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October 21, 2022

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

Subject: Refuse Hideaway Landfill
September 2022 Operation Monitoring and Maintenance Activities

Dear Cindy:

TRC completed the following operation, monitoring, and maintenance activities at the Refuse Hideaway Landfill in Middleton, WI in September 2022.

- September 13, 2022 – Monthly Site Inspection
- September 19, 2022 – Gas Probe Monitoring

Gas Extraction System

The gas extraction system (GES) remained shutdown during the month of September due to an issue with the electrical service. Van Ert Electrical (Van Ert) previously confirmed that a new transformer is needed to repair the electrical service. Van Ert completed preparation and upgrades to the transformer structure between September 29 and 30, 2022. TRC will continue to provide updates to the WDNR as the repairs are completed.

Perimeter gas probe monitoring was conducted at the site on September 19, 2022, and the monitoring data is included in the attachments.

Leachate Extraction System

The leachate extraction system remained off during the month of September. A new pump head was installed on the air compressor system in June 2022, however due to the site electrical issue, the system could not be restarted. The leachate tank level was gauged during the Monthly Site Inspection and contained 61 inches of leachate.

Cap Inspection

TRC conducted a monthly inspection of the landfill cap and stormwater conveyance features on September 13, 2022. TRC personnel observed areas of bare soil throughout the landfill cap that were previously seeded in 2021. TRC plans to reseed these areas in October 2022 as approved by the WDNR. An inspection form and photo log are attached with further details.

Monitoring results collected during the site visits completed in September 2022 are attached.

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

Sincerely,

TRC

Andrew M. Stehn

Andrew Stehn, PE
Project Manager

Attachments: September 2022 Monitoring Results

September 2022 Monitoring Results

REFUSE HIDEAWAY LANDFILL
GAS PROBE MONITORING FORM

TECHNICIAN(S): J. Roelke

DATE: 9/19/2022

START TIME: 8:08 AM

END TIME: 1:15 PM

GAS/INSTRUMENT TYPE: **GEM 2000**

SERIAL NO.: 11668

WEATHER CONDITIONS: sunny

DATE LAST CALIBRATED: 9/19/2022

TEMPERATURE: 59 F

METHOD: Standard Calibration Gases

BAROMETRIC PRESSURE & TREND: 30.02, rising

PRESS INSTRUMENT : Manometer

GROUND CONDITIONS: moist

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-1D	8:35	0.0	10.0	0.5	11.4	5.2	(2)
GP-1S	8:37	0.0	>5	6.4	17.0	0.4	(2)
GP-2D	8:40	0.0	14	0.7	10.9	7.1	(1)
PG-2S	8:42	0.0	12	0.6	11.0	10.2	(1)
GP-3	8:45	0.0	>5	5.2	7.1	12.1	(1)
GP-4	8:52	0.0	0.0	0.0	6.4	12.6	(1)
GP-5	8:57	0.0	0.0	0.0	4.6	16.5	(2)
GP-6	9:03	0.0	0.0	0.0	2.1	18.0	(1)
GP-7	9:11	0.0	0.0	0.0	4.5	16.6	(2)
GP-8	9:24	0.0	0.0	0.0	6.9	14.7	(2)
GP-9	9:29	0.0	0.0	0.0	5.1	15.0	(1)
GP-10	9:34	0.0	0.0	0.0	8.5	13.3	(1)
GP-11D	9:40	0.03	74	3.7	15.1	1.4	(2)
GP-11S	9:42	0.0	32	1.6	12.9	14.1	(2)
GP-12D	9:48	0.0	>5	5.9	14.9	5.7	(1) Stable readings at 2 minutes.
GP-12S	9:51	0.0	0.0	0.0	4.6	15.6	(1)
GP-13D	9:55	0.0	12	0.6	10.3	7.8	(2) Stable readings at 2 minutes.
GP-13S	9:58	0.0	0.0	0.0	5.9	13.8	(2)

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-16D	10:20	0.0	0.0	0.0	1.8	19.2	(2)
GP-16S	10:22	0.0	0.0	0.0	3.4	17.5	(2)
GP-17D	10:14	0.0	0.0	0.0	14.0	16.6	(1)
GP-17M	10:16	0.0	0.0	0.0	3.6	16.9	(1)
GP-17S	10:18	0.0	0.0	0.0	4.5	16.0	(1)
GP-18D	10:25	0.0	0.0	0.0	0.9	19.9	(2)
GP-18M	10:27	0.0	0.0	0.0	1.4	19.4	(2)
GP-18S	10:29	0.0	0.0	0.0	5.2	16.7	(2)
GP-19$^{85-100}$	11:10	0.0	0.0	0.0	0.0	20.8	(1)
GP-19$^{50-70}$	11:12	0.0	0.0	0.0	0.7	20.1	(1)
GP-19$^{25-40}$	11:14	0.0	0.0	0.0	0.4	20.3	(1)
GP19$^{2-15}$	11:16	0.0	0.0	0.0	0.0	20.8	(1)
GP-20$^{85-100}$	11:02	0.0	0.0	0.0	0.1	20.6	(2)
GP-20$^{50-70}$	11:04	0.0	0.0	0.0	0.0	20.8	(2)
GP-20$^{25-40}$	11:06	0.0	0.0	0.0	0.3	20.4	(2)
GP-20$^{2-15}$	11:08	0.0	0.0	0.0	0.5	20.3	(2)
GP-21$^{85-100}$	10:54	0.0	0.0	0.0	0.2	20.6	(2)
GP-21$^{50-70}$	10:56	0.0	0.0	0.0	0.1	20.7	(2)
GP-21$^{25-40}$	10:58	0.0	0.0	0.0	0.0	20.8	(2)
GP-21$^{2-15}$	11:00	0.0	0.0	0.0	0.5	20.3	(2)
GP-22$^{85-100}$	11:22	0.0	0.0	0.0	3.5	17.4	(2)
GP-22$^{50-70}$	11:24	0.0	0.0	0.0	0.9	19.9	(2)
GP-22$^{25-40}$	11:26	0.0	0.0	0.0	1.3	19.3	(2)
GP-22$^{2-15}$	11:28	0.0	0.0	0.0	3.4	17.6	(2)

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-23$^{85-100}$	11:31	0.0	0.0	0.0	0.0	20.8	(2)
GP-23$^{50-70}$	11:33	0.0	0.0	0.0	0.0	20.8	(2)
GP-23$^{25-40}$	11:35	0.0	0.0	0.0	0.0	20.8	(2)
GP-23$^{2-15}$	11:37	0.0	0.0	0.0	0.8	20.1	(2)
GP-24$^{85-100}$	11:41	0.0	0.0	0.0	0.0	20.8	(2)
GP-24$^{50-70}$	11:43	0.0	0.0	0.0	1.6	19.4	(2)
GP-24$^{25-40}$	11:45	0.0	0.0	0.0	0.1	20.6	(2)
GP-24$^{2-15}$	11:47	0.0	0.0	0.0	2.2	19.1	(2)
GPW-1D	13:02	-0.1	0.0	0.0	0.7	19.5	(1)
GPW-1M	13:04	0.0	0.0	0.0	0.0	20.8	(1)
GPW-1S	13:06	0.0	0.0	0.0	1.7	18.4	(1)
G-1D	8:25	0.03	94	4.7	17.8	0.0	(1) Stable readings at 2 minutes.
G-1S	8:28	0.0	>5	9.7	17.4	1.3	(1) Stable readings at 2 minutes.
G-2D	10:04	0.0	>5	6.5	18.9	0.0	(1) Stable readings at 2 minutes.
G-2S	10:07	0.0	0.0	0.0	2.9	17.8	(1)
G-5	9:21	0.0	0.0	0.0	6.6	13.2	(1)
G-6	8:18	0.0	0.0	0.0	0.5	20.3	(1)
G-8	10:49	0.0	0.0	0.0	0.0	20.8	(1)
G-9	10:37	0.0	0.0	0.0	0.1	20.6	(1)
G-10	11:56	-0.41	0.0	0.0	0.0	20.8	(1)
Speedway Office	8:32	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.

Entered by: J. Roelke 9/19/2022
Checked by: A Ruetten 9/22/2022

Key:

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

Cap Inspection

Inspection Details		Site Conditions	
Inspector :	John Roelke	**Weather Conditions:**	Sunny
Date:	9/13/2022	**Ground Condition:**	Moist
Time:	13:56	**Temperature:**	73 F

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, with no changes from previous condition.

Condition of drainage ways:

West Drainage Ditch - The north portion shows signs of vegetation die-off, see Photo 1. Standing water was observed in this area during the inspection. This area was identified as having less positive slope than its surroundings and regraded several times during 2020-2021 grading work at the Site. Final survey showed positive slope. 3.15" of rain was recorded between September 10 and 12, 2022.

East Drainage Ditch - TRC has continued to monitor the riprap along west embankment of the northern culvert. Riprap appears to be eroding and beginning to fail. Some vegetation die-off and light erosion was observed along a north portion of the drainage ditch; see Photos 2 and 3.

Beyond the above noted issues, drainage ways are acceptable, with minor changes from previous conditions.

Extent of vegetation cover: Vegetation cover is acceptable over the majority of the Site, with vegetation growth between 16"-20". Mowing of the cap is expected to be completed in late September. Some areas that were seeded post-construction in 2021 are not showing signs of growth, as shown in Photos 4-6. No erosion is evident, though reseeding may be required at various locations throughout the Site. TRC plans to reseed select areas in October as approved by WDNR.

Some tree regrowth has started to the northeast (photo 7) and east central (photo 8) portions of the landfill. These areas will be further inspected following the fall mowing event.

Significant erosion: No evidence of significant erosion at the Site observed.

Repeated erosion: No evidence of repeated erosion at the Site observed.

Vegetation die-off:

West Drainage Ditch - The north portion show signs of vegetation die-off, see Photo 1. 3.15" of rain was recorded between September 10 and 12,2022.

East Drainage Ditch - Evidence of riprap wash out was observed along the western embankment of the western culvert. Some vegetation die-off and light erosion was observed along a north portion of the drainage ditch, see Photos 2 and 3. TRC will continue to monitor.

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:

East Drainage Ditch - Some light erosion to the north end of the north-to-south portion observed, 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 and outfalls.

Measure the distance between the invert of the sedimentation basin outlet and the top of the sediments accumulated in the basin (June Only): NM

Data Entered By: J. Roelke 9/14/2022

Checked By: A. Ruetten 9/22/2022

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	9/13/2022

Description

Western Drainage Ditch: North portion shows signs of standing water at the time of the inspection. Surface water is flowing naturally towards the southern riprap. 3.15" of rain was recorded between September 10 and 12.

Photo No.	Date
2	9/13/2022

Description

Eastern Drainage Ditch: Some riprap has begun to washout from the west side of the western culvert. Gravel has begun to wash into the culvert, but the drainage way was not 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	9/13/2022

Description

Eastern Drainage Ditch: The north portion of the drainage pathway shows natural flowage of surface water. 3.15" of rain was recorded between September 10 and 12. Light erosion is observed.

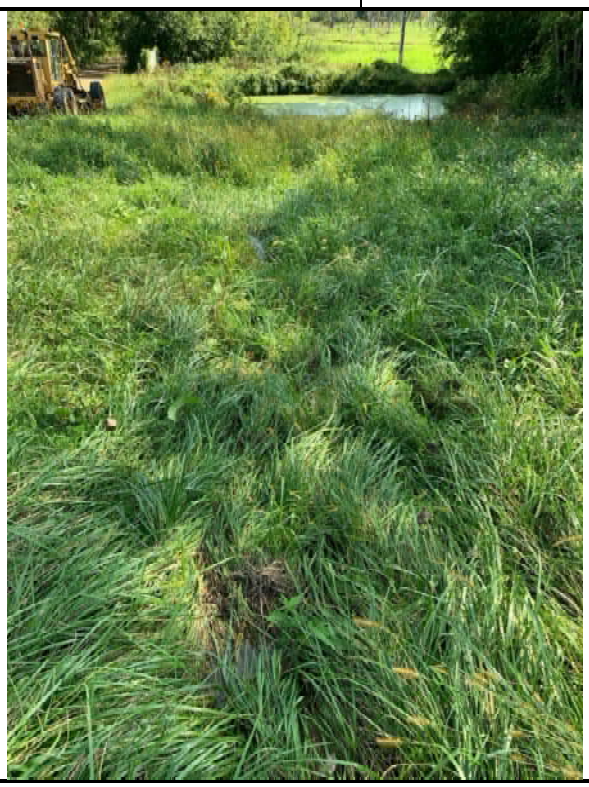

Photo No.	Date
4	9/13/2022

Description

Northwestern Landfill Extents: Select areas that were seeded following the 2021 construction event contained bare soil. Reseeding is scheduled for October 2022.

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	9/13/2022

Description

Northern Landfill Extents: Select areas that were seeded following the 2021 construction event contained bare soil. Reseeding is scheduled for October 2022.

Photo No.	Date
6	9/13/2022

Description

Central Landfill Extents: Select areas that were seeded following the 2021 construction event contained bare soil. Reseeding is scheduled for October 2022.

Photographic Log

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

Photo No.	Date
7	9/13/2022

Description

Northwest Landfill Extents: Signs of emerging shrub growth were observed at the northwest portion of the landfill surface.

Photo No.	Date
8	9/13/2022

Description

East Central Landfill Extents: Signs of emerging shrub growth were observed along the east central portion of the landfill surface.