ANNUAL INSPECTION REPORT

BARRETT LANDFILL

New Berlin, Waukesha County, Wisconsin

January 18, 2018

PRESENTED TO

Wisconsin Department
of Natural Resources
101 S. Webster Street
Madison, WI 53707

PRESENTED BY

TETRA TECH

Tetra Tech
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TETRA TECH

January 18, 2018

Mr. Jason Lowery, Assistant Project Manager
Wisconsin Department of Natural Resources
Remediation & Redevelopment Program
101 S. Webster Street, Box 7921 Madison, WI 53707

SENT BY EMAIL: Jason.Lowery@wisconsin.gov

RE: BARRETT LANDFILL – Annual Inspection Report

Dear Mr. Lowery:

Enclosed is the Annual Inspection Report for the Barrett Landfill, in New Berlin, Wisconsin, prepared for the Wisconsin Department of Natural Resources (WDNR) by Tetra Tech, presenting the results of the inspections and specifying the items identified as requiring maintenance or repair.

We trust that the information provided meets or exceeds your expectations. Please contact me (262-792-1282x226, ashley.wagner@tetratech.com) to discuss our findings or if you are in need of any additional information.

Sincerely,

Tetra Tech

Ashley A. Wagner

Senior Project Geologist, P.G.

Enclosure: Annual Inspection Report

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CONTENTS

SUMMARY OF ANNUAL LANDFILL INSPECTION

On behalf of the Wisconsin Department of Natural Resources (WDNR), Tetra Tech performed the Annual Inspection at the Barrett Landfill in New Berlin, Wisconsin in November and December of 2017.

The purpose of the annual landfill inspection was to provide an evaluation of the quality of the cover and monitoring systems, documentation of observations, and identification of areas of concern impacting the ability to meet performance objectives. Tasks were conducted to ensure compliance with performance objectives as defined in Wisconsin Administrative Code NR504.

Inspections were conducted during gas probe monitoring on November 1, 2017 and groundwater monitoring on November 14-17, 2017, in addition to during the Annual Inspection which was conducted on December 18, 2017. Field visits were conducted by Tetra Tech geologists Ashley Wagner and Ashley Kowalewski. The results of the inspections are summarized below. Recommendations based on the monitoring and annual inspection events are provided as Section 2. The detailed Landfill Inspection Form is included as Appendix A. Site maps are provided as Appendix B, and photographic documentation is provided as Appendix C.

GENERAL LANDFILL: SECURITY FENCE, ACCESS ROADS and PERIMETER

Inspections of the access roads and perimeter fencing were conducted on December 18, 2017 and included an evaluation of erosion, vegetation, damage, barriers, and tampering.

In general, the following conditions were observed:

Mowing

The vegetated landfill cover and perimeter was mowed at the direction of WDNR in the Fall of 2017, prior to Tetra Tech's contract for landfill O&M.

Large Tree and Brush Removal along Perimeter Fence

Inspection of large trees along the fence line of the landfill property was completed by the WDNR in the Fall of 2017, prior to Tetra Tech's contract for landfill O&M. Evidence of tree trimming was observed during sampling and inspection events.

Elevations Survey

A survey of monitor wells, gas probes and leachate head wells will be conducted in the Spring of 2018. Monitor well data will include casing elevations to 0.01 ft, ground surface elevations to 0.1 ft, and horizontal coordinates. All other wells will be surveyed for ground surface elevations to 0.1 ft and horizontal coordinates. This information will be submitted to the WDNR in electronic and map format. Tetra Tech will incorporate this information into future groundwater contour maps.

LANDFILL COVER INSPECTION

An inspection of the landfill cover was conducted on December 18, 2017. The inspection included an evaluation of the condition of vegetative cover, areas of significant erosion, signs of settlement or subsidence, and presence of significant vegetation around gas vents and monitor wells.

Drainage channels along the perimeter of the landfill were assessed for the following during the Annual Inspection:

- Areas of erosion, including drainage channels and channel slopes
- Backfill, seed and mulch erosion areas (gullies)
- Culverts, overflow structures, riprap condition, and potential blockage

Areas that need vegetation, erosion or settlement repair were identified, and these will be graded and/or filled with protective cover soil and topsoil, seeded, mulched and sufficiently watered to re-establish vegetation in the Spring of 2018.

It was noted during the inspection that small trees and tree stumps (<6 inches in diameter) were located on the cap. Most had appeared to have been recently cut down, while a few remained standing. Locations are noted on the attached figure.

Mulched material from the brush hog was present in the drainage channel on the northwestern portion of the Site. It did not appear to be obstructing any drainage at the time, and it will be monitored in the future. The location of this area location is indicated on the attached figure.

A description and the associated locations of recommended repairs is provided in Section 2.

LANDFILL GAS VENTING SYSTEM

Gas probe monitoring was completed on November 1, 2017. A total of 27 samples were collected from the gas probe locations for measurement of percent carbon dioxide, percent LEL as methane, and percent oxygen. Ambient temperature and barometric pressure measurements were collected at the beginning of the field project day.

The landfill gas venting system was assessed during the gas probe monitoring event as well as during the Annual Inspection for an evaluation of the overall condition and operational effectiveness, as follows:

- Vent pipes were inspected and cleared of any obstructions
- Vent screens were maintained and secured as necessary; beehives need to be removed from two vent screens
- Several vents were missing screens and will need to be repaired
- Vent boots were inspected for any holes or tears in the liner
- Hose clamps securing the boots in place were checked and retightened if needed

Gas vent risers were inspected and recommended repairs are provided in Section 2.

GROUNDWATER MONITORING NETWORK

An assessment of the groundwater monitoring network was completed during the groundwater sampling event from November 14th to 17th, 2017 as well as during the Annual Inspection which was completed December 18, 2017. Recommendations for repairs to groundwater monitor wells are provided in Section 2.

The annual inspection included all gas probes and leachate head wells; these were also inspected during sampling events. We recommend that missing, damaged or corroded locks be replaced and minimal damage to casing or well covers be repaired as provided in Section 2.

Leachate Removal System Commissioning and Decommissioning

The leachate pumping system was decommissioned on October 26, 2017. A final collection of leachate was transported by MJM Pumping Services, LLC to Crystal Springs Treatment, LLC of Milwaukee, WI for disposal. The aboveground force main was disconnected and the system winterized at this time. Pipes were capped, electrical panels shut down (switches turned off), and flexible piping drained for storage at the Tetra Tech storage unit.

RECOMMENDATIONS BASED ON 2017 ANNUAL LANDFILL INSPECTION

In accordance with the Scope of Work, the following activities will be conducted in the Spring of 2018:

LEACHATE LINE CLEANING

In Spring of 2018 the leachate collection lines will be water pressure cleaned (water "jetted") and television inspected. The annual inspection report for 2018 will detail information regarding the conditions of the lines, in addition to recommendations as deemed appropriate. Tetra Tech will coordinate and oversee leachate line cleaning and televising activities at the site; WDNR will contract with these subcontractors directly.

ELEVATIONS SURVEY

A survey of monitor wells, gas probes and leachate head wells will be conducted in the Spring of 2018. Monitor well data will include casing elevations to 0.01 ft; ground surface elevations to 0.1 ft; and horizontal coordinates. Gas probes and leachate head well surveys will include ground surface elevations to 0.1 ft and horizontal coordinates. This information will be submitted to the WDNR in both electronic and map format. Tetra Tech will incorporate this information into future groundwater contour maps.

REPAIRS NEEDED

We provide the following recommendations for follow up or repairs in Spring of 2018, based on the Annual Inspection:

Gas Vents and Probes:

- Gas vents need to be renumbered. Some vents are not assigned a number and others are assigned duplicate numbers. The newly numbered vents will be placed on a revised Site Map.
- Five gas vents (GV-3, GV-11, GV-18, GV-50, and an unmarked gas vent near GP-9) had holes or tears in the boots at the base of the vent. Hose clamps need to be replaced on GV-17 (a duplicate number) and GV-26. Screens need to be replaced on GV-1 and GV-33, and screens need to be cleared (not fully blocking screen) at GV-2 and GV-50.
- Gas probes GP-3, GP-5 and GP-12 need locks as there are none on these protective casings. GP-1, GP-2S/D, GP-5S/M/D, GP-6S/M/D, GP-9S/M/D and GP-10S/M/D need caps on the individual probes; the vented caps that were present on gas probes were plugged with mud and should all be replaced (27 caps in total).

Leachate Head Wells:

- Leachate head wells (LHW) and unknown pipes will be identified or renumbered and placed on a revised Site Map.
- One LHW (near GV-46) had a hole/tear in the boot that will need to be repaired.
- If the protective casing is lockable, locks will need to be added. If the protective casing cannot be locked, a cap or plug that can be locked will need to be installed.

Monitor Wells:

- Monitor wells will all be clearly marked on both the inside and outside of the casing. Currently, there are no WDNR Monitor Well ID labels on any of the wells; these will be installed at each location upon receipt of the labels assigned to each well at installation.
- Eight monitor wells are currently without locks.
- Eight monitor wells need new 2-inch caps.

- B-96-13A and B-96-13 have unlockable PVC protective casings: we recommend installation of protective casings consisting of lockable steel; alternatively, both well casings are of considerable height (approximately 4.5 feet above ground surface) and if not switched to steel could be cut down to a workable height, and a lockable cap or plug installed. B-96-13 is damaged at a depth of approximately 8 ft bgs; this will be further investigated and repaired or replaced as needed.
- B-94-19 is bent and needs to be repaired. During sampling of B-94-19A, it was difficult to get a bailer down the well at approximately 7.5 ft bgs; this will be further investigated and repaired if appropriate.
- B-94-14A is located near the edge of a slope and there is erosion around the cement pad that should be addressed by clean fill or repair.

Erosion:

- Erosion channels were observed on the northeast face of the landfill hill, extending towards Sedimentation Basin 1; these channels will need to be filled and reseeded.
- Several tire tracks or erosion channels on the southwest corner (near GV-44) will need to be filled and reseeded. Light erosion on the north face of the landfill hill (near GV-11 and GV-14) should be filled and reseeded or monitored for further erosion.
- A total of six animal burrow holes need to be filled.
- A burrow hole located east of GV-8 appears to have damaged the liner; filling and reseeding of this area, in addition to liner repairs if deemed necessary, are recommended.
- A drain pipe located near GV-26 is flattened and damaged; this should be repaired.

Features are identified on the photo log and attached Figure.

APPENDICES

APPENDIX A: Landfill Inspection Forms

APPENDIX B: Site Map

APPENDIX C: Photograph Documentation

APPENDIX A: Landfill Inspection Forms

BARRETT LANDFILL INSPECTION FORM A-1
Monitor Wells
December 18, 2017

Well ID	Clearly Marked? (Y/N)	Lock Condition (Good, rusted, broken, none)	WDNR Number	Well Cap (Y/N)	Well Condition	Photo Time	Notes
MWs sampled							
B-15A	Yes	Good	NA	No	Rusted	15:00/15:01	
B-21	Yes	Ok	NA	No	Rusted	14:38/14:42	
B-21A	Yes	Ok	NA	No	Rusted	14:38/14:41	
B-94-14A	Yes	Ok	NA	Yes	Ok	15:08/15:10	
B-94-14R	Yes	Ok	NA	Yes	Ok	15:09/15:11	
B-94-19A	Yes	Ok	NA	Yes	Good	15:21	
B-94-25	says B-25	Good	NA	Yes	Ok	15:17/15:19	
B-94-25A	says B-25A	Good	NA	No	Ok	15:18	
B-96-13A	No	None	NA	Yes	Good	15:31/15:35	well not lockable, pvc pipe
B-96-17	No	None	NA	Yes	Rusted	14:02	
B-96-17A	No	None	NA	Yes	Rusted	14:03	
B-96-18A	Yes	Ok	NA	Yes	Cap doesn't sit right	15:44/15:45	
B-96-18B	Yes	Ok	NA	Yes	Ok	15:46/15:47	
W-23	Yes	None	NA	Yes	Rusted	15:39/15:41	
W-23A	Yes	None	NA	Yes*	Ok	15:42	Needs new well cap
W-24	Yes	Good	NA	No	Good	13:47/13:48	
Other Wells							
B-94-26	No	None	NA	No	Ok	13:38/13:39	
B-19	Yes	None	NA	No	Bent, needs repair	15:22	
B-96-13	Yes	None	NA	Yes	PVC outer casing not lockable	15:31	Tear in boot/liner

BARRETT LANDFILL INSPECTION FORM A-2
Gas Vents
December 18, 2017

Well ID	Clearly Marked? (Y/N)	Boot Condition	Hose Clamp Condition	Screen Present	Screen Clear (Y/N)	Tilt Direction	Notes
GV-1	Yes	NA	NA	No	Yes	Straight	Cleared out beehive from inside vent
GV-2	Yes	Ok	Ok	Yes	No	NE	Needs beehive cleared out
GV-3	Yes	Hole/tear	Ok	Yes	Yes	Straight	
GV-4	Yes	Ok	Ok	Yes	Yes	Straight	
GV-5	Yes	Ok	Ok	Yes	Yes	Straight	
GV-6	Yes	Ok	Ok	Yes	Yes	Straight	
GV-7	Yes	Ok	Ok	Yes	Yes	Straight	
GV-8	Yes	Ok	Ok	Yes	Yes	Straight	tightened hose clamp
GV-9	Yes	Ok	Ok	Yes	Yes	N	
GV-10	Yes	Ok	Ok	Yes	Yes	N	
GV-11	Yes	Ok	Ok	Yes	Yes	N	duplicate number
GV-11	Yes	Hole/tear	Ok	Yes	Yes	Straight	duplicate number
GV-12	Yes	Ok	Ok	Yes	Yes	Slightly N	
GV-13	Yes	Ok	Ok	Yes	Yes	N	
GV-14	Yes	Ok	Ok	Yes	Yes	Slightly N	
GV-15	Yes	Ok	Ok	Yes	Yes	Straight	
GV-17	Yes	Ok	Ok	Yes	Yes	Straight	duplicate number
GV-17	Yes	Ok	None	Yes	Yes	Straight	duplicate number
GV-18	Yes	Hole/tear	Ok	Yes	Yes	Straight	
GV-20	Yes	Ok	Ok	Yes	Yes	Straight	
GV-21	Yes	Ok	Ok	Yes	Yes	Straight	
GV-22	Yes	Ok	Ok	Yes	Yes	Straight	
GV-23	Yes	Ok	Ok	Yes	Yes	N	
GV-24	Yes	Ok	Ok	Yes	Yes	Straight	
GV-25	Yes	Ok	Ok	Yes	Yes	E	
GV-26	Yes	Ok	Bent	Yes	Yes	E	
GV-27	Yes	Ok	Ok	Yes	Yes	E	
GV-28	Yes	Ok	Ok	Yes	Yes	W	
GV-29	Yes	Ok	Ok	Yes	Yes	Slightly N/NW	
GV-30	Yes	Ok	Ok	Yes	Yes	S	
GV-31	Yes	Ok	Ok	Yes	Yes	Slightly N	
GV-32	Yes	Ok	Ok	Yes	Yes	NNE	
GV-33	Yes	Ok	Ok	None	Yes	Straight	
GV-34	Yes	Ok	Ok	Yes	Yes	N	
GV-35	Yes	Ok	Ok	Yes	Yes	Slightly N	
GV-36	Yes	Ok	Ok	Yes	Yes	Straight	
GV-38	Yes	None	None	Yes	Yes	W	
Unmarked	No	None	None	Yes	Yes	W	Unmarked GV, S of GV-38
GV-39	Yes	Ok	Ok	Yes	Yes	NW	
Unmarked	No	Ok	Ok	Yes	Yes	N	Unmarked GV, N of GV-39, trees at base
GV-41	Yes	Ok	Ok	Yes	Yes	W	
GV-43	No	None	None	Yes	Yes	Straight	
GV-44	Yes	Ok	Ok	Yes	Yes	Straight	tightened hose clamp
GV-45	Yes	Ok	Ok	Yes	Yes	Straight	
GV-46	Yes	Ok	Ok	Yes	Yes	Straight	
GV-47	Yes	Ok	Ok	Yes	Yes	E	
GV-48	Yes	Ok	Ok	Yes	Yes	S	
GV-49	Yes	Ok	Ok	Yes	Yes	S	
GV-50	Yes	Hole/tear	Ok	Yes	No	With downhill direction	Beehive in screen
Unmarked	No	Hole/tear	Ok	Yes	Yes	E	Unmarked GV by GP-9

BARRETT LANDFILL INSPECTION FORM A-3
Gas Probes
December 18, 2017

Well ID	Clearly Marked? (Y/N)	Lock Condition (Good, rusted, broken, none)	WDNR Number	Well Cap (Y/N)	Well Condition	Photo Time	Notes
GP-1	Yes	Good	NA	No	Ok, rusted	15:00/15:02	
GP-2S	Yes	Good	NA	No	Ok, rusted	14:38/14:40	
GP-2D	Yes		NA	No		14:38/14:40	
GP-3S	Yes	None	NA	Yes	Good	13:34	
GP-3M	Yes		NA	Yes			
GP-3D	Yes		NA	Yes			
GP-4	Abandoned						
GP-5S	Yes	None	NA	No	Dented	15:06/15:07	
GP-5M	Yes		NA	No			
GP-5D	Yes		NA	No			
GP-6S	Yes	Ok	NA	No	Good	14:53	
GP-6M	Yes		NA	No			
GP-6D	Yes		NA	No			
GP-7	Abandoned						
GP-8S	Yes	Good	NA	Yes	Fair	11:39/11:40	
GP-8M	Yes		NA	Yes			
GP-8D	Yes		NA	Yes			
GP-9S	Yes	Ok	NA	No	Good	11:42/11:43	Lock won't lock on well cover doesn't fit right
GP-9M	Yes		NA	No			
GP-9D	Yes		NA	No			
GP-10S	Yes	Ok	NA	No	Good	12:48	
GP-10M	Yes		NA	No			
GP-10D	Yes		NA	No			
GP-11S	Yes	Good	NA	Yes	Good	13:42/13:43	
GP-11M	Yes		NA	Yes			
GP-11D	Yes		NA	Yes			
GP-12S	Yes	None	NA	Yes	Good	13:54/13:55	
GP-12M	Yes		NA	Yes			
GP-12D	Yes		NA	Yes			

BARRETT LANDFILL INSPECTION FORM A-4
Leachate Head Wells or Unknown
December 18, 2017

Well ID	Clearly Marked? (Y/N)	Boot Condition	Hose Clamp Condition	Lock Condition (Good, rusted, broken, none)	Key Number	Well Cap (Y/N)	Well Condition	Location	Notes
LHW	only as LHW	Ok	Ok	None	NA	No	Ok	Near GV-33, northern part of site	No number assigned
LHW	only as LHW	Ok	Ok	None	NA	No	Ok	N of GV-39, northwestern part of site	No number assigned
LHW	only as LHW	Ok	Ok	None	NA	NA	Ok, straight	By GP-11, southern part of site	No number assigned, looks like gas vent
LHW	only as LHW	Hole/tear	Ok	None	NA	Yes	tilted W	By GV-46, southwestern part of site	No number assigned, capped off
LHW-94-6	Yes	Loose	Loose	None		Yes	tilted inside casing		
LHW?	No	NA	NA	None	NA	Yes	Cover broken	W of leachate piping	not sure if LHW or something else
LHW?	No	NA	NA	None	NA	Yes	Ok	W of leachate piping	not sure if LHW or something else
LHW?	No	NA	NA	None	NA	Yes	no cover on larger casing	N of B-96-17	not sure if LHW or something else, 2 pipes in larger casing

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GAS PROBE DATA

Project:	Barrett Landfill	Barometric Pressure:	28.85 Hg
Location:	New Berlin, Wisconsin	Temperature (ambient):	36 F
Personnel:	Ashley Wagner	Measuring Device:	Landtec GEM 2000

				% Methane				
Date	Time	Measurement Point	GEMS ID	Peak	LEL	% CO_2	% O_2	Comments
11/1/2017	12:10	Background	---	0.0	0.0	0.0	20.4	
11/1/2017	14:16	GP-1	280	0.0	0.0	1.4	19.1	
11/1/2017	13:35	GP-2S	284	0.0	0.0	4.3	16.0	
11/1/2017	13:36	GP-2D	286	0.0	0.0	0.0	20.8	
11/1/2017	15:44	GP-3S	287	0.0	0.0	2.0	17.3	
11/1/2017	15:46	GP-3M	288	0.0	0.0	6.5	4.5	
11/1/2017	15:48	GP-3D	289	0.0	0.0	6.8	3.9	
11/1/2017	---	GP-4	290	COULD NOT LOCATE				
11/1/2017	14:27	GP-5S	294	0.0	0.0	4.7	16.4	
11/1/2017	14:26	GP-5M	295	0.0	0.0	6.1	15.2	
11/1/2017	14:25	GP-5D	296	0.0	0.0	4.2	15.8	
11/1/2017	14:01	GP-6S	297	20.2	>	8.6	0.0	
11/1/2017	14:03	GP-6M	298	16.3	>	6.9	3.7	
11/1/2017	14:05	GP-6D	299	3.2	68.0	1.9	17.0	
11/1/2017	---	GP-7	300	COULD NOT LOCATE				
11/1/2017	15:53	GP-8S	264	0.0	0.0	5.5	12.4	
11/1/2017	15:54	GP-8M	265	0.0	0.0	2.3	17.2	
11/1/2017	15:52	GP-8D	266	0.0	0.0	1.9	15.6	
11/1/2017	15:56	GP-9S	267	0.0	0.0	1.0	19.2	
11/1/2017	15:57	GP-9M	268	0.0	0.0	6.6	10.7	
11/1/2017	15:58	GP-9D	269	0.0	0.0	0.4	19.9	
11/1/2017	16:00	GP-10S	270	0.0	0.0	3.4	18.0	
11/1/2017	16:01	GP-10M	271	0.0	0.0	4.3	16.4	
11/1/2017	16:02	GP-10D	272	0.0	0.0	14.3	3.6	
11/1/2017	16:06	GP-11S	273	0.0	0.0	5.2	15.6	
11/1/2017	16:08	GP-11M	274	0.0	0.0	2.7	15.6	
11/1/2017	16:10	GP-11D	275	0.0	0.0	4.5	14.1	
11/1/2017	13:45	GP-12S	276	0.1	0.0	2.6	18.0	
11/1/2017	13:46	GP-12M	277	0.0	0.0	2.7	17.1	
11/1/2017	13:47	GP-12D	278	0.0	0.0	0.1	20.7	

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Barrett Landfill Site Inspection Form

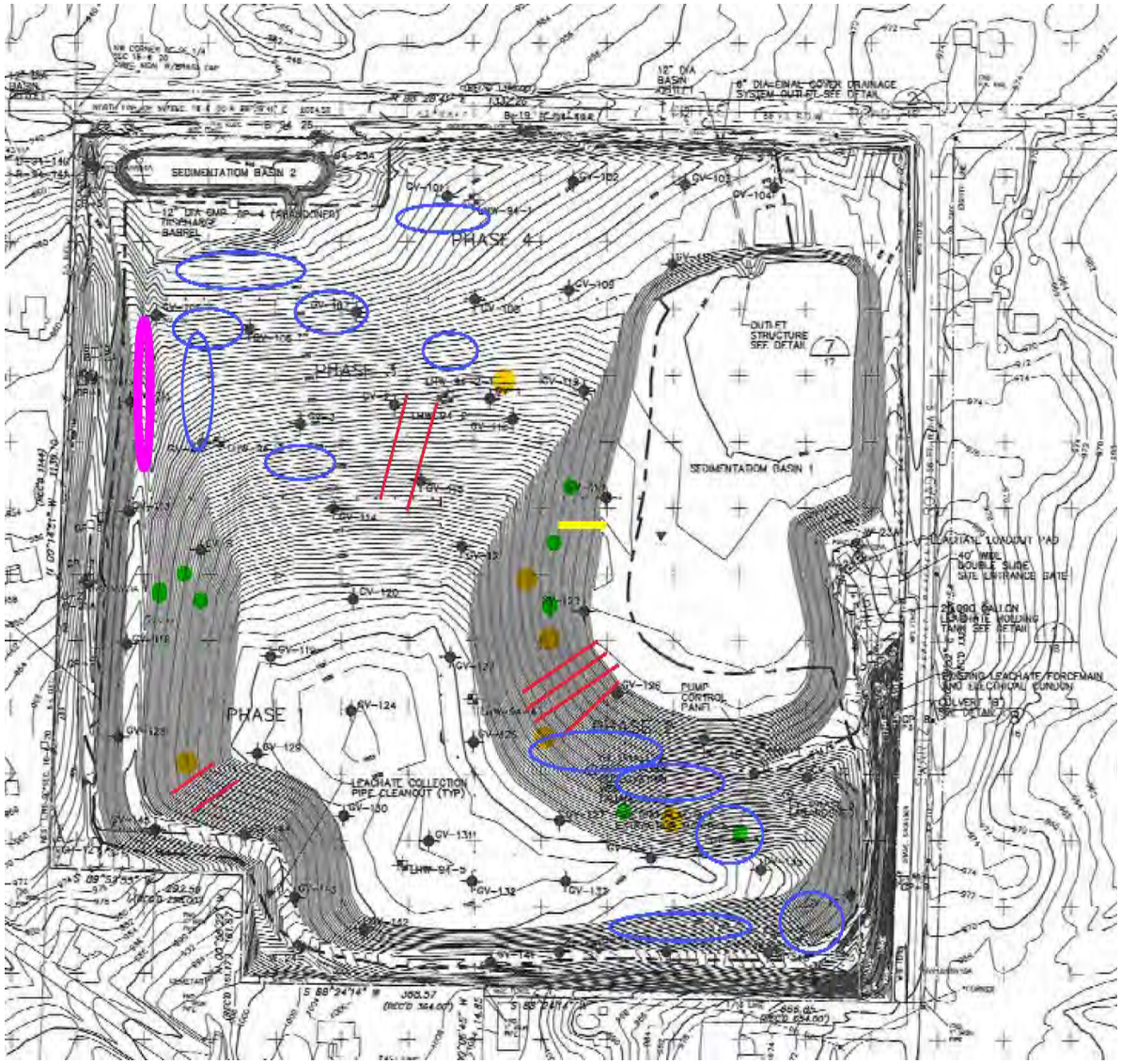
Inspector: Ashley Wagner Date: 12/18/2017

Type of inspection: **annual**

	Good	Fair	Poor	Comments
1. Vegetative cover (condition, trees or bushes on cap)		X		small trees/shrubs/stumps were located throughout the landfill cap, noted on figure
2. Soil stability (erosion control)		X		Erosion found on NE, N and SW hill faces, need repairs
3. Cover integrity (no exposed waste or ruts)	X			a piece of corrugated metal and a tire were found on the north face of the hill.
4. Surface water drainage (settlement or ponding)	X			Mulched material at NW portion, noted on figure, will need to observe in future to see if blocking drainage.
5. Surface seep control	X			
6. Unauthorized access control (fence,	X			
7. Groundwater well maintenance (seals, casing, labels)		X		Locks and caps need to be installed where missing, repairs to wells as noted
8. Gas Probes		X		Locks and caps need to be installed where missing.
9. Gas vents				Need to be renumbered
10. Leachate Head Wells (LHW) and unidentified pipes			X	Need to be labeled, caps and locks installed where missing, fix any broken or missing covers
11. Drainage layer discharge pipes		X		Drain pipe near GV-26 needs to be repaired/replaced, all others ok
12. Other activites on or adjacent to	X			
13. Additional comments	Some well locks are difficult to open (getting old and rusted) and may need to			
14. Items to be observed in future	erosion on N hill face, mulched material on NW portion			
15. Recommended maintenance	Fill/reseed erosion; fix missing screens and clear partially blocked			

APPENDIX B: Site Map

2017 ANNUAL LANDFILL INSPECTION FEATURES – Barrett Landfill, New Berlin, Wisconsin



LEGEND

- EXISTING GRADE
- FINAL GRADE
- PROPERTY LINE
- PERMITTED LIMIT OF WASTE
- APPROXIMATE LIMITS OF WASTE DISPOSAL / MEMBRANE LIMITS
- PERMITTED LIMITS OF WASTE
- GP-11 GAS PROBE
- LY-PHASE LYSIMETER
- LH-W-94-2 LEACHATE HEADWELL
- GV-101 GAS VENT
- B-21 PIEZOMETER
- W-23A MONITORING WELL
- FM FORCEMAIN CLEANOUT

- Tree/stump
- Erosion
- Damaged Drain Pipe
- Animal Burrow
- Bare Vegetation
- Woodchips/mulched material

NOTES:

1. TOPOGRAPHIC MAP, AS-BUILT CONDITIONS, NOVEMBER 2000 BY NORTH SHORE ENGINEERING OF MEQUON, WISCONSIN
2. HORIZONTAL DATUM BASED ON LOCAL GRID. VERTICAL DATUM IS USGS MEAN SEA LEVEL.
3. PROPERTY LINE IS FROM NATIONAL SURVEY & ENGINEERING OF BROOKFIELD, WISCONSIN.
4. LIMIT OF WASTE DISPOSAL SHOWN ON THIS DRAWING IS APPROXIMATE AND IS BASED ON SITE RECORDS, SITE INVESTIGATIONS PERFORMED ON NOVEMBER 23, 1995, AND 1999 – 2000 FINAL COVER CONSTRUCTION FIELD SURVEY BY NORTH SHORE ENGINEERING, SEPTEMBER, 2000.
5. FINAL GRADE CONTOURS ON THIS DRAWING REPRESENT THE TOP OF THE TOPSOIL LAYER.
6. BENCHMARK LOCATED AT PK NAIL ON SECTION LINE AT CENTERLINE OF COFFEE ROAD AND SWARTZ ROAD. COORDINATES: N 1376.82, E 1432.16, ELEV 973.24
7. BASEMAP FROM EARTH TECH FINAL IMPROVEMENTS PLAN DATED OCTOBER 2001.

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Source of Base Map: Shaw Environmental Site Plan View, December 2, 2014.

APPENDIX C: Photograph Documentation

Barrett Landfill
New Berlin, Wi

Tetra Tech Site Inspection

December 18, 2017

11:15-15:50

Weather 35°F, Partly Cloudy

Ashley A. Wagner Ashley Kowalewski

1. GP-8 looking NE

2. GV-2 tilting NE, looking

3. GV-3 boot needs repair, looking NW

4. Unmarked LHW, on top hill between GV-3 and GV-4, looking E

5. Tree/stump NW of GV-4, looking N

6. LHW on top of hill, SE of GV-17

7. Inside of Unmarked LHW

8. Animal Burrow, Looking S at GV-4

9. Animal burrow, looking SE towards GV-6

10. Animal Burrow E of GV-7

11. Animal Burrow, looking W at GV-7

12. Hole and possible damage to liner, looking NW towards GV-8

13. Hole and possible damage to liner SE of GV-8, looking W

14. Hole and possible damage to liner

15. Tree stump, looking N along hillside, towards Sed. Basin 1

16. Damaged drain pipe

17. Damaged drain pipe, looking NE

18. Erosion on NE hill face, looking SW towards GV-6

19. Erosion on NE hill face, looking SW towards GV-6

20. Erosion on NE hill face, looking SW towards GV-6

21. Erosion on NE hill face, looking SW towards GV-6

22. NE hill face erosion, looking SW

23. NE hill face erosion, looking WSW

24. Bare spots in vegetation, looking uphill towards GV-4

25. Bare spot in vegetation, looking uphill SE towards GV-2

26. Tree Stump, looking N towards Sed. basin 1

27. Tree stump in middle of bare spots of vegetation, NW of GV-2, looking NNW

28. GP-9, looking S

29. GP-9, looking E, no caps on individual probes

30. Unmarked GV tilting E, looking S at GP-9, towards SE corner of LF

31. Unmarked GV by GP-9 damaged liner

32. Unmarked GV by GP-9 damaged liner spot #2

33. Trailer on SE corner, looking S

34. SE corner of LF, looking N towards GV-3

35. SE corner of LF, looking N towards GV-3

36. Looking W towards GV-49, tilting S, bare spots in vegetation

37. Southern edge of hill, looking W

38. GP-10

39. GP-10, no caps on individual probes

40. GV-49 looking NE, bare spots in vegetation

41. Looking NW from GV-49, bare spots in vegetation

42. B-94-26 lookking S, no lock

43. B-94-26, no cap

44. GV-47 tilting E, looking S towards Sanchez residence

45. Un-numbered LHW N of GP-11, looking N, bare spots in vegetation

46. GP-11, looking SE

47. GP-11, looking SE

48. W-24

49. W-24, looking NW

50. Un-numbered LHW N of GV-46, tilting W, looking S

51. Un-numbered LHW by GV-46

52. Tear in boot of un-numbered capped off LHW by GV-46

53. Tree stump, looking S towards GV-45 and cemetery

54. GV-44 looking E, hose clamp needs to be tightened

55. GV-44 looking SE at tightened hose clamp

56. Erosion or ruts on SW corner down hill from GV-17 and NE of GV-44

57. Animal burrow, north of erosion or ruts on SW corner of LF

58. GP-12, not locked, looking W

59. GP-12

60. B-96-17, looking W

61. B-96-17A, with cap

62. Unknown pipes in ground, not marked, N of B-96-17, looking S

63. Unknown pipes in ground, not marked, N of B-96-17

64. Un-marked GV, SE of B-21 and SW of B-39, looking S

65. B-21

66. GP-6, looking S

67. GP-6, no caps

68. Unmarked GV, SW of GV-38 and E of B-15, looking S

69. B-15A, looking N

70. B-15A, no cap

71. GP-1, looking S

72. GP-1, no cap

73. Woodchips in ditch, looking N towards GV-38

74. Unmarked GV, N of GV-39, tilting N

75. Unmarked GV with slight tilt to N, N of GV-39, looking N

76. Unmarked GV and unmarked LHW, N of GV-39, looking SW

77. Tree stumps at base of unmarked GV that is N of GV-39

78. Tree stump NW of GV-39, looking W

79. Small tree stumps along west hill face, looking W

80. Small trees on top of hill SW of GV-14

81. GV-14 tilting slightly N, looking E

82. GV-11 tilting N, looking E

83. Tire on ground by GV-11

84. GV-9 tilting N, looking E

85. GV-27 tilting E, looking N

86. GV-10, tilting N, looking E

87. Animal burrow W of GV-10

88. Animal burrow by GV-10, looking E at GV-10

89. Slight erosion or tire tracks on N hill face, looking S uphill towards GV-14

90. Slight erosion or tire tacks, looking S uphill towards GV-11

91. Slight erosion or tire tacks, looking S uphill towards GV-11

92. GV-12 slightly tilting N, looking E

93. GV-13 tilting N, looking W

94. Bare spot with a piece of corrugated metal

95. Bare spot with a piece of corrugated metal, looking N towards GV-36

96. GV-38 brush at base, looking N

97. GV-38 tilting W, looking W

98. GP-5, looking NW

99. GP-5, no cap

100. B-94-14A, looking W, erosion of soil around cement pad

101. B-94-14A, with cap

102. B-94-14R, looking NW

103. B-94-14R with cap

104. B-94-25A, only labeled as B-25A, looking NW

105. B-94-25A, no cap

106. B-94-25, only labeled as B-25, looking NW

107. B-94-25, with cap

108. GV-35 slightly tilting N, looking E

109. GV-33 missing vent screen, looking NE

110. B-94-19A, looking NNW

111. B-94-19A, with cap

112. B-19, bent towards the N, looking N

113. B-19, inside well, no cap damage to PVC, looking N

114. Un-numbered LHW E of GV-33 no cap no lock

115. Un-numbered LHW E of GV-33, looking W

116. GV-34 tilting N, looking E

117. GV-32 tilting N to NE, looking E

118. GV-31 slightly tilting N, looking E

119. GV-30 tilting S, looking E

120. GV-29 slightly tilting N to NW, looking E

121. GV-28 tilting W, looking N

122. B-96-13

123. B-96-13 tear in boot, looking S

124. B-96-13A, not lockable, looking S

125. B-96-13A, capped, labeled '13S' on cap

126. B-96-13A, capped, labeled '13N' on cap

127. GP-3, looking S

128. GP-3, all depths are capped

129. W-23, looking W, no lock

130. W-23, no cap

131. W-23A, looking N

132. W-23A

133. Possible LHW or GV, unmarked, looking S along leachate piping

134. GV-1, no vent screen, looking E

135. GV-1, looking S

136. Broken cover of southern unmarked possible LHW by leachate piping

137. Inside unmarked southern LHW by leachate piping

138. Inside unmarked northern LHW by leachate piping

139. Possible LHW by leachate piping both unmarked, looking N

140. B-96-18A and B-96-18B, looking W

141. B-96-18B inside cap

142. B-96-18B

143. B-96-18A inside cap

144. B-96-18A, looking SE, garbage along ditch

145. B-96-18A, looking NE