

June 8, 2023

Ms. Erin Endsley Hydrogeologist Program Director Wisconsin Department of Natural Resources 1701 North 4th Street Superior, WI 54880

Subject: 2023 Semi-annual Inspection Report – First Report

Stoughton City Landfill, Stoughton, Dane County, Wisconsin USEPA ID #WID980901219; WDNR BRRTS #02-13-000880

Dear Ms. Endsley:

TRC completed the initial semi-annual inspection for the 2023 calendar year for the Stoughton City Landfill (Site). Inspection tasks were completed in concurrence with the December 9, 2019 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 2020 Quality Assurance/Quality Control Plan (Revision 0) (TRC, 2020). This letter summarizes inspection and monitoring activities completed between February 2023 and June 2023.

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 February 28, 2023, April 25, 2023, and June 7, 2023 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 three events are included in Attachment 1.

Field data indicates that methane and VOCs were not detected in any of the gas probes during this inspection period. Oxygen levels varied by probe and inspection event but were generally just below ambient air levels of 20.9%. Low concentrations of carbon dioxide were detected at select probes with the highest reading of 1.4% by volume at GMP-3 during the June 2023 event, all other detectable readings at the site were below 0.5%.

Flow Prevention Monitoring

Mechanical packers are currently installed in wells MW-7I, MW-8I, and MW-10I and were found to be working properly and preventing flow out of each well during the bimonthly inspections.

April 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 April 25, 2023, 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.

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Landfill Cover

No issues were observed with the landfill cover that require immediate maintenance, however there are a small number of animal burrows along the eastern fence adjacent to the wetlands. There are three to four localized areas where animals have dug burrows from inside of the fenced area out to the adjacent wetlands. Trapping animals and filling these burrows would not be a permanent solution due to the high amount of animal activity in the in the area. These areas should be monitored during future inspection events to ensure that these burrows are not expanding 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. A small amount of ponding was observed in the area between GV-15 and GV16 during a site visit with the Environmental Protection Agency in March 2023. This area appeared dry with minimal soil saturation during the April 2023 inspection event. The ponding was likely due to the combination of snow melt and recent weather events, however this area should be monitored closely going forward to ensure that the cap 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 the only issue found was the signage near GV-3 had fallen over; the base of the sign appeared to be rusted and broken. TRC staff drove the fence post back into the ground, however, it may need to be replaced if issue continues. Additionally, the vents are constructed of, PVC which is beginning to become brittle due to age and there is an increased risk of couplers failing and gas vents falling over. This issue should be monitored and repaired as needed.

Monitoring Well Network

There are currently 37 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-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.
- OW-2 has a packer installed and is preventing possible artesian conditions. The packer will continue to be monitored on a bi-monthly basis.
- OW-4 is an artesian well and the expandable cap at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- EW-01 is an artesian well and the expandable cap at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.



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Security - Fencing/Gate

The chain link fence that surrounds a portion of the landfill was in good condition. The gate was in good condition and the lock was functioning; however, it is becoming difficult to lock and should be replaced before winter of 2023. There is a section of broken fencing along the western side of the landfill that will need to be repaired. Two of the wooden slats were removed.

Signage

Signs are located along the exterior of the fence surrounding the landfill. The signs were in good condition and labels were visible.

Access Road

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

Recommendations

Repairs to the wooden fence should be completed, TRC can assist with the repair if 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 GV-16. A new main gate lock should also be purchased and installed for the Site before winter of 2023.

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

Sincerely,

TRC

Ändrew Stehn, PE Project Manager

Attachments: 1. Bi-monthly Gas Probe Monitoring Forms (February, April, and June 2023)

2. Semi-annual Site Inspection Form - April 2023

cc: Giang Van Nguyen - USEPA Region V

M. Stel

References

TRC Environmental Corporation. 2020. Quality Assurance/Quality Control Plan. Stoughton City Landfill. Stoughton, Dane County, Wisconsin. April 13, 2020.



Attachment 1

Bi-monthly Gas Probe Monitoring Forms (February, April, and June 2023)

PAGE	OF	

DATE



PROJECT NAME:	Stoughton City Landfill
PROJECT NUMBER:	375007.0002.0000
PROJECT MANAGER:	Andrew Stehn
SITE LOCATION:	Stoughton, Wisconsin
DATES OF FIELDWORK:	2/28/2023 TO 6/7/2023
PURPOSE OF FIELDWORK:	Bi-monthly Gas Monitoring and April Semi-annual Site Inspection
WORK PERFORMED BY:	Wes Braga John Roelke
Wesley & Buaza	6/7/2023 (motion) M. Stell 6/7/2023

DATE

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DATE



PID FIELD CALIBRATION LOG

PROJECT NAME:	Stoughton (City Landfill	MODEL:	MiniRae 3000	
PROJECT NUMBER.:	375007		LAMP VOLTAGE:	10.6	
SAMPLER NAME:	John Roelk	е	SERIAL NO.:	RENTAL	
		PID CALIBRA	TION CHECK		
	DATE: 2/28/2023 Time: 9:21 AM INITIALS: JAR	DATE:4/25/2023 TIME: 14:30 PM INITIALS: WB	DATE: 06/07/2023 TIME: 11:02 INITIALS: JAR	DATE: TIME: INITIALS:	DATE: TIME: INITIALS:
BATTERY CHECK	✓	✓	V		
ZERO GAS	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	1	1
SPAN GAS	100.3 / 100.0	100.4 /100.0	100.1 / 100.0	/	/
AUDIBLE FAN MOTOR CHECK	V	√	V		
RESPONSE CHECK	V	V	V		
		NOT	ES		
PRO	BLEMS ENCOUNTER	RED		CORRECTIVE ACTIO	N
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GAS MONITORING REPORT

SITE	E NAME:	Stou	ghton City	Landfill		DATE: 2/28/2023			
PROJECT N	UMBER:	37	5007.0002.	0000		TECHNICIAN:			
GAS SENSOR	SENSOR MODEL: GEMS 2000				FIELD CALIBRATED: YES: NO:				
						WEATHE	R		
W	EATHER: clear							TEMPE	RATURE: 37 °F
SKY CON	DITIONS: clear					-		WIND	SPEED: 5 MPH DIR: SE
GROUND CON	DITIONS: SNOW:	YES:	✓	NO:				RELATIVE HUMII	DITY (%):
FROZEN	GROUND/FROST:	YES:	\checkmark	NO:				DEW	POINT °F 29
VI	ISIBILITY: 15	miles			TIME:		•	BAROMETE	RIC PRESS (in.Hg): 29.89 TREND: rising
	ī					GAS READ			
Probe/Vent Number	Time	Pres + or -	in w.c.	%LEL	H₄ % V/V	O ₂ (% V/V)	CO ₂ (% V/V)	PID (ppm)	Comment
GMP-1	9:32	-	0.09	0.0	0.0	20.5	0.2	0.0	
GMP-2	9:40	-	2.10	0.0	0.0	20.8	0.0	0.0	
GMP-3	9:47	-	0.44	0.0	0.0	19.9	1.0	0.0	
Joh	n Rollke			6/7/2022		(Indrew W	1. Steh	6/7/0000
SIGNED		1		6/7/2023 DATE	-	CHECKE	D BY		6/7/2023 DATE

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GAS MONITORING REPORT

ÇITIŞ	NAME:	Stor	ghton City	Landfill		DATE:	4/25/2023		
PROJECT N			5007.0002			TECHNICIAN:			
GAS SENSOR			GEMS 200					FIELD CALIB	RATED: YES: 🗸 NO:
						WEATHE	- D		
\\/	EATHER: close					WEATHE	-K	TEMPE	RATURE: 43.2 °F
	EATHER: clear DITIONS: clear								D SPEED: 3.1 MPH DIR: ENE
	DITIONS: Clear DITIONS: SNOW:	YES:		NO:	V			RELATIVE HUMI	
	GROUND/FROST:			NO:	_				POINT °F 34
		miles			TIME:	14:30			RIC PRESS (in.Hg): 29.18 TREND: rising
						GAS READ	INGS		
Probe/Vent	Time	Pres	sure	С	H ₄	O ₂ (% V/V)	CO ₂ (% V/V)	PID (ppm)	Comment
Number		+ or -	in w.c.	%LEL	% V/V				Comment
GMP-1	15:20		0.00	0.0	0.0	20.2	0.1	0.0	
GMP-2	14:55	-	0.03	0.0	0.0	20.1	0.2	0.0	
GMP-3	14:39	+	0.02	0.0	0.0	20.2	0.1	0.0	
	1	<u> </u>					<u> </u>		
Wesley &	JBuaza			6/7/2023		0	Indrew M	1. Stel	6/7/2023
SIGNED	//			DATE		CHECKE	D BY		DATE

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6/7/2023 DATE



GAS MONITORING REPORT

C	- NIANE.	٥.	L			5.4	0/4/0000		
	E NAME:		hton City				6/1/2023		
PROJECT N			007.0002.			TECHNICIAN:	John Roelke		
GAS SENSOR	MODEL:	(GEMS 200	00				FIELD CALIB	RATED: YES: NO:
						WEATHE	R		
W	EATHER: clear					_		TEMPE	RATURE: 68 °F
SKY CON	IDITIONS: clear					_		WINE	SPEED: 9 MPH DIR: sw
GROUND CON	IDITIONS: SNOW:	YES:		NO:	/			RELATIVE HUMI	DITY (%): 44
FROZEN	GROUND/FROST:	YES:		NO:	✓			DEW	POINT °F 46
VI	ISIBILITY: 10) miles			TIME:	11:15	_	BAROMETE	RIC PRESS (in.Hg): 29.93 TREND: falling
						GAS READ	INGS		
Probe/Vent Number	Time	Press + or -	in w.c.	C %LEL	H ₄	O ₂ (% V/V)	CO ₂ (% V/V)	PID (ppm)	Comment
GMP-1	11:30	+ 01 -	0.00	0.0	0.0	20.4	0.2	0.0	
GMP-2	11:25		0.00	0.0	0.0	20.2	0.5	0.0	
GMP-3	11:17		0.00	0.0	0.0	19.8	1.4	0.0	
			0.00	0.0	0.0			0.0	
John Ri	olike			6/7/2023		Ch	drew M.	Steh	6/7/2023

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Attachment 2

Semi-annual Site Inspection Form April 2023



Operation and Maintenance Semi-Annual Inspection Report Stoughton City Landfill

				Sto	ughton, \	Wisconsin				
	INSPECTOR: \		ga				STOUGHTON CITY LA	ANDFILL - STOU	GHTON, WI	
	PROJECT: S		4/25/2023 375007.0002.0000							
	PROJECT: 8	STOUGHTO	JN CITY LAN	IDFILL O&M	WEAT		375007.0002.0000			
\4/5 A.T.I.I			1	CUEAR			010115		500	
WEATHER TEMPERATURE				CLEAR 43°F	P.	ARTLY CLOUDY	CLOUE	DY	FOG 	
WIND				CALM		MEDIUM	HIGH	<u> </u>		
	RAI	N		NONE		LIGHT	MODER		HEAVY	
PRECIPITATION	SNC	W		NONE		LIGHT	MODER		HEAVY	
				INS	SPECTION	ON ITEMS				
		ROU	ITINE	SPECIAL						
TYPE OF INSPECTION	N		/							
PERSONS/EQUIPMENT PF	RESENT:	Wesley Bra	aga/ GEM 20	000, Mini Rae 3000 PID	, Dwyer Dig	ital Manometer.				
GENERAL DESCRIPTION OF SITE	E CONDITIONS		Cita ia ia a		!!!					
noticed along the eastern fence				ood condition. vegetati	on is well es	stablished and is not stre	sseu. some amma b	urrowing		
noticed diong the eastern rene	e iiiie dariiig ti	по поресе	1011.							
SPECIAL INSPEC	CIAL ITEMS			POTENTIAL P	ROBLEM	AREA	STATUS		NOTES	
PERIMETER SECURI	ITY FENCING		BROKE	N OR MISSING WOOD S	SLATS, TORN	CHAIN LINK FABRIC			the wood fencing have been removed	
							2	north of the	western gate.	
ENTRANCE GATE AND LOC	CLING MECHA	NIICNA	10	OCK DBOKEN (MISSING	NATCHANIE	M INODEDATIVE				
LINTRAINCE GATE AIND LOC	CKING WILCHA	INISINI	LC	OCK BROKEN/MISSING,	IVIECHANISI	VIINOPERATIVE	1		difficult to close. Lock is still operable e replaced in the near future.	
							1	but should b	e replaced in the hear future.	
MONITORING WELLS AND	WELLHEAD CO	VERS	SIGNS	OF TAMPERING, CASI	NG DAMAG	ED, LOCK MISSING.	1			
							-			
FINAL COVER VE	GETATION		BARE SPO	OTS, STRESSED VEGETA	TION, DEEP	ROOTED VEGETATION				
							1			
FINAL COVER SLOPE (EXPLAIN BELOW)		GUI	LIES, LACK OF VEGETAT	TION SUBSI	DENCE PONDING		Ponding area	noted during the March 2023 EPA's		
,		,			,			5-year Site walk was dry with no saturated soil		
							1	observed du	ring the April 2023 inspection.	
									l burrowing noticed along eastern	
								fence line. Burrows are mainly shallow going		
EVIDENCE OF BURRON	WING ANIMAL	S	[DAMAGE TO FINAL COV	/ER, EVIDEN	ICE OF WASTE		the fence and are unlikely to be within the li- landfilled material. Due to the adjacent wetle		
									mals and/or filling holes are unlikely to	
									ent solution. Burrowing should be	
									uring future inspections to ensure cap	
							1	integrity con	tinues.	
STORMWATER DRAIN	AGE CHANNEI	s		GULLIES, EROSION, DE	BRIS CLILVE	ERT BLOCKED				
3.3						52001125	1			
									at GV-3 has rusted out at the ground	
LANDFILL GAS VENT	TING SYSTEM		DAMAG	GED OR BLOCKED VENT	RISERS, STE	RESSED VEGETATION			fallen over. Sign was repaired during on by TRC staff. If the sign continues to	
									n sign post will need to be replaced.	
			1				1	ian over thei	. 5.5.1 post will ficed to be replaced.	
							1			
ACCESS RC	JAD			PONDING, RU	TTING, EROS	SION	1			
COVER MOWING AND T			MOWING	G AND TALL VEGETATIO						
REMOVAL (OCTOBER IN	ISPECTION ON	LY)		VEGETATION HEIGH	T, ANY MISS	SED AREAS				
* (1)ACCEPTABLE - NO MAINTE	NANCE PEO:	IDED (2) ::	IOT ACCEST	ADLE IDENTIFY SECTION	DED MAAINT	ENIANCE				
* (1)ACCEPTABLE - NO MAINTE	ENANCE REQU	IKED. (2) N	IOT ACCEPT	ABLE - IDENTIFY REQUI	KED WAIN I	ENANCE				
SUMMARY OF DEFICIENCIES AI	ND/OR CORRE	CTIVE ACT	IONS:	Wooden slats along w	estern fenc	e need to be replaced. A	nimal burrowing alor	ng eastern fence	e line should be	
monitored and addressed if iss	ues worsen. D	anger sign	at GV-3 wa	s reinstalled, monitor fo	or post repl	acement. Main gate lock	should be replaced	orior to winter 2	2023.	
	1									
	1/2/	, al.	Buaza	-						
SIGNATURE OF INSPECTOR:	vescu	7 00	The same of the sa				DATE:	4/25/2023		



Photographic Log

Client Name:

Wisconsin Department of Natural Resources Site Location:

Project No.:

Stoughton City Landfill

375007.0004

Photo No.

Date 4/25/2023

1 Time: 13:06

Weather: Overcast/ 43°F

Description: Broken fence

looking southeast.

Photographer:

Wes Braga



Photo No.

Date

2

4/25/2023

Time: 13:30

Weather: Overcast/ 43°F

Description:

Sign repaired at GV-3.

Photographer:

Wes Braga





Photographic Log

Client Name:

Wisconsin Department of Natural Resources

Site Location:

Stoughton City Landfill

Project No.:

375007.0004

Photo No.

3

Date 4/25/2023

Time: 13:45

Weather: Overcast/ 43°F

Description:

Animal burrow near east

fence.

Photographer:

Wesley & Bury

Wes Braga

Photo No.

Date

1

4/25/2023

Time: 13:50

Weather: Overcast/ 43°F

Description:

Animal burrow near east

fence.

Photographer:

Wes Braga

