December 3, 2019
File No. 25219092.00

Mr. Jason Lowery
Wisconsin Department of Natural Resources
101 S. Webster St.
P.O. Box 7921
Madison, WI 53707-7921

Subject: Second 2019 Semi-annual Facility Inspection Report
Stoughton City Landfill
FID #113005950 – License #133
USEPA ID #WID980901219
WDNR Purchase Order #37000-0000010307

Dear Mr. Lowery:

This letter provides a summary of the observations and results from the activities performed in association with the second 2019 semi-annual period at the Stoughton City Landfill site (Site). The activities during this period include bimonthly monitoring of the perimeter landfill gas probes and an inspection of the Site including the landfill cover, storm water management system, landfill gas venting system, perimeter fencing, groundwater monitoring wells, and access road. A copy of this letter report is also being sent to Ms. Van Nguyen at the U.S. Environmental Protection Agency (USEPA), and an electronic copy has been emailed to you.

BIMONTHLY GAS PROBE MONITORING

SCS Engineers (SCS) personnel monitored three perimeter landfill gas probes at the Site in association with this period on June 20, 2019; August 2, 2019; and October 2, 2019. The sampling was conducted using field meters to assess the quality and pressure/vacuum of soil gas at the probe locations.

Methane was not identified at concentrations above 50 percent of the lower explosive limit (LEL) or 2.5 percent by volume at any of the gas probes during this reporting period. Based on the monitoring results from this period, it does not appear that landfill gas, exceeding the LEL of 5 percent for methane, is migrating to the south of the landfill towards occupied homes. The completed bimonthly gas probe monitoring report forms are included in **Attachment A**.

SITE INSPECTION

SCS performed the semi-annual facility inspection at the site on October 2, 2019. The completed semi-annual facility inspection report is included in **Attachment B**. The observations from the semi-annual inspection for this period are summarized below.

Landfill Cover – The landfill cover is generally in good condition. Several minor items were noted:

- A few small areas of surface water ponding were present (**Attachment C**, **Photo 1**). The ponded water had not adversely affected the vegetation, thus is not significant.

- Woody vegetation was present in several limited areas on landfill surface, including near GV-11 and MW-11.

These items should be monitored in the future and appropriate action taken if necessary.

Storm Water Management System – No visible erosion was noted in the drainage channels. The culverts were undamaged and unobstructed. A subcontractor had removed the woody vegetation noted in the previous semi-annual report from the storm water ditch (**Attachment C**, **Photo 2**).

Landfill Gas Venting System – The gas venting wells were intact, and no stressed vegetation was identified in the vicinity of the wells. Woody vegetation is growing in the vicinity of GV-11 (**Attachment C**, **Photo 3**) and GV-8 is slightly out of plumb but appears to be undamaged (**Attachment C**, **Photo 4**).

Perimeter Security Fencing – The chain-link fencing on the north and east sides of the site was in good condition. Both access gates are in good condition, and the padlocks operated properly. Signage was present and legible on both access gates. There was no evidence of trespassing or unauthorized use of the portion of the Site where access is restricted.

A portion of a slat was broken from the wooden perimeter fence on the south side (**Attachment C**, **Photo 5**) of the site. The remainder of the wooden fence was in good condition.

Monitoring Wells and Wellhead Covers – Woody vegetation is present in the vicinity of the MW-11 nest (**Attachment C**, **Photo 6**). The woody vegetation should be removed in 2020.

Since the time of the inspection, additional work was performed on the packers in MW-10I and MW-13I. As previously noted, the mechanical packers installed in these wells were not able to be completely removed from the wells. On November 1, 2019, the packers were removed from the wells with the aid of a mechanical device (i.e., a jack). The protective casing of MW-13I was cut near the ground surface and temporarily removed to allow better access to the well. The protective casing was reconnected using aluminum angle stock and pop rivets. T2 Torquer style orange locking plugs (compression caps) were installed at the top of both wells.

As stated in the 2019 First Semi-annual Report, SCS intended to provide mechanical packers for three additional wells that had been flowing at that time (MW8S, MW-8B, and MW-8I). Due to the difficulty of removing the packers already installed in wells at the Site, and the fact that the MW-8 wells were not flowing at this time, packers were not installed.

All monitoring wells were locked after completion of the well repairs.

Access Road – The site access road was in good condition with no ruts or erosion noted. No standing water was observed on the site access road.

If you have any questions about this report or any other aspect of the project, please call us at 608-224-2830.

Sincerely,

Leslie A. Busse, PE
Senior Project Manager
SCS Engineers

Mike Prattke
Project Director
SCS Engineers

LAB/AJR/MP

cc: Ms. Giang Van Nguyen, USEPA Region V

Encl. Attachment A – Bimonthly Gas Probe Monitoring Report Forms
Attachment B – Completed Semi-annual Facility Inspection Form, October 2, 2019
Attachment C – Photograph Log

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Attachment A

Bimonthly Gas Probe Monitoring Report Forms

Gas Probe Monitoring Report
Stoughton City Landfill
Stoughton, Wisconsin
25219092.00

Probe	%LEL (as methane)	% Oxygen	% CO_2	PID (ppm)	Pressure (inches of water)
GP-1	0.1	20.7	0.0	0.1	0.0
GP-2	0.0	20.9	0.0	0.1	-0.5
GP-3	0.0	20.9	0.0	0.1	-0.5

Instruments Used: Elkins Earthworks Meter, PID #2

Operator: Lindsey Carlson

Date: 6/20/19

Weather Conditions:

Barometric Pressure (inches of Hg): 30 Temperature (Degrees F): 61

Relative Humidity (%): 80 Dewpoint (Degrees F): 55 Wind: N 12 mph

Sky Conditions: Partly cloudy

Ground Conditions:

_____Snow __x___No Snow ____Frozen Ground/Frost

Gas Probe Monitoring Report
Stoughton City Landfill
Stoughton, Wisconsin
25219092.00

Probe	%LEL (as methane)	% Oxygen	% CO_2	PID (ppm)	Pressure (inches of water)
GP-1	0.0	20.7	0.1	0.0	0.02
GP-2	0.0	20.9	0.0	0.0	0.0
GP-3	0.0	20.5	0.6	0.0	0.0

Instruments Used: Elkins Earthworks, PID #3

Operator: Paul Grover

Date: 8-2-19

Weather Conditions: Sunny

Barometric Pressure (inches of Hg): 30.15 Temperature (Degrees F): 81

Relative Humidity (%): 36 Dewpoint (Degrees F): 52 Wind: 5 mph

Sky Conditions: Clear

Ground Conditions:

_____Snow __x___No Snow _____Frozen Ground/Frost

Gas Probe Monitoring Report
Stoughton City Landfill
Stoughton, Wisconsin
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Probe	%LEL (as methane)	% Oxygen	% CO_2	PID (ppm)	Pressure (inches of water)
GP-1	2	20.8	0.2	0.1	0.2
GP-2	0	20.9	0	0	0.2
GP-3	0	20.9	0.8	0	0.2

Instruments Used: Elkins Earthworks, PID #3

Operator: Lindsey Carlson

Date: 10/02/19

Weather Conditions: Overcast, misty, wet conditions

Barometric Pressure (inches of Hg): 29.04 Temperature (Degrees F): 55

Relative Humidity (%): 86 Dewpoint (Degrees F): 53.75 Wind: 13 mph NE

Sky Conditions: overcast

Ground Conditions:

_____Snow __x___No Snow _____Frozen Ground/Frost

Attachment B

Completed Semi-annual Facility Inspection Form, October 2, 2019

Operation and Maintenance Semi Annual Inspection Report
Stoughton City Landfill
Stoughton, Wisconsin

Inspector Lindsey Carlson
Company SCS Engineers
Project Stoughton Landfill
Location Stoughton Landfill
Date/Time 10/2/19 / 10:30am
Project No. 25219092.00

Weather:	Clear	P. Cloudy	Cloudy	Fog
Temperature:	High	55°F	---	---
Wind:	Calm	Medium	High	---
Precipitation:	Rain	Light	Moderate	Heavy
	Snow	Light	Moderate	Heavy

Type of Inspection: Routine ☒ Special ☐

Persons/Equipment Present: Lindsey Carlson (SCS Engineers), Elkins Earthworks – gas analyzer, PID #3

General Description of Site Conditions: Wet due to recent rainfall events, some minor issues but overall in good condition.

Specific Inspection Items	Potential Problem Areas	Status *	Notes
Perimeter Security Fencing	Broken or missing wood slats, torn chain link fabric.	2	Missing wood slat in fence.
Entrance Gate and Locking Mechanism	Lock broken/missing, mechanism inoperative.	1	
Monitoring Wells and Wellhead Covers	Signs of tampering, casing damaged, lock missing.	1	Well nest 11 obstructed by woody vegetation, may cause damage.
Final Cover Vegetation	Bare spots, stressed vegetation, deep rooted vegetation.	2	See above. Woody vegetation present throughout landfill area – GV-11 obstructed.
Final Cover Slope (explain below)	Gullies, lack of vegetation, subsidence, ponding.	1	Very minor ponding from recent rain event.
Evidence of Burrowing Animals	Damage to final cover, evidence of waste.	1	
Stormwater Drainage Channels	Gullies, erosion, debris, culvert blocked.	1	Culvert recently unobstructed.
Landfill Gas Venting System	Damaged or blocked vent risers, stressed vegetation.	1	GV-8 leaning but seemingly undamaged.
Access Road	Ponding, rutting, erosion.	1	
Cover Mowing and Tall Vegetation Removal (October Inspection Only)	Mowing and tall vegetation removal done to specified vegetation hight, any missed areas		

* (1) Acceptable - No Maintenance Required. (2) Not Acceptable - Identify Required Maintenance.

Summary of Deficiencies and/or Corrective Actions: Need to replace wooden slat in fence and remove obsructive vegegation around MW-11 and GV-11.

Signature of Inspector Lindsey E. Carlson Date 10/2/2019

Attachment C

Photograph Log

Stoughton City Landfill
Stoughton, WI
SCS Engineers Project #25219092.00

Operation and Maintenance Semi Annual Inspection Report
October 02, 2019

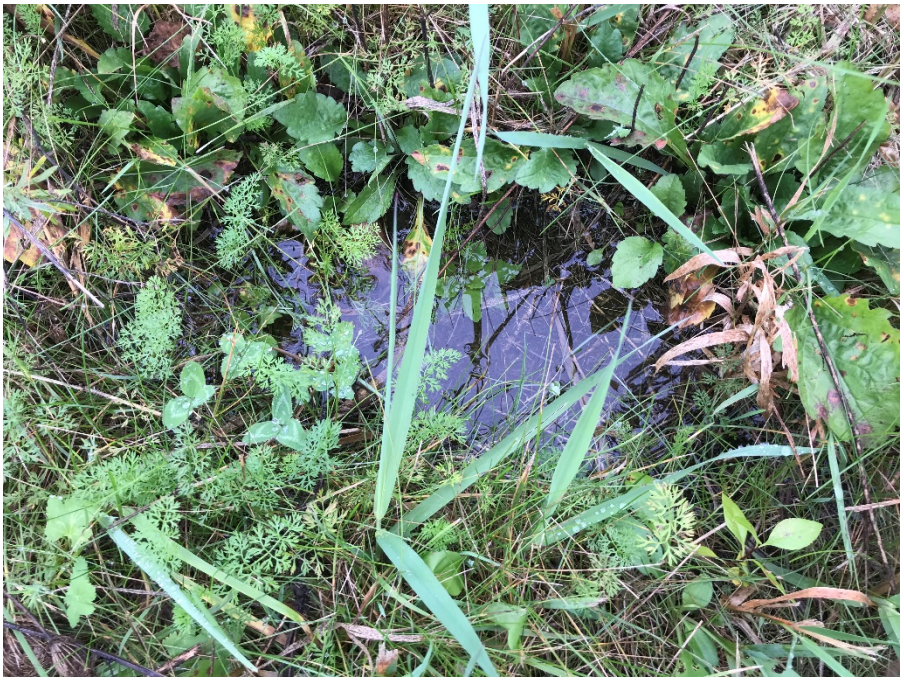

Photo 1: Slight surface water ponding on landfill cap after recent storm events (looking down).

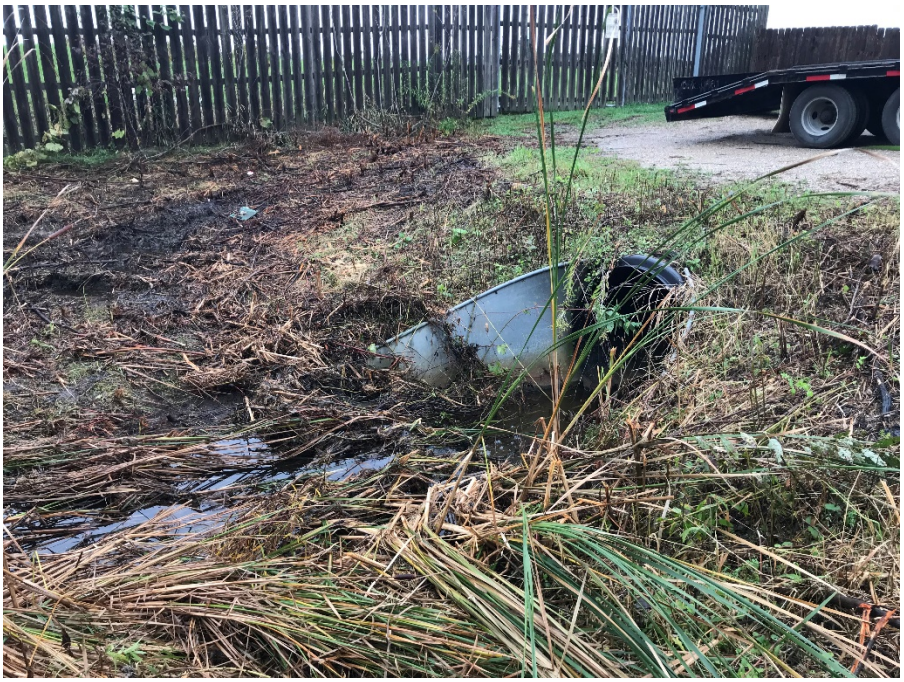

Photo 2: View of culvert outside of southeast gate recently cleared of vegetation (looking northeast).

Stoughton City Landfill
Stoughton, WI
SCS Engineers Project #25219092.00

Operation and Maintenance Semi Annual Inspection Report
October 02, 2019

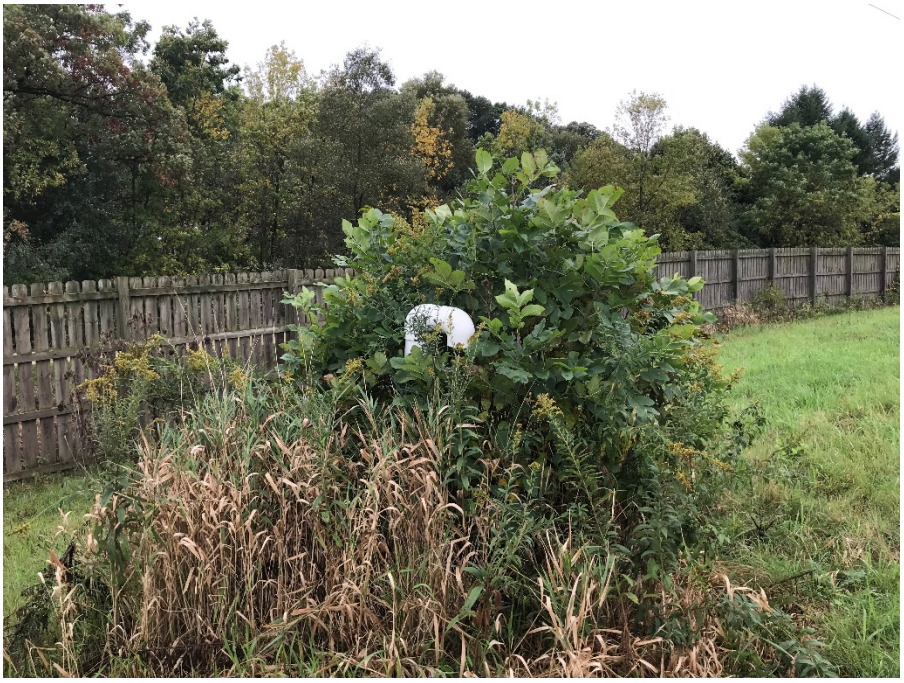

Photo 3: Woody vegetation in the vicinity of GV-11 (looking southwest).

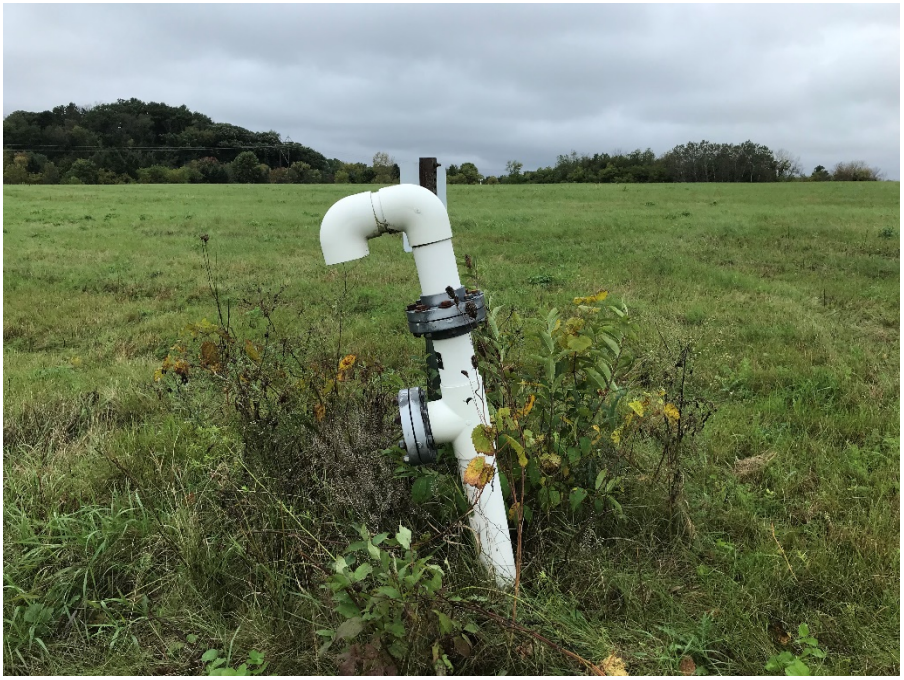

Photo 4: GV-8 slightly out of plumb, though apparently functional (looking west).

Stoughton City Landfill
Stoughton, WI
SCS Engineers Project #25219092.00

Operation and Maintenance Semi Annual Inspection Report
October 02, 2019

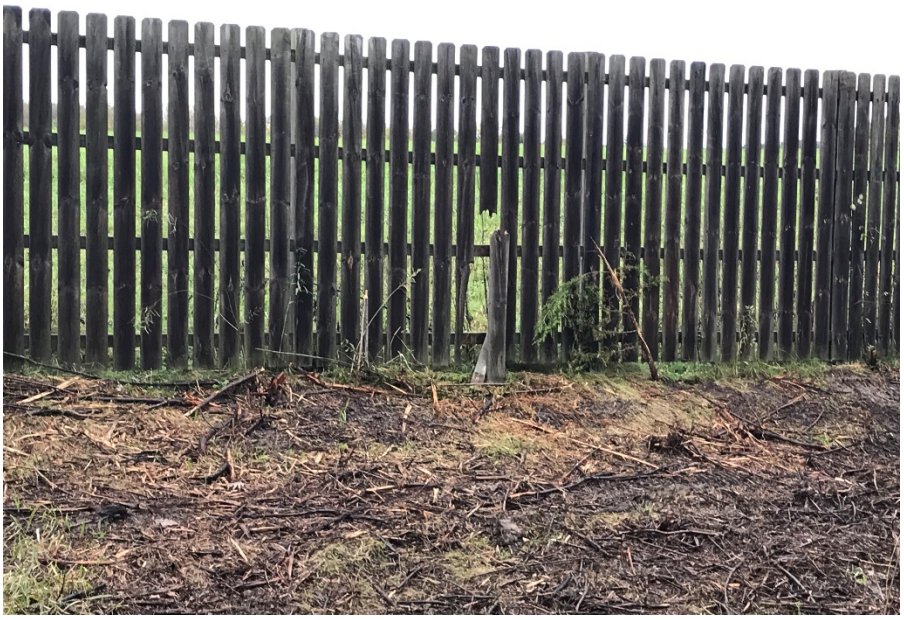

Photo 5: View of broken wood slat in south side fence (looking north).

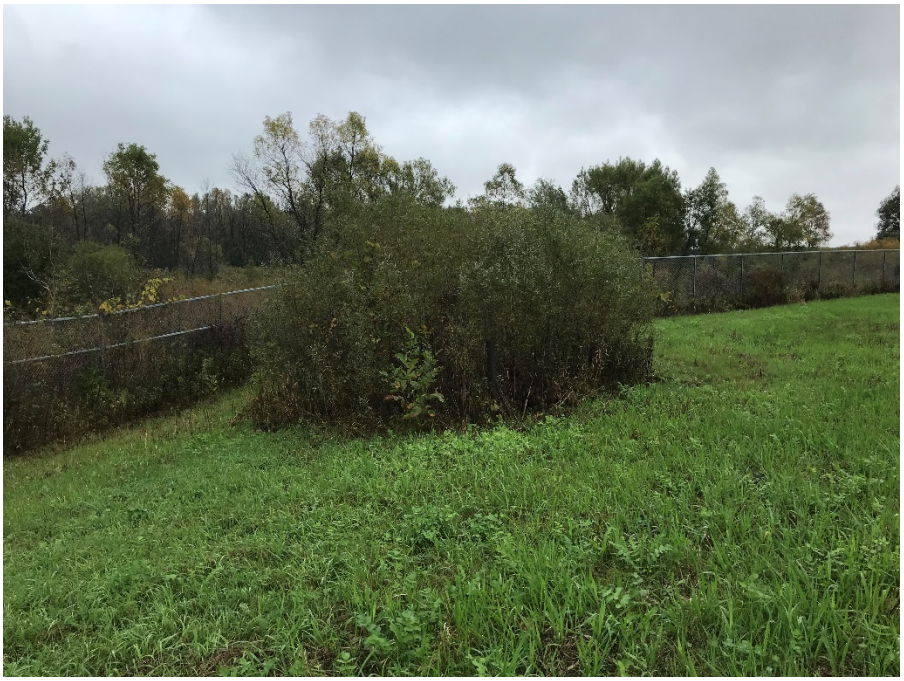

Photo 6: Thick woody vegetation in the vicinity of MW-11 nest (looking northeast).