

Appendix G

WIF All Site Wells (October 2025)

State of Wisconsin Department of Natural Resources
PO Box 7921, Madison WI
53707-7921 dnr.wi.gov

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Page 0 of 7

Use the Groundwater Monitoring Well and Point Information Form to record identification, location and construction information for groundwater monitoring wells and any other sample "points," (e.g., gas probes, lysimeters, leachate collection systems, etc.), that are part of the environmental monitoring program. **NOTE:** Not all fields will be applicable to all point types. Only **one** coordinate reference system may be used per site. Allowable coordinate systems are listed below. (Coordinates for each system require a minimum number of digits as described below.) Local grid coordinates cannot be accepted. Identify the Coordinate Reference System, Datum and Method used.

Facility Name		County	Facility ID No. (FID)		License, Permit or Monitoring No.		Date	Completed By (Name and Firm)									
Vernon County MSW Landfill		Vernon	663038310		3268		06/11/2026	Brian Kent, SEH									
DNR Point ID No.	Point Name ¹	WUWN ² (if app.)	Type	Status	Gradient	Enf. Stds. Y/N.	Construction Date	Elevations msl (ft)		Well Casing			Well Screen Length (ft)	Well (Pt) Total Length (ft)	Coordinates ^{3,4,5}		
								Ground Surface	Well Top (of casing)	Type	Diam ⁶ (in)	Length ⁷ (ft)			Y / Lat / Northing	X / Long / Easting	
-	102	MW-1P		11	▼	▼	12/30/1987	1236.4	1238.41	▼	2	101.1	10	111.1	582809.9	1745957.3	▼
-	101	MW-1		12	▼	▼	12/30/1987	1236.4	1238.11	▼	2	148.0	10	158.0	582815.9	1745957.3	▲▼
-	121	MW-1PR		11	▼	▼	01/12/1994	1245.0	1247.61	▼	2	112.7	15	127.7	582942.0	1745694.8	▲▼
-	120	MW-1R		12	▼	▼	01/12/1994	1244.6	1247.25	▼	2	149.6	15	164.6	582940.8	1745703.8	▲▼
-	123	MW-1RZ		12	▼	▼	03/12/2003	1244.0	1245.45	▼	2	181.5	5	186.5	582921.9	1745693.6	▲▼
-	104	MW-2P		11	▼	▼	01/17/1988	1252.5	1254.88	▼	2	114.8	10	124.8	583625.4	1745476.5	▲▼
-	103	MW-2		12	▼	▼	01/17/1988	1252.5	1254.35	▼	2	164.6	10	174.6	583625.4	1745492.0	▲▼
-	105	MW-3		12	▼	▼	02/02/1988	1233.0	1235.25	▼	2	175.0	5	180.0	584086.5	1746427.4	▲▼
-	107	MW-4P		11	▼	▼	01/29/1988	1232.9	1235.19	▼	2	85.0	10	95.0	584086.2	1746438.4	▲▼
-	109	MW-5A		11	▼	▼	11/08/1989	1224.0	1225.18	▼	2	88.3	15	103.3	583467.8	1746571.9	▲▼
-	108	MW-5		12	▼	▼	02/17/1988	1223.3	1225.32	▼	2	140.6	10	150.6	583467.9	1746588.2	▲▼
-	110	MW-6		12	▼	▼	02/20/1988	1233.0	1235.37	▼	2	197.2	5	202.2	584086.7	1746417.4	▲▼
-	111	MW-7		12	▼	▼	11/07/1989	1255.7	1258.03	▼	2	229.5	5	234.5	583843.8	1745887.7	▲▼
-	112	MW-8R		12	▼	▼	11/13/1989	1256.1	1258.84	▼	2	187.5	15	202.5	583836.9	1745874.1	▲▼
-	113	MW-9		11	▼	▼	08/29/1989	1255.4	1257.50	▼	2	111.8	15	126.8	583858.6	1745892.2	▲▼
-	114	MW-10		12	▼	▼	09/15/1989	1215.6	1217.52	▼	2	178.5	5	183.5	582822.1	1746433.1	▲▼
-	115	MW-11		12	▼	▼	09/22/1989	1216.4	1218.36	▼	2	147.5	15	162.5	582806.2	1746431.9	▲▼
-	116	MW-12		11	▼	▼	09/22/1989	1216.4	1218.36	▼	2	83.5	15	98.5	582806.6	1746413.0	▲▼
-	117	MW-13P		11	▼	▼	02/26/2003	1224.5	1227.42	▼	2	87.4	15	102.4	582910.4	1746035.5	▲▼
-	118	MW-14	JX072	12	▼	▼	03/12/2003	1247.5	1249.69	▼	2	171.1	15	186.1	583881.3	1746475.7	▲▼

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Page 0 of 7

DNR Point ID No.	Point Name¹	WUWN² (if app.)	Type	Status	Gradient	Enf. Stds. Y/N.	Constructio n Date	Elevations msl (ft)		Well Casing			Well Screen L ength (ft)	Well (Pt) Total Len gth² (ft)	Coordinates³,⁴,⁵	
								Ground Surface	Well Top (of casing)	Type	Diam³ (in)	Length³ (ft)			Y / Lat / Northing	X / Long / Easting
119	MW-14Z	JX073	12	▼	▼	▼	03/07/2003	1247.5	1250.22	▼	2	205.8	5	210.8	583866.9	1746488.0
125	MW-14WT	WC334	11	▼	▼	▼	09/20/2022	1247.2	1249.70	▼	2	90.0	15	105.0	583964.7	1746693.0
127	MW-15WT	WC335	11	▼	▼	▼	09/28/2022	1220.6	1223.24	▼	2	72.8	10	82.8	583598.0	1746728.6
129	MW-16WT	WC336	11	▼	▼	▼	09/21/2022	1184.7	1187.41	▼	2	64.9	10	74.9	583157.3	1746673.3
131	MW-16	WC337	12	▼	▼	▼	08/25/2022	1184.3	1186.92	▼	2	91.9	5	96.9	583147.8	1746669.6
133	MW-17WT	WC338	11	▼	▼	▼	09/26/2022	1196.4	1199.18	▼	2	76.9	10	86.9	582907.9	1746684.9
201	P-1 (Facility)	FU046	13	▼	▼	▼	12/10/1992			▼	6					
202	P-2 (Williams)	8IW730	13	▼	▼	▼	07/10/1969			▼	6					
502	Sedimentation Basin		22	▼	▼	▼				▼						
300	Leachate Storage Tank		23	▼	▼	▼				▼					583001.6	1745623.2
340	Lys-1		14	▼	▼	▼				▼					582940.4	1745918.7
341	Lys-2		14	▼	▼	▼				▼					582916.5	1746103.3
342	Lys-3		14	▼	▼	▼				▼					582892.9	1746261.9
310	LHW-1		24	▼	▼	▼				▼					583130.8	1745934.8
314	LHW-2		24	▼	▼	▼				▼					583452.2	1745941.7
318	LHW-3		24	▼	▼	▼				▼					583120.3	1746129.7
322	LHW-4		24	▼	▼	▼				▼					583793.7	1746077.0
326	LHW-5		24	▼	▼	▼				▼					583124.4	1746365.6
330	LHW-6		24	▼	▼	▼				▼					583461.2	1746372.4
460	GP-1		51	▼	▼	▼				▼					583357.5	1745680.9
462	GP-2		51	▼	▼	▼				▼					583821.2	1745951.2
464	GP-3		51	▼	▼	▼				▼					582918.3	1746000.6
135	MW-16Z	WF528	12	▼	▼	▼	08/06/2024	1184.5	1186.50	▼	2	117.0	5	122.0	583168.4	1746679.1
137	MW-18WT	WF527	11	▼	▼	▼	08/02/2024	1210.1	1212.24	▼	2	79.2	10	89.2	583413.3	1746690.8
139	MW-18	WF526	11	▼	▼	▼	08/01/2024	1209.8	1212.00	▼	2	109.2	10	119.2	583407.8	1746695.9

Completion of this form is mandatory under chs. 281, 289 and 292, Wis. Stats., and ss. NR 110.25, NR 507.14 and NR 716.15, Wis. Admin. Code

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Page 0 of 7

DNR Point ID No.	Point Name ¹	WUWN ² (if app.)	Type	Status	Gradient	Enf. Stds. Y/N.	Constructio n Date	Elevations msl (ft)		Well Casing			Well Screen L ength (ft)	Well (Pt) Total Len gth ³ (ft)	Coordinates ^{4,5A}	
								Ground Surface	Well Top (of casing)	Type	Diam ³ (in)	Length ³ (ft)			Y / Lat / Northing	X / Long / Easting
141	MW-19	WF530	11	▼	▼	▼	08/13/2024	1190.5	1192.82	▼	2	95.3	10	105.3	582931.4	1746831.1
143	MW-19Z	WF529	12	▼	▼	▼	08/09/2024	1190.2	1192.34	▼	2	127.1	5	132.1	582939.8	1746831.5
145	MW-20WT	WF441	11	▼	▼	▼	04/24/2025	1174.4	1176.32	▼	2	44.9	10	54.9	583271.01	1746802.47
147	MW-20	WF440	11	▼	▼	▼	04/23/2025	1174.3	1176.58	▼	2	71.3	10	81.3	583280.67	1746804.86

¹Include previous name as well if one exists.

²Wisconsin Unique Well Number.

³Well Casing Diameter measures inside diameter.

⁴Length of well casing
from top of casing to screen
Total length of well from top of casing to bottom of screen
length and screen length

⁵Identify Coordinate Reference System (only one system may be used per site):

☐ State Plane (min. 2 digits right of decimal)

☒ ☐

⁵Identify Projection Datum and units*

☐ ☐ ☒ ☐

Units used for State Plane, WTM or County Coord. Sys:

☐ ☒ NOTE: A datum and units are not required for Lat/Long

⁵Identify the Method Used to Determine the Coordinates:

☒ ☐ ☐ ☐ ☐

⁵Y / Lat / Northing
describe the vertical axis.

X / Long / Easting
describe the horizontal axis.

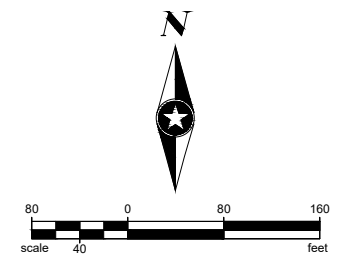
(include "-" where needed, e.g., -89.123456)

Appendix H

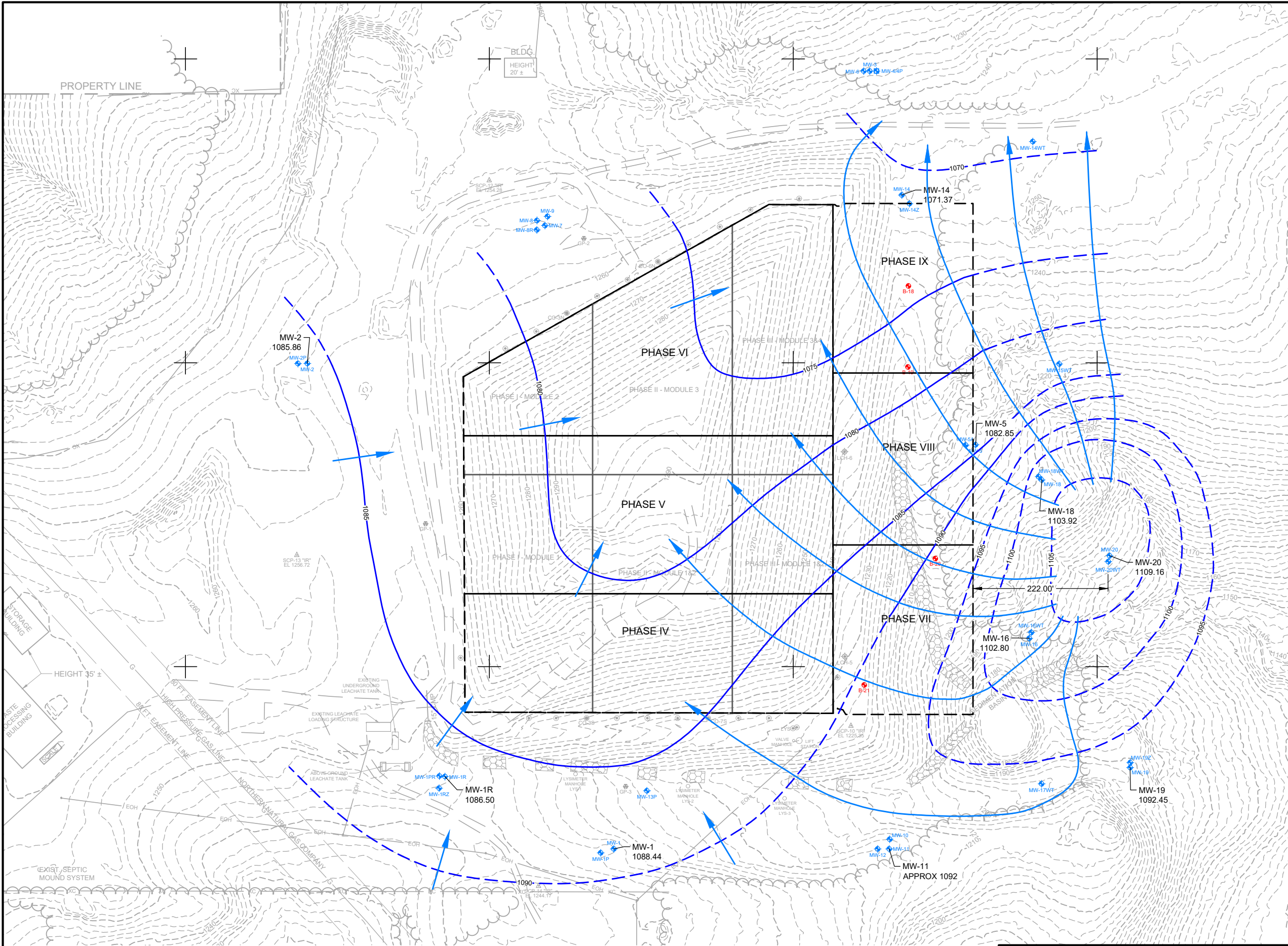
2025 Groundwater Contour Maps

1. CONTOUR INTERVAL IS 2-FOOT.
2. EXISTING CONTOURS REPRESENT MOST CURRENT SURVEY PERFORMED BY SEH, INC. ON APRIL 4, 2025.
3. GROUNDWATER ELEVATIONS RECORDED ON MAY 14, 2025.

	MAJOR GROUND CONTOUR
	MINOR GROUND CONTOUR
	PHASE BOUNDARY
	APPROVED LIMITS OF WASTE
	PROPERTY LINE
	GROUNDWATER MONITORING WELL
	SOIL BORING



Save: 12/9/2025 1:33 PM bheirich Plot: 12/9/2025 1:34 PM X:\UZ\VERS\167824\5-final-dsgn\51-drawings\65-Heavy\GWFEASIBILITY STUDY\SHEETS\VC167824_GWTR_REGIONAL_4.dwg



NOTES:

1. CONTOUR INTERVAL IS 2-FOOT.
2. EXISTING CONTOURS REPRESENT MOST CURRENT SURVEY PERFORMED BY SEH, INC. ON APRIL 4, 2025.
3. GROUNDWATER ELEVATIONS RECORDED ON AUGUST 27, 2025.

LEGEND:

- 1170 --- MAJOR GROUND CONTOUR
- MINOR GROUND CONTOUR
- PHASE BOUNDARY
- APPROVED LIMITS OF WASTE
- PROPERTY LINE
- XX GROUNDWATER MONITORING WELL
- XX SOIL BORING
- GROUNDWATER FLOW DIRECTION

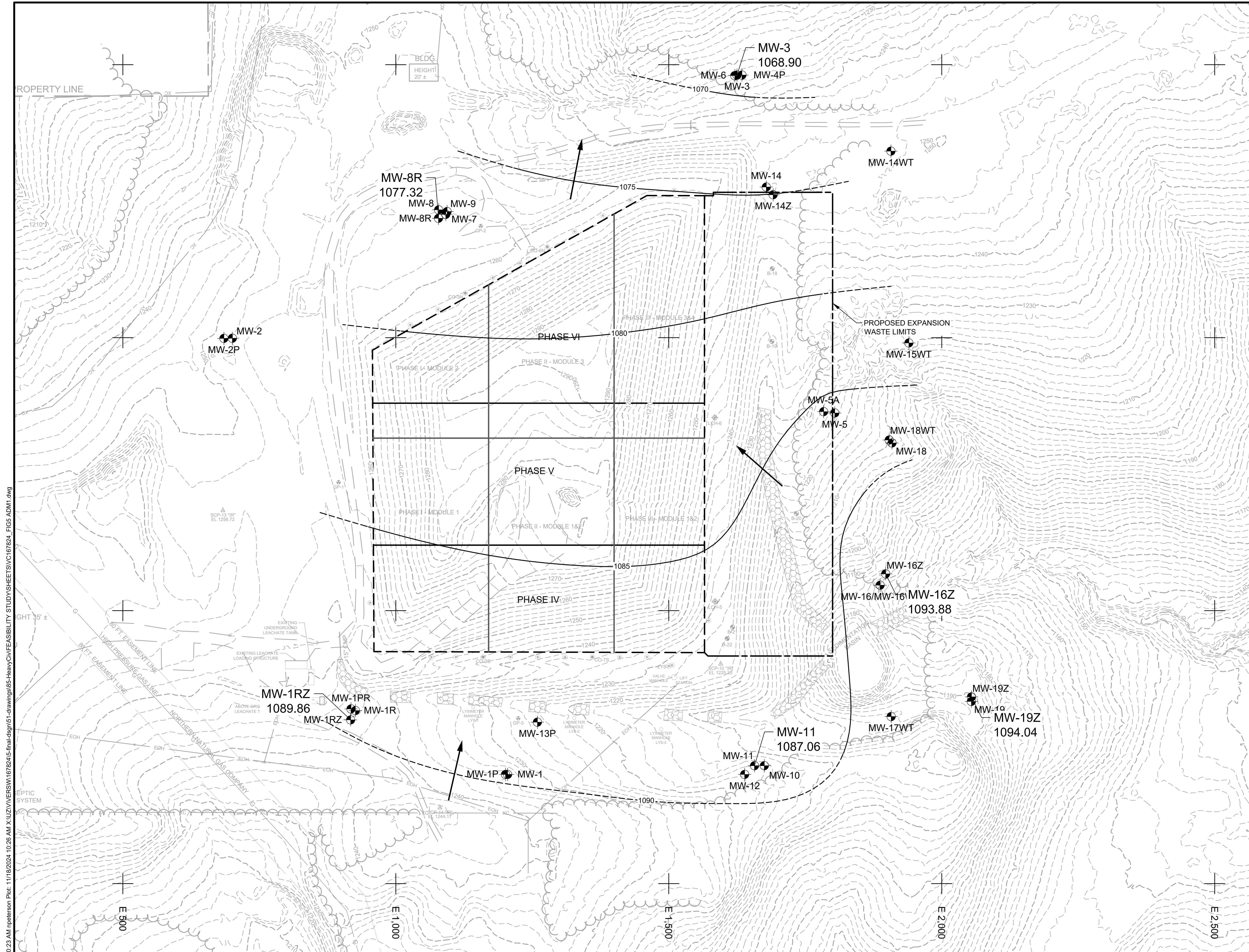


PROJECT NO.
VERSW 167824
DATE:
10/27/2025

**GROUNDWATER CONTOUR MAP
REGIONAL WATER TABLE (08/27/2025)**
FEASIBILITY STUDY
VERNON COUNTY LANDFILL - VIROQUA, WI

**FIG
4**

Save: 11/18/2024 10:23 AM mpeterson Plot: 11/18/2024 10:26 AM X:\UZ\V\VERS\W167824\5-final-dsgn\51-drawings\5-Heavy\CON\FEASIBILITY STUDY\SHEETS\VC167824_FIGS ADM1.dwg

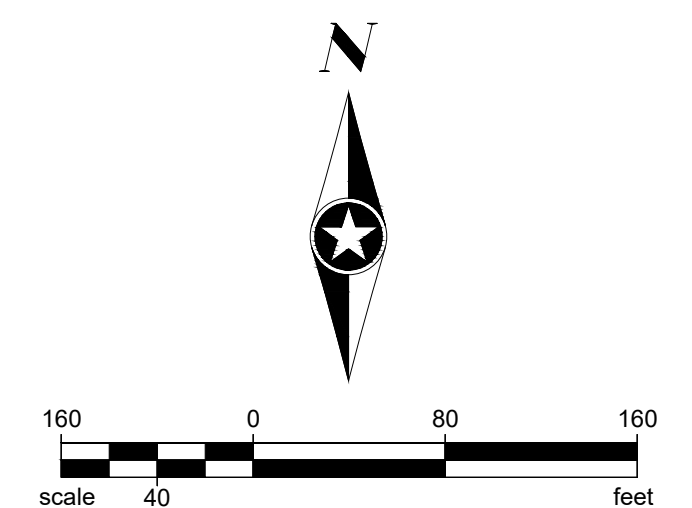


NOTES:

- TOPOGRAPHIC CONTOUR INTERVAL IS 10-FOOT MAJOR AND 2-FOOT MINOR.
- GROUNDWATER CONTOUR INTERVAL IS 5-FOOT.
- GROUNDWATER CONTOURS ARE BASED ON MONITORING WELL STATIC WATER ELEVATIONS SAMPLED BY SEH INC. FOR VERNON COUNTY ON AUGUST 27, 2024.

LEGEND:

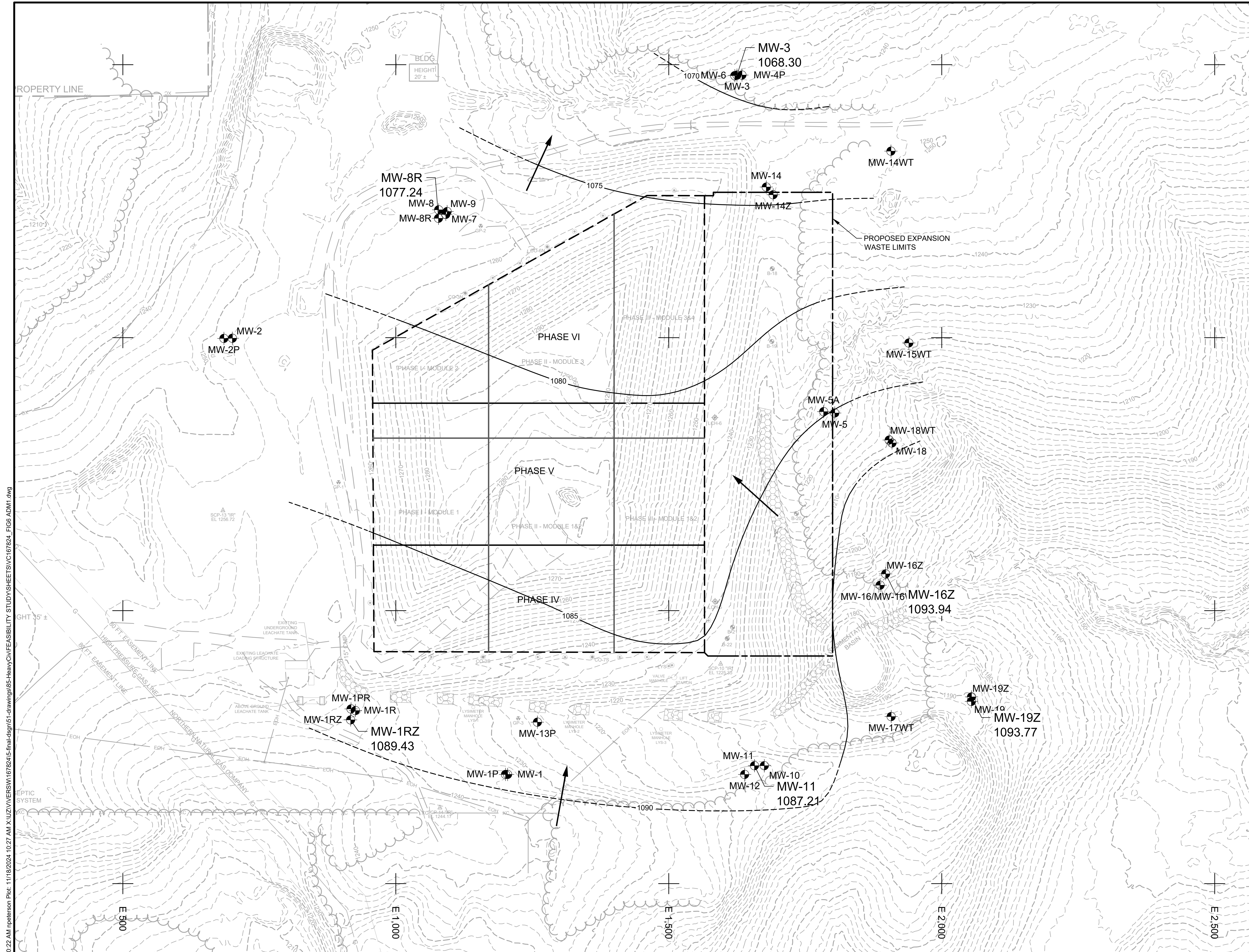
- Static Water Elevation - FT (AUGUST 27, 2024)
- Existing Monitoring Well
- Groundwater Contour (Dashed Where Inferred)
- Groundwater Flow Line
- Proposed Waste Limits
- Active Waste Limits



Save: 11/18/2024

SEH Project	VERSW 167824	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date		PLANS PREPARED BY:	PLANS PREPARED FOR:	VERNON COUNTY LANDFILL FEASIBILITY STUDY - ADDENDUM 1	FIG 5						
Drawn By	NRP																	
Designed By	TTR																	
Checked By	DRH																	
									329 JAY STREET SUITE 301 LA CROSSE, WI 54601-4034 PHONE: 1.608.782.3161	VERNON COUNTY SOLID WASTE DEPTH 53705 CTH LF VIROQUA, WISCONSIN	UPPER POTENTIOMETRIC MAP (AUGUST 2024)							

Save: 11/18/2024 10:22 AM mpeterson Plot: 11/18/2024 10:27 AM X:\UZV\VERS\W167824\5-final-dsgn\51-drawings\5-Heavy\CON\FEASIBILITY STUDY\5SHEETS\VC167824_FIG6 ADM1.dwg



NOTES:

1. TOPOGRAPHIC CONTOUR INTERVAL IS 10-FOOT MAJOR AND 2-FOOT MINOR.
2. GROUNDWATER CONTOUR INTERVAL IS 5-FOOT.
3. GROUNDWATER CONTOURS ARE BASED ON MONITORING WELL STATIC WATER ELEVATIONS SAMPLED BY SEH INC. FOR VERNON COUNTY ON OCTOBER 2, 2024.

LEGEND:

- MW-9
XXXXXX
- STATIC WATER ELEVATION - FT
(OCTOBER 2, 2024)
- MW-9
- EXISTING MONITORING WELL
- 1145
- GROUNDWATER CONTOUR
(DASHED WHERE INFERRED)
- GROUNDWATER FLOW LINE
- PROPOSED WASTE LIMITS
- ACTIVE WASTE LIMITS

SEH Project	VERS\W 167824	Rev #	Revision Issue Description	Date	Rev #	Revision Issue Description	Date
Drawn By	NRP						
Designed By	TTR						
Checked By	DRH						

SEH

PLANS PREPARED BY:
329 JAY STREET
SUITE 301
LA CROSSE, WI 54601-4034
PHONE: 1.608.782.3161

PLANS PREPARED FOR:
VERNON COUNTY SOLID WASTE DEPTH
53705 CTH LF
VIROQUA, WISCONSIN

VERNON COUNTY LANDFILL
FEASIBILITY STUDY - ADDENDUM 1
UPPER POTENTIOMETRIC MAP (OCTOBER 2024)

FIG 6

Appendix I

Revised Select Soil Boring Logs and Sonic Drilling Core Photos

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 4

Facility/Project Name Vernon County Landfill Expansion			License/Permit/Monitoring Number 3268		Boring Number MW-15WT	
Boring Drilled By: Name of crew chief (first, last) and Firm Braun Intertec			Date Drilling Started 9/26/2022		Date Drilling Completed 9/27/2022	
Drilling Method hsa,mud rotary						
WI Unique Well No. WC335	DNR Well ID No. 127	Common Well Name MW-15WT	Final Static Water Level 1,136.4 Feet MSL	Surface Elevation 1,220.6 Feet MSL	Borehole Diameter 6.0 inches	
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 164,382 N, 715,726 E S/C/N			Lat ° ' " Long ° ' "		Local Grid Location ☐ N ☐ E ☐ S ☐ W	
SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W						
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua		

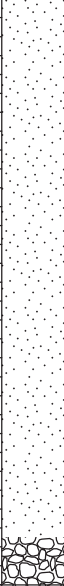
Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 AU	24			SILTY SAND (SM), dark brown, moist, fine grained, trace organics (Topsoil)	SM									
2 SS	18 14	5 6 7	1.5 3.0	LEAN CLAY WITH SAND (CL), brown to dark brown, moist, with silt, low plasticity (Residuum)	CL									
3 SS	18 4	6 5 6	4.5 6.0											
4 SS	18 16	5 4 5	7.5	CLAYEY SAND (SC), reddish brown, moist, fine to medium grained, trace gravel (Residuum)	SC									
5 SS	18 14	6 6 22	10.5	LEAN CLAY WITH SAND (CL), light brown to to brown, moist, medium plasticity, stratified with light gray to red fat clay (CH) lenses < 1cm thick (Residuum)	CL									
6 SS	18 14	3 4 5	12.0 13.5	NOTE Occasional sand layers throughout sample 5. NOTE: Sample 6 highly disturbed due to gravel.										
7 SS	18 16	3 3 4	15.0	FAT CLAY (CH), brown to reddish brown, moist, high plasticity, mottled, with sand (Residuum)	CH									
8 SS	18 18	2 4 4	18.0	NOTE: Started mud rotary drilling after sample 8.						46	109	73	97	0% Gravel, 3% Sand
9	18	2	19.5											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm Short Elliott Hendrickson Inc.	Tel: Fax:
-----------	--	--------------

Boring Number		MW-15WT		Use only as an attachment to Form 4400-122.		Page 2 of 4								
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
SS	16	4 6	21.0 22.5 24.0	NOTE: Occasional clayey sand (SC) layers throughout sample 9. FAT CLAY (CH), brown to reddish brown, moist, high plasticity, mottled, with sand (Residuum) <i>(continued)</i>										
10 SS	18 18	2 4 9	25.5 27.0 28.5											
11 SS	18 16	9 8 4	30.0 31.5 33.0											
12 SS	18 14	2 1 1	34.5 36.0 37.5											
13 SS	16 12	38 17 50	39.0 40.5 42.0 43.5	WEATHERED SANDSTONE, light brown fine grained, moderately cemented, highly to completely weathered (Saprolite). (Sandstone - poorly consolidated)										
14 SS	14 16	10 15 50	45.0 46.5 48.0	NOTE: poorly cemented with occasional silt layers throughout sample 14.										
15 SS	13 12	15 45 50	49.5 51.0 52.5											

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
16 SS		18 14	32	WEATHERED SANDSTONE, light brown fine grained, moderately cemented, highly to completely weathered (Saprolite). (continued)										
			27											
			24											
			24											
17 SS		18 14	6											
			5											
			10											
			10											
18 SS		2 1	50	SANDY DOLOSTONE, light brown, moderately weathered to fresh.										

Boring Number		MW-15WT										Use only as an attachment to Form 4400-122.										Page 4 of 4	
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments								
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200										
			87.0	SANDY DOLOSTONE, light brown, moderately weathered to fresh. <i>(continued)</i>																			
			88.5																				
			90.0																				
			91.5																				
			93.0																				
			94.5																				
			96.0																				
			97.5																				
			99.0	Boring Terminated at 99 feet.																			

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 4

Facility/Project Name Vernon County Landfill Expansion			License/Permit/Monitoring Number 3268		Boring Number MW-16	
Boring Drilled By: Name of crew chief (first, last) and Firm Braun Intertec			Date Drilling Started 8/22/2022		Date Drilling Completed 8/26/2022	
Drilling Method hsa,mud rotary						
WI Unique Well No. WC337	DNR Well ID No. 131	Common Well Name MW-16	Final Static Water Level 1,103.9 Feet MSL	Surface Elevation 1,184.3 Feet MSL	Borehole Diameter 6.0 inches	
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 163,931 N, 715,671 E S/C/N			Lat ° ' " Long ° ' "		Local Grid Location ☐ N ☐ E ☐ S ☐ W	
SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W						
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua		

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 CU	24 -		1.5	LEAN CLAY WITH SAND (CL), brown, moist, low plasticity, occasional fine roots (Fill)	CL									
2 SS	18 0	2 2 2	3.0											
3 SS	18 10	1 1 2	4.5 6.0											
4 ST	24 -		7.5								43	21		
5 ST	24 -		9.0 10.5	LEAN CLAY WITH SAND (CL), brown to light brown, moist, low to medium plasticity, mottled (Residuum) NOTE: Trace gravel below 15 feet bgs.	CL					24	37	16	96	0% Gravel, 4% Sand, Permeability = 3.1E-08 cm/sec
6 SS	18 14	2 3 3	12.0 13.5											
7 SS	18 14	8 7 6	15.0 16.5											
8 SS	18 18	4 4 6	18.0											
9	18	4	19.5		CL									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm Short Elliott Hendrickson Inc.	Tel: Fax:
-----------	--	--------------

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well	Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
SS	18	5 6	21.0 22.5 24.0	LEAN TO FAT CLAY (CL-CH), brown to light brown, moist, medium to high plasticity, mottled, occasional clayey sand (SC) layers less than 1" thick throughout (Residuum) (continued)	CL										0% Gravel, 62% Sand
10 SS	18 14	4 4 5	25.5 27.0 28.5	NOTE: Occasional weathered sandstone layering at 25 to 26 feet bgs.											
11 SS	18 8	8 7 5	30.0 31.5 33.0	NOTE: Sample 11 - All Sluff.											
12 SS	18 8	22 28 30	34.5 36.0 37.5	WEATHERED SANDY DOLOSTONE, brown to light brown, moist, highly weathered, with sand layers throughout (Saprolite) NOTE: Sample 12 - All Sluff.											
13 MC	18 -	6 15 42	39.0 40.5 42.0 43.5	(Residuum)											
14 SS	18 16	5 8 16	45.0 46.5 48.0	WEATHERED SANDY DOLOSTONE, brown to light brown, moist, highly weathered, little gravel, with sand layers throughout (Saprolite) (Residuum)											
15 SS	18 16	8 10 26	49.5 51.0 52.5	NOTE: Switched to mud rotary after sample 15.											

[illegible]

Page 4 of 4

[illegible]

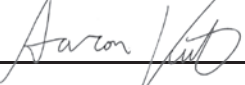
Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 4

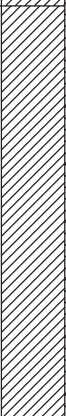
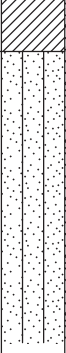
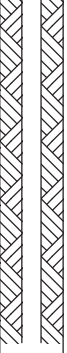
Facility/Project Name Vernon County Landfill Expansion		License/Permit/Monitoring Number 3268		Boring Number MW-16Z	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental		Date Drilling Started 8/2/2024		Date Drilling Completed 8/5/2024	
Drilling Method Rotasonic					
WI Unique Well No. WF528	DNR Well ID No.	Common Well Name MW-16Z	Final Static Water Level 1,078.5 Feet MSL	Surface Elevation 1,184.5 Feet MSL	Borehole Diameter 6.0 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 567 N, 1,897 E S/C/N SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W			Local Grid Location Lat _____ ' _____ " _____" Long _____ ' _____ " _____" Feet ☐ N ☐ E Feet ☐ S ☐ W		
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua	

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200		
1 GP	120 96		2	LEAN CLAY (CL), dark brownish gray (10YR 4/2), moist, with sand, little gravel and roots/organics, medium stiff, low plasticity, no odor, no staining (Fill).	CL										
			4												
			6												
			8	LEAN CLAY (CL), dark yellowish brown (10YR 4/6), moist, medium stiff, moderate plasticity, no odor, no staining (Fill).	CL										
			10												
2 GP	120 108		12	SANDY LEAN CLAY (CL), yellow to strong brown (10YR 7/6 to 7.5YR 5/8), dry, with sandstone rock fragments, medium stiff, low plasticity, crushed rock from 25 to 27 feet, no odor, no staining (Residuum).	CL										
			14												
			16												
			18												
			20												
3 GP	120 108		22												
			24												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm **SEH** Tel: _____ Fax: _____

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number		MW-16Z		Use only as an attachment to Form 4400-122.		Page 2 of 4								
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
4 GP	120 102		26	SANDY LEAN CLAY (CL), yellow to strong brown (10YR 7/6 to 7.5YR 5/8), dry, with sandstone rock fragments, medium stiff, low plasticity, crushed rock from 25 to 27 feet, no odor, no staining (Residuum). <i>(continued)</i>	CL									
			28											
			30											
			32											
5 GP	120 108		34	LEAN CLAY (CL), light olive brown (10YR 4/2), moist, with sand, little gravel and roots/organics, medium stiff, low plasticity, no odor, no staining (Residuum).	CL									
			36											
			38											
			40											
6 GP	120 120		42	LEAN CLAY (CL), strong brown (7.5YR 4/6), moist, medium stiff, moderate plasticity, no odor, no staining (Residuum).	CL									
			44											
			46											
			48											
7 GP	120 108		50	SILTY SAND (SM), yellowish brown (10YR 5/4), dry, fine grained, poorly graded, no odor, no staining (Saprolite). (RESIDUUM)	SM									
			52											
			54											
			56											

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
8 GP	120 108		68	SILTY SAND (SM), yellowish brown (10YR 5/4), dry, fine grained, poorly graded, no odor, no staining (Saprolite). (continued) (RESIDUUM)	SM									
			70											
			72											
			74											
			76											
9 GP	120 108		76	Note: Temp well was installed from 69 to 79 feet bgs during drilling and left over the weekend. Water was present at 77.8 feet bgs.										
			78											
			80											
			82											
			84											
10 GP	120 120		86	SANDY DOLOSTONE, fine grained, slightly weathered, wet, minor vugs from 80 to 85 ft bgs, clayey lenses with wetness at 80 to 81.5 feet, 86 to 88 feet, and 90 to 95 feet.										
			88											
			90											
			92											
			94											
11 GP	120 60		96	(RESIDUUM) BR										
			98											
			100											
			102											
			104											
	106	SANDY FAT CLAY (CH), strong brown (7.5YR 5/6), wet, soft, high plasticity, drop in rods and limited recovery from 98 to 100 feet, most likely transition from competent to weathered dolostone (Saprolite). (RESIDUUM)	CH											
	108	Note: Static water level could not be directly observed during drilling. Groundwater encountered at 106.02 feet bgs on 8/7/2024.												

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 4

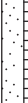
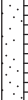
Facility/Project Name Vernon County Landfill Expansion			License/Permit/Monitoring Number 3268		Boring Number MW-17WT	
Boring Drilled By: Name of crew chief (first, last) and Firm Braun Intertec			Date Drilling Started 9/21/2022		Date Drilling Completed 9/23/2022	
WI Unique Well No. WC338		DNR Well ID No. 133	Common Well Name MW-17WT		Borehole Diameter 6.0 inches	
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 163,691 N, 715,688 E S/C/N			Lat ° ' " Long ° ' "		Local Grid Location ☐ N ☐ E ☐ S ☐ W	
SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W						
Facility ID 3268		County Vernon		County Code 63	Civil Town/City/ or Village Viroqua	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 AU	18		1.5	LEAN CLAY WITH SAND (CL), brown (Residuum)	CL									
2 SS	18	5	3.0	CLAYEY SAND (SC), brown, rock fragments at 4.5 to 6 and 7 to 8.5 feet bgs, poorly graded sand seam (1 inch) at 8.4 feet, rough drilling from 7.5 to 8 feet bgs (Residuum).	SC									
3 SS	18	10	4.5							20	59	40	43	13% Gravel, 45% Sand
4 SS	18	14	7.5							17	39	27	43	9% Gravel, 48% Sand
5 SS	18	10	10.5	WEATHERED SANDSTONE, light brown, very friable, iron oxide staining (Saprolite). (Sandstone - poorly consolidated)						16	41	29	48	0% Gravel, 52% Sand
6 SS	18	14	12.0											
7 SS	18	24	15.0											
8 SS	18	15	18.0											
9	18	7	19.5											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm Short Elliott Hendrickson Inc.	Tel: Fax:
-----------	--	--------------

[illegible]

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
16 SS	 18 18	10 14 16	54.0 55.5	WEATHERED SANDSTONE, brown to dark brown, clayey, very friable (<i>Saprolite</i>). (continued)										
			57.0 58.5	(Sandstone - poorly consolidated)										
17 SS	 18 8	14 10 10	60.0 61.5 63.0											
18 SS	 18 1	50+	64.5 66.0 67.5 69.0 70.5 72.0 73.5 75.0 76.5 78.0 79.5 81.0 82.5 84.0 85.5	SANDSTONE, brown to dark brown, clayey, very friable.			            							
				NOTE: Static water level could not be directly observed during drilling. Groundwater encountered at 79.9 feet bgs on 9/26/2022.										

Page 4 of 4

[illegible]

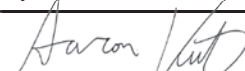
Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 4

Facility/Project Name Vernon County Landfill Expansion		License/Permit/Monitoring Number 3268		Boring Number MW-18	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental		Date Drilling Started 7/29/2024		Date Drilling Completed 7/31/2024	
Drilling Method Rotasonic					
WI Unique Well No. WF526	DNR Well ID No.	Common Well Name MW-18	Final Static Water Level 1,099.8 Feet MSL	Surface Elevation 1,209.8 Feet MSL	Borehole Diameter 6.0 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 807 N, 1,909 E S/C/N SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W			Local Grid Location Lat _____ ° _____ ' _____ " _____" Long _____ ° _____ ' _____ " _____" Feet ☐ N ☐ E Feet ☐ S ☐ W		
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua	

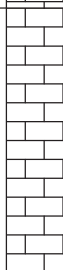
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 GP	120 72		0	SANDY LEAN CLAY (CL), dark yellowish brown (10YR 3/4), fine grained, moist, soft, some roots and organics, low plasticity, no odor, no staining (Topsoil).	CL									
			2											
			4	SANDY LEAN CLAY (CL), yellowish brown to yellow (10YR 5/6 to 10YR 7/8), moist, with sandstone fragments, medium stiff, moderate plasticity, no odor, no staining, large fragment of sandstone at 4 feet, (Residuum).	CL									
			6											
			8											
			10											
2 GP	120 120		12											
			14											
			16	SANDY FAT CLAY (CH), dark yellowish brown to yellowish brown (10YR 3/4 to 10YR 5/8), moist, with gravel, soft, high plasticity, no odor, no staining, increased moisture from 15 to 19 feet, sandy lense from 19 to 20 feet (Residuum).	CH									
			18											
			20											
3 GP	120 120		22											
			24											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SEH	Tel: Fax:
--	--------------------	--------------

Boring Number		MW-18		Use only as an attachment to Form 4400-122.										Page 2 of 4	
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200		
4 GP	120 120		26	CLAYEY SAND (SC), brown (10YR 5/3), fine grained, dry, poorly graded, loose, no odor, no staining (Residuum).	SC										
			28												
			30												
			32												
5 GP	120 120		30	POORLY GRADED SAND (SP), pale yellow to yellow (2.5Y 7/3 to 2.5Y 7/8), fine grained, dry, loose, some sandstone fragments, clayey lenses with sandstone fragments from 40 to 43 feet (Saprolite). (Sandstone - poorly consolidated)											
			32												
			34												
			36												
6 GP	120 120		40		SP										
			42												
			44												
			46												
7 GP	120 120		48												
			50												
			52												
			54												
			56												
			58												
			60												
			62												
			64												
			66		SM										

Boring Number		MW-18		Use only as an attachment to Form 4400-122.		Page 3 of 4								
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
8 GP	120	120	68	SILTY SAND (SM), pale yellow to yellow (2.5Y 8/2 to 2.5Y 7/6), fine grained, dry, poorly graded, with dolostone fragments, sandy clay lense from 70 to 71 feet (Saprolite). (continued) (Sandstone - poorly consolidated)	SM									
	120		70											
9 GP	120	120	72	SILTY SAND (SM), pale yellow to yellow (2.5Y 8/2 to 2.5Y 7/6), fine grained, wet, poorly graded, with dolostone fragments, sandy clay seams at 80 to 81 feet, 83 to 84 feet, and 85 to 87 feet (Saprolite). (Sandstone - poorly consolidated)	SM									
	120		80											
10 GP	120	120	82	SANDY DOLOSTONE, slight weathering, pale yellow to yellow, fine grained.	BR									
	120		84											
11 GP	120	120	86											
	120		88											
			90											
			92											
			94											
			96											
			98											
			100											
			102											
			104											
			106											
			108											

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
12 GP	 84 84	 110 112 114 116 118			BR									
				SANDY DOLOSTONE, slight weathering, pale yellow to yellow, fine grained, wet, clayey lenses with wetness at 110 and 115 feet.	BR									
				NOTE: Wet conditions noted at 110 feet bgs during drilling.										
			118	Boring Terminated at 117 feet.										

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 4

Facility/Project Name Vernon County Landfill Expansion		License/Permit/Monitoring Number 3268		Boring Number MW-19Z	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental		Date Drilling Started 8/6/2024		Date Drilling Completed 8/9/2024	
Drilling Method Rotasonic					
WI Unique Well No. WF529	DNR Well ID No.	Common Well Name MW-19Z	Final Static Water Level 1,095.2 Feet MSL	Surface Elevation 1,190.2 Feet MSL	Borehole Diameter 6.0 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 342 N, 2,054 E S/C/N		Lat ° ' " Long ° ' "		Local Grid Location ☐ N ☐ E ☐ S ☐ W	
SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W					
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua	

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 GP	120 72		2	SANDY LEAN CLAY (CL), strong brown (7.5YR 4/6), moist, some roots and organics, medium stiff, low plasticity, large dolostone fragments throughout, dolostone fragments contain vugs, chert remineralization, and small fractures (Fill). SANDY LEAN CLAY (CL), very dark grayish brown (10YR 3/2), fine grained, moist, some roots and organics, medium stiff, low plasticity, no odor, no staining (Topsoil).	CL									
			4		CL									
			6											
			8											
2 GP	120 96		10	POORLY GRADED SAND (SP), brownish yellow (10YR 6/8), fine grained, moist, poorly graded, medium dense, some minor bands of iron oxide staining (Saprolite). (Sandstone - poorly consolidated)	SP									
			12											
			14											
			16											
			18											
			20											
3 GP	120 120		22	POORLY GRADED SAND (SP), yellow (2.5Y 7/6), fine grained, moist, poorly graded, medium dense, small sandstone fragments throughout, drilling hard at bottom (Saprolite). (Sandstone - poorly consolidated)	SP									
			24											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Ben Korte Firm **SEH** Tel: _____ Fax: _____

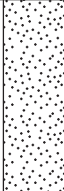
Page 2 of 4

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			26		SP									
			28											
4	120		30	SANDSTONE, slightly weathered, fine grained, dry, some iron oxide staining present.	BR									
GP	120	32												
			34											
			36											
			38											
			40											
5	120		42											
GP	120	44												
			46											
			48											
			50											
			52											
6	120		54											
GP	120	56												
			58											
			60											
			62											
			64											
7	120		66											
GP	120													

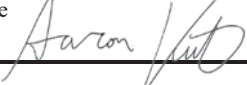
Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 3

Facility/Project Name Vernon County Landfill Expansion			License/Permit/Monitoring Number 3268		Boring Number MW-20	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental			Date Drilling Started 4/22/2025		Date Drilling Completed 4/23/2025	
Drilling Method Rotasonic						
WI Unique Well No. WF440	DNR Well ID No. 147	Common Well Name MW-20	Final Static Water Level 1,104.7 Feet MSL	Surface Elevation 1,174.3 Feet MSL	Borehole Diameter 6.0 inches	
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 583,281 N, 1,746,805 E S/C/N SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W			Lat ° ' " Long ° ' "		Local Grid Location ☐ N ☐ E ☐ S ☐ W	
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua		

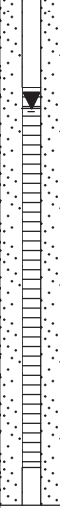
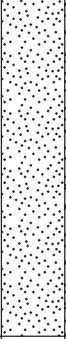
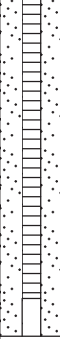
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 GP	60 48		2	FAT CLAY (CH), dark yellowish brown (10YR, 4/6), moist, medium stiff, homogeneous, high plasticity, no odor, no staining, (Residuum),	CH									
2 GP	60 36		6	POORLY GRADED SAND (SP), yellow (10Y, 7/8), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Weathered Sandstone - poorly consolidated).	SP									
3 GP	60 48		10	Note: Darker gray seams with some silt noted around 13 ft bgs.										
4 GP	60 48		16	Note: Darker gray seams with some silt noted around 15 ft bgs.										
5 GP	60 48		20	Note: Darker gray seams with some silt noted around 19 ft bgs.	SP									
			22	POORLY GRADED SAND (SP), very pale brown (10YR, 8/3), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Weathered Sandstone -										
			24											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm Short Elliott Hendrickson 3535 Vadnais Center Drive Vadnais Heights, MN 55110	Tel: 651.490.2000 Fax:
--	---	---------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
6 GP	60 36		26	poorly consolidated). Note: Darker gray seam with some silt noted around 24 ft bgs.	SP									
		28	POORLY GRADED SAND (SP), very pale brown (10YR, 8/3), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Weathered Sandstone - poorly consolidated). (continued)											
7 GP	60 48	30	Note: Increase in moisture noted around 27 ft bgs.											
		32												
		34			SP									
8 GP	60 36	36	Note: Increase in moisture noted around 38 ft bgs.											
		38	POORLY GRADED SAND (SP), yellowish brown (10YR, 5/8), poorly graded, fine grained, moist, medium dense, no odor, no staining, finer sands with potentially some silt and pieces of sandstone fragments throughout layer, (Sandstone - poorly consolidated).											
9 GP	60 60	40												
		42			SP									
		44												
10 GP	60 36	46	POORLY GRADED SAND (SP), yellowish brown (10YR, 5/8), poorly graded, fine grained, wet, medium dense, no odor, no staining, finer sands with potentially some silt and pieces of sandstone fragments throughout layer, (Sandstone - poorly consolidated).											
		48												
11 GP	60 48		50	Note: Wet soils noted from 46 to 55 ft bgs, likely perched water table.	SP									
		52												
		54												
12 GP	36 30	56	POORLY GRADED SAND (SP),light gray to white (10YR, 7/2 to 10YR, 8/1), poorly graded, fine grained, moist, medium dense, no odor, no staining, (Sandstone - poorly consolidated).											
		58			SP									
13 GP	60 42	60	Note: Increased pieces of poorly cemented sandstone fragments from 58 to 61 ft bgs.											
		62												
		64												
14 GP	84 66		66		SP									

Boring Number		MW-20		Use only as an attachment to Form 4400-122.										Page 3 of 3	
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200		
15 GP	60 60		68	POORLY GRADED SAND (SP), yellow (10YR, 7/8), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Sandstone - poorly consolidated). <i>(continued)</i>	SP										
			70												
16 GP	60 48		72	POORLY GRADED SAND (SP), yellowish brown (10YR, 5/8), poorly graded, fine grained, wet, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Sandstone - poorly consolidated). Note: Very wet, soft sandy silt lens from 75 to 77 ft bgs. Regional water table likely encountered around 71 ft bgs.	SP										
			74												
			76												
			78												
			80	Boring Terminated at 80 feet.											

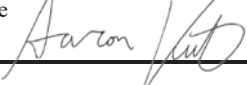
Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name Vernon County Landfill Expansion		License/Permit/Monitoring Number 3268		Boring Number MW-20WT	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental		Date Drilling Started 4/23/2025		Date Drilling Completed 4/24/2025	
Drilling Method Rotasonic					
WI Unique Well No. WF441	DNR Well ID No. 145	Common Well Name MW-20WT	Final Static Water Level 1,128.3 Feet MSL	Surface Elevation 1,174.4 Feet MSL	Borehole Diameter 6.0 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 583,271 N, 1,746,802 E S/C/N SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W			Local Grid Location Lat _____ ° _____ ' _____ " _____" Long _____ ° _____ ' _____ " _____" ☐ N ☐ E ☐ S ☐ W		
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua	

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					P 200	RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index			
1 GP	660 0			SEE BORING LOG FROM MW-20. Borehole for installation of well MW-20WT was blind drilled to 55 ft bgs based on geologic information provide by adjacent exploratory borehole for deeper well MW-20 that was completed to 80 ft bgs the previous day.											
			2												
			4												
			6												
			8												
			10												
			12												
			14												
			16												
			18												
			20												
			22												
			24												

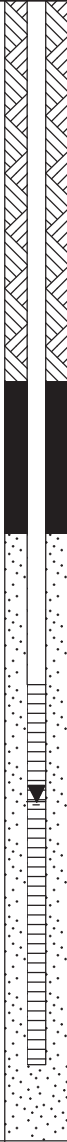
I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm Short Elliott Hendrickson 3535 Vadnais Center Drive Vadnais Heights, MN 55110	Tel: 651.490.2000 Fax:
--	--	---------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number **MW-20WT** Use only as an attachment to Form 4400-122.

Page **2** of **2**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			26	SEE BORING LOG FROM MW-20. Borehole for installation of well MW-20WT was blind drilled to 55 ft bgs based on geologic information provide by adjacent exploratory borehole for deeper well MW-20 that was completed to 80 ft bgs the previous day. <i>(continued)</i>										
			28											
			30											
			32											
			34											
			36											
			38											
			40											
			42											
			44											
			46											
			48											
			50											
			52											
			54											
				Boring Terminated at 55 feet.										

Note: Wet soils indicating perched water
table encountered at 45 ft bgs.

MW-16Z

100ft

0ft

10ft

20ft

30ft

40ft

60ft

70ft

80ft

110ft

50ft

90ft



MW-18



MW-19Z

10 20 30 40 50 60 70 80 90 100 110 120 130



MW-20

0-10ft

10-20ft

20-30ft

30-40ft

40-50ft

50-60ft

60-70ft

70-80ft



Appendix J

Environmental Monitoring Plan

Environmental Monitoring and Maintenance Plan

Vernon County Landfill

Viroqua, Wisconsin

VERSW 167824 | June 12, 2026



Building a Better World
for All of Us®

Engineers | Architects | Planners | Scientists

Contents

Title Page
Contents

1	Introduction	1
2	Groundwater Monitoring Well Sampling	1
3	Private Well Monitoring	3
4	Surface Water Monitoring	4
5	Leachate Monitoring Program	5
5.1	Leachate Sampling Points	5
5.2	Leachate Quality.....	5
5.3	Leachate Head	5
6	Landfill Gas Monitoring	6
6.1	LFG Monitoring.....	6
7	Inspection and Maintenance Requirements	6

Contents (continued)

List of Tables

- Table 1 – Groundwater Monitoring Requirements
- Table 2 – Analytical Parameters, Methods, and Preservatives
- Table 3 – Private Water Supply Well Monitoring
- Table 4 – Surface Water Monitoring
- Table 5 – Leachate and Lysimeter Monitoring Requirements
- Table 6 – Landfill Gas Probe Monitoring
- Table 7 – Landfill Gas Extraction System Monitoring Requirements
- Table 8 – Inspection and Maintenance Requirements

List of Figures

- Figure 1 – Environmental Monitoring Plan

List of Appendices

- Appendix A - Well Information Forms
- Appendix B - Leachate Figures

Environmental Monitoring and Maintenance Plan

Vernon County Landfill

Prepared for Vernon County, Wisconsin

1 Introduction

This plan summarizes the environmental monitoring program and maintenance requirements for the Vernon County Landfill.

The Vernon County Landfill is a 250-acres parcel located in the Town of Viroqua, Wisconsin. The site is located in Section 15, T13N, R4W, City of Viroqua, Vernon County, Wisconsin. The site is owned by Vernon County and has been operating since 1993. The integrated waste management system includes, but is not limited to:

- An approximate 10-acre municipal solid waste landfill, with an approximate design capacity of 590,000 cubic yards (WDNR License No. 3268).
- A closed small sized (50,000 cubic yard) C&D Landfill (WDNR License No. 3712).
- A recyclable material processing and baling facility.

Figure 1, “Environmental Monitoring Plan” shows existing facility layout of the Landfill. The monitoring requirements summarized in this plan are based on the requirements outlined in Wisconsin Department of Natural Resources (WDNR) site approvals.

2 Groundwater Monitoring Well Sampling

The groundwater monitoring requirements for the Landfill are summarized within **Table 1**. Groundwater sampling and decontamination procedures will follow guidelines established by the WDNR. Groundwater samples will be collected at the frequency specified by WDNR plan approvals. Groundwater sampling involves the preparation of the groundwater monitoring wells for sampling, the collection of representative groundwater samples, analysis of the groundwater samples, comparison of the analytical results to the applicable groundwater standards, and reporting of the results to the WDNR Groundwater Environmental Monitoring Database (GEMS). Well Information Forms (WIFs) are found in **Appendix A**. The sampling procedures are outlined below:

- All sampling preparation is completed by the sampling team prior to sampling event.
- Measure water elevation: Measure the distance from the top of the monitoring well casing to the top of groundwater in the well to the nearest hundredth (0.01) of a foot, using an electronic water level indicator. Subtract the measured distance from the elevation of the top of the well casing to obtain groundwater elevation. The well casing is referenced to USGS elevation. The measurements are recorded on the field form.

- As necessary, pumps will be pulled that interfere with obtaining accurate water levels. This procedure may need to be completed 1-2 days before a water level measurement can be taken to stabilize water level in the well.
- Well Purging and Field Measurements: Wells are purged using dedicated pumps or a portable pump, decontaminated prior to use. Four well volumes of water or the amount of water to purge the well dry is removed from each well before sampling. The amount of water purged is recorded on the field form. Field tests for specific conductance, temperature, and pH are performed on an unfiltered sample in the field. The appropriate meters are used for measurements. Also, the presence of any color, turbidity, or odor in the sample is noted on the field form.
- Collect Sample: Collect the necessary sample from the monitoring well after the required volume of water has been purged. If the well is purged dry, wait for the well to recharge sufficiently to allow removal of an adequate sample volume. Typically, the volatile organic compound (VOC) samples are collected first at the wellhead, immediately upon removal of the sample from the well. Appropriate samples for indicator parameters and metals are filtered through a 0.45-micron membrane. The samples are then preserved as outlined in **Table 2**, "Analytical Parameters, Methods, and Preservatives." All samples are stored at 4° C.
- Calibration: Field measurement meters are to be calibrated daily according to manufacturer's instructions. Calibrations are to be recorded in field form or field book format.
- Equipment decontamination: All equipment used for sampling, except for dedicated well pumps and tubing, is cleaned between wells by triple rinsing with distilled/deionized water to prevent cross-contamination.
- The volume of sample needed is determined by the laboratory and is relative to the parameters being tested. Sample volume, bottle type, and preservative type listed on **Table 2** are recorded on the chain-of-custody form at the completion of each sampling event.
- Chain-of-Custody: The samples are maintained under chain-of-custody procedures throughout the sampling event. The field sampler is responsible for care, custody, and transportation of the samples to the WDNR certified laboratory.

To evaluate data quality, one duplicate groundwater sample is typically collected for each group of 10 samples. These samples are typically collected from wells which are downgradient of the facility. Field/equipment blanks will be collected and transported during groundwater sampling to evaluate decontamination procedures. One field/equipment blank for each group of 10 samples is to be collected. The field/equipment blanks are typically collected after sampling of a downgradient well. One trip blank for VOCs per cooler is to be initiated at the laboratory and transported with the sample bottles. All samples are tracked on the chain-of-custody forms.

The list of groundwater wells and parameters for the Landfill are provided on **Table 1**. The locations of groundwater wells for the Landfill are shown on **Figure 1**.

Analytical parameters will be analyzed by the laboratory in accordance with methods in the latest edition of Test Methods for Evaluating Solid Waste Physical/Chemical Methods SW 846. The parameters, analytical methods, and appropriate preservatives for the detection monitoring parameters are listed in **Table 2** and Wis. Admin. Code NR 507 Appendix I, Table 3.

Groundwater quality analyses results are provided by the laboratory in both electronic and hard copy format. The electronic data is uploaded into a data management system and reported electronically to WDNR-GEMS by the County's landfill consultant. Analytical results are reported with the limit of detection (LOD) and the limit of quantification (LOQ) for each parameter. If a substance is detected below the limit of quantification, the detected value is reported with the appropriate qualifier.

Groundwater laboratory analytical and field data are reported to WDNR-GEMS semi-annually in January and July. The GEMS submittal will also include:

- NR 140 Exceedance Notification,
- Monthly Landfill Gas Well Data,
- Semi-Annual Perimeter Gas Probe Data,
- Leachate Discharge Quantities,
- Semi-Annual Sedimentation Basin Data,
- Environmental Monitoring Data Certification Form 4400-231 (R 1/04).

3 Private Well Monitoring

One private water supply well is present on the facility property, but it is located greater than 1,200 feet from the proposed expansion area. One private water supply well is located south of the landfill property and is also greater than 1,200 feet south of the proposed expansion area. Currently, the monitoring conducted on these wells is summarized in **Table 3**.

The procedures for sampling private water supply wells are as follows:

- Flush the system from private wells as close to the pump as possible and before the water softener, water heater, or pressure tank, if possible. Purge and sample only from the cold water ports. If it is not possible to collect a sample before treatment, note this on the field form. There is usually a sample tap just prior to entering the pressure tank.
 - Remove aerators, filters, or other devices from the sample tap before taking a sample.
 - If the sample must be taken from an outside tap, remove any hoses before taking a sample.
 - If the sample is collected on the well side of the pressure tank, make sure the pump is running and allow the water to run from the tap for at least ten minutes or four pump cycles prior to sample collection. Ensure the flowing water is cold before sampling.
 - If the sample is collected on the plumbing side of the pressure tank, allow the water to run at least 20 minutes prior to sample collection to flush out water in the pressure tank and cycle the water pump. For large pressure tanks, calculate the necessary flushing time based on pressure tank volume and flow rate. Ensure the flowing water is cold before sampling.
 - If not purging from sampling port, purge water supply line to sampling port to ensure a fresh representative sample is collected. Ensure the flowing water is cold before sampling.
 - Make every effort possible to reduce the amount of aeration of the sample by filling the sample container with the least amount of turbulence. If the sample port has any aeration screen or strainer filter or other device remove it prior to sampling.
 - Reduce the water flow to a thin stream before collecting sample for VOCs.
-

- Do not filter samples taken from water supply wells. Sample directly into sample containers. Sample order should be:
 - preserved vials
 - unpreserved vials
 - preserved glass bottles
 - unpreserved glass bottles
 - preserved plastic bottles
 - unpreserved plastic bottles
- Make every effort to reduce any possible sources of contamination in area of sampling port (example: remove gas containers, fertilizers, etc. from area).
- For each sampling event, the same sample port should be used.

In-field measurements, color, odor, turbidity, field pH, and field conductivity (corrected to 25° C) are performed on a separate unfiltered sample at the time of sampling. In-field measurements are recorded on the field form.

The private water supply wells are sampled for the parameters outlined in **Table 3**. Samples from private wells may use Method EPA 524.2 but must include additional VOCs on the Method 8260 list and NR 507 Appendix III list.

To evaluate drinking water data quality, one duplicate VOC drinking water sample is collected at each event. The duplicate sample is collected at the P-2 or “Williams” well whenever possible. Field/equipment blanks will be collected/transported during drinking water sampling to evaluate decontamination procedures. One trip blank for VOCs per cooler will be initiated at the laboratory and transported with the sample bottles. All samples are tracked on the chain of custody forms.

The results are reported to WDNR-GEMS semi-annually with the environmental monitoring data for the Active MSW Landfill (License #3268).

4 Surface Water Monitoring

Surface water from the landfill flows into a sedimentation basin located southeast of the Active MSW Landfill, as shown on **Figure 1**.

A surface water sample will be collected at the inspection point (Sedimentation Basin) semi-annually for analysis of parameter identified in **Table 4**.

All analytical parameters collected semi-annually shall be collected as a grab direct immersion sample. Pond samplers, pumps, boats, hip boots, waders, and other water sampling devices may be required to collect a surface water or stormwater sample safely. A direct immersion sampling method shall be implemented for sample collection whenever possible and is described below.

- Don appropriate health and safety equipment.
 - Obtain the required sample container(s).
 - If entering the water body, always do so with as little bottom disturbance as possible and wait for the water around the planned sampling area to return to its undisturbed state (clarity) before sampling.
-

- Collect each liquid sample by slowly submerging the sample container with minimal surface disturbance. If sampling in a stream or current, make sure the open end of the sample container is pointed upstream.
- Retrieve the container from the liquid with minimal disturbance; cap and wipe the outside of the container with a towel or cloth.

The surface water monitoring results will be reported to WDNR-GEMS semi-annually with the environmental monitoring data for the Active MSW Landfill (License #3268).

5 Leachate Monitoring Program

5.1 Leachate Sampling Points

The leachate collection system for the Active MSW Landfill (License #3268), drains to leachate storage tank located near the southwest side of the property. Additional design and configuration detail information for the leachate system is located in **Appendix B**, “Leachate Figures”.

5.2 Leachate Quality

Leachate operation monitoring requirements are to be in accordance with Chapter NR 507. Monitoring requirements are summarized on **Table 5**, “Leachate and Lysimeter Monitoring Requirements.” The locations of leachate monitoring points are shown on **Figure 1**.

Grab samples are collected from the leachate storage tank (WDNR Point ID 300). A representative grab sample will be collected using a composite sampler, bailer or similar method. These samples will be collected semi-annually in the months of March and September.

During collection of the unpreserved sample, field pH and field specific conductance are to be measured. Additionally, the color, turbidity, and odor of the sample are noted. All field measurements are recorded on the field form. Leachate quantities are recorded monthly and reported semi-annually with the leachate quality data.

Reporting of the semi-annual monitoring for the landfill to the WDNR-GEMS database will be completed on a semi-annual basis.

5.3 Leachate Head

Leachate head monitoring is conducted at the Active MSW Landfill (License #3268), in accordance with the schedule outlined on **Table 5**. **Figure 1** shows the location of the leachate head monitoring wells for the above reference sites.

A Plan modification was submitted to the WDNR on October 2, 2020, proposing the revised leachate monitoring system that is summarized on **Table 5**. This modification proposed to monitor leachate cleanout location CO-3S, CO-7S, CO-3N, and CO-6N instead of damaged or missing leachate wells LHW-1, LHW-2, LHW-3, and LHW-4. This proposed plan modification was approved by the WDNR in a letter dated February 9, 2021.

When measuring the liquid elevation at the leachate cleanouts, the elevation must be adjusted by 18-inches to reflect leachate head elevation on the liner versus the leachate collection trend. Leachate quantities pumped are recorded monthly with the leachate quality data. Reporting leachate head volumes for Active MSW Landfill (License #3268) to WDNR-GEMS database is included in the semi-annual GEMS submittal.

6 Landfill Gas Monitoring

The landfill gas (LFG) monitoring network consists of LFG monitoring probes located on the perimeter of the Active MSW Landfill (License #3268). The location of LFG probes are shown on **Figure 1**.

6.1 LFG Monitoring

LFG probe monitoring is conducted in accordance with the Plan of Operation as specified on **Table 6**, “Landfill Gas Monitoring”. Gas probes will be monitored using a handheld combustible gas meter, i.e., LANDTEC GEM 5000. Each probe will be monitored semi-annually for percent methane and percent oxygen. Site conditions will also be required at the time of gas monitoring which includes monitoring of ambient temperature, barometric pressure, barometric pressure trend, and ground surface conditions. The data results from LFG probes are reported to the WDNR semi-annually. The location of LFG monitoring points are shown on **Figure 1**, “LFG Monitoring Plan.”

Once final closure occurs, the LFG produced by the Active MSW Landfill (License #3268) will be extracted and conveyed to a blower and flare system. Future LFG extraction monitoring is summarized on **Table 7**, “Landfill Gas Extraction System Monitoring Requirements”. Data will be collected from the LFG extraction blower twice monthly while it is operating. The blower inlet, blower outlet, and flare data are reported under WDNR Point ID 400 through 402, respectively. The data results from the LFG extraction points will be reported to the WDNR semi-annually.

7 Inspection and Maintenance Requirements

The Landfill Operations Coordinator, or designee, conducts daily, weekly, and monthly of all active and closed landfill areas. Inspection and maintenance requirements for the Landfill are shown on **Table 8**, “Inspection and Maintenance Requirements.” Results of the inspections are documented on inspection logs and retained by the Landfill Operations coordinator.

The inspections will include but not be limited to review of the following:

- Site Conditions shall be noted for:
 - Weather conditions and station data.
 - Dust/Water application volume.
 - Odors.
 - Intermediate and final cover shall be inspected, and observations of the following noted:
 - Growth of vegetation and presence of any bare spots.
 - Erosion of the waste slope and/or intermediate cover.
 - Sloughing or slumping of the waste face or intermediate cover.
 - Presence of any leachate seeps.
 - Evidence of gas leakage through the cover.
 - Leachate management system shall be checked for:
 - Leachate extraction wells working.
 - Building inspection.
 - Integrity of the leachate transfer piping.
-

- Sedimentation/clogging in the leachate manhole.
 - Proper operation of the leachate pump including manufacturer's recommended periodic maintenance.
 - SCADA and leachate totals.
- Surface water management structures shall be checked for:
 - Integrity of surface water and erosion control devices.
 - Siltation or sedimentation in surface water conveyance structure.
 - Erosion in and/or around surface water conveyance structure.
- Operating gas and leachate management system on the Landfill shall be:
 - SCADA and gas monitor operation and calibration.
 - LFG quality measurements.

The Landfill Operations Manager, or designee, shall take action within 48 hours to correct any deficiency on any of the listed structures. The corrective action shall return the damage structure to its original condition or better.

Tables

Table 1 – Groundwater Monitoring Requirements

Table 2 – Analytical Parameters, Methods, and Preservatives

Table 3 – Private Water Supply Well Monitoring

Table 4 – Surface Water Monitoring

Table 5 – Leachate and Lysimeter Monitoring Requirements

Table 6 – Landfill Gas Probe Monitoring

Table 7 – Landfill Gas Extraction System Monitoring Requirements

Table 8 – Inspection and Maintenance Requirements

Table 1
Groundwater Monitoring Requirements
Vernon County Landfill (License # 3268)

WELL ID	DNR ID	Grid Location		GW Elevation 04189	Odor 00001	Color 00002	Turbidity 00003	Field Temp. 00010	Field Conductivity 00094	Field pH 00400	Chloride 00940	Total Hardness 22413	Alkalinity 39036	Dissolved Iron 74010	VOCs ¹
		Northing	Easting												
MW-1	101	582815.9	1745979.0	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-1R	120	582940.9	1745703.8	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-1P	102	582809.9	1745957.4	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--
MW-1RZ	123	582922.0	1745693.7	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-1PR ²	121	582942.0	1745694.9	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-2	103	583625.4	1745492.1	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--
MW-2P	104	583625.5	1745476.6	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--
MW-3	105	584086.5	1746427.5	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-4P	107	584086.3	1746438.4	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-5 ³	108	583468.0	1746588.2	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-5A ^{2,3}	109	583467.9	1746571.9	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-6	110	584086.7	1746417.5	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-7	111	583843.8	1745887.8	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-8R	112	583837.0	1745874.2	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-9 ²	113	583858.6	1745892.3	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-10	114	582822.1	1746433.2	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-11	115	582806.2	1746432.0	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-12 ²	116	582806.6	1746413.0	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-13P	117	582910.5	1746035.6	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-14 ³	118	583881.3	1746475.7	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-14Z ³	119	583867.0	1746488.0	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-14WT	125	583964.8	1746693.1	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-15WT	127	583598.0	1746728.6	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--
MW-16WT	129	583157.4	1746673.4	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--
MW-16	131	583147.8	1746669.7	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-16Z	135	583168.4	1746679.1	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-17WT ²	133	582907.9	1746684.9	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-18WT	137	583413.3	1746690.8	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
MW-18	139	583407.8	1746695.9	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-19	141	582931.4	1746831.1	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-19Z	143	582939.8	1746831.5	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-20WT	TBD	583271.0	1746802.5	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--
MW-20	TBD	583280.7	1746804.9	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A
MW-14R ⁴	TBD	Future	Future	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A

SA = Semi Annual Monitoring (March and September).

A= Annual Monitoring (September).

1. VOCs within ch. NR 507, Appendix III, including acetone, carbon disulfide, methyl ethyl ketone, and tetrahydrofuran.

2. Subtitle "D" Wells.

3. Well will need to be abandoned during proposed expansion construction. Sampling will occur until well is abandoned.

4. Proposed replacement monitoring well to be installed when existing monitoring wells MW-14 and MW-14Z are abandoned due to proposed expansion construction.

Table 2
Analytical Parameters, Methods, and Preservatives
Vernon County Landfill (License # 3268)

Parameter	Minimum Sample Size	Container	Preservative ¹	Method
Volatile Organic Compounds	120 ml	GV40T	HCL	EPA 8021, 8260
Alkalinity	100 ml	P or G	---	EPA 310.2
Antimony	250 ml	P or G	HNO3, pH <2	EPA 200.9
Arsenic	250 ml	P or G	HNO3, pH <2	EPA 200.9
Barium	250 ml	P or G	HNO3, pH <2	EPA 6010
Beryllium	250 ml	P or G	HNO3, pH <2	EPA 6010
Biochemical Oxygen Demand (BOD)	100 ml	P or G	---	SM5210B
Boron	250 ml	P or G	HNO3, pH <2	EPA 6020
Cadmium	250 ml	P or G	HNO3, pH <2	EPA 6020
Chemical Oxygen Demand (COD)	50 ml	P or G	HNO3, pH <2	EPA 410.4, 5220B
Chloride	50 ml	P or G	---	EPA 300.0
Chromium	250 ml	P or G	HNO3, pH <2	EPA 6010
Cobalt	250 ml	P or G	HNO3, pH <2	EPA 6010
Color	---	---	---	---
Conductivity (Field)	---	---	---	---
Copper	250 ml	P or G	HNO3, pH <2	EPA 6010
Fluoride	250 ml	P or G	---	EPA 340.2
Groundwater Elevation	---	---	---	---
Hardness	50 ml	P or G	---	EPA 6010
Iron	250 ml	P or G	HNO3, pH <2	EPA 6010
Lead	250 ml	P or G	HNO3, pH <2	EPA 6020
Manganese	250 ml	P or G	HNO3, pH <2	EPA 6010
Mercury	50 ml	P or G	HNO3, pH <2	EPA 245.1
Nickel	250 ml	P or G	HNO3, pH <2	EPA 6010
Nitrate + Nitrite (NO3+NO2)	50 ml	P or G	---	EPA 3531
Odor	---	---	---	---
pH (Field)	---	---	---	---
Selenium	250 ml	P or G	HNO3, pH <2	EPA 6020
Silver	250 ml	P or G	HNO3, pH <2	EPA 6010
Sodium	250 ml	P or G	HNO3, pH <2	EPA 200.7
Sulfate	250 ml	P or G	---	EPA 300.0
Temperature (Field)	---	---	---	EPA 170.1, 2550 B
Thallium	250 ml	P or G	HNO3, pH <2	EPA 200.9
Total Kjeldahl Nitrogen	250 ml	P or G	H2SO4, pH <2	SM 4500-NH3E
Total Suspended Solids	250 ml	P or G	---	USGS I-3765
Turbidity	---	---	---	---
Vanadium	250 ml	P or G	HNO3, pH <2	EPA 6010
Zinc	250 ml	P or G	HNO3, pH <2	EPA 6010

1. All samples must be cooled to 4 C.
GV 40T - 40 ml glass vial with teflon cap
G = Glass
P = Plastic

Table 3
Private Water Supply Well Monitoring
Vernon County Landfill (License # 3268)

Private Water Supply WELL ID	DNR ID	Color 00002	Odor 00001	Turbidity 00003	Field Temp. 00010	Field pH 00400	Field Conductivity 00094	Alkalinity, total 39036	Total Hardness 22413	Chloride 00940	VOCs ¹
Facility Well (P-1)	201	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Williams Well (P-2)	202	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA

SA = Semi Annual Monitoring (March and September).

1. Samples from private wells may use Method EPA 524.2, but must include additional VOCs on Method EPA 8260 list and NR507 Appendix III list.

Table 4
Surface Water Monitoring
Vernon County Landfill (License # 3268)

Sample Point	DNR ID	Surface Water Elevation 99520	Dissolved Oxygen 299	Odor 00001	Color 00002	Turbidity 00003	Field Temp. 00010	Field Cond 00094	Field pH 00400	Total Alkalinity 00410	Chloride 00940	Total Iron 74010	Filtered Nitrate 00620	Total Phosphorous 00665	Total Hardness 00900
Sedimentation Basin	502	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
SA = Semi Annual Monitoring (March and September).															

Table 5
Leachate and Lysimeter Monitoring Requirements
Vernon County Landfill (License # 3268)

[illegible]

1. VOCs within ch. NR 507, Appendix III, including acetone, carbon disulfide, methyl ethyl ketone, and tetrahydrofuran.

2. SVOCs within ch. NR 507, Appendix IV.

3. To be abandoned during proposed expansion construction. Sampling will occur until location is abandoned.

M- Monthly

SA - Semiannually

A - Annually

Table 6
Landfill Gas Probe Monitoring
Vernon County Landfill (License # 3268)

Sample Point	DNR #	Grid Location		Gas Quality		Field Temperature F	Barometric Pressure mm of HG	Barometric Pressure Trend	Ground Surface Condition
				Methane %	Oxygen %				
		Northing	Easting	85547	85550	46388	00025	46381	
Reported under Active MSW Landfill (License #3253)									
GP-1	460	1745680.9	583357.5	Q	Q	Q	Q	Q	--
GP-2R	463	1745951.2	583821.3	Q	Q	Q	Q	Q	--
GP-3	464	1746000.7	582918.3	Q	Q	Q	Q	Q	--
GP-4	TBD	Future	Future	Q	Q	Q	Q	Q	--
Q = Quarterly Monitoring (March, June, September, and December).									

Table 7
Landfill Gas Extraction System Monitoring Requirements
Vernon County Landfill (License # 3268)

Sample Point	DNR ID #	Coordinates		Gas Quality				Vacuum " H2O 46390	Pressure 46382	Header Pressure " H2O 46382	Field Temperature F 46388	Flow Rate 46386
				Carbon Dioxide %	Methane %	Nitrogen %	Oxygen %					
		Northing	Easting	85544	85547	99181	85550					
Blower Inlet	400	Future	Future	Mx2	Mx2	Mx2	Mx2	Mx2	Mx2	--	Mx2	Mx2
Blower Outlet	401	Future	Future	Mx2	Mx2	Mx2	Mx2	Mx2	Mx2	--	Mx2	Mx2
Flare	402	Future	Future	--	--	--	--	--	--	Mx2	--	Mx2
GW-1	410	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-2	412	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-3	414	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-4	416	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-5	418	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-6	420	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-7	422	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-8	424	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-9	426	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-10	428	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-11	430	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-12	TBD	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-13	TBD	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-14	TBD	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
GW-15	TBD	Future	Future	--	Q	--	Q	--	--	Q	Q	Q
Mx2 = Twice Monthly M = Monthly Q = Quarterly A = Annually 1. Required at the time of any gas monitoring.												

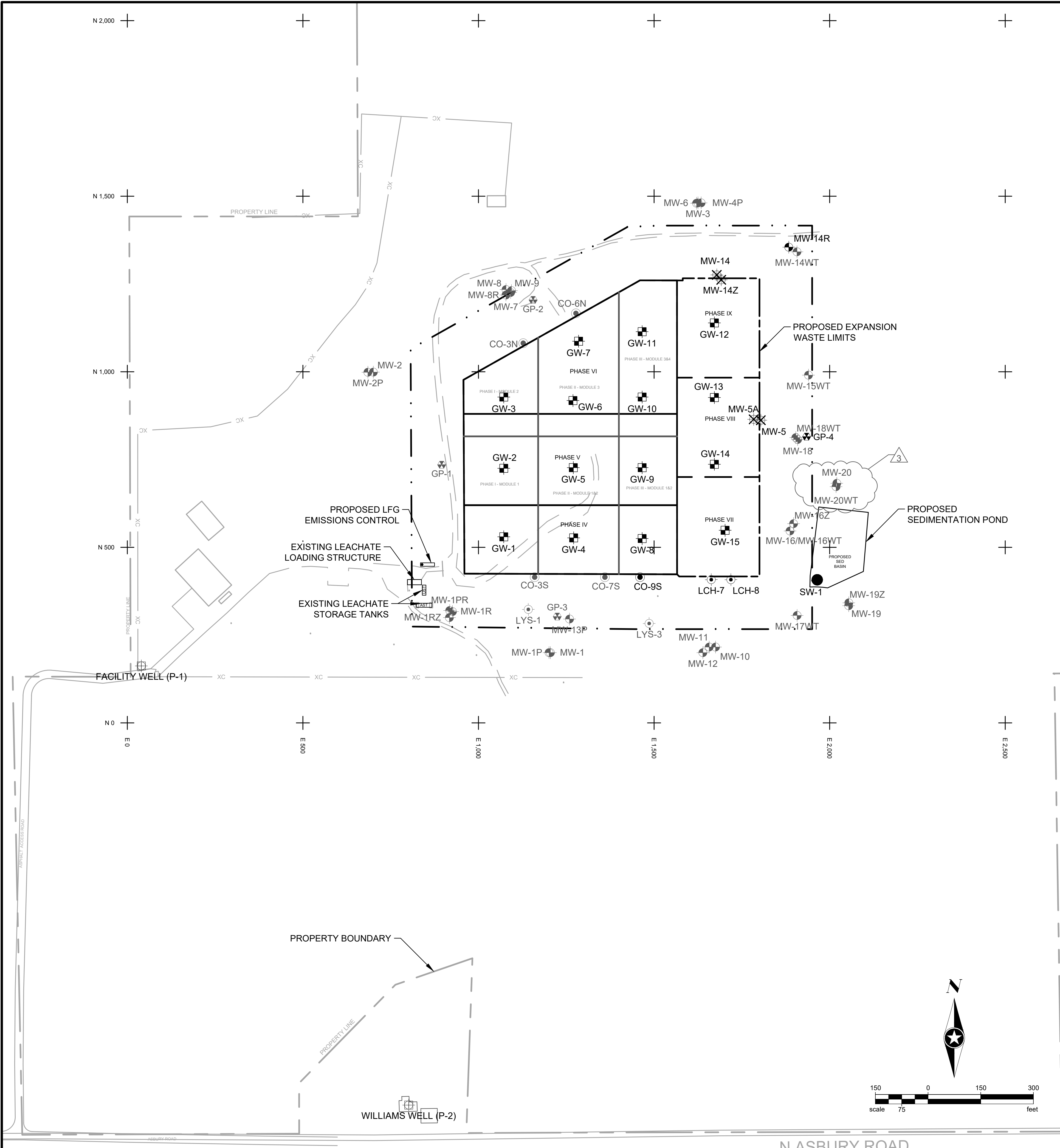
Table 8
Inspection and Maintenance Requirements
Vernon County Landfill (License # 3268)

Location	Inspection Schedule	Maintenance Schedule
Cover Vegetation	Semi-Annually	Maintain Healthy Vegetative Growth, Repair as Necessary
Cover Vegetation	Annually	Mow Cover
Runoff Control Strcutres	Semi-Annually	Inspect for Erosion and Sedimentation, Repair as Necessary
Cap Settlement	Semi-Annually	Check for Cap Settlement, Repair as Necessary
Road Repair	Semi-Annually	Inspect Roads, Repair as Necessary
Gas Extraction System	Monthly	Inspect Wells, Blower, Piping, etc.
Leachate Collection System	Semi-Annually	Inspect Lift Station, Pumps, Tank, Loading Structure, Cleanout Riser, etc.
Leachate Collection System	Annually	Clean out Leachate Lines
Lysimeters	Semi-Annually	Inspect Sampling Ports and Manholes
Groundwater Monitoring Wells	Semi-Annually	Inspect Surface Seal, Protective Casing/Cover, Lock, Well Casing, Labels, Cap, Bailer Fit, etc.
Groundwater Monitoring Wells	Annually	Measure Well Depth
M = Monthly A = Annually		
SA - Semi-Annually		

Figures

Figure 1 – Environmental Monitoring Plan

Save: 6/11/2026 11:25 AM bhennrich Plot: 6/11/2026 11:35 AM X:\UZ\IVERSW\167824\5-final-dgn\51-drawings\85-HeavyCiv\FEASIBILITY STUDY\SHEETS\SV\167824_30.dwg



LEGEND:

EXISTING:

- GROUNDWATER MONITORING WELL
- PRIVATE GROUNDWATER WELL
- LEACHATE HEAD WELL
- CLEANOUT (HEAD WELL)
- LYSIMETER
- GAS PROBE
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL (TO BE ABANDONED)
- LEACHATE HEAD WELL
- GAS PROBE
- LANDFILL GAS MONITORING/EXTRACTION WELL
- SURFACE WATER SAMPLING LOCATION

GENERAL:

- 150-FT DESIGN MANAGEMENT ZONE (DMZ)
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING APPROVED WASTE LIMITS
- PROPOSED EXPANSION WASTE LIMITS
- PROPOSED SEDIMENTATION BASIN LIMITS
- PROPOSED FLARE LOCATION
- EXISTING LEACHATE STORAGE TANK

LFG Monitoring				
Monitoring Points		Parameters	Sample Interval	
Existing Gas Monitoring Wells GP-1 GP-2R GP-3		% Methane	Q	March, June, September, and December
		% Oxygen	Q	
		Field Temperature	Q	
		Barometric Pressure	Q	
		Barometric Pressure Trend	Q	
Proposed Gas Monitoring Wells GP-4		% Methane	Q	March, June, September, and December
		% Oxygen	Q	
		Field Temperature	Q	
		Barometric Pressure	Q	
		Barometric Pressure Trend	Q	
Proposed LFG Extraction Wells GW-1 GW-6 GW-12 GW-2 GW-7 GW-13 GW-3 GW-8 GW-14 GW-4 GW-9 GW-15 GW-5 GW-10 GW-11 GW-4 GW-11		Header Pressure in Water Column	M	March, June, September, and December
		% Methane	Q	
		% Oxygen	Q	
		Field Temperature	Q	
		Flow Rate	Q	
Proposed LFG System Blower Inlet Blower Outlet		% Methane	Mx2	Twice Monthly
		% Oxygen	Mx2	
		% Carbon Dioxide	Mx2	
		% Nitrogen	Mx2	
		Vacuum (in H2O)	Mx2	
		Pressure	Mx2	
		Field Temperature	Mx2	
		Flow Rate	Mx2	
		Head Pressure (in H2O)	Mx2	
		Flow Rate	Mx2	
Flare				Twice Monthly

Operation and Maintenance Activities		
Location	Inspection Schedule	Maintenance Schedule
Cover Vegetation	Semi-Annually	Maintain Healthy Vegetative Growth, Repair as Necessary
Cover Vegetation	Annually	Mow Cover
Runoff Control Structures	Semi-Annually	Inspect for Erosion and Sedimentation, Repair as Necessary
Cap Settlement	Semi-Annually	Check for Cap Settlement, Repair as Necessary
Road Repair	Semi-Annually	Inspect Roads, Repair as Necessary
Gas Extraction System	Monthly	Inspect Wells, Blower, Piping, etc.
Leachate Collection System	Semi-Annually	Inspect Lift Station, Pumps, Tank, Loading Structure, Cleanout Riser, etc.
Leachate Collection System	Annually	Clean out Leachate Lines
Lysimeters	Semi-Annually	Inspect Sampling Ports and Manholes
Groundwater Monitoring Wells	Semi-Annually	Inspect Surface Seal, Protective Casing/Cover, Lock, Well Casing, Labels, Cap, Bailor Fit, etc.
Groundwater Monitoring Wells	Annually	Measure Well Depth

Groundwater Monitoring Wells/Piezometers			
Well ID		Parameters	Sample Interval
Existing Wells		Groundwater Elevation	SA
MW-1	MW-6	Field pH	SA
MW-1R	MW-7	Field Conductivity	SA
MW-1RZ	MW-8R	Field Temperature	SA
MW-3	MW-10	Diss. Alkalinity	SA
MW-4P	MW-11	Diss. Chloride	SA
MW-5 ¹	MW-13P	Total Hardness	SA
M-19	MW-19Z	Color, Odor, Turbidity	SA
Proposed Wells ²		Dissolved Iron	SA
		VOCs	A
			September
Existing Wells		Groundwater Elevation	SA
MW-1P	MW-2	Field pH	SA
MW-15WT	MW-16WT	Field Conductivity	SA
		Field Temperature	SA
		Color, Odor, Turbidity	SA
Subtitle D Wells		Groundwater Elevation	SA
MW-1PR	MW-9	Field pH	SA
MW-5A ¹	MW-12	Field Conductivity	SA
		Field Temperature	SA
		Diss. Alkalinity	SA
		Diss. Chloride	SA
		Total Hardness	SA
		Color, Odor, Turbidity	SA
		Dissolved Iron	SA
		VOCs	SA
Proposed to be Abandoned Wells			
MW-5			
MW-14			
MW-5A			
1. To be abandoned due to proposed expansion construction. The well will continue to be monitored until abandonment is necessary.			
2. Proposed replacement monitoring wells to be installed when existing monitoring wells MW-14 and MW-14Z are abandoned due to proposed expansion construction.			
Private Wells			
Well ID		Parameters	Sample Interval
Facility Well (P-1)		Field pH	SA
Williams Well (P-2)		Field Conductivity	SA
		Field Temperature	SA
		Color, Odor, Turbidity	SA
		Diss. Alkalinity	SA
		Diss. Chloride	SA
		Total Hardness	SA
		VOCs	SA

Leachate				
Monitoring Points	Parameters		Sample Interval	
Leachate Head Wells	Leachate Volume Pumped	M	Monthly	
CO-3S CO-3N LCH-5	Leachate Elevation	M		
CO-7S CO-6N LCH-6	Leachate Depth	M		
Proposed Leachate Head Wells				
LCH-7 LCH-8 CO-9S				
Proposed to be Abandoned Head Wells				
LCH-5 LCH-6				
Leachate Storage Tank	Leachate Volume Pumped	M	Monthly	
	BOD	SA	March & September	
	Total Ammonia Nitrogen	SA		
	Field pH	SA		
	Field Conductivity	SA		
	Total Alkalinity	SA		
	Total Chloride	SA		
	Total Suspended Solids	SA		
	Total Hardness	SA		
	Total Sulfate	SA		
	Total Sodium	SA		
	Total Cadmium	SA		
	Total Iron	SA		
	Total Lead	SA		
	Total Manganese	SA		
	Total Mercury	SA		
	Total Kjeldahl Nitrogen	SA		
	Color, Odor, Turbidity	SA		
	VOCs	SA		
	SVOCs	A		September

Monitoring Points		Parameters	Sample Interval	
Lys-1 Lys-3	Lys-1 Lys-3	Lysimeter Discharge (gallons)	M	Monthly
		Depth to Liquid	M	
		Liquid Elevation	SA	March & September
		Field pH	SA	
		Field Conductivity	SA	
		Total Alkalinity	SA	
		Total Chloride	SA	
		Total Hardness	SA	
		Total Sodium	SA	
		Total Sulfate	SA	
		Total Kjeldahl Nitrogen	SA	
		Color, Odor, Turbidity	SA	
		VOCs	A	September
		SVOCs	A	

Monitoring Points		Parameters	Sample Interval	
Sedimentation Basin (SW-1)	Sedimentation Basin (SW-1)	Surface Water Elevation	SA	March & September
		Dissolved Oxygen	SA	
		Field pH	SA	
		Field Conductivity	SA	
		Field Temperature	SA	
		Total Alkalinity	SA	
		Total Chloride	SA	
		Total Hardness	SA	
		Total Iron	SA	
		Filtered Nitrate	SA	
		Total Phosphorous	SA	
		Color, Odor, Turbidity	SA	

SEH Project	VERSW 167824	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	NRP/BRH	3	ADDENDUM NO. 2	10/29/2025			
Designed By	TTR	2	ADDENDUM NO. 1	11/19/2024			
Checked By	NRP	1	ISSUED FOR REGULATORY REVIEW	09/11/2023			

PLANS PREPARED BY:
329 JAY STREET
SUITE 301
LA CROSSE, WI 54601-4034
PHONE: 1.608.782.3161

PLANS PREPARED FOR:
VERNON COUNTY SOLID WASTE DEPT
53705 CTH LF
VIROQUA, WISCONSIN

VERNON COUNTY LANDFILL
FEASIBILITY STUDY
ENVIRONMENTAL MONITORING PLAN

Appendix A

Well Information Forms

State of Wisconsin Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Page 0 of 7

Use the Groundwater Monitoring Well and Point Information Form to record identification, location and construction information for groundwater monitoring wells and any other sample "points," (e.g., gas probes, lysimeters, leachate collection systems, etc.), that are part of the environmental monitoring program. **NOTE:** Not all fields will be applicable to all point types. Only **one** coordinate reference system may be used per site. Allowable coordinate systems are listed below. (Coordinates for each system require a minimum number of digits as described below.) Local grid coordinates cannot be accepted. Identify the Coordinate Reference System, Datum and Method used.

Facility Name		County	Facility ID No. (FID)		License, Permit or Monitoring No.		Date	Completed By (Name and Firm)									
Vernon County MSW Landfill		Vernon	663038310		3268		06/11/2026	Brian Kent, SEH									
DNR Point ID No.	Point Name ¹	WUWN ² (if app.)	Type	Status	Gradient	Enf. Stds. Y/N.	Construction Date	Elevations msl (ft)		Well Casing			Well Screen Length (ft)	Well (Pt) Total Length (ft)	Coordinates ^{3,4,5}		
								Ground Surface	Well Top (of casing)	Type	Diam ⁶ (in)	Length ⁷ (ft)			Y / Lat / Northing	X / Long / Easting	
-	102	MW-1P		11	▼	▼	12/30/1987	1236.4	1238.41	▼	2	101.1	10	111.1	582809.9	1745957.3	▼
-	101	MW-1		12	▼	▼	12/30/1987	1236.4	1238.11	▼	2	148.0	10	158.0	582815.9	1745957.3	▲▼
-	121	MW-1PR		11	▼	▼	01/12/1994	1245.0	1247.61	▼	2	112.7	15	127.7	582942.0	1745694.8	▲▼
-	120	MW-1R		12	▼	▼	01/12/1994	1244.6	1247.25	▼	2	149.6	15	164.6	582940.8	1745703.8	▲▼
-	123	MW-1RZ		12	▼	▼	03/12/2003	1244.0	1245.45	▼	2	181.5	5	186.5	582921.9	1745693.6	▲▼
-	104	MW-2P		11	▼	▼	01/17/1988	1252.5	1254.88	▼	2	114.8	10	124.8	583625.4	1745476.5	▲▼
-	103	MW-2		12	▼	▼	01/17/1988	1252.5	1254.35	▼	2	164.6	10	174.6	583625.4	1745492.0	▲▼
-	105	MW-3		12	▼	▼	02/02/1988	1233.0	1235.25	▼	2	175.0	5	180.0	584086.5	1746427.4	▲▼
-	107	MW-4P		11	▼	▼	01/29/1988	1232.9	1235.19	▼	2	85.0	10	95.0	584086.2	1746438.4	▲▼
-	109	MW-5A		11	▼	▼	11/08/1989	1224.0	1225.18	▼	2	88.3	15	103.3	583467.8	1746571.9	▲▼
-	108	MW-5		12	▼	▼	02/17/1988	1223.3	1225.32	▼	2	140.6	10	150.6	583467.9	1746588.2	▲▼
-	110	MW-6		12	▼	▼	02/20/1988	1233.0	1235.37	▼	2	197.2	5	202.2	584086.7	1746417.4	▲▼
-	111	MW-7		12	▼	▼	11/07/1989	1255.7	1258.03	▼	2	229.5	5	234.5	583843.8	1745887.7	▲▼
-	112	MW-8R		12	▼	▼	11/13/1989	1256.1	1258.84	▼	2	187.5	15	202.5	583836.9	1745874.1	▲▼
-	113	MW-9		11	▼	▼	08/29/1989	1255.4	1257.50	▼	2	111.8	15	126.8	583858.6	1745892.2	▲▼
-	114	MW-10		12	▼	▼	09/15/1989	1215.6	1217.52	▼	2	178.5	5	183.5	582822.1	1746433.1	▲▼
-	115	MW-11		12	▼	▼	09/22/1989	1216.4	1218.36	▼	2	147.5	15	162.5	582806.2	1746431.9	▲▼
-	116	MW-12		11	▼	▼	09/22/1989	1216.4	1218.36	▼	2	83.5	15	98.5	582806.6	1746413.0	▲▼
-	117	MW-13P		11	▼	▼	02/26/2003	1224.5	1227.42	▼	2	87.4	15	102.4	582910.4	1746035.5	▲▼
-	118	MW-14	JX072	12	▼	▼	03/12/2003	1247.5	1249.69	▼	2	171.1	15	186.1	583881.3	1746475.7	▲▼

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Page 0 of 7

DNR Point ID No.	Point Name¹	WUWN² (if app.)	Type	Status	Gradient	Enf. Stds. Y/N.	Constructio n Date	Elevations msl (ft)		Well Casing			Well Screen L ength (ft)	Well (Pt) Total Len gth² (ft)	Coordinates ^{3,4,5}		
								Ground Surface	Well Top (of casing)	Type	Diam³ (in)	Length³ (ft)			Y / Lat / Northing	X / Long / Easting	
119	MW-14Z	JX073	12	▼	▼	▼	03/07/2003	1247.5	1250.22	▼	2	205.8	5	210.8	583866.9	1746488.0	▲▼
125	MW-14WT	WC334	11	▼	▼	▼	09/20/2022	1247.2	1249.70	▼	2	90.0	15	105.0	583964.7	1746693.0	▲▼
127	MW-15WT	WC335	11	▼	▼	▼	09/28/2022	1220.6	1223.24	▼	2	72.8	10	82.8	583598.0	1746728.6	▲▼
129	MW-16WT	WC336	11	▼	▼	▼	09/21/2022	1184.7	1187.41	▼	2	64.9	10	74.9	583157.3	1746673.3	▲▼
131	MW-16	WC337	12	▼	▼	▼	08/25/2022	1184.3	1186.92	▼	2	91.9	5	96.9	583147.8	1746669.6	▲▼
133	MW-17WT	WC338	11	▼	▼	▼	09/26/2022	1196.4	1199.18	▼	2	76.9	10	86.9	582907.9	1746684.9	▲▼
201	P-1 (Facility)	FU046	13	▼	▼	▼	12/10/1992			▼	6						▲▼
202	P-2 (Williams)	8IW730	13	▼	▼	▼	07/10/1969			▼	6						▲▼
502	Sedimentation Basin		22	▼	▼	▼				▼							▲▼
300	Leachate Storage Tank		23	▼	▼	▼				▼					583001.6	1745623.2	▲▼
340	Lys-1		14	▼	▼	▼				▼					582940.4	1745918.7	▲▼
341	Lys-2		14	▼	▼	▼				▼					582916.5	1746103.3	▲▼
342	Lys-3		14	▼	▼	▼				▼					582892.9	1746261.9	▲▼
310	LHW-1		24	▼	▼	▼				▼					583130.8	1745934.8	▲▼
314	LHW-2		24	▼	▼	▼				▼					583452.2	1745941.7	▲▼
318	LHW-3		24	▼	▼	▼				▼					583120.3	1746129.7	▲▼
322	LHW-4		24	▼	▼	▼				▼					583793.7	1746077.0	▲▼
326	LHW-5		24	▼	▼	▼				▼					583124.4	1746365.6	▲▼
330	LHW-6		24	▼	▼	▼				▼					583461.2	1746372.4	▲▼
460	GP-1		51	▼	▼	▼				▼					583357.5	1745680.9	▲▼
462	GP-2		51	▼	▼	▼				▼					583821.2	1745951.2	▲▼
464	GP-3		51	▼	▼	▼				▼					582918.3	1746000.6	▲▼
135	MW-16Z	WF528	12	▼	▼	▼	08/06/2024	1184.5	1186.50	▼	2	117.0	5	122.0	583168.4	1746679.1	▲▼
137	MW-18WT	WF527	11	▼	▼	▼	08/02/2024	1210.1	1212.24	▼	2	79.2	10	89.2	583413.3	1746690.8	▲▼
139	MW-18	WF526	11	▼	▼	▼	08/01/2024	1209.8	1212.00	▼	2	109.2	10	119.2	583407.8	1746695.9	▲▼

Completion of this form is mandatory under chs. 281, 289 and 292, Wis. Stats., and ss. NR 110.25, NR 507.14 and NR 716.15, Wis. Admin. Code

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Page 0 of 7

DNR Point ID No.	Point Name ¹	WUWN ² (if app.)	Type	Status	Gradient	Enf. Stds. Y/N.	Constructio n Date	Elevations msl (ft)		Well Casing			Well Screen L ength (ft)	Well (Pt) Total Len gth ³ (ft)	Coordinates ^{4,5A}	
								Ground Surface	Well Top (of casing)	Type	Diam ³ (in)	Length ³ (ft)			Y / Lat / Northing	X / Long / Easting
141	MW-19	WF530	11	▼	▼	▼	08/13/2024	1190.5	1192.82	▼	2	95.3	10	105.3	582931.4	1746831.1
143	MW-19Z	WF529	12	▼	▼	▼	08/09/2024	1190.2	1192.34	▼	2	127.1	5	132.1	582939.8	1746831.5
145	MW-20WT	WF441	11	▼	▼	▼	04/24/2025	1174.4	1176.32	▼	2	44.9	10	54.9	583271.01	1746802.47
147	MW-20	WF440	11	▼	▼	▼	04/23/2025	1174.3	1176.58	▼	2	71.3	10	81.3	583280.67	1746804.86

¹Include previous name as well if one exists.

²Wisconsin Unique Well Number.

³Well Casing Diameter measures inside diameter.

⁴Length of well casing
from top of casing to screen
Total length of well from top of casing to bottom of screen
length and screen length

⁵Identify Coordinate Reference System (only one system may be used per site):

☐ State Plane (min. 2 digits right of decimal)

☒ ☐

⁶Identify Projection Datum and units*

☐ ☐ ☒ ☐

Units used for State Plane, WTM or County Coord. Sys:

☐ ☒ NOTE: A datum and units are not required for Lat/Long

⁷Identify the Method Used to Determine the Coordinates:

☒ ☐ ☐ ☐ ☐

⁸Y / Lat / Northing
describe the vertical axis.

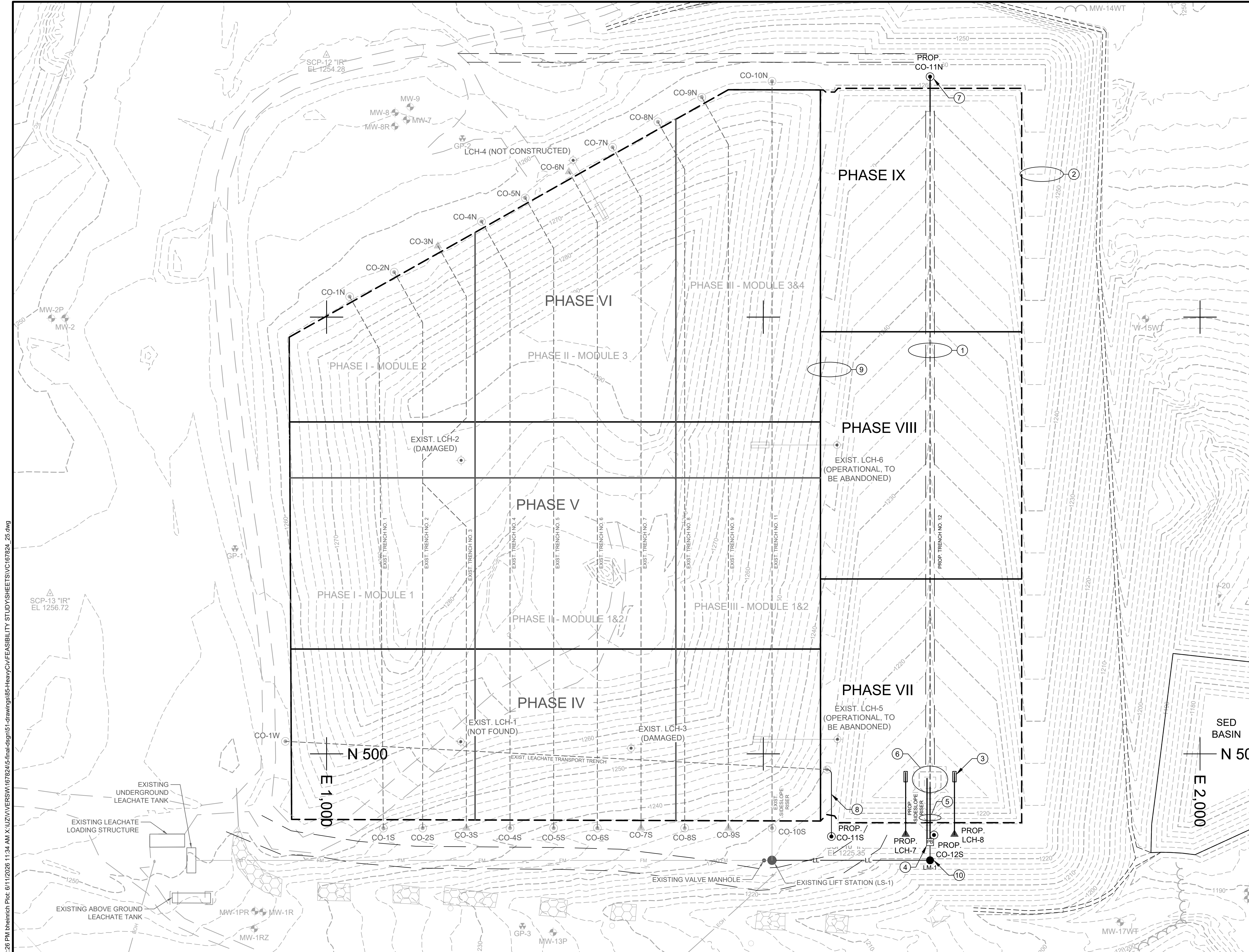
X / Long / Easting
describe the horizontal axis.

(include "-" where needed, e.g., -89.123456)

Appendix B

Leachate Figures

Save: 10/28/2025 2:25 PM bhierich Plot: 6/1/2026 11:34 AM X:\UZ\VERSW\167824\5-final\dwg\51-drawings\85-HeavyCiv\FEASIBILITY STUDY\51SHEET\SV\167824_25.dwg



- NOTES:**
1. CONTOUR INTERVAL IS 10-FOOT MAJOR AND 2-FOOT MINOR.
 2. CONTOURS WITHIN THE LINER LIMITS REPRESENT TOP OF 5-FOOT CLAY LINER ELEVATIONS (BASE).
 3. CONTOURS OUTSIDE THE PHASE BOUNDARY LIMITS REPRESENT FINAL GRADE ELEVATIONS POST EXPANSION LINER CONSTRUCTION (TOP OF TOPSOIL, ETC.).
 4. LOCATIONS OF EXISTING LEACHATE INFRASTRUCTURE INCLUDING TRENCHES, HEADWELLS, CLEANOUT, ETC. IS APPROXIMATE.

- LEGEND:**
- EXISTING LEACHATE COLLECTION LINE
 - - - PROPOSED LEACHATE COLLECTION LINE
 - ⊙ EXISTING LEACHATE CLEANOUT
 - ⦿ PROPOSED LEACHATE CLEANOUT
 - ⊕ EXISTING LEACHATE HEADWELL
 - △ PROPOSED LEACHATE HEAD MONITORING LOCATION AND CLEANOUT (CONSTRUCTED)
 - ▲ PROPOSED LEACHATE HEAD MONITORING LOCATION (FUTURE)

- KEYNOTES:**
1. LEACHATE COLLECTION TRENCH

4
31
 2. PERIMETER BERM, DITCH AND OUTLET PIPE

3
35
 3. LEACHATE HEAD MONITORING WELL

2
31
 4. LEACHATE EXTRACTION BUILDING

3
33
 5. PHASE VII LEACHATE COLLECTION SIDE SLOPE RISER TRENCH

4
32
 6. PHASE VII LEACHATE COLLECTION SUMP

1
32
 7. LEACHATE COLLECTION CLEANOUT RISER

1
31
 8. LEACHATE CLEANOUT EXTENSION

2
34
 9. COMPOSITE LINER SPLICE

7
31
 10. LEACHATE MANHOLE LM-1 - PLAN

4
33

Appendix K

Needs Assessment

Table 11-1
Remaining Site Capacity and Service Area Population Characteristics
Vernon County Landfill - Proposed Eastern Expansion

Site Name	Service Area ⁽¹⁾	Remaining Site Capacity as of January 2026 ⁽²⁾ (CY)	Service Area Population 2020 Census ⁽³⁾	Service Area Population 2025 Census ⁽³⁾	Population Numeric Change	Population Percent Change	Population Annual Growth Rate
Vernon County Landfill	Vernon County	18,194	30,714	31,388	674	2.19%	0.44%

Notes:

(1) The service area for Vernon County Landfill, through local ordinance, consists of Vernon County only.

(2) Remaining site capacity based on volume survey performed January 14, 2026 - Capacity as of Jan 14, 2026 .

(3) Population data from Wisconsin Department of Administration (DOA) Wisconsin Demographic Services Center "January 1, 2025 Final Population Estimates" https://doa.wi.gov/Pages/LocalGovtsGrants/Population_Estimates.aspx.

Table 11-2
Historical Waste Acceptance and Annual Air Space Consumed
Vernon County Landfill - Proposed Eastern Expansion

Year	Waste Accepted - All⁽¹⁾ (Tons)	Estimated Volume Consumed⁽²⁾ (CY)	Annual Waste Demand Growth (%)
2007 ⁽³⁾	14,461	19,281	--
2008	15,544	20,725	7.49%
2009	14,967	19,956	-3.71%
2010	14,958	19,944	-0.06%
2011	16,806	22,408	12.35%
2012	15,321	20,428	-8.84%
2013	16,972	22,629	10.78%
2014	17,377	23,169	2.39%
2015	16,283	21,711	-6.30%
2016	17,420	23,227	6.98%
2017	15,991	21,321	-8.20%
2018	17,783	23,711	11.21%
2019	20,187	26,916	13.52%
2020	20,937	27,916	3.72%
2021	18,397	24,529	-12.13%
2022	17,327	23,103	-5.82%
2023	18,415	24,553	6.28%
2024	12,336	16,448	-33.01%
2025	9,323	12,431	-49.32%
Mean Year to Year	16,358.16	21,810.88	-2.93%
Median Year to Year	16,806.00	22,408.00	1.16%
Avg Year to Year Past 5 Yrs	15,159.60	20,212.80	-18.80%
Growth Previous 5 Years⁽⁴⁾	--	--	-15.63%

Notes:

(1) Tonnage intake rates from WDNR Tonnage Reports. (<http://dnr.wi.gov/topic/Landfills/Fees.html>). Includes all waste types.

(2) Volume consumed estimated using a waste density of 1,500 lb/cy per Draft WDNR Landfill Needs and Site Life Guidance Doc. (2004).

(3) The year 2007 represents when all waste types were diverted to the MSW Landfill after the small sized C&D site closed.

(4) Growth rate calculated represents the compound annual growth rate.

Table 11-3
Statewide Waste Disposal Rates
Vernon County Landfill - Proposed Eastern Expansion

Year	Wisconsin Population ⁽¹⁾	Total Volume of Waste Disposed In Wisconsin MSW & Industrial Landfills			Disposal Rate								
		MSW ⁽²⁾	Non-MSW ⁽³⁾	Total	MSW ⁽²⁾	Non-MSW ⁽³⁾	Total	MSW ⁽²⁾	Non-MSW ⁽³⁾	Total	MSW ⁽²⁾⁽⁴⁾	Non-MSW ⁽³⁾⁽⁴⁾	Total
		(tons)			(tons/capita/year)			(lbs/cap/day)			(CY/year)		
2010	5,686,986	4,153,036	4,116,909	8,269,945	0.73	0.72	1.45	4.00	3.97	7.97	5,537,381	5,489,212	11,026,593
2011	5,694,236	4,040,494	4,003,406	8,043,900	0.71	0.70	1.41	3.89	3.85	7.74	5,387,325	5,337,875	10,725,200
2012	5,703,525	3,930,734	4,779,108	8,709,842	0.69	0.84	1.53	3.78	4.59	8.37	5,240,979	6,372,144	11,613,123
2013	5,717,110	3,908,613	3,941,357	7,849,970	0.68	0.69	1.37	3.75	3.78	7.52	5,211,484	5,255,143	10,466,627
2014	5,732,981	3,977,291	4,187,777	8,165,068	0.69	0.73	1.42	3.80	4.00	7.80	5,303,055	5,583,703	10,886,757
2015	5,753,324	3,991,389	4,228,574	8,219,963	0.69	0.73	1.43	3.80	4.03	7.83	5,321,852	5,638,099	10,959,951
2016	5,775,120	4,108,436	4,470,469	8,578,905	0.71	0.77	1.49	3.90	4.24	8.14	5,477,915	5,960,625	11,438,540
2017	5,783,278	4,222,091	4,234,245	8,456,336	0.73	0.73	1.46	4.00	4.01	8.01	5,629,455	5,645,660	11,275,115
2018	5,816,231	4,286,143	4,507,659	8,793,802	0.74	0.78	1.51	4.04	4.25	8.28	5,714,857	6,010,212	11,725,069
2019	5,843,443	4,421,479	4,277,037	8,698,516	0.76	0.73	1.49	4.15	4.01	8.16	5,895,305	5,702,716	11,598,021
2020	5,893,718	4,350,249	3,603,942	7,954,191	0.74	0.61	1.35	4.04	3.35	7.40	5,800,332	4,805,256	10,605,588
2021	5,901,473	4,478,130	3,703,388	8,181,518	0.76	0.63	1.39	4.16	3.44	7.60	5,970,840	4,937,851	10,908,691
2022	5,949,155	4,398,873	4,051,449	8,450,322	0.74	0.68	1.42	4.05	3.73	7.78	5,865,164	5,401,932	11,267,096
2023	5,951,400	4,473,716	4,136,203	8,609,919	0.75	0.69	1.45	4.12	3.81	7.93	5,964,955	5,514,937	11,479,892
2024	5,989,256	4,500,656	3,728,741	8,229,397	0.75	0.62	1.37	4.12	3.41	7.53	6,000,875	4,971,655	10,972,529
2025	6,033,734	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average 2021-2025 (Last 5 Years)					0.75	0.66	1.41	4.11	3.60	7.71	5,950,458	5,206,594	11,157,052

Notes:

- (1) Population data from Wisconsin Department of Administration (DOA) Wisconsin Demographic Services Center "January 1, 2022 Final Population Estimates Summary" https://doa.wi.gov/Pages/LocalGovtsGrants/Population_Estimates.aspx.
- (2) Category 1 Wastes from WDNR Landfill Tonnage Reports. <https://dnr.wisconsin.gov/topic/Landfills/Fees.html>.
- (3) All other remaining WDNR Waste Categories (i.e., Categories 2 - 6 and 19 - 33). <https://dnr.wisconsin.gov/topic/Landfills/Fees.html>.
- (4) Conversion factor of 1,500 lbs/CY used to calculate an estimated volume.

Table 11-4
Per Capita Service Area Disposal Rate
Vernon County Landfill - Proposed Eastern Expansion

Statewide Average Disposal Rate (2021-2024)⁽¹⁾	1.41	ton/person/yr
Service Area Population (2025)⁽²⁾	31,117	
Estimated Annual Service Area Disposal	43,777	ton/year
Average Waste Density⁽³⁾	1,500	lbs./CY
Estimated Annual Service Area Disposal	58,370	CY/year

Notes:

(1) Disposal rate is the average total (MSW and Non-MSW) waste disposed statewide from 2021-2024. Statewide disposal rate calculated in Table 11-3.

(2) Population data from Wisconsin Demographic Services Center.

(3) Volume of waste derived from assumed average waste density of 1,500 lb/cy per Draft WDNR Landfill Needs and Site Life Guidance Doc. (2004).



Building a Better World for All of Us[®]

Sustainable buildings, sound infrastructure, safe transportation systems, clean water, renewable energy, and a balanced environment. Building a Better World for All of Us communicates a company-wide commitment to act in the best interests of our clients and the world around us.

We're confident in our ability to balance these requirements.

JOIN OUR SOCIAL COMMUNITIES

