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January 2, 2025

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

Subject: 2024 Semi-annual Inspection Report – Second Report
Stoughton City Landfill, Stoughton, Dane County, Wisconsin
USEPA ID #WID980901219; WDNR BRRTS #02-13-000880

Dear Mr. LeRoy:

TRC completed the second semi-annual inspection of two for the 2024 calendar year for the Stoughton City Landfill (Site). Inspection tasks were completed in concurrence with the October, 2023 City of Stoughton Landfill Operation and Maintenance Bidding Documents, follow up correspondences between TRC and the Wisconsin Department of Natural Resources (WDNR), and the April 2024 Quality Assurance/Quality Control Plan (Revision 1) (TRC, 2024). This letter summarizes inspection and monitoring activities completed in June, August and October 2024.

Bimonthly Site Monitoring

Gas Probe Monitoring

Currently the Site contains three gas monitoring probes (GMP-1, GMP-2, and GMP-3) along the southern perimeter of the landfill to evaluate if off site landfill gas migration is occurring. TRC mobilized to the site on June 20, August, 22 and October 22, 2024 to monitor gas concentrations and collect pressure reading at each of these gas monitoring probes. Each probe was field monitored using a Landtec GEM 2000 meter for methane (percent lower explosive limit and percent by volume), carbon dioxide, and oxygen. Volatile organic compounds (VOCs) were field monitored using a Rae Systems MiniRae 3000 and a pressure reading was collected using a Dwyer 475 Series Manometer. Field measurements from these two events are included in Attachment 1.

No methane gas was detected in the gas probes during the Summer and Fall 2024 monitoring events which indicates that it's unlikely that any significant landfill gas migration is occurring along the southern perimeter. Additionally, VOC migration from the landfill in that area is unlikely since all detectable PID readings were below 1 parts per million. Oxygen levels varied by probe and inspection event but were generally at, or just below ambient air levels of 20.9%. Low concentrations of carbon dioxide were generally detected at the probes with the highest reading of 2.5% by volume at GMP-3, the other detectable readings at the site were below 0.7 %.

Flow Prevention Monitoring

During each bimonthly site visit the flow prevention devices at monitoring wells MW-7I, MW-8I and MW-10I were inspected. The devices include mechanical packers installed at MW-7I, MW-8I and MW-10I due to artesian conditions present at these wells. During the site inspection the packers were in place and preventing flow out of the well.

October Semi-annual Site Inspection

The semi-annual site inspection included a visual evaluation of the landfill cover, storm sewer management system, gas venting system, monitoring well network, security fencing/entrance gate, signage, and the access road (Site features). TRC completed a site walk on October 22, 2024, completing an inspection of the Site features and a summary of the inspection is included in Attachment 2. A photographic log is also included in Attachment 2.

Landfill Cover

The landfill cap was mowed in accordance with the on August 22, 2024 by TRC's mowing contractor in accordance with the October, 2023 City of Stoughton Landfill Operation and Maintenance Bidding Documents. No issues were observed with the landfill cover that require immediate maintenance. There were several small animal burrowing's (less than 4-inches) at various spots on the landfill cover, nothing extensive that requires additional maintenance. Additionally, the three to four localized areas of larger burrowing (greater than 4-inches) along the eastern fence line remain similar in size and number to the ones originally identified in the Spring 2023 Inspection Report. These areas should continue to be monitored during future inspection events to ensure that they do not expand into the limits of the waste.

Storm Sewer Management System

The storm sewer management system appeared to be functioning as constructed and no significant erosion damage or lack of vegetation was observed. The area where ponding was noted near GV-15 and GV-16 during the EPA's 2023 site visit was dry during this inspection event. The area will continue to be monitored in the future to ensure that the cap and vegetation is not damaged.

Landfill Gas Vents

The Site contains 21 gas vents throughout the limits of the landfill. Each vent was inspected by TRC and no issues were noted during this inspection event. The sign for GMP-3 that was noted as damaged in the Spring event was re-installed and will be inspected during the December gas monitoring event to see if replacement is needed.

Monitoring Well Network

There are currently 35 monitoring, extraction, or observation wells installed surrounding and in close proximity to the landfill. Each well was inspected, and the following observations were found:

- MW-1D and MW-1S were abandoned to allow a utility line to be installed through the area. Abandonment was completed by a separate WDNR consultant and documentation is not included in this inspection report.
- MW-7I is an artesian well and the packer at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- MW-8I is an artesian well and the packer at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.

- MW-10I is an artesian well and the packer at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- The locks on several of the wells are rusted and will be replaced soon.

Security - Fencing/Gate

The chain link fence that surrounds a portion of the landfill was in good condition. Both landfill gates were in good condition, however the locks will need to be replaced during the winter gas monitoring events. The fencing noted as broken in the Spring sampling event had been fixed by the City of Stoughton, however TRC was notified in September that a fence post had broken along the western section of the fence and would require replacement. TRC inspected the damage, and it appears to be due to a rotted 4 by 6 inch wooden fence post buckling and not evidence of vandalism. TRC will attempt to put a temporary repair in place until the fence can be properly repaired in Spring 2025. The repair will be inspected during each gas monitoring event until a permanent replacement can be completed. The WDNR may consider replacing the wooden fence section with chain-link to limit the number of repairs needed at the site annually.

Signage

Signs are located along the exterior of the fence surrounding the landfill. The signs were in good condition; however, the labels need to be re-done do to fading.

Access Road

No issues were observed with the Site access road during this inspection.

Recommendations

Per the request for proposal document, TRC can assist with the repair of the broken fence as needed. Future inspections should make special note of increased animal activity along the eastern fence line as well as any evidence of ponding between GV-15 and G-16. A new main gate lock should also be purchased for the site in the future. Additionally, due to the abandonment of MW-1S and MW-1D an updated site figure displaying the active monitoring well network should be completed in 2025.

If you have any questions, please contact me at Wbraga@trccompanies.com or at (608) 234-7374.

Sincerely,

TRC

Wesley Braga
Project Manager

Attachments:
1. Gas Probe Monitoring Forms - June 2024, August 2024, October 2024
2. Semi-annual Site Inspection Form – October 2024
3. Photographic Log – October 2024

cc: Giang Van Nguyen – USEPA Region V

References

TRC Environmental Corporation. 2024. Quality Assurance/Quality Control Plan. Stoughton City Landfill. Stoughton, Dane County, Wisconsin. April 16, 2024.

Attachment 1

Bi-monthly Gas Probe Monitoring Forms
June 2024, August 2024, October 2024

PROJECT NAME: Stoughton Landfill

PROJECT NUMBER: 576123

PROJECT MANAGER: Wesley Braga

SITE LOCATION: Stoughton, Wisconsin

DATES OF FIELDWORK: 6/20/2024, 8/22/2024, 10/22/2024

PURPOSE OF FIELDWORK: Bi-monthly Gas Monitoring

WORK PERFORMED BY: Maddie Holicky

	11/14/2024		11/15/2024
SIGNED	DATE	CHECKED BY	DATE

PID FIELD CALIBRATION LOG

PROJECT NAME:	Stoughton City Landfill	MODEL:	MiniRae 3000
PROJECT NUMBER.:	576123	LAMP VOLTAGE:	10.6
SAMPLER NAME:	Maddie Holicky/Wes Braga	SERIAL NO.:	RENTAL

PID CALIBRATION CHECK

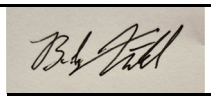
	DATE: 6/20/2024 TIME: 12:00 INITIALS: MH	DATE:8/22/2024 TIME: 8:50 INITIALS: MH	DATE: 10/22/2024 TIME: 11:09 INITIALS: MH	DATE: TIME: INITIALS:	DATE: TIME: INITIALS:
BATTERY CHECK	☑	☑	☑	☐	☐
ZERO GAS	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	/	/
SPAN GAS	100/ 100.0	100/ 100.0	100/ 100.0	/	/
AUDIBLE FAN MOTOR CHECK	☑	☑	☑	☐	☐
RESPONSE CHECK	☑	☑	☑	☐	☐

NOTES
10-22-2024 - Bump with 100 ISO Span gas: 99.7 ppm

PROBLEMS ENCOUNTERED	CORRECTIVE ACTION

SIGNED

10/22/2024
DATE



CHECKED

11/15/2024
DATE

GAS MONITORING REPORT

SITE NAME:	Stoughton City Landfill	DATE: 6/20/2024	
PROJECT NUMBER:	576123.0000.0000	TECHNICIAN: M. Holicky	
GAS SENSOR MODEL:	GEMS 2000	FIELD CALIBRATED: YES: ☑	NO: ☐

WEATHER

WEATHER: Sunny
SKY CONDITIONS: Clear
GROUND CONDITIONS: SNOW: YES: ☐ NO: ☑
FROZEN GROUND/FROST: YES: ☐ NO: ☑
VISIBILITY: Clear TIME: 12:00

TEMPERATURE: 70 °F
WIND SPEED: 9 MPH DIR: NW
RELATIVE HUMIDITY (%): 88
DEW POINT °F 63
BAROMETRIC PRESS (in.Hg): 29.24 TREND: up

GAS READINGS

Probe/Vent Number	Time	Pressure		CH_4		O_2 (% V/V)	CO_2 (% V/V)	PID (ppm)	Comment
		+ or -	in w.c.	%LEL	% V/V				
GMP-1	12:10	+	0.02	0.0	0.0	20.5	0.01	0.0	
GMP-2	12:15	+	0.00	0.0	0.0	20.2	0.08	0.0	
GMP-3	12:20	+	0.01	0.0	0.0	20.7	0.01	0.0	

SIGNED 6/20/2024 DATE

CHECKED BY 11/15/2024 DATE

GAS MONITORING REPORT

SITE NAME:	Stoughton City Landfill	DATE: 8/22/2024	
PROJECT NUMBER:	576123.0000.0000	TECHNICIAN: M. Holicky	
GAS SENSOR MODEL:	GEMS 2000	FIELD CALIBRATED: YES: ☑	NO: ☐

WEATHER

WEATHER: Sunny
SKY CONDITIONS: Clear
GROUND CONDITIONS: SNOW: YES: ☐ NO: ☑
FROZEN GROUND/FROST: YES: ☐ NO: ☑
VISIBILITY: Clear TIME: 8:50

TEMPERATURE: 75 °F
WIND SPEED: 7 MPH DIR: SW
RELATIVE HUMIDITY (%): 43
DEW POINT °F 51
BAROMETRIC PRESS (in.Hg): 29.31 TREND: up

GAS READINGS

Probe/Vent Number	Time	Pressure		CH_4		O_2 (% V/V)	CO_2 (% V/V)	PID (ppm)	Comment
		+ or -	in w.c.	%LEL	% V/V				
GMP-1	9:00	+	0.01	0.0	0.0	21.1	0	0.0	
GMP-2	9:10	+	0.00	0.0	0.0	20.7	0.01	0.0	
GMP-3	9:15	+	0.01	0.0	0.0	20.7	0.01	0.0	

SIGNED 8/22/2024 DATE

CHECKED BY 11/15/2024 DATE

GAS MONITORING REPORT

SITE NAME:	Stoughton City Landfill	DATE: 10/22/2024	
PROJECT NUMBER:	576123.0000.0000	TECHNICIAN: M. Holicky	
GAS SENSOR MODEL:	GEMS 2000	FIELD CALIBRATED: YES: ☑	NO: ☐

WEATHER

WEATHER: Sunny
SKY CONDITIONS: Clear
GROUND CONDITIONS: SNOW: YES: ☐ NO: ☑
FROZEN GROUND/FROST: YES: ☐ NO: ☑
VISIBILITY: Clear TIME: 11:00

TEMPERATURE: 60 °F
WIND SPEED: 5 MPH DIR: SW
RELATIVE HUMIDITY (%): 80
DEW POINT °F 38
BAROMETRIC PRESS (in.Hg): 29.24 TREND: up

GAS READINGS

Probe/Vent Number	Time	Pressure		CH_4		O_2 (% V/V)	CO_2 (% V/V)	PID (ppm)	Comment
		+ or -	in w.c.	%LEL	% V/V				
GMP-3	11:23	-	0.3	0.0	0.0	20.2	2.5	0.0	
GMP-2	11:31	-	0.5	0.0	0.0	21.1	0.7	0.0	
GMP-1	11:37	-	0.10	0.0	0.0	21.5	0.2	0.0	

SIGNED 10/22/2024 DATE

CHECKED BY 11/15/2024 DATE

Attachment 2

Semi-annual Site Inspection Form
October 2024

Operation and Maintenance Semi-Annual Inspection Report

Stoughton City Landfill
Stoughton, Wisconsin

INSPECTOR: Maddie Holicky	LOCATION: STOUGHTON CITY LANDFILL - STOUGHTON, WI
COMPANY: TRC	DATE/TIME: 10/22/2024, 9:00 am
PROJECT: STOUGHTON CITY LANDFILL O&M	PROJECT NUMBER : 576123.0000.0000

WEATHER

WEATHER	CLEAR	PARTLY CLOUDY	CLOUDY	FOG
TEMPERATURE	HIGH	60°F	---	---
WIND	CALM	MEDIUM	HIGH	---
PRECIPITATION	RAIN	LIGHT	MODERATE	HEAVY
	SNOW	LIGHT	MODERATE	HEAVY

INSPECTION ITEMS

TYPE OF INSPECTION	ROUTINE	SPECIAL
	☑	☐

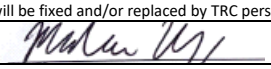
PERSONS/EQUIPMENT PRESENT: Maddie Holicky (TRC), PID (Rae Systems MiniRae 3000) and a pressure reading manometer (Dwyer 475 Series)

GENERAL DESCRIPTION OF SITE CONDITIONS: Site is in good condition.
Vegetation is well established and is not stressed. Only small animal burrowing noticed during this inspection

SPECIAL INSPECIAL ITEMS	POTENTIAL PROBLEM AREA	STATUS	NOTES
PERIMETER SECURITY FENCING	BROKEN OR MISSING WOOD SLATS, TORN CHAIN LINK FABRIC	2	Fence post on west side of landfill needs to be replaced due to rotting
ENTRANCE GATE AND LOCKING MECHANISM	LOCK BROKEN/MISSING, MECHANISM INOPERATIVE	2	Lock was hard to open due to rust, will be replaced as soon as possible
MONITORING WELLS AND WELLHEAD COVERS	SIGNS OF TAMPERING, CASING DAMAGED, LOCK MISSING.	2	Locks were hard to open due to rust, will be replaced as soon as possible
FINAL COVER VEGETATION	BARE SPOTS, STRESSED VEGETATION, DEEP ROOTED VEGETATION	1	
FINAL COVER SLOPE (EXPLAIN BELOW)	GULLIES, LACK OF VEGETATION, SUBSIDENCE, PONDING	1	
EVIDENCE OF BURROWING ANIMALS	DAMAGE TO FINAL COVER, EVIDENCE OF WASTE	1	Some small burrows seen at various spots around the cap
STORMWATER DRAINAGE CHANNELS	GULLIES, EROSION, DEBRIS, CULVERT BLOCKED	1	
LANDFILL GAS VENTING SYSTEM	DAMAGED OR BLOCKED VENT RISERS, STRESSED VEGETATION	1	
ACCESS ROAD	PONDING, RUTTING, EROSION	1	
COVER MOWING AND TALL VEGETATION REMOVAL (OCTOBER INSPECTION ONLY)	MOWING AND TALL VEGETATION REMOVAL DONE TO SPECIFIED VEGETATION HEIGHT, ANY MISSED AREAS	1	

* (1)ACCEPTABLE - NO MAINTENANCE REQUIRED. (2) NOT ACCEPTABLE - IDENTIFY REQUIRED MAINTENANCE

SUMMARY OF DEFICIENCIES AND/OR CORRECTIVE ACTIONS: Locks on gates and monitoring wells will be replaced as soon as possible.
The broken fence post on the west side will be fixed and/or replaced by TRC personnel.

SIGNATURE OF INSPECTOR:  DATE: 11/14/2024

Attachment 3

Photographic Log
October 2024

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources	Stoughton City Landfill	576123.0000

Photo No.	Date
1	10/22/2024

Time: 11:50

Weather: Cloudy, 55°F

Description:
Mowed landfill cap.

Photo facing south.

Photo No.	Date
2	10/22/2024

Time: 11:51

Weather: Cloudy/ 55°F

Description:
Gas vent and landfill cap.

Photo facing southwest.

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources	Stoughton City Landfill	576123.0000

Photo No.	Date
3	10/22/2024

Time: 11:45

Weather: Cloudy/ 55°F

Description:
Landfill cap.

Photo facing southeast.

Photo No.	Date
4	10/18/2024

Time: 13:51

Weather: Sunny/ 67°F

Description:
Wooden fence slats replaced and damaged fence post.

Photo facing east.

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources	Stoughton City Landfill	576123.0000

Photo No.	Date
5	10/18/2024

Time: 13:55

Weather: Sunny/ 67°F

Description:
Repaired fence slats along western fence line.

Photo looking east.

Photo No.	Date
6	10/18/2024

Time: 13:59

Weather: Sunny/ 67°F

Description:
Rotted fence post.