

Cuba Municipal Waste Disposal Site

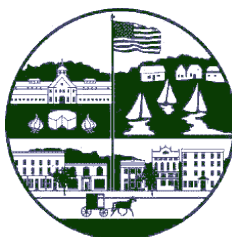
ALLEGANY COUNTY, NEW YORK

Periodic Review Report (2021-2022)

NYSDEC Site Number: 902012

Prepared for:

Village of Cuba
17 East Main Street
Cuba, New York 14727



Prepared by:



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February 2022

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Executive Summary

The Cuba Landfill Site (the "Site") is a 39.78-acre former waste disposal facility located on Jackson Hill Road in the Town of Cuba, Allegany County, New York. The Site is owned by the Village of Cuba and was operated by the Village of Cuba from the 1950s to the 1980s. The New York State Department of Environmental Conservation (NYSDEC) and the Village of Cuba entered into an Order on Consent to close the Cuba Landfill. This Order on Consent required the remedial parties, NYSDEC and the Village of Cuba, to investigate and remediate contaminated media at the Site.

During the Remedial Investigation (RI) conducted at the Site in 1999, waste material, soil, groundwater, air, leachate, and sediment samples were collected to characterize the nature and extent of contamination. Results of the Cuba Landfill RI indicated that Site waste included a source of contamination that presented a threat to the environment and that off-Site contaminant migration was occurring. Analytical results showed that the contaminants of concern, identified as volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs), were present in relatively low concentrations and were typical of unlined landfills that received domestic and industrial waste.

The Record of Decision, dated June 2000, authorized the selected remedy of the installation of a low permeability cap with passive gas venting, an up-gradient surface water diversion, a phytoremediation system for control of leachate, and long-term groundwater monitoring. A series of monitoring wells were installed at the Site during the remedial process as part of the long-term groundwater monitoring program. The monitoring of these wells, among other tasks, is summarized in this Periodic Review Report (PRR).

Operation, maintenance, and monitoring activities associated with the remedial action implementation are conducted at the Cuba Landfill as part of ongoing implementation of the Site Management Plan (SMP). These monitoring activities provide data to evaluate remedy performance, effectiveness, and protectiveness. As a component of the SMP, annual Site inspections are conducted in addition to groundwater, surface water, and landfill gas evaluation events.

Remedy performance monitoring data obtained during this reporting period indicate the remedies implemented continue to perform as expected, are effective, protective, and progressing toward the remedial action objectives during this reporting period. Chlorinated VOC (cVOC) exceedances occurred relative to 6 New York Codes, Rules and Regulations (6 NYCRR) Part 703.5 Class GA Ambient Groundwater Quality Standards (Part 703.5 AWQS) at five (5) wells in March, 2021. The data indicate that groundwater VOC concentrations have generally decreased since remedy implementation; inorganic concentrations continue to exhibit fluctuations. As indicated by the data, surface water quality does not appear to be impacted by surface water runoff from the Site. Additionally, an off-Site downgradient private supply well sampled during this reporting period does not appear to be impacted by groundwater from the Site.



1.0 Introduction

This PRR was prepared by Lu Engineers, on behalf of the Village of Cuba, in accordance with the requirements set forth in NYSDEC Department of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines set forth by NYSDEC. The first PRR was required 14 months after the final completion of construction in May 2010. The reporting period for this PRR is from January 25, 2021 to January 25, 2022. The following items are included in this PRR:

- Identification, assessment, and certification of each EC/institutional controls (IC) required by the remedy for the Site.
- Results of the Site inspection and sampling events including applicable inspection forms and other records generated for the Site during the reporting period.
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions.
- Data summary tables of groundwater and surface water contaminants of concern. These include a presentation of past VOC data as part of an evaluation of contaminant concentration trends.
- Laboratory analytical results, and the required laboratory data deliverables for each sample collected during the reporting period have been and will continue to be submitted electronically in a NYSDEC-approved EQUIS format.
- A Site evaluation, which includes the following:
 - I. The compliance of the remedy with the requirements of the Site-specific ROD.
 - II. The operation and the effectiveness of each treatment unit, including identification of any needed repairs or modifications.
 - III. Any new conclusions or observations regarding Site contamination based on inspection or lab data generated during the monitoring events.
 - IV. Recommendations regarding any necessary changes to the remedy and/or SMP.
 - V. The overall performance and effectiveness of the remedy to date.

2.0 Site Overview

2.1 Introduction

The Cuba Landfill is a 39.78-acre former waste disposal facility located in the Town of Cuba, Allegany County, New York. The landfill Site is owned by the Village of Cuba and was operated by the Village of Cuba from the 1950s to the 1980s. The Site is bordered to the north by Deep Snow Road and a hay field, and to the west, east, and south by undeveloped wooded lands. The topography of the Site slopes steeply to the south. The landfill ground cover consists primarily of mowed grass. Storm water drainage trenches oriented north-south and lined with rip-rap exist on the western portion of the landfill cap. These swales drain to a storm water detention pond at the toe of the slope. An unnamed intermittent tributary of the north branch of Van Campen Creek closely parallels the eastern border.

The boundaries of the Site are more fully described in the metes and bounds Site description that is a component of the NYSDEC's Declaration of Covenants and Restrictions. The Site is accessed via Jackson Hill Road and the seasonal Deep Snow Road.

The NYSDEC and the Village of Cuba entered into an Order on Consent (No. B9-461-94-09) to close the Cuba Landfill. This Order on Consent required the remedial parties, NYSDEC and the Village of Cuba, to investigate and remediate contaminated media at the Site. In 2013, the Village of Cuba purchased a 10-acre rectangular parcel of land that adjoins the Site to the immediate south. This parcel is not considered part of the definition or boundary of the Site. Off-Site monitoring wells MW-7, MW-10 and MW-10D are contained within the boundary of this 10-acre parcel.

2.2 Background

Starting in the early 1950s, household, commercial, and industrial wastes were disposed of within the Cuba Landfill. The Village of Cuba acquired the Site in 1967 and operated it as an un-permitted municipal landfill. The facility was issued a sanitary landfill permit in 1979 by the NYSDEC and became inactive in approximately 1981. The landfill was inspected on a regular basis by NYSDEC until the Village completed an approved closure plan in 1987.

In 1994, results of Phase II Preliminary Site Assessment (PSA) were completed for the NYSDEC to determine if the Site qualified for the New York State Registry of Inactive Hazardous Waste Disposal Sites (IHWDS). Results of testing at the Site conducted by URS Consultants, Inc. indicated the presence of VOCs in Site groundwater and leachate and confirmed the disposal of hazardous waste including solvents, plating wastes, PCB capacitors, and paint sludges. Based on these findings and the confirmed disposal of hazardous waste including solvents, plating wastes, PCB capacitors, and paint sludges, the Site was reclassified from Class 2a to Class 2 (significant threat to public health or the environment; action required) in 1994.

During the RI conducted at the Site in 1999 and subsequent confirmatory sampling events, waste material/soil, groundwater, air, leachate, and sediment samples were collected to characterize the nature and extent of the contamination. The RI results indicated that the Site was a source of contamination and that there was migration of contaminants off-Site. Analytical testing results showed that contaminants of concern (VOCs and PCBs) were present in relatively low concentrations typical of unlined landfills that receive domestic and industrial waste. The following presents a summary of the RI activities and findings:

- Soil –Twelve (12) surface soil locations were sampled. Phenol, Aroclor 1260, and several metals including arsenic, beryllium, cobalt, copper, iron, nickel, selenium, and zinc were detected at concentrations above applicable standards, criteria, and guidelines (SCGs). Subsurface soil samples from two (2) locations did not contain concentrations of VOCs, semi-volatile organic compounds (SVOCs), pesticides, or PCBs greater than the SCGs.
- Upper Bedrock Groundwater – Predominantly impacted with VOCs in excess of applicable standards. Limited exceedances of SVOCs, pesticides, and metals were detected.
- Surface Water Sediment – No VOCs, pesticides, or PCBs were detected in any of the sediment samples analyzed. One (1) sampling location at the southwest corner of the property contained one (1) SVOC, phenol, and a few metals exceeding the SCGs. Both upgradient and downgradient samples from both tributaries contained similar metals concentrations.
- Groundwater Springs – Groundwater springs located downgradient and at various off-Site locations contained VOCs, endrin, Aroclor 1260, and a few metals were detected at concentrations greater than the SCGs.



In 2008, the NYSDEC issued a work authorization to EA to provide construction, administration, and inspection services at the Cuba Landfill Site. EA was also retained to provide inspection services during construction activities, and to prepare the Final Engineering Report (FER) for these activities. D'Virka and Bartilucci Consulting Engineers was the design engineer of record for the landfill closure. The NYSDEC awarded the landfill closure contract to Modern Environmental Group, Inc. (Modern) for the construction activities. The Site was remediated in accordance with the NYSDEC-approved remedial design dated February 2008. The overall goal of the remedial actions at the Site is protection of human health and the environment, and meeting relevant SCGs. Specific remedial action objectives are as follows:

- Eliminate, to the extent practicable, direct human or animal exposure to waste in the landfill.
- Eliminate, to the extent practicable, the migration of contaminants from the landfill to groundwater.
- Reduce, control, or eliminate, to the extent practicable, the generation of leachate within the landfill mass.
- Eliminate, to the extent practicable, ingestion of groundwater affected by the Site that does not meet 6 NYCRR 703.5 Class GA Ambient Water Quality Criteria.
- Eliminate, to the extent practicable, off-Site migration of groundwater that does not meet 6 NYCRR Part 703.5 Class GA Ambient Water Quality Criteria.

After completion of the remedial work as specified within the February 2008 Contract Documents (Contract D006905), some contamination remained in the subsurface at the Site. Engineering controls (ECs) were incorporated into the Site remedy to control exposure to remaining contamination during the use of the Site to ensure protection of public health and the environment. In accordance with the New York State Solid Waste Management Facilities Regulations (6NYCRR Part 360-2.15[k][4]) and the Site-specific SMP, environmental monitoring sampling points have been, and continue to be maintained, monitored, and sampled to evaluate surface water and groundwater quality and assess potential residual impacts to the environment immediately surrounding the landfill to support eventual Site closure.

A chronology of the significant actions/events of the remedial program for the Site is presented in the following table.

CUBA LANDFILL PERIODIC REVIEW REPORT REMEDY IMPLEMENTATION CHRONOLOGY	
Significant Action/Event	Date
Phase I –PSA	October 1990
Phase II –PSA	January 1994
RI Report ⁽¹⁾	July 1999
Feasibility Study Report ⁽²⁾	December 1999
Record of Decision ⁽³⁾	June 2000
Remedial Design Work Plan ⁽⁴⁾	June 2001
Pre-Design Investigation Report	October 2003
Remedy Design Completion	February 2008
NYSDEC Design Approval	April 2008
Project Health and Safety Plan	April 2008



CUBA LANDFILL PERIODIC REVIEW REPORT REMEDY IMPLEMENTATION CHRONOLOGY	
Significant Action/Event	Date
Remedy Implementation	September 2008
Substantial Completion	October 2009
NYSDEC Approval of Remedy Construction Completion (Final Completion)	May 2010
Site-Specific Quality Assurance Project Plan Addendum	January 2011
First Quarterly Report ⁽⁵⁾	April 2011
NYSDEC Site Management Plan Approval	August 2011
Second Quarterly Report ⁽⁵⁾	July 2011
Annual Report No. 1, May 2010 – July 2011 ⁽⁵⁾	September 2011
Declaration of Covenants and Restrictions	October 2011
Periodic Review Report ⁽⁵⁾	November 2011
Third Quarterly Report (July/August 2011 event) ⁽⁵⁾	December 2011
Fourth Quarterly Report (November 2011 event) ⁽⁵⁾	April 2012
Fifth Quarterly Report (February 2012 event) ⁽⁵⁾	June 2012
Sixth Inspection/Monitoring Report (July 2014 event, Lu Engineers)	July 2014
Seventh Inspection/Monitoring Report (November 2014 event, Lu Engineers)	November 2014
Eighth Inspection/Monitoring Report (June 2015 event, Lu Engineers)	February 2016
Ninth Inspection/Monitoring Report (October 2016 event, Lu Engineers)	February 2017
Tenth Inspection/Monitoring Report (March 2017 event, Lu Engineers)	February 2018
Eleventh Inspection/Monitoring Report (May 2018 event, Lu Engineers)	February 2019
NYSDEC Emerging Contaminant Sampling Event	August 2018
Twelfth Inspection/Monitoring Report (September 2019 event, Lu Engineers)	February 2020
Thirteenth Inspection/Monitoring Report (October 2020 event, Lu Engineers)	February 2021
Fourteenth Inspection/Monitoring Report (March 2021 event, Lu Engineers)	February 2022

- (1) Dvirka and Bartilucci Consulting Engineers. 1999. Remedial Investigation Report. Cuba Municipal Waste Disposal Site (Registry No. 9-02-012), Village of Cuba, Alleghany County, New York. July.
- (2) Dvirka and Bartilucci Consulting Engineers. 1999. Feasibility Study Report, Cuba Municipal Waste Disposal Site (Registry No. 9-02-012), Village of Cuba, Alleghany County, New York. December.
- (3) New York State Department of Environmental Conservation. 2000. Record of Decision, Village of Cuba Municipal Waste Disposal Site, Village of Cuba, Alleghany County, Site Number 9-02-012. June.
- (4) Dvirka and Bartilucci Consulting Engineers. 2001. Remedial Design Work Plan, Cuba Municipal Waste Disposal Site (Registry No. 9-02-012), Village of Cuba, Alleghany County, New York. June.
- (5) Prepared by EA Science and Technology, an affiliate of EA Engineering, P.C.

3.0 Remedy Performance, Effectiveness, and Protectiveness Evaluation

Post-remedial groundwater sampling indicates that low-level residual groundwater contamination persists at the Site since completion of remedial work. Eleven (11) post-remediation sampling events were conducted in accordance with and as outlined in the SMP in:

- January 2011
- November 2011
- July 2014
- November 2014
- June 2015
- October 2016
- March 2017
- May/August 2018
- September 2019
- October 2020
- March 2021



4.0 Institutional Control/Engineering Control Compliance

The Cuba Landfill Site remedies involve the use of both ICs and ECs to protect public health and the environment. The IC/EC Plan is one (1) component of the SMP and is subject to revision by NYSDEC. ICs/ECs include the following:

Institutional Controls:

- Land Use Restriction
- Groundwater Use Restriction
- Excavation Work Plan
- Soil Vapor Intrusion Evaluation

Engineering Controls:

- Engineered Landfill Cap
- Passive Gas Vents
- Landfill Surface Drainage
- Leachate Phytoremediation
- Site Entrance Gates
- Access Road.

Each of the above listed controls is described in Table 3. Information in Table 3 includes a description of the objective of the control, how the performance of the control is monitored, and summarizes the current performance and status of each control. Based on the information in Table 3, each of the ICs and ECs at the Cuba Landfill Site remain in place and continue to be effective.

The required IC/EC certification has been completed as a component of this report and is included as Appendix E.

5.0 Monitoring Plan Compliance

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, the soil cover system, and all affected Site media identified in the following table:

Monitoring Program	Frequency*	Matrix	Analysis
Groundwater Monitoring	Annual (rotating quarterly)	Groundwater	EPA Method 8260 VOCs; EPA Method 6010 TAL Metals
Surface Water Monitoring	Annual (rotating quarterly)	Surface Water	EPA Method 8260 VOCs; EPA Method 6010 TAL Metals
Private Supply Well	Annual (rotating quarterly)	Surface Water	EPA Method 8260 VOCs; EPA Method 6010 TAL Metals
Landfill Gas Monitoring	Annual (rotating quarterly)	Organic Vapors	H ₂ S, VOC, CO, LEL O ₂ , PID screening
Cover System Monitoring	Annual (rotating quarterly)	Soil/Geotextile Cover System	Visual Inspection, determine applicable maintenance

*The frequency of events will be conducted as specified until otherwise approved by NYSDEC

LEL: lower explosive limit, H₂S: hydrogen sulfide, CO: carbon monoxide, O₂: oxygen

Monitoring activities completed during this reporting period included the following:

- Annual groundwater sampling of 11 monitoring wells (refer to Figure 2);
- Annual sampling of four (4) surface water locations;
- Annual landfill gas monitoring;
- Annual inspection of the Site cover system

The monitoring locations, analytical testing requirements and inspection protocols for each monitoring/sampling/inspection event are outlined in the approved SMP. Site wells were sampled on March 25 & 26, 2021 using sampling methods and procedures outlined in the SMP. Groundwater quality measurements including temperature, turbidity, pH, conductivity and oxidation reduction potential (ORP) were collected during the purging process at each well. Purge water from each well was released to the ground surface near the well. At each well, samples were collected for analysis of VOCs and TAL metals. Samples were submitted to ALS Environmental, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) - certified laboratory located in Rochester, New York.

Groundwater monitoring logs are included as Appendix A of this report.

6.0 Monitoring Results

6.1 Groundwater Data

The following constituents were detected in exceedance of 6 NYCRR Part 703.5 Class GA Groundwater Standards at one (1) or more sample locations for the reporting period:

Volatile Organics

- trichloroethene (TCE)
- 1,1,1-trichloroethane (1,1,1-TCA)
- 1,1-dichloroethane (1,1-DCA)
- chloroethane (ETC) cis-1,2-dichloroethene (cis-1,2-DCE)

Metals

- | | |
|-------------|-------------|
| • iron | • chromium |
| • manganese | • lead |
| • arsenic | • magnesium |
| • beryllium | • nickel |
| • cadmium | • sodium |

The following provides a comprehensive summary of March 2021 Findings:

- Sampling at 8354 Jackson Hill Road did not identify VOC exceedances relative to Part 703.5.
- No VOC exceedances were identified at the upgradient wells MW-1S and MW-1D, consistent with previous sampling events.
- All VOC exceedances detected at MW-4 slightly decreased relative to the 2020-2021 reporting period; TCE concentrations (previously identified in exceedance during the 2016 and 2018 sampling events) continue to remain below applicable regulatory criteria.
- VOC concentrations at MW-7 did not significantly change relative to the 2020-2021 reporting period.
- VOC concentrations increased slightly for each parameter detected at MW-8; concentrations appear to fluctuate seasonally and have not surpassed the highest documented levels observed in the May 2018 sampling event.
- No VOC exceedances were identified at downgradient wells MW-10 and MW-10D, consistent with previous sampling events.



- VOC concentrations at MW-11 did not significantly change relative to the 2020-2021 reporting period.
- No VOC exceedances were identified at the upgradient wells MW-12, consistent with previous sampling events.
- TCE concentrations at MW-13 declined relative to prior most recent sampling event in September 2019; degradation products remain consistent with previous results.
- Wells MW-3 and MW-9 were dry and not sampled during this reporting period.
- Iron and manganese exceedances were frequently detected and generally fluctuated relative to previous sampling events.
- In addition to iron and manganese, concentrations of arsenic, beryllium, cadmium, chromium, lead, magnesium, nickel, and sodium were identified at concentrations exceeding applicable regulatory criteria at MW-10, MW-12, and MW-13. It is noted that groundwater at these locations exhibited high turbidity at the time of sampling.

6.2 Surface Water Data

Surface water sampling identified iron exceedances at SW-3 and SW-4, consistent with previous sampling events. No VOCs were detected above minimum laboratory quantitation limits in any of the surface water samples.

6.3 Leachate Indicator Data

Leachate indicators, other than TAL metals, have not been collected since 2014.

6.4 Landfill Gas Monitoring Data

In addition to groundwater monitoring conducted in March 2021, all landfill vents were screened for VOCs and combustible gases including H₂S, CO, O₂ using a PID and 4 gas meter, respectively. Refer to Figure 2 for gas vent locations. No elevated readings in the vents were found during the Site-wide inspection, as documented in Appendix D.

6.5 Site Inspections

In March 2021, the landfill cap grades and swales were in good condition. The vegetated cap system appeared to be limiting the amount of surface water infiltration through buried waste and reducing the impact on groundwater quality as determined by water quality parameters. A copy of the Site-wide inspection form is included as Appendix D of this report.

6.6 Results Summary

In general, the remedy performance monitoring data presented above indicate that the remedies implemented are performing as expected, are effective and protective, and are progressing towards the remedial action objectives. Groundwater VOC concentrations have generally decreased over time, but have fluctuated since 2011. The landfill cap is serving to reduce groundwater impacts as determined by previous leachate indicator parameter concentrations. The data also indicate that water quality does not appear to have been impacted from surface water runoff from the Site. These findings generally demonstrate progress towards attaining the remediation goals set forth in the controlling documents and the Record of Decision.

7.0 Conclusions and Recommendations

7.1 Compliance with the Site Management Plan

The controlling document for the Site is the approved SMP. The requirements specified in the SMP have been met during the reporting period of this PRR. The ROD for the Site requires groundwater use restrictions. NYSDEC placed a Declaration of Covenants and Restrictions on file at the Allegany County Clerk's office that restricts groundwater use in the area around the Site.

7.2 Performance and Effectiveness of the Remedies

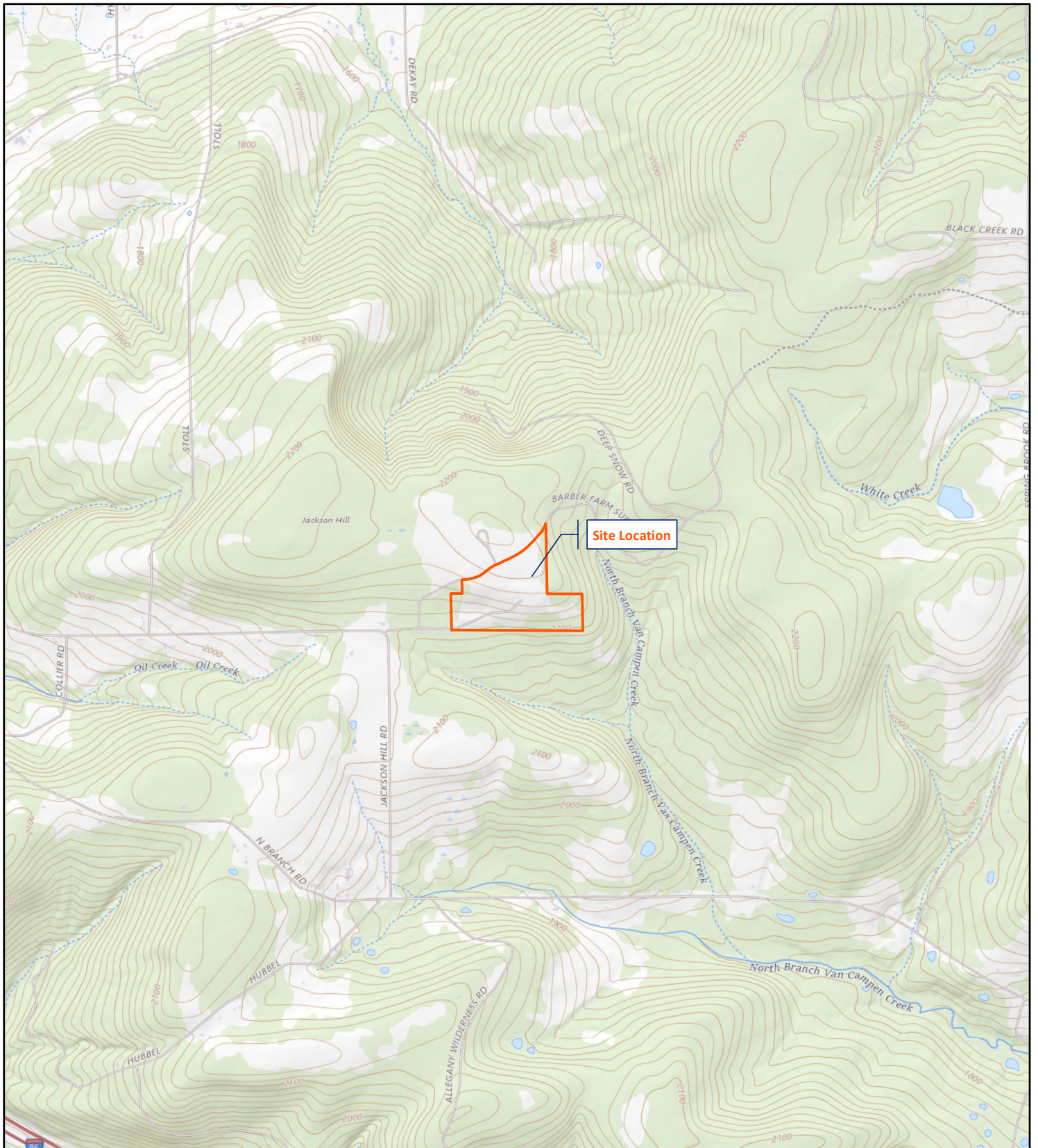
Overall, the remedy performance monitoring data collected during this reporting period indicate that the remedies implemented for both of the operable units are performing generally as expected, are effective and protective. The landfill cap is serving to reduce groundwater impacts as determined by generally stable and/or declining leachate indicator parameter concentrations.

Landfill gas is typical and is not impacting resources. It appears that stream and tributary water quality has not been impacted from surface water discharges from the Site. These factors demonstrate progress towards attaining the remediation goals set forth in the controlling documents and the ROD.

7.3 Future Sampling Schedule and Periodic Review Report Submittals

Based on the analytical data generated during this reporting period, it remains evident that cVOCs, iron, and manganese are the primary contaminants of concern at the Site. Increased concentrations of VOCs and metals in several Site monitoring wells may be attributed to seasonal fluctuations in groundwater elevations and elevated turbidity. The general trend of VOC concentrations suggests that degradation is occurring. In accordance with the approved SMP for this Site, Lu Engineers will perform the next sampling event during the second quarter of 2022.

It is recommended that the next PRR be submitted approximately one (1) year from submittal of this PRR. A final determination of the submittal schedule for future Site reporting requirements will be determined with approval by the NYSDEC.



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Contour Interval: 20 feet

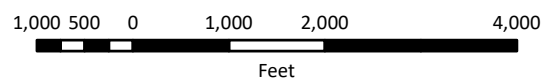


Figure 1. Site Location Plan
Cuba Municipal Waste Disposal Site
NYSDEC Site #902012
Village of Cuba, New York



DATE: February 2022

PROJECT #: 50191-01

DRAWN/CHECKED: BGS/GLA

DATA SOURCE:
ESRI Online Basemap

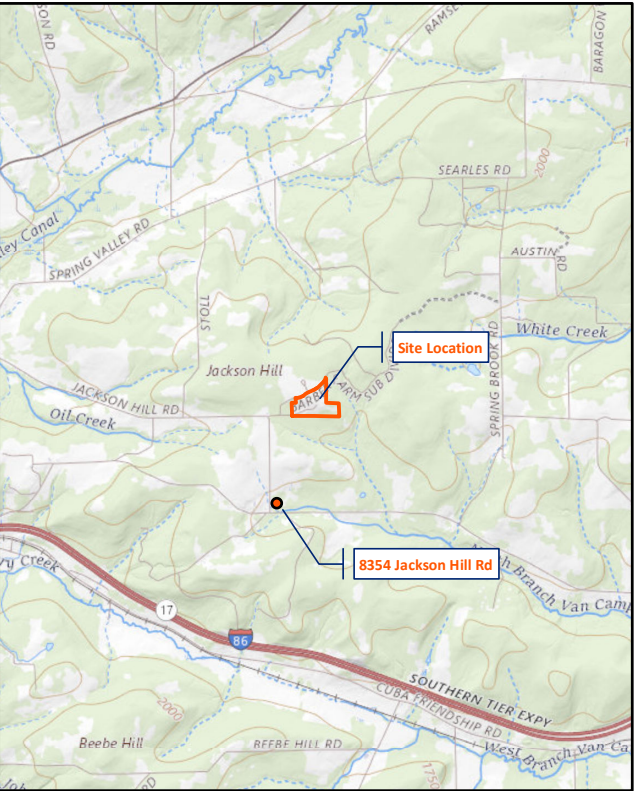
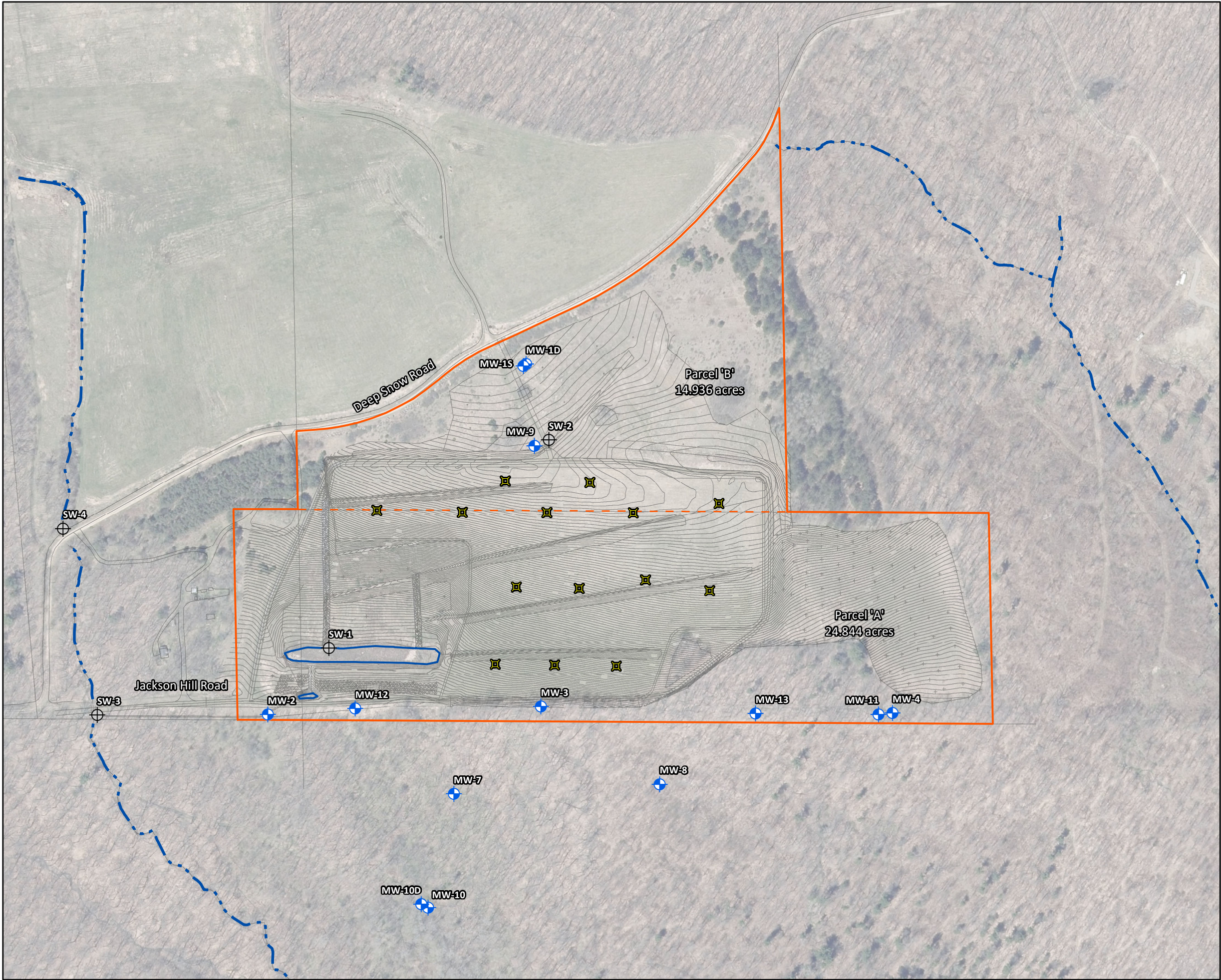


Figure 2:
Site Plan

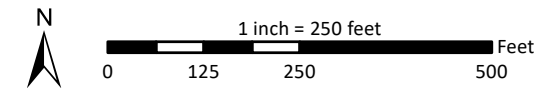
Project:
Cuba Municipal Waste Disposal Site
PRR 2021-2022

Location:
Jackson Hill Road
Cuba, Allegany County, NY



Legend

- Site Boundary
- North Branch, Van Campen Creek
- ⊕ Monitoring Wells
- ⊕ Surface Water Sample Locations
- ⊕ Landfill Gas Vent



Drawn/Checked By: BGS/GLA
Lu Project Number: 50191
Date: February 2021
General:
1. Coordinate System: NAD 1983 State Plane NY West FIPS 3103 Feet
2. Scale: 1:3600 (original document size 11"x17")

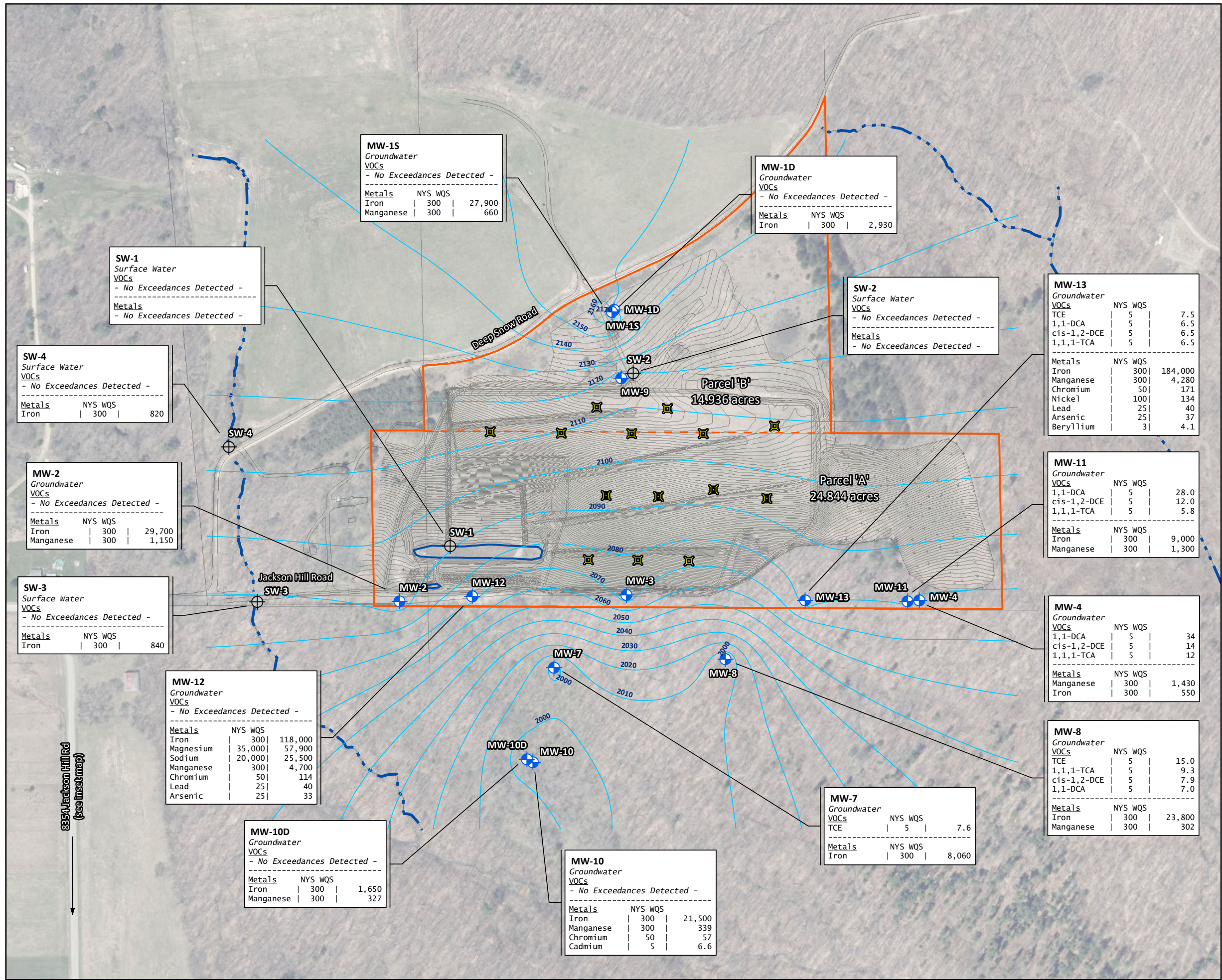
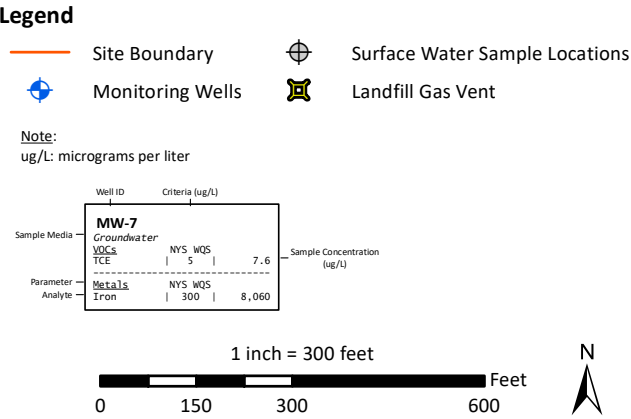


Figure 3:
Sample Analytical Results

Project:
Cuba Municipal Waste Disposal Site
PRR 2021-2022

Location:
Jackson Hill Road
Cuba, Allegany County, NY



Drawn/Checked By: BGS/GLA
Lu Project Number: 50191
Date: February 2022
General:
1. Coordinate System: NAD 1983 State Plane NY West FIPS 3103 Feet
2. Scale: 1:3600 (original document size 11"x17")

Groundwater Sample Analytical Results

Detected Parameters ¹	NYS Water Quality Standard ²	Sample ID:		8354 Jackson		MW-15		MW-1D		MW-2		MW-3		MW-4		MW-7		MW-8		MW-9		MW-10		MW-10D		MW-11		MW-12		MW-13		SW-01		SW-02		SW-03		SW-04	
		Sample Date:		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021	
		Qual:		Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q	Res	Q
Volatile Organic Compounds (VOCs)																																							
1,1,1-Trichloroethane (TCA)	5.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS		12	4.1		9.3	NS	< 1.0	< 1.0		NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	5.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS	< 1.0	< 1.0				NS	< 1.0	< 1.0		1.0	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	1.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS	< 1.0	< 1.0				NS	< 1.0	< 1.0		1.0	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS	< 1.0	< 1.0				NS	< 1.0	< 1.0		1.0	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane (1,1-DCA)	5.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS		34	1.5		7.0	NS	< 1.0		0.66 J		28	0.53 J		6.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane (1,1-DCE)	5.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS		3.4	0.89 J		0.56 J	NS	< 1.0		0.28 J		2.8	< 1.0		0.39 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	--	µg/L	< 1.0	< 1.0																																			

Notes

- 1 – Results compared to '6 NYCRR Part 703.5 Water Quality Standards and Classifications
- 2 – Water Class GA (groundwater)
- µg/L: micrograms per liter
- <: Result not detected above minimum laboratory quantitation limit
- NA: Sample not analyzed for referenced parameter
- NS: Well not sampled (dry)

Results exceed water quality standard/guidance value

J: Estimated value due to concentration between the MRL and the MDL

*: guidance value

Cuba Municipal Waste Disposal Site (#902012)

Periodic Review Report 2021-2022

Groundwater Sample Analytical Results

Table 1-2 Groundwater Sample Analytical Results - Metals

		NYS Water Quality Standard ²		Sample ID: 8354 Jackson		MW-1S	MW-1D	MW-2	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-10D	MW-11	MW-12	MW-13	SW-01	SW-02	SW-03	SW-04
Detected Parameters ¹		Sample Date:	3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021		3/25/2021	
			Qual:	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q	Res Q
Metals																						
Aluminum, Total	--	µg/L	400	27100	4340	25600	NS	590	9570	22000	NS	15900	2400	10800	83800	116000	< 100	340	1220	1190		
Antimony, Total	3.0	µg/L	< 60	< 60	< 60	< 60	NS	< 60	< 60	< 60	NS	< 60	< 60	< 60	< 60	< 60	< 60	< 60	< 60	< 60	< 60	< 60
Arsenic, Total	25	µg/L	< 10	12	< 10	17	NS	< 10	< 10	10 J	NS	< 10	< 10	< 10	33	37	< 10	< 10	< 10	< 10	< 10	< 10
Barium, Total	1000	µg/L	36	250	29	153	NS	31	103	142	NS	182	70	75	399	804	13 J	9.0 J	14 J	11 J		
Beryllium, Total	3.0*	µg/L	< 3.0	1.2 J	0.2 J	1.0 J	NS	< 3.0	0.4 J	1.0 J	NS	0.7 J	< 3.0	0.4 J	2.7 J	4.1	< 3.0	< 3.0	< 3.0	< 3.0		
Cadmium, Total	5.0	µg/L	< 5.0	0.9 J	< 5.0	2.5 J	NS	< 5.0	< 5.0	< 5.0	NS	6.6	< 5.0	< 5.0	1.2 J	1.6 J	< 5.0	< 5.0	< 5.0	< 5.0		
Calcium, Total	--	µg/L	16000	32200	24000	41700	NS	48300	51300	39000	NS	150000	46300	62000	94100	55900	30900	6700	3900	2900		
Chromium, Total	50	µg/L	0.7 J	34	5.0 J	26	NS	0.8 J	13.0	25	NS	57	4.0 J	11	114	171	< 10	0.7 J	1.0 J	2.0 J		
Cobalt, Total	--	µg/L	< 50	10 J	< 50	10 J	NS	< 50	3.0 J	11 J	NS	7.0 J	0.9 J	4.0 J	40 J	61	< 50	< 50	< 50	< 50		
Copper, Total	200	µg/L	< 20	24	15 J	20	NS	< 20	21.0	38	NS	27	< 20	7.0 J	62	104	< 20	< 20	< 20	< 20		
Iron, Total	300	µg/L	800	27900	2930	29700	NS	550	8060	23800	NS	21500	1650	9000	118000	184000	< 100	290	840	820		
Lead, Total	25	µg/L	< 50	13 J	10 J	13 J	NS	< 50	6.0 J	4.0 J	NS	7.0 J	< 50	4.0 J	40 J	40 J	< 50	< 50	< 50	< 50		
Magnesium, Total	35000*	µg/L	4200	9800	9800	16400	NS	12500	25700	18600	NS	22200	20600	15100	57900	33200	8800	1200	900 J	700 J		
Manganese, Total	300	µg/L	14	660	108	1150	NS	1430	189	302	NS	339	327	1300	4700	4280	5.0 J	19	22	17		
Mercury, Total	0.7	µg/L	< 0.2	< 0.2	< 0.2	< 0.2	NS	< 0.2	< 0.2	< 0.2	NS	< 0.2	< 0.2	< 0.2	0.09 J	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2		
Nickel, Total	100	µg/L	< 40	15 J	< 40	27 J	NS	< 40	4.0 J	16 J	NS	12 J	< 40	8.0 J	87	134	< 40	< 40	< 40	< 40		
Potassium, Total	--	µg/L	1700 J	9500	2500	8500	NS	2600	4500	8400	NS	8200	2700	5100	23000	26100	1800 J	2300	1400 J	1500 J		
Selenium, Total	10	µg/L	< 10	< 10	< 10	< 10	NS	< 10	< 10.0	< 10	NS	< 10	< 10	< 10	8.0 J	< 10	< 10	< 10	< 10	< 10		
Silver, Total	50	µg/L	< 10	< 10	< 10	< 10	NS	< 10	< 10.0	< 10	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Sodium, Total	20000	µg/L	13000	2900	4200	17000	NS	4200	6900	5500	NS	18200	16100	4300	25500	4300	8200	500 J	2200	2700		
Thallium, Total	0.5*	µg/L	< 10	< 10	< 10	< 10	NS	< 10	< 10.0	< 10	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Vanadium, Total	--	µg/L	< 50	37 J	6.0 J	27 J	NS	< 50	12.0 J	30 J	NS	33 J	3.0 J	15 J	108	153	< 50	< 50	2.0 J	2.0 J		
Zinc, Total	2000*	µg/L	25	84	39	729	NS	17 J	31.0	66	NS	110	16 J	37	239	377	< 20	< 20	< 20	< 20		

Notes

1 – Results compared to '6 NYCRR Part 703.5 Water Quality Standards and Classifications

2 – Water Class GA (groundwater)

µg/L: micrograms per liter

<: Results not detected above minimum laboratory quantitation limit

NA: Sample not analyzed for referenced parameter

NS: Well not sampled (dry)

Results exceed water quality standard/guidance value

J: Estimated value due to concentration between the MRL and the MDL

*: guidance value

Cuba Municipal Waste Disposal Site (#902012)
Periodic Review Report 2021-2022
Contaminant of Concern Results Trend

Table 2-1 Contaminant of Concern Results Trend: VOCs

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	MW-15												MW-1D											
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post-Remediation										
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21
VOCs																										
Acetone	50*	µg/L	ND	ND	ND	2.21	ND	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	NS	ND	ND	NS	2.6 J	ND	ND	ND	ND
Chloroethane	5.0	µg/L	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	µg/L	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND
1,1-Dichloroethane	5.0	µg/L	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS	ND	NS	0.19	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND
1,1-Dichloroethene	5.0	µg/L	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5.0	µg/L	1.0	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS	ND	NS	0.2	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND
Tetrachloroethene	5.0	µg/L	1.0	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND
Trichloroethene	5.0	µg/L	ND	ND	ND	ND	µg/L	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	ND	ND	ND

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	MW-2													MW-3										
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post-Remediation										
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21
VOCs																										
Acetone	50*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	14	433	NS	ND	NS	ND	NS	NS	NS	NS	NS
Chloroethane	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	4.0	20.6	NS	56.2	NS	14.0	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.31	ND	622	NS	ND	NS	79.0	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	11.0	81.6	NS	86.4	NS	27.0	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	65.0	7.2	NS	4.8	NS	ND	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	240.0	73.8	NS	84.8	NS	33.0	NS	NS	NS	NS	NS	NS
Tetrachloroethene	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	NS	NS	NS	NS	NS	NS
Trichloroethene	5.0	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	290.0	99.8	NS	162.0	NS	210.0	NS	NS	NS	NS	NS	NS

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	MW-4													MW-07											
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post-Remediation											
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-18	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	
VOCs																											
Acetone	50*	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.9 B	ND	ND	NS	NS	ND	ND	ND	ND	NS	ND	ND	5.4 B	ND	ND	
Chloroethane	5.0	µg/L	ND	5.62	6.22	2.12	11.0	12.0	ND	9.6	6.0	6.4	4.4	0.90 J	NS	NS	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	5.0	µg/L	ND	13.4	10.2	10.1	18.0	21.0	20.0	12.0	10.0	29.0	32.0	14.0	NS	NS	ND	3.22	ND	ND	NS	2.9	2.8	3.0	3.5	3.1	
1,1-Dichloroethane	5.0	µg/L	100.0	85.5	84.6	62.7	79.0	68.0	100.0	38.0	30.0	57.0	77.0	34.0	NS	NS	ND	1.53	ND	ND	NS	1.3 J	1.3 J	1.6	1.8	1.5	
1,1-Dichloroethene	5.0	µg/L	1.0	3.62	3.95	3.08	6.9	7.7	6.0	3.1	3.3	6.2	7.2	3.4	NS	NS	ND	0.55	ND	ND	NS	0.56	0.62	ND	0.83 J	0.89 J	
1,1,1-Trichloroethane	5.0	µg/L	12.0	30.1	24.5	19.7	24.0	32.0	30.0	12.0	10.0	19.0	17.0	12.0	NS	NS	5.9	5.63	ND	ND	NS	4.5	4.4	4.4	4.5	4.1	
Tetrachloroethene	5.0	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.46 J	0.68 J	NS	NS	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	
Trichloroethene	5.0	µg/L	4.0	14.1	6.22	6.75	ND	ND	6.4	5.3	4.3	2.5	2.2	4.3	NS	NS	6.9	7.55	6.9	7.1	NS	6.4	6.3	7.3	7.1	7.6	

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	MW-8													MW-9												
		Timeline:	Pre-Remediation		Post-Remediation											Pre-Remediation	Post-Remediation											
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21		
VOCs																												
Acetone	50*	µg/L	NS	ND	NS	51.5	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.18	NS	51.5	NS	NS	NS	NS	NS	NS	NS		
Chloroethane	5.0	µg/L	NS	ND	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	NS	0.96	NS	NS	NS	NS	NS	NS	NS		
cis-1,2-Dichloroethene	5.0	µg/L	NS	0.59	NS	0.53	NS	5.4	5.4	8.4	12	5.5	6.4	7.9	ND	0.59	NS	0.53	NS	NS	NS	NS	NS	NS	NS	NS		
1,1-Dichloroethane	5.0	µg/L	NS	3.48	NS	2.71	NS	5.6	6.0	7.6	8.4	4.7	5.3	7.0	2.0	3.48	NS	2.71	NS	NS	NS	NS	NS	NS	NS	NS		
1,1-Dichloroethene	5.0	µg/L	NS	ND	NS	ND	NS	ND	ND	0.72	1.3	ND	0.47 J	0.56 J	ND	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS		
1,1,1-Trichloroethane	5.0	µg/L	NS	0.8	NS	0.3	NS	10.0	8.1	12.0	13.0	6.6	6.8	9.3	0.9	0.78	NS	0.31	NS	NS	NS	NS	NS	NS	NS	NS		
Tetrachloroethene	5.0	µg/L	NS	ND	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	2.0	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS		
Trichloroethene	5.0	µg/L	NS	ND	NS	ND	NS	15.0	14	21.0	27.0	13.0	13.0	15.0	ND	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS		

Detected Parameters ¹	NYS Groundwater Standard ²	MW-10												
		Well ID:												
		Timeline:	Pre-Remediation	Post-Remediation										
Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21		
VOCs														
Acetone	50*	µg/L	NS	4.62	12.0	2.13	ND	17.0	ND	ND	ND	NS	NS	ND
Chloroethane	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
cis-1,2-Dichloroethene	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
1,1-Dichloroethane	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
1,1-Dichloroethene	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
1,1,1-Trichloroethane	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
Tetrachloroethene	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
Trichloroethene	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND

Notes
1 – Results compared to '6 NYCRR Part 703.5 Water Quality Standards and Classifications
2 – Water Class GA (groundwater)
µg/L: micrograms per liter
< : Results not detected above minimum laboratory quantitation limit
NA: Sample not analyzed for referenced parameter
NS: Well not sampled

J: Estimated value due to concentration between the MRL and the MDL
*: guidance value

Cuba Municipal Waste Disposal Site (#902012)
Periodic Review Report 2021-2022
Contaminant of Concern Results Trend

Table 2-1 (Continued) Contaminant of Concern Results Trend: VOCs

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	MW-10D													MW-11											
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post-Remediation											
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	
VOCs																											
Acetone	50*	µg/L	NS	NS	ND	6.66	ND	ND	ND	ND	5.7	ND	ND	ND	NS	5.45	ND	1.81	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	5.0	µg/L	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	2.23	ND	1.17	ND	ND	ND	1.5 J	ND	2.1	1.5	1.3	
cis-1,2-Dichloroethene	5.0	µg/L	NS	NS	ND	0.69	ND	ND	ND	ND	ND	ND	0.83 J	0.86 J	NS	4.87	9.1	4.17	ND	8.1	ND	7.0	7.3	3.6	12.0	12.0	
1,1-Dichloroethane	5.0	µg/L	NS	NS	ND	0.5	ND	ND	ND	ND	ND	ND	0.61 J	0.66 J	NS	50.5	53.0	44.0	25.0	39.0	ND	24.0	26.0	8.8	30.0	28.0	
1,1-Dichloroethene	5.0	µg/L	NS	NS	ND	0.18	ND	ND	ND	ND	ND	ND	0.20 J	0.28 J	NS	1.61	ND	1.48	ND	ND	ND	1.4	2.1	ND	2.2	2.8	
1,1,1-Trichloroethane	5.0	µg/L	NS	NS	ND	1.66	ND	ND	ND	ND	0.99	ND	1.6	1.6	NS	13.9	15.0	12.8	6.0	11.0	ND	6.4	7.9	2.5	4.9	5.8	
Tetrachloroethene	5.0	µg/L	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	1.45	ND	2.92	ND	ND	ND	1.6	1.4	ND	1.1	1.0	
Trichloroethene	5.0	µg/L	NS	NS	ND	0.7	ND	ND	ND	ND	0.64	0.41 J	ND	0.70 J	0.90 J	NS	4.03	ND	4.27	ND	ND	ND	4.0	4.5	1.3	3.1	3.6

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	MW-12													MW-13											
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post Remediation											
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	
VOCs																											
Acetone	50*	µg/L	NS	5.22	ND	2.41	ND	ND	1.7	ND	ND	ND	ND	NS	6.21	ND	1.61	ND	ND	ND	1.70 J	ND	ND	NS	ND		
Chloroethane	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	0.61	ND	0.37	ND	ND	ND	ND	ND	ND	NS	ND		
cis-1,2-Dichloroethene	5.0	µg/L	NS	1.29	ND	1.47	ND	ND	ND	ND	ND	ND	ND	NS	14.7	12.0	17.1	11.0	7.4	9.7	6.1	4.4	6.5	NS	6.5		
1,1-Dichloroethane	5.0	µg/L	NS	2.1	ND	2.14	ND	ND	0.70 J	ND	ND	0.21 J	0.53 J	NS	21.4	15.0	20.0	14.0	9.3	12	6.6	5.4	6.4	NS	6.5		
1,1-Dichloroethene	5.0	µg/L	NS	0.32	ND	0.21	ND	ND	ND	ND	ND	ND	ND	NS	1.06	ND	1.67	ND	ND	ND	0.93	0.43 J	ND	NS	0.39 J		
1,1,1-Trichloroethane	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	NS	27.4	16.0	24.7	14.0	11.0	11	9.0	5.3	6.6	NS	6.5		
Tetrachloroethene	5.0	µg/L	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	7.39	6.4	6.55	5.7	5.4	6.0	5.9	4.5	4.6	NS	4.4		
Trichloroethene	5.0	µg/L	NS	1.33	ND	1.45	ND	ND	0.78	0.28 J	ND	0.30 J	0.44 J	NS	17.8	13.0	15.9	13.0	9.9	12	9.5	6.4	8.1	NS	7.5		

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	SW-1													SW-2											
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post-Remediation											
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	
VOCs																											
Acetone	50*	µg/L	NS	NS	ND	NS	ND	ND	ND	1.80 J	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	5.5	
Chloroethane	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	
cis-1,2-Dichloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	
1,1-Dichloroethane	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	
1,1-Dichloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	
1,1,1-Trichloroethane	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	
Tetrachloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	
Trichloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	

Detected Parameters ¹	NYS Groundwater Standard ²	Well ID:	SW-3												SW-4											
		Timeline:	Pre-Remediation	Post-Remediation											Pre-Remediation	Post-Remediation										
		Date:	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21	Nov-97	Jan-14	Jul-14	Nov-14	Nov-15	Jun-15	Oct-16	Mar-17	May-18	Sep-19	Oct-20	Mar-21
VOCs																										
Acetone	50*	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	3.10 J	ND	ND	ND	
Chloroethane	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	5.0	µg/L	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	

Notes
1 – Results compared to '6 NYCRR Part 703.5 Water Quality Standards and Classifications
2 – Water Class GA (groundwater)
µg/L: micrograms per liter
< : Results not detected above minimum laboratory quantitation limit
NA: Sample not analyzed for referenced parameter
NS: Well not sampled

J: Estimated value due to concentration between the MRL and the MDL
*: guidance value

Cuba Municipal Waste Disposal Site (#902012)

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Contaminant of Concern Results Trend

Table 2-2 Contaminant of Concern Results Trend- Inorganics

Baseline Parameter List	NYS Water Quality Standard ^a	Sample ID Sample Type Sample Date	MW-15 Water					MW-16 Water					MW-2 Water					MW-3 Water					MW-4 Water					MW-7 Water					MW-8 Water																					
			7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21																	
			Leachate Indicators																																																			
Alkalinity, as CaCO ₃	---	mg/L	70.3	NS	NS	NS	NS	NS	NS	75.7	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	156	NA	NA	NA	NA	NA	NA	177	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA						
Ammonia (as N)	2(s)	mg/L	0.123	NS	NS	NS	NS	NS	NS	ND	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.444	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA						
Biochemical oxygen demand	---	mg/L	4.5	NS	NS	NS	NS	NS	NS	ND	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	9.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA						
Bromide	2(g)	mg/L	ND	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA					
Chemical Oxygen Demand	---	mg/L	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS				
Chloride	250(s)	mg/L	ND	NS	NS	NS	NS	NS	NS	9.8	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Color	---	color units	32	NS	NS	NS	NS	NS	NS	18	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	13	NA	NA	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA				
Hardness, Calcium/Magnesium	---	mg/L	86.8	NS	NS	NS	NS	NS	NS	86.1	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	169	NA	NA	NA	NA	NA	NA	NA	241	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA				
Kjeldahl Nitrogen - Total (as N)	---	mg/L	0.6	NS	NS	NS	NS	NS	NS	0.4	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Nitrate (as N)	10(s)	mg/L	1	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA				
Organic carbon-Total (TOC)	---	mg/L	1	NS	NS	NS	NS	NS	NS	1.7	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.8	NA	NA	NA	NA	NA	NA	NA	1.2	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA				
Phenolics, Total Recoverable	0.001(s)	mg/L	ND	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA				
Residue-filterable (TDS)	---	mg/L	111	NS	NS	NS	NS	NS	NS	125	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	168	NA	NA	NA	NA	NA	NA	NA	277	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA				
Sulfate (as SO ₄)	250(s)	mg/L	9.1	NS	NS	NS	NS	NS	NS	10.8	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Inorganic Parameters																																																						
Aluminum	---	µg/L	14600	NS	13400	NS	NS	NS	27100	5180	NS	28700	1220	240	3950	4340	NS	NS	NS	NS	NS	NS	NS	25600	NS	NS	NS	NS	NS	NS	709	740	37.7	12.2	1020	NS	590	32900	NA	4719	1310	6400	2520	9750	6800	17600	17900	288	34900	25700	22000			
Antimony	3 (g)	µg/L	ND	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Arsenic	25 (s)	µg/L	ND	NS	7.79	NS	NS	NS	12	ND	NS	NS	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Barium	1000 (s)	µg/L	129	NS	216.2	NS	NS	NS	250	30.6	NS	184.8	7.72	ND	61.8	29	NS	NS	NS	NS	NS	NS	NS	153	NS	NS	NS	NS	NS	NS	20.7	34	12.72	14.57	51	20.3	31	277	NA	88.04	59.85	87	65.8	103	51.1	158	311.2	48.49	215	140	142			
Beryllium	3 (g)	µg/L	ND	NS	0.83	NS	NS	NS	1.2 J	ND	NS	1.6	1.9 J	ND	0.2 J	0.2 J	NS	NS	NS	NS	NS	NS	NS	1.0 J	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Cadmium	5	µg/L	ND	NS	0.06 J	NS	NS	NS	0.9 J	ND	NS	1.19	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	2.5 J	NS	NS	NS	NS	NS	NS	ND	ND	0.13 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Calcium	---	µg/L	22200	NS	27800	NS	NS	NS	32200	18700	NS	26500	23100	18800	25300	24000	NS	NS	NS	NS	NS	NS	NS	41700	NS	NS	NS	NS	NS	NS	NS	48900	30700	31000	31100	38400	50500	48300	46800	NA	50200	53200	48900	52100	51300	28000	33300	46000	39400	36600	38000	39000		
Chromium	50 (s)	µg/L	19.9	NS	21.47	NS	NS	NS	34	ND	NS	43.25	0.29 J	ND	5.4 J	5 J	NS	NS	NS	NS	NS	NS	NS	26	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cobalt	---	µg/L	ND	NS	14.5	NS	NS	NS	NS	10 J	ND	NS	1.4 J	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Copper	200 (s)	µg/L	ND	NS	24.27	NS	NS	NS	NS	24	95.5	NS	689.5	2.67	ND	6.6 J	15 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.95 J	1.39	ND	ND	4990	NA	114.8	27.47	ND	5.9 J	21	ND	53	208.8	2.33 J	91	51.7	38				
Iron	300 (s)	µg/L	18300	NS	30800	NS	NS	NS	27900	3410	NS	44100	128	420	4150	2930	NS	NS	NS	NS	NS	NS	NS	28700	NS	NS	NS	NS	NS	NS	NS	1050	1230	67.3	73	1490	ND	550	40700	NA	10200	1830	6090	2350	8060	5780	20900	34400	588	45300	28800	23800		
Lead	25	µg/L	7.4	NS	15.53	NS	NS	NS	13 J	6.8	NS	268	2.99	ND	10 J	10 J	NS	NS	NS	NS	NS	NS	NS	13 J	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Magnesium	35,000 (g)	µg/L	7190	NS	8700	NS	NS	NS	9800	9600	NS	17000	9380	8800	4720	9800	NS	NS	NS	NS	NS	NS	NS	16400	NS	NS	NS	NS	NS	NS	NS	11500	8800	7170	786	10000	12000	12500	30000	21800	24800	25700	13200	14200	21000	12800	22300	16800	18600					
Manganese	300 (s)	µg/L	909	NS	983.2	NS	NS	NS	660	82.9	NS	1096	9.48	23	125	108	NS	NS	NS	NS	NS	NS	NS	1150	NS	NS	NS	NS	NS	NS	NS	1090	2170	4115	1840	8080	4980	4980	1430	961	NA	348.2	66.68	146	49.1	189	65.9	333	1231	8.82	610	381	302	
Mercury	0.7 (s)	µg/L	ND	NS	ND	NS	NS	NS	NS	ND	NS	ND	NS	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100 (s)	µg/L	ND	NS	29.69	NS	NS	NS	15 J	ND	NS	62.44	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	27 J	NS	NS	NS	NS	NS	NS	NS	ND	ND	5.04	3.14	ND	2.8 J	ND	77.3	NA	11.66	1.92 J	ND	ND	4 J	ND	ND	43.56	77 J	ND	23.1 J	16 J		
Potassium	---	µg/L	5970	NS	3140	NS	NS	NS	9500	2780	NS	5470	1160	ND	2100	2300	NS	NS	NS	NS	NS	NS	NS	8500	NS	NS	NS	NS	NS	NS	3800	2500	2250	2280	2800	2690	2600	10600	NA	2940	2240	3600	2720	4500	3390	6500	4520	1470	12300	9310	8400			
Selenium	10 (s)	µg/L	ND	NS	1.93 J	NS	NS	NS	NS	NS	NS	3.6 J	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	50 (s)	µg/L	ND	NS																																																		

Cuba Municipal Waste Disposal Site (#902012)
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Groundwater Elevations Summary

Table 3-0 Groundwater Elevations: March 2021

Well ID	Casing Elevation	Depth to Water	Groundwater Elevation	Well Depth
MW-1S	2210.85	26.88	2183.97	32.35
MW-1D	2210.61	74.16	2136.45	78.56
MW-2	2099.59	3.2	2096.39	6.25
MW-3	2099.59	(dry)	--	24.73
MW-4	2103.6	24.9	2078.7	32.3
MW-7	2075.76	80.71	1995.05	99.49
MW-8	2071.58	72.95	1998.63	78.55
MW-9	2201.21	(dry)	--	88.3
MW-10	2051.47	54.61	1996.86	55.42
MW-10D	2051.47	60.85	1990.62	83.34
MW-11	2103.68	22.57	2081.11	32.41
MW-12	2098.24	24.74	2073.5	40.18
MW-13	2106.95	22.55	2084.4	29.79

Notes

Results presented in feet

Cuba Municipal Waste Disposal Site (#902012)
Periodic Review Report 2021-2022
Institutional and Engineering Controls Compliance Summary

Table 4-0

Institutional/Engineering Control	Description	Objective	Monitoring	Performance/Status
Institutional Controls				
Land Use Restriction	Restricts the use of the landfill property.	Controls potential for direct contact with waste materials, leachate, and contaminated groundwater.	NA	Use of the property has been restricted through the recorded Declaration of Covenants and Restrictions with Allegany County.
Groundwater Use Restriction	Restricts the use of groundwater.	Controls potential for direct contact with contaminated groundwater.	NA	Groundwater use restriction in effect as part of the Declaration of Covenants and Restrictions with Allegany County for the Cuba Landfill Site area groundwater.
Excavation Work Plan	Describes procedures to be used to manage excavated contaminated soil and /or waste from the Site (sampling, analysis, disposal requirements).	To provide for appropriate handling, management, and disposal of contaminated soil and/or waste.	NA	Excavation plan to be implemented in accordance with approved Site management plan. To date, no excavation of contaminated soil or waste has occurred during the reporting period.
Soil Vapor Intrusion Evaluation	Determines the potential for soil vapor intrusion and if mitigation measures, such as creating a vapor barrier or a passive sub-slab depressurization system, are necessary.	Eliminate potential exposure to vapors in the proposed structure.	NA	The potential for vapor intrusion must be evaluated for any buildings to be developed on or around the Site, and any potential impacts that are identified must be monitored or mitigated. Measures to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the soil vapor intrusion evaluation, the NYSDOH guidance, and construction details of the proposed structure.
Engineering Controls				
Engineered Landfill Cap	Comprised of a geocomposite gas venting layer, a 40-mil LLDPE textured geomembrane, geocomposite drainage layer, and an 18-in. soil barrier protection layer. Topsoil and a reinforced vegetated surface are over the barrier protection layer.	Prevent exposure to remaining contamination in soil/fill at the Site by placing cap over the remaining and consolidated waste	Monitoring via Site inspections and leachate indicator monitoring.	Cap is vegetated, stable, and effective. Maintenance operations are limited to repairs to minor localized erosion and control of animal burrows in surficial cover soils. Leachate indicators are analyzed periodically. Leachate generation rates are decreasing, as would be expected following the construction of an engineered cap.

Institutional/Engineering Control	Description	Objective	Monitoring	Performance/Status
Passive Gas Vents	Polyvinyl chloride pipe gas vents were installed within the landfill cap boundaries.	Collect landfill gas generated under the cap and to convey the gas to the existing landfill gas collection system to control potential for lateral migration.	Monitored via Site inspections and monitoring of landfill gas with portable monitoring equipment.	Gas monitoring results are typical of landfill gas and appropriate operation of the gas control system is in place.
Landfill Surface Drainage	A berm constructed of soil and waste materials below the liner system defined each swale. Following the placement of the geocomposite drainage layer, a strip of the geocomposite was cut out in each swale for the placement of perforated 6-in. corrugated polyethylene pipe topped with pea gravel and wrapped with geotextile that was later heat sealed to the geocomposite on either side.	Four drainage swales were included in the landfill cap design to promote efficient drainage over the cap. Each swale was constructed to allow stormwater to flow in a northeast-southwest direction across the landfill.	Monitored through Site inspections and groundwater/surface water sampling.	A media monitoring program is in place for groundwater. Groundwater and surface water samples are collected on an annual basis, per SMP. Stream and tributary water quality has not been impacted from surface water discharges from the Site. VOC and metal concentrations are generally decreasing or remaining stable in groundwater.
Phytoremediation	168 willow trees were planted south of the retention pond. Two (2) varieties of bare-root willow trees were selected to be planted. The tree varieties include golden curls willow and prairie cascade willow.	Trees were intended to mitigate potential leachate seepage south of the Site. Staining was previously observed in stream water during RI sampling along the southern boundary of the Site.	Monitored through Site inspections.	To date, there has been no evidence of excessive leachate on the access road south of the willow trees planted for phytoremediation. Approx. 30% of the willow trees have died at the east end of the planting area.
Site Security	8-ft chain link fence gates were installed at the entrances of the property on Deep Snow Road, one (1) to the southwest of the Site and one (1) to the north of the Site. Gates have been secured with locks.	Minimize the potential for trespassing and vehicular traffic.	Monitoring via Site inspection.	Security measures in place and effective.
Access Road	A permanent maintenance road was constructed by placing 6 in. of road paving material over a non-woven geotextile.	Provides access controls to the Site, minimizing the potential for human encroachment on the landfill cap surface.	Monitoring via Site inspection.	Access road in place and effective.

Appendix A

Groundwater Sampling Logs

Low Flow Groundwater Sampling Field Record

Project Name Cuba Landfill
 Location ID MW-1D
 Activity Time _____

Field Sample ID MW-1D
 Sample Time 15:25

Job # 50191
 Sampling Event # __
 Date 03/25/21

SAMPLING NOTES

Initial Depth to Water 74.16 feet
 Final Depth to Water 78.08 feet
 Screen Length _____ feet
 Total Volume Purged ~1.5 gallons
 Measurement Point N
 Well Depth 78.56 feet
 Pump Intake Depth _____
 PID Well Head _____

Well Diameter 2"
 Well Integrity:
 Cap ☒
 Casing ☒
 Locked ☒
 Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:25	78.08		10.7	7.24	2.91	60.9	0.223	47.5	

Purge Observations: Slightly turbid no odor or sheen

Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: N/A
 Type of Tubing: N/A
 Type of Water Quality Meter: YSI / Lamotte

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

Started to go dry at 1.5 gallons
purged. Sampled well

Low Flow Groundwater Sampling Field Record



Project Name Cuba Landfill
Location ID MW-15
Activity Time _____

Field Sample ID MW-15
Sample Time 15.10

Job # 50191
Sampling Event # __
Date 03/25/2021

SAMPLING NOTES

Initial Depth to Water 26.88 feet
Final Depth to Water 27.02 feet
Screen Length _____ feet
Total Volume Purged ~ 2.5 gallons
Measurement Point N
Well Depth 32.25 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ☒
Casing ☒
Locked ☒
Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:10	27.02		15.2	6.57	3.61	724 AU	0.196	135.0	Turbid

Purge Observations: Highly turbid

Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: N/A
Type of Tubing: N/A
Type of Water Quality Meter: YSI / Lomate

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

Highly turbid

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Job # 50191
Sampling Event # --
Date 03/25/21

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

Purge Estimate: _____ gallons

[illegible]

Purge Water Containerized: _____

Calibrated:

Well was dry

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Job # 50191
Sampling Event # --
Date 03/25/21

PURGE DATA

[illegible]

Purge Water Containerized: No

Calibrated: _____

Parameter	Sample Collected
VOCs	Yes
Metals	Yes

LOCATION NOTES

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Job # 50191
Sampling Event #
Date 03/25/21

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

Purge Estimate: _____ gallons

[illegible]Purge Water Containerized: No

Calibrated: _____

Low Flow Groundwater Sampling Field Record



Project Name Cuba Landfill
Location ID MW-8
Activity Time _____

Field Sample ID MW-8
Sample Time 13:50

Job # 50191
Sampling Event # __
Date 03/25/21

SAMPLING NOTES

Initial Depth to Water 72.95 feet
Final Depth to Water 78.55 feet
Screen Length _____ feet
Total Volume Purged ~ 2.7 gallons
Measurement Point N
Well Depth 78.55 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ☒
Casing ☒
Locked ☒
Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
13:50	78.55		11.6	7.91	8.13	76.2	161.2	78.3	Turbid

Purge Observations: Turbid

Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: N/A
Type of Tubing: N/A
Type of Water Quality Meter: VSE / Lamotte

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

Well went dry after ~ 2.5
gallons purged. Collected sample
with partial bailer

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Job # 50191
Sampling Event # __
Date 03/25/21

Well was dry

Low Flow Groundwater Sampling Field Record



Project Name Cuba Landfill
Location ID MW-10
Activity Time _____

Field Sample ID MW-10
Sample Time 09:20

Job # 50191
Sampling Event # __
Date 03/25/21

SAMPLING NOTES

Initial Depth to Water 54.61 feet Measurement Point N
Final Depth to Water 55.09 feet Well Depth 55.42 feet
Screen Length _____ feet Pump Intake Depth _____
Total Volume Purged ~ 1.5 gallons PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ☒
Casing ☒
Locked ☒
Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
09:20	55.09		10.2	7.90	12.53	70.3	0.375	203.1	

Purge Observations: Faint odor, slightly turbid

Purge Water Containerized: _____

EQUIPMENT DOCUMENTATION

Type of Pump: N/A

Type of Tubing: N/A

Type of Water Quality Meter: Lanette / YSI

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

 Project Name Cuba Landfill
 Location ID MW-10D
 Activity Time _____

 Field Sample ID MW-10D
 Sample Time 11:00

 Job # 50191
 Sampling Event # __
 Date 03/25/21

SAMPLING NOTES

 Initial Depth to Water 60.85 feet
 Final Depth to Water 60.85 feet
 Screen Length _____ feet
 Total Volume Purged ~11.0 gallons
 Measurement Point N
 Well Depth 83.34 feet
 Pump Intake Depth _____
 PID Well Head _____

 Well Diameter 2"
 Well Integrity:
 Cap ☒
 Casing ☒
 Locked ☒
 Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:00	60.85		12.5	8.0	4.08	45.1	0.434	144.0	

Purge Observations: Slightly turbid

Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

 Type of Pump: N/A
 Type of Tubing: N/A
 Type of Water Quality Meter: YSI/Lanette

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

Low Flow Groundwater Sampling Field Record



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Project Name Cuba Landfill
Location ID MW-11
Activity Time _____

Field Sample ID MW-11
Sample Time 13:20

Job # 50191
Sampling Event # __
Date 03/25/21

SAMPLING NOTES

Initial Depth to Water 22.57 feet
Final Depth to Water 31.94 feet
Screen Length _____ feet
Total Volume Purged ~5 gallons
Measurement Point N
Well Depth 32.41 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ☒
Casing ☒
Locked ☒
Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
13:20	31.94		9.0	6.71	4.67	61.6	0.375	112.7	

Purge Observations: Turbid

Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: N/A

Type of Tubing: N/A

Type of Water Quality Meter: YSI / Lano He

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

Low Flow Groundwater Sampling Field Record



Project Name Cuba Landfill
Location ID MW-12
Activity Time _____

Field Sample ID MW-12
Sample Time 14:10

Job # 50191
Sampling Event # __
Date 03/25/21

SAMPLING NOTES

Initial Depth to Water 24.74 feet
Final Depth to Water 38.80 feet
Screen Length _____ feet
Total Volume Purged 7.5 gallons
Measurement Point N
Well Depth 40.18 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ☒
Casing ☒
Locked ☒
Collar ☒

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Purge Estimate: _____ gallons

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:15	38.80		10.1	7.36	8.87	388 AU	0.700	9.9	

Purge Observations: extremely turbid

Purge Water Containerized: no

EQUIPMENT DOCUMENTATION

Type of Pump: N/A
Type of Tubing: N/A
Type of Water Quality Meter: YSI/Lanette

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Sample Collected
VOCs	<u>Yes</u>
Metals	<u>Yes</u>

LOCATION NOTES

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Job # 50191
Sampling Event # --
Date 03/25/21

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

Purge Estimate: _____ gallons

[illegible]

Purge Water Containerized: No

Calibrated: _____

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Job # 50191
Sampling Event # __
Date 03/25/21

PURGE DATA

[illegible]

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Job # 50191
Sampling Event # --
Date 03/25/21

[illegible]

Not enough water to
collect a ~~water~~ reading

Low Flow Groundwater Sampling Field Record

 Project Name Cuba
 Location ID SW-3
 Activity Time 11:45

 Field Sample ID _____
 Sample Time _____

 Job # 50191-01
 Sampling Event #
 Date 10/27/2020

SAMPLING NOTES

Initial Depth to Water _____ feet	Measurement Point _____	Well Diameter <u>N/A</u>
Final Depth to Water <u>N/A</u> feet	Well Depth <u>N/A</u> feet	Well Integrity: _____
Screen Length _____ feet	Pump Intake Depth _____	Cap _____
Total Volume Purged _____ gallons	PID Well Head _____	Casing _____

(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Locked _____
Collar _____

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:45	N/A	N/A	8.8	6.80	7.62	106.6	0.106	143.8	

 Purge Observations: _____
 Purge Water Containerized: _____

EQUIPMENT DOCUMENTATION

 Type of Pump: Bailer
 Type of Tubing: n/a
 Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	_____	_____
TAL Metals	_____	_____
	_____	_____
	_____	_____
	_____	_____

LOCATION NOTES

Slightly turbid, no odor or
slime

Low Flow Groundwater Sampling Field Record

 Project Name Cuba
 Location ID SW-4
 Activity Time 9:25

 Field Sample ID _____
 Sample Time _____

 Job # 50191-01
 Sampling Event #
 Date 10/27/2020

SAMPLING NOTES

Initial Depth to Water <u>N/A</u> feet	Measurement Point <u>N/A</u>	Well Diameter <u>N/A</u>
Final Depth to Water <u>N/A</u> feet	Well Depth <u>N/A</u> feet	Well Integrity: _____
Screen Length <u>N/A</u> feet	Pump Intake Depth <u>N/A</u>	Cap _____
Total Volume Purged <u>N/A</u> gallons	PID Well Head <u>N/A</u>	Casing _____

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
 Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Locked _____
 Collar _____

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
		<u>See</u>	<u>photos</u>			<u>9.97</u>			
<u>9:25</u>	<u>N/A</u>	<u>N/A</u>	<u>8.1</u>	<u>7.84</u>	<u>86.7</u>	<u>↓</u>	<u>0.076</u>	<u>138.0</u>	

Purge Observations: _____

Purge Water Containerized: _____

EQUIPMENT DOCUMENTATION

 Type of Pump: Bailer

 Type of Tubing: n/a

 Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020

Calibrated: _____

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
-----------	---------	------------------

VOCs _____

TAL Metals _____

LOCATION NOTES

Clear, no odor or steam

Appendix B

Photo Pages

Site Photographs

Cuba Municipal Waste Disposal Site #902012



Photo No. 1 Top of Site Facing Southeast



Photo No. 2 Top of Site Facing Southwest



Photo No. 3 Access Road Facing East



Photo No. 4 Access Roadway Facing West-Northwest

Site Photographs

Cuba Municipal Waste Disposal Site #902012



Photo No. 5 Healthy Willow Trees



Photo No. 6 Willow Trees in Poor Condition



Photo No. 7 Access Road to MW-4



Photo No. 8 8354 Jackson Hill Road Sample Location



April 06, 2021

Service Request No:R2102872

Ben Seifert
LU Engineers
339 East Avenue
Suite 200
Rochester, NY 14604

Laboratory Results for: Cuba Landfill

Dear Ben,

Enclosed are the results of the sample(s) submitted to our laboratory March 26, 2021
For your reference, these analyses have been assigned our service request number **R2102872**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Greg Andrus

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | **FAX** +1 585 288 8475

ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Client: LU Engineers
Project: Cuba Landfill
Sample Matrix: Water

Service Request: R2102872
Date Received: 03/26/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Seventeen water samples were received for analysis at ALS Environmental on 03/26/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

Method 6010C, 03/31/2021: The control limits for matrix spike recovery of one or more of the spiked analytes are not applicable and have been flagged with a "#". The concentration of the analyte(s) in the parent sample is more than 4x the spike concentration. No further corrective action was required.

Volatiles by GC/MS:

Method 8260C, 04/02/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8260C, 04/02/2021: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

A handwritten signature in black ink, appearing to read "J. Amato".

Approved by _____

Date 04/06/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-10	Lab ID: R2102872-001
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	15900		30	100	ug/L	6010C
Barium, Total	182		3	20	ug/L	6010C
Beryllium, Total	0.7	J	0.2	3.0	ug/L	6010C
Cadmium, Total	6.6		0.4	5.0	ug/L	6010C
Calcium, Total	150000		300	1000	ug/L	6010C
Chromium, Total	57		0.6	10	ug/L	6010C
Cobalt, Total	7	J	0.9	50	ug/L	6010C
Copper, Total	27		4	20	ug/L	6010C
Iron, Total	21500		70	100	ug/L	6010C
Lead, Total	7	J	3	50	ug/L	6010C
Magnesium, Total	22200		30	1000	ug/L	6010C
Manganese, Total	339		4	10	ug/L	6010C
Nickel, Total	12	J	3	40	ug/L	6010C
Potassium, Total	8200		200	2000	ug/L	6010C
Sodium, Total	18200		200	1000	ug/L	6010C
Vanadium, Total	33	J	0.7	50	ug/L	6010C
Zinc, Total	110		10	20	ug/L	6010C

CLIENT ID: MW-10D	Lab ID: R2102872-002
--------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	2400		30	100	ug/L	6010C
Barium, Total	70		3	20	ug/L	6010C
Calcium, Total	46300		300	1000	ug/L	6010C
Chromium, Total	4	J	0.6	10	ug/L	6010C
Cobalt, Total	0.9	J	0.9	50	ug/L	6010C
Iron, Total	1650		70	100	ug/L	6010C
Magnesium, Total	20600		30	1000	ug/L	6010C
Manganese, Total	327		4	10	ug/L	6010C
Potassium, Total	2700		200	2000	ug/L	6010C
Sodium, Total	16100		200	1000	ug/L	6010C
Vanadium, Total	3	J	0.7	50	ug/L	6010C
Zinc, Total	16	J	10	20	ug/L	6010C
1,1,1-Trichloroethane (TCA)	1.6		0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	0.66	J	0.20	1.0	ug/L	8260C
1,1-Dichloroethene (1,1-DCE)	0.28	J	0.20	1.0	ug/L	8260C
Trichloroethene (TCE)	0.90	J	0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	0.86	J	0.23	1.0	ug/L	8260C

CLIENT ID: MW-07	Lab ID: R2102872-003
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	9570		30	100	ug/L	6010C
Barium, Total	103		3	20	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-07	Lab ID: R2102872-003
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Beryllium, Total	0.4	J	0.2	3.0	ug/L	6010C
Calcium, Total	51300		300	1000	ug/L	6010C
Chromium, Total	13		0.6	10	ug/L	6010C
Cobalt, Total	3	J	0.9	50	ug/L	6010C
Copper, Total	21		4	20	ug/L	6010C
Iron, Total	8060		70	100	ug/L	6010C
Lead, Total	6	J	3	50	ug/L	6010C
Magnesium, Total	25700		30	1000	ug/L	6010C
Manganese, Total	189		4	10	ug/L	6010C
Nickel, Total	4	J	3	40	ug/L	6010C
Potassium, Total	4500		200	2000	ug/L	6010C
Sodium, Total	6900		200	1000	ug/L	6010C
Vanadium, Total	12	J	0.7	50	ug/L	6010C
Zinc, Total	31		10	20	ug/L	6010C
1,1,1-Trichloroethane (TCA)	4.1		0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	1.5		0.20	1.0	ug/L	8260C
1,1-Dichloroethene (1,1-DCE)	0.89	J	0.20	1.0	ug/L	8260C
Trichloroethene (TCE)	7.6		0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	3.1		0.23	1.0	ug/L	8260C

CLIENT ID: MW-04	Lab ID: R2102872-004
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	590		30	100	ug/L	6010C
Barium, Total	31		3	20	ug/L	6010C
Calcium, Total	48300		300	1000	ug/L	6010C
Chromium, Total	0.8	J	0.6	10	ug/L	6010C
Iron, Total	550		70	100	ug/L	6010C
Magnesium, Total	12500		30	1000	ug/L	6010C
Manganese, Total	1430		4	10	ug/L	6010C
Potassium, Total	2600		200	2000	ug/L	6010C
Sodium, Total	4200		200	1000	ug/L	6010C
Zinc, Total	17	J	10	20	ug/L	6010C
1,1,1-Trichloroethane (TCA)	12		0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	34		0.20	1.0	ug/L	8260C
1,1-Dichloroethene (1,1-DCE)	3.4		0.20	1.0	ug/L	8260C
Chloroethane	0.90	J	0.23	1.0	ug/L	8260C
Tetrachloroethene (PCE)	0.68	J	0.21	1.0	ug/L	8260C
Trichloroethene (TCE)	4.3		0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	14		0.23	1.0	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-11	Lab ID: R2102872-005
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	10800		30	100	ug/L	6010C
Barium, Total	75		3	20	ug/L	6010C
Beryllium, Total	0.4	J	0.2	3.0	ug/L	6010C
Calcium, Total	62000		300	1000	ug/L	6010C
Chromium, Total	11		0.6	10	ug/L	6010C
Cobalt, Total	4	J	0.9	50	ug/L	6010C
Copper, Total	7	J	4	20	ug/L	6010C
Iron, Total	9000		70	100	ug/L	6010C
Lead, Total	4	J	3	50	ug/L	6010C
Magnesium, Total	15100		30	1000	ug/L	6010C
Manganese, Total	1300		4	10	ug/L	6010C
Nickel, Total	8	J	3	40	ug/L	6010C
Potassium, Total	5100		200	2000	ug/L	6010C
Sodium, Total	4300		200	1000	ug/L	6010C
Vanadium, Total	15	J	0.7	50	ug/L	6010C
Zinc, Total	37		10	20	ug/L	6010C
1,1,1-Trichloroethane (TCA)	5.8		0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	28		0.20	1.0	ug/L	8260C
1,1-Dichloroethene (1,1-DCE)	2.8		0.20	1.0	ug/L	8260C
Chloroethane	1.3		0.23	1.0	ug/L	8260C
Tetrachloroethene (PCE)	1.0		0.21	1.0	ug/L	8260C
Trichloroethene (TCE)	3.6		0.20	1.0	ug/L	8260C
Vinyl Chloride	0.72	J	0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	12		0.23	1.0	ug/L	8260C

CLIENT ID: MW-08	Lab ID: R2102872-006
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	22000		30	100	ug/L	6010C
Arsenic, Total	10	J	6	10	ug/L	6010C
Barium, Total	142		3	20	ug/L	6010C
Beryllium, Total	1.0	J	0.2	3.0	ug/L	6010C
Calcium, Total	39000		300	1000	ug/L	6010C
Chromium, Total	25		0.6	10	ug/L	6010C
Cobalt, Total	11	J	0.9	50	ug/L	6010C
Copper, Total	38		4	20	ug/L	6010C
Iron, Total	23800		70	100	ug/L	6010C
Lead, Total	4	J	3	50	ug/L	6010C
Magnesium, Total	18600		30	1000	ug/L	6010C
Manganese, Total	302		4	10	ug/L	6010C
Nickel, Total	16	J	3	40	ug/L	6010C
Potassium, Total	8400		200	2000	ug/L	6010C
Sodium, Total	5500		200	1000	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-08	Lab ID: R2102872-006
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Analyte	Results	Flag	MDL	MRL	Units	Method
Vanadium, Total	30	J	0.7	50	ug/L	6010C
Zinc, Total	66		10	20	ug/L	6010C
1,1,1-Trichloroethane (TCA)	9.3		0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	7.0		0.20	1.0	ug/L	8260C
1,1-Dichloroethene (1,1-DCE)	0.56	J	0.20	1.0	ug/L	8260C
Trichloroethene (TCE)	15		0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	7.9		0.23	1.0	ug/L	8260C

CLIENT ID: MW-13	Lab ID: R2102872-007
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	116000		30	100	ug/L	6010C
Arsenic, Total	37		6	10	ug/L	6010C
Barium, Total	804		3	20	ug/L	6010C
Beryllium, Total	4.1		0.2	3.0	ug/L	6010C
Cadmium, Total	1.6	J	0.4	5.0	ug/L	6010C
Calcium, Total	55900		300	1000	ug/L	6010C
Chromium, Total	171		0.6	10	ug/L	6010C
Cobalt, Total	61		0.9	50	ug/L	6010C
Copper, Total	104		4	20	ug/L	6010C
Iron, Total	184000		700	1000	ug/L	6010C
Lead, Total	40	J	3	50	ug/L	6010C
Magnesium, Total	33200		30	1000	ug/L	6010C
Manganese, Total	4280		4	10	ug/L	6010C
Nickel, Total	134		3	40	ug/L	6010C
Potassium, Total	26100		200	2000	ug/L	6010C
Sodium, Total	4300		200	1000	ug/L	6010C
Vanadium, Total	153		0.7	50	ug/L	6010C
Zinc, Total	377		10	20	ug/L	6010C
1,1,1-Trichloroethane (TCA)	6.5		0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	6.5		0.20	1.0	ug/L	8260C
1,1-Dichloroethene (1,1-DCE)	0.39	J	0.20	1.0	ug/L	8260C
Tetrachloroethene (PCE)	4.4		0.21	1.0	ug/L	8260C
Trichloroethene (TCE)	7.5		0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	6.5		0.23	1.0	ug/L	8260C

CLIENT ID: SW-02	Lab ID: R2102872-008
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	340		30	100	ug/L	6010C
Barium, Total	9	J	3	20	ug/L	6010C
Calcium, Total	6700		300	1000	ug/L	6010C
Chromium, Total	0.7	J	0.6	10	ug/L	6010C
Iron, Total	290		70	100	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: SW-02			Lab ID: R2102872-008			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Magnesium, Total	1200		30	1000	ug/L	6010C
Manganese, Total	19		4	10	ug/L	6010C
Potassium, Total	2300		200	2000	ug/L	6010C
Sodium, Total	500	J	200	1000	ug/L	6010C
Acetone	5.5		5.0	5.0	ug/L	8260C

CLIENT ID: MW-01S			Lab ID: R2102872-009			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	27100		30	100	ug/L	6010C
Arsenic, Total	12		6	10	ug/L	6010C
Barium, Total	250		3	20	ug/L	6010C
Beryllium, Total	1.2	J	0.2	3.0	ug/L	6010C
Cadmium, Total	0.9	J	0.4	5.0	ug/L	6010C
Calcium, Total	32200		300	1000	ug/L	6010C
Chromium, Total	34		0.6	10	ug/L	6010C
Cobalt, Total	10	J	0.9	50	ug/L	6010C
Copper, Total	24		4	20	ug/L	6010C
Iron, Total	27900		70	100	ug/L	6010C
Lead, Total	13	J	3	50	ug/L	6010C
Magnesium, Total	9800		30	1000	ug/L	6010C
Manganese, Total	660		4	10	ug/L	6010C
Nickel, Total	15	J	3	40	ug/L	6010C
Potassium, Total	9500		200	2000	ug/L	6010C
Sodium, Total	2900		200	1000	ug/L	6010C
Vanadium, Total	37	J	0.7	50	ug/L	6010C
Zinc, Total	84		10	20	ug/L	6010C

CLIENT ID: MW-01D			Lab ID: R2102872-010			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	4340		30	100	ug/L	6010C
Barium, Total	29		3	20	ug/L	6010C
Beryllium, Total	0.2	J	0.2	3.0	ug/L	6010C
Calcium, Total	24000		300	1000	ug/L	6010C
Chromium, Total	5	J	0.6	10	ug/L	6010C
Copper, Total	15	J	4	20	ug/L	6010C
Iron, Total	2930		70	100	ug/L	6010C
Lead, Total	10	J	3	50	ug/L	6010C
Magnesium, Total	9800		30	1000	ug/L	6010C
Manganese, Total	108		4	10	ug/L	6010C
Potassium, Total	2500		200	2000	ug/L	6010C
Sodium, Total	4200		200	1000	ug/L	6010C
Vanadium, Total	6	J	0.7	50	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-01D	Lab ID: R2102872-010
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Analyte	Results	Flag	MDL	MRL	Units	Method
Zinc, Total	39		10	20	ug/L	6010C

CLIENT ID: Jackson Hill Rd	Lab ID: R2102872-011
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	400		30	100	ug/L	6010C
Barium, Total	36		3	20	ug/L	6010C
Calcium, Total	16000		300	1000	ug/L	6010C
Chromium, Total	0.7	J	0.6	10	ug/L	6010C
Iron, Total	800		70	100	ug/L	6010C
Magnesium, Total	4200		30	1000	ug/L	6010C
Manganese, Total	14		4	10	ug/L	6010C
Potassium, Total	1700	J	200	2000	ug/L	6010C
Sodium, Total	13000		200	1000	ug/L	6010C
Zinc, Total	25		10	20	ug/L	6010C

CLIENT ID: SW-04	Lab ID: R2102872-012
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	1190		30	100	ug/L	6010C
Barium, Total	11	J	3	20	ug/L	6010C
Calcium, Total	2900		300	1000	ug/L	6010C
Chromium, Total	2	J	0.6	10	ug/L	6010C
Iron, Total	820		70	100	ug/L	6010C
Magnesium, Total	700	J	30	1000	ug/L	6010C
Manganese, Total	17		4	10	ug/L	6010C
Potassium, Total	1500	J	200	2000	ug/L	6010C
Sodium, Total	2700		200	1000	ug/L	6010C
Vanadium, Total	2	J	0.7	50	ug/L	6010C

CLIENT ID: SW-03	Lab ID: R2102872-013
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	1220		30	100	ug/L	6010C
Barium, Total	14	J	3	20	ug/L	6010C
Calcium, Total	3900		300	1000	ug/L	6010C
Chromium, Total	1	J	0.6	10	ug/L	6010C
Iron, Total	840		70	100	ug/L	6010C
Magnesium, Total	900	J	30	1000	ug/L	6010C
Manganese, Total	22		4	10	ug/L	6010C
Potassium, Total	1400	J	200	2000	ug/L	6010C
Sodium, Total	2200		200	1000	ug/L	6010C
Vanadium, Total	2	J	0.7	50	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-02			Lab ID: R2102872-014			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	25600		30	100	ug/L	6010C
Arsenic, Total	17		6	10	ug/L	6010C
Barium, Total	153		3	20	ug/L	6010C
Beryllium, Total	1.0	J	0.2	3.0	ug/L	6010C
Cadmium, Total	2.5	J	0.4	5.0	ug/L	6010C
Calcium, Total	41700		300	1000	ug/L	6010C
Chromium, Total	26		0.6	10	ug/L	6010C
Cobalt, Total	10	J	0.9	50	ug/L	6010C
Copper, Total	20		4	20	ug/L	6010C
Iron, Total	29700		70	100	ug/L	6010C
Lead, Total	13	J	3	50	ug/L	6010C
Magnesium, Total	16400		30	1000	ug/L	6010C
Manganese, Total	1150		4	10	ug/L	6010C
Nickel, Total	27	J	3	40	ug/L	6010C
Potassium, Total	8500		200	2000	ug/L	6010C
Sodium, Total	17000		200	1000	ug/L	6010C
Vanadium, Total	27	J	0.7	50	ug/L	6010C
Zinc, Total	729		10	20	ug/L	6010C
cis-1,2-Dichloroethene	0.31	J	0.23	1.0	ug/L	8260C

CLIENT ID: MW-12			Lab ID: R2102872-015			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Aluminum, Total	83800		30	100	ug/L	6010C
Arsenic, Total	33		6	10	ug/L	6010C
Barium, Total	399		3	20	ug/L	6010C
Beryllium, Total	2.7	J	0.2	3.0	ug/L	6010C
Cadmium, Total	1.2	J	0.4	5.0	ug/L	6010C
Calcium, Total	94100		300	1000	ug/L	6010C
Chromium, Total	114		0.6	10	ug/L	6010C
Cobalt, Total	40	J	0.9	50	ug/L	6010C
Copper, Total	62		4	20	ug/L	6010C
Iron, Total	118000		700	1000	ug/L	6010C
Lead, Total	40	J	3	50	ug/L	6010C
Magnesium, Total	57900		30	1000	ug/L	6010C
Manganese, Total	4700		4	10	ug/L	6010C
Mercury, Total	0.09	J	0.08	0.20	ug/L	7470A
Nickel, Total	87		3	40	ug/L	6010C
Potassium, Total	23000		200	2000	ug/L	6010C
Selenium, Total	8	J	7	10	ug/L	6010C
Sodium, Total	25500		200	1000	ug/L	6010C
Vanadium, Total	108		0.7	50	ug/L	6010C
Zinc, Total	239		10	20	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-12			Lab ID: R2102872-015			
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Analyte	Results	Flag	MDL	MRL	Units	Method
1,1,1-Trichloroethane (TCA)	0.23	J	0.20	1.0	ug/L	8260C
1,1-Dichloroethane (1,1-DCA)	0.53	J	0.20	1.0	ug/L	8260C
Trichloroethene (TCE)	0.44	J	0.20	1.0	ug/L	8260C

CLIENT ID: SW-01			Lab ID: R2102872-016			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Barium, Total	13	J	3	20	ug/L	6010C
Calcium, Total	30900		300	1000	ug/L	6010C
Magnesium, Total	8800		30	1000	ug/L	6010C
Manganese, Total	5	J	4	10	ug/L	6010C
Potassium, Total	1800	J	200	2000	ug/L	6010C
Sodium, Total	8200		200	1000	ug/L	6010C



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

Client: LU Engineers
Project: Cuba Landfill/50191.01

Service Request:R2102872

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2102872-001	MW-10	3/25/2021	0920
R2102872-002	MW-10D	3/25/2021	1100
R2102872-003	MW-07	3/25/2021	1230
R2102872-004	MW-04	3/25/2021	1315
R2102872-005	MW-11	3/25/2021	1320
R2102872-006	MW-08	3/25/2021	1350
R2102872-007	MW-13	3/25/2021	1410
R2102872-008	SW-02	3/25/2021	1445
R2102872-009	MW-01S	3/25/2021	1510
R2102872-010	MW-01D	3/25/2021	1525
R2102872-011	Jackson Hill Rd	3/25/2021	1545
R2102872-012	SW-04	3/25/2021	0930
R2102872-013	SW-03	3/25/2021	0945
R2102872-014	MW-02	3/25/2021	1015
R2102872-015	MW-12	3/25/2021	1015
R2102872-016	SW-01	3/25/2021	1030
R2102872-017	Trip Blank	3/25/2021	

[illegible]



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004600

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 2 OF 2

Project Name		Project Number		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																	
Project Manager		Report CC		PRESERVATIVE																	
Company/Address				NUMBER OF CONTAINERS	GC/MS VOCs • 8260 • 824 • CLP GC/MS SVOCs • 8270 • 825 GC VOCs • 8271 • 801/802 PESTICIDES • 8081 • 808 PCBs • 8082 • 808 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) TZL VOC TZL Metals												Preservative Key 0. NONE 1. HCL 2. HNO ₃ 3. H ₂ SO ₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO ₄ 8. Other _____				
Phone #		Email																			
Sampler's Signature		Sampler's Printed Name																			
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX																	
Jackson Hill Rd.		03/25/21	15:45	Water																	
SW-04		03/26/21	09:30																		
~~MW~~ SW-03		03/26/21	09:45																		
MW-02		03/26/21	10:15																		
MW-12		03/26/21	10:15																		
SW-01		03/26/21	10:30																		
MW-04 MS		03/25/21	13:15																		
MW-04 MSD		03/25/21	13:15																		
Tap Blank		-	-																		
SPECIAL INSTRUCTIONS/COMMENTS Metals					TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ____ 1 day ____ 2 day ____ 3 day ____ 4 day ____ 5 day Standard (10 business days-No Surcharge) REQUESTED REPORT DATE _____					REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data Edata ____ Yes ____ No					INVOICE INFORMATION PO # BILL TO:						
STATE WHERE SAMPLES WERE COLLECTED																					
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY							
Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature							
Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name							
Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm							
Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time							

R2102872

5

LU Engineers
Cuba Landfill





Cooler Receipt and Preservation Check Form

R2102872

5

LU Engineers
Cuba Landfill



Project/Client h4 Folder Number _____

Cooler received on 3/26/21 by: @

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<u>Y</u> N
2	Custody papers properly completed (ink, signed)?	<u>Y</u> N
3	Did all bottles arrive in good condition (unbroken)?	<u>Y</u> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<u>Y</u> N

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did <u>VOA</u> vials, Alk, or Sulfide have sig* bubbles?	<u>Y</u> N NA
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<u>NA</u>

8. Temperature Readings Date: 3/26/21 Time: 1441 ID: IR#7 IR#11 From: Temp Blank Sample Bottle

Observed Temp (°C)							
Within 0-6°C?	<u>Y</u> N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	<u>Y</u> N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule
& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-02 by e on 3/26/21 at 1443
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 3/29/21 Time: 1215 by: @

9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH							
≤2	<u>203419</u>	HNO ₃	<u>✓</u>	<u>21120092</u>					
≤2		H ₂ SO ₄							
<4		NaHSO ₄							
5-9		For 608pest		No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522		If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃							
		ZnAcetate	-						
		HCl	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 2583 21-03-03

Explain all Discrepancies/ Other Comments:

MW-08 - 1 unfilled roc
MW-10 - 1 vial headspace
MW-11 - 1 vial "

1 incomplete and unsigned COC.

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: @
PC Secondary Review: 4/1/21

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



Miscellaneous Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.	+	Correlation coefficient for MSA is <0.995.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.	P	Concentration >40% difference between the two GC columns.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	X	See Case Narrative for discussion.
		MRL	Method Reporting Limit. Also known as:
		LOQ	Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
		MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
		LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
		ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

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Analyst Summary report

Client: LU Engineers
Project: Cuba Landfill/50191.01

Service Request: R2102872

Sample Name: MW-10
Lab Code: R2102872-001
Sample Matrix: Water

Date Collected: 03/25/21**Date Received:** 03/26/21**Analysis Method**

6010C

7470A

8260C

Extracted/Digested By

AKONZEL

AKONZEL

Analyzed By

KMCLAEN

AKONZEL

NMANSEN

Sample Name: MW-10D
Lab Code: R2102872-002
Sample Matrix: Water

Date Collected: 03/25/21**Date Received:** 03/26/21**Analysis Method**

6010C

7470A

8260C

Extracted/Digested By

AKONZEL

AKONZEL

Analyzed By

KMCLAEN

AKONZEL

NMANSEN

Sample Name: MW-07
Lab Code: R2102872-003
Sample Matrix: Water

Date Collected: 03/25/21**Date Received:** 03/26/21**Analysis Method**

6010C

7470A

8260C

Extracted/Digested By

AKONZEL

AKONZEL

Analyzed By

KMCLAEN

AKONZEL

NMANSEN

Sample Name: MW-04
Lab Code: R2102872-004
Sample Matrix: Water

Date Collected: 03/25/21**Date Received:** 03/26/21**Analysis Method**

6010C

7470A

8260C

Extracted/Digested By

AKONZEL

AKONZEL

Analyzed By

KMCLAEN

AKONZEL

NMANSEN

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: LU Engineers
Project: Cuba Landfill/50191.01

Service Request: R2102872

Sample Name: MW-11
Lab Code: R2102872-005
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: MW-08
Lab Code: R2102872-006
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: MW-13
Lab Code: R2102872-007
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL
AKONZEL

Analyzed By

NMANSEN
KMCLAEN
AKONZEL
NMANSEN

Sample Name: SW-02
Lab Code: R2102872-008
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

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Analyst Summary report

Client: LU Engineers
Project: Cuba Landfill/50191.01

Service Request: R2102872

Sample Name: MW-01S
Lab Code: R2102872-009
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: MW-01D
Lab Code: R2102872-010
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: Jackson Hill Rd
Lab Code: R2102872-011
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: SW-04
Lab Code: R2102872-012
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

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Analyst Summary report

Client: LU Engineers
Project: Cuba Landfill/50191.01

Service Request: R2102872

Sample Name: SW-03
Lab Code: R2102872-013
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: MW-02
Lab Code: R2102872-014
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

Sample Name: MW-12
Lab Code: R2102872-015
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL
AKONZEL

Analyzed By

NMANSEN
KMCLAEN
AKONZEL
NMANSEN

Sample Name: SW-01
Lab Code: R2102872-016
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method

6010C
7470A
8260C

Extracted/Digested By

AKONZEL
AKONZEL

Analyzed By

KMCLAEN
AKONZEL
NMANSEN

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Analyst Summary report

Client: LU Engineers
Project: Cuba Landfill/50191.01

Service Request: R2102872

Sample Name: Trip Blank
Lab Code: R2102872-017
Sample Matrix: Water

Date Collected: 03/25/21
Date Received: 03/26/21

Analysis Method
8260C

Extracted/Digested By

Analyzed By
NMANSEN



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	



Sample Results

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

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www.alsglobal.com



Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

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dba ALS Environmental

Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:20
Date Received: 03/26/21 14:35

Sample Name: MW-10
Lab Code: R2102872-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 14:01	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 14:01	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 14:01	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:01	
1,4-Dioxane	40 U	40	13	1	04/02/21 14:01	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 14:01	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 14:01	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 14:01	
Acetone	5.0 U	5.0	5.0	1	04/02/21 14:01	
Benzene	1.0 U	1.0	0.20	1	04/02/21 14:01	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 14:01	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 14:01	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 14:01	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 14:01	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:01	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 14:01	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 14:01	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 14:01	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 14:01	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 14:01	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 14:01	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 14:01	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 14:01	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 14:01	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 14:01	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 14:01	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 14:01	
Styrene	1.0 U	1.0	0.20	1	04/02/21 14:01	

ALS Group USA, Corp.
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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:20
Date Received: 03/26/21 14:35

Sample Name: MW-10
Lab Code: R2102872-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 14:01	
Toluene	1.0 U	1.0	0.20	1	04/02/21 14:01	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 14:01	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 14:01	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 14:01	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 14:01	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 14:01	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 14:01	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 14:01	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 14:01	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 14:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	04/02/21 14:01	
Dibromofluoromethane	98	80 - 116	04/02/21 14:01	
Toluene-d8	99	87 - 121	04/02/21 14:01	

ALS Group USA, Corp.
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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 11:00
Date Received: 03/26/21 14:35

Sample Name: MW-10D
Lab Code: R2102872-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.6	1.0	0.20	1	04/02/21 14:22	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,1-Dichloroethane (1,1-DCA)	0.66 J	1.0	0.20	1	04/02/21 14:22	
1,1-Dichloroethene (1,1-DCE)	0.28 J	1.0	0.20	1	04/02/21 14:22	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 14:22	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 14:22	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 14:22	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:22	
1,4-Dioxane	40 U	40	13	1	04/02/21 14:22	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 14:22	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 14:22	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 14:22	
Acetone	5.0 U	5.0	5.0	1	04/02/21 14:22	
Benzene	1.0 U	1.0	0.20	1	04/02/21 14:22	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 14:22	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 14:22	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 14:22	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 14:22	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:22	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 14:22	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 14:22	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 14:22	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 14:22	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 14:22	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 14:22	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 14:22	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 14:22	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 14:22	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 14:22	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 14:22	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 14:22	
Styrene	1.0 U	1.0	0.20	1	04/02/21 14:22	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 11:00
Date Received: 03/26/21 14:35

Sample Name: MW-10D
Lab Code: R2102872-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 14:22	
Toluene	1.0 U	1.0	0.20	1	04/02/21 14:22	
Trichloroethene (TCE)	0.90 J	1.0	0.20	1	04/02/21 14:22	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 14:22	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 14:22	
cis-1,2-Dichloroethene	0.86 J	1.0	0.23	1	04/02/21 14:22	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 14:22	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 14:22	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 14:22	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 14:22	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 14:22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	04/02/21 14:22	
Dibromofluoromethane	105	80 - 116	04/02/21 14:22	
Toluene-d8	105	87 - 121	04/02/21 14:22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 12:30
Date Received: 03/26/21 14:35

Sample Name: MW-07
Lab Code: R2102872-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	4.1	1.0	0.20	1	04/02/21 14:44	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,1-Dichloroethane (1,1-DCA)	1.5	1.0	0.20	1	04/02/21 14:44	
1,1-Dichloroethene (1,1-DCE)	0.89 J	1.0	0.20	1	04/02/21 14:44	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 14:44	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 14:44	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 14:44	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:44	
1,4-Dioxane	40 U	40	13	1	04/02/21 14:44	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 14:44	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 14:44	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 14:44	
Acetone	5.0 U	5.0	5.0	1	04/02/21 14:44	
Benzene	1.0 U	1.0	0.20	1	04/02/21 14:44	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 14:44	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 14:44	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 14:44	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 14:44	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 14:44	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 14:44	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 14:44	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 14:44	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 14:44	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 14:44	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 14:44	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 14:44	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 14:44	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 14:44	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 14:44	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 14:44	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 14:44	
Styrene	1.0 U	1.0	0.20	1	04/02/21 14:44	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 12:30
Date Received: 03/26/21 14:35

Sample Name: MW-07
Lab Code: R2102872-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 14:44	
Toluene	1.0 U	1.0	0.20	1	04/02/21 14:44	
Trichloroethene (TCE)	7.6	1.0	0.20	1	04/02/21 14:44	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 14:44	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 14:44	
cis-1,2-Dichloroethene	3.1	1.0	0.23	1	04/02/21 14:44	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 14:44	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 14:44	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 14:44	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 14:44	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 14:44	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	04/02/21 14:44	
Dibromofluoromethane	103	80 - 116	04/02/21 14:44	
Toluene-d8	103	87 - 121	04/02/21 14:44	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:15
Date Received: 03/26/21 14:35

Sample Name: MW-04
Lab Code: R2102872-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	12	1.0	0.20	1	04/02/21 15:06	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,1-Dichloroethane (1,1-DCA)	34	1.0	0.20	1	04/02/21 15:06	
1,1-Dichloroethene (1,1-DCE)	3.4	1.0	0.20	1	04/02/21 15:06	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 15:06	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 15:06	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 15:06	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:06	
1,4-Dioxane	40 U	40	13	1	04/02/21 15:06	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 15:06	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 15:06	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 15:06	
Acetone	5.0 U	5.0	5.0	1	04/02/21 15:06	
Benzene	1.0 U	1.0	0.20	1	04/02/21 15:06	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 15:06	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 15:06	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 15:06	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 15:06	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:06	
Chloroethane	0.90 J	1.0	0.23	1	04/02/21 15:06	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 15:06	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 15:06	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 15:06	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 15:06	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 15:06	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 15:06	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 15:06	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 15:06	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 15:06	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 15:06	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 15:06	
Styrene	1.0 U	1.0	0.20	1	04/02/21 15:06	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:15
Date Received: 03/26/21 14:35

Sample Name: MW-04
Lab Code: R2102872-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	0.68 J	1.0	0.21	1	04/02/21 15:06	
Toluene	1.0 U	1.0	0.20	1	04/02/21 15:06	
Trichloroethene (TCE)	4.3	1.0	0.20	1	04/02/21 15:06	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 15:06	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 15:06	
cis-1,2-Dichloroethene	14	1.0	0.23	1	04/02/21 15:06	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 15:06	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 15:06	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 15:06	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 15:06	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 15:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	04/02/21 15:06	
Dibromofluoromethane	102	80 - 116	04/02/21 15:06	
Toluene-d8	103	87 - 121	04/02/21 15:06	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:20
Date Received: 03/26/21 14:35

Sample Name: MW-11
Lab Code: R2102872-005

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.8	1.0	0.20	1	04/02/21 15:27	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,1-Dichloroethane (1,1-DCA)	28	1.0	0.20	1	04/02/21 15:27	
1,1-Dichloroethene (1,1-DCE)	2.8	1.0	0.20	1	04/02/21 15:27	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 15:27	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 15:27	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 15:27	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:27	
1,4-Dioxane	40 U	40	13	1	04/02/21 15:27	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 15:27	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 15:27	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 15:27	
Acetone	5.0 U	5.0	5.0	1	04/02/21 15:27	
Benzene	1.0 U	1.0	0.20	1	04/02/21 15:27	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 15:27	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 15:27	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 15:27	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 15:27	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:27	
Chloroethane	1.3	1.0	0.23	1	04/02/21 15:27	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 15:27	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 15:27	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 15:27	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 15:27	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 15:27	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 15:27	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 15:27	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 15:27	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 15:27	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 15:27	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 15:27	
Styrene	1.0 U	1.0	0.20	1	04/02/21 15:27	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:20
Date Received: 03/26/21 14:35

Sample Name: MW-11
Lab Code: R2102872-005

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0	1.0	0.21	1	04/02/21 15:27	
Toluene	1.0 U	1.0	0.20	1	04/02/21 15:27	
Trichloroethene (TCE)	3.6	1.0	0.20	1	04/02/21 15:27	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 15:27	
Vinyl Chloride	0.72 J	1.0	0.20	1	04/02/21 15:27	
cis-1,2-Dichloroethene	12	1.0	0.23	1	04/02/21 15:27	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 15:27	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 15:27	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 15:27	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 15:27	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 15:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	04/02/21 15:27	
Dibromofluoromethane	107	80 - 116	04/02/21 15:27	
Toluene-d8	108	87 - 121	04/02/21 15:27	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:50
Date Received: 03/26/21 14:35

Sample Name: MW-08
Lab Code: R2102872-006

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	9.3	1.0	0.20	1	04/02/21 15:49	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,1-Dichloroethane (1,1-DCA)	7.0	1.0	0.20	1	04/02/21 15:49	
1,1-Dichloroethene (1,1-DCE)	0.56 J	1.0	0.20	1	04/02/21 15:49	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 15:49	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 15:49	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 15:49	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:49	
1,4-Dioxane	40 U	40	13	1	04/02/21 15:49	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 15:49	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 15:49	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 15:49	
Acetone	5.0 U	5.0	5.0	1	04/02/21 15:49	
Benzene	1.0 U	1.0	0.20	1	04/02/21 15:49	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 15:49	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 15:49	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 15:49	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 15:49	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 15:49	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 15:49	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 15:49	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 15:49	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 15:49	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 15:49	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 15:49	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 15:49	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 15:49	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 15:49	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 15:49	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 15:49	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 15:49	
Styrene	1.0 U	1.0	0.20	1	04/02/21 15:49	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:50
Date Received: 03/26/21 14:35

Sample Name: MW-08
Lab Code: R2102872-006

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 15:49	
Toluene	1.0 U	1.0	0.20	1	04/02/21 15:49	
Trichloroethene (TCE)	15	1.0	0.20	1	04/02/21 15:49	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 15:49	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 15:49	
cis-1,2-Dichloroethene	7.9	1.0	0.23	1	04/02/21 15:49	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 15:49	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 15:49	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 15:49	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 15:49	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 15:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	04/02/21 15:49	
Dibromofluoromethane	103	80 - 116	04/02/21 15:49	
Toluene-d8	105	87 - 121	04/02/21 15:49	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 14:10
Date Received: 03/26/21 14:35

Sample Name: MW-13
Lab Code: R2102872-007

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	6.5	1.0	0.20	1	04/02/21 16:11	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,1-Dichloroethane (1,1-DCA)	6.5	1.0	0.20	1	04/02/21 16:11	
1,1-Dichloroethene (1,1-DCE)	0.39 J	1.0	0.20	1	04/02/21 16:11	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 16:11	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 16:11	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 16:11	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:11	
1,4-Dioxane	40 U	40	13	1	04/02/21 16:11	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 16:11	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 16:11	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 16:11	
Acetone	5.0 U	5.0	5.0	1	04/02/21 16:11	
Benzene	1.0 U	1.0	0.20	1	04/02/21 16:11	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 16:11	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 16:11	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 16:11	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 16:11	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:11	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 16:11	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 16:11	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 16:11	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 16:11	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 16:11	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 16:11	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 16:11	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 16:11	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 16:11	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 16:11	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 16:11	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 16:11	
Styrene	1.0 U	1.0	0.20	1	04/02/21 16:11	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 14:10
Date Received: 03/26/21 14:35

Sample Name: MW-13
Lab Code: R2102872-007

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	4.4	1.0	0.21	1	04/02/21 16:11	
Toluene	1.0 U	1.0	0.20	1	04/02/21 16:11	
Trichloroethene (TCE)	7.5	1.0	0.20	1	04/02/21 16:11	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 16:11	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 16:11	
cis-1,2-Dichloroethene	6.5	1.0	0.23	1	04/02/21 16:11	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 16:11	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 16:11	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 16:11	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 16:11	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 16:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	04/02/21 16:11	
Dibromofluoromethane	104	80 - 116	04/02/21 16:11	
Toluene-d8	106	87 - 121	04/02/21 16:11	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 14:45
Date Received: 03/26/21 14:35

Sample Name: SW-02
Lab Code: R2102872-008

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 16:33	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 16:33	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 16:33	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:33	
1,4-Dioxane	40 U	40	13	1	04/02/21 16:33	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 16:33	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 16:33	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 16:33	
Acetone	5.5	5.0	5.0	1	04/02/21 16:33	
Benzene	1.0 U	1.0	0.20	1	04/02/21 16:33	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 16:33	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 16:33	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 16:33	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 16:33	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:33	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 16:33	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 16:33	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 16:33	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 16:33	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 16:33	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 16:33	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 16:33	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 16:33	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 16:33	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 16:33	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 16:33	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 16:33	
Styrene	1.0 U	1.0	0.20	1	04/02/21 16:33	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 14:45
Date Received: 03/26/21 14:35

Sample Name: SW-02
Lab Code: R2102872-008

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 16:33	
Toluene	1.0 U	1.0	0.20	1	04/02/21 16:33	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 16:33	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 16:33	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 16:33	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 16:33	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 16:33	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 16:33	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 16:33	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 16:33	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 16:33	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	04/02/21 16:33	
Dibromofluoromethane	107	80 - 116	04/02/21 16:33	
Toluene-d8	107	87 - 121	04/02/21 16:33	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:10
Date Received: 03/26/21 14:35

Sample Name: MW-01S
Lab Code: R2102872-009

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 16:54	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 16:54	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 16:54	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:54	
1,4-Dioxane	40 U	40	13	1	04/02/21 16:54	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 16:54	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 16:54	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 16:54	
Acetone	5.0 U	5.0	5.0	1	04/02/21 16:54	
Benzene	1.0 U	1.0	0.20	1	04/02/21 16:54	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 16:54	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 16:54	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 16:54	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 16:54	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 16:54	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 16:54	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 16:54	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 16:54	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 16:54	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 16:54	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 16:54	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 16:54	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 16:54	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 16:54	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 16:54	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 16:54	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 16:54	
Styrene	1.0 U	1.0	0.20	1	04/02/21 16:54	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:10
Date Received: 03/26/21 14:35

Sample Name: MW-01S
Lab Code: R2102872-009

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 16:54	
Toluene	1.0 U	1.0	0.20	1	04/02/21 16:54	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 16:54	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 16:54	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 16:54	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 16:54	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 16:54	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 16:54	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 16:54	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 16:54	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 16:54	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	04/02/21 16:54	
Dibromofluoromethane	105	80 - 116	04/02/21 16:54	
Toluene-d8	108	87 - 121	04/02/21 16:54	

ALS Group USA, Corp.
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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:25
Date Received: 03/26/21 14:35

Sample Name: MW-01D
Lab Code: R2102872-010

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 17:16	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 17:16	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 17:16	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:16	
1,4-Dioxane	40 U	40	13	1	04/02/21 17:16	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 17:16	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 17:16	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 17:16	
Acetone	5.0 U	5.0	5.0	1	04/02/21 17:16	
Benzene	1.0 U	1.0	0.20	1	04/02/21 17:16	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 17:16	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 17:16	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 17:16	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 17:16	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:16	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 17:16	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 17:16	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 17:16	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 17:16	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 17:16	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 17:16	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 17:16	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 17:16	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 17:16	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 17:16	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 17:16	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 17:16	
Styrene	1.0 U	1.0	0.20	1	04/02/21 17:16	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:25
Date Received: 03/26/21 14:35

Sample Name: MW-01D
Lab Code: R2102872-010

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 17:16	
Toluene	1.0 U	1.0	0.20	1	04/02/21 17:16	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 17:16	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 17:16	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 17:16	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 17:16	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 17:16	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 17:16	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 17:16	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 17:16	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 17:16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	04/02/21 17:16	
Dibromofluoromethane	104	80 - 116	04/02/21 17:16	
Toluene-d8	107	87 - 121	04/02/21 17:16	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:45
Date Received: 03/26/21 14:35

Sample Name: Jackson Hill Rd
Lab Code: R2102872-011

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 17:38	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 17:38	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 17:38	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:38	
1,4-Dioxane	40 U	40	13	1	04/02/21 17:38	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 17:38	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 17:38	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 17:38	
Acetone	5.0 U	5.0	5.0	1	04/02/21 17:38	
Benzene	1.0 U	1.0	0.20	1	04/02/21 17:38	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 17:38	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 17:38	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 17:38	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 17:38	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:38	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 17:38	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 17:38	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 17:38	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 17:38	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 17:38	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 17:38	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 17:38	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 17:38	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 17:38	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 17:38	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 17:38	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 17:38	
Styrene	1.0 U	1.0	0.20	1	04/02/21 17:38	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:45
Date Received: 03/26/21 14:35

Sample Name: Jackson Hill Rd
Lab Code: R2102872-011

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 17:38	
Toluene	1.0 U	1.0	0.20	1	04/02/21 17:38	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 17:38	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 17:38	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 17:38	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 17:38	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 17:38	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 17:38	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 17:38	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 17:38	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 17:38	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	04/02/21 17:38	
Dibromofluoromethane	103	80 - 116	04/02/21 17:38	
Toluene-d8	107	87 - 121	04/02/21 17:38	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:30
Date Received: 03/26/21 14:35

Sample Name: SW-04
Lab Code: R2102872-012

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 17:59	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 17:59	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 17:59	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:59	
1,4-Dioxane	40 U	40	13	1	04/02/21 17:59	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 17:59	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 17:59	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 17:59	
Acetone	5.0 U	5.0	5.0	1	04/02/21 17:59	
Benzene	1.0 U	1.0	0.20	1	04/02/21 17:59	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 17:59	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 17:59	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 17:59	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 17:59	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 17:59	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 17:59	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 17:59	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 17:59	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 17:59	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 17:59	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 17:59	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 17:59	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 17:59	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 17:59	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 17:59	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 17:59	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 17:59	
Styrene	1.0 U	1.0	0.20	1	04/02/21 17:59	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:30
Date Received: 03/26/21 14:35

Sample Name: SW-04
Lab Code: R2102872-012

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 17:59	
Toluene	1.0 U	1.0	0.20	1	04/02/21 17:59	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 17:59	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 17:59	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 17:59	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 17:59	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 17:59	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 17:59	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 17:59	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 17:59	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 17:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	04/02/21 17:59	
Dibromofluoromethane	100	80 - 116	04/02/21 17:59	
Toluene-d8	102	87 - 121	04/02/21 17:59	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:45
Date Received: 03/26/21 14:35

Sample Name: SW-03
Lab Code: R2102872-013

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 18:21	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 18:21	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 18:21	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:21	
1,4-Dioxane	40 U	40	13	1	04/02/21 18:21	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 18:21	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 18:21	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 18:21	
Acetone	5.0 U	5.0	5.0	1	04/02/21 18:21	
Benzene	1.0 U	1.0	0.20	1	04/02/21 18:21	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 18:21	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 18:21	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 18:21	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 18:21	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:21	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 18:21	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 18:21	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 18:21	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 18:21	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 18:21	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 18:21	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 18:21	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 18:21	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 18:21	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 18:21	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 18:21	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 18:21	
Styrene	1.0 U	1.0	0.20	1	04/02/21 18:21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:45
Date Received: 03/26/21 14:35

Sample Name: SW-03
Lab Code: R2102872-013

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 18:21	
Toluene	1.0 U	1.0	0.20	1	04/02/21 18:21	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 18:21	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 18:21	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 18:21	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 18:21	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 18:21	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 18:21	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 18:21	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 18:21	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 18:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	04/02/21 18:21	
Dibromofluoromethane	106	80 - 116	04/02/21 18:21	
Toluene-d8	108	87 - 121	04/02/21 18:21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:15
Date Received: 03/26/21 14:35

Sample Name: MW-02
Lab Code: R2102872-014

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 18:43	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 18:43	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 18:43	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:43	
1,4-Dioxane	40 U	40	13	1	04/02/21 18:43	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 18:43	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 18:43	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 18:43	
Acetone	5.0 U	5.0	5.0	1	04/02/21 18:43	
Benzene	1.0 U	1.0	0.20	1	04/02/21 18:43	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 18:43	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 18:43	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 18:43	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 18:43	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 18:43	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 18:43	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 18:43	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 18:43	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 18:43	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 18:43	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 18:43	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 18:43	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 18:43	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 18:43	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 18:43	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 18:43	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 18:43	
Styrene	1.0 U	1.0	0.20	1	04/02/21 18:43	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:15
Date Received: 03/26/21 14:35

Sample Name: MW-02
Lab Code: R2102872-014

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 18:43	
Toluene	1.0 U	1.0	0.20	1	04/02/21 18:43	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 18:43	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 18:43	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 18:43	
cis-1,2-Dichloroethene	0.31 J	1.0	0.23	1	04/02/21 18:43	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 18:43	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 18:43	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 18:43	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 18:43	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 18:43	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	04/02/21 18:43	
Dibromofluoromethane	104	80 - 116	04/02/21 18:43	
Toluene-d8	106	87 - 121	04/02/21 18:43	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:15
Date Received: 03/26/21 14:35

Sample Name: MW-12
Lab Code: R2102872-015

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.23 J	1.0	0.20	1	04/02/21 19:04	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,1-Dichloroethane (1,1-DCA)	0.53 J	1.0	0.20	1	04/02/21 19:04	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 19:04	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 19:04	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 19:04	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:04	
1,4-Dioxane	40 U	40	13	1	04/02/21 19:04	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 19:04	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 19:04	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 19:04	
Acetone	5.0 U	5.0	5.0	1	04/02/21 19:04	
Benzene	1.0 U	1.0	0.20	1	04/02/21 19:04	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 19:04	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 19:04	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 19:04	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 19:04	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:04	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 19:04	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 19:04	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 19:04	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 19:04	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 19:04	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 19:04	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 19:04	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 19:04	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 19:04	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 19:04	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 19:04	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 19:04	
Styrene	1.0 U	1.0	0.20	1	04/02/21 19:04	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:15
Date Received: 03/26/21 14:35

Sample Name: MW-12
Lab Code: R2102872-015

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 19:04	
Toluene	1.0 U	1.0	0.20	1	04/02/21 19:04	
Trichloroethene (TCE)	0.44 J	1.0	0.20	1	04/02/21 19:04	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 19:04	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 19:04	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 19:04	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 19:04	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 19:04	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 19:04	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 19:04	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 19:04	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	04/02/21 19:04	
Dibromofluoromethane	102	80 - 116	04/02/21 19:04	
Toluene-d8	104	87 - 121	04/02/21 19:04	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:30
Date Received: 03/26/21 14:35

Sample Name: SW-01
Lab Code: R2102872-016

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 19:26	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 19:26	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 19:26	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:26	
1,4-Dioxane	40 U	40	13	1	04/02/21 19:26	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 19:26	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 19:26	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 19:26	
Acetone	5.0 U	5.0	5.0	1	04/02/21 19:26	
Benzene	1.0 U	1.0	0.20	1	04/02/21 19:26	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 19:26	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 19:26	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 19:26	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 19:26	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 19:26	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 19:26	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 19:26	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 19:26	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 19:26	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 19:26	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 19:26	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 19:26	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 19:26	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 19:26	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 19:26	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 19:26	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 19:26	
Styrene	1.0 U	1.0	0.20	1	04/02/21 19:26	

ALS Group USA, Corp.
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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:30
Date Received: 03/26/21 14:35

Sample Name: SW-01
Lab Code: R2102872-016

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 19:26	
Toluene	1.0 U	1.0	0.20	1	04/02/21 19:26	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 19:26	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 19:26	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 19:26	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 19:26	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 19:26	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 19:26	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 19:26	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 19:26	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 19:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	04/02/21 19:26	
Dibromofluoromethane	101	80 - 116	04/02/21 19:26	
Toluene-d8	103	87 - 121	04/02/21 19:26	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21
Date Received: 03/26/21 14:35

Sample Name: Trip Blank
Lab Code: R2102872-017

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 13:39	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 13:39	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 13:39	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:39	
1,4-Dioxane	40 U	40	13	1	04/02/21 13:39	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 13:39	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 13:39	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 13:39	
Acetone	5.0 U	5.0	5.0	1	04/02/21 13:39	
Benzene	1.0 U	1.0	0.20	1	04/02/21 13:39	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 13:39	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 13:39	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 13:39	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 13:39	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:39	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 13:39	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 13:39	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 13:39	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 13:39	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 13:39	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 13:39	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 13:39	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 13:39	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 13:39	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 13:39	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 13:39	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 13:39	
Styrene	1.0 U	1.0	0.20	1	04/02/21 13:39	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21
Date Received: 03/26/21 14:35

Sample Name: Trip Blank
Lab Code: R2102872-017

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 13:39	
Toluene	1.0 U	1.0	0.20	1	04/02/21 13:39	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 13:39	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 13:39	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 13:39	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 13:39	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 13:39	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 13:39	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 13:39	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 13:39	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 13:39	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	04/02/21 13:39	
Dibromofluoromethane	102	80 - 116	04/02/21 13:39	
Toluene-d8	103	87 - 121	04/02/21 13:39	



Metals

ALS Environmental—Rochester Laboratory

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:20
Date Received: 03/26/21 14:35

Sample Name: MW-10
Lab Code: R2102872-001

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	15900	ug/L	100	30	1	03/31/21 18:52	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 18:52	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 18:52	03/30/21	
Barium, Total	6010C	182	ug/L	20	3	1	03/31/21 18:52	03/30/21	
Beryllium, Total	6010C	0.7 J	ug/L	3.0	0.2	1	03/31/21 18:52	03/30/21	
Cadmium, Total	6010C	6.6	ug/L	5.0	0.4	1	03/31/21 18:52	03/30/21	
Calcium, Total	6010C	150000	ug/L	1000	300	1	03/31/21 18:52	03/30/21	
Chromium, Total	6010C	57	ug/L	10	0.6	1	03/31/21 18:52	03/30/21	
Cobalt, Total	6010C	7 J	ug/L	50	0.9	1	03/31/21 18:52	03/30/21	
Copper, Total	6010C	27	ug/L	20	4	1	03/31/21 18:52	03/30/21	
Iron, Total	6010C	21500	ug/L	100	70	1	03/31/21 18:52	03/30/21	
Lead, Total	6010C	7 J	ug/L	50	3	1	03/31/21 18:52	03/30/21	
Magnesium, Total	6010C	22200	ug/L	1000	30	1	03/31/21 18:52	03/30/21	
Manganese, Total	6010C	339	ug/L	10	4	1	03/31/21 18:52	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:04	03/31/21	
Nickel, Total	6010C	12 J	ug/L	40	3	1	03/31/21 18:52	03/30/21	
Potassium, Total	6010C	8200	ug/L	2000	200	1	03/31/21 18:52	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:52	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 18:52	03/30/21	
Sodium, Total	6010C	18200	ug/L	1000	200	1	03/31/21 18:52	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:52	03/30/21	
Vanadium, Total	6010C	33 J	ug/L	50	0.7	1	03/31/21 18:52	03/30/21	
Zinc, Total	6010C	110	ug/L	20	10	1	03/31/21 18:52	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 11:00
Date Received: 03/26/21 14:35

Sample Name: MW-10D
Lab Code: R2102872-002

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	2400	ug/L	100	30	1	03/31/21 18:55	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 18:55	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 18:55	03/30/21	
Barium, Total	6010C	70	ug/L	20	3	1	03/31/21 18:55	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 18:55	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 18:55	03/30/21	
Calcium, Total	6010C	46300	ug/L	1000	300	1	03/31/21 18:55	03/30/21	
Chromium, Total	6010C	4 J	ug/L	10	0.6	1	03/31/21 18:55	03/30/21	
Cobalt, Total	6010C	0.9 J	ug/L	50	0.9	1	03/31/21 18:55	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 18:55	03/30/21	
Iron, Total	6010C	1650	ug/L	100	70	1	03/31/21 18:55	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 18:55	03/30/21	
Magnesium, Total	6010C	20600	ug/L	1000	30	1	03/31/21 18:55	03/30/21	
Manganese, Total	6010C	327	ug/L	10	4	1	03/31/21 18:55	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:07	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 18:55	03/30/21	
Potassium, Total	6010C	2700	ug/L	2000	200	1	03/31/21 18:55	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:55	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 18:55	03/30/21	
Sodium, Total	6010C	16100	ug/L	1000	200	1	03/31/21 18:55	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:55	03/30/21	
Vanadium, Total	6010C	3 J	ug/L	50	0.7	1	03/31/21 18:55	03/30/21	
Zinc, Total	6010C	16 J	ug/L	20	10	1	03/31/21 18:55	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 12:30
Date Received: 03/26/21 14:35

Sample Name: MW-07
Lab Code: R2102872-003

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	9570	ug/L	100	30	1	03/31/21 18:59	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 18:59	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 18:59	03/30/21	
Barium, Total	6010C	103	ug/L	20	3	1	03/31/21 18:59	03/30/21	
Beryllium, Total	6010C	0.4 J	ug/L	3.0	0.2	1	03/31/21 18:59	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 18:59	03/30/21	
Calcium, Total	6010C	51300	ug/L	1000	300	1	03/31/21 18:59	03/30/21	
Chromium, Total	6010C	13	ug/L	10	0.6	1	03/31/21 18:59	03/30/21	
Cobalt, Total	6010C	3 J	ug/L	50	0.9	1	03/31/21 18:59	03/30/21	
Copper, Total	6010C	21	ug/L	20	4	1	03/31/21 18:59	03/30/21	
Iron, Total	6010C	8060	ug/L	100	70	1	03/31/21 18:59	03/30/21	
Lead, Total	6010C	6 J	ug/L	50	3	1	03/31/21 18:59	03/30/21	
Magnesium, Total	6010C	25700	ug/L	1000	30	1	03/31/21 18:59	03/30/21	
Manganese, Total	6010C	189	ug/L	10	4	1	03/31/21 18:59	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:10	03/31/21	
Nickel, Total	6010C	4 J	ug/L	40	3	1	03/31/21 18:59	03/30/21	
Potassium, Total	6010C	4500	ug/L	2000	200	1	03/31/21 18:59	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:59	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 18:59	03/30/21	
Sodium, Total	6010C	6900	ug/L	1000	200	1	03/31/21 18:59	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:59	03/30/21	
Vanadium, Total	6010C	12 J	ug/L	50	0.7	1	03/31/21 18:59	03/30/21	
Zinc, Total	6010C	31	ug/L	20	10	1	03/31/21 18:59	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:15
Date Received: 03/26/21 14:35

Sample Name: MW-04
Lab Code: R2102872-004

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	590	ug/L	100	30	1	03/31/21 19:08	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:08	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:08	03/30/21	
Barium, Total	6010C	31	ug/L	20	3	1	03/31/21 19:08	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 19:08	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:08	03/30/21	
Calcium, Total	6010C	48300	ug/L	1000	300	1	03/31/21 19:08	03/30/21	
Chromium, Total	6010C	0.8 J	ug/L	10	0.6	1	03/31/21 19:08	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 19:08	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 19:08	03/30/21	
Iron, Total	6010C	550	ug/L	100	70	1	03/31/21 19:08	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 19:08	03/30/21	
Magnesium, Total	6010C	12500	ug/L	1000	30	1	03/31/21 19:08	03/30/21	
Manganese, Total	6010C	1430	ug/L	10	4	1	03/31/21 19:08	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:12	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 19:08	03/30/21	
Potassium, Total	6010C	2600	ug/L	2000	200	1	03/31/21 19:08	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:08	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:08	03/30/21	
Sodium, Total	6010C	4200	ug/L	1000	200	1	03/31/21 19:08	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:08	03/30/21	
Vanadium, Total	6010C	50 U	ug/L	50	0.7	1	03/31/21 19:08	03/30/21	
Zinc, Total	6010C	17 J	ug/L	20	10	1	03/31/21 19:08	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:20
Date Received: 03/26/21 14:35

Sample Name: MW-11
Lab Code: R2102872-005

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	10800	ug/L	100	30	1	03/31/21 19:25	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:25	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:25	03/30/21	
Barium, Total	6010C	75	ug/L	20	3	1	03/31/21 19:25	03/30/21	
Beryllium, Total	6010C	0.4 J	ug/L	3.0	0.2	1	03/31/21 19:25	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:25	03/30/21	
Calcium, Total	6010C	62000	ug/L	1000	300	1	03/31/21 19:25	03/30/21	
Chromium, Total	6010C	11	ug/L	10	0.6	1	03/31/21 19:25	03/30/21	
Cobalt, Total	6010C	4 J	ug/L	50	0.9	1	03/31/21 19:25	03/30/21	
Copper, Total	6010C	7 J	ug/L	20	4	1	03/31/21 19:25	03/30/21	
Iron, Total	6010C	9000	ug/L	100	70	1	03/31/21 19:25	03/30/21	
Lead, Total	6010C	4 J	ug/L	50	3	1	03/31/21 19:25	03/30/21	
Magnesium, Total	6010C	15100	ug/L	1000	30	1	03/31/21 19:25	03/30/21	
Manganese, Total	6010C	1300	ug/L	10	4	1	03/31/21 19:25	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:25	03/31/21	
Nickel, Total	6010C	8 J	ug/L	40	3	1	03/31/21 19:25	03/30/21	
Potassium, Total	6010C	5100	ug/L	2000	200	1	03/31/21 19:25	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:25	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:25	03/30/21	
Sodium, Total	6010C	4300	ug/L	1000	200	1	03/31/21 19:25	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:25	03/30/21	
Vanadium, Total	6010C	15 J	ug/L	50	0.7	1	03/31/21 19:25	03/30/21	
Zinc, Total	6010C	37	ug/L	20	10	1	03/31/21 19:25	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 13:50
Date Received: 03/26/21 14:35

Sample Name: MW-08
Lab Code: R2102872-006

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	22000	ug/L	100	30	1	03/31/21 19:28	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:28	03/30/21	
Arsenic, Total	6010C	10 J	ug/L	10	6	1	03/31/21 19:28	03/30/21	
Barium, Total	6010C	142	ug/L	20	3	1	03/31/21 19:28	03/30/21	
Beryllium, Total	6010C	1.0 J	ug/L	3.0	0.2	1	03/31/21 19:28	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:28	03/30/21	
Calcium, Total	6010C	39000	ug/L	1000	300	1	03/31/21 19:28	03/30/21	
Chromium, Total	6010C	25	ug/L	10	0.6	1	03/31/21 19:28	03/30/21	
Cobalt, Total	6010C	11 J	ug/L	50	0.9	1	03/31/21 19:28	03/30/21	
Copper, Total	6010C	38	ug/L	20	4	1	03/31/21 19:28	03/30/21	
Iron, Total	6010C	23800	ug/L	100	70	1	03/31/21 19:28	03/30/21	
Lead, Total	6010C	4 J	ug/L	50	3	1	03/31/21 19:28	03/30/21	
Magnesium, Total	6010C	18600	ug/L	1000	30	1	03/31/21 19:28	03/30/21	
Manganese, Total	6010C	302	ug/L	10	4	1	03/31/21 19:28	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:28	03/31/21	
Nickel, Total	6010C	16 J	ug/L	40	3	1	03/31/21 19:28	03/30/21	
Potassium, Total	6010C	8400	ug/L	2000	200	1	03/31/21 19:28	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:28	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:28	03/30/21	
Sodium, Total	6010C	5500	ug/L	1000	200	1	03/31/21 19:28	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:28	03/30/21	
Vanadium, Total	6010C	30 J	ug/L	50	0.7	1	03/31/21 19:28	03/30/21	
Zinc, Total	6010C	66	ug/L	20	10	1	03/31/21 19:28	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 14:10
Date Received: 03/26/21 14:35

Sample Name: MW-13
Lab Code: R2102872-007

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	116000	ug/L	100	30	1	03/31/21 19:31	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:31	03/30/21	
Arsenic, Total	6010C	37	ug/L	10	6	1	03/31/21 19:31	03/30/21	
Barium, Total	6010C	804	ug/L	20	3	1	03/31/21 19:31	03/30/21	
Beryllium, Total	6010C	4.1	ug/L	3.0	0.2	1	03/31/21 19:31	03/30/21	
Cadmium, Total	6010C	1.6 J	ug/L	5.0	0.4	1	03/31/21 19:31	03/30/21	
Calcium, Total	6010C	55900	ug/L	1000	300	1	03/31/21 19:31	03/30/21	
Chromium, Total	6010C	171	ug/L	10	0.6	1	03/31/21 19:31	03/30/21	
Cobalt, Total	6010C	61	ug/L	50	0.9	1	03/31/21 19:31	03/30/21	
Copper, Total	6010C	104	ug/L	20	4	1	03/31/21 19:31	03/30/21	
Iron, Total	6010C	184000	ug/L	1000	700	10	04/01/21 15:56	03/30/21	
Lead, Total	6010C	40 J	ug/L	50	3	1	03/31/21 19:31	03/30/21	
Magnesium, Total	6010C	33200	ug/L	1000	30	1	03/31/21 19:31	03/30/21	
Manganese, Total	6010C	4280	ug/L	10	4	1	03/31/21 19:31	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:30	03/31/21	
Nickel, Total	6010C	134	ug/L	40	3	1	03/31/21 19:31	03/30/21	
Potassium, Total	6010C	26100	ug/L	2000	200	1	03/31/21 19:31	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:31	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:31	03/30/21	
Sodium, Total	6010C	4300	ug/L	1000	200	1	03/31/21 19:31	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:31	03/30/21	
Vanadium, Total	6010C	153	ug/L	50	0.7	1	03/31/21 19:31	03/30/21	
Zinc, Total	6010C	377	ug/L	20	10	1	03/31/21 19:31	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 14:45
Date Received: 03/26/21 14:35

Sample Name: SW-02
Lab Code: R2102872-008

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	340	ug/L	100	30	1	03/31/21 19:34	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:34	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:34	03/30/21	
Barium, Total	6010C	9 J	ug/L	20	3	1	03/31/21 19:34	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 19:34	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:34	03/30/21	
Calcium, Total	6010C	6700	ug/L	1000	300	1	03/31/21 19:34	03/30/21	
Chromium, Total	6010C	0.7 J	ug/L	10	0.6	1	03/31/21 19:34	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 19:34	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 19:34	03/30/21	
Iron, Total	6010C	290	ug/L	100	70	1	03/31/21 19:34	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 19:34	03/30/21	
Magnesium, Total	6010C	1200	ug/L	1000	30	1	03/31/21 19:34	03/30/21	
Manganese, Total	6010C	19	ug/L	10	4	1	03/31/21 19:34	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:33	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 19:34	03/30/21	
Potassium, Total	6010C	2300	ug/L	2000	200	1	03/31/21 19:34	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:34	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:34	03/30/21	
Sodium, Total	6010C	500 J	ug/L	1000	200	1	03/31/21 19:34	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:34	03/30/21	
Vanadium, Total	6010C	50 U	ug/L	50	0.7	1	03/31/21 19:34	03/30/21	
Zinc, Total	6010C	20 U	ug/L	20	10	1	03/31/21 19:34	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:10
Date Received: 03/26/21 14:35

Sample Name: MW-01S
Lab Code: R2102872-009

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	27100	ug/L	100	30	1	03/31/21 19:38	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:38	03/30/21	
Arsenic, Total	6010C	12	ug/L	10	6	1	03/31/21 19:38	03/30/21	
Barium, Total	6010C	250	ug/L	20	3	1	03/31/21 19:38	03/30/21	
Beryllium, Total	6010C	1.2 J	ug/L	3.0	0.2	1	03/31/21 19:38	03/30/21	
Cadmium, Total	6010C	0.9 J	ug/L	5.0	0.4	1	03/31/21 19:38	03/30/21	
Calcium, Total	6010C	32200	ug/L	1000	300	1	03/31/21 19:38	03/30/21	
Chromium, Total	6010C	34	ug/L	10	0.6	1	03/31/21 19:38	03/30/21	
Cobalt, Total	6010C	10 J	ug/L	50	0.9	1	03/31/21 19:38	03/30/21	
Copper, Total	6010C	24	ug/L	20	4	1	03/31/21 19:38	03/30/21	
Iron, Total	6010C	27900	ug/L	100	70	1	03/31/21 19:38	03/30/21	
Lead, Total	6010C	13 J	ug/L	50	3	1	03/31/21 19:38	03/30/21	
Magnesium, Total	6010C	9800	ug/L	1000	30	1	03/31/21 19:38	03/30/21	
Manganese, Total	6010C	660	ug/L	10	4	1	03/31/21 19:38	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:35	03/31/21	
Nickel, Total	6010C	15 J	ug/L	40	3	1	03/31/21 19:38	03/30/21	
Potassium, Total	6010C	9500	ug/L	2000	200	1	03/31/21 19:38	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:38	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:38	03/30/21	
Sodium, Total	6010C	2900	ug/L	1000	200	1	03/31/21 19:38	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:38	03/30/21	
Vanadium, Total	6010C	37 J	ug/L	50	0.7	1	03/31/21 19:38	03/30/21	
Zinc, Total	6010C	84	ug/L	20	10	1	03/31/21 19:38	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:25
Date Received: 03/26/21 14:35

Sample Name: MW-01D
Lab Code: R2102872-010

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	4340	ug/L	100	30	1	03/31/21 19:47	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:47	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:47	03/30/21	
Barium, Total	6010C	29	ug/L	20	3	1	03/31/21 19:47	03/30/21	
Beryllium, Total	6010C	0.2 J	ug/L	3.0	0.2	1	03/31/21 19:47	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:47	03/30/21	
Calcium, Total	6010C	24000	ug/L	1000	300	1	03/31/21 19:47	03/30/21	
Chromium, Total	6010C	5 J	ug/L	10	0.6	1	03/31/21 19:47	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 19:47	03/30/21	
Copper, Total	6010C	15 J	ug/L	20	4	1	03/31/21 19:47	03/30/21	
Iron, Total	6010C	2930	ug/L	100	70	1	03/31/21 19:47	03/30/21	
Lead, Total	6010C	10 J	ug/L	50	3	1	03/31/21 19:47	03/30/21	
Magnesium, Total	6010C	9800	ug/L	1000	30	1	03/31/21 19:47	03/30/21	
Manganese, Total	6010C	108	ug/L	10	4	1	03/31/21 19:47	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:38	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 19:47	03/30/21	
Potassium, Total	6010C	2500	ug/L	2000	200	1	03/31/21 19:47	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:47	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:47	03/30/21	
Sodium, Total	6010C	4200	ug/L	1000	200	1	03/31/21 19:47	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:47	03/30/21	
Vanadium, Total	6010C	6 J	ug/L	50	0.7	1	03/31/21 19:47	03/30/21	
Zinc, Total	6010C	39	ug/L	20	10	1	03/31/21 19:47	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 15:45
Date Received: 03/26/21 14:35

Sample Name: Jackson Hill Rd
Lab Code: R2102872-011

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	400	ug/L	100	30	1	03/31/21 19:51	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:51	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:51	03/30/21	
Barium, Total	6010C	36	ug/L	20	3	1	03/31/21 19:51	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 19:51	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:51	03/30/21	
Calcium, Total	6010C	16000	ug/L	1000	300	1	03/31/21 19:51	03/30/21	
Chromium, Total	6010C	0.7 J	ug/L	10	0.6	1	03/31/21 19:51	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 19:51	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 19:51	03/30/21	
Iron, Total	6010C	800	ug/L	100	70	1	03/31/21 19:51	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 19:51	03/30/21	
Magnesium, Total	6010C	4200	ug/L	1000	30	1	03/31/21 19:51	03/30/21	
Manganese, Total	6010C	14	ug/L	10	4	1	03/31/21 19:51	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:40	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 19:51	03/30/21	
Potassium, Total	6010C	1700 J	ug/L	2000	200	1	03/31/21 19:51	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:51	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:51	03/30/21	
Sodium, Total	6010C	13000	ug/L	1000	200	1	03/31/21 19:51	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:51	03/30/21	
Vanadium, Total	6010C	50 U	ug/L	50	0.7	1	03/31/21 19:51	03/30/21	
Zinc, Total	6010C	25	ug/L	20	10	1	03/31/21 19:51	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:30
Date Received: 03/26/21 14:35

Sample Name: SW-04
Lab Code: R2102872-012

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	1190	ug/L	100	30	1	03/31/21 19:54	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:54	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:54	03/30/21	
Barium, Total	6010C	11 J	ug/L	20	3	1	03/31/21 19:54	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 19:54	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:54	03/30/21	
Calcium, Total	6010C	2900	ug/L	1000	300	1	03/31/21 19:54	03/30/21	
Chromium, Total	6010C	2 J	ug/L	10	0.6	1	03/31/21 19:54	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 19:54	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 19:54	03/30/21	
Iron, Total	6010C	820	ug/L	100	70	1	03/31/21 19:54	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 19:54	03/30/21	
Magnesium, Total	6010C	700 J	ug/L	1000	30	1	03/31/21 19:54	03/30/21	
Manganese, Total	6010C	17	ug/L	10	4	1	03/31/21 19:54	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:43	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 19:54	03/30/21	
Potassium, Total	6010C	1500 J	ug/L	2000	200	1	03/31/21 19:54	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:54	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:54	03/30/21	
Sodium, Total	6010C	2700	ug/L	1000	200	1	03/31/21 19:54	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:54	03/30/21	
Vanadium, Total	6010C	2 J	ug/L	50	0.7	1	03/31/21 19:54	03/30/21	
Zinc, Total	6010C	20 U	ug/L	20	10	1	03/31/21 19:54	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 09:45
Date Received: 03/26/21 14:35

Sample Name: SW-03
Lab Code: R2102872-013

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	1220	ug/L	100	30	1	03/31/21 19:57	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 19:57	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 19:57	03/30/21	
Barium, Total	6010C	14 J	ug/L	20	3	1	03/31/21 19:57	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 19:57	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 19:57	03/30/21	
Calcium, Total	6010C	3900	ug/L	1000	300	1	03/31/21 19:57	03/30/21	
Chromium, Total	6010C	1 J	ug/L	10	0.6	1	03/31/21 19:57	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 19:57	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 19:57	03/30/21	
Iron, Total	6010C	840	ug/L	100	70	1	03/31/21 19:57	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 19:57	03/30/21	
Magnesium, Total	6010C	900 J	ug/L	1000	30	1	03/31/21 19:57	03/30/21	
Manganese, Total	6010C	22	ug/L	10	4	1	03/31/21 19:57	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:45	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 19:57	03/30/21	
Potassium, Total	6010C	1400 J	ug/L	2000	200	1	03/31/21 19:57	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:57	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 19:57	03/30/21	
Sodium, Total	6010C	2200	ug/L	1000	200	1	03/31/21 19:57	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 19:57	03/30/21	
Vanadium, Total	6010C	2 J	ug/L	50	0.7	1	03/31/21 19:57	03/30/21	
Zinc, Total	6010C	20 U	ug/L	20	10	1	03/31/21 19:57	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:15
Date Received: 03/26/21 14:35

Sample Name: MW-02
Lab Code: R2102872-014

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	25600	ug/L	100	30	1	03/31/21 20:01	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 20:01	03/30/21	
Arsenic, Total	6010C	17	ug/L	10	6	1	03/31/21 20:01	03/30/21	
Barium, Total	6010C	153	ug/L	20	3	1	03/31/21 20:01	03/30/21	
Beryllium, Total	6010C	1.0 J	ug/L	3.0	0.2	1	03/31/21 20:01	03/30/21	
Cadmium, Total	6010C	2.5 J	ug/L	5.0	0.4	1	03/31/21 20:01	03/30/21	
Calcium, Total	6010C	41700	ug/L	1000	300	1	03/31/21 20:01	03/30/21	
Chromium, Total	6010C	26	ug/L	10	0.6	1	03/31/21 20:01	03/30/21	
Cobalt, Total	6010C	10 J	ug/L	50	0.9	1	03/31/21 20:01	03/30/21	
Copper, Total	6010C	20	ug/L	20	4	1	03/31/21 20:01	03/30/21	
Iron, Total	6010C	29700	ug/L	100	70	1	03/31/21 20:01	03/30/21	
Lead, Total	6010C	13 J	ug/L	50	3	1	03/31/21 20:01	03/30/21	
Magnesium, Total	6010C	16400	ug/L	1000	30	1	03/31/21 20:01	03/30/21	
Manganese, Total	6010C	1150	ug/L	10	4	1	03/31/21 20:01	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 10:53	03/31/21	
Nickel, Total	6010C	27 J	ug/L	40	3	1	03/31/21 20:01	03/30/21	
Potassium, Total	6010C	8500	ug/L	2000	200	1	03/31/21 20:01	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 20:01	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 20:01	03/30/21	
Sodium, Total	6010C	17000	ug/L	1000	200	1	03/31/21 20:01	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 20:01	03/30/21	
Vanadium, Total	6010C	27 J	ug/L	50	0.7	1	03/31/21 20:01	03/30/21	
Zinc, Total	6010C	729	ug/L	20	10	1	03/31/21 20:01	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:15
Date Received: 03/26/21 14:35

Sample Name: MW-12
Lab Code: R2102872-015

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	83800	ug/L	100	30	1	03/31/21 20:04	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 20:04	03/30/21	
Arsenic, Total	6010C	33	ug/L	10	6	1	03/31/21 20:04	03/30/21	
Barium, Total	6010C	399	ug/L	20	3	1	03/31/21 20:04	03/30/21	
Beryllium, Total	6010C	2.7 J	ug/L	3.0	0.2	1	03/31/21 20:04	03/30/21	
Cadmium, Total	6010C	1.2 J	ug/L	5.0	0.4	1	03/31/21 20:04	03/30/21	
Calcium, Total	6010C	94100	ug/L	1000	300	1	03/31/21 20:04	03/30/21	
Chromium, Total	6010C	114	ug/L	10	0.6	1	03/31/21 20:04	03/30/21	
Cobalt, Total	6010C	40 J	ug/L	50	0.9	1	03/31/21 20:04	03/30/21	
Copper, Total	6010C	62	ug/L	20	4	1	03/31/21 20:04	03/30/21	
Iron, Total	6010C	118000	ug/L	1000	700	10	04/01/21 15:59	03/30/21	
Lead, Total	6010C	40 J	ug/L	50	3	1	03/31/21 20:04	03/30/21	
Magnesium, Total	6010C	57900	ug/L	1000	30	1	03/31/21 20:04	03/30/21	
Manganese, Total	6010C	4700	ug/L	10	4	1	03/31/21 20:04	03/30/21	
Mercury, Total	7470A	0.09 J	ug/L	0.20	0.08	1	04/01/21 11:55	03/31/21	
Nickel, Total	6010C	87	ug/L	40	3	1	03/31/21 20:04	03/30/21	
Potassium, Total	6010C	23000	ug/L	2000	200	1	03/31/21 20:04	03/30/21	
Selenium, Total	6010C	8 J	ug/L	10	7	1	03/31/21 20:04	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 20:04	03/30/21	
Sodium, Total	6010C	25500	ug/L	1000	200	1	03/31/21 20:04	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 20:04	03/30/21	
Vanadium, Total	6010C	108	ug/L	50	0.7	1	03/31/21 20:04	03/30/21	
Zinc, Total	6010C	239	ug/L	20	10	1	03/31/21 20:04	03/30/21	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21 10:30
Date Received: 03/26/21 14:35

Sample Name: SW-01
Lab Code: R2102872-016

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	100 U	ug/L	100	30	1	03/31/21 20:07	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 20:07	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 20:07	03/30/21	
Barium, Total	6010C	13 J	ug/L	20	3	1	03/31/21 20:07	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 20:07	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 20:07	03/30/21	
Calcium, Total	6010C	30900	ug/L	1000	300	1	03/31/21 20:07	03/30/21	
Chromium, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 20:07	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 20:07	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 20:07	03/30/21	
Iron, Total	6010C	100 U	ug/L	100	70	1	03/31/21 20:07	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 20:07	03/30/21	
Magnesium, Total	6010C	8800	ug/L	1000	30	1	03/31/21 20:07	03/30/21	
Manganese, Total	6010C	5 J	ug/L	10	4	1	03/31/21 20:07	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 11:57	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 20:07	03/30/21	
Potassium, Total	6010C	1800 J	ug/L	2000	200	1	03/31/21 20:07	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 20:07	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 20:07	03/30/21	
Sodium, Total	6010C	8200	ug/L	1000	200	1	03/31/21 20:07	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 20:07	03/30/21	
Vanadium, Total	6010C	50 U	ug/L	50	0.7	1	03/31/21 20:07	03/30/21	
Zinc, Total	6010C	20 U	ug/L	20	10	1	03/31/21 20:07	03/30/21	



QC Summary Forms

ALS Environmental—Rochester Laboratory

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Volatile Organic Compounds by GC/MS

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QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		85-122	80-116	87-121
MW-10	R2102872-001	93	98	99
MW-10D	R2102872-002	100	105	105
MW-07	R2102872-003	99	103	103
MW-04	R2102872-004	97	102	103
MW-11	R2102872-005	100	107	108
MW-08	R2102872-006	100	103	105
MW-13	R2102872-007	101	104	106
SW-02	R2102872-008	102	107	107
MW-01S	R2102872-009	103	105	108
MW-01D	R2102872-010	103	104	107
Jackson Hill Rd	R2102872-011	100	103	107
SW-04	R2102872-012	97	100	102
SW-03	R2102872-013	104	106	108
MW-02	R2102872-014	101	104	106
MW-12	R2102872-015	99	102	104
SW-01	R2102872-016	98	101	103
Trip Blank	R2102872-017	99	102	103
Method Blank	RQ2103437-04	97	101	103
Lab Control Sample	RQ2103437-03	96	101	97
MW-04 MS	RQ2103437-05	105	108	106
MW-04 DMS	RQ2103437-06	105	105	105

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QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21
Date Received: 03/26/21
Date Analyzed: 04/2/21
Date Extracted: NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name: MW-04
Lab Code: R2102872-004
Analysis Method: 8260C
Prep Method: EPA 5030C

Units: ug/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike RQ2103437-05			Duplicate Matrix Spike RQ2103437-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	12	63.9	50.0	104	64.4	50.0	106	74-127	<1	30
1,1,2,2-Tetrachloroethane	1.0 U	47.1	50.0	94	48.4	50.0	97	72-122	3	30
1,1,2-Trichloroethane	1.0 U	48.9	50.0	98	49.5	50.0	99	82-121	1	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	46.6	50.0	93	47.0	50.0	94	50-147	<1	30
1,1-Dichloroethane (1,1-DCA)	34	87.0	50.0	107	87.3	50.0	107	74-132	<1	30
1,1-Dichloroethene (1,1-DCE)	3.4	64.4	50.0	122 *	65.5	50.0	124 *	71-118	2	30
1,2,3-Trichlorobenzene	1.0 U	46.7	50.0	93	48.0	50.0	96	59-129	3	30
1,2,4-Trichlorobenzene	1.0 U	53.2	50.0	106	50.2	50.0	100	69-122	6	30
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	50.6	50.0	101	51.7	50.0	103	37-150	2	30
1,2-Dibromoethane	1.0 U	49.3	50.0	99	49.2	50.0	98	67-127	<1	30
1,2-Dichlorobenzene	1.0 U	46.7	50.0	93	47.5	50.0	95	77-120	2	30
1,2-Dichloroethane	1.0 U	46.5	50.0	93	47.4	50.0	95	68-130	2	30
1,2-Dichloropropane	1.0 U	53.6	50.0	107	52.4	50.0	105	79-124	2	30
1,3-Dichlorobenzene	1.0 U	47.8	50.0	96	48.5	50.0	97	83-121	1	30
1,4-Dichlorobenzene	1.0 U	47.0	50.0	94	47.6	50.0	95	82-120	1	30
1,4-Dioxane	40 U	812	1000	81	821	1000	82	44-154	1	30
2-Butanone (MEK)	5.0 U	54.3	50.0	109	52.8	50.0	106	61-137	3	30
2-Hexanone	5.0 U	54.5	50.0	109	53.5	50.0	107	56-132	2	30
4-Methyl-2-pentanone	5.0 U	54.7	50.0	109	54.2	50.0	108	60-141	1	30
Acetone	5.0 U	51.1	50.0	102	51.6	50.0	103	35-183	<1	30
Benzene	1.0 U	51.4	50.0	103	51.9	50.0	104	76-129	1	30
Bromochloromethane	1.0 U	48.0	50.0	96	48.9	50.0	98	80-122	2	30
Bromodichloromethane	1.0 U	48.2	50.0	96	49.0	50.0	98	78-133	2	30
Bromoform	1.0 U	51.4	50.0	103	52.0	50.0	104	58-133	1	30
Bromomethane	1.0 U	38.9	50.0	78	39.7	50.0	79	10-184	2	30
Carbon Disulfide	1.0 U	52.6	50.0	105	53.5	50.0	107	59-140	2	30
Carbon Tetrachloride	1.0 U	51.2	50.0	102	53.4	50.0	107	65-135	4	30
Chlorobenzene	1.0 U	49.4	50.0	99	49.8	50.0	100	76-125	<1	30
Chloroethane	0.90 J	51.6	50.0	101	49.6	50.0	97	48-146	4	30
Chloroform	1.0 U	49.1	50.0	98	48.9	50.0	98	75-130	<1	30
Chloromethane	1.0 U	68.6	50.0	137	59.8	50.0	120	55-160	14	30
Cyclohexane	1.0 U	49.5	50.0	99	46.0	50.0	92	52-145	7	30
Dibromochloromethane	1.0 U	52.9	50.0	106	54.1	50.0	108	72-128	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
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QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21
Date Received: 03/26/21
Date Analyzed: 04/2/21
Date Extracted: NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name: MW-04
Lab Code: R2102872-004
Analysis Method: 8260C
Prep Method: EPA 5030C

Units: ug/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike RQ2103437-05			Duplicate Matrix Spike RQ2103437-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Dichlorodifluoromethane (CFC 12)	1.0 U	53.5	50.0	107	69.5	50.0	139	49-154	26	30
Dichloromethane	1.0 U	48.8	50.0	98	49.1	50.0	98	73-122	<1	30
Ethylbenzene	1.0 U	53.6	50.0	107	52.6	50.0	105	72-134	2	30
Isopropylbenzene (Cumene)	1.0 U	51.3	50.0	103	52.5	50.0	105	77-128	2	30
Methyl Acetate	2.0 U	39.3	50.0	79	38.9	50.0	78	26-121	1	30
Methyl tert-Butyl Ether	1.0 U	49.6	50.0	99	49.6	50.0	99	75-119	<1	30
Methylcyclohexane	1.0 U	47.4	50.0	95	46.4	50.0	93	45-146	2	30
Styrene	1.0 U	48.9	50.0	98	50.3	50.0	101	74-136	3	30
Tetrachloroethene (PCE)	0.68 J	52.0	50.0	103	50.9	50.0	100	72-125	2	30
Toluene	1.0 U	51.1	50.0	102	51.6	50.0	103	79-119	1	30
Trichloroethene (TCE)	4.3	55.5	50.0	102	54.5	50.0	100	74-122	2	30
Trichlorofluoromethane (CFC 11)	1.0 U	52.1	50.0	104	52.1	50.0	104	71-136	<1	30
Vinyl Chloride	1.0 U	58.4	50.0	117	56.8	50.0	114	74-159	3	30
cis-1,2-Dichloroethene	14	65.6	50.0	104	64.6	50.0	102	77-127	2	30
cis-1,3-Dichloropropene	1.0 U	51.4	50.0	103	52.7	50.0	105	52-134	2	30
m,p-Xylenes	2.0 U	108	100	108	107	100	107	80-126	<1	30
o-Xylene	1.0 U	53.8	50.0	108	55.2	50.0	110	79-123	3	30
trans-1,2-Dichloroethene	1.0 U	56.8	50.0	114	55.0	50.0	110	73-118	3	30
trans-1,3-Dichloropropene	1.0 U	52.3	50.0	105	53.6	50.0	107	71-133	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2103437-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	04/02/21 13:17	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	04/02/21 13:17	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	04/02/21 13:17	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:17	
1,4-Dioxane	40 U	40	13	1	04/02/21 13:17	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	04/02/21 13:17	
2-Hexanone	5.0 U	5.0	0.20	1	04/02/21 13:17	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	04/02/21 13:17	
Acetone	5.0 U	5.0	5.0	1	04/02/21 13:17	
Benzene	1.0 U	1.0	0.20	1	04/02/21 13:17	
Bromochloromethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
Bromodichloromethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
Bromoform	1.0 U	1.0	0.25	1	04/02/21 13:17	
Bromomethane	1.0 U	1.0	0.70	1	04/02/21 13:17	
Carbon Disulfide	1.0 U	1.0	0.42	1	04/02/21 13:17	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	04/02/21 13:17	
Chlorobenzene	1.0 U	1.0	0.20	1	04/02/21 13:17	
Chloroethane	1.0 U	1.0	0.23	1	04/02/21 13:17	
Chloroform	1.0 U	1.0	0.24	1	04/02/21 13:17	
Chloromethane	1.0 U	1.0	0.28	1	04/02/21 13:17	
Cyclohexane	1.0 U	1.0	0.26	1	04/02/21 13:17	
Dibromochloromethane	1.0 U	1.0	0.20	1	04/02/21 13:17	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	04/02/21 13:17	
Dichloromethane	1.0 U	1.0	0.65	1	04/02/21 13:17	
Ethylbenzene	1.0 U	1.0	0.20	1	04/02/21 13:17	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	04/02/21 13:17	
Methyl Acetate	2.0 U	2.0	0.33	1	04/02/21 13:17	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	04/02/21 13:17	
Methylcyclohexane	1.0 U	1.0	0.20	1	04/02/21 13:17	
Styrene	1.0 U	1.0	0.20	1	04/02/21 13:17	

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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2103437-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	04/02/21 13:17	
Toluene	1.0 U	1.0	0.20	1	04/02/21 13:17	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	04/02/21 13:17	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	04/02/21 13:17	
Vinyl Chloride	1.0 U	1.0	0.20	1	04/02/21 13:17	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	04/02/21 13:17	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	04/02/21 13:17	
m,p-Xylenes	2.0 U	2.0	0.20	1	04/02/21 13:17	
o-Xylene	1.0 U	1.0	0.20	1	04/02/21 13:17	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	04/02/21 13:17	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	04/02/21 13:17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	04/02/21 13:17	
Dibromofluoromethane	101	80 - 116	04/02/21 13:17	
Toluene-d8	103	87 - 121	04/02/21 13:17	

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QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Analyzed: 04/02/21

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2103437-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	19.3	20.0	97	75-125
1,1,2,2-Tetrachloroethane	8260C	19.0	20.0	95	78-126
1,1,2-Trichloroethane	8260C	19.5	20.0	98	82-121
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	17.8	20.0	89	67-124
1,1-Dichloroethane (1,1-DCA)	8260C	20.4	20.0	102	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	22.8	20.0	114	71-118
1,2,3-Trichlorobenzene	8260C	17.9	20.0	90	67-136
1,2,4-Trichlorobenzene	8260C	18.9	20.0	94	75-132
1,2-Dibromo-3-chloropropane (DBCP)	8260C	21.0	20.0	105	55-136
1,2-Dibromoethane	8260C	19.2	20.0	96	82-127
1,2-Dichlorobenzene	8260C	18.9	20.0	94	80-119
1,2-Dichloroethane	8260C	19.2	20.0	96	71-127
1,2-Dichloropropane	8260C	20.2	20.0	101	80-119
1,3-Dichlorobenzene	8260C	19.2	20.0	96	83-121
1,4-Dichlorobenzene	8260C	19.3	20.0	97	79-119
1,4-Dioxane	8260C	261	400	65	44-154
2-Butanone (MEK)	8260C	21.0	20.0	105	61-137
2-Hexanone	8260C	19.9	20.0	99	63-124
4-Methyl-2-pentanone	8260C	20.4	20.0	102	66-124
Acetone	8260C	18.1	20.0	90	40-161
Benzene	8260C	19.6	20.0	98	79-119
Bromochloromethane	8260C	19.4	20.0	97	81-126
Bromodichloromethane	8260C	19.3	20.0	97	81-123
Bromoform	8260C	23.0	20.0	115	65-146
Bromomethane	8260C	16.5	20.0	83	42-166
Carbon Disulfide	8260C	21.3	20.0	106	66-128
Carbon Tetrachloride	8260C	19.8	20.0	99	70-127
Chlorobenzene	8260C	18.1	20.0	91	80-121
Chloroethane	8260C	19.0	20.0	95	62-131
Chloroform	8260C	19.3	20.0	97	79-120
Chloromethane	8260C	26.9	20.0	135	65-135
Cyclohexane	8260C	21.0	20.0	105	69-120
Dibromochloromethane	8260C	21.8	20.0	109	72-128

Printed 4/6/2021 10:57:29 AM

Superset Reference:21-0000584834 rev 00

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QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Analyzed: 04/02/21

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2103437-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	26.5	20.0	133	59-155
Dichloromethane	8260C	19.4	20.0	97	73-122
Ethylbenzene	8260C	20.0	20.0	100	76-120
Isopropylbenzene (Cumene)	8260C	19.2	20.0	96	77-128
Methyl Acetate	8260C	18.7	20.0	94	61-133
Methyl tert-Butyl Ether	8260C	20.2	20.0	101	75-118
Methylcyclohexane	8260C	20.9	20.0	104	51-129
Styrene	8260C	19.1	20.0	96	80-124
Tetrachloroethene (PCE)	8260C	17.2	20.0	86	72-125
Toluene	8260C	18.9	20.0	94	79-119
Trichloroethene (TCE)	8260C	17.9	20.0	89	74-122
Trichlorofluoromethane (CFC 11)	8260C	20.2	20.0	101	71-136
Vinyl Chloride	8260C	23.3	20.0	117	74-159
cis-1,2-Dichloroethene	8260C	19.6	20.0	98	80-121
cis-1,3-Dichloropropene	8260C	20.6	20.0	103	77-122
m,p-Xylenes	8260C	39.7	40.0	99	80-126
o-Xylene	8260C	19.7	20.0	99	79-123
trans-1,2-Dichloroethene	8260C	21.3	20.0	106	73-118
trans-1,3-Dichloropropene	8260C	22.8	20.0	114	71-133



Metals

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

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ALS Group USA, Corp.
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Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: R2102872-MB1

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	100 U	ug/L	100	30	1	03/31/21 18:29	03/30/21	
Antimony, Total	6010C	60 U	ug/L	60	5	1	03/31/21 18:29	03/30/21	
Arsenic, Total	6010C	10 U	ug/L	10	6	1	03/31/21 18:29	03/30/21	
Barium, Total	6010C	20 U	ug/L	20	3	1	03/31/21 18:29	03/30/21	
Beryllium, Total	6010C	3.0 U	ug/L	3.0	0.2	1	03/31/21 18:29	03/30/21	
Cadmium, Total	6010C	5.0 U	ug/L	5.0	0.4	1	03/31/21 18:29	03/30/21	
Calcium, Total	6010C	1000 U	ug/L	1000	300	1	03/31/21 18:29	03/30/21	
Chromium, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 18:29	03/30/21	
Cobalt, Total	6010C	50 U	ug/L	50	0.9	1	03/31/21 18:29	03/30/21	
Copper, Total	6010C	20 U	ug/L	20	4	1	03/31/21 18:29	03/30/21	
Iron, Total	6010C	100 U	ug/L	100	70	1	03/31/21 18:29	03/30/21	
Lead, Total	6010C	50 U	ug/L	50	3	1	03/31/21 18:29	03/30/21	
Magnesium, Total	6010C	1000 U	ug/L	1000	30	1	03/31/21 18:29	03/30/21	
Manganese, Total	6010C	10 U	ug/L	10	4	1	03/31/21 18:29	03/30/21	
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 09:52	03/31/21	
Nickel, Total	6010C	40 U	ug/L	40	3	1	03/31/21 18:29	03/30/21	
Potassium, Total	6010C	2000 U	ug/L	2000	200	1	03/31/21 18:29	03/30/21	
Selenium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:29	03/30/21	
Silver, Total	6010C	10 U	ug/L	10	0.6	1	03/31/21 18:29	03/30/21	
Sodium, Total	6010C	1000 U	ug/L	1000	200	1	03/31/21 18:29	03/30/21	
Thallium, Total	6010C	10 U	ug/L	10	7	1	03/31/21 18:29	03/30/21	
Vanadium, Total	6010C	50 U	ug/L	50	0.7	1	03/31/21 18:29	03/30/21	
Zinc, Total	6010C	20 U	ug/L	20	10	1	03/31/21 18:29	03/30/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: R2102872-MB2

Service Request: R2102872
Date Collected: NA
Date Received: NA

Basis: NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury, Total	7470A	0.20 U	ug/L	0.20	0.08	1	04/01/21 11:19	03/31/21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Collected: 03/25/21
Date Received: 03/26/21
Date Analyzed: 03/31/21 - 04/01/21

Duplicate Matrix Spike Summary
Inorganic Parameters

Sample Name: MW-04
Lab Code: R2102872-004

Units: ug/L
Basis: NA

Matrix Spike R2102872-004MS						Duplicate Matrix Spike R2102872-004DMS					
Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Aluminum, Total	6010C	590	2580	2000	99	2540	2000	97	75-125	2	20
Antimony, Total	6010C	60 U	511	500	102	502	500	100	75-125	2	20
Arsenic, Total	6010C	10 U	44	40	109	41	40	103	75-125	5	20
Barium, Total	6010C	31	2120	2000	104	2100	2000	104	75-125	<1	20
Beryllium, Total	6010C	3.0 U	51.1	50.0	102	50.7	50.0	101	75-125	<1	20
Cadmium, Total	6010C	5.0 U	51.5	50.0	103	50.8	50.0	102	75-125	1	20
Calcium, Total	6010C	48300	50900	2000	129 #	49700	2000	73 #	75-125	2	20
Chromium, Total	6010C	0.8 J	211	200	105	209	200	104	75-125	<1	20
Cobalt, Total	6010C	50 U	516	500	103	511	500	102	75-125	<1	20
Copper, Total	6010C	20 U	247	250	99	245	250	98	75-125	<1	20
Iron, Total	6010C	550	1570	1000	101	1540	1000	99	75-125	2	20
Lead, Total	6010C	50 U	509	500	102	507	500	101	75-125	<1	20
Magnesium, Total	6010C	12500	14700	2000	109 #	14300	2000	93 #	75-125	2	20
Manganese, Total	6010C	1430	1930	500	100	1870	500	88	75-125	3	20
Mercury, Total	7470A	0.20 U	1.03	1.00	103	1.05	1.00	105	75-125	3	20
Nickel, Total	6010C	40 U	511	500	102	508	500	102	75-125	<1	20
Potassium, Total	6010C	2600	22300	20000	98	22100	20000	97	75-125	<1	20
Selenium, Total	6010C	10 U	1020	1010	101	1010	1010	100	75-125	<1	20
Silver, Total	6010C	10 U	50	50	99	49	50	99	75-125	<1	20
Sodium, Total	6010C	4200	24400	20000	101	24200	20000	100	75-125	<1	20
Thallium, Total	6010C	10 U	1930	2000	97	1930	2000	96	75-125	<1	20
Vanadium, Total	6010C	50 U	515	500	103	511	500	102	75-125	<1	20
Zinc, Total	6010C	17 J	527	500	102	525	500	102	75-125	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Analyzed: 03/31/21 - 04/01/21

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
R2102872-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum, Total	6010C	2010	2000	101	80-120
Antimony, Total	6010C	497	500	99	80-120
Arsenic, Total	6010C	43.0	40	108	80-120
Barium, Total	6010C	2090	2000	104	80-120
Beryllium, Total	6010C	50.4	50.0	101	80-120
Cadmium, Total	6010C	51.8	50.0	104	80-120
Calcium, Total	6010C	2100	2000	103	80-120
Chromium, Total	6010C	209	200	105	80-120
Cobalt, Total	6010C	521	500	104	80-120
Copper, Total	6010C	245	250	98	80-120
Iron, Total	6010C	1020	1000	102	80-120
Lead, Total	6010C	512	500	102	80-120
Magnesium, Total	6010C	1990	2000	100	80-120
Manganese, Total	6010C	507	500	101	80-120
Mercury, Total	7470A	1.05	1.00	105	80-120
Nickel, Total	6010C	520	500	104	80-120
Potassium, Total	6010C	19200	20000	96	80-120
Selenium, Total	6010C	1010	1010	100	80-120
Silver, Total	6010C	48.6	50	97	80-120
Sodium, Total	6010C	20100	20000	101	80-120
Thallium, Total	6010C	1870	2000	94	80-120
Vanadium, Total	6010C	509	500	102	80-120
Zinc, Total	6010C	514	500	103	80-120

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: LU Engineers
Project: Cuba Landfill/50191.01
Sample Matrix: Water

Service Request: R2102872
Date Analyzed: 04/01/21

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
R2102872-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury, Total	7470A	1.05	1.00	105	80-120

SITE-WIDE INSPECTION FORM

Cuba Landfill Site
Town of Cuba, Allegany County

NAME OF INSPECTOR: BS/KM

COMPANY OF INSPECTOR: Lv Engineers

DATE OF INSPECTION: 03/25/2021

CURRENT USE OF SITE: Closed Landfill

EVIDENCE OF VANDALISM (wells, vents, protective cover damage):

N/A

EVIDENCE OF COVER SYSTEM INTRUSION (ruts, burrows, excavations):

N/A

EVIDENCE OF PENETRATIONS (poles, posts, stakes):

N/A

EVIDENCE OF HUMAN ENCROACHMENT (trash, fire pits, tire/footprints):

N/A

GENERAL SITE CONDITION (gates, access road, culverts):

Good. Gates + wells are locked. Access road in good condition w/ exception of standing water at the base of the landfill

EVIDENCE OF EROSION, SETTLEMENT RUTTING, POTHOLE, SLIPPAGE:

N/A

EVIDENCE OF STRESSED VEGETATION OR BARE SPOTS: ~ 1/4 of the
willow trees on the eastern side appear dead

EVIDENCE OF DAMAGE TO WELLS/VENTS: N/A

EVIDENCE OF COVER SYSTEM SUBSIDENCE NEAR WELLS/VENTS:
Northern most wells MW-1 + MW-15 are uplifted

EVIDENCE OF WILDLIFE INTRUSION (nests, burrows, wasp nests):
N/A

EVIDENCE OF SPILLED LIQUIDS (well tampering/vent blowout):
N/A

GAS VENTS: Unusual conditions- belching, whistling, excessive gas production:
N/A

MONITORING WELLS: Well covers in place and secure: Yes

EVIDENCE OF DRAINAGE ISSUES (i.e., blockage due to sedimentation, ponding):
N/A

EVIDENCE OF SWALE OVERFLOW (i.e., stormwater pathway strays from swales):
N/A

EVIDENCE OF WILLOW TREE MORTALITY:

See previous comment

EVIDENCE OF PHYTOREMEDIATION FAILURE (i.e., excessive leachate on access road south of willow trees):

NA

LANDFILL/GAS VENT MONITORING DATA

[illegible]

Appendix E

Institutional Control/Engineering Control Certification

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7):

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.
- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site Details

Box 1

Site No. **902012**

Site Name **Cuba Municipal Waste Disposal**

Site Address: JACKSON HILL ROAD **Zip Code:** 14727

City/Town: Cuba

County: Allegany

Site Acreage: 39.780

Reporting Period: January 25, 2021 to January 25, 2022

YES NO

1. Is the information above correct?



If NO, include handwritten above or on a separate sheet.

2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?



3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?



4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?



If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.

5. Is the site currently undergoing development?



Box 2

YES NO

6. Is the current site use consistent with the use(s) listed below?
Closed Landfill



7. Are all ICs in place and functioning as designed?



IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

Description of Institutional ControlsParcel**155.00-1-6.15**Owner

Village of Cuba

Institutional Control

Site Management Plan

Ground Water Use Restriction
 Soil Management Plan
 Landuse Restriction
 Surface Water Use Restriction
 Monitoring Plan

A revised Site Management Plan (SMP) was approved in 2021 to manage remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Notice in accordance with ECL Article 71, Title 36.

A Declaration of Covenants and Restrictions (DCR) has been filed on the two entire parcels (~40 acres) that provides an enforceable legal instrument to ensure compliance with the SMP and all ECs and ICs placed on the Site. The DCR was filed with Allegany County in October 2011, and recorded on 10/11/11 as Instrument No.2011-50956.

Because there is remaining contamination at this site, Engineering Controls (ECs) and Institutional Controls (ICs) have been implemented to protect public health and the environment for future use. The Controlled Property has the following Engineering Controls:

1. An engineered landfill cap;
2. Fourteen passive gas vents were installed within the landfill cap boundaries;
3. Four drainage swales were included in the landfill cap design to promote efficient drainage over the cap;
4. One hundred sixty eight willow trees were planted south of the retention pond to mitigate potential leachate seepage south of the site;
5. To minimize the potential of vehicular traffic, 8-ft chain link fence gates were installed at the entrances of the property on Deep Snow Road, one to the southwest of the site and one to the north of the site. Gates have been secured with locks to minimize the potential for trespassing;
6. An access road to control access to the contaminated area;and
7. Sentinel wells for long-term monitoring of site groundwater.

A series of ICs are required to implement, maintain and monitor these ECs. The DCR requires compliance with these ICs, to ensure that:

- All ECs must be operated and maintained as specified in the SMP;and
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP; and
- Groundwater, soil vapor, and other environmental or public health monitoring must be performed as defined in the SMP; and
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in the SMP; and
- An exclusion against any uses other than for a landfill;and
- On-site environmental monitoring devices, including but not limited to, groundwater monitoring wells and

passive soil gas vents, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

In addition, the DCR places the following restrictions on the entire property:

- The property may only be used for its current use as a landfill.
- The property may not be used for a higher level of use without additional remediation and amendment of the DCR, as approved by the NYSDEC.
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area, and any potential impacts that are identified must be monitored or mitigated.
- Vegetable gardens and farming on the property are prohibited.
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the controlled property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

NYSDEC retains the right to access such controlled property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

These EC/ICs are designed to:

- Prevent ingestion/direct contact with contaminated soil
- Prevent exposure to contaminants volatilizing from contaminated soil
- Prevent exposure to onsite groundwater
- Prevent the migration of LNAPL from the small impacted area of the landfill and the release of LNAPL contaminants into groundwater.

155.00-1-7

VILLAGE OF CUBA

Soil Management Plan

Monitoring Plan

Ground Water Use Restriction

Landuse Restriction

Surface Water Use Restriction

Site Management Plan

A revised Site Management Plan (SMP) was approved in 2021 to manage remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Notice in accordance with ECL Article 71, Title 36.

A Declaration of Covenants and Restrictions (DCR) has been filed on the two entire parcels (~40 acres) that provides an enforceable legal instrument to ensure compliance with the SMP and all ECs and ICs placed on the Site. The DCR was recorded with Allegany County in October 2011 (recorded on 10/11/11, instrument no. 2011-50956).

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5. To minimize the potential of vehicular traffic, 8-ft chain link fence gates were installed at the entrances of the property on Deep Snow Road, one to the southwest of the site and one to the north of the site. Gates have been secured with locks to minimize the potential for trespassing;

6. An access road to control access to the contaminated area;and

7. Sentinel wells for long-term monitoring of site groundwater.

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- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP; and
- Groundwater, soil vapor, and other environmental or public health monitoring must be performed as defined in the SMP; and
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in the SMP; and
- An exclusion against any uses other than for a landfill;and
- On-site environmental monitoring devices, including but not limited to, groundwater monitoring wells and passive soil gas vents, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

In addition, the DCR places the following restrictions on the entire property:

- The property may only be used for its current use as a landfill.
- The property may not be used for a higher level of use without additional remediation and amendment of the DCR, as approved by the NYSDEC.
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area, and any potential impacts that are identified must be monitored or mitigated.
- Vegetable gardens and farming on the property are prohibited.
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the controlled property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

NYSDEC retains the right to access such controlled property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

These EC/ICs are designed to:

- Prevent ingestion/direct contact with contaminated soil
- Prevent exposure to contaminants volatilizing from contaminated soil
- Prevent exposure to onsite groundwater
- Prevent the migration of LNAPL from the small impacted area of the landfill and the release of LNAPL contaminants into groundwater.

Parcel	Engineering Control
155.00-1-6.15	Cover System Subsurface Barriers Fencing/Access Control
155.00-1-7	Subsurface Barriers Cover System Fencing/Access Control

Box 5

Periodic Review Report (PRR) Certification Statements

- I certify by checking "YES" below that:
 - the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;
 - to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO
☒ ☐
- For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:
 - The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
 - nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
 - access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
 - nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
 - if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO
☒ ☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 902012

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Gregory L. Andrus, P.E. at 339 East Avenue Suite 200 Rochester, NY 14604
print name print business address

am certifying as Owner's Representative (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.


Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

2/22/22
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Michael E. Hanscom at 339 East Ave, Suite 200, Rochester, NY 14604,
print name print business address

am certifying as a Professional Engineer for the Village of Cuba, NY (Owner)
(Owner or Remedial Party)

Michael E. Hanscom

Signature of Professional Engineer, for the Owner or
Remedial Party, Rendering Certification



Stamp

(Required for PE)

03/16/22

Date