the horizontal and vertical extent of the shallow plume. The review of the data for the bedrock aquifer indicated that the contamination in the sandstone aquifer does not extend beyond the property where private drinking water supply well PW-21RR is located. VOC concentrations in the monitoring wells along the center of the bedrock plume, continue to show mostly stable or decreasing long-term concentration trends. Furthermore, relevant consistent recent DCE concentrations in PW-28, and the consistent presence of low concentrations of DCE in PW-19, suggest that the dissolved VOC plume may be stabilizing. Vinyl chloride has not been detected in these wells.

Site Inspection

The inspection of the Site was conducted on 6/13/2023. In attendance were Trevor Bannister of WDNR, Jake Margelofsky of GFL Environmental Services USA, Inc., Sheila Desai of EPA, and Ann Bekta and Bridget Kelly of WDNR. The purpose of the inspection was to observe Site conditions and assess the protectiveness of the remedy.

As discussed above, the LGRL has been completely deconstructed and the waste relocated to the active GRL. As such, inspection and regulatory responsibilities are now carried out by the WDNR Waste Program. The WDNR Waste Program semi-annual inspection was conducted concurrently with the Site inspection. The inspection consisted of a walk-over of the active landfill, visual inspection of the landfill gas extraction, leachate, cover, and drainage systems, and an interview with the current Site operations manager. No significant issues were noted during the inspection. The cap, where complete, was intact and covered with short vegetation. There were no signs of significant erosion, and the cap

was free of pockets where rainwater could collect. There were no seeps around the perimeter of the cap and there was no waste protruding through the cap.

Security at the Site is good, associated with the active landfill. The gates are open and monitored during business hours and secured after hours with video surveillance ongoing. The fencing around the facility was in good repair. Several monitoring wells were observed and since no damage to the protective caps was obvious, no additional inspection of the wells was made. The monitoring contractor performs semi-annual monitoring and any issues with monitoring wells are reported and repaired as needed.

The results of the Site inspection show that the active GRL components are generally maintained in accordance with state and federal regulations. The Site inspection checklist is included in Appendix F.

The PRP's Site manager was interviewed as part of this FYR during the Site inspection, as noted above, and no issues or concerns were noted. No interviews of the public were conducted.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

No.

The OU1 source control remedy has changed fundamentally from its original conception with the completion of the deconstruction of the LGRL and relocation of waste from the former LGRL into the active GRL. The net result may be a substantial improvement with respect to containment of contaminants still within the waste material (significantly, the primary objective of the OU1 source control remedy), as the waste is now located within an engineered, lined landfill under the authority of the WDNR Waste Program. The OU2 groundwater remedy is not functioning as intended by the decision documents, as evidenced by increasing contaminant concentration trends in the downgradient monitoring wells since the ROD (though now stable) within the shallow unconfined aquifer and the presence of the contaminant plume in the bedrock aquifer beyond the waste edge. Increasing vinyl chloride concentrations exceeding state groundwater enforcement standards at downgradient monitoring wells in the unconsolidated aquifer indicate that the remedy is not currently on a path to meeting RAOs, as the groundwater plume appears to have expanded from the original plume. Furthermore, the existence of the contaminant plume in the bedrock aquifer was not addressed in the decision documents as its presence was unknown at the time.

With respect to the need for ICs as identified in the decision documents, current state landfill regulations and existing Site access controls provide adequate controls over land and groundwater use on and near the Site for the short term. However, ICs need to be evaluated and implemented to prevent exposure to contaminated groundwater through use of the bedrock aquifers, including requirement of a treatment system at the private water supply well, PW-21RR. Currently available data provide a basis for establishing an area where supply well and groundwater use restrictions might apply, and this process has been initiated.

Considering the significant changes in Site conditions (i.e., relocation of the LGRL into the GRL) since the decision documents were developed, the need for a new decision document to address these changes is apparent.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

No.

There have been no changes in the state or federal groundwater standards for the key contaminants of cis-1,2-DCE, trichloroethene, and vinyl chloride. However, there have been changes in the Site conditions that may affect the future protectiveness of the remedy, and the assumptions used during the development of the baseline risk assessment may not be valid. The earlier risk assessments were based on no known exposures to contaminants through drinking water. Since contamination has been discovered in the deep bedrock aquifer, there may be a potential contaminant exposure pathway through drinking water ingestion in the future. Therefore, there is a need to revise the risk assessment for the Site. Currently, the exposure pathway for drinking water has been eliminated through interim measures by providing a treatment system and monthly monitoring at supply well PW-21RR, which is the only supply well where state or federal drinking water standards are exceeded.

There is potential for the emerging contaminants (e.g. per- and polyfluoroalkyl substances [PFAS] and 1,4-dioxane) to be present in the groundwater due to the Site's historical use as a landfill. PFAS and 1,4-dioxane need to be evaluated to determine if they are present at the Site and are site-related COCs. PFAS and 1,4-dioxane have been encountered at several other landfill sites with VOC contamination, and this FYR recommends that PFAS and 1,4-dioxane be evaluated at the Site to determine if it is present and is site-related.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No.

The Site did not experience any impacts from natural disasters during this reporting period. In addition, no site changes or vulnerabilities that may be related to climate change impacts not apparent during remedy selection, remedy implementation or O&M (e.g., sea level rise, changes in precipitation, increasing risk of floods, changes in temperature, increasing intensity of hurricanes, increasing wildfires, melting permafrost) were identified during this reporting period.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
None

Issues and Recommendations Identified in the Five-Year Review:

OU(s): 2	Issue Category: Changed Site Conditions			
	Issue: The assumptions used during the development of the baseline risk assessment may not be valid.			
	Recommendation 1: Conduct a supplemental assessment of human health risks to support an updated decision document regarding the change in remedy for OU1 and additional ICs for the contamination in the deeper bedrock aquifer.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/30/2025

OU(s): 1, 2	**Issue Category:** Institutional Controls			
	Issue: The required ICs have not been fully evaluated on-site and off-site. A review of the ICs is needed to assure that the remedy is functioning as intended with regard to the ICs and to ensure effective procedures are in place for long-term stewardship at the Site.			
	Recommendation 2: Prepare an ICIAP with LTS procedures documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that effective ICs are in place and effective and are monitored, maintained and enforced.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/30/2026

OU: 1, 2	**Issue Category:** Changed Site Conditions
	Issue: Both operable units at the Site have changed significantly since the original Site decision documents were developed.

	Recommendation 3: A new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The deeper bedrock aquifer has been investigated and the need for additional ICs needs to be evaluated. If additional ICs are necessary, they will need to be memorialized in a decision document.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	10/31/2026

OU: 2	**Issue Category:** Monitoring			
	Issue: Deep bedrock aquifer monitoring is being conducted voluntarily by the PRPs.			
	Recommendation 4: Continue monitoring groundwater at LGRL according to the existing comprehensive monitoring program and identify requirements for monitoring in the future decision document.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/13/2029

OU: 2	**Issue Category:** Monitoring			
	Issue: The contaminant plume in the shallow unconsolidated aquifer may be migrating beyond the downgradient monitoring wells, but site conditions make access difficult to impossible for installing monitoring wells in useful locations.			
	Recommendation 5: Evaluate the feasibility of expanding the monitoring well network by installing additional monitoring wells to delineate the downgradient extent of the plume. If deemed possible, install additional wells and add them to the monitoring program.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/30/2026

OU: 2	**Issue Category:** Monitoring

	Issue: PFAS and/or 1,4-dioxane may be present in groundwater at the Site, as these emerging contaminants have been found at other landfills with VOC contamination.			
	Recommendation 6: Evaluate historical information and records regarding past waste management practices and the potential for past disposal of PFAS and 1,4-dioxane and submit a summary of findings. Prepare and implement a work plan to assess the presence and distribution of these compounds in groundwater at the Site.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/30/2026

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: 1	*Protectiveness Determination:* Short-term Protective
Protectiveness Statement: The OU1 source control remedy currently protects human health and the environment because human and ecological exposures are currently under control, the waste relocation project has been completed, and the waste is now in an engineered, lined landfill. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: -prepare an ICIAP with LTS procedures documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that effective ICs are in place and effective and are monitored, maintained and enforced; and - a new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The deeper bedrock aquifer has been investigated and the need for additional ICs needs to be evaluated. If additional ICs are necessary, they will need to be memorialized in a decision document.	
Operable Unit: 2	*Protectiveness Determination:* Short-term Protective
Protectiveness Statement: The OU2 groundwater remedy currently protects human health and the environment because human health and ecological exposures are currently under control. There are no known uses of the shallow aquifer, though additional investigation is recommended to evaluate indications that that the plume is expanding and further delineate	

the downgradient extent of the plume. For the deep bedrock aquifer, the human exposure pathway was eliminated via installation of a treatment system and monthly monitoring for effectiveness of treatment. There are no other known users of the deep aquifer where drinking water standards are exceeded. However, in order for the remedy to be protective in the long term the following actions need to be taken to ensure protectiveness:

-conduct a supplemental assessment of human health risks to support an updated decision document regarding the change in remedy for OU1 and additional ICs for the contamination in the deeper bedrock aquifer;

- prepare an ICIAP with LTS procedures documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that ICs are in place and effective and are monitored, maintained and enforced;

- a new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The deeper bedrock aquifer has been investigated and the need for additional ICs needs to be evaluated. If additional ICs are necessary, they will need to be memorialized in a decision document;

- continue monitoring groundwater at LGRL according to the existing comprehensive monitoring program and identify requirements for monitoring in the future decision document;

-evaluate the feasibility of expanding the shallow monitoring well network, and expand the investigation and monitoring well network if any adverse changes to groundwater quality are observed. If deemed possible, install additional wells and add them to the monitoring program; and

-evaluate historical information and records regarding past waste management practices and the potential for past disposal of PFAS and 1,4-dioxane and submit a summary of findings. Prepare and implement a work plan to assess the presence and distribution of these compounds in groundwater at the Site.

Sitewide Protectiveness Statement
Protectiveness Determination: Short-term Protective
Protectiveness Statement: The Site-wide remedy currently protects human health and the environment because human health and ecological exposures are currently under control. However, in order for the remedy to be protective in the long term the following actions need to be taken to ensure protectiveness:

-conduct a supplemental assessment of human health risks to support an updated decision document regarding the change in remedy for OU1 and additional ICs for the contamination in the deeper bedrock aquifer;

- prepare an ICIAP with LTS procedures documenting required IC activities necessary by the PRPs and the agencies to further evaluate and implement additional ICs, as necessary, and to ensure that effective ICs are in place and effective and are monitored, maintained and enforced;

- a new decision document (or documents) is needed to memorialize the removal of the LGRL and its relocation to the active GRL. The deeper bedrock aquifer has been investigated and the need for additional ICs needs to be evaluated. If additional ICs are necessary, they will need to be memorialized in a decision document.

- continue monitoring groundwater at LGRL according to the existing comprehensive monitoring program and identify requirements for monitoring in the future decision document;

- evaluate the feasibility of expanding the shallow monitoring well network, and expand the investigation and monitoring well network if any adverse changes to groundwater quality are observed. If deemed possible, install additional wells and add them to the monitoring program; and

-evaluate historical information and records regarding past waste management practices and the potential for past disposal of PFAS and 1,4-dioxane and submit a summary of findings. Prepare and implement a work plan to assess the presence and distribution of these compounds in groundwater at the Site.

VIII. NEXT REVIEW

The next FYR report for the Hechimovich Sanitary Landfill Superfund Site is required five years from the completion date of this review.

Appendix A – Reference List

Reference List

- Environmental Sampling Corporation, 2021. 2020 Annual Report, Land & Gas Reclamation Landfill, WDNR License No. 1118, Advanced Disposal Services Glacier Ridge Landfill. April 2020.

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- SCS BT Squared, Inc., 2012. [Workplan for] Off-Site Investigation of Chlorinated VOC Plume in Bedrock, Land and Gas Reclamation Landfill, Veolia Environmental Services. April 2012.

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- SCS Engineers, Inc., 2021b. 2020 Annual Report, Land & Gas Reclamation Landfill/Hechimovich Sanitary Landfill Site. June 2021.

- SCS Engineers, Inc., 2022. Additional Investigation Update, Chlorinated Volatile Organic Compounds in Bedrock Aquifer, Land & Gas Reclamation Landfill (Hechimovich Sanitary Landfill). March 2022.

- SCS Engineers, Inc., 2022b. 2021 Annual Report, Land & Gas Reclamation Landfill/Hechimovich Sanitary Landfill Site. June 2022.

- SCS Engineers, Inc., 2023. 2022 Annual Report, Land & Gas Reclamation Landfill/Hechimovich Sanitary Landfill Site. May 2023.

- WDNR, 1994. Record of Decision – Source Control Operable Unit Interim Remedy – Land and Gas Reclamation Landfill. January 1994.

- WDNR, 1995. Record of Decision – Final Remedy – Land and Gas Reclamation Landfill. September 1995.

- WDNR, 1997. Preliminary Closeout Report - Land and Gas Reclamation Site. August 1997.

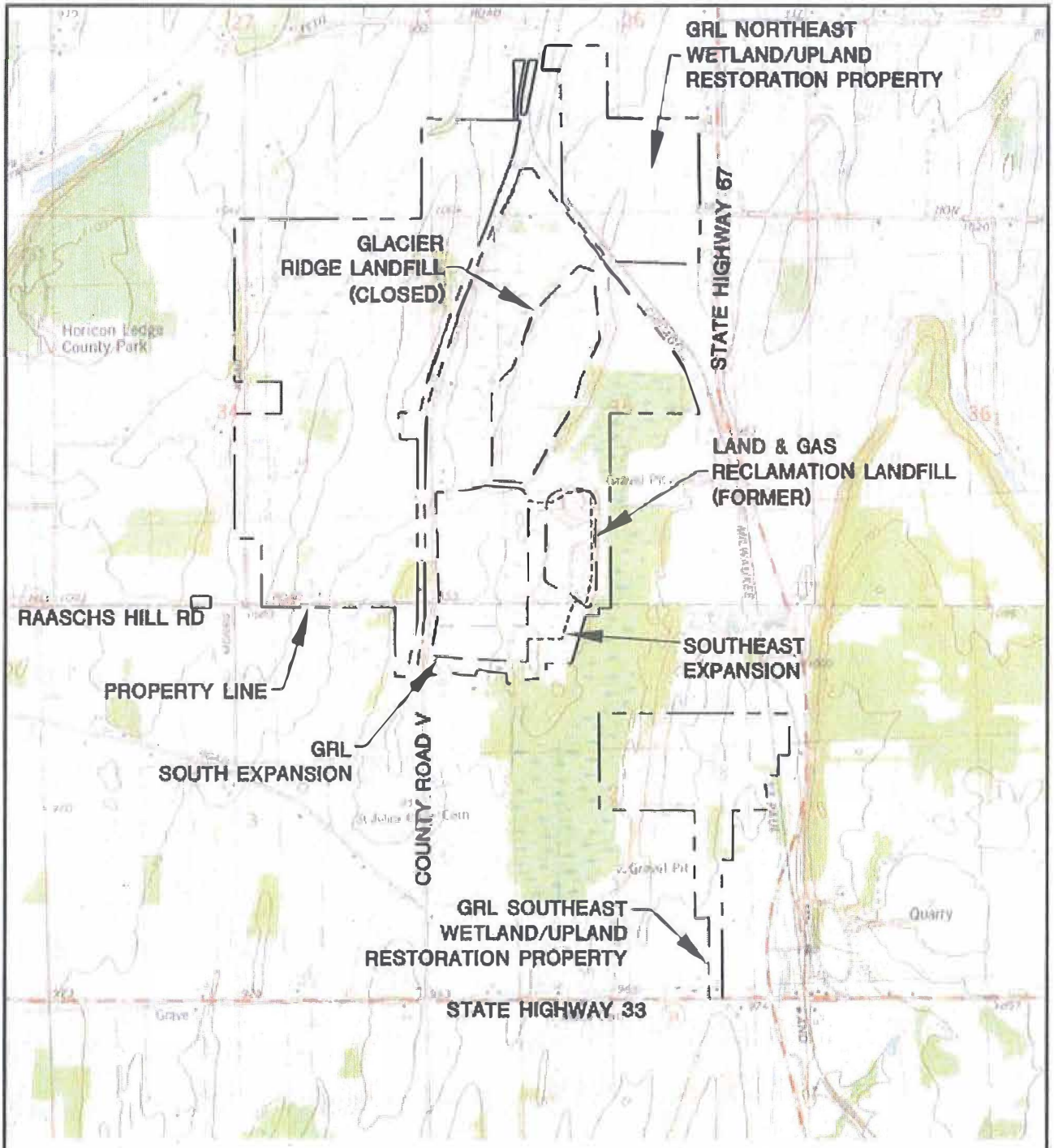
Appendix B – Site Chronology

Event	Date
City of Mayville dump operations	1959-70
Site operated by George Hechimovich	1970-85
WDNR issues conditional license to Hechimovich Sanitary Landfill	September 1970
WDNR issues renewal including toxic and hazardous waste disposal	December 1972
WDNR notifies Hechimovich Landfill that hazardous wastes are no longer allowed	1979
WDNR issues extension to 1980	November 1979
Site accepts liquid hazardous wastes	1970-80
Site name changed to LGRL	July 1985
LGRL ceases accepting all wastes	October 1986
State enforcement action requires a landfill cap and gas collection system	July 1987
Hechimovich Landfill proposed to National Priorities List (NPL)	June 24, 1988
Final NPL listing	March 31, 1989
RI Completed	April 1993
Interim Source Control ROD signed	January 13, 1994
FS completed	February 1994
Final ROD signed	September 6, 1995
Preliminary Close-out Report signed	September 16, 1997
First FYR completed	February 19, 1999
Second FYR completed	June 21, 2004
Third FYR completed	June 17, 2009
Fourth FYR completed	June 13, 2014
Relocation of LGRL waste into active Glacier Ridge Landfill (GRL) completed	March 23, 2016
Fifth FYR completed	June 10, 2019
Site inspection for sixth FYR conducted	June 13, 2023

Appendix C - Figures

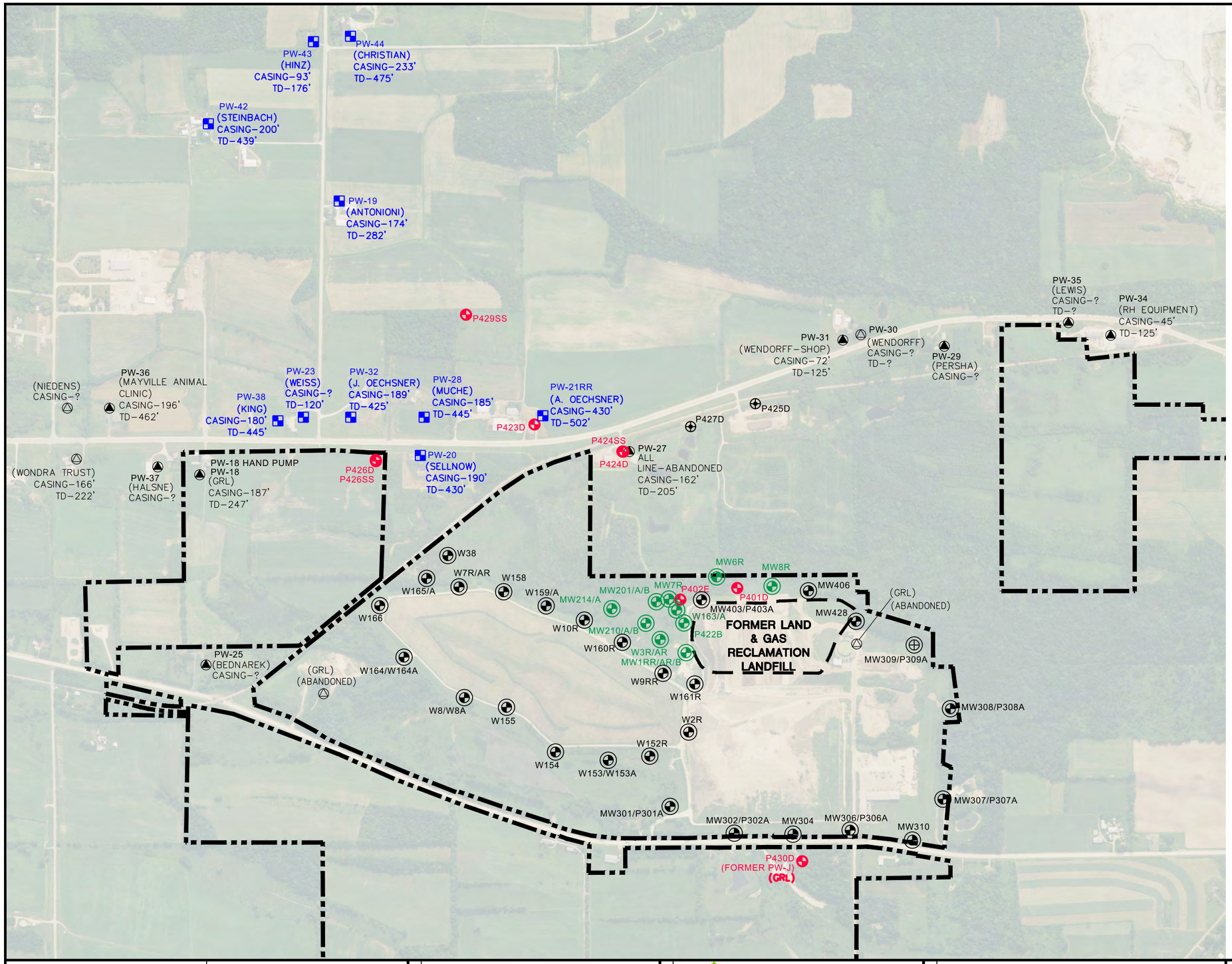
1A Site Location Map
1B Monitoring Well and Private Well Locations
2 Cross Section Location Map
3 Cross Section A-A'
4 Cross Section B-B'
5 Cross Section C-C'
6 Shallow Groundwater Elevations and Water Table – October 2022
7 Dolomite Bedrock Groundwater Elevations and Potentiometric Surface Contours – July 2022
8 Dolomite Bedrock Groundwater Elevations and Potentiometric Surface Contours – October 2022
9 Sandstone Bedrock Groundwater Elevations and Potentiometric Surface Contours – July 2022
10 Sandstone Bedrock Groundwater Elevations and Potentiometric Surface Contours – October 2022
11 VOCs in Shallow Groundwater – October 2022
12 VOCs in Bedrock Groundwater – October 2022

G1 Time Series Graphs for Mid-Depth Wells Along the Shallow Plume (MW-1AR, MW-210A, MW-214A)
G2 Time Series Graphs for Source Area Well Nests (MW-1 and W-3)
G3 Time Series Graphs for Downgradient Well Nests (MW-210 and MW-214)
G4 Time Series Graph for cis-1,2-DCE in Bedrock Monitoring Wells
G5 Time Series Graph for Vinyl Chloride in Bedrock Monitoring Wells
G6 Time Series Graph for cis-1,2-Dichloroethylene in Water Supply Wells Downgradient from LGRL
G7 Time Series Graph for Vinyl Chloride at PW-21RR Samples (Before Treatment System)



CLIENT	GLACIER RIDGE LANDFILL, LLC.	SITE	ADVANCED DISPOSAL SERVICES GLACIER RIDGE LANDFILL DODGE COUNTY, WISCONSIN		SITE LOCATION MAP
PROJECT NO.	3701	DRAWN BY:	AHB	ENGINEER	FIGURE
DRAWN:	01/24/13	CHECKED BY:	BP	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	1A
REVISED:	02/13/13	APPROVED BY:	SC 04/15/13		

I:\3701\Drawings-General\Plan of Operation\Figures\FIGURE 1.dwg, 4/22/2013 12:30:34 PM



N

1,000 0 1,000

SCALE: 1" = 1,000'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (LGRL MONITORING/INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (GRL MONITORING)
- ABANDONED SHALLOW AQUIFER MONITORING WELL/NEST
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)

NOTES:

1. AERIAL PHOTOGRAPH FROM THE NATIONAL AGRICULTURE IMAGERY PROGRAM AND PUBLISHED BY THE USDA FSA AERIAL PHOTOGRAPHY FIELD OFFICE. DATE OF IMAGE IS OCTOBER 30, 2015.
2. PROPERTY BOUNDARIES ARE APPROXIMATE. PROPERTY INFORMATION OBTAINED FROM DODGE COUNTY LAND INFORMATION OFFICE ON FEBRUARY 6, 2020.
3. PRIVATE WELL LOCATIONS AND DEPTHS ARE APPROXIMATE BASED ON PLAT MAPS AND WELL LOGS.
4. WELL PW-27 AND BOREHOLES P425D AND P427D WERE ABANDONED IN APRIL 2016.
5. GRL MONITORING WELLS SHOWN ARE NOT PART OF THE LGRL INVESTIGATION BUT ARE USED TO PROVIDE SUPPLEMENTAL INFORMATION ON GROUNDWATER FLOW AND LIMITS OF LGRL IMPACTS ON GROUNDWATER.
6. PW-J WAS HISTORICALLY MONITORED FOR GRL. OTHER GRL PRIVATE WELL SAMPLE LOCATIONS NOT SHOWN.

PROJECT NO.	25223008.02	DRAWN BY:	KP
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

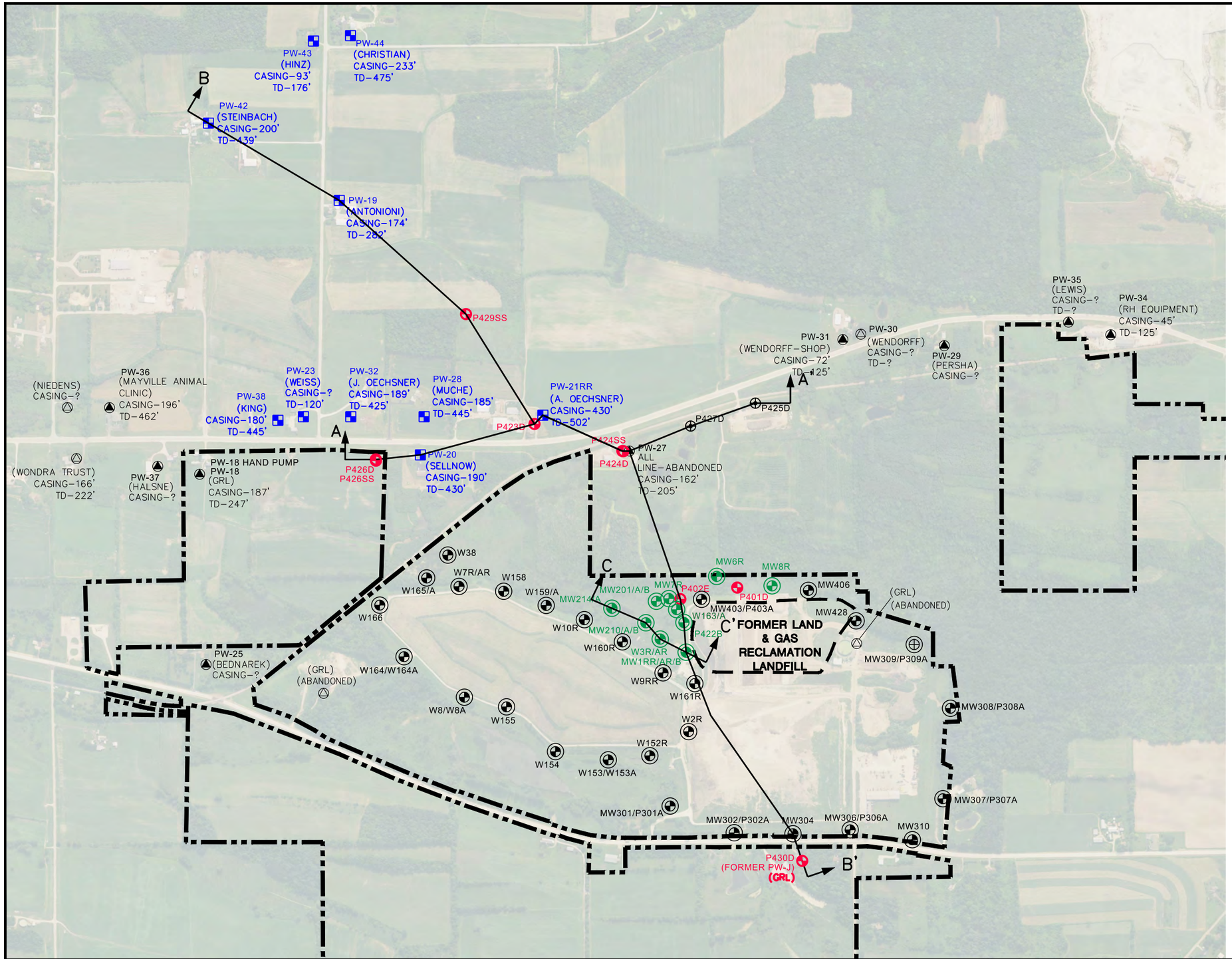
CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT
LAND AND GAS RECLAMATION LANDFILL
DODGE COUNTY, WISCONSIN

MONITORING WELL AND
PRIVATE WELL LOCATIONS

FIGURE
1B

I:\25223008.02\Drawings\Monitoring Well Locations.dwg, 5/25/2023 10:03:25 AM



N

1,000 0 1,000

SCALE: 1" = 1,000'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (LGRL MONITORING/INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (GRL MONITORING)
- ABANDONED SHALLOW AQUIFER MONITORING WELL/NEST
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- CROSS SECTION LOCATION

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.

PROJECT NO.	25221008.02	DRAWN BY:	KP
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	04/22/2022	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

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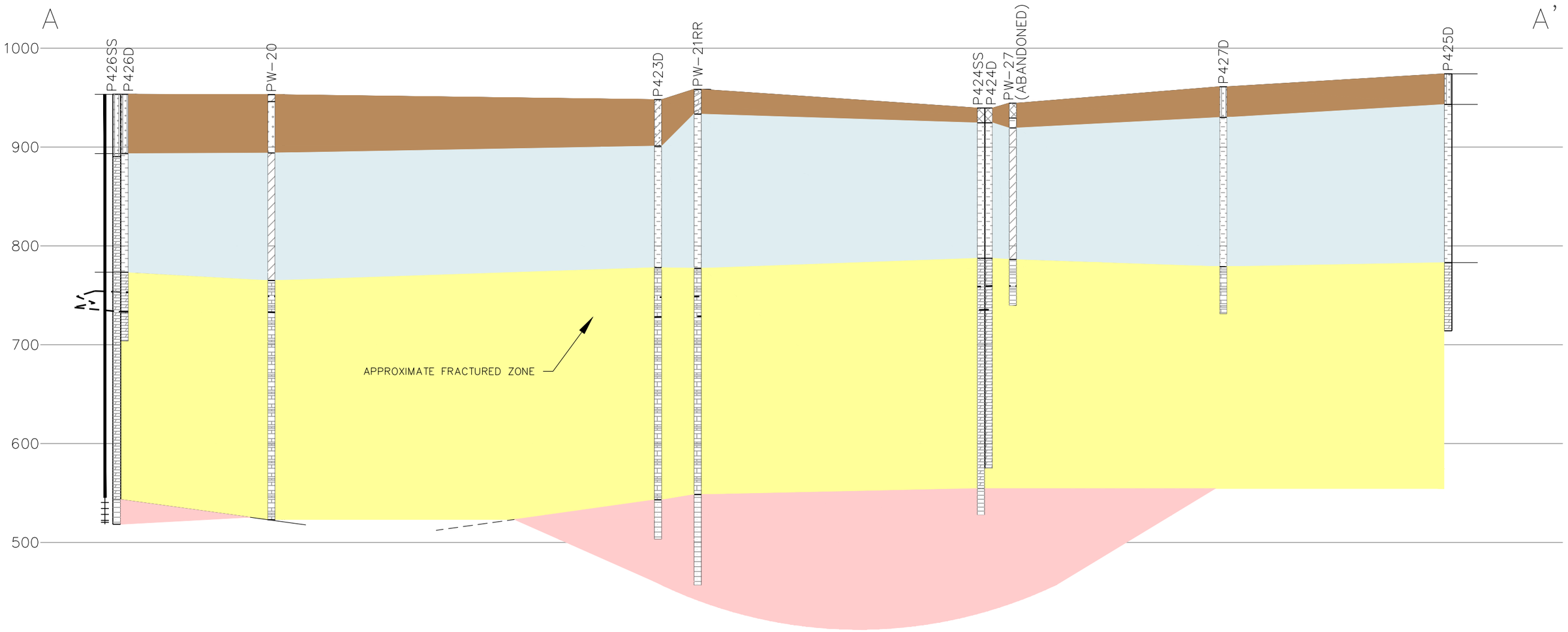
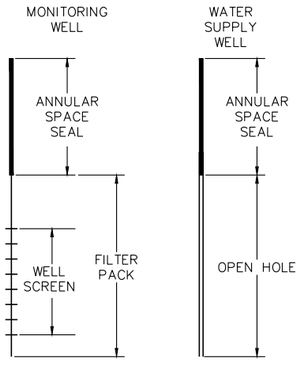
DODGE COUNTY, WISCONSIN

CROSS SECTION LOCATION MAP

FIGURE 2

I:\25223008.02\Drawings\Monitoring Well Locations.dwg, 5/25/2023 10:04:00 AM





WELL DETAIL

NOTES:

1. THE PORTION OF ANY BOREHOLE EXTENDING BELOW THE MONITORING WELL SCREEN AND FILTER PACK WAS BACKFILLED WITH BENTONITE CHIPS PRIOR TO WELL CONSTRUCTION.
2. MONITORING WELL P423D WAS INSTALLED IN FORMER WATER SUPPLY WELL PW-21R AFTER BACKFILLING THE LOWER PORTION WITH BENTONITE CHIPS.
3. APPROXIMATE FRACTURED ZONE BASED ON BOREHOLE LOGGING AND PACKER PUMPING TEST IN MONITORING WELL BOREHOLES AND PW-27. THE ZONE IS INFERRED AT PW-20 AND PW-21RR, WHICH WERE NOT TESTED.

0 300

HORIZONTAL SCALE: 1" = 300'
VERTICAL SCALE: 1" = 100'
VERTICAL EXAGGERATION = 3X

LEGEND

- SILTY SAND
- SHALE
- DOLOMITE
- LIMESTONE
- LEAN CLAY
- SAND, WELL GRADED
- SAND WITH GRAVEL
- SANDSTONE
- CLAYEY CRAVEL
- FILL

PROJECT NO.	25223008.02	DRAWN BY:	BSS
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

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DODGE COUNTY, WISCONSIN

CROSS SECTION A-A'

FIGURE 3

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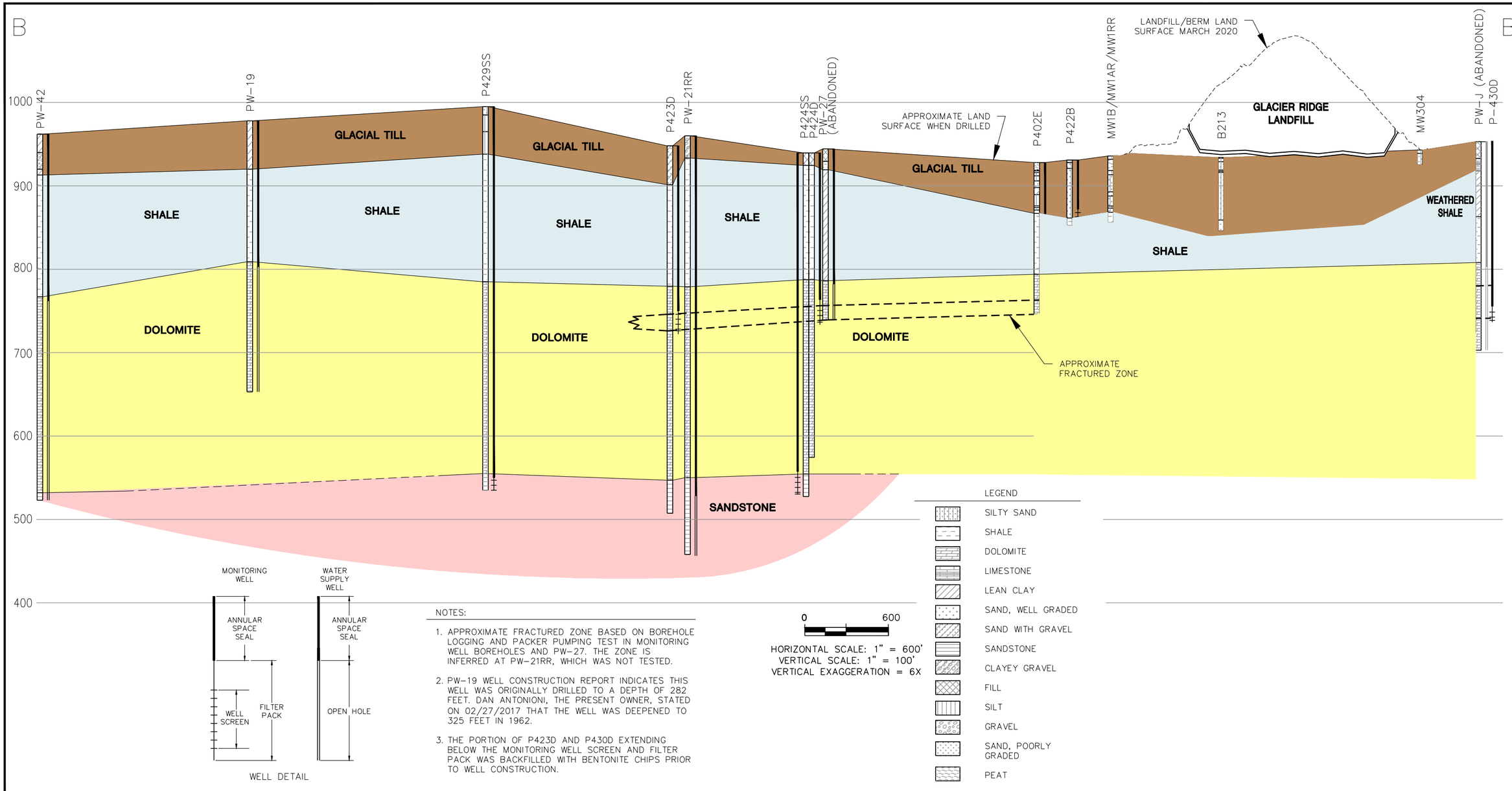

MONITORING WELL

WATER SUPPLY WELL

WELL DETAIL

NOTES:

1. APPROXIMATE FRACTURED ZONE BASED ON BOREHOLE LOGGING AND PACKER PUMPING TEST IN MONITORING WELL BOREHOLES AND PW-27. THE ZONE IS INFERRED AT PW-21RR, WHICH WAS NOT TESTED.
2. PW-19 WELL CONSTRUCTION REPORT INDICATES THIS WELL WAS ORIGINALLY DRILLED TO A DEPTH OF 282 FEET. DAN ANTONIONI, THE PRESENT OWNER, STATED ON 02/27/2017 THAT THE WELL WAS DEEPENED TO 325 FEET IN 1962.
3. THE PORTION OF P423D AND P430D EXTENDING BELOW THE MONITORING WELL SCREEN AND FILTER PACK WAS BACKFILLED WITH BENTONITE CHIPS PRIOR TO WELL CONSTRUCTION.

0 600

HORIZONTAL SCALE: 1" = 600'
VERTICAL SCALE: 1" = 100'
VERTICAL EXAGGERATION = 6X

LEGEND

- SILTY SAND
- SHALE
- DOLOMITE
- LIMESTONE
- LEAN CLAY
- SAND, WELL GRADED
- SAND WITH GRAVEL
- SANDSTONE
- CLAYEY GRAVEL
- FILL
- SILT
- GRAVEL
- SAND, POORLY GRADED
- PEAT

PROJECT NO.	25223008.02	DRAWN BY:	BSS/KP
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT
LAND AND GAS RECLAMATION LANDFILL
DODGE COUNTY, WISCONSIN

CROSS SECTION B-B'

FIGURE 4

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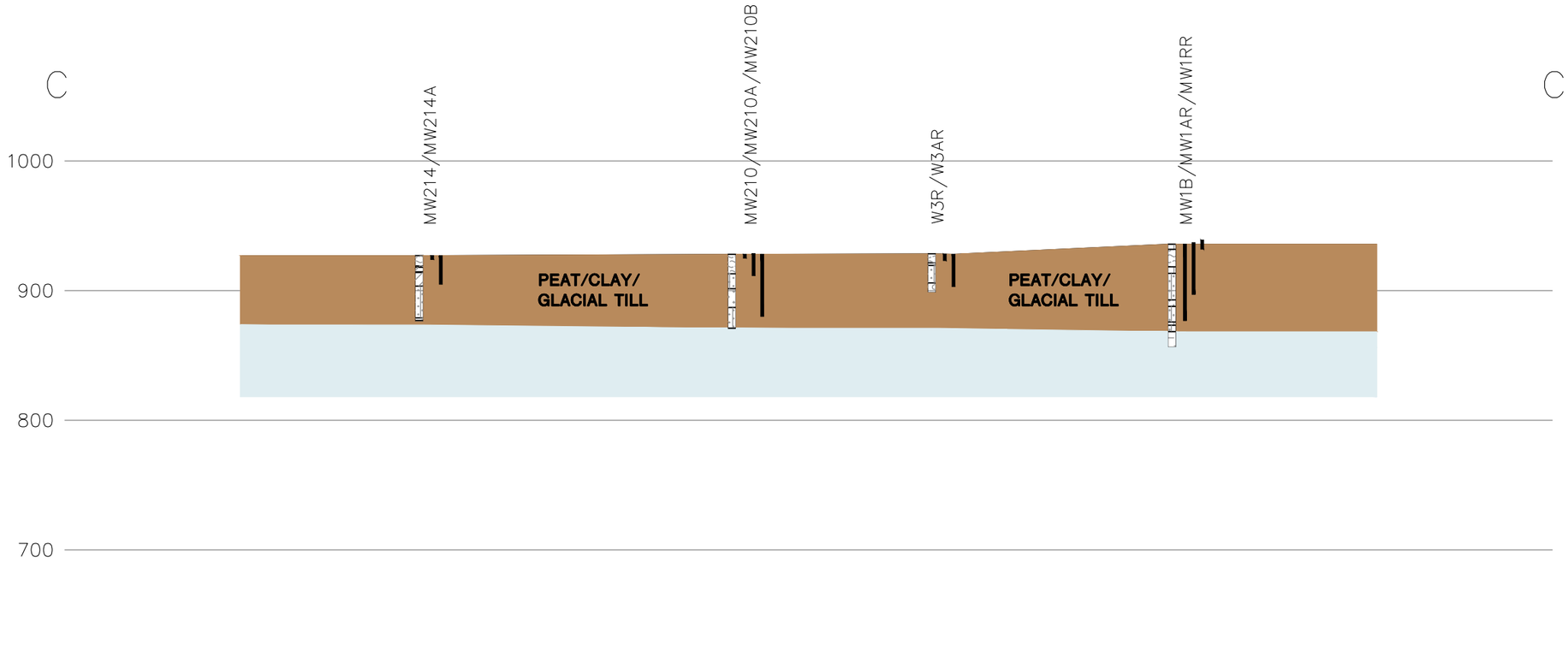
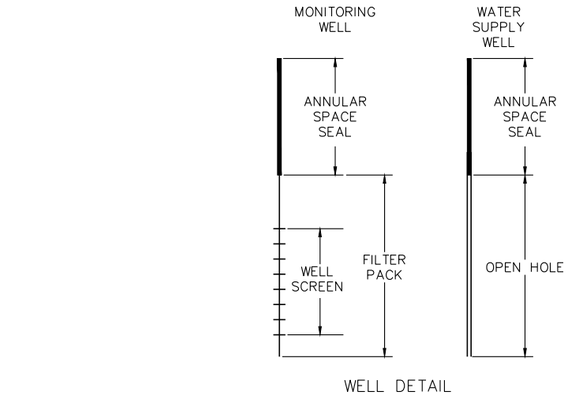




WELL DETAIL

0 150

HORIZONTAL SCALE: 1" = 150'
VERTICAL SCALE: 1" = 100'
VERTICAL EXAGGERATION = 1.5X

LEGEND

- SILTY SAND
- SHALE
- DOLOMITE
- LIMESTONE
- LEAN CLAY
- SAND, WELL GRADED
- SAND WITH GRAVEL
- SANDSTONE
- CLAYEY GRAVEL
- FILL
- SILT
- GRAVEL
- SAND, POORLY GRADED
- PEAT

PROJECT NO.	25223008.02	DRAWN BY:	BSS
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

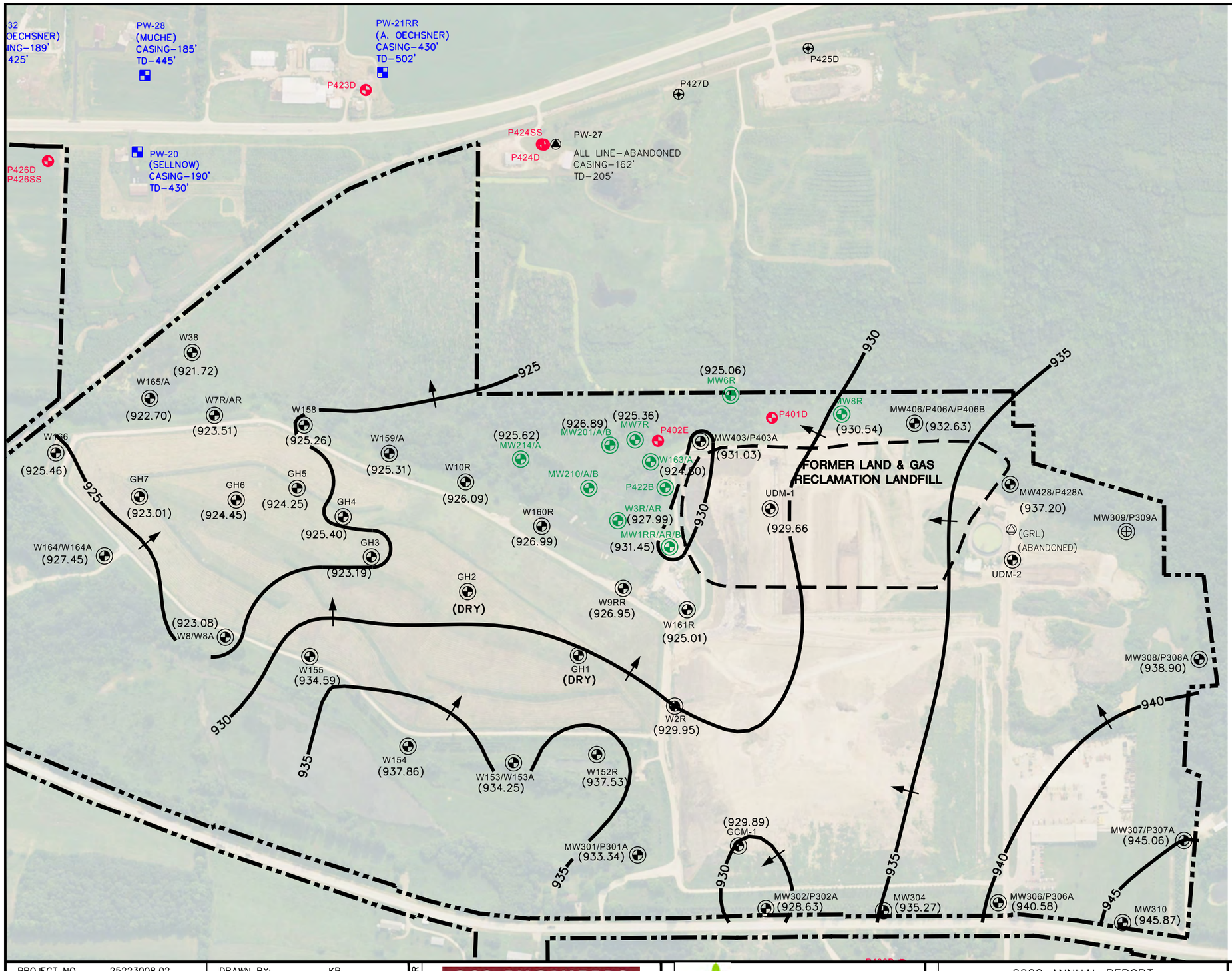
CLIENT: GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT
LAND AND GAS RECLAMATION LANDFILL
DODGE COUNTY, WISCONSIN

CROSS SECTION C-C'

FIGURE 5

I:\25223008.02\Drawings\Cross Sections.dwg, 5/25/2023 10:08:03 AM



N

500 0 500

SCALE: 1" = 500'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (LGRL MONITORING/INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST OR HORIZONTAL WELL (GRL MONITORING)
- ABANDONED SHALLOW AQUIFER MONITORING WELL/NEST OR HORIZONTAL WELL
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- (939.32) — WATER TABLE ELEVATION MEASURED OCTOBER 2022
- WATER TABLE ELEVATION CONTOUR (5' INTERVAL)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.

PROJECT NO.	25223008.02	DRAWN BY:	KP
DRAWN:	05/17/2023	CHECKED BY:	EO
REVISED:	05/22/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT LAND AND GAS RECLAMATION LANDFILL DODGE COUNTY, WISCONSIN

SHALLOW GROUNDWATER ELEVATIONS AND WATER TABLE – OCTOBER 2022

FIGURE 6

I:\25223008.02\Drawings\Shallow Wtbl.dwg, 5/25/2023 10:09:04 AM

N

800 0 800

SCALE: 1" = 800'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- (849.25) — DOLOMITE GROUNDWATER ELEVATION
- DOLOMITE GROUNDWATER ELEVATION CONTOUR (0.5' INTERVAL)
- DOLOMITE GROUNDWATER ELEVATION CONTOUR (5' INTERVAL)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.
2. GROUNDWATER ELEVATION MEASUREMENTS WERE TAKEN ON APRIL 7, 8, 28, 2022.

PROJECT NO.	25223008.02	DRAWN BY:	KP
DRAWN:	05/17/2023	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

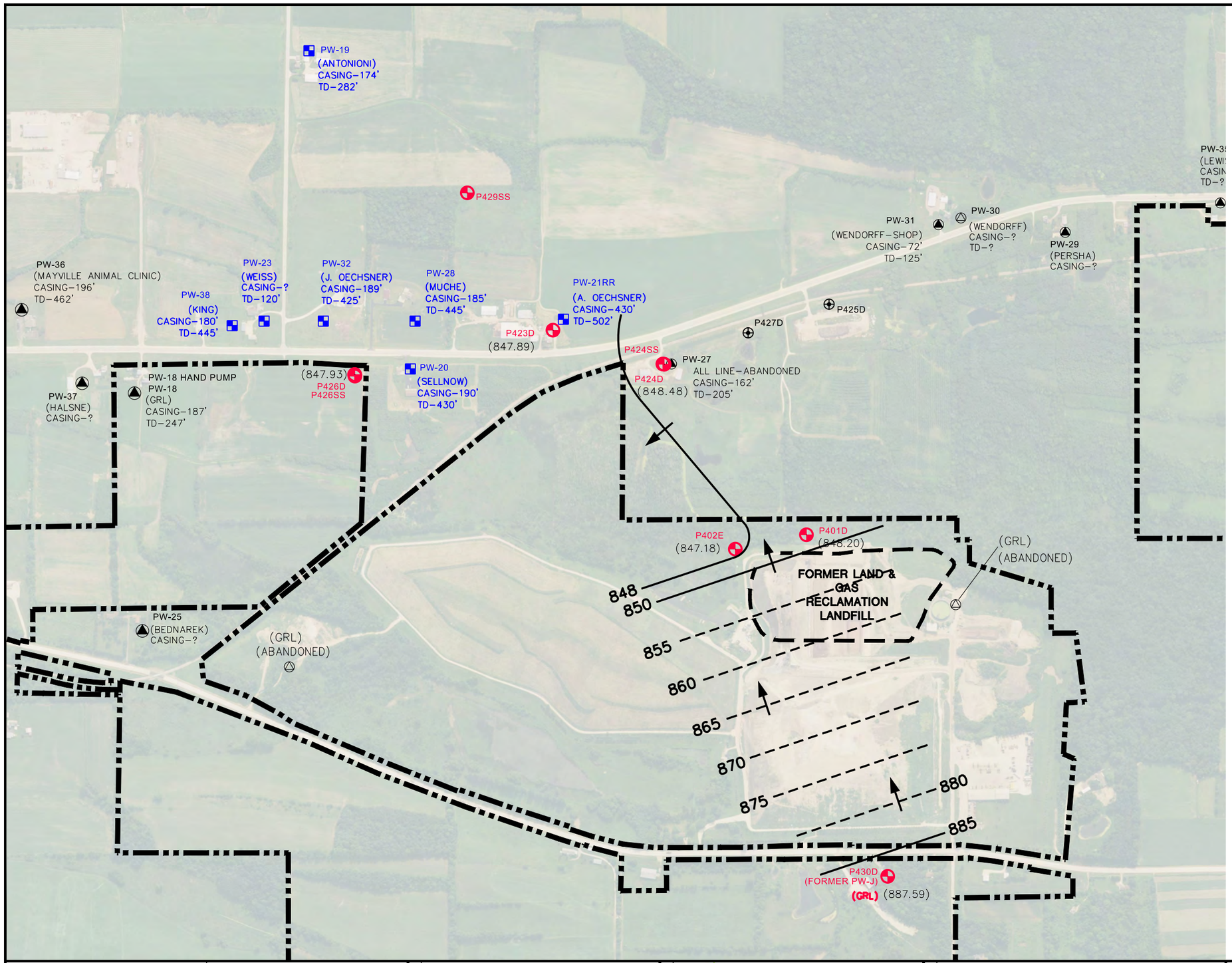
CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT LAND AND GAS RECLAMATION LANDFILL DODGE COUNTY, WISCONSIN

DOLOMITE BEDROCK GROUNDWATER ELEVATIONS AND POTENTIOMETRIC SURFACE CONTOURS – APRIL 2022

FIGURE 7

I:\25223008.02\Drawings\BEDROCK WTBL (Dolomite).dwg, 5/25/2023 10:09:59 AM



N

800 0 800

SCALE: 1" = 800'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- (849.94) — DOLOMITE GROUNDWATER ELEVATION
- DOLOMITE GROUNDWATER ELEVATION CONTOUR (0.5' INTERVAL)
- DOLOMITE GROUNDWATER ELEVATION CONTOUR (5' INTERVAL)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.
2. GROUNDWATER ELEVATION MEASUREMENTS WERE TAKEN ON OCTOBER 7 AND 30, 2022.

PROJECT NO.	25223008.02	DRAWN BY:	KP
DRAWN:	05/17/2023	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT
LAND AND GAS RECLAMATION LANDFILL
DODGE COUNTY, WISCONSIN

DOLOMITE BEDROCK GROUNDWATER ELEVATIONS AND POTENTIOMETRIC SURFACE CONTOURS – OCTOBER 2022

FIGURE 8

I:\25223008.02\Drawings\BEDROCK WTBL (Dolomite).dwg, 5/25/2023 1:40:46 PM

N

800 0 800

SCALE: 1" = 800'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- (849.25) — SANDSTONE GROUNDWATER ELEVATION
- SANDSTONE GROUNDWATER ELEVATION CONTOUR (1' INTERVAL)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.
2. GROUNDWATER ELEVATION MEASUREMENTS WERE TAKEN ON APRIL 7, 8, AND 28, 2022.

PROJECT NO.	25223008.02	DRAWN BY:	KP
DRAWN:	05/17/2023	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT, LAND AND GAS RECLAMATION LANDFILL, DODGE COUNTY, WISCONSIN

SANDSTONE BEDROCK GROUNDWATER ELEVATIONS AND POTENTIOMETRIC SURFACE CONTOURS – APRIL 2022

FIGURE 9

I:\25223008.02\Drawings\BEDROCK WTBL (Sandstone).dwg, 5/25/2023 10:15:19 AM

PW-19
(ANTONIONI)
CASING-174'
TD-282'

(836.39)
P429SS

838
840
842
844
846

PW-36
(MAYVILLE ANIMAL CLINIC)
CASING-196'
TD-462'

PW-38
(KING)
CASING-180'
TD-445'

PW-23
(WEISS)
CASING-?
TD-120'

PW-32
(J. OECHSNER)
CASING-189'
TD-425'

PW-28
(MUCHE)
CASING-185'
TD-445'

PW-21RR
(A. OECHSNER)
CASING-430'
TD-502'

P423D

(847.78)
P424SS

P424D

PW-27
ALL LINE-ABANDONED
CASING-162'
TD-205'

P427D

P425D

PW-31
(WENDORFF-SHOP)
CASING-72'
TD-125'

PW-30
(WENDORFF)
CASING-?
TD-?

PW-29
(PERSHA)
CASING-?

PW-3
(LEWI
CASIN
TD-?

PW-37
(HALSNE)
CASING-?

PW-18 HAND PUMP
PW-18
(GRL)
CASING-187'
TD-247'

P426D
P426SS
(845.15)

PW-20
(SELLNOW)
CASING-190'
TD-430'

P402E
P401D
W163/A

FORMER LAND & GAS RECLAMATION LANDFILL

(GRL)
(ABANDONED)

PW-25
(BEDNAREK)
CASING-?

(GRL)
(ABANDONED)

P430D
(FORMER PW-J)
(GRL)

N

800 0 800

SCALE: 1" = 800'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- (849.94) — SANDSTONE GROUNDWATER ELEVATION
- SANDSTONE GROUNDWATER ELEVATION CONTOUR (2' INTERVAL)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.
2. GROUNDWATER ELEVATION MEASUREMENTS WERE TAKEN ON OCTOBER 7 AND 30, 2022.

PROJECT NO.	25223008.02	DRAWN BY:	KP
DRAWN:	05/17/2023	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

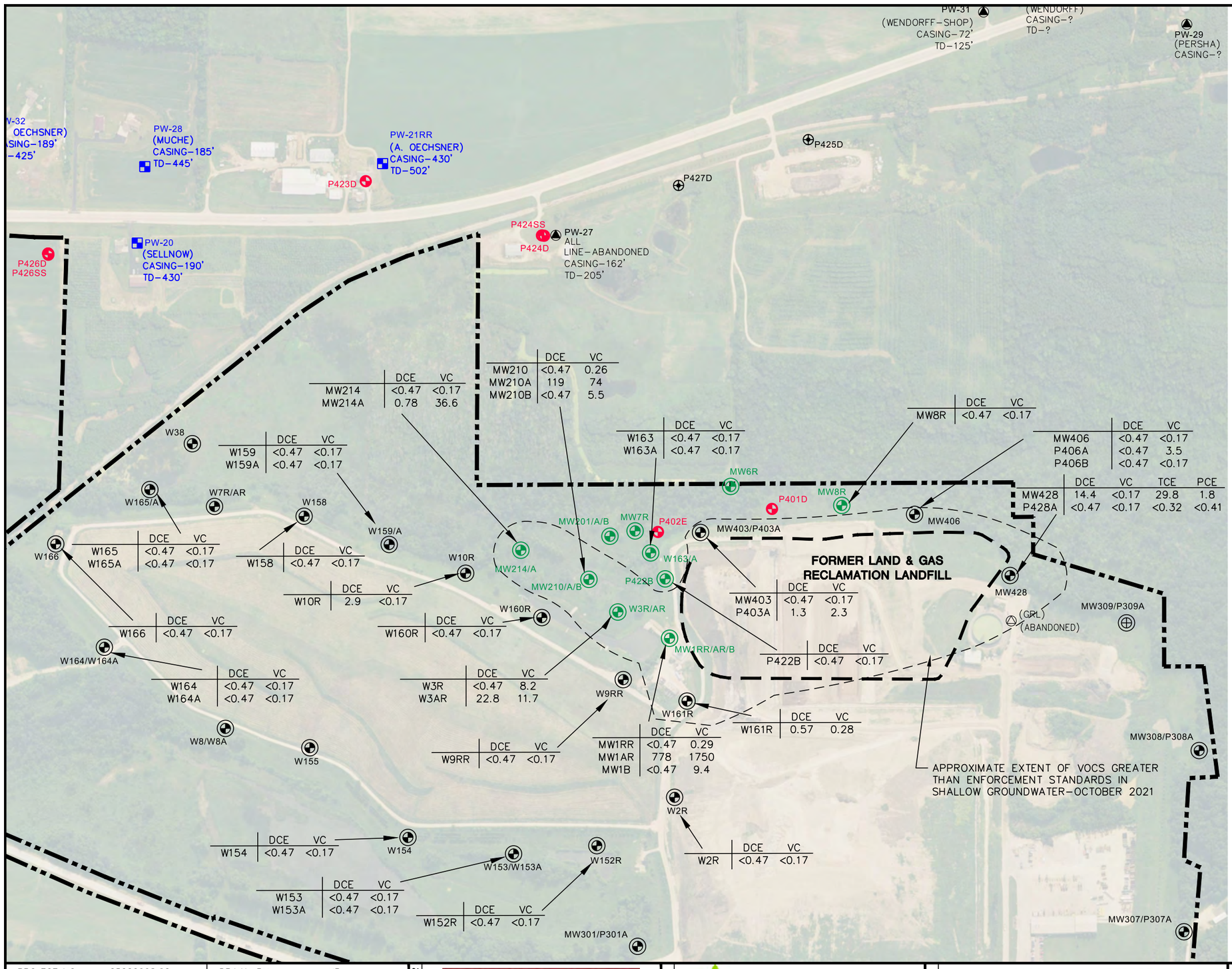
CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT
LAND AND GAS RECLAMATION LANDFILL
DODGE COUNTY, WISCONSIN

SANDSTONE BEDROCK GROUNDWATER ELEVATIONS AND POTENTIOMETRIC SURFACE CONTOURS – OCTOBER 2022

FIGURE 10

I:\25223008.02\Drawings\BEDROCK WTBL (Sandstone).dwg, 5/25/2023 11:09:46 AM



N

500 0 500

SCALE: 1" = 500'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (LGRL MONITORING/INVESTIGATION)
- SHALLOW AQUIFER MONITORING WELL/NEST (GRL MONITORING)
- ABANDONED SHALLOW AQUIFER MONITORING WELL/NEST
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- DCE CIS-1,2-DICHLOROETHYLENE (µg/L) (PAL=7; ES=70)
- VC VINYL CHLORIDE (µg/L) (PAL=0.02; ES=0.2)
- TCE TRICHLOROETHYLENE (µg/L) (PAL=0.5; ES=5)
- PCE TETRACHLOROETHYLENE (µg/L) (PAL=0.5; ES=5)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.
2. VOC RESULTS ARE NOT SHOWN FOR ALL WELLS. VOC RESULTS SHOWN ARE FROM OCTOBER 2022 SAMPLING EVENT.

PROJECT NO.	25222008.02	DRAWN BY:	KP
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	04/22/2022	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

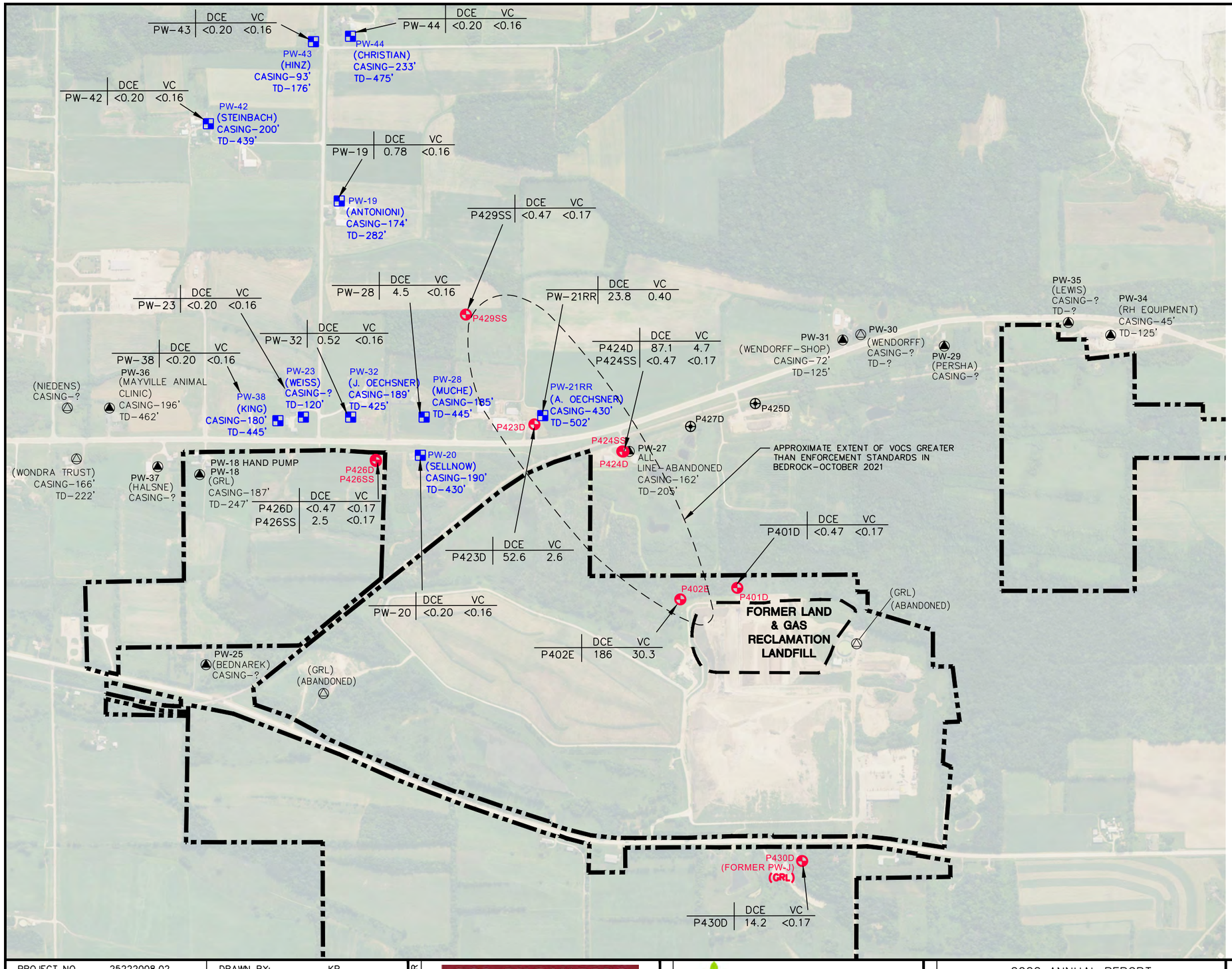
CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

SITE: 2022 ANNUAL REPORT
LAND AND GAS RECLAMATION LANDFILL
DODGE COUNTY, WISCONSIN

VOCS IN SHALLOW GROUNDWATER
OCTOBER 2022

FIGURE 11

I:\25223008.02\Drawings\RSLTS_VOC Shallow GW.dwg, 5/25/2023 10:16:50 AM



N

1,000 0 1,000

SCALE: 1" = 1,000'

LEGEND

- GLACIER RIDGE LANDFILL (GRL) PROPERTY LINE
- FORMER LGRL LIMITS OF WASTE
- APPROXIMATE PRIVATE WELL LOCATION, IN CURRENT MONITORING PROGRAM
- APPROXIMATE PRIVATE WELL LOCATION, HAS BEEN SAMPLED PREVIOUSLY
- APPROXIMATE PRIVATE WELL LOCATION, NOT SAMPLED
- PW-30 — WELL NAME ASSIGNED FOR SAMPLING PROGRAM
- (PERSHA) — WELL OWNER
- BEDROCK MONITORING WELL (LGRL INVESTIGATION)
- INVESTIGATION PHASE 2 BOREHOLE (ABANDONED)
- DCE — CIS-1,2-DICHLOROETHYLENE (µg/L) (PAL=7; ES=70)
- VC — VINYL CHLORIDE (µg/L) (PAL=0.02; ES=0.2)

NOTES:

1. SEE FIGURE 1, MONITORING WELL AND PRIVATE WELL LOCATIONS, FOR BASE MAP NOTES.

PROJECT NO.	25222008.02	DRAWN BY:	KP
DRAWN:	04/19/2021	CHECKED BY:	EO
REVISED:	05/17/2023	APPROVED BY:	EO

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

CLIENT: GFL — GLACIER RIDGE LANDFILL, LLC.

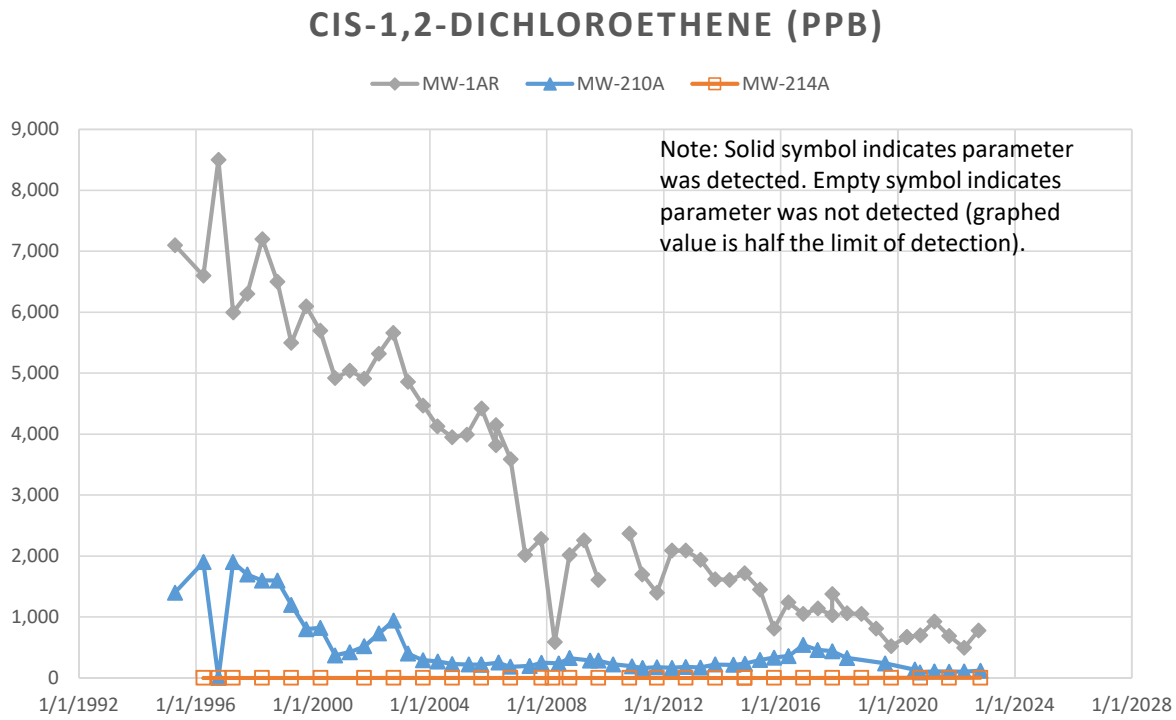
SITE: 2022 ANNUAL REPORT LAND AND GAS RECLAMATION LANDFILL DODGE COUNTY, WISCONSIN

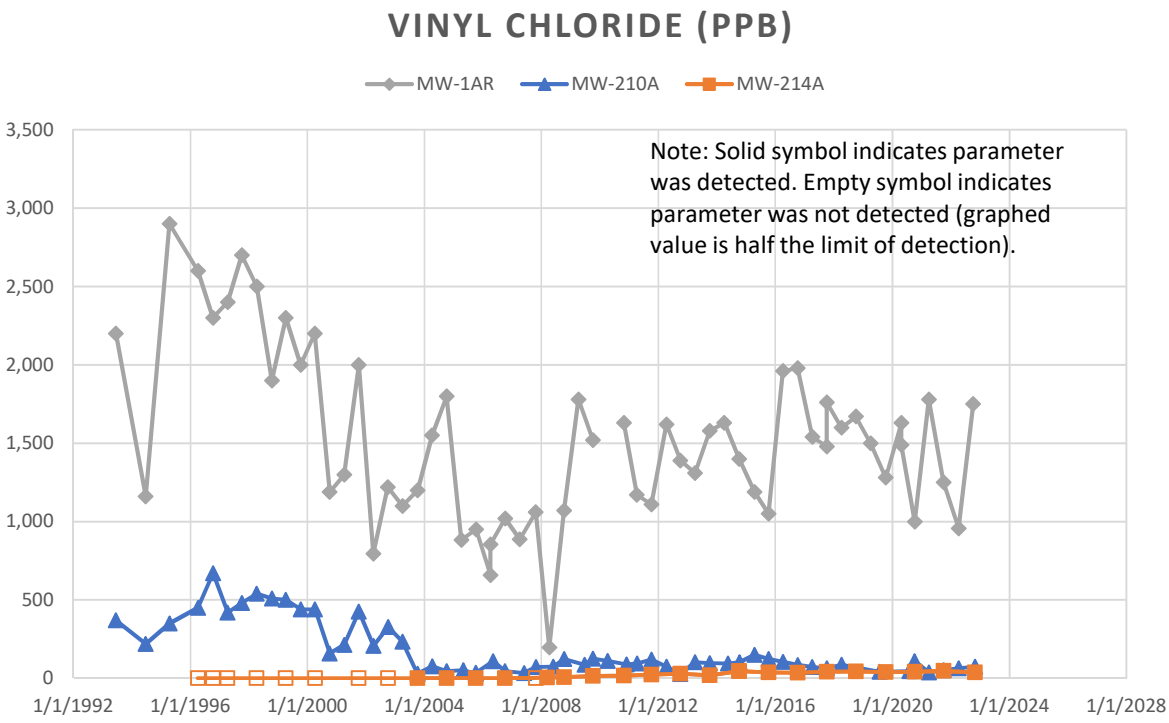
VOCS IN BEDROCK GROUNDWATER OCTOBER 2022

FIGURE 12

I:\25223008.02\Drawings\RSLTS_VOC Bedrock.dwg, 5/25/2023 10:20:15 AM

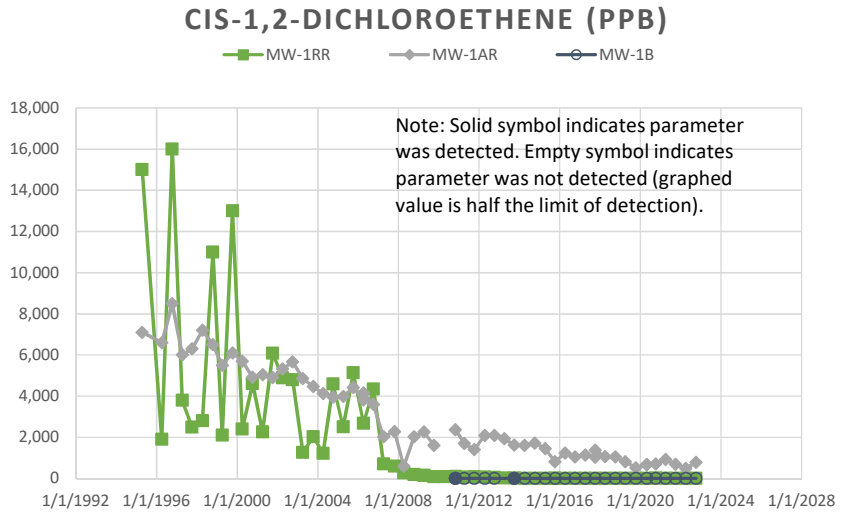
Figure G1. Time Series Graphs for Mid-Depth Wells Along the Shallow Plume (MW-1AR, MW-210A, MW-214A)

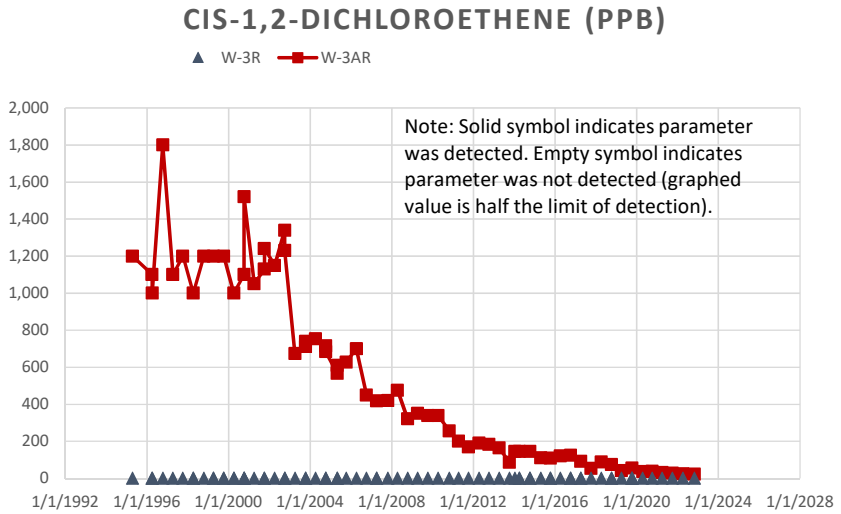


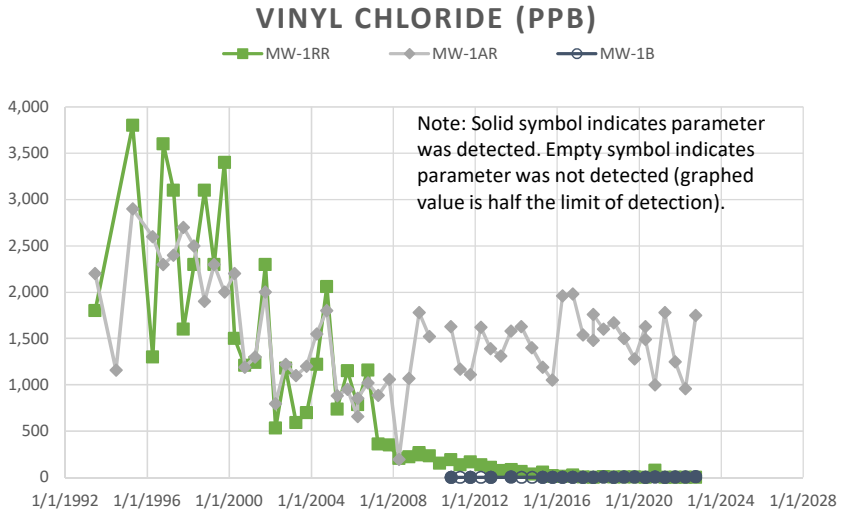


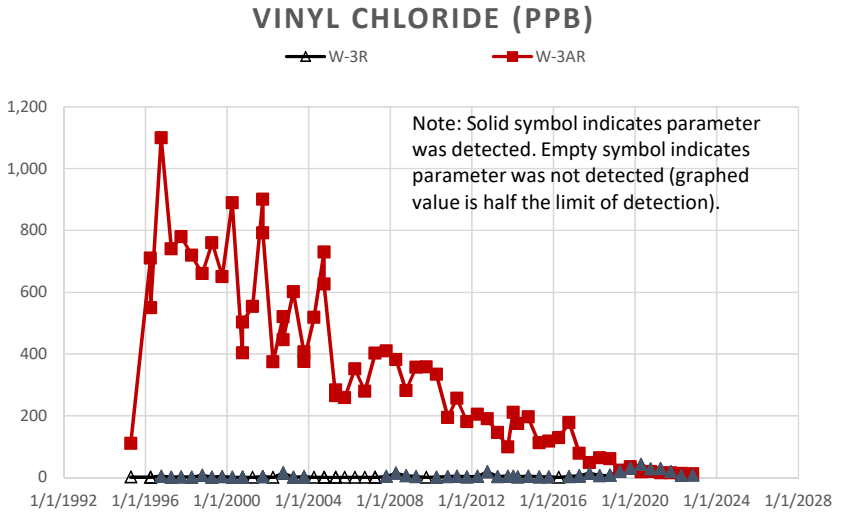
Note: When comparing between graphs, be aware that vertical scales vary.

Figure G2. Time Series Graphs for Source Area Well Nests (MW-1 and W-3)



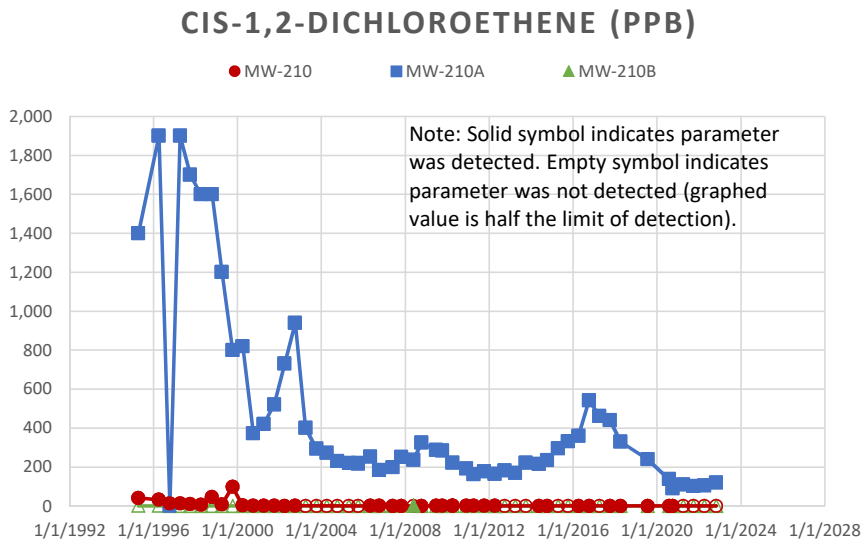


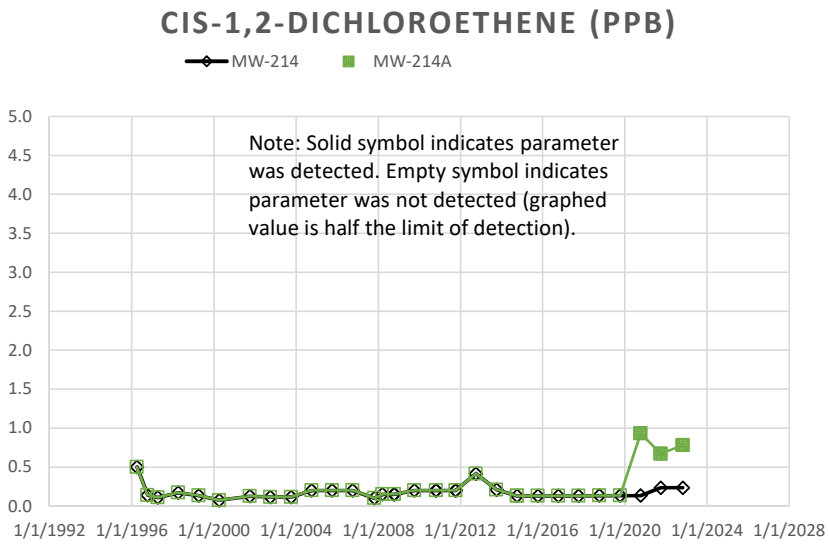


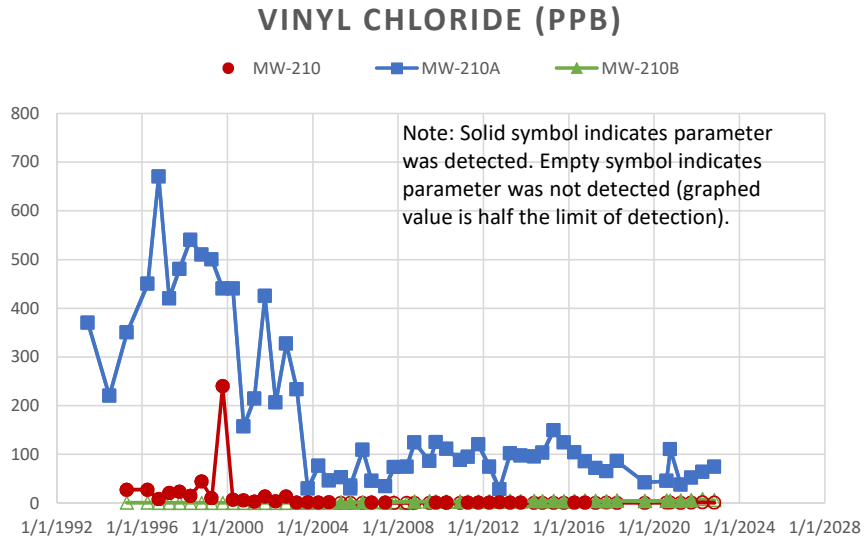


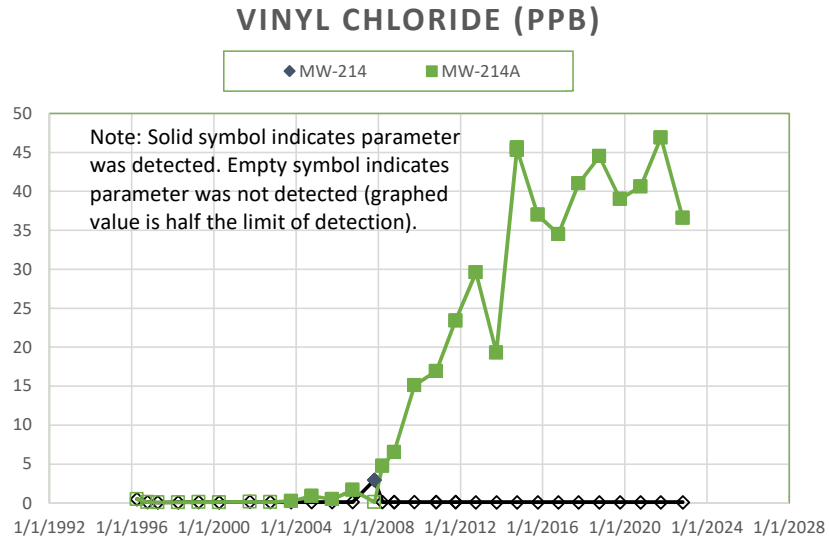
Note: When comparing between graphs, be aware that vertical scales vary.

Figure G3. Time Series Graphs for Downgradient Well Nests (MW-210 and MW-214)









Note: When comparing between graphs, be aware that vertical scales vary.

Figure G4. Time Series Graph for cis-1,2-DCE in Bedrock Monitoring Wells

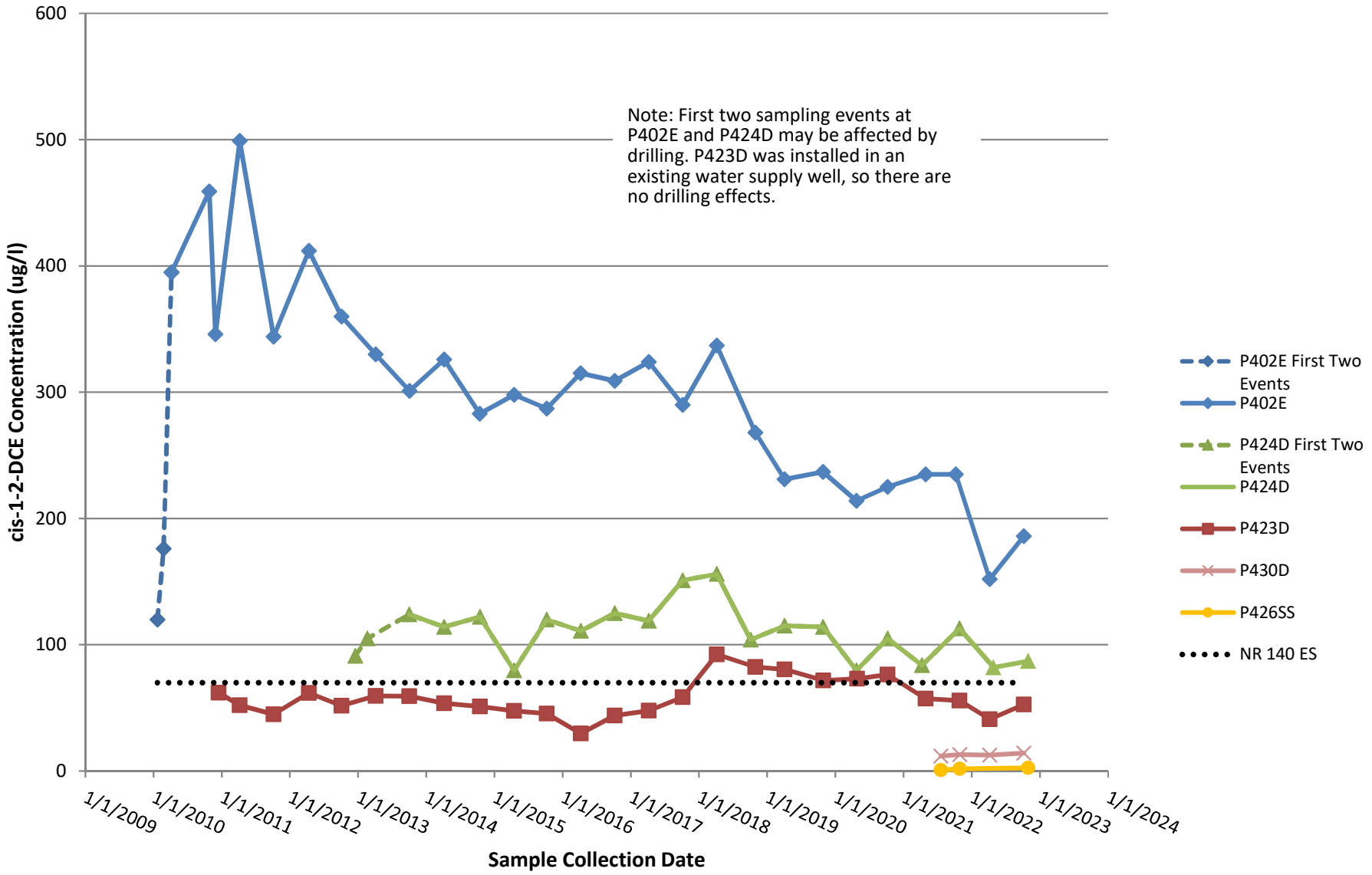


Figure G5. Time Series Graph for Vinyl Chloride in Bedrock Monitoring Wells

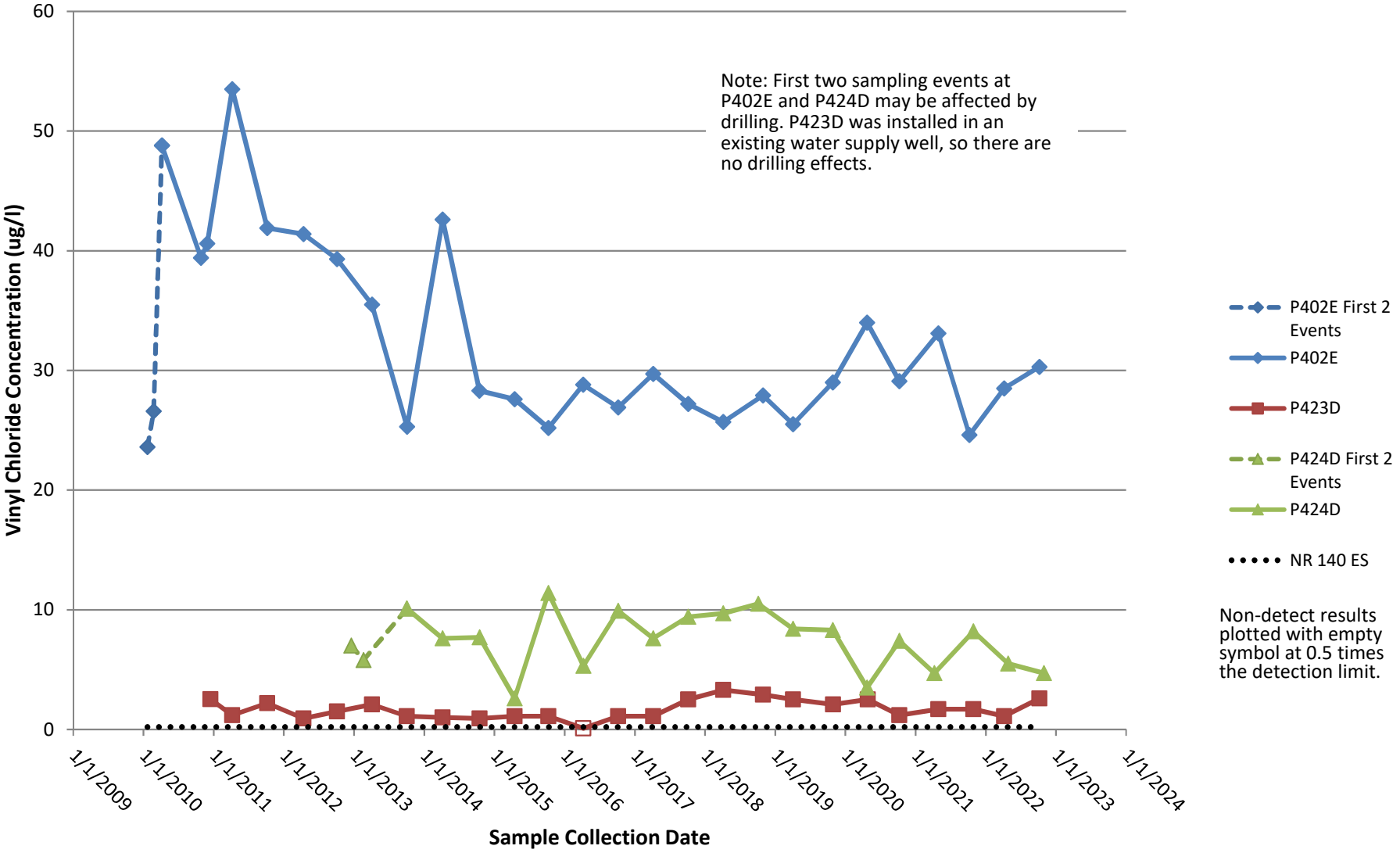


Figure G6. Time Series Graph for Cis-1,2-Dichloroethylene in Water Supply Wells Downgradient from LGRL

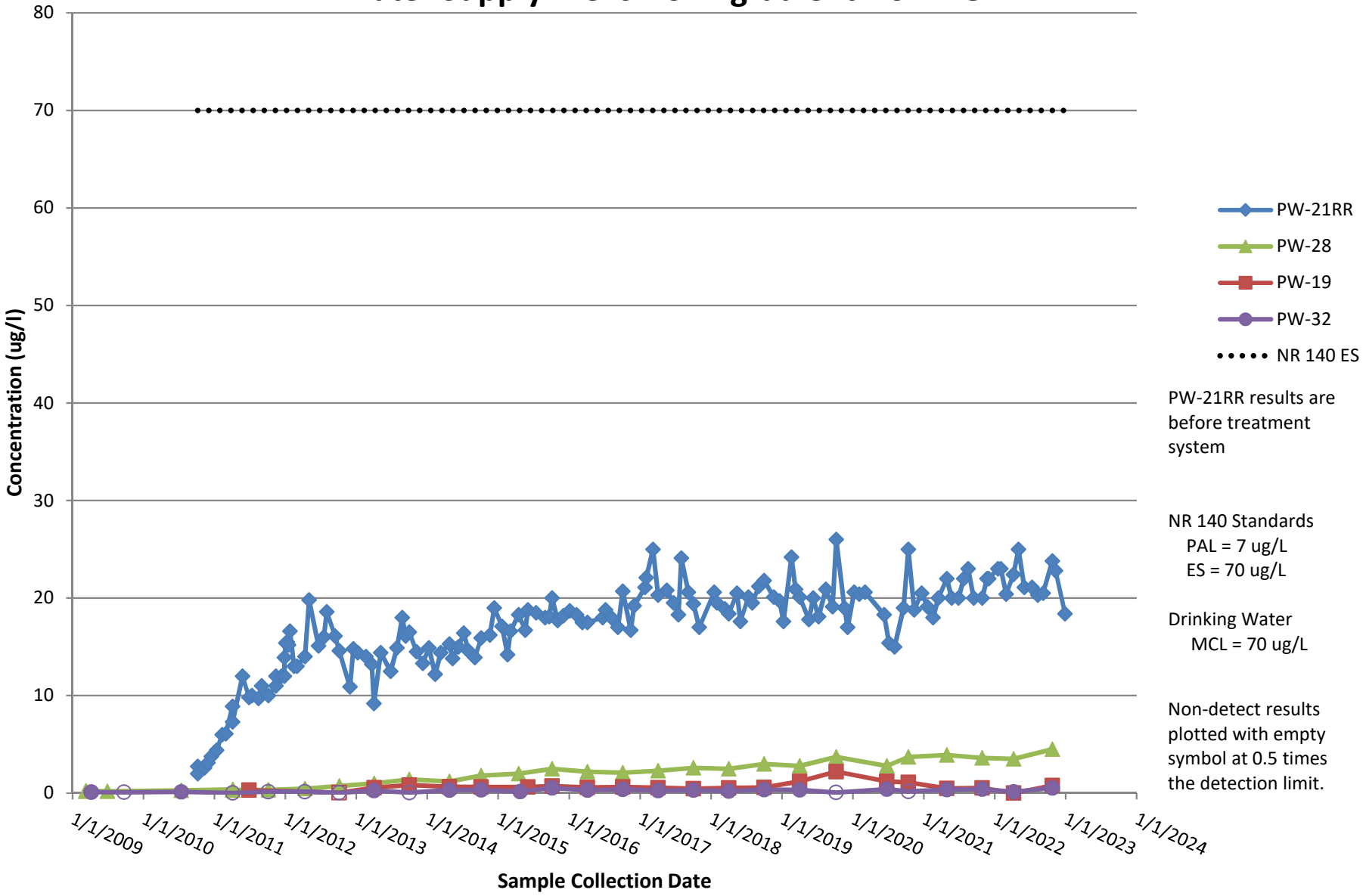
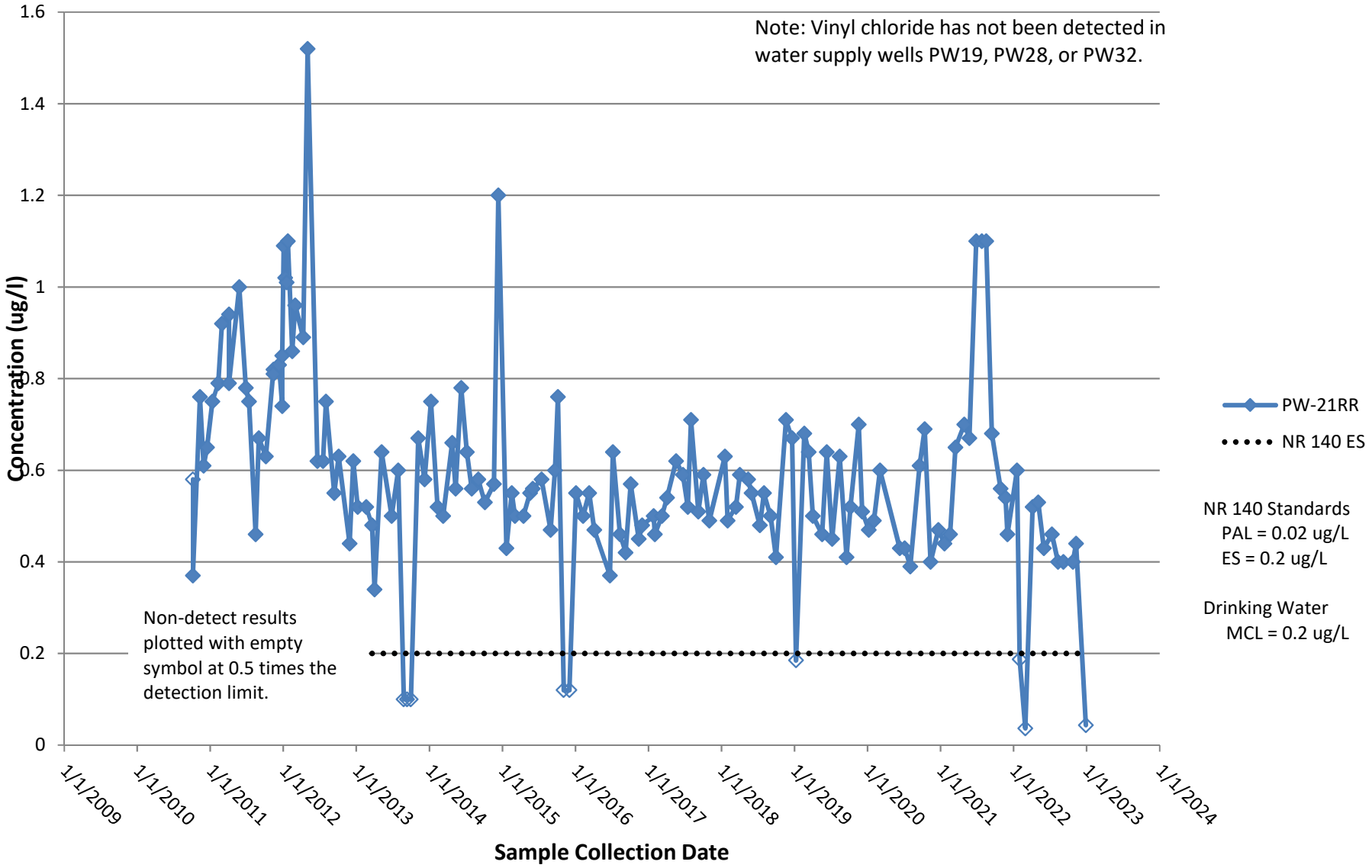


Figure G7. Time Series Graph for Vinyl Chloride at PW-21RR Samples (Before Treatment System)



Appendix D - Tables

1 Water Level Summary – Bedrock Wells
2 LGRL VOC Investigation Bedrock Well Sample Results – Through October 2022
3 LGRL VOC Investigation Deep Unconsolidated Well Sample Results - Through October 2022
4 LGRL VOC Investigation Water Supply Well Sample Results – Through December 2022

Table 1. Water Level Summary - Bedrock Wells
Land and Gas Reclamation Landfill / File No. 25223008.02

Raw Data	Depth to Water in feet below top of well casing											
	P401D	P402E	P423D	Office Well	PW18	PW27	P424D	P424SS	P426D	P426SS	P429SS	P430D
Measurement Date												
March 12, 2010	76.87	73.58		53.82	108.25	91.44						
April 8, 2011	76.96	73.67	95.30									
October 6-7, 2011	81.26	78.00	100.50									
April 13, 2012	77.60	74.40	96.00									
October 3-5, 2012	81.70	78.43	99.72									
December 17, 2012	82.16	78.95	100.50			96.90	93.40	92.90				
February 20, 2013	82.11	78.88	99.55			96.20	92.75	92.10				
April 1, 2013	81.20	77.70	98.60				91.75	91.20				
September 30, 2013	83.33	80.09	101.30				94.80	94.22				
April 7, 2014	80.00	76.80	97.87				91.04	90.65				
October 6, 2014	80.35	77.15	98.75				91.91	91.55				
April 17, 2015	78.75	75.45	96.88				90.10	89.72				
May 20, 2015	78.93	75.72	97.27				90.42	90.06	104.15			
June 3, 2015	78.85	75.65	97.00				90.14	89.80	103.65			
October 9, 2015	83.10	79.90	100.80				93.80	93.50	107.50			
April 4, 2016	77.92	74.76	95.65				88.90	89.40	102.35			
October 7, 2016	80.35	77.5	98.60				91.6	91.3	105.3			
April 7, 2017	75.80	72.52	94.30				87.33	87.10	101.00			
October 6, 2017	79.56	76.35	98.12				91.10	90.85	103.82			
November 30, 2017											156.90	
December 28, 2017	77.65											
February 1, 2018											155.80	
April 5-6, 2018	78.60	75.50	96.90				89.90	89.62	103.65			
April 25, 2018											157.00	
October 4, 2018							90.38	90.20				
October 30, 2018	79.70	76.30	95.40						102.20			
January 9, 2019											158.20	
April 1, 2019	75.50	73.10	94.55				87.20	87.05	99.55		150.35	
October 28-29, 2019	76.70	73.60	94.95				88.20	88.05	101.75		152.50	
April 17, 24, and 27, 2020	73.25	70.84	91.61				84.70	84.50	98.50		149.15	
October 8-9, 2020	78.82	75.72	97.22				90.33	90.20	104.65		154.80	
April 9 and 29, 2021	76.88	73.75	94.25				87.30	87.20	101.00		153.80	
July 20, 2021	82.36	79.25	100.93				93.95	93.88	107.55	109.00	155.10	67.80
October 4, 2021	83.05	79.85	101.31				94.40	94.10	108.00	109.85	158.40	68.95
April 7-8 and 28, 2022	80.35	77.15	98.65				91.72	91.60	105.30	106.90	154.25	68.00
October 7 and 30, 2022	84.10	81.90	101.10				94.12	94.10	107.72	109.50	162.85	69.25

Table 1. Water Level Summary - Bedrock Wells
Land and Gas Reclamation Landfill / File No. 25223008.02

Ground Water Elevation in feet above mean sea level (amsl)												
Well Number	**P401D**	**P402E**	**P423D**	**Office Well**	**PW18**	**PW27**	**P424D**	**P424SS**	**P426D**	**P426SS**	**P429SS**	**P430D**
Top of Casing Elevation (feet amsl)	932.30	929.08	948.99	958.14	947.56	946.15	942.60	941.88	955.65	954.65	999.24	956.84
Screen/Open Hole Length (ft)	15.00	20.00	18.00	46.00	60.00	43.00	20.00	20.00	20.00	20.00	15.00	10.00
Total Depth (ft from top of casing)	147.40	177.98	225.01	202.00	247.00	205.00	206.10	411.45	221.80	434.50	460.00	218.50
Top of Screen / Open Hole Elevation (ft)	799.90	771.10	205.01	802.14	760.56	784.15	756.50	550.43	753.85	540.15	554.24	748.34
Measurement Date												
March 12, 2010	855.43	855.50		904.32	839.31	854.71						
April 8, 2011	855.34	855.41	853.69									
October 6-7, 2011	851.04	851.08	848.49									
April 13, 2012	854.70	854.68	852.99									
October 3-5, 2012	850.60	850.65	849.27									
December 17, 2012	850.14	850.13	848.49			849.25	849.20	848.98				
February 20, 2013	850.19	850.20	849.44			849.95	849.85	849.78				
April 1, 2013	851.10	851.38	850.39				850.85	850.68				
September 30, 2013	848.97	848.99	847.69				847.80	847.66				
April 7, 2014	852.30	852.28	851.12				851.56	851.23				
October 6, 2014	851.95	851.93	850.24				850.69	850.33				
April 17, 2015	853.55	853.63	852.11				852.50	852.16				
May 20, 2015	853.37	853.36	851.72				852.18	851.82	851.50			
June 3, 2015	853.45	853.43	851.99				852.46	852.08	852.00			
October 9, 2015	849.20	849.18	848.19				848.80	848.38	848.15			
April 4, 2016	854.38	854.32	853.34				853.70	852.48	853.30			
October 7, 2016	851.95	851.58	850.39				851.00	850.58	850.35			
April 7, 2017	856.50	856.56	854.69				855.27	854.78	854.65			
October 6, 2017	852.74	852.73	850.87				851.50	851.03	851.83			
November 30, 2017											842.34	
December 28, 2017	854.65											
February 1, 2018											843.44	
April 5-6, 2018	853.70	853.58	852.09				852.70	852.26	852.00			
April 25, 2018											842.24	
October 4, 2018							852.22	851.68			Well	
October 30, 2018	852.60	852.78	853.59						853.45		Inaccessible	
January 9, 2019											841.04	
April 1, 2019	856.80	855.98	854.44				855.40	854.83	856.10		848.89	
October 28-29, 2019	855.60	855.48	854.04				854.40	853.83	853.90		846.74	
April 17, 24, and 27, 2020	859.05	858.24	857.38				857.90	857.38	857.15		850.09	
October 8-9, 2020	853.48	853.36	851.77				852.27	851.68	851.00		844.44	
April 9 and 29, 2021	855.42	855.33	854.74				855.30	854.68	854.65		845.44	
July 20, 2021	849.94	849.83	848.06				848.65	848.00	848.10	845.65	844.14	889.04
October 4, 2021	849.25	849.23	847.68				848.20	847.78	847.65	844.80	840.84	887.89
April 7-8 and 28, 2022	851.95	851.93	850.34				850.88	850.28	850.35	847.75	844.99	888.84
October 7 and 30, 2022	848.20	847.18	847.89				848.48	847.78	847.93	845.15	836.39	887.59
Bottom of Well Elevation (ft)	784.90	751.10	723.98	756.14	700.56	741.15	736.50	530.43	733.85	520.15	539.24	738.34

Created by: EO Date: 3/16/2010
Last revision by: RM Date: 4/21/2023
Checked by: BAS Date: 4/21/2023
Proj Mgr QA/QC: EO Date: 5/23/2023

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
P-401D	10/7/2009	Siemens	**6.37**	**452**	**194**	<0.70	<0.40	<0.40	<0.40	<0.4	<0.50	<0.30	<0.4	<0.2	ND
	4/6/2010	Siemens	**12.3**	**400**	**278**	<0.70	<0.40	<0.40	<0.40	<0.4	<0.50	<0.10	<0.4	<0.2	o-Xylene **0.22** J
	10/27/2010	Siemens	**10.4**	**345**	**277**	<0.70	<0.40	<0.40	<0.40	<0.4	<0.50	<0.30	<0.4	<0.2	ND
	11/29/2010	Siemens	**11.6**	**340**	--	<0.70	<0.40	<0.30	<0.40	<0.4	<0.50	<0.30	<0.4	<0.2	ND
	4/8/2011	Siemens	**9.4**	**356**	**281**	<0.70	<0.40	<0.40	<0.40	<0.4	<0.50	<0.30	<0.4	<0.2	cis-1,3-Dichloropropylene **0.25** J
	10/6/2011	Siemens	**9.36**	**332**	**273**	<0.70	<0.40	<0.40	<0.40	<0.4	<0.50	<0.30	<0.4	<0.2	Carbon Disulfide **28.8**
	4/13/2012	Siemens	**9.44**	**365**	**226**	<0.70	<0.40	<0.40	<0.40	<0.4	<0.50	<0.30	<0.4	<0.2	ND
	10/4/2012	Pace	**9.4**	**359**	**219**	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	ND
	10/4/2013	Pace	**12.6**	**360**	**251**	<0.44	<0.39	<0.28	<0.43	<0.42	<0.37	<0.47	<0.36	<0.18	ND
	4/7/2014	Pace	**10.9**	**362**	**255**	<0.37	<0.50	<0.16	<0.41	<0.26	<0.24	<0.50	<0.33	<0.18	ND
	10/17/2014	Pace	**12.4**	**340**	**280**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/17/2015	Pace	**12.0**	**348**	**251**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/9/2015	Pace	**12.6**	**350**	**289**	<0.37	<0.50	<0.24	<0.41	**11.0**	**0.43** J	<0.50	**0.41** J	<0.18	Acetone **21.2**
	4/7/2016	Pace	**12.5**	**344**	**273**	<0.37	<0.50	<0.24	<0.41	**1.7**	<0.26	<0.50	<0.33	<0.18	Acetone **3.0** J
	12/28/2017	Pace	**16.4**	**340**	**323**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/6/2018	Pace	**17.2**	**348**	**357**	<0.37 L1	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Acetone **3.0** J1
	10/30/2018	Pace	**16.8**	**332**	**322**	<1.3	<2.2	<0.27	<0.24	**0.33** J1	<1.1	<0.33	<0.26	<0.17	Acetone **10.6** J1
	10/30/2018 (DUP)	Pace	**16.9**	**336**	**309**	<1.3	<2.2	<0.27	<0.24	**0.61** J1	<1.1	<0.33	<0.26	<0.17	Acetone **7.3** J1
	4/4/2019	Pace	**16.8**	**333**	**304**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	10/28/2019	Pace	**15.7**	**321**	**320**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone **9.2** J1
	4/24/2020	Pace	**17.1**	**341**	**273**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	
	10/8/2020	Pace	**17.8**	**342**	**339**	<1.3	<2.2	<0.27	<0.24	**1.8**	<0.46	<0.33	<0.26	<0.17	Acetone **6.9** J1
	4/29/2021	Pace	**16.5**	**351**	**285**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/8/2021	Pace	**18.1**	**349**	**323**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	4/7/2022	Pace	**18.6**	**376**	**295**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/8/2022	Pace	**19.2**	**344**	**306**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
P-402D (Abandoned)	10/7/2009	Siemens	**60.9**	**381**	**1,050**	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	Toluene	**0.43** J
P-402E	1/22/2010	Siemens	**47.3**	**439**	**516**	**2.6** CSH	**0.53** J	**2.9**	**0.5** J	**120**	**4.18**	<0.30	**2.71**	**23.6**		
	2/24/2010	Siemens	**72.4**	484	--	<3.50	<2.00	<2.00	<2.00	**176**	**7.38**	<1.50	**2.66**	**26.6**	ND	
	2/24/2010	TA	--	--	--	**3.9**	<0.30	**1.9**	**0.61**	**200**	**8**	<0.50	**1.9**	**35**		
	4/7/2010	Siemens	**68.5**	**414**	**486**	**7.25** J	<4.0	<4.0	<4.0	**395**	**12.4** J	<3.0	**4.84** J	**48.8**	ND	
	10/27/2010	Siemens	**78.4**	**403**	**505**	<7.0	<4.0	<4.0	<4.0	**459**	**14.8** J	<3.0	**11.1** J	**39.4**	Methylene Chloride	**8.47** J
	11/29/2010	Siemens	**83.6**	**410**	--	<7.0	<4.0	<4.0	<4.0	**346**	**10.9** J	<3.0	**9.16** J	**40.6**	ND	
	4/8/2011	Siemens	**87.7**	**404**	**483**	**7.64**	<0.40	**1.41**	**1.65**	**499**	**18.8**	<0.30	**15.7**	**53.5**	Tetrahydrofuran	**4.95** J
	10/7/2011	Siemens	**73**	**392**	**502**	**5.87**	<0.40	**1.47**	**1.23** J	**344**	**11.8**	<0.30	**13.6**	**41.9**	Carbon Disulfide	**3.30** J
															Tetrahydrofuran	**2.77 J**
	4/13/2012	Siemens	**75.9**	**412**	**496**	<7	<4	<4	<4	**412**	**11.6** J	<3	**11.5 J**	**41.4**	ND	
	10/4/2012	Pace	**68.8**	**344**	**466**	**5.0**	<0.24	**1.3**	**1.2**	**360**	**13.0**	<0.45	**12.5**	**39.3**	Tetrahydrofuran	**2.7** J
	4/5/2013	Pace	**60.2**	**397**	**566**	**5.8**	<0.96	<3.0	<2.3	**330**	**11.2**	<1.8	**10.2**	**35.5**	ND	
	10/4/2013	Pace	**61.6**	**397**	**456**	**4.5**	<0.78	**1.3** J	<0.85	**301**	**20.5**	<0.94	**8.3**	**25.3**	ND	
	4/7/2014	Pace	**61.5**	**399**	**470**	**8.0**	<2.0	**1.2** J	<1.6	**326**	**12.0**	<2.0	**8.3**	**42.6**	ND	
	10/15/2014	Pace	**61.7**	**373**	**453**	**5.0**	<2.5	<1.2	<2.1	**283**	**17.9**	<2.5	**6.5**	**28.3**	ND	
	4/17/2015	Pace	**62.8**	**383**	**450**	**4.8**	<1.2	**0.82** J	<1.0	**298**	**8.5**	<5.1	**5.5**	**27.6**	ND	
	10/9/2015	Pace	**64.5**	**389**	**465**	**5.2**	<1.2	<0.60	<1.0	**287**	**8.4**	<1.2	**4.8**	**25.2**	Acetone	**19.6** J
	4/7/2016	Pace	**63.5**	**364**	**450**	**7.9**	<1.2	**1.1** J	<1.0	**315**	**20.3**	<1.2	**4.4**	**28.8**	ND	
	10/7/2016	Pace	**56.8**	**376**	**475**	**7.4**	<2.0	<0.97	<1.6	**309**	**9.4**	<2.0	**3.8** J	**26.9**	ND	
	4/7/2017	Pace	**65.3**	**392**	**442**	**7.1**	<1.2	**1.1** J	<1.0	**324**	**14.3**	<1.2	**3.3**	**29.7**	ND	
	10/6/2017	Pace	**58.4**	**379**	**452**	**5.2**	<1.2	0.78 J	1.5 J	**290**	**11.5**	<1.2	**3.5**	**27.2**	ND	
	4/6/2018	Pace	**54.9**	**388** M0	**478**	<0.94 L1	<1.2	**1.2** J1	<1.0	**337**	<0.64	<1.2	**2.4** J1	**25.7**	ND	
	4/6/2018 (DUP)	Pace	**55.3**	**366**	**482**	**3.1** L1	<0.50	**1.2**	**1.1**	**324**	**4.5**	<0.50	**2.5**	**27.2**	Acetone	**7.2** J1
															Tetrahydrofuran	3.2 J1
	10/30/2018	Pace	**53.5**	**377**	**436**	**4.7** J1	<5.5	**0.81** J1	<0.61	**268**	**8.9** J1	<0.82	**2.1** J1	**27.9**	ND	

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Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
P-402E	4/4/2019	Pace	**53.3**	**362**	**445**	**4.6** J1	<5.5	**0.94** J1	<0.61	**231**	**7.2** J1	**1.5** J1	**1.7** J1	**25.5**	ND
(cont.)	10/28/2019	Pace	**50.3**	**368**	**466**	**4.4** J1	<5.5	**0.73** J1	**0.74** J1	**237**	**6.7** J1	<0.82	**1.3** J1	**29**	Acetone 11 J1
	4/23/2020	Pace	**48.7**	**365**	**436**	**4.7** J1	<5.5	**1.2** J1	**1.0** J1	**214**	**8.1**	<0.82	**0.79** J1	**34**	ND
	10/8/2020	Pace	**50.1**	**378**	**484**	**4.0** J1	<5.5	<0.68	<0.61	**225**	**5.7**	<0.82	**0.86** J1	**29.1**	ND
	4/29/2021	Pace	**44.7**	**375**	**416**	**4.0** J1	<4.1	**0.85** J1	<1.5	**235**	**6.6**	<1.0	<0.80	**33.1**	ND
	10/8/2021	Pace	**41.1**	**374**	**462**	<3.4	<4.1	**0.82** J1	<1.5	**235**	**6.2**	<1.0	**0.85** J1	**24.6**	ND
	4/7/2022	Pace	**43.1**	**410**	**426**	**4.0** J1	<4.1	<0.74	<1.5	**152**	**4.2**	<1.0	<0.80	**28.5**	ND
	10/7/2022	Pace	**44.2**	**380**	**453**	<3.4	<4.1	<0.74	<1.5	**186**	**5.1**	<1.0	<0.80	**30.3**	ND
P-423D	12/16/2010	Siemens	**34.6**	**394**	--	**2.13** J	<0.40	**0.60** J	<0.40	**62.1**	**2.6**	<0.30	**0.9** J	**2.53**	ND
	4/8/2011	Siemens	**29.7**	**360**	**427**	**1.38** J	<0.40	**0.59** J	<0.40	**52**	**2.04**	<0.30	**0.73** J	**1.2**	ND
	10/7/2011	Siemens	**32.1**	**373**	**441**	**1.57** J	<0.40	**0.44** J	<0.40	**44.9**	**1.64** J	<0.30	**0.74** J	**2.19**	Carbon Disulfide **1.99** J
	4/13/2012	Siemens	**28.2**	**348**	**432**	**1.36** J	<0.40	**0.59** J	<0.40	**61.9**	**2.75**	<0.30	**0.92** J	**0.91** J	ND
	10/5/2012	Pace	**8.8**	**364**	**227**	**1.1**	<0.24	<0.75	<0.57	**51.8**	**2.5**	<0.45	**0.68** J	**1.5**	ND
	4/5/2013	Pace	**25.6**	**364**	**487**	**1.5**	<0.24	<0.75	<0.57	**59.4**	**2.6**	<0.45	**0.72** J	**2.1**	ND
	10/3/2013	Pace	**30.6**	**356**	**413**	**1.1**	<0.39	<0.28	<0.43	**59.3**	**2.4**	<0.47	**0.74** J	**1.1**	ND
	4/7/2014	Pace	**29.9**	**366**	**420**	**1.5**	<0.50	**0.41** J	<0.41	**53.6**	**2.6**	<0.50	**0.75** J	**1.0** J	ND
	10/16/2014	Pace	**32.4**	**347**	**410**	**0.95** J	<0.50	**0.37** J	<0.41	**51.2**	**2.5**	<0.50	**0.66** J	**0.91** J	ND
	4/17/2015	Pace	**33.8**	**357**	**408**	**0.97** J	<0.50	**0.35** J	<0.41	**47.7**	**2.2**	<0.50	**0.66** J	**1.1**	ND
	10/9/2015	Pace	**40.3**	**370**	**430**	**1.3**	<0.50	**0.32** J	<0.41	**45.5**	**2.0**	<0.50	**0.60** J	**1.1**	ND
	4/8/2016	Pace	**37.5**	**355**	**432**	**0.62** J	<0.50	<0.24	<0.41	**29.7**	**1.2**	<0.50	**0.47** J	<0.18	ND
	10/7/2016	Pace	**43.4**	**372**	**447**	**1.9**	<0.50	**0.38** J	<0.41	**43.9**	**2.0**	<0.50	**0.57** J	**1.1**	ND
	4/7/2017	Pace	**43.0**	**364**	**430**	**1.7**	<0.50	**0.44** J	<0.41	**47.9**	**2.6**	<0.50	**0.73** J	**1.1**	ND
	10/6/2017	Pace	**34.8**	**354**	**432**	**2.1**	<0.50	0.38 J	<0.41	**58.6**	**3.1**	<0.50	**0.59** J	**2.5**	ND
	4/6/2018	Pace	**41.0**	**365**	**472**	<0.37 L1	<0.50	**0.65** J1	<0.41	**92.4**	<0.26	<0.50	**0.74** J1	**3.3**	ND
	10/30/2018	Pace	**39.2**	**371**	**437**	**2.8** J1	<2.2	**0.56** J1	<0.24	**82.5**	**3.6** J1	<0.33	**0.70** J1	**2.9**	Acetone **3.6** J1
	4/4/2019	Pace	**36.3**	**358**	**428**	**2.8** J1	<2.2	**0.66** J1	<0.24	**80.4**	**4.1**	<0.33	**0.59** J1	**2.5**	Acetone **7.7** J1

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Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
P-423D (cont.)	10/29/2019	Pace	**28.6**	**336**	**434**	**1.8** J1	<2.2	**0.53** J1	<0.24	**71.8**	**3.3** J1	<0.33	**0.71** J1	**2.1**	2-Butanone (MEK) **11.1** J1 Acetone **5.4** J1
	4/27/2020	Pace	**44.3**	**344**	**453**	**2.2** J1	<2.2	**0.60** J1	<0.24	**73.1**	**3.4**	<0.33	**0.66** J1	**2.5**	ND
	10/8/2020	Pace	**41.2**	**358**	**488**	**1.4** J1	<2.2	**0.50** J1	<0.24	**76.4**	**3.4**	<0.33	**0.86** J1	**1.2**	Acetone **4.5** J1
	4/29/2021	Pace	**47.3**	**355**	**463**	<1.4	<1.6	**0.39** J1	<0.58	**57.3**	**2.7**	<0.41	**0.89** J1	**1.7**	ND
	10/28/2021	Pace	**45.8**	**365**	**486**	**1.5** J1	<1.6	**0.39** J1	<0.58	**55.7**	**2.6**	<0.41	**0.90** J1	**1.7**	ND
	4/7/2022	Pace	**53.1**	**371**	**468**	**1.4** J1	<1.6	<0.30	<0.58	**41.1**	**2.0**	<0.41	**0.80** J1	**1.1**	ND
	10/7/2022	Pace	**37.6**	**372**	**425**	**2.0** J1	<1.6	**0.46** J1	<0.58	**52.6**	**1.9**	<0.41	**0.77** J1	**2.6**	ND
P-424D	12/17/2012	Pace	**33.8**	**357**	**409**	**2.5**	<0.48	<1.5	<1.1	**91.2**	**3.5**	<0.90	**1.7** J	**7.0**	ND
	2/20/2013	Pace	**32.6**	**382**	**432**	**2.6**	<0.24	**0.92** J	<0.57	**105**	**3.2**	<0.45	**2.5**	**5.8**	ND
	10/3/2013	Pace	**38.5**	**379**	**444**	**2.6**	<0.39	**1.1**	<0.43	**124**	**3.5**	<0.47	**3.2**	**10.1**	ND
	4/7/2014	Pace	**34.8**	**369**	**427**	**3.1**	<0.50	**0.98** J	**0.42** J	**114**	**4**	<0.50	**3**	**7.6**	Acetone **3.1** J
	10/16/2014	Pace	**40.7**	**358**	**424**	**3.3**	<1.0	**0.92** J	<0.82	**122**	**4.9**	<1.0	**2.4**	**7.7**	ND
	4/17/2015	Pace	**37.7**	**363**	**409**	**1.8**	<0.50	**0.54** J	<0.41	**79.6**	**2.5**	<0.50	**2.3**	**2.6**	ND
	10/9/2015	Pace	**48.6**	**384**	**449**	**3.5**	<0.50	**0.88** J	<0.41	**120**	**3.8**	<0.50	**2.2**	**11.4**	ND
	4/8/2016	Pace	**40.7**	**369**	**432**	**2.9**	<0.50	**0.82** J	<0.41	**111**	**3.4**	<0.50	**2.3**	**5.3**	ND
	10/7/2016	Pace	**45.1**	**370**	**485**	**4.1**	<1.2	**0.94** J	<1.0	**125**	**4.3**	<1.2	**2.3** J	**9.9**	ND
	4/7/2017	Pace	**43.2**	**374**	**422**	**3.6**	<0.50	**0.84** J	<0.41	**119**	**4.0**	<0.50	**2.1**	**7.6**	ND
	10/6/2017	Pace	**43.2**	**369**	**452**	**3.1**	<0.50	**1**	**0.51** J	**151**	**4.7**	<0.50	**2**	**9.4**	ND
	4/6/2018	Pace	**41.1**	**371**	**466**	**0.41** J1,L1	<0.50	<0.24	**0.54** J1	**156**	<0.26	<0.50	**2.0**	**9.7**	Tetrahydrofuran **2.6** J1
	10/5/2018	Pace	**36.1**	**366**	**457**	**3.3** J1	<2.2	**0.66** J1	**0.41** J1	**104**	**3.4** J1	<0.33	**2.0**	**10.5**	ND
	4/4/2019	Pace	**38.1**	**356**	**436**	**2.9** J1	<2.2	**0.82** J1	**0.41** J1	**115**	**3.6** J1	<0.33	**1.9**	**8.4**	Acetone **3.5** J1
	10/28/2019	Pace	**36**	**357**	**452**	**2.4** J1	<2.2	**0.82** J1	**0.33** J1	**114**	**3.6** J1	<0.33	**1.9**	**8.3**	Acetone **5.8** J1
	4/24/2020	Pace	**40.2**	**361**	**429**	**1.8** J1	<2.2	**0.75** J1	**0.29** J1	**79.7**	**3.5**	<0.33	**1.8**	**3.5**	Acetone **5.5** J1
	10/8/2020	Pace	**35.2**	**367**	**474**	**2.2** J1	<2.2	**0.76** J1	<0.24	**105**	**3.3**	<0.33	**1.7**	**7.4**	Acetone **3.2** J1
	4/9/2021	Pace	**36.1**	**359**	**427**	**1.8** J1	<1.6	**0.52** J1	<0.58	**83.7**	**2.8**	<0.41	**1.5**	**4.7**	ND
	10/28/2021	Pace	**35.6**	**375**	**455**	**2.0** J1	<1.6	**0.76** J1	<0.58	**113**	**3.3**	<0.41	**1.6**	**8.2**	ND

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Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
P-424D	4/28/2022	Pace	**36.3**	**389**	**420**	**2.1** J1	<1.6	**0.57** J1	<0.58	**82.1**	**2.5**	<0.41	**1.5**	**5.5**	Acetone	**18.8** J1
(cont.)	10/31/2022	Pace	**37.3**	**382**	**426**	**1.7** J1	<1.6	**0.53** J1	<0.58	**87.1**	**2.6**	<0.41	**1.4**	**4.7**	ND	
P-424SS	12/17/2012	Pace	<2.0	**303**	**287**	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	ND	
	2/20/2013	Pace	**2.1** J	**309**	**298**	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	ND	
	10/3/2013	Pace	**2.8** J	**320**	**298**	<0.44	<0.39	<0.28	<0.43	<0.42	<0.37	<0.47	<0.36	<0.18	ND	
	4/7/2014	Pace	**2.5** J	**311**	**290**	<0.37	<0.50	<0.16	<0.41	<0.26	<0.24	<0.50	<0.33	<0.18	ND	
	10/16/2014	Pace	**2.8** J	**303**	**283**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	4/17/2015	Pace	**2.8** J	**314**	**276**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Acetone	**3.7** J
	10/9/2015	Pace	**2.4** J	**323**	**295**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	4/8/2016	Pace	**2.7** J	**309**	**293**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	10/7/2016	Pace	**1.0** JB	**307**	**294**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	4/7/2017	Pace	**0.92** J	**314**	**288**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	4/7/2017 DUP	Pace	**0.91** J	**317**	**284**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	10/6/2017	Pace	**0.80** J	**310**	**306**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND	
	4/6/2018	Pace	**0.72** J1	**318**	**329**	<0.37 L1	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Acetone	**3.0** J1
	10/5/2018	Pace	**0.96** J1	**307** M0	**326**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND	
	4/4/2019	Pace	**0.76** J1	**301**	**312**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone	**5.9** J1
	10/28/2019	Pace	**1.0** J1	**291**	**318**	<1.3	<2.2 R1	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone	**5.5** J1
	4/24/2020	Pace	**1.3** J1	**302**	**302**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.26	<0.26	<0.17	Acetone	**2.8** J1
	10/8/2020	Pace	**1.3** J1	**307**	**347**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	Acetone	**3.7** J1
	4/9/2021	Pace	**0.88** J1	**309**	**308**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	
	10/28/2021	Pace	**1.1** J1	**335**	**333**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	
	4/28/2022	Pace	**0.99** J1	**335**	**306**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	
	10/31/2022	Pace	**0.85** J1	**325**	**301**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
P-426D	6/3/2015	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	8/12/2015	Pace	**21.5**	**337**	**405**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/9/2015	Pace	**59.6**	**369**	**499**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Acetone **18.6** J
	4/8/2016	Pace	**27.7**	**331**	**408**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/7/2016	Pace	**55**	**362**	**532**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/7/2017	Pace	**37.0**	**349**	**413**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/27/2017	Pace	**44.4**	**334**	**480**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/6/2018	Pace	**43.9**	**349**	**499**	<0.37 L1	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/30/2018	Pace	**59.2**	**356**	**492**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	4/5/2019	Pace	**36.2**	**319**	**437**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	10/29/2019	Pace	**60.6**	**350**	**536**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone **6.5** J1
	4/24/2020	Pace	**23.8**	**323**	**402**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	Acetone **3.4** J1
	10/8/2020	Pace	**48.0**	**352**	**528**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	Acetone **3.8** J1
	4/29/2021	Pace	**30.0**	**339**	**416**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/28/2021	Pace	**18.7**	**342**	**428**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	4/8/2022	Pace	**27.9**	**383**	**447**	<1.4	<1.6	<0.30	<0.58	**1.6**	<0.53	<0.41	<0.32	0.17	ND
	10/31/2022	Pace	**19.2**	**356**	**393**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
P-426SS	7/20/2021	Pace	**21.4**	**352**	**475**	<1.4	<1.6	<0.30	<0.58	**0.77** J1	<0.53	<0.41	<0.32	<0.17	ND
	10/29/2021	Pace	**24.8**	**359**	**481**	<1.4	<1.6	<0.30	<0.58	**1.7**	<0.53	<0.41	<0.32	<0.17	ND
	4/8/2022	Pace	**24.6**	**363**	**416**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/31/2022	Pace	**30.7**	**378**	**449**	<1.4	<1.6	<0.30	<0.58	**2.5**	<0.53	<0.41	<0.32	<0.17	ND

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
P-429SS	11/30/2017	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	2/1/2018	Pace	**1.3** J	**318**	**322**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/25/2018	Pace	**1.1** J1	**313**	**314**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	1/9/2019	Pace	**2.5**	**296**	**320**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone **4.3** J
	4/26/2019	Pace	**1.2** J	**317**	**328**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone **40.8**
	10/29/2019	Pace	**1.5** J1,B	**306** M0	**336**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	Acetone **11.9** J1
	4/27/2020	Pace	**1.4** J1	**310**	**319**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	Acetone **2.9** J1
	10/9/2020	Pace	**1.9** J1	**317**	**340**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	ND
	4/29/2021	Pace	**1.1** J1	**318**	**324**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/28/2021	Pace	**1.7** J1	**329**	**355**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	4/8/2022	Pace	**1.7** J1	**342**	**325**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/31/2022	Pace	**1.7** J1	**331**	**311**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
P-430D	7/20/2021	Pace	**21.2**	**357**	**409**	<1.4	<1.6	<0.30	<0.58	**11.8**	**0.81** J1	<0.41	<0.32	<0.17	ND
	10/28/2021	Pace	**21.2**	**360**	**388**	<1.4	<1.6	<0.30	<0.58	**13**	**0.81** J1	<0.41	<0.32	<0.17	ND
	4/7/2022	Pace	**24.5**	**391**	**388**	<1.4	<1.6	<0.30	<0.58	**12.6**	**0.87** J1	<0.41	<0.32	**0.23** J1	ND
	10/7/2022	Pace	**22.9**	**354**	**404**	<1.4	<1.6	<0.30	<0.58	**14.2**	**0.95** J1	<0.41	<0.32	<0.17	ND

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
Trip Blank	1/22/2010	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	2/24/2010	TA	--	--	--	<1.0	<0.30	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	ND
	2/24/2010	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	11/29/2010	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	12/16/2010	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	10/6/2011	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	10/7/2011	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	4/13/2012	Siemens	--	--	--	<0.70	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.40	<0.20	ND
	10/4/2012	Pace	--	--	--	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	ND
	10/5/2012	Pace	--	--	--	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	Methylene Chloride **1.0** Acetone **6.8 J**
	12/17/2012	Pace	--	--	--	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	ND
	10/3/2013	Pace	--	--	--	<0.44	<0.39	<0.28	<0.43	<0.42	<0.37	<0.47	<0.36	<0.18	ND
	4/7/2014	Pace	--	--	--	<0.37	<0.50	<0.16	<0.41	<0.26	<0.24	<0.50	<0.33	<0.18	Methylene Chloride **0.25** J
	10/15/2014	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/17/2015	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Acetone **8.5** J
	6/3/2015	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	8/12/2015	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Methylene Chloride **0.28** J
	10/9/2015	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/7/2016	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/8/2016	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/5/2017	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/6/2018	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/25/2018	Pace	--	--	--	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/5/2018	Pace	--	--	--	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	10/30/2018	Pace	--	--	--	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	4/4/2019	Pace	--	--	--	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
Trip Blank (cont.)	4/26/2019	Pace	--	--	--	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND	
	4/29/2021	Pace	--	--	--	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	Methylene Chloride	**0.37** J1
	10/28/2021	Pace	--	--	--	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	
	4/28/2022	Pace	--	--	--	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	
	10/31/2022	Pace	--	--	--	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND	
NR 140 Groundwater Enforcement Standard			250	NS	NS	400	30	850	7	70	100	5	5	0.2	1,4 Dichlorobenzene	75
															Acetone	9,000
															Carbon Disulfide	1,000
															Chloroform	6
															Methylene Chloride	5
															Tetrahydrofuran	50
															Toluene	800
															Xylenes	2,000
NR 140 Preventive Action Limit			125	NS	NS	80	3	85	0.7	7	20	0.5	0.5	0.02	1,4 Dichlorobenzene	15
															Acetone	1,800
															Carbon Disulfide	200
															Chloroform	0.6
															Methylene Chloride	0.5
															Tetrahydrofuran	10
															Toluene	160
															Xylenes	400

Table 2. LGRL VOC Investigation Bedrock Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02

Abbreviations:
ND = Not detected
NS = No standard established
mg/L = Milligrams per Liter
µg/L = Micrograms per Liter
Siemens = Siemens Water Technologies
TA = TestAmerica, Watertown, WI
Pace = Pace Analytical Services, Inc., Green Bay, WI
-- = Not Analyzed

Bold indicates detected compound.
Bold and underline indicates result above drinking water standard.

Lab Notes/Qualifiers:
B = Analyte was detected in the associated method blank.
CSH = Check standard for this analyte exhibited a high bias. Sample results may also be biased high.
J = Estimated value below laboratory limit of quantitation.
J1 = Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ).
L1 = Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.
M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
R1 = Relative Percent Difference value was outside control limits.

Created by:	MOB	Date:	9/5/2012
Last revision by:	RM	Date:	5/25/2023
Checked by:	EO	Date:	5/25/2023
Proj Mgr QA/QC:	EO	Date:	5/25/2023

Table 3. LGRL VOC Investigation Deep Unconsolidated Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
MW-1B	10/27/2010	Siemens	**53.1**	**231**	**251**	<0.7	<0.4	<0.4	<0.4	**4.02**	<0.5	<0.30	<0.4	**0.33 J**	o-xylene	**0.28** J
	4/7/2011	Siemens	**72.3**	**174**	**271**	<0.7	<0.4	<0.4	<0.4	<0.4	<0.5	<0.30	<0.4	<0.20	ND	
	10/7/2011	Siemens	**78.1**	**200**	**292**	<0.7	<0.4	<0.4	<0.4	<0.4	<0.5	<0.30	<0.4	**0.58 J**	Carbon Disulfide	**2.77** J
	4/13/2012	Siemens	**84.3**	**186**	**291**	<0.7	<0.4	<0.4	<0.4	<0.4	<0.5	<0.30	<0.4	<0.20	Acetone	**7.88** J
	10/4/2012	Siemens	**71.6**	**196**	**276**	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	**0.37 J**	Carbon Disulfide	**21.8**
	10/1/2013	Pace	**83.5**	**216**	**276**	<0.44	<0.39	<0.28	<0.43	**2.7**	<0.37	<0.47	<0.36	**4.1**	ND	
	4/7/2014	Pace	**69.8**	**219**	**276**	<0.37	<0.50	<0.16	<0.41	<0.26	<0.24	<0.50	<0.33	<0.18	ND	
	10/10/2014	Pace	**71.6**	**213**	**284**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	Acetone	**4.1** J
	4/17/2015	Pace	**67.6**	**224**	**265**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**1.1**	ND	
	10/9/2015	Pace	**64.4**	**227**	**290**	<0.37	**0.63 J**	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**1.3**	Acetone	**22.1**
	4/6/2016	Pace	**97.9**	**203**	**303**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**2.5**	**ND**	
	10/5/2016	Pace	**109**	**200**	**373**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**2.4**	**ND**	
	4/6/2017	Pace	**89**	**216**	**287**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**1.9**	**ND**	
	10/5/2017	Pace	**93.6**	**212**	**314**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**2.0**	**ND**	
	4/5/2018	Pace	**128**	**178**	**339**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	**3.4**	ND	
	10/3/2018	Pace	**109**	**215**	**335**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	**2.3**	Acetone	**5.3** J1
	4/4/2019	Pace	**124**	**186**	**345**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	**4.2**	Acetone	**10.3** J
	10/10/2019	Pace	**123**	**180**	**331**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	**5.1**	Acetone	**6.3** J1
															Carbon Disulfide	**0.98** J1
	4/23/2020	Pace	**133**	**190**	**339**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	**2.2**	Carbon disulfide	**0.80** J1
	10/7/2020	Pace	**139**	**177**	**358**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	**4.3**	Acetone	**3.5** J1
	4/8/2021	Pace	**144**	**190**	**372**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	**2.7**	ND	
	10/7/2021	Pace	**149**	**194**	**372**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	**4.3**	ND	
	4/6/2022	Pace	**162**	**187**	**356**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	**5.4**	ND	
	10/6/2022	Pace	**150**	**200**	**358**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	**9.4**	ND	

Table 3. LGRL VOC Investigation Deep Unconsolidated Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
P-422B	10/27/2010	Siemens	**6.9**	**218**	**152**	<0.7	<0.4	<0.4	<0.4	**8.7**	<0.5	<0.30	**0.51 J**	**0.26 J**	ND
	11/29/2010	Siemens	**7.16**	**225**	--	--	--	--	--	--	--	--	--	--	Methane **24.3**
	4/7/2011	Siemens	**8.15**	**183**	**149**	<0.7	<0.4	<0.4	<0.4	<0.4	<0.5	<0.30	<0.4	< 0.20	ND
	10/6/2011	Siemens	**6.34**	**194**	**152**	<0.7	<0.4	<0.4	<0.4	<0.4	<0.5	<0.30	<0.4	<0.20	ND
	4/13/2012	Siemens	**10.2**	**212**	**159**	<0.7	<0.4	<0.4	<0.4	<0.4	<0.5	<0.30	<0.4	<0.20	ND
	10/4/2012	Pace	**5.7**	**206**	**150**	<0.97	<0.24	<0.75	<0.57	<0.83	<0.89	<0.45	<0.48	<0.18	ND
	10/3/2013	Pace	**25.8**	**196**	**169**	<0.44	<0.39	<0.28	<0.43	<0.42	<0.37	<0.47	<0.36	<0.18	ND
	4/7/2014	Pace	**33.6**	**200**	**180**	<0.37	<0.50	<0.16	<0.41	<0.26	<0.24	<0.50	<0.33	<0.18	ND
	10/10/2014	Pace	**25.9**	**198**	**170**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/17/2015	Pace	**32.5**	**189**	**166**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/9/2015	Pace	**29**	**200**	**167**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	4/7/2016	Pace	**19.7**	**194**	**164**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/7/2016	Pace	**18.9**	**199**	**165**	<0.37	<0.50	<0.24	<0.41	**1.4**	<0.26	<0.50	<0.33	<0.18	ND
	4/7/2017	Pace	**12.2**	**209**	**157**	<0.37	<0.50	<0.24	<0.41	**7**	**0.27 J**	<0.50	<0.33	<0.18	ND
	10/6/2017	Pace	**10**	**212**	**166**	<0.37	<0.50	<0.24	<0.41	**0.85 J**	<0.26	<0.50	<0.33	<0.18	ND
	4/5/2018	Pace	**10.1**	**216**	**175**	<0.37	<0.50	<0.24	<0.41	<0.26	<0.26	<0.50	<0.33	<0.18	ND
	10/3/2018	Pace	**8.6**	**199**	**164**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	4/5/2019	Pace	**10.1**	**210**	**173**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	10/9/2019	Pace	**7.8**	**208**	**166**	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
	4/20/2020	Pace	**9.1** J1,D3	**216**	**180**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	ND
	10/7/2020	Pace	**10.4** M0	**198**	**176**	<1.3	<2.2	<0.27	<0.24	<0.27	<0.46	<0.33	<0.26	<0.17	ND
	4/6/2021	Pace	**8.0**	**215**	**145**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/7/2021	Pace	**7.8**	**221**	**186**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND
	10/7/2022	Pace	**8.0**	**215**	**172**	<1.4	<1.6	<0.30	<0.58	<0.47	<0.53	<0.41	<0.32	<0.17	ND

Table 3. LGRL VOC Investigation Deep Unconsolidated Well Sample Results - Through October 2022
Land and Gas Reclamation Landfill / File No. 25223008.02
(Results are in µg/L, except where otherwise noted)

Well Number	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
NR 140 Groundwater Enforcement Standard			250	NS	NS	400	30	850	7	70	100	5	5	0.2	Acetone	9000
															Carbon Disulfide	1,000
															Xylenes	2,000
NR 140 Preventive Action Limit			125	NS	NS	80	3	85	0.7	7	20	0.5	0.5	0.02	Acetone	1,800
															Carbon Disulfide	200
															Xylenes	400

Abbreviations:
ND = Not detected
mg/L = Milligrams per Liter
µg/L = Micrograms per Liter
Siemens = Siemens Water Technologies
Pace = Pace Analytical Services, Inc., Green Bay, WI
-- = Not Analyzed

Bold indicates detected compound.
Bold and underline indicates result above drinking water standard.

Lab Notes/Qualifiers:
J = Estimated value below laboratory limit of quantitation.
J1 = Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ).
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Created by: MDB Date: 6/12/2019
Last revision by: RM Date: 4/21/2023
Checked by: BAS Date: 4/21/2023
Proj Mgr QA/QC: EO Date: 5/25/2023

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
Monthly Monitoring Locations															
PW-21R	A. Oechsner N7548 Hwy. 67 Mayville	1/29/2009	NLS	**12**	**310**	<0.79	<0.31	<0.21	<0.13	**11**	**0.26** J	<0.15	<0.18	**0.61**	ND
			NLS	--	--	<0.79	<0.31	<0.21	<0.13	**10**	**0.26** J	<0.15	<0.18	**0.56**	ND
		2/24/2009	NLS	--	--	<0.79	<0.31	<0.21	<0.13	**10**	<0.19	<0.15	<0.18	**0.35** J	ND
			CT	--	--	<0.40	**0.56** JB	<0.21	<0.24	**8.6**	<0.27	<0.30	<0.24	**0.39**	ND
		6/30/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	**19**	**0.52** J	<0.20	**0.26**	**0.53**	ND
		7/14/2010	NLS	--	--	<1.0	<0.16	<0.14	<0.11	**12**	**0.23** J	<0.10	<0.12	**0.40** J	ND
PW-21RR Untreated	A. Oechsner N7548 Hwy. 67 Mayville	10/7/2010	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**2.74**	<0.50	<0.30	<0.40	**0.58** J	ND
			TA	--	--	<1.0	<0.30	<0.50	<0.50	**2.0**	<0.50	<0.50	<0.20	**0.37** J	ND
		11/11/2010	TA	**13**	**320**	<1.0	**0.47** J	<0.50	<0.50	**2.6**	<0.50	<0.50	<0.20	**0.76** J	Chloroform **0.29** J Toluene **21**
		11/29/2010	Siemens	**12.4**	**347**	<0.70	<0.40	<0.40	<1.30	**3.12**	<0.50	<0.30	<0.40	**0.61** J	Toluene **1.25**
		12/16/2010	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**3.75**	<0.50	<0.30	<0.40	**0.65** J	Toluene **0.99** J
		1/12/2011	NLS	--	--	<1.0	<0.16	<0.14	<0.11	**4.4**	**0.13** J	<0.10	<0.12	**0.75**	ND
		2/10/2011	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**6**	<0.50	<0.30	<0.40	**0.79**	ND
		3/1/2011	TA	--	--	<0.070	<0.063	<0.074	<0.059	**6.1**	<0.13	<0.067	<0.060	**0.92**	ND
		4/5/2011	NLS	--	--	<1.6	<0.29	<0.23	<0.13	**8.9**	**0.32** J	<0.11	<0.28	**0.94**	ND
			TA	--	--	<0.10	<0.20	<0.050	<0.050	**7.3**	**0.27** J	<0.050	<0.050	**0.79**	ND
		5/26/2011	TA	--	--	**0.34** J	<0.20	**0.080** J	<0.05	**12**	**0.44** J	<0.050	<0.050	**1.0**	ND
		6/28/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	**9.8**	**0.37** J	<0.15	<0.25	**0.78**	ND
		7/14/2011	TA	--	--	<0.50	**0.33** J	<0.25	<0.15	**10**	**0.40** J	<0.15	<0.25	**0.75**	ND
		8/16/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	**9.7**	**0.31** J	<0.15	<0.25	**0.46** J	ND
		9/1/2011	TA	--	--	<0.50	**0.46** J	<0.25	<0.15	**11**	**0.45** J	<0.15	<0.25	**0.67**	ND
		10/6/2011	TA	--	--	**0.52**	<0.30	<0.25	<0.15	**10**	**0.40** J	<0.15	<0.25	**0.63**	ND
		11/14/11 *	TA	--	--	<0.50	<0.30	<0.25	<0.15	**11**	**0.43** J	<0.15	<0.25	**0.82**	ND
		11/14/11 **	TA	--	--	**0.64**	<0.30	<0.25	<0.15	**12**	**0.43** J	<0.15	<0.25	**0.81**	ND
		12/12/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	**12**	**0.42** J	<0.15	<0.25	**0.83**	ND
		12/27/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	**12**	**0.45** J	<0.15	<0.25	**0.74**	ND
			Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**13.9**	**0.57** J	<0.30	<0.40	**0.85** J	ND
		1/4/2012	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**15.4**	**0.62** J	<0.30	<0.40	**1.09**	ND
		1/11/2012	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**15.5**	**0.66** J	<0.30	<0.40	**1.02**	ND
		1/18/2012	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**15.2**	**0.66** J	<0.30	<0.40	**1.01**	ND
		1/25/2012	Siemens	--	--	<0.70	<0.40	<0.40	<0.40	**16.6**	**0.61** J	<0.30	<0.40	**1.10**	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-21RR Untreated (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	2/15/2012	TA	--	--	<0.50	<0.30	<0.25	<0.15	**13**	**0.47** J	<0.15	<0.25	**0.86**	ND
		3/1/2012	TA	--	--	<0.50	<0.30	<0.25	<0.15	**13**	**0.48** J	<0.15	<0.25	**0.96**	ND
		4/11/2012	TA	**16**	**290**	<0.50	<0.30	<0.25	<0.15	**14**	**0.69**	<0.15	<0.25	**0.89**	ND
		5/2/2012	Siemens	--	--	**0.92** J	<0.40	<0.40	<0.40	**19.8**	**0.80** J	<0.30	<0.40	**1.52**	ND
		6/20/2012	Pace	--	--	**0.25** J	**0.73** J	**0.11** J	<0.16	**15.1**	**0.51**	<0.16	<0.11	**0.62**	ND
		7/18/2012	Pace	--	--	<0.20	<0.13	<0.072	<0.16	**16**	**0.47** J	<0.16	<0.11	**0.62**	ND
		8/2/2012	Pace	--	--	**0.46** J	<0.13	**0.12** J	<0.16	**18.6**	**0.64**	<0.16	<0.11	**0.75**	ND
		9/13/2012	Pace	--	--	<0.31	<0.13	<0.072	<0.16	**16.1**	**0.49** J	<0.16	<0.11	**0.55**	Benzene **0.050** J Toluene **0.088** J
		10/5/2012	Pace	**13.6**	**316**	<0.31	<0.13	<0.072	<0.16	**14.6**	**0.51**	<0.16	<0.11	**0.63**	ND
		11/29/2012	Pace	--	--	<0.31	<0.13	<0.072	<0.16	**10.9**	**0.30** J	<0.16	<0.11	**0.44**	ND
		12/17/2012	Pace	--	--	<0.31	<0.13	<0.072	<0.16	**14.8**	**0.45** J	<0.16	<0.11	**0.62**	ND
		1/8/2013	Pace	--	--	**0.62** J	<0.13	<0.072	<0.16	**14.4**	**0.40** J	<0.16	<0.11	**0.52**	ND
		2/20/2013	Pace	--	--	<0.31	<0.13	<0.072	<0.16	**14**	**0.39** J	<0.16	<0.11	**0.52**	ND
		3/21/2013	Pace	--	--	<0.31	<0.13	<0.072	<0.16	**13.2**	**0.42** J	<0.16	<0.11	**0.48**	ND
		4/2/2013	Pace	**13.1**	**294**	<0.31	<0.13	<0.072	<0.16	**9.2**	**0.25** J	<0.16	<0.11	**0.34** J	ND
		5/7/2013	Pace	--	--	<0.31	<0.13	<0.072	<0.16	**14.4**	**0.43** J	<0.16	<0.11	**0.64**	ND
		6/27/2013	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**12.5**	**0.32** J	<0.25	<0.12	**0.5**	m&p-Xylene **0.22** JB
		7/29/2013	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**14.9**	**0.35** J	<0.25	<0.12	**0.6**	ND
		8/26/2013	Pace	--	--	<0.22	<0.40	<0.20	<0.23	**18**	<0.20	<0.19	<0.18	<0.19	ND
		9/12/2013	Pace	--	--	<0.22 L3	<0.40 L3	<0.20	<0.23	**16.1**	<0.20	<0.19	<0.18	<0.19 L3	ND
		10/1/13	Pace	**14.6**	**349**	<0.22	<0.40	<0.20	<0.23	**16.5**	**0.47** J	<0.19	<0.18	<0.19	ND
		11/7/13	Pace	--	--	<0.22	<0.40	<0.20	<0.23	**14.5**	**0.44** J	<0.19	<0.18	**0.67**	Methylene Chloride **0.48** J 1,2-Dichloroethane **0.55**
		12/9/13	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**13.3**	**0.39** J	<0.25	<0.13	**0.58**	ND
		1/9/2014	Pace	--	--	<0.50	<0.50 M1	<0.25	<0.24	**14.9**	**0.33** J	<0.25	<0.13	**0.75**	ND
		2/11/2014	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**12.2**	**0.32** J	<0.25	<0.13	**0.52**	ND
		3/11/2014	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**14.4**	**0.46** J	<0.25	<0.13	**0.50**	ND
		4/25/2014	Pace	**14.7**	**356**	<0.50	<0.50	<0.25	<0.24	**15.3**	**0.42** J	<0.25	<0.13	**0.66**	ND
		5/12/2014	Pace	--	--	<0.17	<0.34	<0.077	<0.13	**13.8**	**0.26** J	<0.099	<0.084	**0.56**	ND
		6/10/2014	Pace	--	--	**0.21** J	<0.34	<0.077	<0.13	**15.0**	**0.38** J	<0.099	<0.084	**0.78**	ND
		7/8/2014	Pace	--	--	**0.29** J	<0.34 M1	<0.077	<0.13	**16.4**	**0.38** J	<0.099	<0.084	**0.64** M1	ND
		8/1/2014	Pace	--	--	**0.25** J	<0.34	<0.077	<0.13	**14.6**	**0.43** J	<0.099	<0.084	**0.56**	ND
		9/3/2014	Pace	--	--	<0.17	<0.34	<0.077	<0.13	**13.9**	**0.27** J	<0.099	<0.084	**0.58**	ND
		9/3/2014 DUP	Pace	--	--	**0.27** J	<0.34	<0.077	<0.13	**14.8**	**0.30** J	<0.099	<0.084	**0.67**	ND
		10/6/2014	Pace	**14.7**	**338**	**0.47** J	<0.34	<0.087	<0.17	**15.9**	**0.48** J	<0.12	<0.084	**0.53**	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-21RR Untreated (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	11/20/2014	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**16.2**	**0.47** J	<0.12	<0.084	**0.57**	ND
		12/12/2014	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**19.0**	<0.15	<0.12	<0.084	**1.2**	ND
		1/21/2015	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**17.1**	<0.15	<0.12	<0.084	**0.43**	ND
		2/18/2015	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**14.2**	**0.37** J	<0.12	<0.084	**0.55**	ND
		3/5/2015	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**16.6**	<0.15	<0.12	<0.084	**0.50**	ND
		4/17/2015	Pace	**15.5** B	**328**	<0.27	<0.34	<0.087	<0.17	**18.3**	**0.48** J	<0.12	<0.084	**0.50**	ND
		5/20/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**16.7**	**0.44** J	<0.15	<0.14	**0.55**	ND
		6/3/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**18.8**	**0.52**	<0.15	<0.14	**0.56**	ND
		7/16/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**18.5**	**1.2**	<0.15	<0.14	**0.58**	ND
		8/31/2015	Pace	--	--	<0.34	<0.64 L2	<0.19	<0.17	**18.0**	**1.1**	<0.15	<0.14	**0.47**	ND
		9/21/2015	Pace	--	--	<0.34 H1	<0.64 H1,L3	**0.19** J,H1	<0.17 H1	**18.1** H1	**0.53** H1	<0.15 H1	**0.18** J,H1	**0.60** H1	ND
		10/6/2015	Pace	**16.0**	**328**	<0.88	<0.20	**0.18**	<0.17	**20**	**0.35**	<0.13	<0.19	**0.76**	ND
		11/4/2015	Pace	--	--	<0.24 N2	<0.23 N2	<0.17 N2	<0.17 N2	**17.7** N2	**0.42** J,N2	<0.32 N2	<0.21 N2	<0.23 N2	ND
		12/3/2015	Pace	--	--	<0.24	<0.23	<0.17	<0.17	**18.2**	**0.37** J	<0.32	<0.21	<0.23	ND
		1/5/2016	Pace	--	--	**0.36** J	<0.64	<0.19 M1	<0.17	**18.7**	<0.18	<0.15	<0.14	**0.55**	ND
		2/9/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**18.3**	**0.41** J	<0.15	<0.14	**0.50**	Toluene **0.27** JB
		3/10/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**17.5**	**0.52** J	<0.15	<0.14	**0.55**	ND
		4/5/2016	Pace	**16.0**	**345**	<0.34	<0.64	<0.19	<0.17	**17.5**	**0.42** J	<0.15	<0.14	**0.47**	ND
		5/19/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**19.7**	**0.24** J	<0.15	<0.14	**0.45**	ND
		6/22/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**18**	**0.46** J	<0.15	<0.14	**0.37**	ND
		7/7/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**18.8**	**0.48** J	<0.15	<0.14	**0.64**	ND
		8/11/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**17.9**	**0.35** J	<0.12	<0.044	**0.46**	ND
		9/9/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**17**	**0.47** J	<0.12	<0.044	**0.42**	ND
		10/4/2016	Pace	**17.0**	**345**	**0.28** J	<0.21	<0.088	<0.089	**20.7**	**0.53**	<0.12	<0.044	**0.57**	ND
		11/14/2016	Pace	--	--	**0.29** J	<0.21	<0.088	<0.089	**16.7**	**0.47** J	<0.12	<0.044	**0.45**	ND
		12/1/2016	Pace	--	--	**0.37** J	<0.21	<0.088	<0.089	**19.2**	**0.51**	<0.12	<0.044	**0.48**	ND
		1/27/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**21.1**	**0.42** J	<0.12	<0.044	**0.5**	ND
		2/2/2017	Pace	--	--	**0.31** J	<0.21	<0.088	<0.089	**22.1**	**0.44** J	<0.12	<0.044	**0.46**	ND
		3/9/2017	Pace	--	--	**0.53** J	<0.21	<0.088	<0.089	**25**	**0.63**	<0.12	<0.044	**0.5**	ND
		4/4/2017	Pace	**18.4**	**339**	**0.32** J	<0.21	<0.088	<0.089	**20.3**	**0.75**	<0.12	<0.044	**0.54**	ND
		5/19/2017	Pace	--	--	**0.54** J	<0.21	<0.088	<0.089	**20.8**	**0.48 J**	<0.12	<0.044	**0.62**	ND
		6/22/2017	Pace	--	--	**0.28** J	<0.21	<0.088	<0.089	**19.5**	**0.51**	<0.12	<0.044	**0.59**	ND
		7/17/2017	Pace	--	--	**0.58** J	<0.21	<0.088	<0.089	**18.3**	**0.42** J	<0.12	<0.044	**0.52**	ND
		8/2/2017	Pace	--	--	**0.33** J	<0.21	**0.20** J	<0.089	**24.1**	**0.68**	<0.12	<0.044	**0.71**	ND
		9/7/2017	Pace	--	--	**0.32** J	<1.1	<0.14	<0.18	**20.6**	**0.51** J	<0.12	<0.11	**0.51**	ND
		10/3/2017	Pace	**18**	**335**	<0.32	<1.1	<0.14	<0.18	**19.4**	**0.41** J	<0.12	<0.11	**0.59**	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-21RR Untreated (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	11/1/2017	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**17**	**0.46** J	<0.12	<0.11	**0.49**	ND
		1/18/2018	Pace	--	--	**0.33** J	<1.1	<0.14	<0.18	**20.6**	**0.50** J	<0.12	<0.11	**0.63**	ND
		2/1/2018	Pace	--	--	**0.35** J	<1.1	<0.14	<0.18	**19.5**	**0.40** J	<0.12	<0.11	**0.49**	ND
		3/14/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**18.9**	**0.37** J1	<0.12	<0.11	**0.52**	ND
		4/3/2018	Pace	**17.5**	**323**	<0.32	<1.1	<0.14	<0.18	**18.4**	**0.36** J1	<0.12	<0.11	**0.59**	ND
		5/15/2018	Pace	--	--	**0.26**	<0.023	**0.14**	<0.034	**20.5**	**0.49**	<0.040	<0.044	**0.58**	ND
		6/1/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**17.6**	**0.44** J1	<0.12	<0.11	**0.55**	ND
		7/12/2018	Pace	--	--	**0.81**	<0.15	<0.16	<0.19	**20.1**	**0.54** J1	<0.17	<0.12	**0.48**	ND
		8/2/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**19.5**	**0.42** J1	<0.17	<0.12	**0.55**	ND
		9/4/2018	Pace	--	--	<0.14	**0.47** J1	<0.16	<0.19	**21.2**	**0.70**	<0.17	<0.12	**0.50**	ND
		10/1/2018	Pace	**17.6**	**325**	<0.14	<0.15	<0.16	<0.19	**21.8**	**0.53** J1	<0.17	<0.12	**0.41**	ND
		11/20/2018	Pace	--	--	<0.14	**0.30** J1	<0.16	<0.19	**20.1**	**0.50** J1	<0.17	<0.12	**0.71**	ND
		12/20/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**19.7**	**0.52** J1	<0.17	<0.12	**0.67**	ND
		1/9/2019	Pace	--	--	<0.37	<0.22	<0.28	<0.21	**17.6**	<0.35	<0.48	<0.23	<0.37	ND
		2/19/2019	Pace	--	--	**0.39** J	<0.15	<0.16	<0.19	**24.2**	**0.53** J	<0.17	<0.12	**0.68**	ND
		3/13/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**20.9**	**0.47** J	<0.17	<0.12	**0.64**	ND
		4/3/2019	Pace	**17.4**	**328**	**0.34** J1	<0.15	<0.16	<0.19	**20.1**	**0.51** J1	<0.17	<0.12	**0.50**	ND
		5/20/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**17.8**	**0.30** J	<0.17	<0.12	**0.46**	ND
		6/12/2019	Northern Lake Services	--	--	<1.5	<0.23	<0.31	<0.25	**20**	<0.47	<0.28	<0.30	**0.64** J2	ND
		7/9/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**18.1**	**0.30** J1	<0.17	<0.12	**0.45**	ND
		8/15/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**20.9**	**0.36** J1	<0.17	<0.12	**0.63**	ND
		9/19/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**19.1**	**0.35** J1	<0.17	<0.12	**0.41**	ND
		10/8/2019	Pace	**18.1**	**331**	<0.14	<0.15	<0.16	<0.19	**26**	**0.52** J1	<0.17	<0.12	**0.52**	ND
		11/19/2019	Pace	--	--	<1.5	<0.23	<0.31	<0.25	**19**	**0.67** J1	<0.28	<0.30	**0.7**	ND
		12/6/2019	Pace	--	--	<1.5	<0.23	<0.31	<0.25	**17**	**0.48** J1	<0.28	<0.30	**0.51** J1	ND
		1/8/2020	Pace	--	--	<0.071	<0.087	<0.079	<0.088	**20.6**	**0.45**	<0.064	**0.12** J2	**0.47**	ND
		2/3/2020	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**20.4**	**0.43** J2	<0.17	<0.12	**0.49**	ND
		3/4/2020	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**20.6**	**0.50** J2	<0.17	<0.12	**0.6**	ND
		6/11/2020	Pace	**16.8**	**329**	**0.18** J2	<0.087	<0.079	<0.088	**18.3**	**0.34**	<0.064	<0.053	**0.43**	ND
		7/6/2020	Pace	--	--	**0.23** J2	<0.087	**0.11** J2	<0.088	**15.4**	**0.33**	<0.064	**0.061** J2	**0.43**	ND
		8/3/2020	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**15**	**0.29** J2	<0.27	<0.46	**0.39**J2	ND
		9/18/2020	Pace	--	--	<0.40	<0.40	<0.28	<0.28	**19**	**0.46** J2	<0.27	<0.46	**0.61** J2	ND
		10/14/2020	Pace	**17.6**	**339**	<2.7	<0.40	<0.28	<0.28	**25**	**0.58** J2	<0.27	<0.46	**0.69** J2	ND

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(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
PW-21RR Untreated (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	11/12/2020	Pace	--	--	<0.34	<0.15	**0.17** J1	<0.19	**18.8**	**0.67**	<0.17	<0.12	**0.4**	Chlorobenzene	**0.25** J1
															1,4-Dichlorobenzene	**0.092** J1
															1,2-Dichloroethane	**0.22** J1
		12/21/2020	Pace	--	--	**0.36** J2	<0.15	**0.18** J1	<0.19	**20.5**	**0.55** J1	<0.17	<0.12	**0.47**	Chlorobenzene	**0.16** J1
		1/20/2021	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**19.1**	**0.40** J1	<0.17	<0.12	**0.44**	Chlorobenzene	**0.15** J1
		2/17/2021	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**18.0**	**0.49** J1	<0.17	<0.12	**0.46**	Chlorobenzene	**0.15** J1
		3/17/2021	Pace	--	--	<0.40	<0.40	<0.28	<0.28	**20**	**0.64** J1	<0.27	<0.46	**0.65**	ND	
		4/29/2021	Pace	18.5	340	<2.7	<0.40	<0.28	<0.28	**22**	**0.58** J1	<0.27	<0.46	**0.70**	ND	
		5/25/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**20**	**0.68** J1	<0.27	<0.46	**0.67**	ND	
		6/28/2021	Pace	--	--	<2.7	**1.1** J1	<0.28	<0.28	**20**	**0.54** J1	<0.27	<0.46	**1.1**	ND	
		7/26/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**22**	**0.59** J1	<0.27	<0.46	**1.1**	ND	
		8/17/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**23**	**0.58** J1	<0.27	<0.46	**1.1**	ND	
		9/15/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**20**	**0.50** J1	<0.27	<0.46	**0.68**	ND	
		10/28/2021	Pace	18.6	346	<2.7	<0.40	<0.28	<0.28	**20**	**0.57** J1	<0.27	<0.46	**0.56** J1	ND	
		11/22/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**22**	**0.67** J1	<0.27	<0.46	**0.54** J1	ND	
		12/1/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**22**	**0.62** J1	<0.27	<0.46	**0.46** J1	ND	
		1/18/2022	Pace	--	--	<5.3	<0.80	<0.55	<0.56	**23**	**0.76** J	<0.54	<0.41	**0.60** J	Methylene Chloride	3.8 J
		2/1/2022	Pace	--	--	<5.3	<0.80	<0.55	<0.56	**23**	**0.68** J	<0.54	<0.41	<0.37	ND	
		3/1/2022	Pace	--	--	<0.076	<0.098	<0.088	<0.048	**20.4**	**0.45**	<0.15	<0.077	<0.073	ND	
		4/7/2022	Pace	20.0	362	<0.17	<0.10	<0.15	<0.23	**22.4**	**0.38** J	<0.094	<0.17	**0.52**	ND	
		5/4/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**25.0**	**0.53** J	<0.094	<0.17	**0.53**	ND	
		6/2/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**21.1**	**0.47** J	<0.094	<0.17	**0.43**	ND	
		7/12/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**21.1**	**0.46** J	<0.094	<0.17	**0.46**	ND	
		8/11/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**20.3**	**0.45** J	<0.094	<0.17	**0.40**	ND	
		9/7/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**20.5**	**0.46** J	<0.094	<0.17	**0.40**	Acetone	1.9 J
		10/25/2022	Pace	**18.3**	**353**	<0.35	<0.15	<0.25	<0.36	**23.8**	**0.52** J	<0.17	<0.24	**0.40** J	ND	
		11/10/2022	Pace	--	--	<0.35	<0.15	<0.25	<0.36	**22.8**	**0.50** J	<0.17	<0.24	**0.44** J	ND	
		12/29/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**18.4**	<0.32	<0.094	<0.17	<0.087	ND	
PW-21RR After Treatment System	A. Oechsner N7548 Hwy. 67 Mayville	6/27/13	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**1.5**	<0.21	<0.25	<0.12	<0.20	m&p-Xylene	**0.25** JB
		7/29/13	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**1.4**	<0.21	<0.25	<0.12	<0.20	ND	
		8/26/13	Pace	--	--	<0.22	<0.40	<0.20	<0.23	**2.3**	<0.20	<0.19	<0.18	<0.19	ND	
		9/12/13	Pace	--	--	<0.22	<0.40	<0.20	<0.23	**2.1**	<0.20	<0.19	<0.18	<0.19	ND	
		10/1/13	Pace	--	--	<0.22	<0.40	<0.20	<0.23	**2.4**	<0.20	<0.19	<0.18	<0.19	ND	
		11/7/13	Pace	--	--	<0.22	<0.40	<0.20	<0.23	**1.2**	<0.20	<0.19	<0.18	<0.19	Methylene Chloride	**0.46** J
		12/9/13	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**0.74**	<0.21	<0.25	<0.13	<0.20	ND	
		1/9/2014	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**0.84**	<0.21	<0.25	<0.13	<0.20	ND	
		2/11/2014	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**0.73**	<0.21	<0.25	<0.13	<0.20	ND	
		3/11/2014	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**1.6**	<0.21	<0.25	<0.13	<0.20	ND	

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-21RR After Treatment System (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	4/25/2014	Pace	--	--	<0.50	<0.50	<0.25	<0.24	**1.2**	<0.21	<0.25	<0.13	<0.20	ND
		5/12/2014	Pace	--	--	<0.17	<0.34	<0.077	<0.13	**1.5**	<0.15	<0.099	<0.084	<0.20	ND
		6/10/2014	Pace	--	--	<0.17	<0.34	<0.077	<0.13	**1.4**	<0.15	<0.099	<0.084	<0.20	ND
		7/8/2014	Pace	--	--	<0.17	<0.34	<0.077	<0.13	**1.3**	<0.15	<0.099	<0.084	<0.20	ND
		8/1/2014	Pace	--	--	<0.17	<0.34	<0.077	<0.13	**1.7**	<0.15	<0.099	<0.084	<0.082	ND
		10/6/2014	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**1.5**	<0.15	<0.12	<0.084	<0.082	ND
		11/20/2014	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**0.63**	<0.15	<0.12	<0.084	<0.082	ND
		12/12/2014	Pace	--	--	<0.27 H1	<0.34 H1,L3	<0.087 H1	<0.17 H1	**9.9** H1	**0.17** J, H1	<0.12 H1	<0.084 H1	**0.35** H1	ND
		1/21/2015	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**9.9**	**0.21** J	<0.12	<0.084	**0.28**	ND
		2/18/2015	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**1.0**	<0.15	<0.12	<0.084	<0.082	ND
		3/5/2015	Pace	--	--	<0.27	<0.34	<0.087	<0.17	**1.3**	<0.15	<0.12	<0.084	<0.082	ND
		4/17/2015	Pace	**15.6** B	**333**	<0.27	<0.34	<0.087	<0.17	**1.6**	<0.15	<0.12	<0.084	<0.082	ND
		5/20/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**0.83**	<0.18	<0.15	<0.14	<0.081	ND
		6/3/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**1.3**	<0.18	<0.15	<0.14	<0.15	Isopropylbenzene (Cumene) **0.11** J
		7/16/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**2.3**	<0.18	<0.15	<0.14	<0.081	ND
		8/31/2015	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**2.1**	<0.18	<0.15	<0.14	<0.081	ND
		9/21/2015	Pace	--	--	<0.34 H1	<0.64 H1,L3	<0.19 H1	<0.17 H1	**1.9** H1	<0.18 H1	<0.15 H1	<0.14 H1	<0.081 H1	ND
		10/6/2015	Pace	--	--	<0.88	<0.20	<0.15	<0.17	**2.5**	<0.18	<0.13	<0.19	<0.10	ND
		11/4/2015	Pace	--	--	<0.24 N2	<0.23 N2	<0.17 N2	<0.17 N2	**1.6** N2	<0.19 N2	<0.32 N2	<0.21 N2	<0.23 N2	Isopropylbenzene (Cumene) **0.81** N2 Benzene **2.4** N2
		12/3/2015	Pace	--	--	<0.24	<0.23	<0.17	<0.17	**1.1**	<0.19	<0.32	<0.21	<0.23	ND
		2/9/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**2.7**	<0.18	<0.15	<0.14	<0.15	Toluene **0.26** J
		3/10/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**1.2**	<0.18	<0.15	<0.14	<0.15	ND
		4/5/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**0.98**	<0.18	<0.15	<0.14	<0.081	ND
		5/19/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**1.2**	<0.18	<0.15	<0.14	<0.081	ND
		6/22/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**1.6**	<0.18	<0.15	<0.14	<0.081	ND
		7/7/2016	Pace	--	--	<0.34	<0.64	<0.19	<0.17	**2.2**	<0.18	<0.15	<0.14	<0.081	ND
		8/11/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.9**	<0.11	<0.12	<0.044	<0.098	ND
		9/9/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.9**	<0.11	<0.12	<0.044	<0.098	ND
		10/4/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.9**	<0.11	<0.12	<0.044	<0.098	ND
		11/14/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.8**	<0.11	<0.12	<0.044	<0.098	ND
		12/1/2016	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.7**	<0.11	<0.12	<0.044	<0.098	ND
		1/27/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.1**	<0.11	<0.12	<0.044	<0.098	ND
		2/2/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.1**	<0.11	<0.12	<0.044	<0.098	ND
		3/9/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.4**	<0.11	<0.12	<0.044	<0.098	ND
		4/4/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.4**	<0.11	<0.12	<0.044	<0.098	ND
		5/19/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.5**	<0.11	<0.12	<0.044	<0.098	ND
		6/22/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.9**	<0.11	<0.12	<0.044	<0.098	ND
		7/17/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.4**	<0.11	<0.12	<0.044	<0.098	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-21RR After Treatment System (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	8/2/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.9**	<0.11	<0.12	<0.044	<0.098	ND
		9/7/2017	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.5**	<0.21	<0.12	<0.11	<0.074	ND
		10/3/2017	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**4.1**	<0.21	<0.12	<0.11	<0.074	ND
		11/1/2017	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.5**	<0.21	<0.12	<0.11	<0.074	ND
		1/18/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.1**	<0.21	<0.12	<0.11	<0.074	ND
		2/1/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.3**	<0.21	<0.12	<0.11	<0.074	ND
		3/14/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.1**	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.0**	<0.21	<0.12	<0.11	<0.074	ND
		5/15/2018	Pace	--	--	<0.053	**0.14**	<0.033	<0.034	**1.5**	<0.028	<0.040	<0.044	<0.016	ND
		6/1/2018	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**1.6**	<0.21	<0.12	<0.11	<0.074	ND
		7/12/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.8**	<0.18	<0.17	<0.12	<0.086	Isopropylbenzene (Cumene) **0.51** J1 N2
		8/2/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**2.9**	<0.18	<0.17	<0.12	<0.086	ND
		9/4/2018	Pace	--	--	<0.14	0.54	<0.16	<0.19	**2.6**	<0.18	<0.17	<0.12	<0.086	ND
		10/1/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**2.2**	<0.18	<0.17	<0.12	<0.086	Isopropylbenzene **0.69**
		11/20/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.3**	<0.18	<0.17	<0.12	<0.086	ND
		12/20/2018	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.5**	<0.18	<0.17	<0.12	<0.086	ND
		1/9/2019	Pace	--	--	<0.37	<0.22	<0.28	<0.21	<0.39	<0.35	<0.48	<0.23	<0.37	ND
		2/19/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.3**	<0.18	<0.17	<0.12	<0.086	ND
		3/13/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.9**	<0.18	<0.17	<0.12	<0.086	ND
		4/3/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**3.5**	<0.18	<0.17	<0.12	<0.086	ND
		5/20/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.2**	<0.18	<0.17	<0.12	<0.086	ND
		6/12/2019	Northern Lake Services	--	--	<1.5	<0.23	<0.31	<0.25	**1.4**	<0.47	<0.28	<0.30	<0.20	ND
		7/9/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**2.6**	<0.18	<0.17	<0.12	<0.086	ND
		8/15/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**4.2**	<0.18	<0.17	<0.12	<0.086	ND
		9/19/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**1.5**	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	--	--	<0.14	<0.15	<0.16	<0.19	**4.9**	<0.18	<0.17	<0.12	<0.086	ND
		11/19/2019	Pace	--	--	<1.5	<0.23	<0.31	<0.25	**3**	<0.47	<0.28	<0.30	<0.20	ND
		12/6/2019	Pace	--	--	<1.5	<0.23	<0.31	<0.25	**2.3**	<0.47	<0.28	<0.30	<0.20	ND
		1/8/2020	Pace	--	--	<0.071	<0.087	<0.079	<0.088	**3.7**	<0.045	<0.064	<0.053	<0.068	ND
		2/3/2020	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**3.9**	<0.18	<0.17	<0.12	<0.086	ND
		3/4/2020	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**5.6**	<0.18	<0.17	<0.12	<0.086	ND
		6/11/2020	Pace	--	--	<0.071	<0.087	<0.079	<0.088	**2.1**	<0.045	<0.064	<0.053	<0.068	ND
		7/6/2020	Pace	--	--	<0.071	<0.087	<0.079	<0.088	**1.3**	<0.045	<0.064	<0.053	<0.068	ND
		8/3/2020	Pace	--	--	<2.7	<0.40	<0.43	<0.28	**1.2**	<0.24	<0.27	<0.46	<0.19	ND
		9/18/2020	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.7**	<0.24	<0.27	<0.46	<0.19	ND
		10/14/2020	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.7**	<0.24	<0.27	<0.46	<0.19	ND
		11/12/2020	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**2.2**	<0.18	<0.17	<0.12	<0.086	Chlorobenzene **0.23** J2

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
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Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-21RR After Treatment System (cont.)	A. Oechsner N7548 Hwy. 67 Mayville	12/21/2020	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**1.7**	<0.18	<0.17	<0.12	<0.086	Chlorobenzene **0.19** J2
		1/20/2021	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**1.7**	<0.18	<0.17	<0.12	<0.086	Chlorobenzene **0.19** J1
		2/17/2021	Pace	--	--	<0.34	<0.15	<0.16	<0.19	**2.0**	<0.18	<0.17	<0.12	<0.086	Chlorobenzene **0.12** J1 Styrene **0.38** J1
		3/17/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.4**	<0.24	<0.27	<0.46	<0.19	ND
		4/29/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.7**	<0.24	<0.27	<0.46	<0.19	ND
		5/25/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.3**	<0.24	<0.27	<0.46	<0.19	ND
		6/28/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.6**	<0.24	<0.27	<0.46	<0.19	ND
		7/26/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.8**	<0.24	<0.27	<0.46	<0.19	ND
		8/17/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**2.2**	<0.24	<0.27	<0.46	<0.19	ND
		9/15/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**2.1**	<0.24	<0.27	<0.46	<0.19	ND
		10/28/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**2.0**	<0.24	<0.27	<0.46	<0.19	ND
		11/22/2021	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.6**	<0.24	<0.27	<0.46	<0.19	ND
		12/1/2021	Pace	--	--	<0.28	<0.40	<0.28	<0.28	**1.3**	<0.24	<0.27	<0.46	<0.19	ND
		1/18/2022	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.5**	<0.24	<0.27	<0.21	<0.19	ND
		2/1/2022	Pace	--	--	<2.7	<0.40	<0.28	<0.28	**1.3**	<0.24	<0.27	<0.21	<0.19	ND
		3/1/2022	Pace	--	--	<0.076	<0.098	<0.088	<0.048	**1.2**	<0.092	<0.15	<0.077	<0.073	ND
		4/7/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**1.8**	<0.32	<0.094	<0.17	<0.087	ND
		5/4/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**1.9**	<0.32	<0.094	<0.17	<0.087	ND
		6/2/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**1.9**	<0.32	<0.094	<0.17	<0.087	Acetone 2.4
		7/12/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**2.2**	<0.32	<0.094	<0.17	<0.087	ND
		8/11/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**1.8**	<0.32	<0.094	<0.17	<0.087	ND
		9/7/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**2.0**	<0.32	<0.094	<0.17	<0.087	Acetone 1.3 J
		10/25/2022	Pace	--	--	<0.35	<0.15	<0.25	<0.36	**2.3**	<0.31	<0.17	<0.24	<0.16	ND
		11/10/2022	Pace	--	--	<0.35	<0.15	<0.25	<0.36	**2.1**	<0.31	<0.17	<0.24	<0.16	ND
		12/29/2022	Pace	--	--	<0.17	<0.10	<0.15	<0.23	**1.9**	<0.32	<0.094	<0.17	<0.087	ND
Semi-annual Monitoring Locations															
PW-19	Antonioni W2831 Zion Church Rd. Mayville	6/28/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	**0.30** J	<0.30	<0.15	<0.25	<0.032	ND
		10/5/2012	Pace	**45.1**	**372**	<0.31	<0.13	<0.072	<0.16	<0.08	<0.14	<0.16	<0.11	<0.16	ND
		4/3/2013	Pace	**40.2**	**339**	<0.31	<0.13	<0.072	<0.16	**0.55**	<0.14	<0.16	<0.11	<0.16	ND
		10/1/2013	Pace	**38.3**	**355**	<0.22	<0.40	<0.20	<0.23	**0.82**	<0.20	<0.19	<0.18	<0.19	ND
		4/25/2014	Pace	**37.9**	**375**	<0.50	<0.50	<0.25	<0.24	**0.65**	<0.21	<0.25	<0.13	<0.20	ND
		10/6/2014	Pace	**43.1**	**341**	<0.27	<0.34	<0.087	<0.17	**0.63** J	<0.15	<0.12	<0.084	<0.082	ND
		6/3/2015	Pace	**41.1**	**352**	<0.34	<0.64	<0.19	<0.17	**0.63**	<0.18	<0.15	<0.14	<0.15	ND
		10/6/2015	Pace	**47.7**	**340**	<0.88	<0.20	<0.15	<0.17	**0.73**	<0.18	<0.13	<0.19	<0.10	ND
		4/5/2016	Pace	**42.6**	**335**	<0.34	<0.64	<0.19	<0.17	**0.59**	<0.18	<0.15	<0.14	<0.081	ND
		10/4/2016	Pace	**45.7**	**349**	<0.18	<0.21	<0.088	<0.089	**0.64**	<0.11	<0.12	<0.044	<0.098	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-19 (cont.)	Antonioni W2831 Zion Church Rd. Mayville	4/4/2017	Pace	**45.7**	**353**	<0.18	<0.21	<0.088	<0.089	**0.55**	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**55.9**	**360**	<0.32	<1.1	<0.14	<0.18	**0.45**	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	**52**	**362**	<0.32	<1.1	<0.14	<0.18	**0.54**	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**51.3**	**348**	<0.14	<0.15	<0.16	<0.19	**0.58**	<0.18	<0.17	<0.12	<0.086	ND
		4/3/2019	Pace	**41.4**	**326**	<0.14	<0.15	<0.16	<0.19	**1.2**	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**54.1**	**347**	<0.14	<0.15	<0.16	<0.19	**2.2**	<0.18	<0.17	<0.12	<0.086	ND
		6/24/2020	Pace	**45.1**	**353**	<2.7	<0.40	<0.28	<0.28	**1.2**	<0.24	<0.27	<0.46	<0.19	ND
		10/14/2020	Pace	**54.2**	**362**	<2.7	<0.40	<0.28	<0.28	**1.1** J2	<0.24	<0.27	<0.46	<0.19	ND
		4/29/2021	Pace	**41.9**	**351**	<2.7	<0.40	<0.28	<0.28	**0.48** J2	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**56.5**	**366**	<2.7	<0.40	<0.28	<0.28	**0.54** J1	<0.24	<0.27	<0.46	<0.19	ND
		4/8/2022	Pace	**39.8**	**382**	<0.17	<0.10	<0.15	<0.23	**0.44** J1	<0.32	<0.094	<0.17	<0.087	ND
		10/25/2022	Pace	**53.1**	**374**	<0.35	<0.15	<0.25	<0.36	**0.78**	<0.31	<0.17	<0.24	<0.16	ND
PW-20	Sellnow N7627 Hwy. 67 Mayville	3/11/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	**0.22** JB	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
		1/21/2010	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
		7/14/2010	NLS	--	--	<1.0	<0.16	<0.14	<0.11	<0.13	<0.11	<0.10	<0.12	<0.13	ND
		4/6/2011	NLS	--	--	<1.6	<0.29	<0.23	<0.13	<0.30	<0.30	<0.11	<0.28	<0.20	ND
			TA	--	--	<0.10	<0.20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.032	ND
		10/6/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		4/13/2012	TA	**33**	**310**	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		10/5/2012	Pace	**45.6**	**323**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/2/2013	Pace	**29.3**	**340**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		10/1/2013	Pace	**22.3**	**312**	<0.22	<0.40	<0.20	<0.23	<0.12	<0.20	<0.19	<0.18	<0.19	ND
		4/25/2014	Pace	**27.7**	**385**	<0.50	<0.50	<0.25	<0.24	<0.23	<0.21	<0.25	<0.13	<0.20	ND
		10/6/2014	Pace	**28.4**	**315**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		4/17/2015	Pace	**62.8**	**365**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**26.4**	**327**	<0.88	<0.20	<0.15	<0.17	<0.16	<0.18	<0.13	<0.19	<0.10	ND
		4/5/2016	Pace	**23.0**	**330**	<0.34	<0.64	<0.19	<0.17	<0.17	<0.18	<0.15	<0.14	<0.081	ND
		10/4/2016	Pace	**27.2**	**325**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		4/6/2017	Pace	**30.4**	**333**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		10/5/2017	Pace	**22.5**	**327**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	**20.6**	**334**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**19.3**	**323** M0	<1.3	<2.2	<0.27	<0.24	<0.27	<1.1	<0.33	<0.26	<0.17	ND
		4/5/2019	Pace	**25.8**	**319**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**18.8**	**319**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		6/24/2020	Pace	**16.7**	**325**	<0.27	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-20 (cont.)	Sellnow N7627 Hwy. 67 Mayville	11/12/2020	Pace	**14.6**	**310** M0	<0.34	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		4/29/2021	Pace	**20.4**	**337**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**30.1**	**370**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		4/8/2022	Pace	**15.0**	**360**	<0.17	<0.10	<0.15	<0.23	<0.25	<0.32	<0.094	<0.17	<0.087	ND
		10/25/2022	Pace	**39.5**	**374**	<0.35	<0.15	<0.25	<0.36	<0.20	<0.31	<0.17	<0.24	<0.16	ND
PW-23	Weiss W2978 Zion Church Rd. Mayville	3/11/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	**0.25** JB	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
		7/14/2010	NLS	--	--	<1.0	<0.16	<0.14	<0.11	<0.13	<0.11	<0.10	<0.12	<0.13	ND
		4/6/2011	NLS	--	--	<1.6	<0.29	<0.23	<0.13	<0.30	<0.30	<0.11	<0.28	<0.20	ND
			TA	--	--	<0.10	<0.20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.032	ND
		10/6/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		4/11/2012	TA	**160**	**320**	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		10/5/2012	Pace	**135**	**358**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/2/2013	Pace	**108**	**385**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		10/1/2013	Pace	**107**	**426**	<0.22	<0.40	<0.20	<0.23	<0.12	<0.20	<0.19	<0.18	<0.19	ND
		4/25/2014	Pace	**94.4**	**383**	<0.50	<0.50	<0.25	<0.24	<0.23	<0.21	<0.25	<0.13	<0.20	ND
		10/6/2014	Pace	**99.3**	**405**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		4/17/2015	Pace	**108**	**379**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**100**	**424**	<0.88	<0.20	<0.15	<0.17	<0.16	<0.18	<0.13	<0.19	<0.10	ND
		4/5/2016	Pace	**66.7**	**353**	<0.34	<0.64	<0.19	<0.17	<0.17	<0.18	<0.15	<0.14	<0.081	ND
		10/4/2016	Pace	**76.7**	**391**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		4/4/2017	Pace	**83.6**	**411**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**103**	**412**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	**84.1**	**501**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**111**	**382**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		4/3/2019	Pace	**94.1**	**379**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**62.7**	**367**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		6/24/2020	Pace	**106**	**375**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/14/2020	Pace	**105**	**398**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		4/29/2021	Pace	**123**	**381**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**106**	**395**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		4/8/2022	Pace	**107**	**407**	<0.17	<0.10	<0.15	<0.23	<0.25	<0.32	<0.094	<0.17	<0.087	ND
		10/25/2022	Pace	**108**	**408**	<0.35	<0.15	<0.25	<0.36	<0.20	<0.31	<0.17	<0.24	<0.16	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-27 (Abandoned)	All Line Construction N7477 Hwy. 67 Mayville	2/24/2009	NLS	--	--	<0.79	<0.31	**0.91**	**0.36** J	**120**	**3.9**	<0.15	**2.9**	**12**	ND
			CT	--	--	**3.0**	**1.1** B	**1.0**	**0.47** J	**110**	**4.4**	<0.30	**2.8**	**9.4**	ND
		3/11/2009	NLS	--	--	<0.95	<0.16	**0.70** J	**0.26** J	**100**	**3.2**	<0.20	**2.4**	**8.3**	ND
			CT	--	--	**2.4**	<0.22	**0.81**	**0.41** J	**89**	**4.1**	<0.30	**2.7**	**7.1**	ND
		6/30/2009	Siemens	--	--	**2.55**	<0.40	**0.91** J	**0.45** J	**115**	**3.71**	<0.30	**2.83**	**8.26**	ND
		2/10/2011	Siemens	**32.3**	**386**	**1.98** J	<0.40	**0.74** J	<0.40	**101**	**3.45**	<0.30	**2.31**	**6.48**	ND
		5/2/2012	Siemens	**26.4**	**334**	**1.42** J	<0.40	**0.42** J	<0.40	**53.6**	**1.81**	<0.30	**1.19** J	**4.02**	ND
		12/17/2012	Pace	**39.9**	**349**	**2.3**	<0.13	**0.69**	**0.17** J	**86.2**	**2.8**	<0.16	**1.2**	**9.1**	Methyl-tert-butyl ether **0.092** J 1,2,4 Trimethylbenzene **0.052** J
		2/20/2013	Pace	**36.7**	**360**	**2.30**	<0.13	**0.77**	<0.16	**87**	**3.30**	<0.16	**1.90**	**7.10**	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
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Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-28	W. Muche N7650 Hwy. 67 Mayville	3/11/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	**0.18** J	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	**0.24** J	<0.27	<0.30	<0.24	<0.11	ND
		6/30/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	**0.19** J	<0.28	<0.20	<0.25	<0.19	ND
		7/14/2010	NLS	--	--	<1.0	<0.16	<0.14	<0.11	**0.28** J	<0.11	<0.10	<0.12	<0.13	ND
		4/6/2011	NLS	--	--	<1.6	<0.29	<0.23	<0.13	**0.39** J	<0.30	<0.11	<0.28	<0.20	ND
			TA	--	--	<0.10	<0.20	<0.050	<0.050	**0.30** J	<0.050	<0.050	<0.050	<0.032	ND
		10/6/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	**0.33** J	<0.30	<0.15	<0.25	<0.032	ND
		4/11/2012	TA	**17**	**280**	<0.50	<0.30	<0.25	<0.15	**0.45** J	<0.30	<0.15	<0.25	<0.032	ND
		10/5/2012	Pace	**15.3**	**316**	<0.31	<0.13	<0.072	<0.16	**0.74**	<0.14	<0.16	<0.11	<0.16	ND
		4/3/2013	Pace	**16.1**	**339**	<0.31	<0.13	<0.072	<0.16	**1**	<0.14	<0.16	<0.11	<0.16	ND
		10/1/2013	Pace	**18.0**	**353**	<0.22	<0.40	<0.20	<0.23	**1.4**	<0.20	<0.19	<0.18	<0.19	ND
		4/25/2014	Pace	**18.3**	**374**	<0.17	<0.34	<0.077	<0.13	**1.2**	<0.15	<0.099	<0.084	<0.20	ND
		10/6/2014	Pace	**26.2**	**331**	<0.27	<0.34	<0.087	<0.17	**1.8**	<0.15	<0.12	<0.084	<0.082	ND
		4/17/2015	Pace	**21.7**	**344**	<0.27	<0.34	<0.087	<0.17	**2.0**	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**24.4**	**365**	<0.88	<0.20	<0.15	<0.17	**2.5**	<0.18	<0.13	<0.19	<0.10	ND
		4/5/2016	Pace	**24.1**	**362**	<0.34	<0.64	<0.19	<0.17	**2.2**	<0.18	<0.15	<0.14	<0.081	ND
		10/4/2016	Pace	**27.2**	**354**	<0.18	<0.21	<0.088	<0.089	**2.1**	<0.11	<0.12	<0.044	<0.098	ND
		4/4/2017	Pace	**27.4**	**354**	<0.18	<0.21	<0.088	<0.089	**2.3**	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**26.8**	**352**	<0.32	<1.1	<0.14	<0.18	**2.6**	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	**27.3**	**370**	<0.32	<1.1	<0.14	<0.18	**2.5**	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**27**	**354**	<0.14	<0.15	<0.16	<0.19	**3.0**	<0.18	<0.17	<0.12	<0.086	ND
		4/3/2019	Pace	**26.9**	**350**	<0.14	<0.15	<0.16	<0.19	**2.8**	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**29.8**	**341**	<0.14	<0.15	<0.16	<0.19	**3.7**	<0.18	<0.17	<0.12	<0.086	ND
		6/24/2020	Pace	**31.6**	**356**	<2.7	<0.40	<0.28	<0.28	**2.8**	<0.24	<0.27	<0.46	<0.19	ND
		10/14/2020	Pace	**32.3**	**364**	<2.7	<0.40	<0.28	<0.28	**3.7**	<0.24	<0.27	<0.46	<0.19	ND
		4/29/2021	Pace	**33.4**	**365**	<2.7	<0.40	<0.28	<0.28	**3.9**	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**34.1**	**397**	<2.7	<0.40	<0.28	<0.28	**3.6**	<0.24	<0.27	<0.46	<0.19	ND
		4/8/2022	Pace	**36.0**	**395**	<0.17	<0.10	<0.15	<0.23	**3.5**	<0.32	<0.094	<0.17	<0.087	ND
		10/25/2022	Pace	**36.4**	**370**	<0.35	<0.15	<0.25	<0.36	**4.5**	<0.31	<0.17	<0.24	<0.16	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-32	J. Oechsner W2983 Zion Church Rd. Mayville	4/7/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	**0.12** J2	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
		9/23/2009	NLS	--	--	<1.2	<0.48	<0.19	<0.22	<0.17	<0.19	<0.17	<0.23	<0.21	ND
		7/14/2010	NLS	--	--	<1.0	<0.16	<0.14	<0.11	**0.14** J	<0.11	<0.10	<0.12	<0.13	ND
		4/5/2011	NLS	--	--	<1.6	<0.29	<0.23	<0.13	<0.30	<0.30	<0.11	<0.28	<0.20	ND
			TA	--	--	<0.10	<0.20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.032	Chlorobenzene **0.050** J
		10/6/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		4/11/2012	TA	**41**	**300**	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		10/5/2012	Pace	**40.2**	**349**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/2/2013	Pace	**39.8**	**478**	<0.31	<0.13	<0.072	<0.16	**0.27** J	<0.14	<0.16	<0.11	<0.16	ND
		10/1/2013	Pace	**40.5**	**362**	<0.22	<0.40	<0.20	<0.23	<0.12	<0.20	<0.19	<0.18	<0.19	ND
		4/25/2014	Pace	**40.7**	**374**	<0.50	<0.50	<0.25	<0.24	**0.30** J	<0.21	<0.25	<0.13	<0.20	ND
		10/6/2014	Pace	**41.2**	**355**	<0.27	<0.34	<0.087	<0.17	**0.33** J	<0.15	<0.12	<0.084	<0.082	ND
		4/24/2015	Pace	**35.4**	**334**	<0.27	<0.34	<0.087	<0.17	**0.16** J	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**37.1**	**355**	<0.88	<0.20	<0.15	<0.17	**0.53**	<0.18	<0.13	<0.19	<0.10	ND
		4/5/2016	Pace	**39.0**	**348**	<0.34	<0.64	<0.19	<0.17	**0.32** J	<0.18	<0.15	<0.14	<0.081	ND
		10/4/2016	Pace	**42.3**	**345**	<0.18	<0.21	<0.088	<0.089	**0.39** J	<0.11	<0.12	<0.044	<0.098	ND
		4/4/2017	Pace	**41.6**	**340**	<0.18	<0.21	<0.088	<0.089	**0.26** J	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**45.1**	**358**	<0.32	<1.1	<0.14	<0.18	**0.31**	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	**43.6**	**373** M0	<0.32	<1.1	<0.14	<0.18	**0.21** J1	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**43.2**	**347**	<0.14	<0.15	<0.16	<0.19	**0.37** J1	<0.18	<0.17	<0.12	<0.086	ND
		4/3/2019	Pace	**44**	**337**	<0.14	<0.15	<0.16	<0.19	**0.33** J1	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**48.1**	**342**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		6/24/2020	Pace	**45**	**345**	<2.7	<0.40	<0.28	<0.28	**0.42** J2	<0.24	<0.27	<0.46	<0.19	ND
		10/14/2020	Pace	**43.4**	**353**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		4/29/2021	Pace	**41.7**	**350**	<2.7	<0.40	<0.28	<0.28	**0.36** J1	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**46.1**	**352**	<2.7	<0.40	<0.28	<0.28	**0.42** J1	<0.24	<0.27	<0.46	<0.19	Chloroform **3.1** Toluene **11**
		4/8/2022	Pace	**41.1**	**374**	<0.17	<0.10	<0.15	<0.23	<0.25	<0.32	<0.094	<0.17	<0.087	ND
		10/25/2022	Pace	**40.9**	**359**	<0.35	<0.15	<0.25	<0.36	**0.52** J1	<0.31	<0.17	<0.24	<0.16	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
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Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-38	King N7746 Hwy. 67 Mayville	5/14/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	**0.57** J	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
		7/14/2010	NLS	--	--	<1.0	<0.16	<0.14	<0.11	<0.13	<0.11	<0.10	<0.12	<0.13	ND
		4/6/2011	NLS	--	--	<1.6	<0.29	<0.23	<0.13	<0.30	<0.30	<0.11	<0.28	<0.20	ND
			TA	--	--	<0.10	<0.20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.032	Toluene **0.22** J
		10/6/2011	TA	--	--	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	Toluene **0.35** J
		4/11/2012	TA	<3.1	**310**	<0.50	<0.30	<0.25	<0.15	<0.30	<0.30	<0.15	<0.25	<0.032	ND
		10/5/2012	Pace	<2.0	**338**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/2/2013	Pace	**2.4** J	**268**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		10/1/2013	Pace	**3.2** J	**349**	<0.22	<0.40	<0.20	<0.23	<0.12	<0.20	<0.19	<0.18	<0.19	ND
		4/25/2014	Pace	**2.9** J	**361**	<0.50	<0.50	<0.25	<0.24	<0.23	<0.21	<0.25	<0.13	<0.20	ND
		10/6/2014	Pace	**3.2** J	**335**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		4/24/2015	Pace	**2.9** JB	**338**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**2.7** J	**341**	<0.88	<0.20	<0.15	<0.17	<0.16	<0.18	<0.13	<0.19	<0.10	ND
		4/5/2016	Pace	**3.0** J	**344**	<0.34	<0.64	<0.19	<0.17	<0.17	<0.18	<0.15	<0.14	<0.081	ND
		10/4/2016	Pace	**1.6** J	**340**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		4/4/2017	Pace	**1.5** J	**339**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**2.5**	**334**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		4/3/2018	Pace	**1.8** J1	**350**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**1.6** J1	**330**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		4/3/2019	Pace	**1.8** J1	**330**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**2.1**	**328**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		6/24/2020	Pace	**2**	**340**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/14/2020	Pace	**1.6** J2	**340**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		4/29/2021	Pace	**1.7** J1	**340**	<2.7	<0.40	<0.28	<0.43	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**1.6** J1	**346**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		4/8/2022	Pace	**1.6** J1	**360**	<0.17	<0.10	<0.15	<0.23	<0.25	<0.32	<0.094	<0.17	<0.087	ND
		10/25/2022	Pace	**1.5** J1	**350**	<0.35	<0.15	<0.25	<0.36	<0.20	<0.31	<0.17	<0.24	<0.16	ND

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Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-J	Glacier Ridge Landfill	10/30/2013	Pace	**28.8**	**395**	<0.44	<0.39	<0.28	<0.43	<0.42	<0.37	<0.47	<0.36	<0.18	ND
		10/8/2014	Pace	**27.3**	**369**	<0.37	<0.5	<0.24	<0.41	<0.26	<0.26	<0.5	<0.33	<0.18	ND
		10/7/2015	Pace	**27.7**	**387**	<0.37	<0.5	<0.24	<0.41	<0.26	<0.26	<0.5	<0.33	<0.18	ND
		10/6/2016	Pace	**30.1**	**368**	<0.37	<0.5	<0.24	<0.41	**0.8** J	<0.26	<0.5	<0.33	<0.18	ND
		2/2/2017	Pace	--	--	<0.18	<0.21	<0.088	<0.089	**1.5**	<0.11	<0.12	<0.044	<0.098	ND
		4/4/2017	Pace	--	--	<0.37	<0.5	<0.24	<0.41	**1.7**	<0.26	<0.5	<0.33	<0.18	ND
		10/3/2017	Pace	**27.8**	**367**	<0.37	<0.5	<0.24	<0.41	**4.6**	**0.35** J	<0.5	<0.33	<0.18	ND
		12/8/2017	Pace	--	--	<0.32	<1.1	<0.14	<0.18	**3.0**	<0.21	<0.12	<0.11	<0.074	Naphthalene **0.73** J Toluene **0.62**
		4/3/2018	Pace	**24.5**	**379 M**	<0.37	<0.5	<0.24	<0.41	**7.1**	**0.43** J	<0.5	<0.33	<0.18	ND
		6/1/2018	Pace	--	--	<0.37	<0.5	<0.24	<0.41	**6.5**	**0.38** J	<0.5	<0.33	<0.18	ND
		6/1/2018 (Dup)	Pace	--	--	<0.5	<0.7	<0.3	<0.4	**5.5**	<0.6	<0.5	<0.3	<0.19	ND
		10/5/2018	Pace	**18.1**	**346**	<1.3	<2.2	<0.27	<0.24	**4.8**	<1.1	<0.33	<0.26	**0.19** J	ND
		10/5/2018 (Dup)	Pace	**18.3**	**348**	<1.3	<2.2	<0.27	<0.24	**4.9**	<1.1	<0.33	<0.26	<0.17	ND
		5/31/2019	Pace	**23.5**	**325**	<1.3	<2.2	<0.27	<0.24	**8.1**	<1.1	<0.33	<0.26	<0.17	Acetone **3.0** J1
		7/9/2019	Pace	--	--	<1.3	<2.2	<0.27	<0.24	**7.3**	<1.1	<0.33	<0.26	<0.17	ND
		10/8/2019	Pace	**23.6**	**345**	<1.3	<2.2	<0.27	<0.24	**6.8**	<1.1	<0.33	<0.26	<0.17	Acetone **7.7** J1
		10/8/2019 (Dup)	Pace	**23.9**	**335**	<1.3	<2.2	<0.27	<0.24	**7.4**	<1.1	<0.33	<0.26	<0.17	Acetone **6.2** J1
		4/22/2020	Pace	**25.1**	**341**	<1.3	<2.2	<0.27	<0.24	**6.8**	**0.64** J2	<0.33	<0.26	<0.17	Acetone **4.2** J2
		10/8/2020	Pace	**24.6**	**370**	<1.3	<2.2	<0.27	<0.24	**8.4**	**0.51** J2	<0.33	<0.26	<0.17	Acetone **4.2** J2
Annual Monitoring Locations															
PW-42	Steinbach W2772 Zion Church Rd. Mayville	10/5/2012	Pace	<2.0	**324**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/2/2013	Pace	**2.2** J	**320**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		10/6/2014	Pace	**3.4** J	**327**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**3.0** J	**342**	<0.88	<0.20	<0.15	<0.17	<0.16	<0.18	<0.13	<0.19	<0.10	ND
		10/4/2016	Pace	**1.6** J	**330**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**2.3**	**328**	<0.32	<1.1	<0.14	<0.018	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**1.9** J1	**322**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<-0.12	<0.086	ND
		10/9/2019	Pace	**2.8**	**327**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/14/2020	Pace	**1.9** J2	**330**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**1.2** J1	**333**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/25/2022	Pace	**1.8** J1	**339**	<0.35	<0.15	<0.25	<0.36	<0.20	<0.31	<0.17	<0.24	<0.16	ND

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PW-43	Hinz W2698 Zion Church Rd. Mayville	10/5/2012	Pace	**11.4**	**215**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/3/2013	Pace	**10.8**	**211**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		10/6/2014	Pace	**12.9**	**226**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**15**	**223**	<0.88	<0.20	<0.15	<0.17	<0.16	<0.18	<0.13	<0.19	<0.10	ND
		10/4/2016	Pace	**12.5**	**218**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**12.2**	**225**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.21	<0.11	<0.074	ND
		10/1/2018	Pace	**16.4**	**217**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/8/2019	Pace	**13.2**	**218**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/14/2020	Pace	**11.7**	**211**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**15.1**	**224**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/25/2022	Pace	**15.6**	**217**	<0.35	<0.15	<0.25	<0.36	<0.20	<0.31	<0.17	<0.24	<0.16	ND
PW-44	Christian N7686 Ekren Rd. Mayville	10/5/2012	Pace	<2.0	**291**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		4/2/2013	Pace	**2.3** J	**316**	<0.31	<0.13	<0.072	<0.16	<0.080	<0.14	<0.16	<0.11	<0.16	ND
		10/6/2014	Pace	**2.9** J	**319**	<0.27	<0.34	<0.087	<0.17	<0.11	<0.15	<0.12	<0.084	<0.082	ND
		10/6/2015	Pace	**2.7** J	**342**	<0.88	<0.20	<0.15	<0.17	<0.16	<0.18	<0.13	<0.19	<0.10	ND
		10/4/2016	Pace	**1.2** J	**326**	<0.18	<0.21	<0.088	<0.089	<0.085	<0.11	<0.12	<0.044	<0.098	ND
		10/3/2017	Pace	**1.6** J	**332**	<0.32	<1.1	<0.14	<0.18	<0.073	<0.21	<0.12	<0.11	<0.074	ND
		10/1/2018	Pace	**1.3** J1	**316**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	Styrene **0.92**
		10/8/2019	Pace	**2**	**323**	<0.14	<0.15	<0.16	<0.19	<0.14	<0.18	<0.17	<0.12	<0.086	ND
		10/14/2020	Pace	**1.4** J2	**330**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/29/2021	Pace	**1.4** J1	**338**	<2.7	<0.40	<0.28	<0.28	<0.35	<0.24	<0.27	<0.46	<0.19	ND
		10/25/2022	Pace	**1.1** J1	**334**	<0.35	<0.15	<0.25	<0.36	<0.20	<0.31	<0.17	<0.24	<0.16	ND
Non-Routine Monitoring Locations															
PW-1	Church View Farms J. Qualmann N7110 Hwy. V Horicon	4/7/2009	NLS	**34**	**240**	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
PW-3	Horicon Marsh Bowmen N7240 Hwy. V	4/30/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-4	Advanced Disposal N7271 Hwy. V Horicon	4/3/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
None	Wondra N7877 Hwy 67 Mayville	10/22/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	Chloroform **0.36**
PW-18	Advanced Disposal N7785 Hwy. 67 Mayville	4/3/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs
PW-18 Hand Pump	Advanced Disposal N7785 Hwy. 67 Mayville	4/3/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-24	St. John's Lutheran Church N7074 Hwy. V	4/30/2009	NLS	**33**	**320**	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	**0.3** J	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-26	Goodearle W3653 Decora Rd. Horicon	4/30/2009	NLS	**13**	**310**	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
PW-29	Persha N7241 Hwy. 67 Mayville	4/3/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-30	Wendorff N7306 Hwy. 67 Mayville	6/23/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-31	Wendorff N7306 Hwy. 67 Mayville	4/3/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-33	Lagerman W3230 STH 33 Iron Ridge	4/3/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-34	R H Equipment N7123 Hwy. 67 Mayville	4/13/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-35	Lewis N7143 Hwy. 67 Mayville	4/13/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-36	Mayville Animal Clinic N7860 Hwy. 67 Mayville	4/21/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND
PW-37	Halsne N7817 Hwy. 67 Mayville	4/30/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND
			CT	--	--	<0.40	**0.40** J	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND

Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022
(Results are in µg/L, except where otherwise noted)

Note: See last page for abbreviations, notes, and groundwater standards.

Well Number	Well Owner	Sample Date	Lab	Chloride (mg/L)	Alkalinity (mg/L)	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride	Other VOCs	
PW-Office Well	Advanced Disposal N7296 Hwy. V Horicon	4/7/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	**3.5**	<0.25	<0.19	1,4 Dichlorobenzene	**0.27** J
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	**3.3**	<0.24	<0.11	1,4 Dichlorobenzene	**0.22** J
		4/30/2009	NLS	--	--	<0.95	<0.16	<0.25	<0.18	<0.10	<0.28	<0.20	<0.25	<0.19	ND	
			CT	--	--	<0.40	<0.22	<0.21	<0.24	<0.21	<0.27	<0.30	<0.24	<0.11	ND	
NR 140 Groundwater Enforcement Standard				250	NS	400	30	850	7	70	100	5	5	0.2	1,2-Dichloroethane	5
															1,4 Dichlorobenzene	75
															Benzene	5
															Chloroform	6
															Chlorobenzene	100
															Methyl-tert-butyl ether	60
															Methylene Chloride	5
															Styrene	100
															Toluene	800
															Trimethylbenzenes	480
															Acetone	9000
Drinking Water Standard (Maximum Contaminant Level)				250	NS	NS	NS	NS	7	70	100	5	5	0.2	1,2-Dichloroethane	5
															1,4 Dichlorobenzene	75
															Benzene	5
															Chloroform (TTHM)	80
															Methylene Chloride	5
															Styrene	100
															Toluene	1,000
															Acetone	NE

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Table 4. LGRL VOC Investigation Water Supply Well Sample Results - Through December 2022

Abbreviations:
NS = No standard established
TTHM = Trihalomethanes (disinfection byproducts including chloroform)
ND = Not detected
mg/L = Milligrams per Liter
µg/L = Micrograms per Liter
-- = Not Analyzed

CT = CT Laboratories, Baraboo, WI
NLS = Northern Lake Service, Inc., Crandon, WI
Siemens = Siemens Water Technologies
TA = TestAmerica, Watertown, WI
Pace = Pace Analytical Services, Inc., Green Bay, WI

Bold indicates detected compound.
Bold and underline indicates result above drinking water standard.

Notes:
* Sample collected at the pressure tank prior to the iron filtration system.
** Sample collected at the kitchen tap after the water passed through the iron filtration system.

Laboratory Notes/Qualifiers:
B = Compound also detected in blank sample
J = Estimated value below laboratory limit of quantitation
J1 = Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ).
J2 = Result enclosed in brackets is between the Limit of Detection (LOD) and Limit of Quantitation (LOQ), and region of less certain quantitation.
H1 = Analysis conducted outside the recognized method holding time. Analyzed 2 days outside of hold time.
L2 = Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
L3 = Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1 = Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
N2 = The lab does not hold The Nelac Institute (NELAC/TNI) accreditation for this parameter.

Created by:	JSN	Date:	4/27/2009
Last revision by:	EO	Date:	5/23/2023
Checked by:	RM	Date:	5/23/2023
Proj Mgr QA/QC:	EO	Date:	5/23/2023

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-001AR (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.69	929.19	928.44	926.54	928.39	925.49	928.29	928.09
ph-Field (standard units)			7.61	7.34	7.39	7.5	7.45	7.05	7.4	7.73
					7.39		7.45	7.05		7.73
Specific conductance-field (umhos/cm @ 25c)			2140	1547	812	2132	2290	2700	1996	2550
					812		2290	2700		2550
Temperature, water (degrees centigrade)			11.5	9.5	10.2	12	17.5	12.1	11.6	20.4
					10.2		12.5	12.1		20.4
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			539	461	501	474	509	502	526	508
					489		516	478		533
Arsenic, dissolved (ug/l As)	10	1	**3.1**	**3.3**	**3.4**	**3.1**	**3.5**	**3.1**	**3.2**	**3.4**
	10	1			**3.4**		**3.3**	**3.3**		**3.6**
Chloride, dissolved (mg/l as Cl)	250	125	**617**	**499**	**538**	**543**	**532**	**534**	**588**	**570**
	250	125			**542**		**525**	**497**		**562**
Hardness, total, filtered (mg/l as CaCO3)			728	690	695	641	711	694	689	743
					664		696	696		742
Organic										
1,1-Dichloroethane (ug/l)	850	85	18.7 J	21	27.8	17.7 J	16.4	17.8 J	15.3 J	19.1 J
	850	85			24.4		15.6	18.4		20.2
1,1-Dichloroethylene (ug/l)	7	0.7	**6.5 J**	**2 J**	**5.8**	<4.9	<5.8	<11.6	<11.6	<11.6
	7	0.7			**4.9 J**		<5.8	<5.8		<11.6

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-001AR (LGRL)										
1,2-Dichloroethane (ug/l)	5	0.5	<5.6	<1.4	**0.67 J**	<5.6	<2.9	<5.8	<5.8	<5.8
	5	0.5			<5.6		<2.9	<2.9		<5.8
Acetone (ug/l)	9000	1800	<54.8	<13.7	3 J	<54.8	<86.4	<173	<173	<173
	9000	1800			<54.8		<86.4	<86.4		<173
Benzene (ug/l)	5	0.5	<4.9	<1.2	**2.1**	<4.9	<3	<5.9	<5.9	<5.9
	5	0.5			<4.9		<3	<3		<5.9
cis-1,2-Dichloroethene (ug/l)	70	7	**808**	**524**	**673**	**701**	**926**	**690**	**495**	**778**
	70	7			**670**		**895**	**737**		**852**
Dichloromethane (ug/l)	5	0.5	<11.6	**6.4 J**	<0.58	<11.6	<3.2	<6.4	<6.4	<6.4
	5	0.5			<11.6		<3.2	<3.2		<6.4
Methyl-tert-butyl ether (ug/l)	60	12	<24.9	<6.2	1.5 J	<24.9	<11.3	<22.6	<22.6	<22.6
	60	12			<24.9		<11.3	<11.3		<22.6
Tetrahydrofuran (ug/l)	50	10	**50.7 J**	**87.2 J**	**62.1**	<46.4	**51.1 J**	<48.4	<48.4	<48.4
	50	10			<46.4		**51.9 J**	**41.8 J**		<48.4
trans-1,2-Dichloroethene, total (ug/l)	100	20	<21.8	<5.5	5.1	**20 J**	7.7 J	15.2 J	<10.6	13.9 J
	100	20			**25.9 J**		5.4 J	<5.3		<10.6
Trichloroethylene (ug/l)	5	0.5	<5.1	<1.3	0.32 J	<5.1	<3.2	<6.4	<6.4	<6.4
	5	0.5			<5.1		<3.2	<3.2		<6.4
Vinyl chloride (ug/l)	0.2	0.02	**1500**	**1280**	**1630**	**1000**	**1780**	**1250**	**957**	**1750**
	0.2	0.02			**1490**		**1550**	**1400**		**1770**

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-001B										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.68	927.82	927.13	925.53	926.98	926.13	925.91	926.11
ph-Field (standard units)			7.02	7.63	7.31	7.72	7.82	7.82	7.89	7.6
Specific conductance-field (umhos/cm @ 25c)			662	458	516	633	825	750	755	851
Temperature, water (degrees centigrade)			12.5	13.7	9.3	12.5	11.6	12.6	10.6	13.1
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			186	180	190	177	190	194	187	200
Chloride, dissolved (mg/l as Cl)	250	125	124	123	**133**	**139**	**144**	**149**	**162**	**150**
Hardness, total, filtered (mg/l as CaCO3)			345	331	339	358	372	372	356	358
Organic										
Acetone (ug/l)	9000	1800	10.3 J	6.3 J	<2.7	3.5 J	<8.6	<8.6	<8.6	<8.6
Carbon disulfide (ug/l)	1000	200	<0.37	0.98 J	0.8 J	<0.45	<1.1	<1.1	<1.1	<1.1
Vinyl chloride (ug/l)	0.2	0.02	**4.2**	**5.1**	**2.2**	**4.3**	**2.7**	**4.3**	**5.4**	**9.4**

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-001RR (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.02	927.82	926.82	924.84	926.77	929.92	926.67	931.45
ph-Field (standard units)			7.21	7.28	7.02	6.92	6.92	6.89	6.92	6.64
Specific conductance-field (umhos/cm @ 25c)			1711	1144	758	1499	1636	1651	1522	1885
Temperature, water (degrees centigrade)			11	8.1	9	13.5	11	13.1	9.7	15.2
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			1050	979	913	1010	976	978	880	927
Arsenic, dissolved (ug/l As)	10	1	**7**	**7.8**	**4.5**	**5**	**4**	**4.8**	**2.6**	**6.2**
Chloride, dissolved (mg/l as Cl)	250	125	91.9	87.5	80.1	110	94.7	113	**150**	**131**
Hardness, total, filtered (mg/l as CaCO3)			845	808	807	930	821	816	828	890
Organic										
1,1-Dichloroethane (ug/l)	850	85	0.5 J	0.44 J	<0.27	0.29 J	<0.3	<0.3	<0.3	<0.3
Acetone (ug/l)	9000	1800	4.4 J	30.5	<2.7	4.5 J	<8.6	<8.6	<8.6	<8.6
Benzene (ug/l)	5	0.5	**0.5 J**	0.44 J	<0.25	0.32 J	<0.3	0.31 J	<0.3	<0.3
cis-1,2-Dichloroethene (ug/l)	70	7	0.94 J	0.93 J	<0.27	**18.5**	<0.47	<0.47	<0.47	<0.47
Vinyl chloride (ug/l)	0.2	0.02	**5.8**	**4.5**	**0.68 J**	**75.9**	**0.99 J**	**1.7**	<0.17	**0.29 J**

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-006R										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			925.55	925.85	925.72	924.65	925.7	925.05	925.79	925.06
ph-Field (standard units)			7.82	7.07	7.1	7.44	7.22	7.04	7.23	7.13
				7.07				7.04		
Specific conductance-field (umhos/cm @ 25c)			364	445	352	829	730	706	859	838
				445				706		
Temperature, water (degrees centigrade)			7.9	12.5	8.3	9.9	15.1	13	9	12.9
				12.5				13		
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			373	407	407	380	398	408	453	430
				405				404		
Arsenic, dissolved (ug/l As)	10	1	0.29 J	0.5 J	0.41 J	0.62 J	0.64 J	0.29 J	0.3 J	0.68 J
	10	1		0.5 J				<0.28		
Chloride, dissolved (mg/l as Cl)	250	125	24.2	24.4	24	23.2	23.1	22.5	23.5	24.6
	250	125		24.3				22.7		
Hardness, total, filtered (mg/l as CaCO3)			386	421	416	376	403	377	400	433
				428				380		

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Table 5 -Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-007R										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.17	926.27	923.97	925.52	925.62	925.82	925.9	925.36
ph-Field (standard units)			7.2	7.29	7.4	7.22	7.02	6.95	7.04	7.09
			7.2			7.22	7.02			7.09
Specific conductance-field (umhos/cm @ 25c)			363	470	380	842	831	830	765	883
			363			842	831			883
Temperature, water (degrees centigrade)			4.8	15.7	8.4	11.9	10.4	11	4.4	10.8
			4.8			11.9	10.4			10.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			352	367	397	428	437	425	348	400 M
			371			408	444			433
Arsenic, dissolved (ug/l As)	10	1	0.73 J	**7.3**	**3.6**	**5.5**	0.96 J	**4.9**	**1.6**	**1.3**
	10	1	0.74 J			**4.7**	0.91 J			**1.3**
Chloride, dissolved (mg/l as Cl)	250	125	57.1	47.6	45.7 M	31.9	34.2	38	45.9	32.4
	250	125	56.4			36.2	34.7			32.2
Hardness, total, filtered (mg/l as CaCO3)			391	380	401	422	413	402	344	381
			375			420	414			380

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-008R (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			931.09	931.25	931.24	930.91	931.21	930.79	931.34	930.54
ph-Field (standard units)			7.13	7.04	7.04	7.34	7.02	7.21	7.18	7.04
Specific conductance-field (umhos/cm @ 25c)			508	839	455	1309	990	1280	1561	1524
Temperature, water (degrees centigrade)			9.9	12.2	9.1	10.5	13.8	11.3	8.6	11.9
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			822	875	851	823	942	899	909	784
Arsenic, dissolved (ug/l As)	10	1	**2.8**	**2.3**	**2.7**	**3.2**	**2**	**2.8**	**2.1**	**2.8**
Chloride, dissolved (mg/l as Cl)	250	125	43	40.5	36.3 M	37.6	37.6	43.5	37.6	40.5
Hardness, total, filtered (mg/l as CaCO3)			763	794	820	715	814	824	809	777
Organic										
Acetone (ug/l)	9000	1800				5.2 J				
MW-201										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.73	927.26	927.01	926.74	926.91	926.96	926.91	926.89
ph-Field (standard units)			7.36	7.32	7.26	7.22	7.01	7.41	7.31	6.89
Specific conductance-field (umhos/cm @ 25c)			352	458	446	841	894	819	620	758
Temperature, water (degrees centigrade)			8.4	16.5	12.2	10.1	19	11.3	6.2	10.4

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-201A										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			925.54	925.79	925.42	926.48	926.59	926.69	926.84	926.54
ph-Field (standard units)			7.28	7.34	7.12	6.91	7.27	7.56	7.61	7.21
Specific conductance-field (umhos/cm @ 25c)			398	494	501	821	921	918	780	830
Temperature, water (degrees centigrade)			8.5	19.1	13.6	10	19.5	11.4	8.7	10.6
MW-201B										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.57	927.33	926.82	925.42	926.57	925.67	926.83	926.27
ph-Field (standard units)			7.61	7.7	7.5	7.1	7.8	7.93	7.96	7.64
Specific conductance-field (umhos/cm @ 25c)			226	277	321	486	464	419	390	396
Temperature, water (degrees centigrade)			8.8	16.5	12.3	9.6	18.8	12.6	7.7	11.1

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-203A										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.16	927.58	927.21	926.61	927.01	926.66	926.31	926.82
ph-Field (standard units)			7.24	7.52	7.55	7.64	7.65	7.36	7.6	7.66
Specific conductance-field (umhos/cm @ 25c)			336	383	344	741	671	673	745	733
Temperature, water (degrees centigrade)			7.1	11.3	9.3	10.4	14.3	10.3	8.9	13.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			309	316	319	318	328	345	351	345
Arsenic, dissolved (ug/l As)	10	1	**8.1**	**5.6**	**7.4**	**8.4**	**6**	**7.2**	**5.9**	**7.2**
Chloride, dissolved (mg/l as Cl)	250	125	27.9	29.9	32.7	32.3	34.8	37.5	35.7 M	39.2
Hardness, total, filtered (mg/l as CaCO3)			355	332	351	355	350	355	366	371

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-210										
Reporting Period			4/1/2018	7/1/2019	7/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.01	927.06	927.06	926.21	926.91	927.06	927.41	926.61
ph-Field (standard units)			7.44	6.93	6.98	6.89	6.92	6.69	6.88	6.89
									6.88	
Specific conductance-field (umhos/cm @ 25c)			1290	1433	1514	2350	1543	1355	1568	1621
									1568	
Temperature, water (degrees centigrade)			9.4	16.2	17.1	15.2	11.9	16.8	7.3	13
									7.3	
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			836	777	795	839	912	862	902	885
									909 M	
Arsenic, dissolved (ug/l As)	10	1	**2.4**	**2.2**	**2.5**	**2.2**	**1.8**	**2**	**1.1**	**2.4**
	10	1							**1.1**	
Chloride, dissolved (mg/l as Cl)	250	125	89.2	77.3	72.8	74.9	72.2	76.2	75.8	79.7
	250	125							76.1	
Hardness, total, filtered (mg/l as CaCO3)			911	845	861	850	871	914	878	968
									868	
Organic										
Acetone (ug/l)	9000	1800	3.9 J	4 J	3.8 J	6.7 J	<2.7	<8.6	<8.6	<8.6
	9000	1800							<8.6	
cis-1,2-Dichloroethene (ug/l)	70	7	0.39 J	0.45 J	0.3 J	0.39 J	<0.27	<0.47	<0.47	<0.47
	70	7							<0.47	

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-210										
Vinyl chloride (ug/l)	0.2	0.02	<0.18	<0.17	**0.34 J**	**0.43 J**	**0.18 J**	**0.52 J**	**0.85 J**	**0.26 J**
	0.2	0.02							**0.82 J**	

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B Compound detected in blank.
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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-210A										
Reporting Period			4/1/2018	7/1/2019	7/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.6	926.95	926.95	925.05	927.05	926.8	927.45	926.9
ph-Field (standard units)			7.72	7.19	6.92	7.34	7.21	7.54	7.28	7.24
Specific conductance-field (umhos/cm @ 25c)			1180	1114	1085	1180	1138	1012	1110	1168
Temperature, water (degrees centigrade)			9.5	13.5	13.5	10.7	13.2	13.7	9.5	11.9
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			537	477	464	460	489	462	474	478
Arsenic, dissolved (ug/l As)	10	1	**8.6**	**7.1**	**7.6**	**7**	**6.1**	**6.8**	**6.1**	**5.9**
Chloride, dissolved (mg/l as Cl)	250	125	**140**	111	106	108	101	111	108	**126**
Hardness, total, filtered (mg/l as CaCO3)			517	491	494	481	467	501	550	544
Organic										
1,1-Dichloroethane (ug/l)	850	85	11.3	7	6.6	5.5	5.3	5.4	4.6	4.4
1,1-Dichloroethylene (ug/l)	7	0.7	**1.6 J**	**1.1 J**	**0.87 J**	<0.61	**0.77 J**	<0.58	<1.5	<1.5
Benzene (ug/l)	5	0.5	<1.2	<0.62	**0.73 J**	<0.62	<0.62	**0.5 J**	<0.74	<0.74
Chloroethane (ug/l)	400	80	7.4	4.7 J	4.4 J	4.4 J	<3.4	4 J	4.6 J	4.9 J
cis-1,2-Dichloroethene (ug/l)	70	7	**330**	**239**	**137**	**90.3**	**109**	**102**	**105**	**119**
Tetrahydrofuran (ug/l)	50	10	<5.1	<5.8	<5.8	<5.8	6.3 J	2.6 J	<6	<6
trans-1,2-Dichloroethene, total (ug/l)	100	20	9.7	<2.7	<1.2	<1.2	<1.2	<0.53	1.4 J	<1.3
Trichloroethylene (ug/l)	5	0.5	**1.9 J**	**1.5 J**	**1.1 J**	<0.64	**1.1 J**	**0.75 J**	**0.88 J**	<0.8
Vinyl chloride (ug/l)	0.2	0.02	**86**	**42.2**	**44.9**	**110**	**37.4**	**51.6**	**63.9**	**74**

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B Compound detected in blank.
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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-210B										
Reporting Period			4/1/2018	7/1/2019	7/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.66	927.08	927.08	925.28	927.28	926.78	927.73	926.68
ph-Field (standard units)			7.99	7.79	7.55	7.64	7.61	7.62	7.71	7.46
Specific conductance-field (umhos/cm @ 25c)			742	734	776	886	832	758	819	885
Temperature, water (degrees centigrade)			10.1	15.7	14.2	12	12.4	13.1	9.1	12.7
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			277	271	275	267	282	280	301	296
Arsenic, dissolved (ug/l As)	10	1	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28
Chloride, dissolved (mg/l as Cl)	250	125	98.4	82.1	85.4	91.4	106	104	102	117
Hardness, total, filtered (mg/l as CaCO3)			384	373	389	363	375	403	430	405
Organic										
Acetone (ug/l)	9000	1800	<3	4.3 J	16.6 J	<2.7	<2.7	<8.6	8.7 J	<8.6
Vinyl chloride (ug/l)	0.2	0.02	**4.3**	**3.9**	**4.5**	**4**	**4.3**	**4.8**	**7.5**	**5.5**

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-214										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			925.57	925.77	925.67	924.67	925.62	925.69		925.62
ph-Field (standard units)			7.2	7.4	7.56	7.23	7.28	7.32	7.54	7.19
						7.23			7.54	
Specific conductance-field (umhos/cm @ 25c)			433	414	358	600	821	737	695	812
						600			695	
Temperature, water (degrees centigrade)			16.1	12.3	9.1	14.6	15.9	15.3	10.4	13.6
						14.6			10.4	
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			369	347	369	377	377	374	363	379
						378			364	
Arsenic, dissolved (ug/l As)	10	1	0.98 J	**1.3**	0.79 J	**2.1**	0.7 J	0.62 J	**1.2**	**1 J**
	10	1				**1.7 J**			**1.3**	
Chloride, dissolved (mg/l as Cl)	250	125	56.7	53.1	46.3	46.6	52.9	44.9	41.7	43.7
	250	125				49.8			38.3	
Hardness, total, filtered (mg/l as CaCO3)			370	365	383	385	383	389	348	384
						393			341	
Organic										
Acetone (ug/l)	9000	1800		8.5 J		4.8 J		<8.6		<8.6
	9000	1800				5.4 J				

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Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-214A										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.54	927.44	927.59	925.59	927.24	926.89	923.57	926.74
ph-Field (standard units)			7.36	7.28	7.38	7.55	7.48	7.67	7.45	7.4
					7.38					
Specific conductance-field (umhos/cm @ 25c)			577	614	444	818	1175	1056	1213	1220
					444					
Temperature, water (degrees centigrade)			11.2	10.5	12.9	13.2	15.2	14.3	14.5	12.5
					12.9					
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			354	344	352	359	358	358	363	372
					353					
Arsenic, dissolved (ug/l As)	10	1	0.78 J	**1**	0.9 J	0.86 J	0.96 J	0.79 J	**2.3**	**1.2**
	10	1			**1**					
Chloride, dissolved (mg/l as Cl)	250	125	**205**	**191**	**202**	**197**	**195**	**196**	**203**	**197**
	250	125			**181**					
Hardness, total, filtered (mg/l as CaCO3)			522	516	542	522	495	514	677	544
					515					
Organic										
Acetone (ug/l)	9000	1800		7.5 J		3.8 J		<8.6		<8.6
cis-1,2-Dichloroethene (ug/l)	70	7		<0.27		0.93 J		0.67 J		0.78 J
Methylethylketone (ug/l)	4000	800		<2.9		7.1 J		<6.5		<6.5
Tetrahydrofuran (ug/l)	50	10		9.4 J		8.7 J		8.4 J		8 J

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-214A										
Vinyl chloride (ug/l)	0.2	0.02		**39**		**40.6**		**46.9**		**36.6**
P-422B										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.09	928.49	927.39	926.69	927.64	927.39	927.64	927.29
ph-Field (standard units)			7.62	7.89	7.65	7.88	7.62	7.54	7.85	7.88
			7.62							
Specific conductance-field (umhos/cm @ 25c)			209	242	263	418	434	370	428	455
			209							
Temperature, water (degrees centigrade)			10.1	11.9	10.4	10.7	13.1	12.3	9.6	10.8
			10.1							
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			210 M	208	216	198	215	221	222	215
			204							
Chloride, dissolved (mg/l as Cl)	250	125	10.1	7.8	9.1 J	10.4 M	8	7.8	11.1	8
	250	125	10.1							
Hardness, total, filtered (mg/l as CaCO3)			173	166	180	176	145	186	167	172
			168							

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-003AR (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.89	928.07	927.22	926.13	926.94	927.24	927.39	927.16
ph-Field (standard units)			7.29	7.31	7.39	7.29	7.16	7.23	7.28	7.09
Specific conductance-field (umhos/cm @ 25c)			722	787	571	1218	1108	1451	1371	1683
Temperature, water (degrees centigrade)			4.9	13.3	8.4	14.4	10.8	10.5	8.7	10.1
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			607	636	593	605	622	600	571	623
Arsenic, dissolved (ug/l As)	10	1	**2.2**	**2.6**	**3.6**	**4.1**	**4.4**	**4.5**	**4.4**	**5.4**
Chloride, dissolved (mg/l as Cl)	250	125	**155**	**162**	**152**	**159**	**171**	**185**	121	**213**
Hardness, total, filtered (mg/l as CaCO3)			606	598	629	614	620	655	577	673
Organic										
1,1-Dichloroethane (ug/l)	850	85	12	16.9	16	14.3	13	15.9	10.9	13.6
1,1-Dichloroethylene (ug/l)	7	0.7	0.4 J	0.66 J	0.31 J	0.35 J	<0.58 M	<0.58	<0.58	<0.58
Acetone (ug/l)	9000	1800	<2.7	6.8 J	<2.7	3.2 J	<8.6	<8.6	<8.6	<8.6
Benzene (ug/l)	5	0.5	**1.1**	**1.1**	**0.93 J**	**0.82 J**	**1.2**	**1.4**	**1.1**	**1.4**
Chloroethane (ug/l)	400	80	6.1	7.2	7	8.2	3.6 J	7.3	6	7.4
cis-1,2-Dichloroethene (ug/l)	70	7	**42.1**	**55.6**	**37.6**	**38.2**	**32.4**	**28.4**	**24.1**	**22.8**
Dichlorodifluoromethane (ug/l)	1000	200	0.72 J	0.78 J	1.1 J	0.67 J	0.49 J	0.49 J	<0.46	<0.46
Tetrahydrofuran (ug/l)	50	10	8.6 J	**10.4 J**	9.1 J	8.9 J	**12.4 J**	9.2 J	9 J	**12.2 J**
trans-1,2-Dichloroethene, total (ug/l)	100	20	<1.1	<1.1	<0.46	0.47 J	<0.53	<0.53	<0.53	<0.53

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-003AR (LGRL)										
Trichloroethylene (ug/l)	5	0.5	0.27 J	0.31 J	0.35 J	<0.26	0.33 J	<0.32	<0.32	<0.32
Vinyl chloride (ug/l)	0.2	0.02	**23.1**	**34.6**	**18.4**	**18.8**	**15.3**	**15.3**	**13**	**11.7**

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-003R (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.65	927.62	926.45	927.07	927.33	927.35	927.85	927.99
ph-Field (standard units)			7.26	6.9	7.35	7.04	6.9	7.2	6.79	7.05
				6.9						7.05
Specific conductance-field (umhos/cm @ 25c)			656	828	513	1101	1076	1310	1521	1498
				828						1498
Temperature, water (degrees centigrade)			3.2	12.8	6.9	13.6	10.9	12.1	8	11.7
				12.8						11.7
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			637	607	588	681	679	743	844	820
				610						815 M
Arsenic, dissolved (ug/l As)	10	1	0.76 J	0.81 J	0.86 J	**1.1**	0.84 J	0.93 J	**1**	**1.2**
	10	1		0.96 J						**1.3**
Chloride, dissolved (mg/l as Cl)	250	125	90.3	89	79.2	86.7	81.8	82.5	69	77.5
	250	125		88.1						73.2
Hardness, total, filtered (mg/l as CaCO3)			719	734	722	738	739	792	832	869
				710						873
Organic										
Acetone (ug/l)	9000	1800	<2.7	8.4 J	3.8 J	5.7 J	<8.6	<8.6	<8.6	<8.6
	9000	1800		7.2 J						<8.6
cis-1,2-Dichloroethene (ug/l)	70	7	<0.27	<0.27	<0.27	<0.27	<0.47	<0.47	<0.47	<0.47
	70	7		0.33 J						<0.47

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-003R (LGRL)										
Vinyl chloride (ug/l)	0.2	0.02	**20.3**	**30.7**	**42.4**	**27.1**	**28.4**	**19.3**	**6.8**	**8.2**
	0.2	0.02		**30.3**						**8**
W-163 (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			924.48	925.43	924.35	924.62	924.98	925.23	925.29	924.8
ph-Field (standard units)			7.77	7.36	7.39	7.14	7.62	7.42	7.62	7.06
Specific conductance-field (umhos/cm @ 25c)			374	511	369	855	716	870	875	792
Temperature, water (degrees centigrade)			8.5	12	9	11.7	17.4	16	6.8	10.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			357	369	360	372	372	406	417	389
Arsenic, dissolved (ug/l As)	10	1	**1.9**	**5.3**	**1.4**	**4.7**	**19.3**	**3.3**	0.54 J	**2.5**
Chloride, dissolved (mg/l as Cl)	250	125	64.5	62.5	60.8	64.2	66.6	71.2	65.2	71.1
Hardness, total, filtered (mg/l as CaCO3)			388	688	349	535	2530	464	397	445
Organic										
Acetone (ug/l)	9000	1800		12.4 J	2.8 J	11.2 J		<8.6		<8.6
Toluene (ug/l)	800	160		0.24 J	<0.27	0.27 J		<0.29		<0.29

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-163A (LGRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.12	927.36	926.02	926.07	926.62	926.37	926.57	927.94
ph-Field (standard units)			6.94	7.79	7.52	7.34	7.64	7.63	7.79	7.29
Specific conductance-field (umhos/cm @ 25c)			209	213	331	343	410	312	345	398
Temperature, water (degrees centigrade)			8.8	15.5	14.1	9.4	13.2	12.9	7.8	10.4
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			188	189	192	175 M	218	186	183	210
Arsenic, dissolved (ug/l As)	10	1	**1.9**	**2.8**	**2.5**	**3.1**	**2.2**	**2.4**	**2.9**	**2.7**
Chloride, dissolved (mg/l as Cl)	250	125	9.7 M	7.6	3.8	2.2	10.1	3.5	3.4	5.8
Hardness, total, filtered (mg/l as CaCO3)			187	193	159	140	187	159	164	205
Organic										
Acetone (ug/l)	9000	1800		10.2 J	4.3 J	5.5 J		<8.6		<8.6
Chloroethane (ug/l)	400	80		1.6 J	<1.3	<1.3		<1.4		<1.4

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B Compound detected in blank.
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M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Staff Gauges	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
SW-02										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Comment, well dry						Yes				
Elevation, surface water (ft above MSL)			925.39	923.84	925.44		923.39	923.39	925.7	923.34
SW-03										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Comment, well dry						Yes	Yes			
Comment, well frozen			Yes							
Elevation, surface water (ft above MSL)				928.6	926.12			927.7	925.7	927.75
SW-04										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Comment, well dry						Yes				
Elevation, surface water (ft above MSL)			927.66	927.91	928.01		927.66	927.46	927.76	927.46

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Table 5 - Historic Monitoring Results - Last 8 Events
Land and Gas Reclamation Landfill

Staff Gauges	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
SW-05										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Comment, well broken								Yes		
Comment, well dry			Yes			Yes	Yes			
Elevation, surface water (ft above MSL)				925.01	925.42				926.46	926.56

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Appendix E

GRL Waste Program Monitoring Results

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-008R (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			931.09	931.25	931.24	930.91	931.21	930.79	931.34	930.54
ph-Field (standard units)			7.13	7.04	7.04	7.34	7.02	7.21	7.18	7.04
Specific conductance-field (umhos/cm @ 25c)		2100	508	839	455	1309	990	1280	1561	1524
Temperature, water (degrees centigrade)			9.9	12.2	9.1	10.5	13.8	11.3	8.6	11.9
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		1200	822	875	851	823	942	899	909	784
Chloride, dissolved (mg/l as Cl)	250	125	43	40.5	36.3 M	37.6	37.6	43.5	37.6	40.5
Hardness, total, filtered (mg/l as CaCO3)		1100	763	794	820	715	814	824	809	777
Organic										
Acetone (ug/l)	9000	1800		<2.7		5.2 J		<8.6		<8.6

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-309										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			939.27	939.32	939.25	937.79	938.25	937.45	937.87	
ph-Field (standard units)			7.44	7.17	7.38	7.55	7.12	7.14	7.1	
				7.17						
Specific conductance-field (umhos/cm @ 25c)		1800	438	1084	475	954	663	828	765	
		1800		1084						
Temperature, water (degrees centigrade)			7.6	12.7	9	11.3	15.4	12	9.8	
				12.7						
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		520	454	494	432	399	433	460	478	
		520		481						
Chloride, dissolved (mg/l as Cl)	250	125	17.6	21.9	8.9	12.1	10.7	13.4	13.1	
	250	125		22						
Hardness, total, filtered (mg/l as CaCO3)		630	603	624	526	535	610	570	536	
		630		**653**						
Organic										
Acetone (ug/l)	9000	1800		5.5 J		3.7 J		<8.6		
	9000	1800		3.8 J						
Chloromethane (ug/l)	30	3		<2.2		<2.2		<1.6		
	30	3		2.7 J						

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B Compound detected in blank.
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M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-403										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Comment, well obstructed								Yes		
Groundwater elevation (ft MSL)			930.54	930.77	931.07	930.17	930.57		932.97	931.03
ph-Field (standard units)			6.85	6.85	7.4	6.77	7		6.87	6.94
Specific conductance-field (umhos/cm @ 25c)		1900	**1990**	1068	765	1623	1754		1407	1623
Temperature, water (degrees centigrade)			9	10	9.6	11.9	11.7		8.1	13.7
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		870	**996**	**1120**	**1010**	**1130**	**1140**		**1170**	**1140**
Chloride, dissolved (mg/l as Cl)	250	125	**135**	95.8	46.4	59	47		37.5	38.8
Hardness, total, filtered (mg/l as CaCO3)		830	**1300**	**1080**	**985**	**1110**	**1030**		**979**	**1000**
Organic										
1,1-Dichloroethane (ug/l)	850	85	0.55 J	0.37 J	0.52 J	0.35 J	<0.3		<0.3	<0.3
Acetone (ug/l)	9000	1800	4.9 J	6.1 J	6.2 J	12.9 J	64.4		13 J	<8.6
Benzene (ug/l)	5	0.5	0.44 J	**0.6 J**	0.36 J	**0.71 J**	0.36 J		0.39 J	**0.5 J**
cis-1,2-Dichloroethene (ug/l)	70	7	1	0.61 J	0.56 J	<0.27	<0.47		<0.47	<0.47
Naphthalene (ug/l)	100	10	3.1 J	<1.2	<1.2	<1.2	<1.1		<1.1	<1.1
Vinyl chloride (ug/l)	0.2	0.02	**1.9**	<0.17	**0.89 J**	<0.17	<0.17		**0.5 J**	<0.17

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-406										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			933.53	933.68	933.6	933.15	933.48	933.03	932.7	932.63
ph-Field (standard units)			7.57	7	7.06	6.94	6.94	6.99	7.22	6.8
			7.57	7						6.8
Specific conductance-field (umhos/cm @ 25c)		1200	588	712	451	1142	923	1097	1080	**1253**
		1200	588	712						**1253**
Temperature, water (degrees centigrade)			6.2	10.6	7.5	11	13.9	11.9	7.8	11.2
			6.2	10.6						11.2
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		640	**711**	**774**	**721**	**663**	**792**	**743**	**763**	**705**
		640	**715**	**776**						**739**
Chloride, dissolved (mg/l as Cl)	250	125	27.6	29.9	29	21.9	23.3	24.9	20.9	4.8
	250	125	27.3	29						21.8
Hardness, total, filtered (mg/l as CaCO3)		590	**733**	**735**	**718**	**717**	**870**	**778**	**732**	**630**
		590	**723**	**744**						**674**
Organic										
Acetone (ug/l)	9000	1800	5.3 J	6.7 J	5.3 J	<2.7	<8.6	<8.6	<8.6	<8.6
	9000	1800		<2.7						<8.6

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-428 (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			936.87	939.01	938.75	936.67	935.82	936.37	935.22	937.2
ph-Field (standard units)			7.27	7.04	7.32	7.48	7.1	6.97	7.2	6.82
Specific conductance-field (umhos/cm @ 25c)			604	1339	611	1307	809	1391	1141	1285
Temperature, water (degrees centigrade)			8.7	12.8	7.7	12.8	13.1	13	9.5	14.1
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			670	709	674	619	697	627	649	605
Arsenic, dissolved (ug/l As)	10	1	0.36 J							
Barium, dissolved (ug/l as Ba)	2000	400	61.2							
Boron, dissolved (mg/l as B)	1	0.2	0.0445	0.0418						
Cadmium, dissolved (ug/l as Cd)	5	0.5	<0.15							
Chloride, dissolved (mg/l as Cl)	250	125	40.5	30.8	30.1	41.9	47.6	55.2	63	98.4
Chromium, dissolved (ug/l as Cr)	100	10	<1							
COD, filtered (mg/l)			<13.4	<13.4						
Copper, dissolved (ug/l Cu)	1300	130	3.2 J							
Cyanide, total (mg/l as CN)	0.2	0.04	<0.0068							
Fluoride, dissolved (mg/l as F)	4	0.8	<0.5 M	<0.1						
Hardness, total, filtered (mg/l as CaCO3)			806	799	831	784	841	835	764	756
Lead, dissolved (ug/l as Pb)	15	1.5	<0.24							
Manganese, dissolved (ug/l as Mn)	50	25	**467**	**455**						
Mercury, dissolved (ug/l as Hg)	2	0.2	<0.084							
Nitrite + nitrate, dis. (mg/l as N)	10	2	**3.7**	**4.3**						
Nitrogen, ammonia, dissolved (mg/l as N)	9.7	0.97	<0.25	<0.25						
Selenium, dissolved (ug/l as Se)	50	10	<0.32							

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
MW-428 (GRL)										
Silver, dissolved (ug/l as Ag)	50	10	<0.1							
Sodium, dissolved (mg/l as Na)			19	20						
Sulfate, dissolved (mg/l as SO4)	250	125	88.9	89.1						
Zinc, dissolved (ug/l as Zn)	5000	2500	20							
Organic										
1,1,1-Trichloroethane (ug/l)	200	40	0.31 J			0.3 J		<0.3		0.31 J
1,1-Dichloroethane (ug/l)	850	85	2.2			1.9		1.3		1.3 M
1,2-Dichloropropane (ug/l)	5	0.5	**3.1**			**2.7**		**2.3**		**2.4**
Acetone (ug/l)	9000	1800	3.3 J			<2.7		<8.6		<8.6
Chlorobenzene (ug/l)	100	20	1.1 J			1 J		1.1		1.1
cis-1,2-Dichloroethene (ug/l)	70	7	**20.3**			**21.4**		**15.1**		**14.4**
Tetrachloroethylene (ug/l)	5	0.5	**1.5**			**1.7**		**1.6**		**1.8**
trans-1,2-Dichloroethene, total (ug/l)	100	20	<1.1			0.91 J		0.55 J		0.71 J
Trichloroethylene (ug/l)	5	0.5	**37.4**			**35**		**30.2**		**29.8**

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
P-403A										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Comment, well obstructed								Yes		
Groundwater elevation (ft MSL)			928.31	928.99	928.77	927.79	928.16		928.59	928
ph-Field (standard units)			6.96	7.48	7.45	7.11	7.04		7.05	6.87
Specific conductance-field (umhos/cm @ 25c)		2900	1720	1011	622	1504	1877		1411	1740
Temperature, water (degrees centigrade)			8.9	14.1	6.4	13.5	10.8		9.7	12.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		860	848 M	**862**	**950**	**909**	**977**		**1010 M**	**864**
Chloride, dissolved (mg/l as Cl)	400	400	264	227	214	199	192		168	221
Hardness, total, filtered (mg/l as CaCO3)		1300	1110	1030	1040	1110	1080		975	946
Organic										
1,1-Dichloroethane (ug/l)	850	85	0.33 J	0.42 J	0.44 J	0.52 J	0.34 J		<0.3	0.5 J
Acetone (ug/l)	9000	1800	6 J	7.3 J	6.2 J	3.7 J	<8.6		<8.6	<8.6
Benzene (ug/l)	5	0.5	**0.78 J**	**1.3**	**0.78 J**	**1.1**	**1.1**		**0.69 J**	**1.2**
cis-1,2-Dichloroethene (ug/l)	70	7	0.85 J	1.3	0.65 J	1.2	0.98 J		0.78 J	1.3
Ethylbenzene (ug/l)	700	140	0.29 J	<0.22	<0.32	<0.32	<0.33		<0.33	<0.33
m&p-Xylene (ug/l)	2000	400	1.3 J	<0.47						
Naphthalene (ug/l)	100	10	3.5 J	<1.2	<1.2	<1.2	<1.1		<1.1	<1.1
o-Xylene (ug/l)	2000	400	0.62 J	<0.26						
Tetrahydrofuran (ug/l)	50	10	3.2 J	2.6 J	3.6 J	2.5 J	3.5 J		<2.4	<2.4
Toluene (ug/l)	800	160	0.7 J	<0.17	<0.27	<0.27	<0.29		<0.29	<0.29
Vinyl chloride (ug/l)	0.2	0.02	**0.61 J**	**1.4**	**0.46 J**	**1.1**	**1.3**		**1**	**2.3**

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
P-406A										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			932.73	933.27	932.95	932.47	932.8	932.47	932.61	932.55
ph-Field (standard units)			7.4	7.75	7.62	7.62	7.26	7.22	7.87	7.65
			7.4							
Specific conductance-field (umhos/cm @ 25c)		1100	326	396	343	724	634	601	664	789
		1100	326							
Temperature, water (degrees centigrade)			8	10.7	9.4	10.7	15.2	12	7.9	10.1
			8							
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		560	350	353	353	344	348	375	384	390
		560	347							
Chloride, dissolved (mg/l as Cl)	250	125	22.7	21.3	19	22.3	18.2	25.5	24.3	28
	250	125	22.7							
Hardness, total, filtered (mg/l as CaCO3)		570	362	336	335	361	385	403	365	416
		570	345							
Organic										
Acetone (ug/l)	9000	1800	3.6 J	<2.7	<2.7	<2.7	<8.6	<8.6	<8.6	<8.6
Vinyl chloride (ug/l)	0.2	0.02	**2.2**	**3.6**	**1.2**	**2**	**1.7**	**2.6**	**1.8**	**3.5**

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
P-406B										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			933.42	933.77	933.52	933.02	933.27	933.02	933.36	933.07
ph-Field (standard units)			7.48	7.51	7.42	7.67	7.52	7.32	7.61	7.46
			7.48		7.42	7.67	7.52		7.61	
Specific conductance-field (umhos/cm @ 25c)		970	341	384	327	717	622	592	707	693
		970	341		327	717	622		707	
Temperature, water (degrees centigrade)			7.5	11.3	9.3	9.9	15.4	10.5	8	12.7
			7.5		9.3	9.9	15.4		8	
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		560	343	333	353	333	341	347	355	343
		560	321		351	334	340		350	
Chloride, dissolved (mg/l as Cl)	250	125	10.1 M	10.2	10.2	10.5	10.2	10.6	10.2	10.1
	250	125	10		10.2	10.5	10.2		9.8	
Hardness, total, filtered (mg/l as CaCO3)		630	399	394	376	409	433	415	377	346
		630	399		372	406	425		373	
Organic										
1,1-Dichloroethane (ug/l)	850	85	1.8	2.3	1.8	1.6	0.94 J	0.81 J	0.79 J	0.71 J
	850	85	1.8		1.9	1.6	0.86 J		0.58 J	
1,2-Dichloropropane (ug/l)	5	0.5	0.29 J	0.42 J	<0.28	0.45 J	<0.45	<0.45	<0.45	<0.45
	5	0.5	<0.28		0.36 J	0.48 J	<0.45		<0.45	
Acetone (ug/l)	9000	1800	4.6 J	8.3 J	4.7 J	<2.7	<8.6	<8.6	<8.6	<8.6
	9000	1800	3.1 J		3.8 J	10.7 J	<8.6		<8.6	
Benzene (ug/l)	5	0.5	**0.96 J**	**1.1**	**1.2**	**1.2**	**1**	**0.89 J**	**0.82 J**	**0.8 J**
	5	0.5	**1.1**		**1.2**	**1.3**	**1 J**		**0.69 J**	
cis-1,2-Dichloroethene (ug/l)	70	7	0.71 J	0.79 J	0.51 J	0.49 J	<0.47	<0.47	<0.47	<0.47
	70	7	0.67 J		0.46 J	0.51 J	<0.47		<0.47	

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
P-406B										
Vinyl chloride (ug/l)	0.2	0.02	**0.29 J**	**0.22 J**	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
	0.2	0.02	**0.27 J**		<0.17	<0.17	<0.17		<0.17	

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
P-428A (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			936.61	937.68	937.16	935.7	935.49	935.41	935.09	935.53
ph-Field (standard units)			7.84	7.68	7.55	7.59	7.62	7.26	7.68	7.48
Specific conductance-field (umhos/cm @ 25c)			393	824	459	866	612	833	828	750
Temperature, water (degrees centigrade)			9	12.9	10	10.7	14.3	12.9	9.2	12.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)			353	373	372	357	357	346	372	376
Arsenic, dissolved (ug/l As)	10	1	**4.4**	**4.6**						
Barium, dissolved (ug/l as Ba)	2000	400	68.2							
Boron, dissolved (mg/l as B)	1	0.2	0.0377	0.0348						
Cadmium, dissolved (ug/l as Cd)	5	0.5	<0.15							
Chloride, dissolved (mg/l as Cl)	250	125	29.3	29.7	29.8	30.5	31.2	30.8	32.3	32.1
Chromium, dissolved (ug/l as Cr)	100	10	<1							
COD, filtered (mg/l)			<13.4	<13.4						
Copper, dissolved (ug/l Cu)	1300	130	<1.1							
Cyanide, total (mg/l as CN)	0.2	0.04	<0.0068							
Fluoride, dissolved (mg/l as F)	4	0.8	<0.1	<0.1						
Hardness, total, filtered (mg/l as CaCO3)			465	499	518	444	541	476	459	438
Lead, dissolved (ug/l as Pb)	15	1.5	<0.24							
Manganese, dissolved (ug/l as Mn)	50	25	21.3	12.7						
Mercury, dissolved (ug/l as Hg)	2	0.2	<0.084							
Nitrite + nitrate, dis. (mg/l as N)	10	2	<0.095	0.13 J						
Nitrogen, ammonia, dissolved (mg/l as N)	9.7	0.97	<0.25	<0.25						
Selenium, dissolved (ug/l as Se)	50	10	<0.32							

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
P-428A (GRL)										
Silver, dissolved (ug/l as Ag)	50	10	<0.1							
Sodium, dissolved (mg/l as Na)			11.1	9.99						
Sulfate, dissolved (mg/l as SO4)	250	125	84.2	82.1						
Zinc, dissolved (ug/l as Zn)	5000	2500	5.4 J							
Organic										
Acetone (ug/l)	9000	1800	5.2 J			<2.7		<8.6		<8.6
W-009RR										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.97	927.92	928.72	925.77	927.22	926.87	926.45	926.95
ph-Field (standard units)			6.89	7.11	7.33	7.14	7.07	7.17	7.03	7.02
Specific conductance-field (umhos/cm @ 25c)		2100	1120	930	1295	1123	1342	1285	1269	1064
Temperature, water (degrees centigrade)			11.3	14	12.8	13.2	14.3	8.1	10.9	16.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		1200	613	707	753	661	758	764	738	748
Chloride, dissolved (mg/l as Cl)	250	125	23.4	32.2	28.9	33.5	36.9	33.7	36.9	35.5
Hardness, total, filtered (mg/l as CaCO3)		1300	630	757	786	747	765	809	778	742
Organic										
Acetone (ug/l)	9000	1800		4.6 J		<2.7		<8.6		<8.6
Benzene (ug/l)	5	0.5		<0.25		<0.25		<0.3		**0.5 J**
Tetrahydrofuran (ug/l)	50	10		**36.5**		**19.3 J**		**17 J**		**33**
Toluene (ug/l)	800	160		<0.17		<0.27		<0.29		0.44 J

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-010R										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.94	926.72	926.56	926.09	926.52	926.04	926.14	926.09
ph-Field (standard units)			7.47	7.05	7.29	7.3	6.99	7.55	7.43	7.12
Specific conductance-field (umhos/cm @ 25c)		2100	1320	1245	1371	1290	1093	1062	770	1048
Temperature, water (degrees centigrade)			7.9	13.3	8.9	12.5	10.6	13.5	8.6	13.3
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		950	676	682	690	654	551	523	417	607
Chloride, dissolved (mg/l as Cl)	250	125	33.7	38.1	32.5	39.2	18.1 M	21.4	14.4	23.9
Hardness, total, filtered (mg/l as CaCO3)		960	864	867	822	855	527	522	453	756
Organic										
Acetone (ug/l)	9000	1800		6.9 J		<2.7		<8.6		<8.6
cis-1,2-Dichloroethene (ug/l)	70	7		3.9		4.5		1.7		2.9

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J Result is an estimated value below the laboratory's limit of quantitation.
B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-158 (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			924.76	926.61	925.21	924.06	925.98	924.66	926.31	925.26
ph-Field (standard units)			7.1	7	7.57	6.94	7.01	7.51	6.92	6.75
Specific conductance-field (umhos/cm @ 25c)		800	**870**	**862**	**855**	**965**	**897**	**948**	**932**	**869**
Temperature, water (degrees centigrade)			7.4	15.3	6.5	13.7	10.3	14.3	8.1	15.5
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		440	**528**	**472**	**488**	**536**	**535**	**562**	**553**	**596**
Chloride, dissolved (mg/l as Cl)	250	125	3.1	1.8 J	2.3	2.1	2.3	2.1	2.9	2.1
Hardness, total, filtered (mg/l as CaCO3)		500	**546**	484	**512**	**601**	436	**620**	**553**	**543**
Organic										
Acetone (ug/l)	9000	1800	3.8 J	7.6 J	8.2 J	<2.7	<8.6	20.3 J	<8.6	<8.6

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-159 (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			925.22	926.6	925.5	925.2	926.05	925.1	926.55	925.31
ph-Field (standard units)			7.33	7.32	7.59	7.29	7.06	7.46	7.44	7.09
Specific conductance-field (umhos/cm @ 25c)		1100	619	**1540**	730	880	820	886	678	778
Temperature, water (degrees centigrade)			8.7	12.1	9.2	12.9	10.5	11.8	8.3	15.3
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		500	335	437	474	471	464	**528**	377	489
Chloride, dissolved (mg/l as Cl)	250	125	2.2	2.5	1.8 J	7.1	2.5	8	3.9	7.5
Hardness, total, filtered (mg/l as CaCO3)		640	445	515	528	566	386	558	368	490
Organic										
Acetone (ug/l)	9000	1800		2.9 J		14.6 J		<8.6		<8.6

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Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-159A (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			925.22	926.67	925.52	925.18	925.92	925.12	926.92	925.42
ph-Field (standard units)			7.29	7.3	7.34	7.37	7.39	7.48	7.33	7.18
								7.48	7.33	
Specific conductance-field (umhos/cm @ 25c)		720	599	**1300**	664	671	685	692	671	638
		720						692	671	
Temperature, water (degrees centigrade)			9.3	10.8	9.8	11.8	11.1	9.6	9.6	13.6
								9.6	9.6	
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		430	320	385	355	353	366	361	388	423
		430						360	382	
Chloride, dissolved (mg/l as Cl)	250	125	3.5	3.1	3.1	4.3	4.1	5.1	4	3.4
	250	125						5.1	4.4	
Hardness, total, filtered (mg/l as CaCO3)		440	346	389	387	391	319	396	395	**441**
		440						396	387	
Organic										
Acetone (ug/l)	9000	1800		<2.7		<2.7		9.9 J		<8.6
	9000	1800						<8.6		

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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B Compound detected in blank.
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M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-160R										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.69	928.14	928.34	926.02	927.09	926.89	926.79	926.99
ph-Field (standard units)			7.6	7.46	7.69	7.58	7.43	7.59	7.48	7.44
Specific conductance-field (umhos/cm @ 25c)		2000	1050	865	1033	977	941	1078	846	893
Temperature, water (degrees centigrade)			8.4	16.2	9.2	15.4	13.3	14.7	9.2	13.2
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		1100	522	495	487	485	480	507	416	495
Chloride, dissolved (mg/l as Cl)	250	125	65.7	56.8	59.4	44	40.8	54.8	44	35.9
Hardness, total, filtered (mg/l as CaCO3)		1100	620	553	553	624	558	605	450	565
Organic										
Acetone (ug/l)	9000	1800	3.6 J	8.4 J	4 J	12.3 J	<2.7	<8.6	<8.6	<8.6
Toluene (ug/l)	800	160	<0.17	0.29 J	<0.27	<0.27	<0.27	0.68 J	<0.29	<0.29

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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B Compound detected in blank.
P Did not meet required preservation and/or hold time.
M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-161R (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			927.46	940.46	926.36	925.86	924.76	925.71	924.16	925.01
ph-Field (standard units)			7.57	7.06	7.71	6.99	6.97	7.15	7.24	7.07
							6.97			
Specific conductance-field (umhos/cm @ 25c)		1100	**1170**	985	**1186**	1058	**1220**	**1103**	**1325**	**1170**
		1100					**1270**			
Temperature, water (degrees centigrade)			8.9	13.9	9.5	12.7	13.2	14.2	10.4	13.2
							13.2			
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		740	571	592 M	559	517	575	647	701	627
		740					592			
Chloride, dissolved (mg/l as Cl)	250	125	40	56	28.6	35.9	60.6	59.6	80.4	56.9
	250	125					56.7			
Hardness, total, filtered (mg/l as CaCO3)		640	**698**	**660**	**734**	**694**	**682**	**811**	**787**	**725**
		640					**680**			
Organic										
Acetone (ug/l)	9000	1800		8 J		<2.7		<8.6		<8.6
cis-1,2-Dichloroethene (ug/l)	70	7		0.44 J		1.3		<0.47		0.57 J
Vinyl chloride (ug/l)	0.2	0.02		**0.86 J**		<0.17		**0.64 J**		**0.28 J**

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P Did not meet required preservation and/or hold time.
M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-163 (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			924.48	925.43	924.35	924.62	924.98	925.23	925.29	924.8
ph-Field (standard units)			7.77	7.36	7.39	7.14	7.62	7.42	7.62	7.06
Specific conductance-field (umhos/cm @ 25c)		1400	374	511	369	855	716	870	875	792
Temperature, water (degrees centigrade)			8.5	12	9	11.7	17.4	16	6.8	10.8
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		520	357	369	360	372	372	406	417	389
Chloride, dissolved (mg/l as Cl)	250	140	64.5	62.5	60.8	64.2	66.6	71.2	65.2	71.1
Hardness, total, filtered (mg/l as CaCO3)		790	388	688	349	535	**2530**	464	397	445
Organic										
Acetone (ug/l)	9000	1800	<2.7	12.4 J	2.8 J	11.2 J	<8.6	<8.6	<8.6	<8.6
Toluene (ug/l)	800	160	<0.17	0.24 J	<0.27	0.27 J	<0.29	<0.29	<0.29	<0.29

Notes: Bold = PAL exceedance, bold + underlined = ES exceedance (groundwater samples only). Only VOCs detected at each sampling point in at least one of the sampling events are shown. Where more than one sample was collected per reporting period (duplicates and/or resampling), these results are shown in the rows below the original sample.

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B Compound detected in blank.
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M Failed method QC check.

Historic Monitoring Results - Last 8 Events
Selected Wells in Glacier Ridge Landfill Monitoring Program

Monitoring Wells	ES	PAL	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
W-163A (GRL)										
Reporting Period			4/1/2019	10/1/2019	4/1/2020	10/1/2020	4/1/2021	10/1/2021	4/1/2022	10/1/2022
Field										
Groundwater elevation (ft MSL)			926.12	927.36	926.02	926.07	926.62	926.37	926.57	927.94
ph-Field (standard units)			6.94	7.79	7.52	7.34	7.64	7.63	7.79	7.29
Specific conductance-field (umhos/cm @ 25c)		760	209	213	331	343	410	312	345	398
Temperature, water (degrees centigrade)			8.8	15.5	14.1	9.4	13.2	12.9	7.8	10.4
Inorganic										
Alkalinity, total filtered (mg/l as CaCO3)		320	188	189	192	175 M	218	186	183	210
Chloride, dissolved (mg/l as Cl)	250	125	9.7 M	7.6	3.8	2.2	10.1	3.5	3.4	5.8
Hardness, total, filtered (mg/l as CaCO3)		360	187	193	159	140	187	159	164	205
Organic										
Acetone (ug/l)	9000	1800	<2.7	10.2 J	4.3 J	5.5 J	<8.6	<8.6	<8.6	<8.6
Chloroethane (ug/l)	400	80	<1.3	1.6 J	<1.3	<1.3	<1.4	<1.4	<1.4	<1.4

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M Failed method QC check.

Appendix F
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION	
Site name: Hechimovich Sanitary Landfill	**Date of inspection:** June 13, 2023
Location and Region: Williamstown, WI - Region V	**EPA ID:** WID052906088
Agency, office, or company leading the five-year review: Wisconsin Department of Natural Resources	**Weather/temperature:** Mostly cloudy w/light rain forecast, high 68F, wind SW at 5-10 mph

Remedy Includes: (Check all that apply)

- x Landfill cover/containment
- x Access controls
- x Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other_____

- x Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Jake Margelofsky (Name) Operations Manager (Title) June 13, 2023 (Date)
   Interviewed X at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached No significant problems reported; occasional minor erosion; maintenance continues consistent with active GRL License #3068.

2. **O&M staff** _____ (Name) _____ (Title) _____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency __WDNR_____

Contact	Name	Title	Date	Phone no.
	Ann Bekta	Engineer	6/13/2023	

Problems; suggestions; ☐ Report attached _None reported_____

_____

Agency _____

Contact	Name	Title	Date	Phone no.

Problems; suggestions; ☐ Report attached _____

_____

Agency _____

Contact	Name	Title	Date	Phone no.

Problems; suggestions; ☐ Report attached _____

_____

Agency _____

Contact	Name	Title	Date	Phone no.

Problems; suggestions; ☐ Report attached _____

_____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - ☐ O&M manual — ☐ Readily available — ☐ Up to date — ☐ N/A
   - x As-built drawings — x Readily available — x Up to date — ☐ N/A
   - x Maintenance logs — x Readily available — x Up to date — ☐ N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** — x Readily available — x Up to date — ☐ N/A
   - x Contingency plan/emergency response plan — x Readily available — x Up to date — ☐ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — x Readily available — x Up to date — ☐ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - x Air discharge permit — ☐ Readily available — ☐ Up to date — ☐ N/A
   - x Effluent discharge — ☐ Readily available — ☐ Up to date — ☐ N/A
   - x Waste disposal, POTW — x Readily available — x Up to date — ☐ N/A
   - ☐ Other permits_____ — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks: per Host Agreement; License #3068_____

5. **Gas Generation Records** — x Readily available — x Up to date — ☐ N/A

   Remarks_____

6. **Settlement Monument Records** — x Readily available — x Up to date — ☐ N/A

   Remarks_____

7. **Groundwater Monitoring Records** — x Readily available — x Up to date — ☐ N/A

   Remarks_____

8. **Leachate Extraction Records** — x Readily available — x Up to date — ☐ N/A

   Remarks_____

9. **Discharge Compliance Records**
   - x Air — x Readily available — x Up to date — ☐ N/A
   - x Water (effluent) — x Readily available — x Up to date — ☐ N/A

   Remarks_____

10. **Daily Access/Security Logs** — x Readily available — x Up to date — ☐ N/A

    Remarks: Video surveillance; gate locked after hours_____

IV. O&M COSTS

1. **O&M Organization**
   - ☐ State in-house
   - ☐ Contractor for State
   - x PRP in-house
   - x Contractor for PRP
   - ☐ Federal Facility in-house
   - ☐ Contractor for Federal Facility
   - ☐ Other_____

2. **O&M Cost Records**
   - x Readily available
   - x Up to date
   - x Funding mechanism/agreement in place
   - Original O&M cost estimate_____ ☐ Breakdown attached

   Total annual cost by year for review period if available

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: Costs not reviewed

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map x Gates secured ☐ N/A
   Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
   Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes x No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes x No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) __self-reporting, drive by____ _____
Frequency __Daily; as needed_____
Responsible party/agency _PRP: GFL_____
Contact _Jake Margelofsky_____ _Operations Mgr____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date x Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☐ Yes ☐ No x N/A

Specific requirements in deed or decision documents have been met x Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☐ No x N/A
Other problems or suggestions: ☐ Report attached
_Access control, existing ICs well-implemented_____
_____
_____
_____

2. **Adequacy** x ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks_____
_____
_____

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map x No vandalism evident
Remarks_____
_____

2. **Land use changes on site** ☐ N/A
Remarks__None_____
_____

3. **Land use changes off site** ☐ N/A
Remarks__None_____
_____

VI. GENERAL SITE CONDITIONS

A. Roads x Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map x Roads adequate ☐ N/A
Remarks___Maintained; good repair; no damage_____
_____

B. Other Site Conditions

Remarks _____

_____

_____

_____

_____

_____

VII. LANDFILL COVERS ☐ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map x Settlement not evident
   Areal extent_____ Depth_____
   Remarks Maintenance per active License #3068_____
   _____

2. **Cracks** ☐ Location shown on site map x Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____
   _____

3. **Erosion** ☐ Location shown on site map x Erosion not evident
   Areal extent_____ Depth_____
   Remarks Erosion repaired regularly_____
   _____

4. **Holes** ☐ Location shown on site map x Holes not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

5. **Vegetative Cover** x Grass ☐ Cover properly established x No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks Cover maintained incrementally, per License #3068_____
   _____

6. **Alternative Cover (armored rock, concrete, etc.)** x N/A
   Remarks_____
   _____

7. **Bulges** ☐ Location shown on site map x Bulges not evident
   Areal extent_____ Height_____
   Remarks_____
   _____

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident
☐ Wet areas ☐ Location shown on site map Areal extent_____
☐ Ponding ☐ Location shown on site map Areal extent_____
x Seeps ☐ Location shown on site map Areal extent_____
☐ Soft subgrade ☐ Location shown on site map Areal extent_____
Remarks Seeps repaired as necessary, per license #3068

9. **Slope Instability** ☐ Slides ☐ Location shown on site map x No evidence of slope instability
Areal extent_____
Remarks_____

B. Benches x Applicable ☐ N/A Final cover area only, per License #3068
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map x N/A or okay
Remarks_____

2. **Bench Breached** ☐ Location shown on site map x N/A or okay
Remarks_____

3. **Bench Overtopped** ☐ Location shown on site map x N/A or okay
Remarks_____

C. Letdown Channels x Applicable ☐ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map x No evidence of settlement
Areal extent_____ Depth_____
Remarks_____

2. **Material Degradation** ☐ Location shown on site map x No evidence of degradation
Material type_____ Areal extent_____
Remarks_____

3. **Erosion** ☐ Location shown on site map x No evidence of erosion
Areal extent_____ Depth_____
Remarks_____

4. **Undercutting** ☐ Location shown on site map x No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ x No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
x No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations x Applicable ☐ N/A

1. **Gas Vents** x Active☐ Passive
x Properly secured/locked x Functioning x Routinely sampled x Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks per active License #3068_____

2. **Gas Monitoring Probes**
x Properly secured/locked x Functioning x Routinely sampled x Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
x Properly secured/locked x Functioning x Routinely sampled x Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
x Properly secured/locked x Functioning x Routinely sampled x Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located x Routinely surveyed ☐ N/A
Remarks_____

E. Gas Collection and Treatment x Applicable ☐ N/A

1. **Gas Treatment Facilities**
   x Flaring ☐ Thermal destruction ☐ Collection for reuse
   x Good condition ☐ Needs Maintenance
   Remarks Active License #3068

2. **Gas Collection Wells, Manifolds and Piping**
   x Good condition ☐ Needs Maintenance
   Remarks

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   x Good condition ☐ Needs Maintenance ☐ N/A
   Remarks

F. Cover Drainage Layer x Applicable ☐ N/A

1. **Outlet Pipes Inspected** x Functioning ☐ N/A
   Remarks Active License #3068

2. **Outlet Rock Inspected** x Functioning ☐ N/A
   Remarks

G. Detention/Sedimentation Ponds x Applicable ☐ N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
   x Siltation not evident
   Remarks Active License #3068

2. **Erosion** Areal extent_____ Depth_____
   x Erosion not evident
   Remarks

3. **Outlet Works** x Functioning ☐ N/A
   Remarks

4. **Dam** ☐ Functioning x N/A
   Remarks

H. Retaining Walls ☐ Applicable x N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____

I. Perimeter Ditches/Off-Site Discharge x Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map x Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   x Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map x Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** x Functioning ☐ N/A
   Remarks_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable x N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____ ☐ Evidence of breaching
   Head differential_____
   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable x N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____
_____
_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable x N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

C. Treatment System ☐ Applicable x N/A

1. **Treatment Train** (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☐ Carbon adsorbers
   ☐ Filters_____
   ☐ Additive (*e.g.*, chelation agent, flocculent)_____
   ☐ Others_____
   ☐ Good condition ☐ Needs Maintenance
   ☐ Sampling ports properly marked and functional
   ☐ Sampling/maintenance log displayed and up to date
   ☐ Equipment properly identified
   ☐ Quantity of groundwater treated annually_____
   ☐ Quantity of surface water treated annually_____
   Remarks_____
   _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☐ Good condition☐ Needs Maintenance
   Remarks_____
   _____

3. **Tanks, Vaults, Storage Vessels**
   ☐ N/A ☐ Good condition☐ Proper secondary containment ☐ Needs Maintenance
   Remarks_____
   _____

4. **Discharge Structure and Appurtenances**
   ☐ N/A ☐ Good condition☐ Needs Maintenance
   Remarks_____
   _____

5. **Treatment Building(s)**
   ☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
   ☐ Chemicals and equipment properly stored
   Remarks_____
   _____

6. **Monitoring Wells** (pump and treatment remedy)
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ All required wells located ☐ Needs Maintenance ☐ N/A
   Remarks_____
   _____

D. Monitoring Data

1. Monitoring Data
   x Is routinely submitted on time x Is of acceptable quality

2. Monitoring data suggests:
   ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
x Properly secured/locked x Functioning x Routinely sampled x Good condition
x All required wells located ☐ Needs Maintenance ☐ N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

OU1: The Hechimovich Landfill (aka LGRL) has been completely deconstructed and the waste relocated to the adjacent, active landfill.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

O&M is now accomplished in accordance with license requirements of the active GRL #3068. WDNR Waste and Materials Management Program oversees the activities; no significant ongoing issues have been reported.

C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. NA

D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. NA