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

T 608.826.3600
TRCcompanies.com

July 21, 2023

Ms. Cindy Koepke
Hydrogeologist
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Refuse Hideaway Landfill
June 2023 Operation Monitoring and Maintenance Activities

Dear Cindy:

TRC completed the following operation, monitoring, and maintenance activities at the Refuse Hideaway Landfill (the Site) in Middleton, WI in June 2023.

- June 9, 2023 – Bi-weekly Site Inspection
- June 13, 2023 - Gas Probe Monitoring
- June 30, 2023 – Monthly Site and Cap Inspections, and Leachate Sample Collection

Electrical Upgrades

TRC and Van Ert Electrical Company Inc. (Van Ert) are working to restore electrical service to the Site to allow for system operation. Van Ert was onsite on June 5, 2023, to complete the harmonics voltage monitoring testing work. The instruments were installed on May 23, 2023, and remained in place until June 5, 2023. A report was provided by Van Ert summarizing details of the harmonics voltage monitoring, electrical motor testing, and the one-line diagram. TRC conducted a review of the report submittal and provided minor comments and concurrence via email on June 28, 2023. Van Ert is working to procure the necessary equipment for the electrical system repairs/upgrades.

Gas Extraction System

The gas extraction system (GES) was restarted in October 2022 and was operated until December 15, 2022, when an overvoltage fault was observed and the system was shut down until the electrical service to the Site is repaired.

Perimeter gas probe monitoring was conducted at the site on June 16, 2023.

Field data from system and gas probe monitoring is included in Attachment 1.

Leachate Extraction System

The leachate extraction system remained off during the month of June due to the issues with the electrical service to the Site.

The leachate tank level was gauged on June 6, and June 30, 2023, and contained 74.5 inches and 35.0 inches of leachate, respectively.

A leachate sample was collected on June 30, 2023, from the extraction system storage tank and analyzed by Eurofins for ICP Metals and Mercury per the Section 2.01 of the Wastewater Discharge Permit NTO-5.11. The laboratory analytical report is provided in Attachment 2.

Cap Inspection

TRC conducted a monthly inspection of the landfill cap and stormwater conveyance features on June 30, 2023. The landfill cap and stormwater conveyance features are operational. TRC will continue to observe the condition of the features as the growing season continues. An inspection form with further details is provided in Attachment 1 and a photographic log is provided in Attachment 3.

If you have any questions, please contact Andrew Stehn at astehn@trccompanies.com or 608-807-8112.

Sincerely,

TRC

Andrew Stehn, PE
Project Manager

Ted O'Connell
Quality Assurance

Attachments:
1. June 2023 Monitoring Results
2. Laboratory Analytical Report – Leachate Sample
3. Photographic Log

Attachment 1

June 2023 Monitoring Results

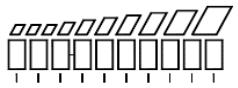
Bi-weekly - System Inspection Log
Landfill Gas Extraction and Leachate Pump System
WDNR - Refuse Highway Landfill
Middleton, Wisconsin

TRC Operator Name:	Will Hazeltine		
Date:	6/9/2023	Arrival Time: 1:05 PM	Departure Time: 2:30 PM

Site Conditions		Equipment	
Weather Conditions:	clear	Gas/Instrument Type:	GEMS 2000
Ground Condition:	dry	Serial Number:	11668
Barometric Pressure:	29.9	Date Last Calibrated:	NM
Barometric Pressure Trend:	falling	Method:	standard field calibration gas
Temperature:	82	Pressure Instrument:	Dwyer Manometer

Landfill Gas Extraction System[1] Landfill Gas System Off Line						
System	***Location***	***Tag #***	***Equipment Description***	***Set Point***	***Typical Range***	***Field Reading***
Blower Motor	Remote	GHS-BLR-301	Amperage	-	3 - 4 amps	NM
			Speed	-	1800 - 1900 rpm	NM
			Frequency	-	30 - 35 Hz	NM
	HMI		Amperage	-	3 -4 amps	NM
	HMI		Speed	-		NM
	HMI		Hours	-	-	NM
Blower Operating (yes/no). Note excessive noise or issues observed.						
Blower Inlet	HMI	PT-301	Blower Inlet Vacuum	7 in. w.c.	7 in. w.c.	NM
	HMI	TE-301	Blower Inlet Temperature	-	50 - 90 °F	NM
	Local	GHS-PI-301	Blower Inlet Vacuum	7 in. w.c.	7 in. w.c.	NM
	Local	GHS-TI-301	Blower Inlet Temperature	-	50 - 90 °F	NM
	Local	Sample Port	Gas Composition - % Methane	-		NM
			Gas Composition - % CO2	-		NM
			Gas Composition - % Oxygen	-		NM
			Gas Composition - % Balance	-		NM
Demister	Local	GHS-PDI-301	Demister Differential Pressure	-	1-2 in w.c.	NM
	Local		Slight Glass: Liquid Present	-	-	NM
	HMI	LS-701	Level Indication	-	-	NM
Blower Outlet	HMI	PT-302	Blower Outlet Flow Pressure	-	-	NM
	HMI	TE-302	Blower Outlet Temperature	-	50 - 90 °F	NM
	HMI	PDT-301	Blower Outlet Flow Differential Pressure	-	1-2 in w.c .	NM
	HMI	-	Blower Outlet Flow Rate	-	180 - 190 scfm	NM
	Local	GHS-PI-302	Blower Outlet Flow Pressure	-	-	NM
	Local	GHS-TI-302	Blower Outlet Temperature	-	50 - 90 °F	NM
	Local	Sample Port	Gas Composition - % Methane	-		NM
			Gas Composition - % CO2	-		NM
			Gas Composition - % Oxygen	-		NM
			Gas Composition - % Balance	-		NM
Branch Headers	Local	North	North Branch Vacuum	-	6 - 7 in w.c.	NM
	Local	North	Valve Position	6 turns open /6	6 turns open	NM
	Local	North Sample Port	Gas Composition - % Methane	-		NM
			Gas Composition - % CO2	-		NM
			Gas Composition - % Oxygen	-		NM
			Gas Composition - % Balance	-		NM
	Local	Central	Central Branch Vacuum	-	6 - 7 in w.c.	NM
	Local	Central	Valve Position	-	6 turns open	NM
	Local	Central Sample Port	Gas Composition - % Methane	-		NM
			Gas Composition - % CO2	-		NM
			Gas Composition - % Oxygen	-		NM
			Gas Composition - % Balance	-		NM
	Local	South	South Branch Vacuum	-	6 - 7 in w.c.	NM
	Local	South	Valve Position	-	6 turns open	NM
	Local	South Sample Port	Gas Composition - % Methane	-		NM
			Gas Composition - % CO2	-		NM
			Gas Composition - % Oxygen	-		NM
			Gas Composition - % Balance	-		NM

Air Compressor System[1,3,4] Air Compressor System Off Line								
Operational Settings	Pressure Set Points					Condensate Set Points		
	Tank Low (psi)	Tank High (psi)	Well Field (psi)	On (min.)	Off (min.)	Open (sec.)	Closed (min.)	Test Operation

Air Dryer System[2]		Electrical Status		HMI Heater/Air Conditioner	
System Operational:	YES	3-Phase Power Indicator:	__3__ of 3	Operational	yes - Comment 2
Condensate Drain Operational:	YES	GFI 1 Status:	Green	Temperature	94
Alarm Indictor:	OFF	GFI 2 Status:	Green	Filter Cleaned	yes
Condenser Cleaned[2]:	NO	**Leachate Tank/Loadout**			
Dew Point Indicator:		Liquid Level (inches):	74.5	Visual Check:	
	Indicate which bars are green(G) or red (R) and note (F) if flashing.	***Contact WDNR if level is above***	**71**	· Evidence of Tank Overflow:	no
		Leak Detection Test Completed:	no	· Inspect concrete pad and storm sewer for damage or backup	
		Overfill Float Functional[5]:	Comment 3		
		Exhaust Stack			
		Drain Stack Sump (vol. removed)	0	Stack Condition[4]:	

1. Check all air lines and gas extraction lines for leaks during each site visit. Drain inline air filters and replace as needed.

2. Air Dryer - Clean the condenser monthly using an air jet (max. 2 bar / 30 psig) inside out. Make sure not to damage the aluminum lamellae of the cooling package.

3. On a quarterly basis change the oil and check/clean the air filters and intercoolers for the air compressor.

4. Inspect mounting brackets and bolts for the air compressor and effluent stack for tightness.

5. Test overfill float operation on a monthly basis.

Comments/Notes:
NM - Not Measured
1. The protective fencing previously installed around the air lines for the leachate extraction wells were inspected following the mowing event. No issues were observed with the fences and/or the air lines.
2. Air conditioner turned on during the inspection.
3. Float overflow light sensor not working.

Data Entered By: Will Hazeltine
Checked By: Molly Wagler

REFUSE HIDEAWAY LANDFILL
GAS PROBE MONITORING FORM

TECHNICIAN(S): J. Roelke

DATE: 6/13/2023

START TIME: 6:55 AM

END TIME: 11:30 AM

GAS/INSTRUMENT TYPE: **GEM 2000**

SERIAL NO.: 11668

DATE LAST CALIBRATED: 6/13/2023

METHOD: Standard Calibration Gases

PRESS INSTRUMENT : Manometer

WEATHER CONDITIONS: Cloudy

TEMPERATURE: 52 °F

BAROMETRIC PRESSURE & TREND: 29.71 in. Hg, steady

GROUND CONDITIONS: dry

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-1D	7:16	0.0	27	1.3	7.6	7.2	(2)
GP-1S	7:18	0.0	>100	5.7	14.0	0.0	(2)
GP-2D	7:21	0.10	42	2.1	5.7	11.7	(1)
GP-2S	7:23	0.0	>100	5.0	13.9	0.0	(1)
GP-3	7:27	0.0	>100	9.0	14.6	4.0	(1)
GP-4	7:32	0.0	0.0	0.0	5.0	16.9	(1)
GP-5	7:36	0.0	0.0	0.0	2.8	17.4	(2)
GP-6	7:41	0.0	0.0	8.8	2.4	18.7	(1)
GP-7	7:48	0.0	0.0	0.0	2.5	18.5	(2)
GP-8	7:57	0.0	0.0	0.0	3.7	17.9	(2)
GP-9	8:02	0.0	0.0	0.0	2.2	19.0	(1)
GP-10	8:06	0.0	0.0	0.0	3.5	15.7	(1)
GP-11D	8:11	0.0	>100	6.4	13.8	0.4	(2)
GP-11S	8:13	0.0	78	3.9	11.2	0.0	(2)
GP-12D	8:20	0.0	>100	12.8	16.6	4.5	(1) Stable readings at 2 minutes.
GP-12S	8:23	0.0	0.0	0.0	5.1	14.0	(1)
GP-13D	8:28	0.0	17	0.8	5.4	12.1	(2)
GP-13S	8:30	0.0	0.0	0.0	7.7	5.1	(2)

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-16D	8:50	0.0	0.0	0.0	0.9	19.3	(2)
GP-16S	8:52	0.0	0.0	0.0	2.2	19.0	(2)
GP-17D	8:43	0.0	0.0	0.0	3.7	15.9	(1)
GP-17M	8:45	0.0	0.0	0.0	2.4	18.7	(1)
GP-17S	8:47	0.0	0.0	0.0	3.1	18.2	(1)
GP-18D	8:54	0.0	0.0	0.0	4.3	14.4	(2)
GP-18M	8:56	0.0	0.0	0.0	3.5	16.3	(2)
GP-18S	8:58	0.0	0.0	0.0	5.5	8.8	(2)
GP-19$^{85-100}$	9:44	0.0	0.0	0.0	0.0	20.8	(1)
GP-19$^{50-70}$	9:46	0.0	0.0	0.0	0.9	19.9	(1)
GP-19$^{25-40}$	9:48	0.0	0.0	0.0	0.4	20.5	(1)
GP19$^{2-15}$	9:50	0.0	0.0	0.0	0.0	20.8	(1)
GP-20$^{85-100}$	9:35	0.10	0.0	0.0	0.5	20.1	(2)
GP-20$^{50-70}$	9:37	0.03	0.0	0.0	0.0	20.8	(2)
GP-20$^{25-40}$	9:39	0.0	0.0	0.0	0.2	20.6	(2)
GP-20$^{2-15}$	9:41	0.0	0.0	0.0	0.5	20.3	(2)
GP-21$^{85-100}$	9:26	0.28	0.0	0.0	0.9	19.2	(2)
GP-21$^{50-70}$	9:28	0.05	0.0	0.0	0.2	20.5	(2)
GP-21$^{25-40}$	9:30	0.03	0.0	0.0	0.2	20.4	(2)
GP-21$^{2-15}$	9:32	0.0	0.0	0.0	0.5	20.5	(2)
GP-22$^{85-100}$	9:57	0.03	0.0	0.0	2.1	19.4	(2)
GP-22$^{50-70}$	9:59	0.04	0.0	0.0	2.6	17.7	(2)
GP-22$^{25-40}$	10:01	0.0	0.0	0.0	1.3	19.8	(2)
GP-22$^{2-15}$	10:03	0.0	0.0	0.0	2.6	18.9	(2)

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-23$^{85\text{-}100}$	10:08	0.0	0.0	0.0	1.2	19.7	(2)
GP-23$^{50\text{-}70}$	10:10	0.0	0.0	0.0	2.2	18.8	(2)
GP-23$^{25\text{-}40}$	10:12	0.0	0.0	0.0	4.6	16.3	(2)
GP-23$^{2\text{-}15}$	10:14	0.0	0.0	0.0	3.8	17.2	(2)
GP-24$^{85\text{-}100}$	10:19	0.0	0.0	0.0	13.0	4.4	(2)
GP-24$^{50\text{-}70}$	10:21	0.0	0.0	0.0	3.2	16,7	(2)
GP-24$^{25\text{-}40}$	10:23	0.0	0.0	0.0	4.5	16.5	(2)
GP-24$^{2\text{-}15}$	10:25	0.0	0.0	0.0	4.0	16.0	(2)
GPW-1D	11:16	0.42	0.0	0.0	1.7	18.5	(1)
GPW-1M	11:18	0.44	0.0	0.0	1.6	18.0	(1)
GPW-1S	11:20	0.0	0.0	0.0	0.9	19.7	(1)
G-1D	7:09	0.03	>100	5.7	16.6	0.0	(1)
G-1S	7:11	0.04	>100	22.6	22.1	0.0	(1)
G-2D	8:34	0.0	0.0	0.0	3.1	15.8	(1)
G-2S	8:36	0.0	>100	8.5	17.8	0.0	(1) Stable readings at 2 minutes.
G-5	7:52	0.22	0.0	0.0	4.6	15.9	(1)
G-6	7:03	0.0	0.0	0.0	1.0	19.2	(1)
G-8	9:21	0.0	0.0	0.0	0.0	20.8	(1)
G-9	9:09	0.04	0.0	0.0	0.0	20.4	(1)
G-10	10:33	0.34	0.0	0.0	1.4	17.3	(1)
Speedway Office	7:13	0.0	0.0	0.0	0.0	20.8	Open to ATM

NOTES:

(1); Locked probe casing.

(2): Probe is above casing and cannot be locked.

(3): No cap for probe casing and cannot be locked.

Key:

Shallow or 2'-15'
Medium or 25'-40'
Deep or 50'-70'
85'-100'

Entered by: J. Roelke 6/13/2023
Checked by: M. Wagler 7/5/2023

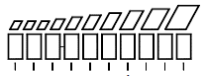
Monthly System Inspection Log
Landfill Gas Extraction and Leachate Pump System
WDNR - Refuse Highway Landfill
Middleton, Wisconsin

TRC Operator Name: T. Perkins		
Date: 6/30/2023	**Arrival Time: 13:30**	**Departure Time: 15:45**

Site Conditions	Initial[1]	Final[2]	Equipment	
Weather Conditions:	Some Sun, hazy	NM	Gas/Instrument Type:	NA
Ground Condition:	Dry	NM	Serial Number:	NA
Barometric Pressure:	29.89 in. Hg	NM	Date Last Calibrated:	NA
Barometric Pressure Trend:	Falling	NM	Method:	Standard field calibration
Temperature:	86	NM	Pressure Instrument:	Dwyer Series 475 Manometer

Landfill Gas Extraction System[3] Landfill Gas Extraction System Off Line							
System	***Location***	***Tag #***	***Equipment Description***	***Set Point***	***Typical Range***	***Initial Field Reading [1]***	***Final Field Reading [2]***
Blower Motor	Remote	GHS-BLR-301	Amperage	-	3 - 4 amps	NM	--
			Speed	-	1800 - 1900 rpm	NM	--
			Frequency	-	30 - 35 Hz	NM	--
	HMI		Amperage	-	3 -4 amps	NM	--
	HMI		Speed	-		NM	--
	HMI		Hours	-	-	NM	--
Blower Operating (YES). Note excessive noise or issues observed.							
Blower Inlet	HMI	PT-301	Blower Inlet Vacuum	7 in. w.c.	7 in. w.c.	NM	NM
	HMI	TE-301	Blower Inlet Temperature	-	50 - 90 °F	NM	NM
	Local	GHS-PI-301	Blower Inlet Vacuum	7 in. w.c.	7 in. w.c.	NM	NM
	Local	GHS-TI-301	Blower Inlet Temperature	-	50 - 90 °F	NM	NM
	Local	Sample Port	Gas Composition - % Methane	-		NM	NM
			Gas Composition - % CO2	-		NM	NM
			Gas Composition - % Oxygen	-		NM	NM
			Gas Composition - % Balance	-		NM	NM
Demister	Local	GHS-PDI-301	Demister Differential Pressure	-	1-2 in w.c	NM	--
	Local		Slight Glass: Liquid Present	-	-		--
	HMI	LS-701	Level Indication	-	-		--
Blower Outlet	HMI	PT-302	Blower Outlet Flow Pressure	-	-	NM	NM
	HMI	TE-302	Blower Outlet Temperature	-	50 - 90 °F	NM	NM
	HMI	PDT-301	Blower Outlet Flow Differential Pressure	-	1-2 in w.c	NM	NM
	HMI	-	Blower Outlet Flow Rate	-	180 - 190 scfm	NM	NM
	Local	GHS-PI-302	Blower Outlet Flow Pressure	-	-	NM	NM
	Local	GHS-TI-302	Blower Outlet Temperature	-	50 - 90 °F	NM	NM
	Local	Sample Port	Gas Composition - % Methane	-		NM	NM
			Gas Composition - % CO2	-		NM	NM
			Gas Composition - % Oxygen	-		NM	NM
			Gas Composition - % Balance	-		NM	NM
Branch Headers	Local	North	North Branch Vacuum	-	6 - 7 in w.c.	NM	NM
	Local	North	Valve Position	6 turns open /6	6 turns open	NM	NM
	Local	North Sample Port	Gas Composition - % Methane	-		NM	NM
			Gas Composition - % CO2	-		NM	NM
			Gas Composition - % Oxygen	-		NM	NM
			Gas Composition - % Balance	-		NM	NM
	Local	Central	Central Branch Vacuum	-	6 - 7 in w.c.	NM	NM
	Local	Central	Valve Position	-	6 turns open	NM	NM
	Local	Central Sample Port	Gas Composition - % Methane	-		NM	NM
			Gas Composition - % CO2	-		NM	NM
			Gas Composition - % Oxygen	-		NM	NM
			Gas Composition - % Balance	-		NM	NM
	Local	South	South Branch Vacuum	-	6 - 7 in w.c.	NM	NM
	Local	South	Valve Position	-	6 turns open	NM	NM
	Local	South Sample Port	Gas Composition - % Methane	-		NM	NM
			Gas Composition - % CO2	-		NM	NM
			Gas Composition - % Oxygen	-		NM	NM
			Gas Composition - % Balance	-		NM	NM

Air Compressor System[3,5,6]								
Operational Settings	Pressure Set Points					Condensate Set Points		
	Tank Low (psi)	Tank High (psi)	Well Field (psi)	On (min.)	Off (min.)	Open (sec.)	Closed (min.)	Test Operation
	NOT OPERATING							(yes/no)

Air Dryer System[4]		Electrical Status		HMI Heater/Air Conditioner	
System Operational:	NM	3-Phase Power Indicator:	3 of 3	Operational	Yes
Condensate Drain Operational:	NM	GFI 1 Status:	GREEN	Temperature	87
Alarm Indictor:	NM	GFI 2 Status:	GREEN	Filter Cleaned	No
Condenser Cleaned[2]:	No	**Leachate Tank/Loadout**			
Dew Point Indicator:		Liquid Level (inches):	35	Visual Check:	
	Indicate which bars are green(G) or red (R) and note (F) if flashing.	***Contact WDNR if level is above***	71 inches	· Evidence of Tank Overflow:	No
		Leak Detection Test Completed:	No	· Inspect concrete pad and storm sewer for damage or backup	
		Overfill Float Functional[7]	Comment 2		
		Exhaust Stack			
		Drain Stack Sump (vol. removed)	0	Stack Condition[6]:	Good

1. Initial site conditions represents readings collected upon arrival to the site and initial field readings are collected prior to the landfill balancing.

2. Final site conditions represents readings collected upon departure from the site and final field readings are collected following the landfill balancing.

3. Check all air lines and gas extraction lines for leaks during each site visit. Drain inline air filters and replace as needed.

4. Air Dryer - Clean the condenser monthly using an air jet (max. 2 bar / 30 psig) inside out. Make sure not to damage the aluminum lamellae of the cooling package.

5. On a quarterly basis change the oil and check/clean the air filters and intercoolers for the air compressor.

6. Inspect mounting brackets and bolts for the air compressor and effluent stack for tightness.

7. Test overfill float operation on a monthly basis.

Comments/Notes:
NM = Not Measured
1. Conducted cap inspection
2. Leachate tank overflow alarm light not functioning

Data Entered By: T. Perkins 7/17/2023
Checked By: M. Wagler 7/18/2023

Cap Inspection
Note: Photograph all issues encountered during inspection
Note: Keep vehicle traffic to gravel roadways, avoid driving on the landfill surface
Is the landfill surface covered in snow (Y/N)? No
Inspect the landfill surface when not covered in snow. Describe the condition and any issues observed for each category below:
Cap integrity: Cap integrity is acceptable. Fencing around GW-1 and GW-2 are damaged but still provide protection from mowing activities. See photo #5 Snow fencing was previously installed and remains in place at GW-2, GW-4, GW-7, GW-8, GW-9, GW-10, GW-11, GW-12, and GW-13 to protect Gas Extraction Well airlines during mowing events.
Condition of drainage ways: West Drainage Ditch - An area of vegetation die off was observed at the drainage path to the north. See photo# 1. This area was previously identified as having less positive slope than its surrounding and was regraded during 2020-2021 grading work at the site. The final post construction survey showed positive slope. East Drainage Ditch - Remaining riprap at the northern culvert appears stable. See photo # 2. Drainage ways are acceptable with minimal to no changes from previous conditions aside from those described above.
Extent of vegetation cover: Vegetation cover is acceptable over the majority of the site. Various areas were reseeded and ground cover was applied in the fall of 2022. Vegetation growth is observed in several reseeded areas but various areas at the eastern and southern portion of the cap show no regrowth and likely need to be reseeded. See photos #3 and #4.
Significant erosion: No evidence if significant erosion was observed at the site.
Repeated erosion: No evidence if significant erosion was observed at the site.
Vegetation die-off: Areas at the west drainage ditch and east drainage ditch previously showed signs of vegetation die-off and were reseeded in the fall of 2022. Ground cover in these areas remains and TRC will continue to monitor regrowth in 2023. See photo # 4.
Maintain surface water conveyances and the sedimentation basin by completing the following:
Inspect drainage ditches for erosion, blockages, and vegetation, describe and note any issues: Evidence of light erosion at the eastern drainage ditch was previously observed and reseeded in the fall of 2022. Ground cover remains in place and TRC will continue to monitor the area for vegetation regrowth and any additional evidence of erosion. See photo # 3.
Inspect sedimentation basin banks and outfalls for erosion, describe and note any issues: No erosion or other issues at sedimentation basin banks or outfalls.
Measure the distance between the invert of the sedimentation basin outlet and the top of the sediment accumulated in the basin **(June Only!)**: No sediment accumulation in the basin was observed.

Attachment 2

Laboratory Analytical Report – Leachate Sample

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Andy Stehn
TRC Environmental Corporation
21 Griffin Rd North
Windsor, Connecticut 06095

Generated 7/10/2023 1:36:37 PM

JOB DESCRIPTION

Refuse LF Leachate - 457573

JOB NUMBER

500-236066-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization

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7/10/2023 1:36:37 PM

Authorized for release by
Sandie Fredrick, Project Manager II
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(920)261-1660

Table of Contents

Case Narrative

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Job ID: 500-236066-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-236066-1

Receipt
The sample was received on 7/1/2023 10:30 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.0º C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Updated sample ID to 06-30-23 per client request.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Client Sample ID: Leachate Tank

Lab Sample ID: 500-236066-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	4.1	J B	10	1.8	ug/L	1		6010D	Total Recoverable
Zinc	7.1	J	20	5.0	ug/L	1		6010D	Total Recoverable

This Detection Summary does not include radiochemical test results.

Method Summary

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-236066-1	Leachate Tank	Water	06/30/23 15:30	07/01/23 10:30

Client Sample Results

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Client Sample ID: Leachate Tank

Lab Sample ID: 500-236066-1

Date Collected: 06/30/23 15:30

Matrix: Water

Date Received: 07/01/23 10:30

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.43		2.0	0.43	ug/L		07/06/23 08:24	07/06/23 23:23	1
Chromium	<1.7		10	1.7	ug/L		07/06/23 08:24	07/06/23 23:23	1
Copper	**4.1**	**J B**	10	1.8	ug/L		07/06/23 08:24	07/06/23 23:23	1
Lead	<2.7		5.0	2.7	ug/L		07/06/23 08:24	07/06/23 23:23	1
Molybdenum	<3.8		10	3.8	ug/L		07/06/23 08:24	07/06/23 23:23	1
Nickel	<1.9		10	1.9	ug/L		07/06/23 08:24	07/06/23 23:23	1
Selenium	<5.3		10	5.3	ug/L		07/06/23 08:24	07/06/23 23:23	1
Silver	<1.5		5.0	1.5	ug/L		07/06/23 08:24	07/06/23 23:23	1
Zinc	**7.1**	**J**	20	5.0	ug/L		07/06/23 08:24	07/06/23 23:23	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.079		0.20	0.079	ug/L		07/07/23 10:00	07/10/23 08:27	1

Definitions/Glossary

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Metals

Prep Batch: 721843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236066-1	Leachate Tank	Total Recoverable	Water	3005A	
MB 500-721843/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-721843/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-236066-1 MS	Leachate Tank	Total Recoverable	Water	3005A	
500-236066-1 MSD	Leachate Tank	Total Recoverable	Water	3005A	
500-236066-1 DU	Leachate Tank	Total Recoverable	Water	3005A	

Prep Batch: 722085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236066-1	Leachate Tank	Total/NA	Water	7470A	
MB 500-722085/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-722085/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 722102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236066-1	Leachate Tank	Total Recoverable	Water	6010D	721843
MB 500-721843/1-A	Method Blank	Total Recoverable	Water	6010D	721843
LCS 500-721843/2-A	Lab Control Sample	Total Recoverable	Water	6010D	721843
500-236066-1 MS	Leachate Tank	Total Recoverable	Water	6010D	721843
500-236066-1 MSD	Leachate Tank	Total Recoverable	Water	6010D	721843
500-236066-1 DU	Leachate Tank	Total Recoverable	Water	6010D	721843

Analysis Batch: 722326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236066-1	Leachate Tank	Total/NA	Water	7470A	722085
MB 500-722085/12-A	Method Blank	Total/NA	Water	7470A	722085
LCS 500-722085/13-A	Lab Control Sample	Total/NA	Water	7470A	722085

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 500-721843/1-A
Matrix: Water
Analysis Batch: 722102

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 721843

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.43		2.0	0.43	ug/L		07/06/23 08:24	07/06/23 23:16	1
Chromium	<1.7		10	1.7	ug/L		07/06/23 08:24	07/06/23 23:16	1
Copper	1.81	J	10	1.8	ug/L		07/06/23 08:24	07/06/23 23:16	1
Lead	<2.7		5.0	2.7	ug/L		07/06/23 08:24	07/06/23 23:16	1
Molybdenum	<3.8		10	3.8	ug/L		07/06/23 08:24	07/06/23 23:16	1
Nickel	<1.9		10	1.9	ug/L		07/06/23 08:24	07/06/23 23:16	1
Selenium	<5.3		10	5.3	ug/L		07/06/23 08:24	07/06/23 23:16	1
Silver	<1.5		5.0	1.5	ug/L		07/06/23 08:24	07/06/23 23:16	1
Zinc	<5.0		20	5.0	ug/L		07/06/23 08:24	07/06/23 23:16	1

Lab Sample ID: LCS 500-721843/2-A
Matrix: Water
Analysis Batch: 722102

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 721843

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	50.0	50.8		ug/L		102	80 - 120
Chromium	200	200		ug/L		100	80 - 120
Copper	250	260		ug/L		104	80 - 120
Lead	100	101		ug/L		101	80 - 120
Molybdenum	1000	986		ug/L		99	80 - 120
Nickel	500	509		ug/L		102	80 - 120
Selenium	100	93.3		ug/L		93	80 - 120
Silver	50.0	51.5		ug/L		103	80 - 120
Zinc	500	504		ug/L		101	80 - 120

Lab Sample ID: 500-236066-1 MS
Matrix: Water
Analysis Batch: 722102

Client Sample ID: Leachate Tank
Prep Type: Total Recoverable
Prep Batch: 721843

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	<0.43		50.0	51.4		ug/L		103	75 - 125
Chromium	<1.7		200	197		ug/L		99	75 - 125
Copper	4.1	J B	250	269		ug/L		106	75 - 125
Lead	<2.7		100	102		ug/L		102	75 - 125
Molybdenum	<3.8		1000	995		ug/L		100	75 - 125
Nickel	<1.9		500	511		ug/L		102	75 - 125
Selenium	<5.3		100	97.8		ug/L		98	75 - 125
Silver	<1.5		50.0	50.8		ug/L		102	75 - 125
Zinc	7.1	J	500	505		ug/L		100	75 - 125

Lab Sample ID: 500-236066-1 MSD
Matrix: Water
Analysis Batch: 722102

Client Sample ID: Leachate Tank
Prep Type: Total Recoverable
Prep Batch: 721843

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	<0.43		50.0	52.0		ug/L		104	75 - 125	1	20
Chromium	<1.7		200	199		ug/L		99	75 - 125	1	20
Copper	4.1	J B	250	268		ug/L		106	75 - 125	0	20
Lead	<2.7		100	103		ug/L		103	75 - 125	1	20

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 500-236066-1 MSD
Matrix: Water
Analysis Batch: 722102

Client Sample ID: Leachate Tank
Prep Type: Total Recoverable
Prep Batch: 721843

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Molybdenum	<3.8		1000	1000		ug/L		100	75 - 125	0	20
Nickel	<1.9		500	517		ug/L		103	75 - 125	1	20
Selenium	<5.3		100	99.4		ug/L		99	75 - 125	2	20
Silver	<1.5		50.0	50.8		ug/L		102	75 - 125	0	20
Zinc	7.1	J	500	509		ug/L		100	75 - 125	1	20

Lab Sample ID: 500-236066-1 DU
Matrix: Water
Analysis Batch: 722102

Client Sample ID: Leachate Tank
Prep Type: Total Recoverable
Prep Batch: 721843

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cadmium	<0.43		<0.43		ug/L		NC	20
Chromium	<1.7		<1.7		ug/L		NC	20
Copper	4.1	J B	3.93	J	ug/L		4	20
Lead	<2.7		<2.7		ug/L		NC	20
Molybdenum	<3.8		<3.8		ug/L		NC	20
Nickel	<1.9		<1.9		ug/L		NC	20
Selenium	<5.3		<5.3		ug/L		NC	20
Silver	<1.5		<1.5		ug/L		NC	20
Zinc	7.1	J	<5.0		ug/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-722085/12-A
Matrix: Water
Analysis Batch: 722326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 722085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.079		0.20	0.079	ug/L		07/07/23 10:00	07/10/23 07:34	1

Lab Sample ID: LCS 500-722085/13-A
Matrix: Water
Analysis Batch: 722326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 722085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.98	1.95		ug/L		98	80 - 120

Lab Chronicle

Client: TRC Environmental Corporation
Project/Site: Refuse LF Leachate - 457573

Job ID: 500-236066-1

Client Sample ID: Leachate Tank

Date Collected: 06/30/23 15:30
Date Received: 07/01/23 10:30

Lab Sample ID: 500-236066-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			721843	BDE	EET CHI	07/06/23 08:24 - 07/06/23 08:54 [1]
Total Recoverable	Analysis	6010D		1	722102	FXG	EET CHI	07/06/23 23:23
Total/NA	Prep	7470A			722085	MJG	EET CHI	07/07/23 10:00 - 07/07/23 12:00 [1]
Total/NA	Analysis	7470A		1	722326	MJG	EET CHI	07/10/23 08:27

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: TRC Environmental Corporation
Job ID: 500-236066-1
Project/Site: Refuse LF Leachate - 457573

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Eurofins Chicago
2417 Bond Street
University Park IL 60484
Phone 708-534 5200 Fax 708-534 52

Chain of Custody Record

eurofins

500-236066 COC

Client Information	Sampler	Lab PM	Carrier Tracking No(s)	COC No
Client Contact: Andy Stehn	Tom w/ Perkins	Fredrick Sandie		500-114148-46275 1
Company: TRC Environmental Corporation	Phone: (608) 347-2022	E Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: WI	Page: Page 1 of 1
Address: ~~21 Griffin Rd North~~ 999 Fourier Dr. Ste 101	PWSID	Analysis Requested		Job #: 500-236066
City: ~~Windsor~~ Madison	Due Date Requested			Preservation Codes
State, Zip: ~~CT, 06095~~ WI, 53717	TAT Requested (days): Standard			A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Phone: (608) 807-8112	Compliance Project: Δ Yes Δ No			Other:
Email: AStehn@trccompanies.com	PO #: Purchase Order Requested			
Project Name: Refuse LF Leachate 457573	WO #:			
Site: Refuse Hideaway Landfill	Project #: 50020017			
	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010D, 7470A	Total Number of containers	Special Instructions/Note
			Preservation Code:				D		
LEACHATE TANK	11/30/2023	1530	G	Water			X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Tom w. Perkins	11/30/2023 1730	TRC	Stephanie Hernandez	7/1/23 1030	EETA
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks
		3.4+3.0


ORIGIN ID:RRLA (262) 202 5955
JOHN ROELKE
TRC
21 GRIFFIN R D NORTH
WINDSOR, CT 06095
UNITED STATES US
SHIP DATE: 27JUN23
ACTWGT: 15.00 LB MAN
CAD: 0269688/CAFE3707
TO SAMPLE RECIEPT
EUROFINS CHICAGO
2417 BOND STREET
UNIVERSITY PARK IL 60484
(708) 534-5200
INV:
PO
REF
DEPT
RMA
500-236066 Waybi
FedEx
Express
FedEx
TRK# 0221 6483 4233 9780
SATURDAY 12:00P
PRIORITY OVERNIGHT
60484
IL-US ORD
XO JOTA
Ref #156297-435 BRDR2 EXP 04/24

16qt.

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 500-236066-1

Login Number: 236066
List Number: 1
Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment 3

Photographic Log

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
1	6/30/2023

Description

Western Drainage Ditch:
Vegetation die off was observed at the north portion of the drainage ditch.

Photo No.	Date
2	6/30/2023

Description

Eastern Drainage Ditch:
Some riprap had previously begun to deteriorate at the west side of the western culvert. Remaining riprap remains stable. Surface water is not being obstructed.

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
3	6/30/2023

Description

<u>Eastern Landfill Extents</u>
Reseeding and ground cover was previously applied in the Fall of 2022. Some bare spots remain and likely need reseeding.

Photo No.	Date
4	6/30/2023

Description

<u>Southern/Eastern Landfill Extents</u>
Reseeding and ground cover was previously applied in the Fall of 2022. Some bare spots remain and likely need reseeding.

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
5	6/30/2023

Description

Southern Landfill Extents: GW-2 protective fencing is falling apart. Fencing still provides protection during mowing operations. GW-1 protective fencing is in the same condition as GW-2.

Photo No.	Date
6	6/30/2023

Description

Northern Landfill Extents: Cap appears to remain in good condition with full vegetation cover.