GENERAL FACILITY INFORMATION

ANNUAL | 2020

Rumpke Sanitary Landfill

1. FACILITY INFORMATION

Facility Name: *

Rumpke Sanitary Landfill

Is this facility government owned? *

- ○ Yes
- ◉ No

Ohio EPA District: *

Southwest District Office

Address of the Physical Location of the Facility: *

10795 Hughes Rd, Cincinnati, OH 45251, USA

County *

Hamilton

Begin typing county name or select from the drop down

City/Township: *

Cincinnati

Zip: *

45251

2. PERSON COMPLETING THIS REPORT

Name: *

John R. Butler

Job Title:

Sr. Site Engineer

Address: *

10795 Hughes Rd, Cincinnati, OH 45251, USA

City: *

Cincinnati

State: *

OH

Zip: *

45251

Phone: *

513-851-0122

Ext:

3152

Alternate Phone:

E-mail Address: *

john.butler@rumpke.com

Business relationship with facility: *

Employee *Examples of business relationships with the facility would be: employee, co-owner, consultant, legal counsel, etc*

FACILITY CONTACT INFORMATION

Name: *

Larry Riddle

Job Title: *

Landfill Manager

Address: *

3990 Generation Drive

City: *

Cincinnati

State: *

OH

Zip: *

45251

Phone: *

513-851-0122

Ext:

3526

Alternate Phone:

E-mail Address: *

larry.riddle@rumpke.com

FACILITY EMERGENCY CONTACT INFORMATION

Name: *

Larry Riddle

Job Title: *

Landfill Manager

Address: *

3990 Generation Drive

City: *

Cincinnati

State: *

OH

Zip: *

45251

Phone: *

513-851-0122

Ext:

3526

Alternate Phone:

E-mail Address: *

larry.riddle@rumpke.com

3. SOLID WASTE FACILITY OPERATIONAL STATUS

Please indicate the status of operation during calendar year 2020. *

- (●) Entire year
- ( ) Partial year
- ( ) Inactive

Check here if facility permanently ceased receiving waste and Ohio EPA notified in accordance with OAC 3745-27-11, 3745-29-11, or 3745-30-09.

- [ ] Check

4. FACILITY ACCESS

A. Are there any service area restrictions on who may use the facility? *

- ( ) Yes
- (●) No

B. Did the facility receive any waste in 2020 that was transported by rail? *

- ( ) Yes
- (●) No

5. MEASURING WASTE RECEIPTS

Ohio Administrative Code Rule 3745-27-19(I), 3745-29-19(I), and 3745-30-14(I) require the owner or operator of a solid waste landfill facility, with an authorized maximum daily waste receipts greater than two hundred tons per day, shall use scales as the sole means of determining gate receipts.

1. Were there any days over the past year that scales were not used to calculate the waste receipts? *

- ( ) Yes
- (●) No

2. Where are the scales located? *

- (●) Onsite
- ( ) Offsite

Facility has a scale exemption

Response created on: Mar 22, 2021 at 01:34 PM EDT by john.butler@rumpke.com

Response last updated on: Apr 12, 2021 at 10:29 AM EDT by Maria.Lammers@epa.ohio.gov

WASTE SUMMARY & RECYCLING

ANNUAL | 2020

Rumpke Sanitary Landfill

Please note: There are nine pages associated with this section of the reporting service. You can navigate between the pages via the page tabs located in the top right corner of the page

6. Direct Haul Waste:

Direct Haul Waste refers to waste that was transported from the collection point to your landfill facility. The waste was not consolidated or transferred to another vehicle before it was received at the landfill facility.

IMPORTANT: Rail transported waste is considered transferred waste. Report rail transported waste in Section 7 of this survey which begins on page 6.

Use Table 6.1 to report all direct haul waste received from Ohio counties that are located within the Ohio solid waste management district (SWMD) where the facility is located.

Use Table 6.2 (on page 2) to report all direct haul waste received from Ohio counties that are located outside of the Ohio SWMD where the facility is located.

Use Table 6.3 (on page 3) to report all direct haul waste received from other states or countries. Report the waste by county only if it originated from within the United States. If the waste originated from outside the United States, then report the origin by country.

In each table, use a separate row to report waste for each county, state, or country of origin for waste that was directly hauled to your facility.

For RSW/ISW Landfills only:

Check here if waste was received from off-site generators

☐

Table 6.1: DIRECT-HAUL IN-DISTRICT WASTE DISPOSED

DIRECT-HAUL IN-DISTRICT WASTE DISPOSED

	COUNTY *Begin typing county name or select from the drop down*	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	ASBESTOS	SW-ADC	TOTALS
1	Hamilton	768,017.02	110,178.44		37,308.26	11,187.03	1,394.54		928,085.29

Municipal Solid Waste

768,017.02

Industrial Solid Waste

110,178.44

Residual Solid Waste

C&DD Waste

37,308.26

Excluded Waste

11,187.03

Asbestos

1,394.54

SW-ADC

Total Tons

928,085.29

For RSW/ISW Landfills only:

Check here if waste was received from off-site generators

☐

Table 6.2: DIRECT-HAUL OUT-OF-DISTRICT WASTE DISPOSED

DIRECT-HAUL OUT-OF-DISTRICT WASTE DISPOSED

	COUNTY	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	ASBESTOS	SW-ADC	TOTALS
1	Auglaize		49.83						49.83
2	Brown	54.47					395.78		450.25
3	Butler	325,946.23	136,872.78		15,291.76		124.69		478,235.46
4	Champaign		94.01						94.01
5	Clark	354.28	152.12						506.40
6	Clermont	37,794.51	532.11		426.24				38,752.86
7	Clinton	8,309.30	9.85		67.74		6.11		8,393.00
8	Darke	313.45	360.53						673.98
9	Delaware	29.35							29.35
10	Greene	7,938.88	56.77				11.70		8,007.35
11	Highland						10.72		10.72
12	Miami		431.06						431.06
13	Montgomery	39,443.47	3,761.59		1,135.94		683.12		45,024.12
14	Preble						2.79		2.79
15	Ross		1,463.07						1,463.07
16	Scioto						16.07		16.07
17	Shelby		1,027.67		30.76				1,058.43
18	Warren	148,208.88	2,856.21		18,753.30		0.50		169,818.89

Municipal Solid Waste Total

568,392.82

Industrial Solid Waste Total

147,667.60

Residual Solid Waste Total

C&DD Waste Total

35,705.74

Excluded Waste Total

Asbestos Total

1,251.48

SW-ADC Total

Total Tons

753,017.64

For RSW/ISW Landfills only:

Check here if waste was received from off-site generators

☐

Table 6.3: DIRECT-HAUL OUT-OF-STATE WASTE DISPOSED

DIRECT-HAUL OUT-OF-STATE WASTE DISPOSED

	COUNTY	ORIGIN	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	ASBESTOS	SW-ADC	TOTALS
1		-Select-	0.00							0.00

Municipal Solid Waste Total

0.00

Industrial Solid Waste Total

Residual Solid Waste Total

C&DD Waste Total

Excluded Waste Total

Asbestos Total

SW-ADC Total

Total Tons
0.00

For RSW/ISW Landfills only:

Check here if waste was received from off-site generators

☐

Table 6.3: DIRECT-HAUL OUT-OF-STATE WASTE DISPOSED - CONTINUED

DIRECT-HAUL OUT-OF-STATE WASTE DISPOSED

	COUNTY	ORIGIN	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	ASBESTOS	SW-ADC	TOTALS
1	Bartholomew	Indiana	22.21	271.31						293.52
2	Dearborn	Indiana	25,880.10	5,550.73		836.55				32,267.38
3	Decatur	Indiana	204.53							204.53
4	Fayette	Indiana	5,096.85	7.72		561.51				5,666.08
5	Franklin	Indiana	11,211.31	1,126.25		140.30				12,477.86
6	Jackson	Indiana	70.31	61.56						131.87
7	Jefferson	Indiana	7,150.17							7,150.17
8	Jennings	Indiana						6.42		6.42
9	Ohio	Indiana	1,877.53			36.50				1,914.03
10	Ripley	Indiana	14,459.38	23.40		70.24				14,553.02

11	Shelby	Indiana	6.92			2.30				9.22
12	Switzerland	Indiana	2,276.24			32.41				2,308.65
13	Union	Indiana	3,847.42			99.18				3,946.60
14	Wayne	Illinois	71.14							71.14
15	Boone	Kentucky	26,111.83	1,514.22		16.20		10.35		27,652.60
16	Campbell	Kentucky	24.26	167.37		13.22				204.85
17	Carroll	Kentucky	46.63							46.63
18	Gallatin	Kentucky		0.29						0.29
19	Henry	Kentucky	12.24							12.24
20	Kenton	Kentucky	2,148.57	324.60		86.78		579.57		3,139.52
21	Oldham	Kentucky	53.92							53.92

Municipal Solid Waste Total

100,571.56

Industrial Solid Waste Total

9,047.45

Residual Solid Waste Total

C&DD Waste Total

1,895.19

Excluded Waste Total

SW-ADC Total

Asbestos Total

596.34

TOTAL Tons

112,110.54

For RSW/ISW Landfills only:

Check here if waste was received from off-site generators

☐

Table 6.3: DIRECT-HAUL OUT-OF-STATE WASTE DISPOSED - CONTINUED

DIRECT-HAUL OUT-OF-STATE WASTE DISPOSED

	COUNTY	ORIGIN	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	ASBESTOS	SW-ADC	TOTALS
1		-Select-	0.00							0.00

Municipal Solid Waste Total

0.00

Industrial Solid Waste Total

Residual Solid Waste Total

C&DD Waste Total

Excluded Waste Total

Asbestos Total

SW-ADC Total

TOTALS Tons

0.00

7. TRANSFERRED AND RAIL-TRANSPORTED WASTE

Transferred waste refers to waste that was consolidated or moved to another vehicle before it was received at your landfill facility.

Important: Rail transported waste is considered transferred waste.

Use Table 7.1 to report all transferred waste received from Ohio counties that are located within the Ohio solid waste management district (SWMD) where your landfill facility is located.

Use Table 7.2 (on page 7) to report all transferred waste received from Ohio counties that are located outside of the Ohio SWMD where your landfill facility is located.

Use Table 7.3 (on page 8) to report all transferred waste received from other states. Report the waste by county only if it originated from within the United States. If the waste originated from outside the United States, then report the origin by country.

In each table, use a separate row to report waste for each county, state, or country of origin for waste that was transferred to your facility.

Table 7.1: IN-DISTRICT TRANSFERRED WASTE DISPOSED

IN-DISTRICT TRANSFERRED WASTE DISPOSED

	FACILITY NAME (ID NUMBER):	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	TOTALS
1	Republic Services Cincinnati Transfer Facility - (SWTF018401)	120,175.44					120,175.44

Municipal Solid Waste

120,175.44

Industrial Solid Waste

Residual Solid Waste

C&DD Waste

Excluded Waste

TOTALS

120,175.44

Table 7.2: OUT-OF-DISTRICT TRANSFERRED WASTE DISPOSED

OUT-OF-DISTRICT TRANSFERRED WASTE DISPOSED

	FACILITY NAME (ID NUMBER):	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	TOTALS
1	Hamilton Transfer Facility - (SWTF018441)	6,751.43					6,751.43
2	Rumpke Waste Inc Greenville Transfer Facility - (SWTF018389)	65,463.79					65,463.79
3	Montgomery County South Transfer Facility - (SWTF018410)	338,008.94					338,008.94

Municipal Solid Waste

410,224.16

Industrial Solid Waste

Residual Solid Waste

C&DD Waste

Excluded Waste

TOTALS

410,224.16

Table 7.3: OUT-OF-STATE TRANSFERRED WASTE DISPOSED

OUT-OF-STATE TRANSFERRED WASTE DISPOSED

	FACILITY NAME	ORIGIN	COUNTY	RECEIVED BY RAIL	MUNICIPAL SOLID WASTE	INDUSTRIAL SOLID WASTE	RESIDUAL SOLID WASTE	C&DD WASTE	EXCLUDED WASTE	TOTALS
1		- Select -		- Select -	0.00					0.00

Municipal Solid Waste

0.00

Industrial Solid Waste

Residual Solid Waste

C&DD Waste

Excluded Waste

TOTALS

0.00

8. OTHER MATERIALS / WASTE RECEIVED

All waste materials entering the solid waste facility should be able to be categorized in one of the seven waste types on the Daily Log of Operations. If it is not clear which category it should be identified as, please contact Ohio EPA, DMWM, District Office for further assistance. Please note that VAP waste soils are considered an industrial waste.

Did your facility accept any shale-drilling waste, septage, sewage sludge, contaminated soils, dredged sediments, solidified liquid waste or other wet wastes for disposal? *

- ○ Yes
- ◉ No
- ○ Not Sure / Do Not Track

2. Were waste solidification activities conducted at the facility during the reporting cycle? *

- ○ Yes
- ◉ No

9. WASTE SUMMARY

A. Grand Total of Waste Received

Table 9.1 Subtotal of Transferred and Direct-Haul Waste Received

(A) Total Tons of In-District Waste

In-District Direct Haul Waste	In-District Transferred Waste	Total Tons of In-District Waste
928,085.29	120,175.44	1,048,260.73

(B) Total Tons of Out-of-District Waste

Out-of-District Direct Haul Waste	Out-of-District Transferred Waste	Total Tons of Out-of-District Waste
753,017.64	410,224.16	1,163,241.80

(C) Total Tons of Out-of-State Waste

Out of State Direct Haul Waste	Out of State Transferred Waste	Total Tons Out of State Waste
112,110.54	0.00	112,110.54

(T) Total tons of wastes received

Total Tons of Direct Haul Waste	Total Tons of Transferred Waste	Total Tons of Wastes Received
1,793,213.47	530,399.60	2,323,613.07

B. If solid waste was used as Alternative Daily Cover (ADC), please describe the solid waste used

C. Materials Diverted for Beneficial Reuse and/or Recycling (optional)

If this facility has no recyclables to report then please check the box where indicated and continue with Section 9.

Does the facility have recycled materials to report? *

- ○ Yes
- ◉ No

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

Solidification Table

Response created on: Mar 22, 2021 at 01:47 PM EDT by john.butler@rumpke.com

Response last updated on: May 3, 2021 at 08:38 AM EDT by Maria.Lammers@epa.ohio.gov

SCRAP TIRE MANAGEMENT

ANNUAL | 2020

Rumpke Sanitary Landfill

10. SCRAP TIRE MANAGEMENT

Did this facility operate a scrap tire collection facility?

- ○ Yes
- ◉ No

Scrap Tire Management Methods – In Table 10.1 please report the management method applied to any tires received by this facility. This includes tires that may have been received incidentally in loads of other solid waste, regardless of whether the facility operated a scrap tire facility. Include the number of passenger tire equivalents (PTE's). List destination(s) reported by transporter (Facility name (location - city, county, state) or Beneficial Use Project).

Assume 20 lbs. per PTE carried by each hauler.

Table 10.1 Scrap Tire Management Methods

	MANAGEMENT METHOD	NAME OF TRANSPORTER	TRANSPORTER REGISTRATION NO.	DESTINATION FACILITY NAME (LOCATION - CITY, COUNTY, STATE) OR BENEFICIAL USE PROJECT	TONS
1	Transferred to a recovery facility for processing	Rumpke Transportation Company, LLC	31-STT-002	Rumpke of Ohio, Inc. Class 2 Recovery Facility 3851 South Street New Miami, OH 45011	21.98

Total Tires Managed (tons)

21.98

Response created on: Mar 22, 2021 at 02:34 PM EDT by john.butler@rumpke.com

Response last updated on: Apr 12, 2021 at 10:28 AM EDT by Maria.Lammers@epa.ohio.gov

FEE INFORMATION

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Rumpke Sanitary Landfill

11. INFORMATION ON FEES COLLECTED BY THE FACILITY

A. to Host community fees and contract fees

In Table 11.1 below, please list all of the following fees that are collected at this facility:

a) Host Community Fees (up to $0.25/ton fee) collected in accordance with Ohio Revised Code 3734.57(C)
b) Any per-ton "Contract Fees" that were negotiated individually between the owner or operator of the facility and a local community or solid waste management district.

Please use a separate row for each fee collected at this facility.

Table 11.1 Host Community Fees and Contract Fees

	TYPE OF FEE COLLECTED	NAME OF TOWNSHIP/MUNICIPALITY/SOLID WASTE MANAGEMENT DISTRICT	$/TON FEE	TOTAL $ COLLECTED
1	◉ Host Community Fees ○ Contract Fees	Colerain Township	0.2500	1,565,068.4600

B. Tipping Fees
Tipping Fees - Please enter the price charged for a "typical load" of solid waste disposed at the facility. If you are unable to define a "typical load," then please report the facility's posted rates (often referred to as the gate rates). Please do not include state fees, solid waste management district fees, host community fees, or contract fees in the prices provided in this table:

Table 11.2 Tipping Fees

Tons (as measured with scales)

38.00 *$ per ton*

Compacted cubic yards

$ per cubic yard

Uncompacted cubic yards

$ per cubic yard

Response created on: Mar 22, 2021 at 02:41 PM EDT by john.butler@rumpke.com

Response last updated on: May 3, 2021 at 08:36 AM EDT by Maria.Lammers@epa.ohio.gov

LEACHATE MANAGEMENT

ANNUAL | 2020

Rumpke Sanitary Landfill

14. LEACHATE MANAGEMENT

Please review the instructions linked here, to determine the requirements for leachate testing results.

Leachate Disposal Table

	CHOOSE MONTH	VOLUME OF LEACHATE SENT FOR DISPOSAL OR TREATMENT *Gallons*	NAME OF DISPOSAL OR TREATMENT FACILITY	ADDRESS OF DISPOSAL OR TREATMENT FACILITY
1	January	6,269,212.00	Metropolitan Sewer District	1400 Gest Street, Cincinnati, OH 45204
2	February	5,414,995.00		
3	March	6,878,941.00		
4	April	5,222,377.00		
5	May	6,013,795.00		
6	June	5,406,400.00		
7	July	5,389,112.00		
8	August	5,602,176.00		
9	September	4,762,467.00		
10	October	5,327,853.00		
11	November	5,524,816.00		
12	December	4,639,262.00		

Total Volume (Gallons)

66,451,406.00

Was the leachate management system tested for clogging or damage during the 2019 reporting year?" *

- (●) Yes
- ( ) No

Please upload verification information after saving this survey.

Indicate if you recirculated leachate during the reporting cycle? *

- ( ) Yes
- (●) No

15. LEACHATE TESTING RESULTS

If you are ready to upload files click "Upload File" to select each file you want to upload. A green status bar will appear as each file uploads and will be replaced with the file name when each upload is complete and the survey is ready to be saved.

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

1. Verification Information

2. Leachate Recirculation

3. Leachate testing results*

Rumpke Sanitary LF Attachments.docx

Response created on: Mar 22, 2021 at 02:46 PM EDT by john.butler@rumpke.com

Response last updated on: May 6, 2021 at 10:21 AM EDT by Cassandra.Schramm@epa.ohio.gov

FINANCIAL ASSURANCE

ANNUAL | 2020

Rumpke Sanitary Landfill

17. ITEMIZED COST ESTIMATES FOR FINANCIAL ASSURANCE

During 2020, your facility should have submitted an update of its financial assurance instrument. Normally this occurs on or before the anniversary date of the original financial assurance instrument. This section pertains to that update.

Ohio Administrative Code Rules 3745-27-19(M)(6), 3745-29-19(M)(6), and 3745-30-14(M)(6) require the annual operating report for landfill facilities to include the most recent final closure and post-closure care cost estimates, and corrective measures cost estimates, if applicable. Complete the checklist at the bottom of this page and upload the required itemized cost estimates after saving the checklist. NOTE: Do not include the actual financial assurance instrument with this report. The original signed instrument should be sent directly to Ohio EPA's financial assurance specialist.

The rule references below summarize what information should be included in this section of the annual operational report:

Municipal solid waste landfills: OAC Rule 3745-27-19(M)(6) The most recent updated final closure cost estimate, post-closure care cost estimate, and, if applicable, corrective measures cost estimate, adjusted for inflation and for any change in final closure cost estimate, post-closure care cost estimate, or corrective measures cost estimate required by rules 3745-27-15, 3745-27-16, and 3745-27-18 of the Administrative Code.

Industrial solid waste landfills: OAC Rule 3745-29-19(M)(6) The most recent updated final closure cost estimate and post-closure care cost estimate adjusted for inflation and for any change in final closure cost estimate, post-closure care cost estimate required by rules 3745-27-15 and 3745-27-16 of the Administrative Code.

Residual solid waste landfills: OAC Rule 3745-30-14(M)(6) The most recent final closure cost estimate and post-closure care cost estimate which have been revised in accordance with paragraph (E)(14)(a) of this rule.

The checklist below is provided to help make sure you have completed the financial assurance requirements as required by OAC Rules 3745-27-15, OAC 3745-27-16, and 3745-27-18, where applicable. The checklist addresses several common errors and omissions and helps to ensure that this section is properly evaluated by Ohio EPA. Please complete the checklist and refer to the associated Notes for additional details. Once again, this list applies to the financial assurance instrument that you submitted to Ohio EPA on your instrument's anniversary date.

1. Are the attached cost estimates itemized? *

- (●) Yes
- ( ) No

2. Were the cost estimates adjusted for inflation? *

- (●) Yes
- ( ) No

Note: The facility owner/operator should have applied the 1.7% inflation factor to any financial assurance instrument submitted in 2020.

3. Were the appropriate inflationary increases made to the financial assurance instrument? *

- (●) Yes
- ( ) No

4. If any of the itemized cost estimates were DECREASED, did you obtain written approval from the Director to decrease? *

- ( ) Yes
- ( ) No

- [x] Not Applicable

Note: If you answered "No" to any of the questions in 2, 3 or 4 above, then please contact a financial assurance specialist at Ohio EPA to determine whether or not you need to submit an amended instrument.

5. Were any of the cost estimates increased from last year to reflect increases in final closure, post-closure care, or corrective measures costs, beyond adjustments made for inflation? *

- [ ] Yes
- [x] No

6. Did you submit an amended, financial insurance instrument during 2020? If no please provide an explanation. *

- [x] Yes
- [ ] No

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

Itemized cost estimates *

RSL Closure Cost 2020 final .pdf

Response created on: Mar 22, 2021 at 03:09 PM EDT by john.butler@rumpke.com

Response last updated on: May 3, 2021 at 08:36 AM EDT by Maria.Lammers@epa.ohio.gov

Section IV – Rumpke Sanitary Landfill Cost Estimates SUMMARY

	2018	2019	2020	2021
Rumpke Sanitary Landfill Closure Cost Estimates - EXISITNG	$ 24,202,593.44	$ 24,735,050.50	**$ 25,155,546.35**	**$ 25,457,412.91**
Rumpke Sanitary Landfill Post-Closure Care Cost Estimate	$ 11,545,475.00	$ 11,799,475.45	**$ 12,000,066.53**	**$ 12,144,067.33**
Rumpke Sanitary Landfill Corrective Measures Cost Estimate	$ 713,000.00	$ 728,686.00	**$ 741,073.66**	**$ 749,966.55**
Rumpke Sanitary Landfill Reaction Area Cost Estimate	$ 8,561,802.00	$ 8,750,161.64	**$ 8,898,914.39**	**$ 9,005,701.36**
				$ -
Total	$ 45,022,870.44	$ 46,013,373.59	**$ 46,795,600.94**	**$ 47,357,148.15**

Phase 1 APPROVAL FOR Solid Waste

Rumpke Sanitary Landfill Closure Cost Estimates - EXISITNG	$ 27,939,412.96	$ 28,554,080.05	**$ 29,039,499.41**	**$ 29,387,973.40**
Rumpke Sanitary Landfill Post-Closure Care Cost Estimate	$ 11,545,475.00	$ 11,799,475.45	**$ 12,000,066.53**	**$ 12,144,067.33**
Rumpke Sanitary Landfill Corrective Measures Cost Estimate	$ 713,000.00	$ 728,686.00	**$ 741,073.66**	**$ 749,966.55**
Rumpke Sanitary Landfill Reaction Area Cost Estimate	$ 8,561,802.00	$ 8,750,161.64	**$ 8,898,914.39**	**$ 9,005,701.36**
				$ -
Total	$ 48,759,689.96	$ 49,832,403.14	**$ 50,679,553.99**	**$ 51,287,708.64**

Rumpke Sanitary landfill Post-Closure Care Cost Estimate

Total Post-Closure Cost Estimate 2018 $11,545,475

CY = Cubic Yards SF = Square Foot LF = Linear Foot EA = Each LS = Lump Sum

I	**Inspection and Reporting**			
	Item Description	Annual Quantity	Unit Cost	Annual Cost
a	Ground Water Monitoring Report (EA)	2	$4,000	$8,000
b	Explosive Gas Monitoring Quarterly Report (EA) *	4	$5,000	$20,000
c	Explosive Gas Monitoring Semi-Annual Report (EA)	0	$5,000	$0
d	Inspection (EA) **	4	$5,000	$20,000
e	Inspection Summary (EA) **	4	$1,500	$6,000
f	Annual Report (EA) ***	1	$5,000	$5,000
g	Other Reporting (Orders, Authorizing Documents) (EA)	0	$5,000	$0
h		0	$0	$0
Total Annual Cost				$59,000
Total Annual Cost multiplied by years of post-closure care				$1,770,000
i	Post-Closure Certification			$2,000
Subtotal for Inspection and Reporting				$1,772,000

II	**Ground Water Monitoring**	
	Item Description	Annual Cost
a	Trace Metals	$4,320
b	Volatile and Semivolatile Organic Compounds	$2,760
c	General Ground Water Quality Parameters	$1,350
d	Alternate Parameter List (site specific)	
e	Assessment Monitoring Parameters	$0
f	Background Sampling (for new wells only)	$0
g	Collection and Transportation of Samples	$15,000
h	subtotal	$23,430
Subtotal for Ground Water Monitoring (total annual cost multiplied by years of post-closure care)		$702,900

III	**Explosive Gas Migration Monitoring**			
	Item Description	Annual Quantity	Unit Cost	Annual Cost
a	Quarterly Sampling	4	$500	$2,000
d				
Total Annual Cost				
Subtotal for Gas Monitoring (for all years of post-closure care)				$60,000

IV **Leachate Monitoring**

	Item Description	Annual Cost
a	Annual Grab Sample 3745-27-14(A)(6)(b)	$500
b	Cost of Testing for Special Constituents	$
c	Collection and Transportation of Samples	$1,000
d	Subtotal	$1,500
Subtotal for Leachate Monitoring (total annual cost multiplied by years of post-closure care)		$45,000

revised as of 3/17/2021

V Surface Water Monitoring

	Item Description	Annual Cost	
a	Sampling per NPDES Permit, Closure Plan, or Other Authorizing Document	17500	
b	Collection and Transportation of Samples	1000	
c	Subtotal		$18,500
Subtotal Surface Water Monitoring (total annual cost multiplied by years of post-closure care)			$555,000

VI Operation and Maintenance of Leachate Collection and Treatment System

	Item Description	Annual Quantity	Unit Cost	Annual Cost
a	Inspection & Flushing of Collection Pipes (LF)	1	$50,000	$50,000
b	Inspection & Cleaning of Sumps and Traps (EA)	included in a	$	$
c	Replacement of Sump pumps, piping, and instrumentation (EA)	1	$50,000	$50,000
d	Inspection & Cleaning of lift station(s), manhole(s), and conveyance structures (EA)	included in a	$	$
e	Replacement of conveyance structure pumps, piping, and instrumentation (EA)	1	$10,500	$10,500
f	Tanks (Spill containment repair, sealing, tank cleaning, and inspection) (EA)	Annual cost based on 1 event per 10 years	$25,000	$2,500
g	Transportation Cost of Sludge Removal (LS) transportation radius:_____	1	$2,000	$2,000
h	Disposal Cost for Sludge Removal (LS) disposal site: _____	1	$2,000	$2,000
i	Characterization Cost of Sludge Removal (LS)	1	$500	$500
j	Off-site Disposal of Leachate (gal)	100000	$0.0200	$2,000
k	On-site Treatment and/or Pretreatment of Leachate (LS) - See Reaction Area Costs	0	$1.0000	$0
l				$119,500
Subtotal Operation and Maintenance of Leachate Collection and Treatment Systems (total annual cost multiplied by years				$3,585,000

VII Operation and Maintenance of Ground Water Monitoring System

	Item Description	Unit Cost	Annual Average Cost
a	Routine Maintenance (inspection, cleaning, repairing) (LS)		$300
b	Repair & Replacement of Monitoring Wells (LS)	Assume 1 replacement every 5 years	$1,000
c		$	$
Total Annual Cost			$1,300
Total Annual Cost multiplied by years of post-closure care			$39,000
d	Abandonment at end of post-closure care period (number of wells: ___34_____)	4500	$153,000
Subtotal for Operations and Maintenance of Ground Water Monitoring System			$192,000

VIII Operation and Maintenance of Explosive Gas Extraction and/or Control System

	Item Description	Unit Cost	Annual Average Cost
a	Extraction Well Repair & Replacement (LS)	Assume 1 replacement every 5 years	$3,000
b	Collection System Repair & Replacement (LS)		$1,000
c	Flare System Repair & Replacement (LS)		$1,000
d	Air Emissions Monitoring [NSPS and OAC 3745-76] (number of yea	6000	$6,000
e	Special Control & Conveyance Structures (LS)		$0
f		$	$
Total Annual Cost			$11,000
Total Annual Cost multiplied by years of post-closure care			$330,000
g	Well Abandonment at end of post-closure care period (Assume gas extraction wells are left in place)		$0
h	System Abandonment at end of post-closure care period (LS)		$0
Subtotal for Operation & Maintenance of Explosive Gas Extraction and/or Control System			$330,000

Rumpke Sanitary landfill Post-Closure Care Cost Estimate

IX Operation and Maintenance of Explosive Gas Monitoring System

	Item Description	Unit Cost	Annual Average Cost
a	Inspection, Repair & Replacement of Monitoring Probes (LS)		$300
b	Inspection, Repair & Replacement of Monitoring Alarms (LS)		$100
c			
Total Annual Cost			$400
Total Annual Cost multiplied by years of post-closure care			$12,000
d	Abandonment at end of post-closure care period (number of probes: _____12____)	4000	$48,000
Subtotal for Operations and Maintenance of Gas Monitoring System			$60,000

X Utilities for Operation

	Item Description	Supplier	Annual Quantity	Unit Cost	Annual Cost
a	Electricity	Duke	$60,000	$0	$60,000
b	Natural Gas			$	$
c	Propane			$	$
d				$	$
Subtotal for Utilities for Operation (total annual cost multiplied by years of post-closure care)					$1,800,000

XI Maintenance of Cover System

	Item Description	Annual Quantity	Unit Cost	Annual Cost
a	Mowing, fertilizing, removal of trees, mulching, and seeding (EA)	556.9	$25	$13,923
b	Cap Repair (leachate outbreak repair, erosion rill repair, differential settlement repair)	2	$3,000	$6,000
c	Maintain Grade & Erosion Repair Minimum based on annual erosion rate	2	$3,000	$6,000
d	Rodent Control (Acre)		$	$
e			$	$
Subtotal for Maintenance of Cover System (total annual cost multiplied by years of post-closure care)				$777,675

XII Operation and Maintenance of Surface Water Management System

	Item Description	Annual Quantity	Unit Cost	Annual Cost
a	Inspection, Cleaning & Repair of Ditches (LF)	2	$4,800	$9,600
b	Inspection, Cleaning & Repair of Conveyance Structure (EA)	2	$2,400	$4,800
c	Inspection, Cleaning & Repair of Sedimentation Pond (EA)	0.75	$36,000	$27,000
d	Inspection, Cleaning & Repair of Spillway/Outlet (EA)	0.75	$600	$450
e			$	$41,850
Subtotal for Operation and Maintenance of Surface Water Management System (total annual cost multiplied by years of pos				$1,255,500

XIII Operation and Maintenance of Access Control Structures

	Item Description	Annual Quantity	Unit Cost	Annual Cost
a	Inspection, Repair & Replacement of Fence (LF)	1	$1,200	$1,200
b	Inspection, Repair & Replacement of Gate (EA)	1	$240	$240
c	Inspection, Repair & Replacement of Sign (EA)	1	$240	$240
d	Maintenance of Roadways (LF)		$12,000	$12,000
e				$13,680
Subtotal for Operation and Maintenance of Access Control Structures (total annual cost multiplied by years of post-closure c				$410,400

revised as of 3/17/2021

Section IV – Rumpke Sanitary Landfill Closure Cost Estimates

Attachment A1

Closure Cost Estimate.

TOTAL CLOSURE COST ESTIMATE 2018	$24,202,593
Current Worst CASE ACRES	300

Description of current worst case: Exsiting Landfill (Grandfathered, BAT Phases II - VII, Vertical Expansion, Soutehrn Expansion Phases VIII - XI) are not capped. Note: Closure cost to be updated with each phase of the expansion and any completed capping project

	Area Calculations		
Existing Landfill		315.7	ac
Phase E1		0.0	ac
Phase E2	Update When Constructed	---	ac
Phase E3	Update When Constructed	---	ac
Phase E4	Update When Constructed	---	ac
Phase E5	Update When Constructed	---	ac
Phase E6	Update When Constructed	---	ac
Phase E7	Update When Constructed	---	ac
Phase E8	Update When Constructed	---	ac
Capped Area	SRA (Updated as additional areas are capped)	15.4	ac
Uncapped Area	Basis for Closure Cost	**300.3**	ac

I	**Ground Water Monitoring Wells**			
	Item Description	Quantity	Unit Cost	Item Cost
a	Ground Water Monitoring Well Installation and Development (EA)	0	$5,000.00	$0
b	Ground Water Monitoring Well Repair and Replacement (EA)	0	$5,000.00	$0
c			$	$
Subtotal for Ground Water Monitoring Wells				$0
	Wells installed with Cell construction			
II	**Fill and Grade (for premature closure)**			
	Item Description	Quantity	Unit Cost	Item Cost
a	Mobilization / Demobilization (LS)		$50,000.00	$50,000
b				$0
c	Excavation (CY)	162000	$1.80	$291,600
d	Placement/ Spreading (CY)	162000	$0.50	$81,000
e	Compaction (CY)	162000	$0.50	$81,000
f	Transportation cost of materials (CY) (transport radius:_____)	0	$0.00	$0
g	Materials Testing (LS) (field and lab)			$0
h	Surveying (LS)			$3,400
i	QA/QC (LS)			$10,000
j			$	
Subtotal for Slope and Fill				$517,000

Section IV – Rumpke Sanitary Landfill Closure Cost Estimates

Attachment A1

III	Cap System Components			
	Item Description**	Quantity	Unit Cost	Item Cost
a	Gas Collection Layer (CY or SF)	0	$0.00	$0
b	Sub-Base Layer (CY)	0	$0.00	$0
c	Engineered Barrier Layer (CY) Grandfatherd area-2Ft	143,234	$5.00	$716,172
c	Engineered Barrier Layer (CY) - BAT area 18"	619,278	$5.00	$3,096,390
d	Geosynthetic Clay Liner (SF)	0	$0.00	$0
e	Flexible Membrane Liner (FML) (SF)	11,147,004	$0.55	$6,130,852
f	Drainage Layer (CY or SF)	11,147,004	$0.66	$7,357,023
g	Freeze Thaw Protection Layer (CY)	968,968	$3.60	$3,488,285
h	Vegetative Layer (CY)	242,242	$2.40	$581,381
i	Surface Water Control System (on the cap) (LS)			$175,000
j	Mobilization/Demobilization for Earthwork (LS)			$50,000
k	Mobilization/Demobilization for Geosynthetics (LS)			$10,000
l	Temporary Erosion Control: Silt Fences (LF) Straw Bales (EA) Other Erosion Control			$750,750
l	Silt Fences (LF)	0	$0.00	$0
l	Straw Bales (EA)	0	$0.00	$0
l	Other Erosion Control -Seeding/acre	300.3	$2,500.00	$750,750
m			$0.00	$
Subtotal Cap System Components				$22,355,852

** Note that the actual surface area may be significantly larger than the plan area depicted in the authorizing document. In addition, the volume of soil once compacted, may be different than the volume excavated.

IV	Permanent Surface Water Structures (outside limits of waste placement)	
	Item Description	Item Cost
a	Surface Water Control Structures	$0
b	Surface Water Conveyance Structures *	$0
c	Mobilization/Demobilization	$0
d		0
Subtotal Permanent Surface Water Structures		$0

*Note: Pond 2 Outlet Pipe completed

V	Explosive Gas Extraction and/or Control System			
	Item Description	Quantity	Unit Cost	Item Cost
a	Extraction Well Installation, Repair, and Replacement (EA) *	24	15000	$360,000
b	Collection System Installation, Repair, and Replacement (LF)		0	$25,000
c	Flare System Installation, Repair, and Replacement (EA)		0	$0
d	Establishment of Utilities and Supplemental Fuel System (LS)			$0
e	Special Controls and Conveyance Structures		$	$0
f	Mobilization/Demobilization (LS)			$5,000
g	QA/QC & Certification (LS)			$10,000
h			$	$0
Subtotal Explosive Gas Extraction and/or Control System				$400,000

*Note: Existing 234 acres has active gas collection system. Gas Collection cost to expand 24 acres. Assume 1 well per acre- utiity flare onsite

Section IV – Rumpke Sanitary Landfill Closure Cost Estimates

Attachment A1

VI	Explosive Gas Monitoring System			Item Cost
	Item Description			
a	Gas Monitoring Probe Installation, Repair, and Replacement			$5,000
b	Alarm Installation and Replacement			$500
c				
Subtotal Explosive Gas Monitoring System				$5,500

VII	Access Control			
	Item Description	Quantity	Unit Cost	Item Cost
a	Fencing (LF)	23000	$10	$230,000
b	Gate (EA)	2	$1,500	$3,000
c	Sign (EA)	1	$300	$300
d			$	$
Subtotal Access Control				$233,300

VIII	**Engineering**(QA/QC)			
	Item Description	Quantity	Unit Cost	Item Cost
a	Revisions to Closure Plan Report (LS)			$2,000
b	Certified engineering designs and calculations for construction			$5,000
c	Surveying (Acre)	300.3	170	$51,051
d	Benchmark Installation (EA) -existing		$	$0
e	Benchmark Survey (EA) -existing		$	$0
f	CQA per acre for soil and liner installation	300.3	1500	$450,450
Subtotal Engineering				$508,501

IX	**Other Costs** List all other costs not included in other sections			
	Item Description	Quantity	Unit Cost	Item Cost
a	Environmental Monitoring (LS)			$5,000
b	Utilities (LS)			$0
c	Restoration of Borrow Areas (Acre)	40	4436	$177,440
d			$	$
Subtotal Site Specific Costs				$182,440

Section IV – Rumpke Sanitary Landfill Closure Cost Estimates

Attachment A1

Closure Cost Estimate.

TOTAL CLOSURE COST ESTIMATE 2018	$27,939,413
E1 Worst CASE ACRES	342

Description of initial worst case: Exsiting Landfill (Grandfathered, BAT Phases II - VII, Vertical Expansion, Soutehrn Expansion Phases VIII - XI) and Eastern Expansion Phase E1 are not capped.
Note: Closure cost to be updated with each phase of the expansion and any completed capping project

	Area Calculations		
Existing Landfill		315.7	ac
Phase E1		41.2	ac
Phase E2	Update When Constructed	---	ac
Phase E3	Update When Constructed	---	ac
Phase E4	Update When Constructed	---	ac
Phase E5	Update When Constructed	---	ac
Phase E6	Update When Constructed	---	ac
Phase E7	Update When Constructed	---	ac
Phase E8	Update When Constructed	---	ac
Capped Area	SRA (Updated as additional areas are capped)	15.4	ac
Uncapped Area	Basis for Closure Cost	**341.5**	ac

I	**Ground Water Monitoring Wells**			
	Item Description	Quantity	Unit Cost	Item Cost
a	Ground Water Monitoring Well Installation and Development (EA)	0	$5,000.00	$0
b	Ground Water Monitoring Well Repair and Replacement (EA)	0	$5,000.00	$0
c			$	$
Subtotal for Ground Water Monitoring Wells				$0
	Wells installed with Cell construction			
II	**Fill and Grade (for premature closure)**			
	Item Description	Quantity	Unit Cost	Item Cost
a	Mobilization / Demobilization (LS)		$50,000.00	$50,000
b			$0.00	$0
c	Excavation (CY)	162000	$1.80	$291,600
d	Placement/ Spreading (CY)	162000	$0.50	$81,000
e	Compaction (CY)	162000	$0.50	$81,000
f	Transportation cost of materials (CY) (transport radius:_____)	0	$0.00	$0
g	Materials Testing (LS) (field and lab)			$0
h	Surveying (LS)			$5,000
i	QA/QC (LS)			$15,000
j			$	
Subtotal for Slope and Fill				$523,600

Section IV – Rumpke Sanitary Landfill Closure Cost Estimates

Attachment A1

III	Cap System Components			
	Item Description**	Quantity	Unit Cost	Item Cost
a	Gas Collection Layer (CY or SF)	0	$0.00	$0
b	Sub-Base Layer (CY)	0	$0.00	$0
c	Engineered Barrier Layer (CY) Grandfatherd area-2Ft	143,234	$5.00	$716,172
c	Engineered Barrier Layer (CY) - BAT area 18"	718,982	$5.00	$3,594,910
d	Geosynthetic Clay Liner (SF)	0	$0.00	$0
e	Flexible Membrane Liner (FML) (SF)	12,941,676	$0.55	$7,117,922
f	Drainage Layer (CY or SF)	12,941,676	$0.66	$8,541,506
g	Freeze Thaw Protection Layer (CY)	1,101,907	$3.60	$3,966,864
h	Vegetative Layer (CY)	275,477	$2.40	$661,144
i	Surface Water Control System (on the cap) (LS)			$175,000
j	Mobilization/Demobilization for Earthwork (LS)			$50,000
k	Mobilization/Demobilization for Geosynthetics (LS)			$10,000
l	Temporary Erosion Control: Silt Fences (LF) Straw Bales (EA) Other Erosion Control			$853,750
l	Silt Fences (LF)	0	$0.00	$0
l	Straw Bales (EA)	0	$0.00	$0
l	Other Erosion Control -Seeding/acre	341.5	$2,500.00	$853,750
m			$0.00	$
Subtotal Cap System Components				$25,687,268

** Note that the actual surface area may be significantly larger than the plan area depicted in the authorizing document. In addition, the volume of soil once compacted, may be different than the volume excavated.

IV	Permanent Surface Water Structures (outside limits of waste placement)	
	Item Description	Item Cost
a	Surface Water Control Structures	$0
b	Surface Water Conveyance Structures *	$0
c	Mobilization/Demobilization	$0
d		0
Subtotal Permanent Surface Water Structures		$0

*Note: Pond 3 to be constructed with Phase E1

V	Explosive Gas Extraction and/or Control System			
	Item Description	Quantity	Unit Cost	Item Cost
a	Extraction Well Installation, Repair, and Replacement (EA) *	40	15000	$600,000
b	Collection System Installation, Repair, and Replacement (LF)		0	$25,000
c	Flare System Installation, Repair, and Replacement (EA)		0	$0
d	Establishment of Utilities and Supplemental Fuel System (LS)			$0
e	Special Controls and Conveyance Structures		$	$0
f	Mobilization/Demobilization (LS)			$5,000
g	QA/QC & Certification (LS)			$10,000
h			$	$0
Subtotal Explosive Gas Extraction and/or Control System				$640,000

*Note: Assume Active Area of 40 acres will need new wells

Section IV – Rumpke Sanitary Landfill Closure Cost Estimates

Attachment A1

VI	Explosive Gas Monitoring System			Item Cost
	Item Description			
a	Gas Monitoring Probe Installation, Repair, and Replacement			$5,000
b	Alarm Installation and Replacement			$500
c				
Subtotal Explosive Gas Monitoring System				$5,500

VII	Access Control			
	Item Description	Quantity	Unit Cost	Item Cost
a	Fencing (LF)	32000	$10	$320,000
b	Gate (EA)	2	$1,500	$3,000
c	Sign (EA)	1	$300	$300
d			$	$
Subtotal Access Control				$323,300

VIII	**Engineering**(QA/QC)			
	Item Description	Quantity	Unit Cost	Item Cost
a	Revisions to Closure Plan Report (LS)			$2,000
b	Certified engineering designs and calculations for construction			$5,000
c	Surveying (Acre)	341.5	170	$58,055
d	Benchmark Installation (EA) -existing		$	$0
e	Benchmark Survey (EA) -existing		$	$0
f	CQA per acre for soil and liner installation	341.5	1500	$512,250
Subtotal Engineering				$577,305

IX	**Other Costs** List all other costs not included in other sections			
	Item Description	Quantity	Unit Cost	Item Cost
a	Environmental Monitoring (LS)			$5,000
b	Utilities (LS)			$0
c	Restoration of Borrow Areas (Acre)	40	4436	$177,440
d			$	$
Subtotal Site Specific Costs				$182,440

Rumpke Sanitary Landfill Corrective Measures Cost Estimate

Rumpke Sanitary Landfill Corrective Measures Cost Estimate 2019 $713,000

I	**Inspection and Reporting**			
	Item Description	Annual Quan	Unit Cost	Annual Cost
a	Ground Water Monitoring Report (EA)	2	$2,000	$4,000
f	Annual Report (EA) ***	1	$2,000	$2,000
g	Other Reporting (Orders, Authorizing Documents) (EA)	0	$0	$0
h		0	$0	$0
Total Annual Cost				$6,000
Total Annual Cost multiplied by years of post-closure care				$180,000
i	Post-Closure Certification			$2,000
Subtotal for Inspection and Reporting				$182,000

II	**Ground Water Monitoring**	
	Item Description	Annual Cost
a	Trace Metals	$4,032
b	Volatile and Semi volatile Organic Compounds	$2,576
c	General Ground Water Quality Parameters	$1,260
d	Alternate Parameter List (site specific)	
e	Assessment Monitoring Parameters	$1,832
f	Background Sampling (for new wells only)	$0
g	Collection and Transportation of Samples	$2,500
h	subtotal	$12,200
Subtotal for Ground Water Monitoring (total annual cost multiplied by years of post-closure		$366,000

VII Operation and Maintenance of Ground Water Monitoring System

	Item Description	Unit Cost	Annual Average Cost
a	Routine Maintenance (inspection, cleaning, repairing) (LS)		$125
b	Repair & Replacement of Monitoring Wells (LS)		$125
c		$	$
Total Annual Cost			$250
Total Annual Cost multiplied by years of post-closure care			$7,500
d	Abandonment at end of post-closure care period (number of wells: ___35_____)	4500	$157,500
Subtotal for Operations and Maintenance of Ground Water Monitoring System			$165,000

Rumpke Sanitary Landfill Reaction Area O&M and Additional Closure Costs

I	Montitoring			
	Item Description	Annual Quantit	Unit Cost	Annual Cost
a	Well Head Monitoring- same as NSPS Monitoring			$ -
b	Temperature Probes Replacement	1	$7,500	$ 7,500
f	Temperature Probes Monitoring	12	$1,000	$ 12,000
g	Leachate Volume Monitoring- automated	0	$0	$ -
h	Settlement Monitoring	2	$5,000	$ 10,000
Total Annual Cost				**$ 29,500**

II	Operation and Maintainence of Odor Control Blanket		
			Annual Cost
a	Repairs- Annual		$20,000
b	Ponded stormwater removal		$3,000
Total Annual Cost			**$ 23,000**

V	Reporting			
	Item Description	quantity	Cost	Unit Cost
a	Quarterly report	4	5000	$20,000
b	Biweekly Report	26	$1,000	26000
Total Annual Cost				**$46,000**

III	Operation and Maintenance of Leachate System			
	Item Description	quantity	Cost	Unit Cost
a	Disposal per day first 2 years	40000	0.12	$1,752,000
	Disposal per year 2-30 years*	100000	0.12	$12,000
b	Pump replacement	5	$10,000	50000
Total Cost for entire Post Closure				**$ 5,340,000**

* Note Help Model shows volume goes to 0 glas.

IV	Regrading of Northend 55 acres @ 1 ft			
	Item Description	Quantity	Unit Cost	Item Cost
a	Mobilization / Demobilization (LS)		$5,000.00	$5,000
b	Soil (CY**)	0	$0.00	$0
c	Excavation (CY)	88715	$1.80	$159,687
d	Placement/ Spreading (CY)	88715	$0.50	$44,358
e	Compaction (CY)	88715	$0.50	$44,358
f	Transportation cost of materials (CY) (transport radius:_____)	0	$0.00	$0
g	Materials Testing (LS) (field and lab)			$0
h	Surveying (LS)			$3,400
i	QA/QC (LS)			$10,000
j			$	
Subtotal For Grading Northend				**$266,802**

Total O& M Costs until Closure	**$ 8,561,802**

DISPOSAL CAPACITY

ANNUAL | 2020

Rumpke Sanitary Landfill

Was any additional capacity permitted at the facility during 2020? *

- ○ Yes
- ◉ No

Please use the spreadsheet available at the following link to calculate the following fields, then upload the spreadsheet and transfer the data from the spreadsheet to the Re-Trac platform.

Upload the spreadsheet here *

RSL Disposal Capacity 2020 AR form.xlsx

AMDWR *

12,500.00 *Tons*

Years Remaining Based on Waste Accepted as of December 31, 2020? *

23 *Years*

Average Daily Waste Received (Tons) in 2020? *

6,366 *Tons*

Remaining Gross Airspace (CY) as of December 31, 2020? *

119,238,156.00 *Yds3*

Remaining Tons for Waste Placement as of December 31, 2020? *

102,856,095 *Tons*

Remaining Constructed Capacity as of December 31, 2020? *

4,846,680.00 *Yds3*

Volume Used (CY) in 2020? *

2,693,699 *Yds3*

Compaction Ratio (Tons/Yds3) for 2020? *

0.86 *Tons/Yds3*

Response created on: Mar 24, 2021 at 11:59 AM EDT by john.butler@rumpke.com

Response last updated on: May 3, 2021 at 08:36 AM EDT by Maria.Lammers@epa.ohio.gov

DMWM Remaining life Tracking Spreadsheet

Last Updated March 21 (BQ)

Use this table to calculate the remaining life and airspace used at your facility, for the annual reporting period. The information highlighted in yellow in this sheet will need transposed into the Annual Report service, via the Re-Trac platform and this spreadsheet will need up loaded into Annual Report service, via the Re-Trac platform. For any questions with this spreadsheet, please contact the Fields Services Unit at 614-644-2621.

			Comments
Last day of annual report year	12/31/2020		
Date of previous years annual report survey	12/4/2019		
Date of most recent annual report survey	1/10/2021		
Remaining gross airspace after most recent annual report survey	119,164,592	Yds^3	
Airspace used between survey events	2,964,646	Yds^3	
Actual Receipts between survey events	2,557,335	tons	
Remaining constructed capacity after most recent annual report survey. (This figure should be based upon the practical volume available in all constructed cells that were completed and certified on or before 12/31/2020)	4,773,116	Yds^3	
Total tons of waste received 2020	2,323,613	tons	
Days open per year	365	days	
AMDWR	12,500	tons per day	
Years Remaining Based on AMDWR as of 12/31/2020	22.54	years	
Years Remaining Based on Waste Accepted as of 12/31/2020	44.27	years	
Average Daily Receipts for 2020	6,366	tons	
Remaining Gross Airspace as of 12/31/2020	119,238,156	Yds^3	
Remaining Tons for Waste Placement as of 12/31/2020	102,856,095	tons	
Remaining Constructed Capacity as of 12/31/2020	4,846,680	Yds^3	
Volume Used in 2020	2,693,699	Yds^3	
Compaction Ratio for 2020	0.86	ton/yrd^3	
Average Cubic yards per day (assuming 7 day week)	7,356	Yds^3/day	
days between surveys	403	days	
Days between last survey and 12/31/2020	(10)	days	

YARD WASTE RESTRICTION

ANNUAL | 2020

Rumpke Sanitary Landfill

19. YARD WASTE REFUSAL

Ohio Administrative Code section 3745-27-19(M)(9) requires the annual operating report for municipal solid waste sanitary landfill facilities that have implemented a written yard waste restriction program, to include a summary of instances in which the facility has recorded refusal of a vehicle due to the presence of yard waste in the vehicle load. Attach the required information after saving this survey.

OAC 3745-27-19(M)(9), (O)(2)(a), and (O)(2)(v) which applies to municipal solid waste sanitary landfills, states that the annual operational report for facilities that have implemented a written yard-waste restriction program must include the following information summarizing the previous calendar year's operations:

If applicable, a summary of instances recorded in accordance with procedures required in paragraph (O)(2)(a)(v) of this rule in which the owner or operator of a sanitary landfill facility refused acceptance of a vehicle due to the presence of source-separated yard waste or commingled yard waste in the vehicle load.

Paragraph 3745-27-19(O) states that a written yard waste restriction program must contain (among other things):

Procedures for the recording of instances in which the sanitary landfill facility refused acceptance of a vehicle load due to the presence of a source-separated yard waste or mixed yard waste in the vehicle load

The sanitary landfill yard waste management and restriction provisions can be found in OAC rule 3745-27-19(E)(8).

The yard waste provisions are not applicable to industrial solid waste and residual solid waste landfills.

During the reporting cycle, did the facility have any recorded instances in which the sanitary landfill facility refused acceptance of a vehicle load due to the presence of a source-separated yard waste or mixed yard waste in the vehicle load? *

- ○ Yes
- ◉ No

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

Summary of Refusal Incidents

Response created on: Mar 22, 2021 at 03:10 PM EDT by john.butler@rumpke.com

Response last updated on: Apr 12, 2021 at 10:27 AM EDT by Maria.Lammers@epa.ohio.gov

TOPOGRAPHIC MAPS

ANNUAL | 2020

Rumpke Sanitary Landfill

13. TOPOGRAPHIC MAPS

Please review the instructions linked here , to determine the requirements for your maps.

If you are ready to upload your map click “Upload File” below to select the file you want to upload. A green status bar will appear as the file uploads and it will be replaced with the file name when upload is complete and the survey is ready to be saved.

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

Attach the required topographic map

EXCEEDS UPLOAD LIMIT.pdf

Response created on: Mar 24, 2021 at 12:02 PM EDT by john.butler@rumpke.com

Response last updated on: May 3, 2021 at 08:36 AM EDT by Maria.Lammers@epa.ohio.gov

MAINTENANCE PERFORMED

ANNUAL | 2020

Rumpke Sanitary Landfill

18. MAINTENANCE

Ohio Administrative Code sections 3745-27-19(M)(7), 3745-29-19(M)(7), and 3745-30-14(M)(7) require the annual operating report for landfill facilities to include information on maintenance performed on various monitoring and control systems at the facility. Attach the required information after saving this survey.

OAC 3745-27-19(M)(7), which applies to municipal solid waste sanitary landfills, states that the annual operational report must include the following information summarizing the previous calendar year's operations:

A summary of any maintenance performed on the leachate management system, ground water monitoring system, explosive gas monitoring system, and any other monitoring and control system installed at the sanitary landfill facility or performed in response to this rule

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

Information on maintenance performed *

RSL Maintainence list for Annual Report.pdf

Response created on: Apr 30, 2021 at 04:40 PM EDT by john.butler@rumpke.com

Response last updated on: May 3, 2021 at 08:32 AM EDT by Maria.Lammers@epa.ohio.gov

RUMPKE
Waste & Recycling Services

3990 Generation Drive, Cincinnati, OH 45251
Phone: 1–800–828–8171 Fax: 513–851–2057

April 30, 2021

2020 Maintenance Activities

Leachate Collection System
The attached list is a list of repairs to the leachate system.. Repairs the pumping system for the north end reaction area is reported on a biweekly basis as part of the agreed order and action plan.

1/15/2020	Boring	B30 replaced sligo and cord
1/17/2020		Vertical 7 crock new Sligo
1/17/2020	phase 4	Blackhawk installed in vertical well
1/17/2020	Boring	B156 sligo replaced with cord
1/17/2020	phase 4	Fuses replaced in panel
1/17/2020		Vertical well over Phase 6 sump. Pump and cord replaced
3/3/2020	liftstation 3	replace section of force main over liner
3/12/2020	air pumps	phase 4 vertical pump repaired new seals
3/12/2020		B30 sligo replaced
3/12/2021	phase 6	Vertical well, Sligo replaced
3/13/2020		B121 New Sligo and cord
3/13/2020		B137 New Sligo and cord
3/13/2020		tank 1 oil removed
4/9/2020	air pumps	B5RS blackhawk installed
4/10/2020		Vertical 4 repaired new seals
4/20/2020		Northend sump#7 float replaced
4/22/2020	industrial water	Capital upgrade start up
5/4/2020	air pumps	B137 blackhawk installed
5/4/2020	air pumps	B121 blackhawk installed
5/4/2020	air pumps	B30 blackhawk installed
5/14/2020	Pump House	electric HL4 rebuilt
5/18/2020		Vertical 4 repaired added wight and new drive rod
5/28/2020		west buttress pump and motor
5/28/2020	liftstation 1	swing check
6/9/2020		tank 1 oil removed
6/25/2020	NW Lift Station	new floats
7/1/2020		tank 1 oil removed
7/2/2020		vertical 4 drive rod
7/2/2020		North reaction area sump #2 pump replaced
7/2/2020		Vertical 6 Sligo replaced

7/2/2020		B156 pump and cord replaced
7/14/2020	v e 2	electrician repair PLC
7/17/2020	phase 5	pump and motor
8/5/2020		vertical 4 drive rod and seals
8/5/2020	air pumps	B138s new install blackhawk
8/6/2020	NW Lift Station	HL4 air compressor
8/17/2020		tank1 oil removed
8/24/2020		6E pump motor and cord replaced
8/31/2020	n e gas	pump and motor replaced
8/31/2020	air pumps	B121 blackhawk repaired seals
9/8/2020	air pumps	138s check valve in pump barrel Blackhawk
9/15/2020		vertical 4 New Control pannel
9/16/2020	NW Lift Station	HL4 rebuilt wet end
9/28/2020		vertical 6 sligo replaced
9/28/2020	air pumps	blackhawk seals replaced
10/1/2020		vertical 6 sligo replaced
10/1/2020	phase 11	black tank hooked up to DW wells in phase 11
10/28/2020	phase 8	green tank hooked to DW wells in phase 8
11/20/2020		tank 1 oil removed

Gas Monitoring System
None needed for gas monitoring probes or bar punches. Periodic replacement of building alarms is listed in the monthly reports.

Gas Collection System
See the Quarterly NSPS reports submitted to Ohio EPA via Air Services.

Groundwater Monitoring System
See attached letter from Eagon And Associates

EAGON
& ASSOCIATES, INC.

100 Old Wilson Bridge Road
Suite 115
Worthington, Ohio 43085
(614) 888-5760
eagoninc.com

August 25, 2020

Mr. Matt Overbeck
Rumpke Sanitary Landfill, Inc.
3990 Generation Drive
Cincinnati, Ohio 45251

RE: Rumpke Sanitary Landfill
MW-3 Repair

Dear Matt:

The following provides background information and documents the repair of MW-3 which was found to have well casing integrity issues during the first 2020 facility groundwater monitoring event. Groundwater level and quality changes were observed which indicated surface water impacts and a probable well integrity issue. Video inspection of the well confirmed that a casing joint failure was present at a depth (approximately 7 feet below ground level) where a repair could be performed. CinDrill was contracted to perform the repair with excavation/access assistance provided by the site. Eagon & Associates Inc. provided oversight and documentation of the repair.

On May 14, 2020, the protector and surface seal were removed from MW-3 and the casing excavated to approximately 8.0 feet which exposed the faulty casing joint. The casing joint was found to be compressed and broken and was located within a borehole section that was not grouted. Cement-bentonite grout was present below the joint. The faulty casing section was removed and the damaged threads on the remaining casing stick-up were cut off. A slip couple and new riser section (10.0 feet length) were added to the well. The couple was secured to the riser sections with stainless steel screws that engaged the casing but were not long enough to penetrate the well. A six-inch diameter PVC casing section was installed over the well and seated on the cement-bentonite grout below the repair (approximately 1.0 to 7.0 feet below ground level). The annulus between the well and 6-inch casing was filled with 3/8-inch bentonite chips to seal the casing joint repair. Bentonite chips were also placed around the base of the 6-inch casing (approximately 1.0 feet) to seal the outside of the casing. The excavation was backfilled with excavation material (soil and rock) to land surface and compacted with an excavator to complete the initial repair and allow for evaluation. During the remainder of the month through early June, the well was periodically bailed dry to remove the surface water that entered the well. This was a slow process given that the well is low yielding. By the end of June, field water quality readings (pH and specific conductance) taken during bailing were approaching unimpacted values and there was no indication of new surface water impacts since the casing was repaired. The casing repair was considered successful. On June 15, 2020, a 3-foot square concrete surface seal and six-inch square aluminum protector were installed to complete the repair.

MW-3 was resurveyed after the repair was complete. Documentation of the repair will be submitted to the Ohio-EPA with the facility's 2020 annual ground-water monitoring system evaluation and the groundwater monitoring plan will be updated as necessary with the next revision of the plan. Please let me know if you have any questions or concerns.

Sincerely,

David J. Sugar, CPG
Hydrogeologist

INTEROFFICE MEMO

Ohio Environmental Protection Agency

To:	File: Ohio EPA – Division of Materials and Waste Management (DMWM)
From:	Michael Harris
Date:	3/31/2021
Re:	Rumpke Sanitary LF, Report, Annual Report, MSWL, MSWL018791
Subject:	2000 Annual Report Submittal

Ohio EPA received this documentation electronically on March 31, 2021. The submittal is part of supporting documentation for the 2020 Annual Report and could not be uploaded into ReTrac Connect due to file size restrictions.

RUMPKE SANITARY LANDFILL, INC.

2020 ANNUAL OPERATIONS REPORT

COLERAIN TOWNSHIP - HAMILTON COUNTY, OHIO

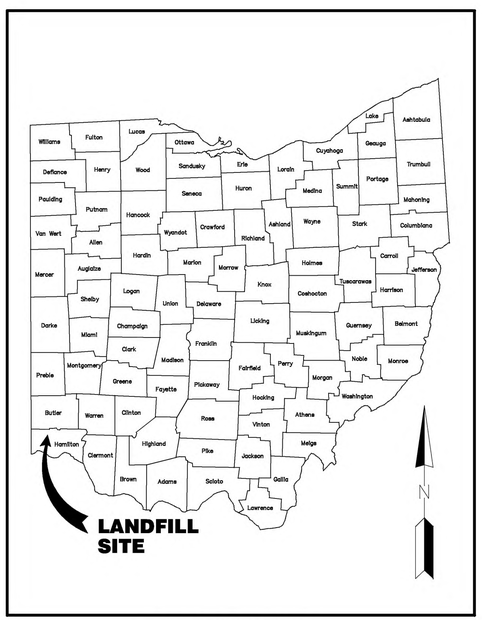
OWNER / OPERATOR

RUMPKE SANITARY LANDFILL, INC.

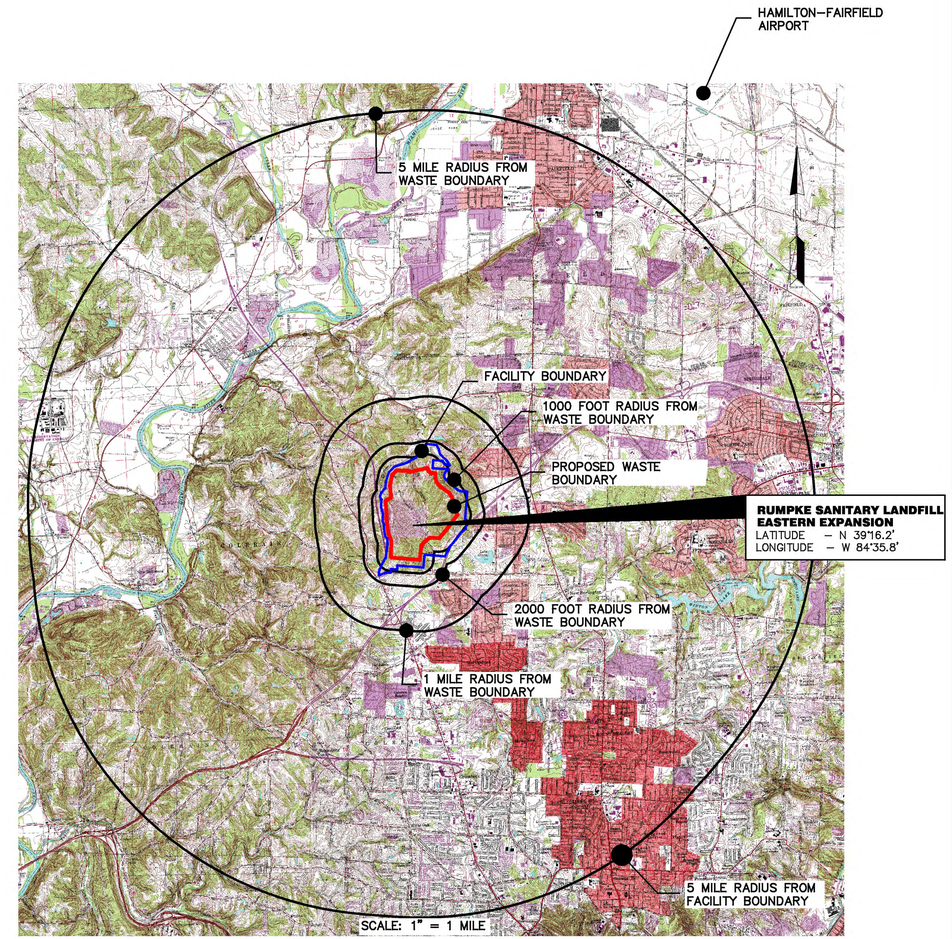
3990 GENERATION DRIVE
CINCINNATI, OHIO 45251
PHONE: (513) 851-0122

INDEX OF DRAWINGS

NUMBER	TITLE	REVISION DATE
	TITLE SHEET	NR
1	2020 EXISTING CONDITIONS (SHEET 1 OF 5)	NR
2	2020 EXISTING CONDITIONS (SHEET 2 OF 5)	NR
3	2020 EXISTING CONDITIONS (SHEET 3 OF 5)	NR
4	2020 EXISTING CONDITIONS (SHEET 4 OF 5)	NR
5	2020 EXISTING CONDITIONS (SHEET 5 OF 5)	NR
6	2020 TOP OF WASTE (SHEET 1 OF 5)	NR
7	2020 TOP OF WASTE (SHEET 2 OF 5)	NR
8	2020 TOP OF WASTE (SHEET 3 OF 5)	NR
9	2020 TOP OF WASTE (SHEET 4 OF 5)	NR
10	2020 TOP OF WASTE (SHEET 5 OF 5)	NR
11	2020 PERMITTED AIRSPACE REMAINING	NR



LOCATION MAP
(NOT TO SCALE)



U.S.G.S. VICINITY MAP
7.5 MINUTE GREENHILLS, OHIO 1965, PHOTOREVISED 1981
7.5 MINUTE CINCINNATI WEST, OHIO 1965, PHOTOINSPECTED 1986, PHOTOREVISED 1981
7.5 MINUTE ADDYSON, OHIO 1965, PHOTOREVISED 1987
7.5 MINUTE SHANDON, OHIO 1965, PHOTOREVISED 1981

STATE OF OHIO
ZACHARY A. CLARK
E-82377
REGISTERED
PROFESSIONAL ENGINEER
5/26/21

PLANS PREPARED BY:
ARCADIS Design & Consultancy for natural and built assets
ARCADIS, INC.
4665 CORNELL ROAD
SUITE 200
CINCINNATI, OHIO 45241
(513) 860–8700

Landfill Acerage Summary Table	
Total acreage that has received waste	300 AC
Total acreage with leachate collection	266 AC
Total acreage with final cover	2 AC
Total acreage with transitional cover	129 AC
Total lined acreage constructed in 2020	0 AC
Currently approved worst case acreage used in financial assurance	300 AC

Note: The areas listed above exclude the slip area on the west side of the existing landfill (with the exception of the final cover). The currently approved worst case acreage excludes the area in Phase XII that has not received waste.

MAPPING COMPILED FROM AERIAL PHOTOGRAPHY EXPOSED: 01–10–2021

Contour interval: 2 feet

Note: Contours on this map were computer generated from a Digital Terrain Model.

THIS MAPPING COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

M.A.N.
M.A.N. MAPPING SERVICES, INC.
4069 WEAVER COURT
HILLIARD OHIO 43026
(614) 876–3663

Note: The user of this mapping should field check areas of dense tree and or ground cover to determine it's suitability for the intended use, and make adjustments where deemed necessary.

Caution: Dashed contours indicate areas of dense foliage, ground cover, or shadows. Contours and spot elevations in these areas are included for reference purposes only and may not meet National Map Accuracy Standards for this scale and contour interval.

NOTES:

1. INFORMATION DEPICTED ON THIS DRAWING REPRESENTS ACTIVITIES CONDUCTED DURING CALENDAR YEAR 2020.

2. FACILITY BOUNDARY DEPICTED IS FROM THE SURVEYS OF BRUMBAUGH ENGINEERING & SURVEYING, LLC. THE ENGINEERING STAMP ON THIS SHEET DOES NOT REPRESENT A CERTIFICATION OF THE ACCURACY OF THE SURVEY. FOR AN EXACT DESCRIPTION OF THE LANDFILL BOUNDARY SEE PLAN SHEET 2D, BOUNDARY MONUMENTATION AND CONTROL PLAN, OF THE PLANS APPROVED BY THE OHIO EPA ON AUGUST 13, 2019.

3. APPROXIMATELY 128 ACRES OF TRANSITIONAL COVER MATERIAL HAS BEEN PLACED ON THE LANDFILL.

LEGEND

- PROPERTY CORNER
- AERIAL CONTROL PANEL
- UTILITY POLE
- LIGHT POLE
- FLAG POLE
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- 2021 ACTIVE FILL AREA
- 2020 ACTIVE FILL AREA

0 400 FEET

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Professional Engineer's Name: ZACHARY CLARK
Professional Engineer's No.: 82377

State	Date Signed	Project Mgr.
OH		RJK
Designed by	Drawn by	Checked by
RJH	RJH	ZAC

STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER
5/26/21

ARCADIS
ARCADIS U.S., INC.

RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 EXISTING CONDITIONS (SHEET 1 of 5)

ARCADIS Project No. 30076926

Date MARCH 2021

ARCADIS
4665 CORNELL ROAD
SUITE 200
CINCINNATI, OHIO 45241
TEL. 513.860.8700

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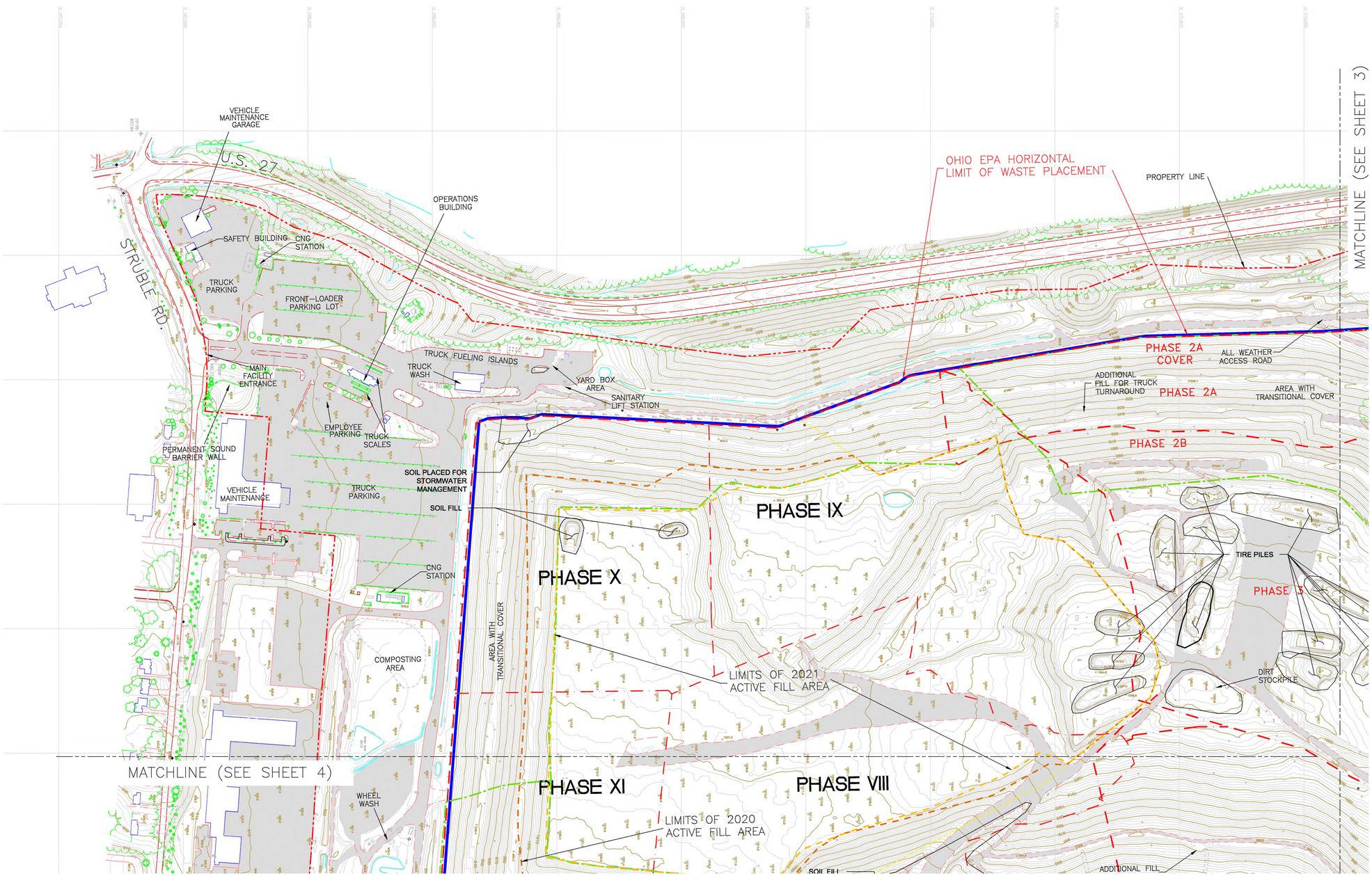

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Professional Engineer's Name: ZACHARY CLARK
Professional Engineer's No.: 82377

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ARCADIS U.S., INC.

RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

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ARCADIS Project No. 30076926

Date MARCH 2021

ARCADIS
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SUITE 200
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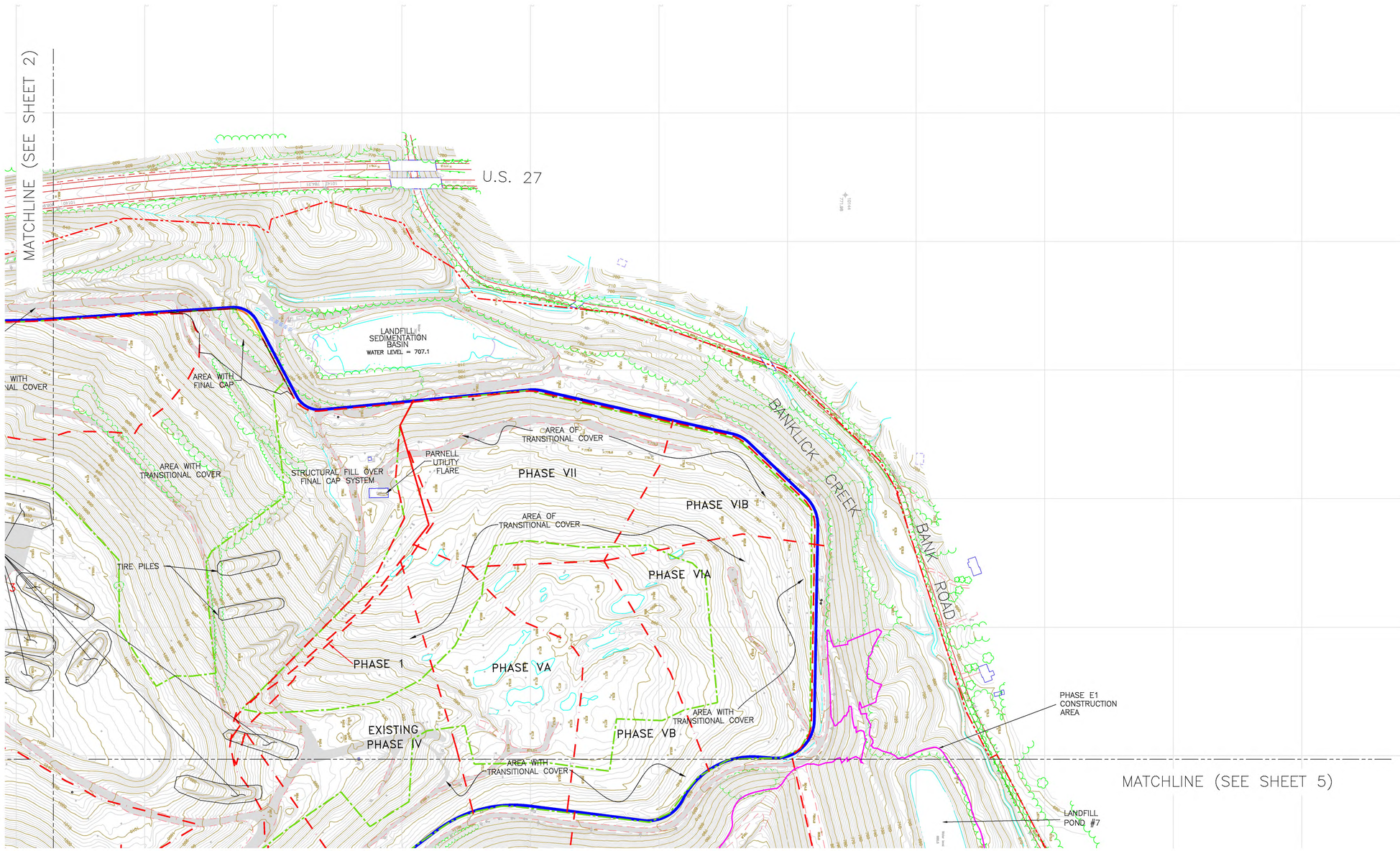

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ARCADIS

ARCADIS U.S., INC.

RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 EXISTING CONDITIONS (SHEET 3 of 5)

ARCADIS Project No.
30076926

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ARCADIS
4665 CORNELL ROAD
SUITE 200
CINCINNATI, OHIO 45241
TEL. 513.860.8700

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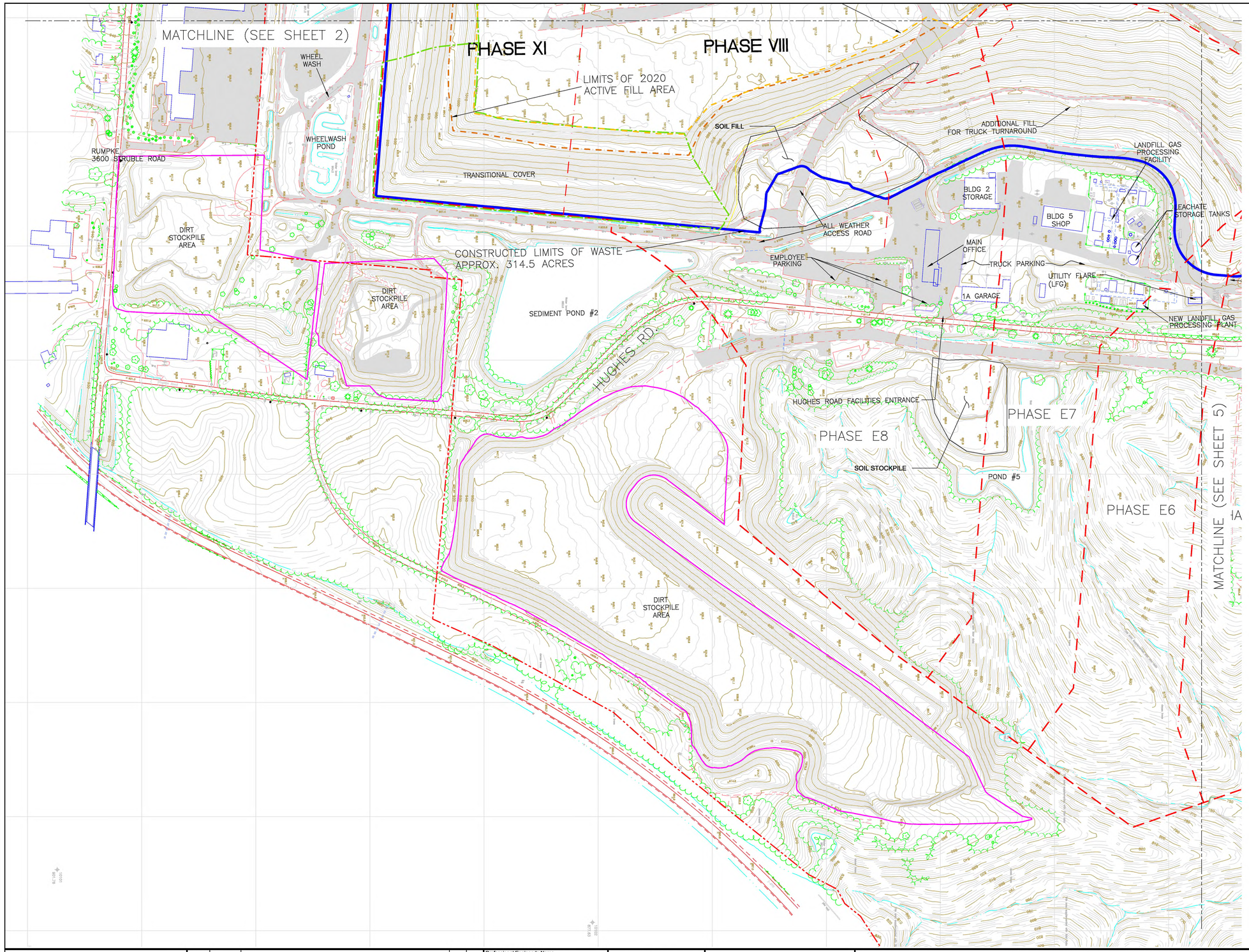

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0 200 FEET

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No.	Date	Revisions	By	Ckd

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Professional Engineer's Name: ZACHARY CLARK
Professional Engineer's No.: 82377

State	Date Signed	Project Mgr.
OH		RJK
Designed by	Drawn by	Checked by
	RJH	ZAC

STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER

ARCADIS

ARCADIS U.S., INC.

RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 EXISTING CONDITIONS (SHEET 4 of 5)

ARCADIS Project No. 30076926

Date MARCH 2021

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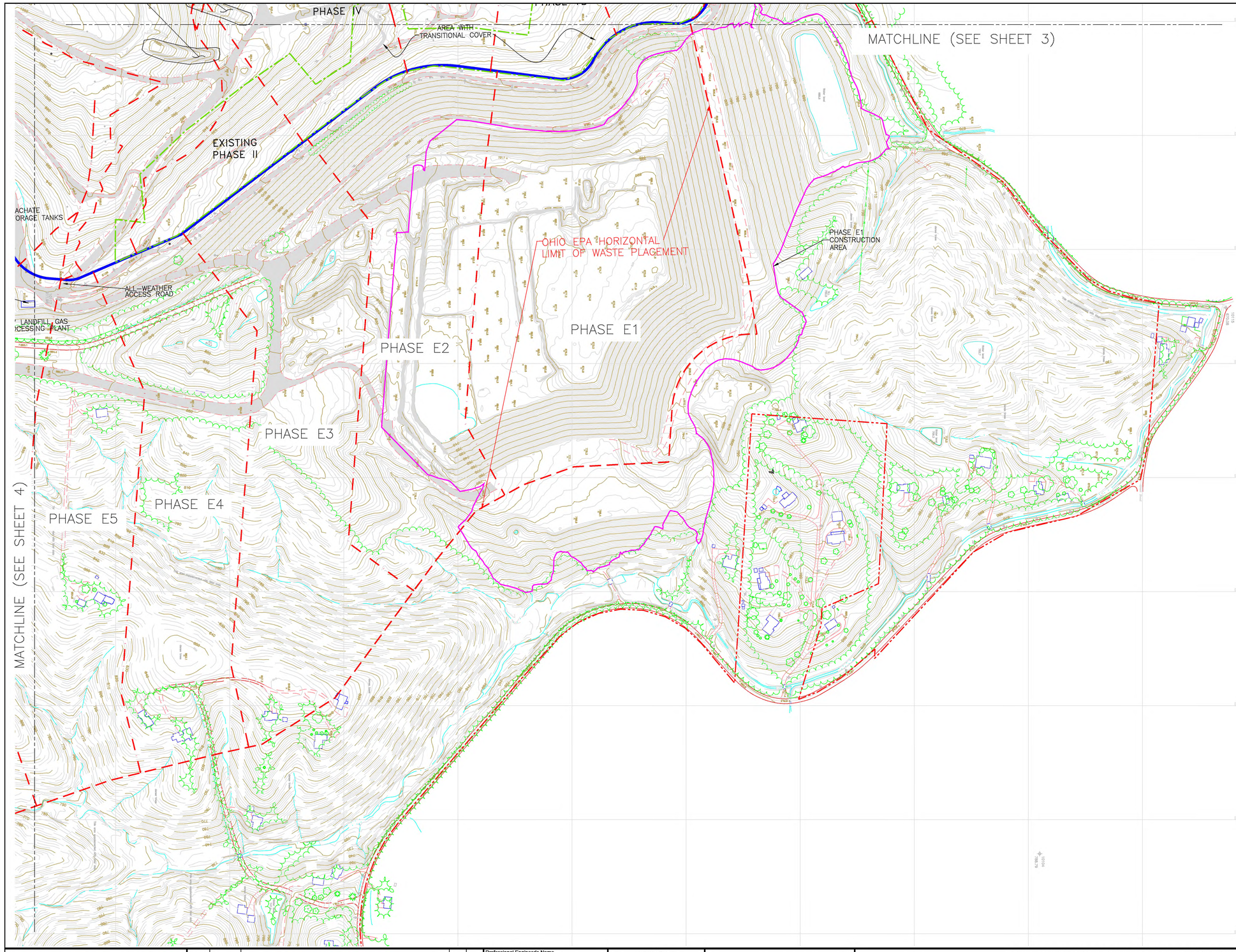
SUITE 200
CINCINNATI, OHIO 45241
TEL. 513.860.8700



MAPPING COMPILED FROM AERIAL PHOTOGRAPHY EXPOSED: 01-10-2021

Contour interval: 2 feet

Note: Contours on this map were computer generated from a Digital Terrain Model.

THIS MAPPING COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

M.A.N. MAPPING SERVICES, INC.
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HILLIARD OHIO 43026
(614) 876-3663

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NOTES:

1. INFORMATION DEPICTED ON THIS DRAWING REPRESENTS ACTIVITIES CONDUCTED DURING CALENDAR YEAR 2020.

2. FACILITY BOUNDARY DEPICTED IS FROM THE SURVEYS OF BRUMBAUGH ENGINEERING & SURVEYING, LLC.. THE ENGINEERING STAMP ON THIS SHEET DOES NOT REPRESENT A VERIFICATION OR CERTIFICATION OF THE SURVEYS. FOR AN EXACT DESCRIPTION OF THE LANDFILL BOUNDARY SEE PLAN SHEET 20, BOUNDARY MONUMENTATION AND CONTROL PLAN, OF THE PLANS APPROVED BY THE OHIO EPA ON AUGUST 12, 2019.

3. APPROXIMATELY 128 ACRES OF TRANSITIONAL COVER MATERIAL HAS BEEN PLACED ON THE LANDFILL.

LEGEND

- PROPERTY CORNER
- AERIAL CONTROL PANEL
- UTILITY POLE
- LIGHT POLE
- FLAG POLE
- CATCH BASIN INLET
- MANHOLE
- SPOT ELEVATION
- EXISTING BUILDING
- TREE
- TREE LINE
- FENCE LINE
- TRANSITIONAL COVER BOUNDARY
- CONSTRUCTED LIMITS OF WASTE
- STREAM OR POND
- UNPAVED ROADS
- PAVED ROADS
- INTERMEDIATE CONTOURS
- INDEX CONTOURS
- PROPERTY BOUNDARY
- LANDFILL PHASE LINE
- OHIO EPA HORIZONTAL LIMIT OF WASTE PLACEMENT
- BORROW/STOCKPILE AREAS
- 2021 ACTIVE FILL AREA
- 2020 ACTIVE FILL AREA

0 200 FEET

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STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER

ARCADIS U.S., INC.

RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 EXISTING CONDITIONS (SHEET 5 of 5)

ARCADIS Project No. 30076926

Date MARCH 2021

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LEGEND

- PROPERTY CORNER
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- BORROW AREAS

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0 400 FEET

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STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER
9/26/21

ARCADIS

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RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 TOP OF WASTE (SHEET 1 of 5)

ARCADIS Project No. 30076926

Date FEBRUARY 2021

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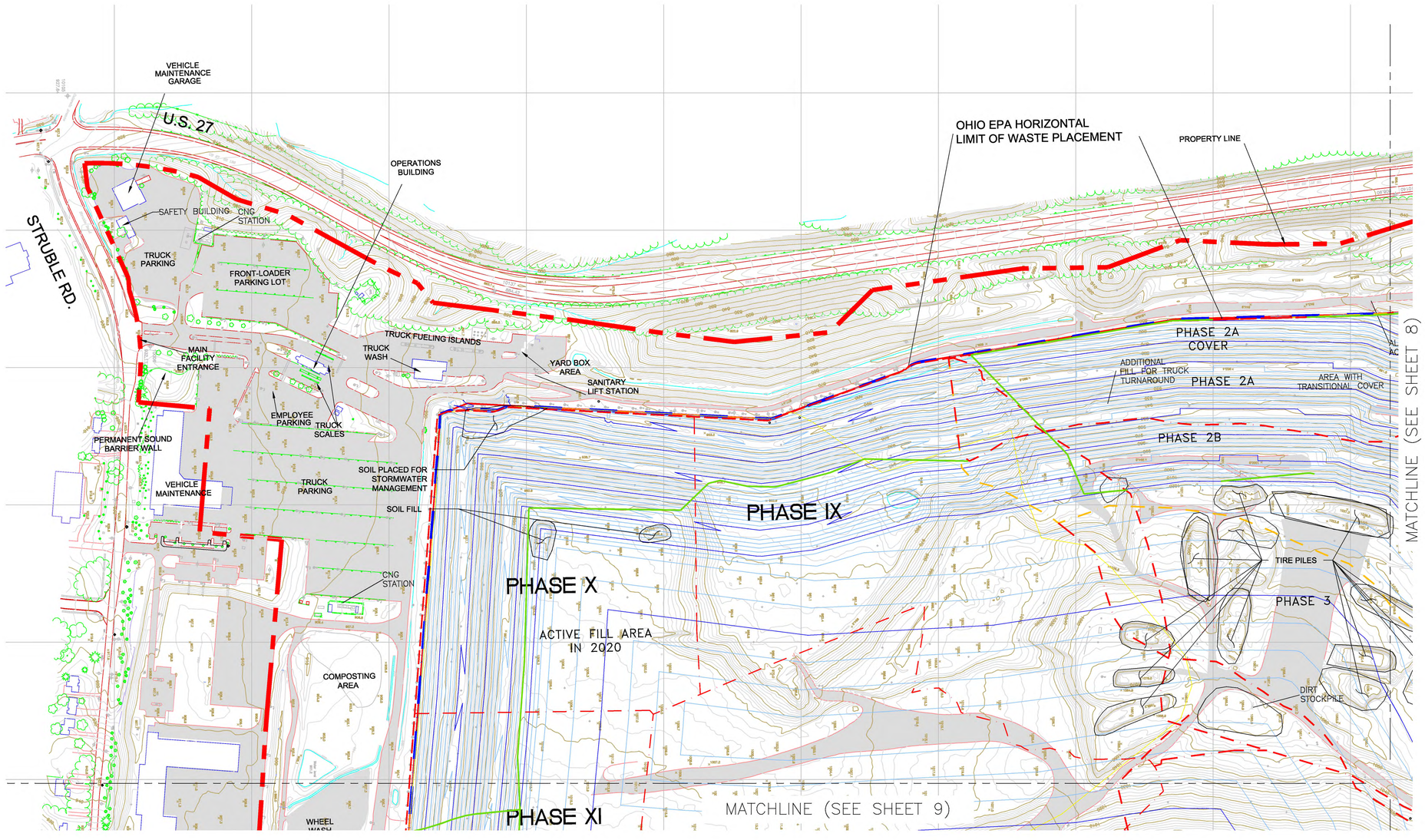
6



LEGEND

- PROPERTY CORNER
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- BORROW AREAS

MAPPING COMPILED FROM AERIAL PHOTOGRAPHY EXPOSED: 01-10-2021

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0 200 FEET

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STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER

ARCADIS

ARCADIS U.S., INC.

RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 TOP OF WASTE (SHEET 2 of 5)

ARCADIS Project No. 30076926

Date FEBRUARY 2021

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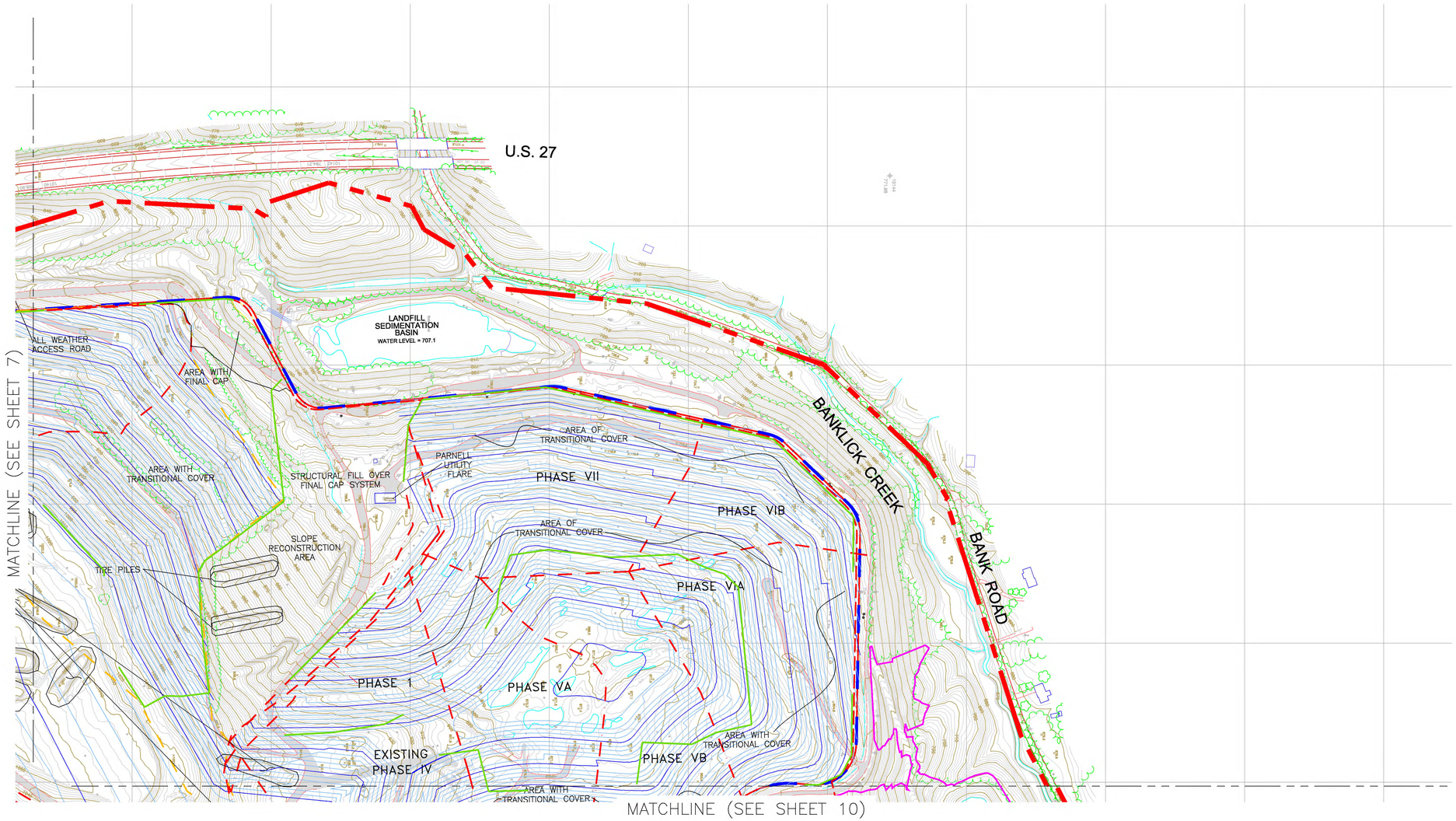

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STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER

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RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 TOP OF WASTE (SHEET 3 of 5)

ARCADIS Project No. 30076926

Date FEBRUARY 2021

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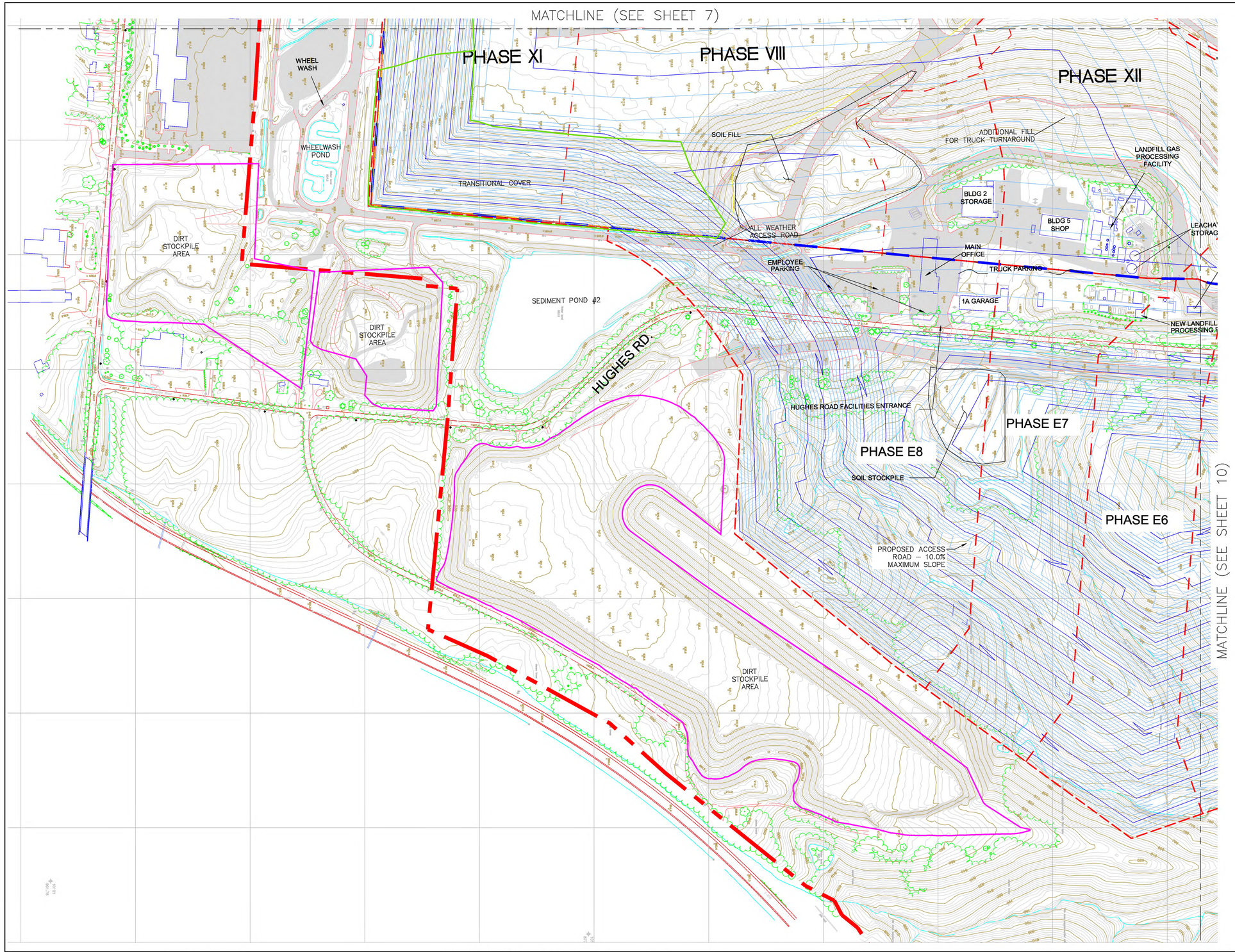

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RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 TOP OF WASTE (SHEET 4 of 5)

ARCADIS Project No. 30076926

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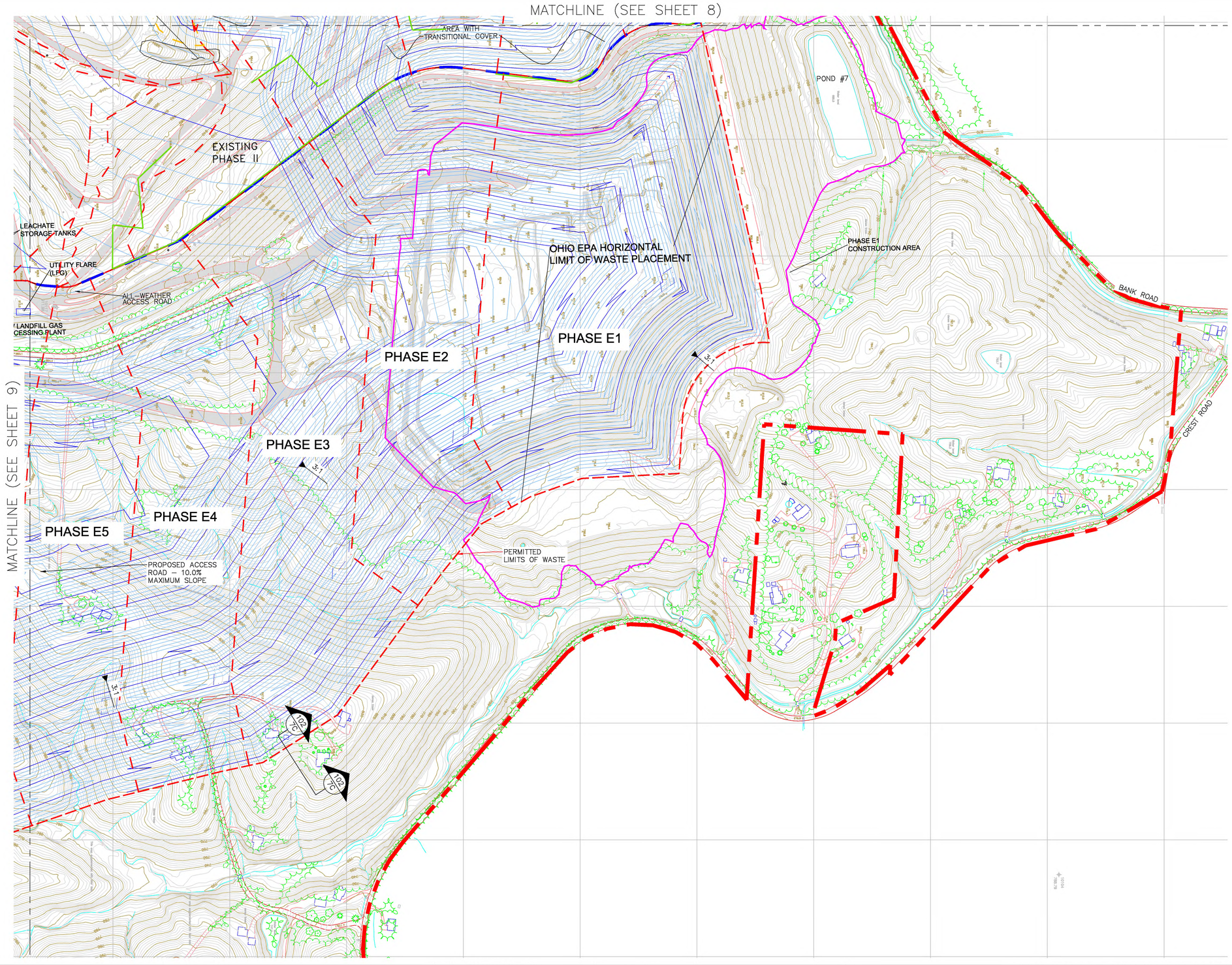

LEGEND

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STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER

ARCADIS

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RUMPKE SANITARY LANDFILL • COLERAIN TWP., HAMILTON CO., OHIO
ANNUAL REPORT

2020 TOP OF WASTE (SHEET 5 of 5)

ARCADIS Project No. 30076926

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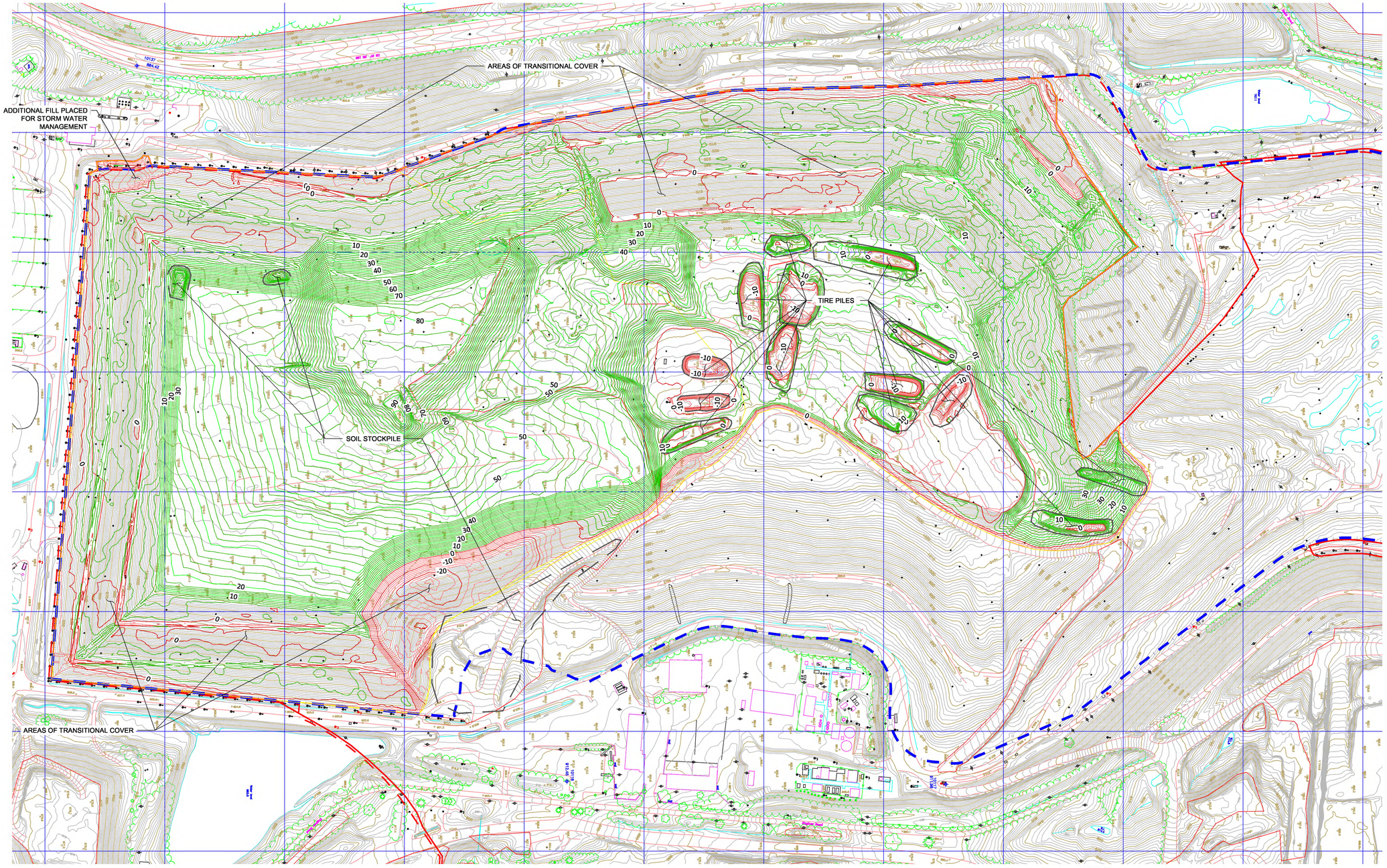

REFERENCE:

BASE SURFACE: AERIAL SURVEY CONDUCTED BY M.A.N. MAPPING SERVICES ON JANUARY 10, 2021.
COMPARISON SURFACE: PERMITTED TOP OF WASTE.

THE PERMITTED PHASE TOP OF WASTE GRADES WERE OBTAINED FROM PTI DRAWINGS 8A-0 THROUGH 8A-4.

LEGEND

- MAJOR CONTOUR BELOW PERMITTED TOW
- MINOR CONTOUR BELOW PERMITTED TOW
- MAJOR CONTOUR ABOVE PERMITTED TOW
- MINOR CONTOUR ABOVE PERMITTED TOW
- CONSTRUCTED LIMITS OF WASTE
- PERMITTED LIMITS OF WASTE

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net	Fill Excluding Stockpiles
V-2020 Permitted REM Airspace	1.000	1.000	8069121 Sq. Ft.	210562 Cu. Yd.	5660162 Cu. Yd.	5449600 Cu. Yd.<Fill>	5498926 Cu. Yd.<Fill>
Totals			8069121 Sq. Ft.	210562 Cu. Yd.	5660162 Cu. Yd.	5449600 Cu. Yd.<Fill>	5498926 Cu. Yd.<Fill>

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Designed by	Drawn by	Checked by
RJH		ZAC

STATE OF OHIO ZACHARY A. CLARK E-82377 REGISTERED PROFESSIONAL ENGINEER
3/26/21

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ARCADIS U.S., INC.

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ANNUAL REPORT

2020 PERMITTED AIRSPACE REMAINING AT CURRENT PHASE

ARCADIS Project No. 30076926
Date MARCH 2021

ARCADIS
4665 CORNELL ROAD
SUITE 200
CINCINNATI, OHIO 45241
TEL. 513.860.8700

EAGON
& ASSOCIATES, INC.

100 Old Wilson Bridge Road
Suite 115
Worthington, Ohio 43085
(614) 888-5760
eagoninc.com

February 18, 2021

Mr. Matt Overbeck
Rumpke Sanitary Landfill
3990 Generation Drive
Cincinnati, Ohio 45251

RE: Rumpke Sanitary Landfill
2020 Annual Report
OAC 3745-27-10(B)(5) – Monitoring System Evaluation
OAC 3745-27-19(M)(5) and (7) – Operational Report

Dear Mr. Overbeck:

In accordance with OAC 3745-27-10(B)(5) and OAC 3745-27-19(M)(5) and (7), Eagon & Associates, Inc. is providing the following information for the annual monitoring system evaluation and annual operational report.

OAC 3745-27-10(B)(5)

Groundwater levels are measured semiannually in all monitoring wells prior to purging and sampling in accordance with OAC 3745-27-10(C)(3). Groundwater levels from the monitoring wells for March and September 2020 are enclosed. There is no aquifer at the site. A meaningful potentiometric map cannot be drawn for the site for the following reasons: 1) the potential flow direction at the soil/bedrock interface is controlled by topography and flow systems are very localized; and 2) water producing zones in the deeper bedrock, when encountered, are meager and isolated from each other. Therefore, there is no meaningful horizontal correlation between ground-water levels. Moreover, in some wells the hydraulic conductivity is so low that water levels do not fully equilibrate between semiannual sampling events. Because of these conditions, all detection monitoring wells surrounding the site are considered to be downgradient. We have evaluated the water-level data collected in 2020 as specified in OAC 3745-27-10(B)(5) and find that the requirements of paragraph (B) of this rule continue to be satisfied.

OAC 3745-27-19(M)(5)

The leachate was sampled at the facility in March 2020 from the leachate storage tank discharge point. The leachate was analyzed for parameters 1-78 from Appendix I to OAC 3745-27-10 plus polychlorinated biphenyls. The analytical results also were included in the 2020 first semiannual statistical analysis report submitted prior to this evaluation. The 2020 leachate results should be submitted with the annual report pursuant to 3745-27-19(M)(5).

OAC 3745-27-19(M)(7)

During 2020, detection monitoring wells HP-3DR, HP-3IRNR, MW-11, detection piezometer MW-12D, and unused expansion boring HB-103 and well MW-110D were abandoned at the Site. Detection monitoring wells MW-30S, MW-30D, P-12S, and P-12D were activated as Phase E1 detection monitoring wells and background data collection has begun at each of these four wells. In addition, Phase E1 monitoring wells MW-29S, MW-31S, and MW-31D were installed. All abandonments and additions to the groundwater monitoring program were performed in accordance with the approved PTI. Routine maintenance was performed for nine wells at the facility. The following is a summary of maintenance performed for each well:

Well No.	Maintenance Performed
P-19S, HP-2	Locks replaced
P-9, HSW-2I, MW-13S and MW-13DR	Cleared dirt from top of pads
MW-3, P-1, and MW-16	Surface casings and concrete seals replaced

The 10(B)(5) ground-water monitoring system evaluation should be submitted not later than 12 months from the 2019 annual submittal. The items enclosed (leachate results and potentiometric surface maps) for the annual operational report should be submitted not later than April 1, 2021.

Please contact me at 614-888-5760 if you have any questions or need additional information.

Sincerely,

Christopher J. Cobel

Christopher J. Cobel
Groundwater Scientist

CJC/kj
encl.
cc: John Butler

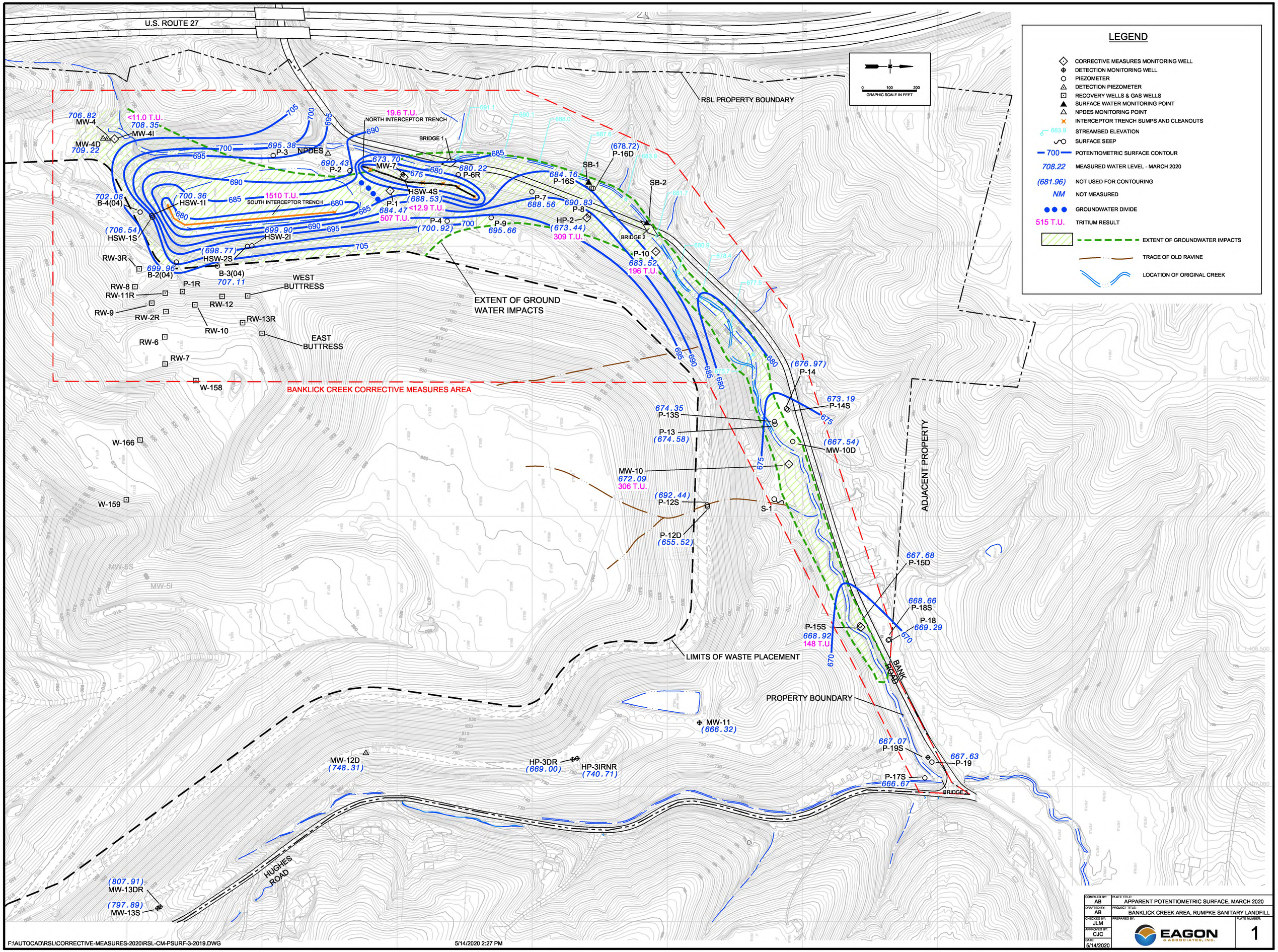
AFFIRMATION

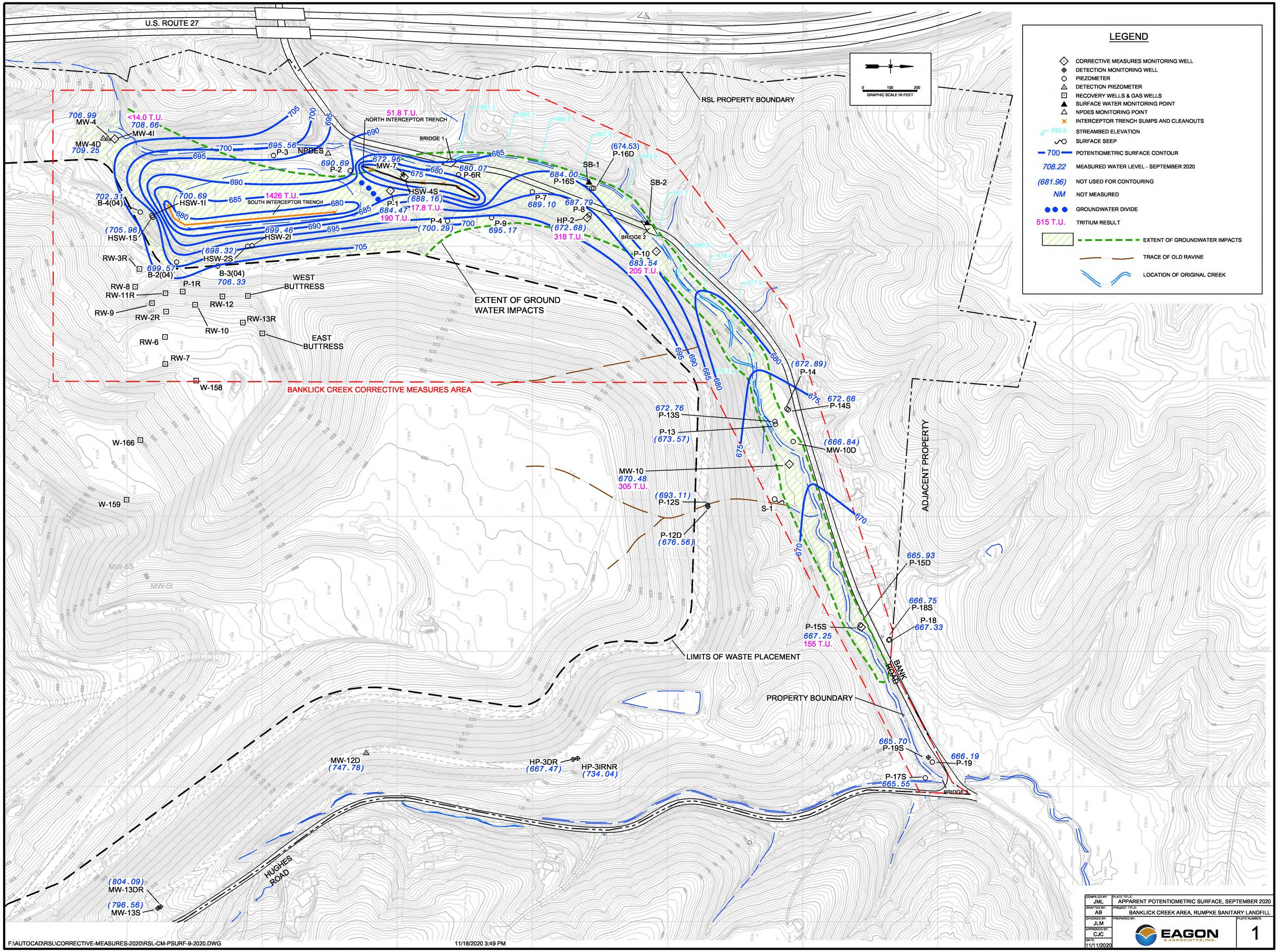
I, Christopher J. Cobel, a qualified Groundwater Scientist of Eagon & Associates, Inc., 100 Old Wilson Bridge Road, Suite 115, Worthington, Ohio 43085, certify that to the best of my knowledge the contents of the submitted 2020 Annual Groundwater Monitoring System Evaluation for Rumpke Sanitary Landfill are true and complete and comply with the requirements of Chapter 3734 of the Revised Code and the rules adopted thereunder.

Christopher J. Cobel

Christopher J. Cobel
Groundwater Scientist

2/18/2021
Date


LEGEND
CORRECTIVE MEASURES MONITORING WELL
DETECTION MONITORING WELL
PIEZOMETER
DETECTION PIEZOMETER
RECOVERY WELLS & GAS WELLS
SURFACE WATER MONITORING POINT
NPDES MONITORING POINT
INTERCEPTOR TRENCH SUMPS AND CLEANOUTS
683.9 STREAMBED ELEVATION
SURFACE SEEP
700 POTENTIOMETRIC SURFACE CONTOUR
708.22 MEASURED WATER LEVEL - MARCH 2020
(681.96) NOT USED FOR CONTOURING
NM NOT MEASURED
GROUNDWATER DIVIDE
515 T.U. TRITIUM RESULT
EXTENT OF GROUNDWATER IMPACTS
TRACE OF OLD RAVINE
LOCATION OF ORIGINAL CREEK
0 100 200
GRAPHIC SCALE IN FEET
U.S. ROUTE 27
RSL PROPERTY BOUNDARY
NORTH INTERCEPTOR TRENCH
SOUTH INTERCEPTOR TRENCH
BRIDGE 1
BRIDGE 2
BRIDGE 3
NPDES
WEST BUTTRESS
EAST BUTTRESS
EXTENT OF GROUND WATER IMPACTS
BANKLICK CREEK CORRECTIVE MEASURES AREA
ADJACENT PROPERTY
BANK ROAD
HUGHES ROAD
LIMITS OF WASTE PLACEMENT
PROPERTY BOUNDARY
706.82 MW-4
<11.0 T.U. 708.35 MW-4I
MW-4D 709.22
695.38 P-3
690.43 P-2
673.70 MW-7
19.6 T.U.
680.22 P-6R
(678.72) P-16D
SB-1
SB-2
684.16 P-16S
P-7 688.56
690.83 P-8
HP-2 (673.44) 309 T.U.
702.08 B-4(04)
700.36 HSW-1I
1510 T.U.
HSW-4S (688.53)
P-1 684.47
<12.9 T.U.
507 T.U.
P-4 (700.92)
P-9 695.66
(706.54) HSW-1S
699.90 HSW-2I
(698.77) HSW-2S
699.96 B-2(04)
B-3(04) 707.11
P-10 683.52 196 T.U.
RW-3R
RW-8
RW-11R
P-1R
RW-9
RW-2R
RW-12
RW-10
RW-13R
RW-6
RW-7
W-158
W-166
W-159
MW-5S
MW-5I
(676.97) P-14
673.19 P-14S
674.35 P-13S
P-13 (674.58)
(667.54) MW-10D
MW-10 672.09 306 T.U.
(692.44) P-12S
S-1
P-12D (655.52)
667.68 P-15D
668.66 P-18S
P-18 669.29
P-15S 668.92 148 T.U.
MW-11 (666.32)
667.07 P-19S
667.63 P-19
P-17S 666.67
MW-12D (748.31)
HP-3DR (669.00)
HP-3IRNR (740.71)
(807.91) MW-13DR
(797.89) MW-13S
F:\AUTOCAD\RSL\CORRECTIVE-MEASURES-2020\RSL-CM-PSURF-3-2019.DWG
5/14/2020 2:27 PM
COMPILED BY: AB
DRAFTED BY: AB
CHECKED BY: JLM
APPROVED BY: CJC
DATE: 5/14/2020
PLATE TITLE: APPARENT POTENTIOMETRIC SURFACE, MARCH 2020
PROJECT TITLE: BANKLICK CREEK AREA, RUMPKE SANITARY LANDFILL
PREPARED BY: EAGON & ASSOCIATES, INC.
PLATE NUMBER: 1



COMPILED BY: JML	PLATE TITLE: APPARENT POTENTIOMETRIC SURFACE, SEPTEMBER 2020
DRAFTED BY: AB	PROJECT TITLE: BANKLICK CREEK AREA, RUMPKE SANITARY LANDFILL
CHECKED BY: JLM	PREPARED BY: EAGON & ASSOCIATES, INC.
APPROVED BY: CJC	PLATE NUMBER: 1
DATE: 11/11/2020	

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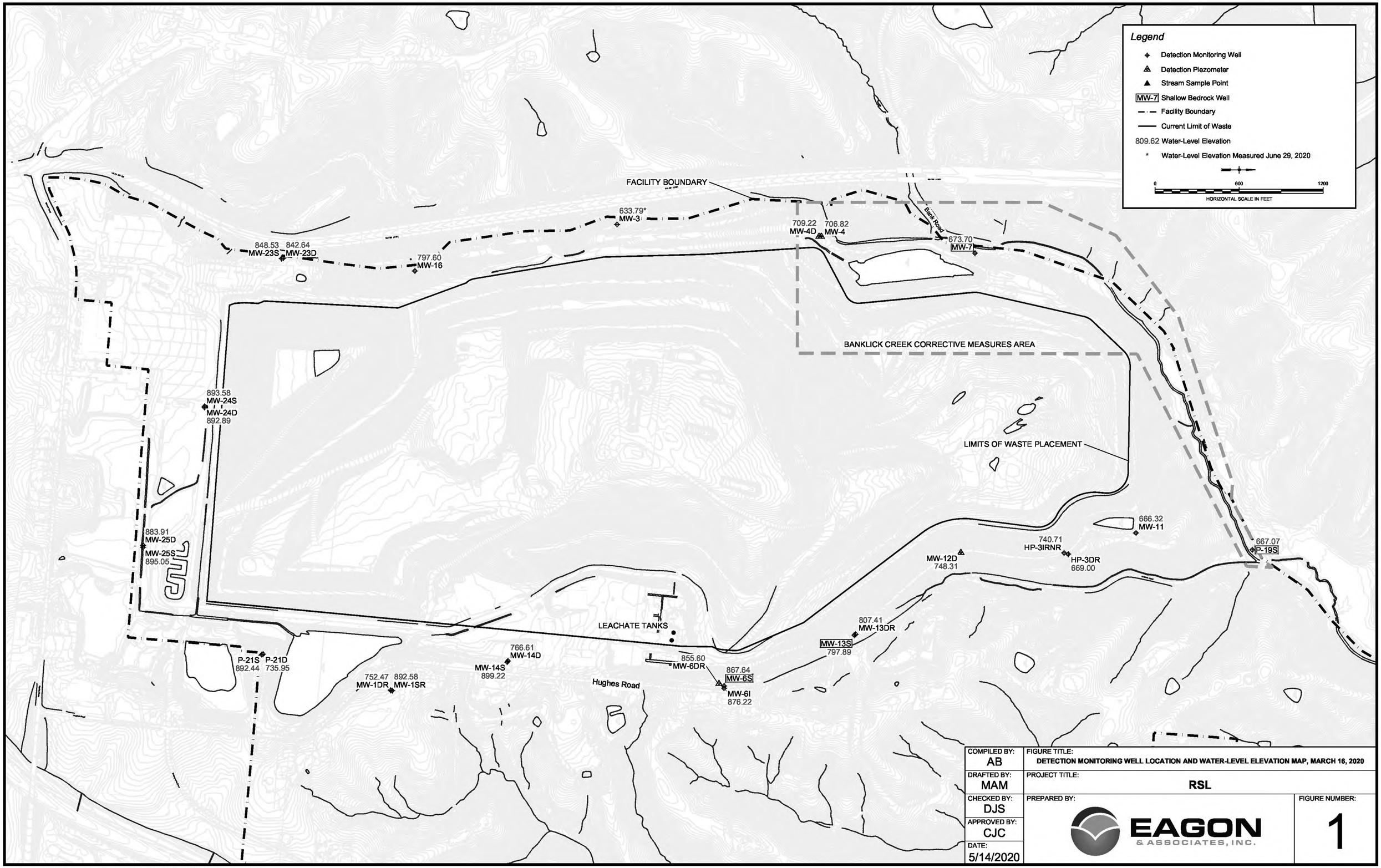

COMPILED BY: AB	FIGURE TITLE: DETECTION MONITORING WELL LOCATION AND WATER-LEVEL ELEVATION MAP, MARCH 16, 2020
DRAFTED BY: MAM	PROJECT TITLE: RSL
CHECKED BY: DJS	PREPARED BY: EAGON & ASSOCIATES, INC.
APPROVED BY: CJC	FIGURE NUMBER: 1
DATE: 5/14/2020	

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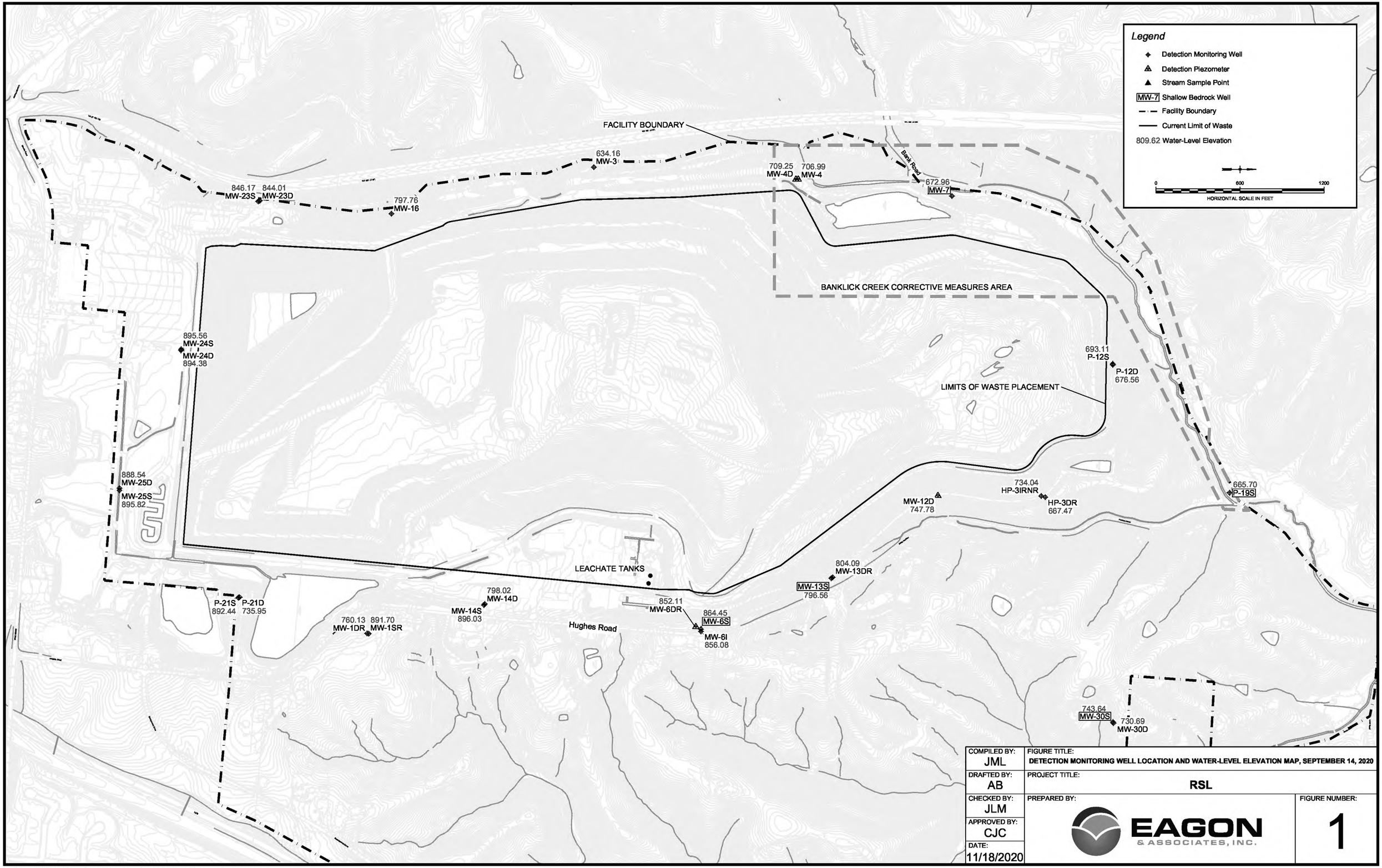

COMPILED BY: JML	FIGURE TITLE: DETECTION MONITORING WELL LOCATION AND WATER-LEVEL ELEVATION MAP, SEPTEMBER 14, 2020
DRAFTED BY: AB	PROJECT TITLE: RSL
CHECKED BY: JLM	PREPARED BY: EAGON & ASSOCIATES, INC.
APPROVED BY: CJC	FIGURE NUMBER: 1
DATE: 11/18/2020	

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GEOCHEMICAL TESTING
Environmental and Energy Analysis

2005 N. Center Ave.
Somerset, PA 15501

814/443-1671
814/445-6666
FAX: 814/445-6729

Friday, April 10, 2020

JOHN BUTLER
RUMPKE SANITARY LANDFILL
10795 HUGHES ROAD
CINCINNATI, OH 45251

RE: RSL - Annual Leachate Event Order No.: G2003A24

Dear JOHN BUTLER:

Geochemical Testing received 2 sample(s) on 3/18/2020 for the analyses presented in the following report.

There were no problems with sample receipt protocols and analyses met the TNI/NELAC, EPA, and laboratory specifications except where noted in the Case Narrative or Laboratory Results.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Timothy W. Bergstresser
Director of Technical Services

Susan K. Gerhard
Project Manager

Report(s) To:
Chris Cobel
Jeff McClellan

ACCREDITED IN ACCORDANCE WITH nelac
I.D. 56-00306PA DEP

Geochemical Testing

Date: *10-Apr-20*

CLIENT: RUMPKE SANITARY LANDFILL
Project: RSL - Annual Leachate Event
Lab Order: G2003A24

CASE NARRATIVE

No problems were encountered during analysis of this workorder, except if noted in this report.

Field parameter data was measured or analyzed by the sampler. The Chain-of-Custody or ancillary forms that record results provided by the sampler are enclosed with the Analytical Reports.

Legend:

H - Method Hold Time exceeded and is not compliant with 40CFR136 Table II.
U - The analyte was not detected at or above the listed concentration, which is below the laboratory quantitation limit.
B - Analyte detected in the associated Method Blank
Q1 - See case narrative ND - Not Detected
MCL - Contaminant Limit J - Indicates an estimated value.
Q - Qualifier QL -Quantitation Limit DF - Dilution Factor

S - Surrogate Recovery outside accepted recovery limits
T - Sample received above required temperature and is not compliant with 40CFR136 Table II.
T1 - Sample received above required temperature
MDA - Minimum Detectable Activity.
** - Value exceeds Action Limit
TICs - Tentatively Identified Compounds.
E - Value above quantitation range

ACCREDITED IN ACCORDANCE WITH nelac
I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Apr-20*

CLIENT:	RUMPKE SANITARY LANDFILL	**Client Sample ID:**	Leachate
Lab Order:	G2003A24		
Project:	RSL - Annual Leachate Event	**Collection Date:**	3/17/2020 11:50:00 AM
Lab ID:	G2003A24-001	**Sampled By:**	Eagon & Associates
Matrix:	LEACHATE	**DateReceived:**	3/18/2020 2:03:50 PM

Analyses	Result	Q	MDL	PQL	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS			Analyst:					**FIELD**
pH (Field)	8.13		0		S.U.			03/17/20 11:50 AM
Specific Conductance (Field)	11010		0		µmhos/cm			03/17/20 11:50 AM
Temperature (Field)	17.7		0		deg C			03/17/20 11:50 AM
Turbidity (Field)	809		0		NTU			03/17/20 11:50 AM
INORGANIC NON-METALS			Analyst:	**GMG**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	5770		50.0	100	mg/L	5	03/19/20 12:30 PM	03/19/20 1:02 PM
INORGANIC NON-METALS			Analyst:	**LRR**				**ASTM D 1067-11**
Alkalinity to pH 4.5	4220		9.6	19	mg/L CaCO3	1.92		03/20/20 11:27 AM
INORGANIC NON-METALS			Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	1750		2.00	10	mg/L	10	03/19/20 9:10 PM	03/19/20 10:12 PM
INORGANIC NON-METALS			Analyst:	**MHF**				**EPA 350.1**
Ammonia Nitrogen	902		40.0	100	mg/L as N	1000		03/19/20 2:34 PM
INORGANIC NON-METALS			Analyst:	**MKH**			**EPA 353.2**	**EPA 353.2**
Nitrate - Nitrite	0.61		0.020	0.05	mg/L as N	1	03/23/20 7:40 AM	03/24/20 2:00 PM
INORGANIC NON METALS			Analyst:	**CML**			**ASTM D 516-07**	**ASTM D 516-11**
Sulfate	37		2.0	5	mg/L	1	03/24/20 4:45 PM	03/24/20 7:23 PM
INORGANIC METALS			Analyst:	**MEG**			**EPA 3010 A**	**EPA 6010 D**
Barium	0.203		0.00500	0.0100	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Beryllium	0.00050	U	0.00050	0.0010	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Cadmium	0.001	J	0.0010	0.002	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Calcium	139		0.050	0.10	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Chromium	0.190		0.0050	0.010	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Cobalt	0.028		0.0020	0.005	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Copper	0.101		0.0050	0.010	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Iron	13.1		0.020	0.05	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Magnesium	81.1		0.050	0.10	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Manganese	0.532		0.0050	0.010	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Nickel	0.148		0.0050	0.010	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Potassium	393		0.20	0.5	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Silver	0.0020	U	0.0020	0.005	mg/L	1	03/22/20 5:40 AM	03/24/20 9:38 AM
Sodium	1370		1.00	2.0	mg/L	10	03/22/20 5:40 AM	03/24/20 8:45 AM
Vanadium	0.051		0.0020	0.005	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM
Zinc	0.324		0.0050	0.010	mg/L	1	03/22/20 5:40 AM	03/23/20 11:14 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Apr-20*

CLIENT:	RUMPKE SANITARY LANDFILL	**Client Sample ID:**	Leachate
Lab Order:	G2003A24		
Project:	RSL - Annual Leachate Event	**Collection Date:**	3/17/2020 11:50:00 AM
Lab ID:	G2003A24-001	**Sampled By:**	Eagon & Associates
Matrix:	LEACHATE	**DateReceived:**	3/18/2020 2:03:50 PM

Analyses	Result	Q	MDL	PQL	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS			Analyst: **JEK**				**EPA 3010 A**	**EPA 6020 B**
Antimony	12.2		1.50	3.0	µg/L	3	03/22/20 5:40 AM	03/24/20 2:23 PM
Arsenic	94.0		1.50	3.0	µg/L	3	03/22/20 5:40 AM	04/01/20 11:40 AM
Lead	21.7		0.60	3.0	µg/L	3	03/22/20 5:40 AM	03/24/20 2:23 PM
Selenium	1.50	U	1.50	3.0	µg/L	3	03/22/20 5:40 AM	04/01/20 1:10 PM
Thallium	0.30	U	0.30	0.6	µg/L	3	03/22/20 5:40 AM	03/24/20 2:23 PM
PCB ANALYSIS			Analyst: **ACG**				**EPA 3535A**	**EPA 8082 A**
PCB 1016	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
PCB 1221	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
PCB 1232	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
PCB 1242	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
PCB 1248	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
PCB 1254	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
PCB 1260	1.0	U	1.0	2.0	µg/L	5	03/20/20 7:30 AM	03/20/20 10:00 PM
Surr: Decachlorobiphenyl	12.2		0	10-110	%REC	5	03/20/20 7:30 AM	03/20/20 10:00 PM
Surr: Tetrachloro-m-xylene	33.1		0	15.2-105	%REC	5	03/20/20 7:30 AM	03/20/20 10:00 PM

NOTES:

D4 - Sample was diluted in the extraction steps due to marked matrix interferences.

VOLATILE ORGANIC COMPOUNDS			Analyst: **ACG**				**EPA 8011**	**EPA 8011**
1,2-Dibromo-3-chloropropane	0.010	U	0.010	0.04	µg/L	1	03/21/20 1:00 PM	03/26/20 12:10 AM
1,2-Dibromoethane	0.010	U	0.010	0.04	µg/L	1	03/21/20 1:00 PM	03/26/20 12:10 AM
Surr: 1,1,2,2-Tetrachloroethane	102		0	60-140	%REC	1	03/21/20 1:00 PM	03/26/20 12:10 AM
VOLATILE ORGANIC COMPOUNDS			Analyst: **MTM**					**EPA 8260B**
Acrylonitrile	2.00	U	2.00	5.00	µg/L	1		03/19/20 1:58 PM
pH	PASS		0		µg/L	1		03/19/20 1:58 PM
Surr: 1,2-Dichloroethane-d4	105		0	70-130	%REC	1		03/19/20 1:58 PM
Surr: 4-Bromofluorobenzene	99.1		0	70-130	%REC	1		03/19/20 1:58 PM
Surr: Dibromofluoromethane	97.0		0	70-130	%REC	1		03/19/20 1:58 PM
Surr: Toluene-d8	102		0	70-130	%REC	1		03/19/20 1:58 PM
VOLATILE ORGANIC COMPOUNDS			Analyst: **MTM**					**EPA 8260 D**
1,1,1,2-Tetrachloroethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,1,1-Trichloroethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,1,2,2-Tetrachloroethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,1,2-Trichloroethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,1-Dichloroethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,1-Dichloroethene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,2,3-Trichloropropane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,2-Dichlorobenzene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Apr-20*

CLIENT:	RUMPKE SANITARY LANDFILL	**Client Sample ID:**	Leachate
Lab Order:	G2003A24		
Project:	RSL - Annual Leachate Event	**Collection Date:**	3/17/2020 11:50:00 AM
Lab ID:	G2003A24-001	**Sampled By:**	Eagon & Associates
Matrix:	LEACHATE	**DateReceived:**	3/18/2020 2:03:50 PM

Analyses	Result	Q	MDL	PQL	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			Analyst: **MTM**					**EPA 8260 D**
1,2-Dichloroethane	0.6	J	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,2-Dichloropropane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
1,4-Dichlorobenzene	1.5		0.50	1.0	µg/L	1		03/19/20 1:58 PM
2-Hexanone	1.00	U	1.00	5.0	µg/L	1		03/19/20 1:58 PM
4-Methyl-2-Pentanone	21.3		0.50	1.0	µg/L	1		03/19/20 1:58 PM
Acetone	1490		250	500	µg/L	50		03/19/20 2:24 PM
Acrylonitrile	2.00	U	2.00	5.0	µg/L	1		03/19/20 1:58 PM
Benzene	2.6		0.50	1.0	µg/L	1		03/19/20 1:58 PM
Bromochloromethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Bromomethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Carbon Disulfide	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Carbon Tetrachloride	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Chlorobenzene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Chlorodibromomethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Chloroethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Chloromethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
cis-1,2-Dichloroethene	1.7		0.50	1.0	µg/L	1		03/19/20 1:58 PM
cis-1,3-Dichloropropene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Dibromomethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Dichlorobromomethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Ethylbenzene	6.3		0.50	1.0	µg/L	1		03/19/20 1:58 PM
Iodomethane	1.00	U	1.00	5.0	µg/L	1		03/19/20 1:58 PM
Methyl Ethyl Ketone	1860		50.0	250	µg/L	50		03/19/20 2:24 PM
Methylene Chloride	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Styrene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Tetrachloroethene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Toluene	19.2		0.50	1.0	µg/L	1		03/19/20 1:58 PM
trans-1,2-Dichloroethene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
trans-1,3-Dichloropropene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
trans-1,4-Dichloro-2-butene	1.00	U	1.00	2.0	µg/L	1		03/19/20 1:58 PM
Tribromomethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Trichloroethene	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Trichlorofluoromethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Trichloromethane	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Vinyl Acetate	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Vinyl Chloride	0.50	U	0.50	1.0	µg/L	1		03/19/20 1:58 PM
Total Xylene	14.1		1.00	2.0	µg/L	1		03/19/20 1:58 PM
Surr: 1,2-Dichloroethane-d4	105		0	70-130	%REC	1		03/19/20 1:58 PM
Surr: 4-Bromofluorobenzene	99.1		0	70-130	%REC	1		03/19/20 1:58 PM
Surr: Dibromofluoromethane	97.0		0	70-130	%REC	1		03/19/20 1:58 PM
Surr: Toluene-d8	102		0	70-130	%REC	1		03/19/20 1:58 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Apr-20*

CLIENT:	RUMPKE SANITARY LANDFILL	**Client Sample ID:**	Leachate
Lab Order:	G2003A24		
Project:	RSL - Annual Leachate Event	**Collection Date:**	3/17/2020 11:50:00 AM
Lab ID:	G2003A24-001	**Sampled By:**	Eagon & Associates
Matrix:	LEACHATE	**DateReceived:**	3/18/2020 2:03:50 PM

Analyses	Result	Q	MDL	PQL	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			Analyst: **MTM**					**EPA 8260 D**

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Apr-20*

CLIENT:	RUMPKE SANITARY LANDFILL	**Client Sample ID:**	Trip Blank
Lab Order:	G2003A24		
Project:	RSL - Annual Leachate Event	**Collection Date:**	3/18/2020 2:02:00 PM
Lab ID:	G2003A24-002	**Sampled By:**	Geochemical Testing
Matrix:	AQUEOUS	**DateReceived:**	3/18/2020 2:03:50 PM

Analyses	Result	Q	MDL	PQL	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			Analyst: **ACG**				**EPA 8011**	**EPA 8011**
1,2-Dibromo-3-chloropropane	0.010	U	0.010	0.04	µg/L	1	03/21/20 1:00 PM	03/26/20 1:00 AM
1,2-Dibromoethane	0.010	U	0.010	0.04	µg/L	1	03/21/20 1:00 PM	03/26/20 1:00 AM
Surr: 1,1,2,2-Tetrachloroethane	112		0	60-140	%REC	1	03/21/20 1:00 PM	03/26/20 1:00 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Geochemical Testing

Quality Assurance Project Report
Prepared for
RUMPKE SANITARY LANDFILL

4/2/2020

Signed: _____
Leslie Ann Nemeth
Project Manager

Signed: _____
David M. Glessner
Quality Assurance Coordinator

Geochemical Testing

Date: *02-Apr-20*

CLIENT: RUMPKE SANITARY LANDFILL
Project: RSL - Annual Leachate Event
Lab Order: G2003A24

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
G2003A24-001A	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001B	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001C	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001D	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001E	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001F	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001G	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-001H	Leachate		3/17/2020 11:50:00 AM	3/18/2020
G2003A24-002A	Trip Blank		3/18/2020 2:02:00 PM	3/18/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 9:35:00 AM**
Prep End Date: **3/19/2020 3:05:00 PM**

Prep Batch **175966** Prep Code: **MEPR6010_3010** Technician: **Kristy L Botteicher**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A37-001I	P-1	Groundwater	3/16/2020 5:29:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A38-001I	HP-2	Groundwater	3/17/2020 9:39:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-003D	MW-23S	Groundwater	3/17/2020 11:01:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-003DDUP		Aqueous	3/19/2020	50	50		1.000	3/19/2020	3/19/2020
G2003A44-003DMS		Aqueous	3/19/2020	50	50		1.000	3/19/2020	3/19/2020
G2003A44-004D	MW-24D	Groundwater	3/17/2020 12:56:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-005D	MW-24S	Groundwater	3/17/2020 12:31:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-006D	MW-25D	Groundwater	3/17/2020 2:00:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-007D	MW-25S	Groundwater	3/17/2020 2:34:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-008D	P-21S	Groundwater	3/17/2020 3:45:00 PM	50	50		1.000	3/19/2020	3/19/2020
LCS1-175966		Aqueous	3/19/2020	50	50		1.000	3/19/2020	3/19/2020
PB-175966		Aqueous	3/19/2020	50	50		1.000	3/19/2020	3/19/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 9:35:00 AM**
Prep End Date: **3/19/2020 3:05:00 PM**

Prep Factor Units: **mL /**

Prep Batch **175967** Prep Code: **MEPR6020_3010** Technician: **Kristy L Botteicher**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A37-001I	P-1	Groundwater	3/16/2020 5:29:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A38-001I	HP-2	Groundwater	3/17/2020 9:39:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-003D	MW-23S	Groundwater	3/17/2020 11:01:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-003DDUP			3/19/2020	50	50		1.000	3/19/2020	3/19/2020
G2003A44-004D	MW-24D	Groundwater	3/17/2020 12:56:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-005D	MW-24S	Groundwater	3/17/2020 12:31:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-006D	MW-25D	Groundwater	3/17/2020 2:00:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-007D	MW-25S	Groundwater	3/17/2020 2:34:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-008D	P-21S	Groundwater	3/17/2020 3:45:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-008DMS			3/19/2020	50	50		1.000	3/19/2020	3/19/2020
LCS2-175967			3/19/2020	50	50		1.000	3/19/2020	3/19/2020
PB-175967			3/19/2020	50	50		1.000	3/19/2020	3/19/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/20/2020 5:30:19 AM**
Prep End Date: **3/20/2020 10:31:43 AM**

Prep Factor Units: **mL / mL**

Prep Batch **176041** Prep Code: **ORPR_HERB_SM** Technician: **Page F. Mustello-Bryant**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003942-001B	SWN Brown	Solid	3/16/2020 11:00:00 AM	10	40		4.000	3/20/2020	3/20/2020
G2003942-001BMS		Aqueous	3/20/2020	10	40		4.000	3/20/2020	3/20/2020
G2003942-001BMSD		Aqueous	3/20/2020	10	40		4.000	3/20/2020	3/20/2020
G2003A25-001D	Rep-1	Groundwater	3/17/2020 9:39:00 AM	40	40		1.000	3/20/2020	3/20/2020
G2003A26-001D	P-15S	Groundwater	3/17/2020 11:50:00 AM	40	40		1.000	3/20/2020	3/20/2020
G2003A31-001D	MW-4I	Groundwater	3/17/2020 3:20:00 PM	40	40		1.000	3/20/2020	3/20/2020
G2003A32-001D	MW-10	Groundwater	3/17/2020 12:10:00 PM	40	40		1.000	3/20/2020	3/20/2020
G2003A33-001D	P-10	Groundwater	3/17/2020 10:49:00 AM	40	40		1.000	3/20/2020	3/20/2020
G2003A36-001D	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	40	40		1.000	3/20/2020	3/20/2020
G2003A37-001D	P-1	Groundwater	3/16/2020 5:29:00 PM	40	40		1.000	3/20/2020	3/20/2020
G2003A38-001D	HP-2	Groundwater	3/17/2020 9:39:00 AM	40	40		1.000	3/20/2020	3/20/2020
LCS-176041		Aqueous	3/20/2020	40	40		1.000	3/20/2020	3/20/2020
MBLK-176041		Aqueous	3/20/2020	40	40		1.000	3/20/2020	3/20/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 12:10:00 AM**
Prep End Date: **3/19/2020 12:50:00 AM**

Prep Factor Units: **mL / mL**

Prep Batch **175878** Prep Code: **INPR_IC** Technician: **Michael B. Galish**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
CB-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
G2003819-001D	SSL-GWC-2	Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
G2003819-002C	SSL-GWC-3R	Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
G2003819-004C	SSL-GWC-12	Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
G2003819-007D	SSL-GWC-1	Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
G2003822-001D	SSL-GWC-11	Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
G2003977-002D	NPDES 002	Waste Water	3/17/2020 10:25:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003979-001B	Weekly DI	Aqueous	3/18/2020 9:10:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003979-001BDUP		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003979-001BLFM		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003980-001E	Leachate/Marcellus	Leachate	3/17/2020 11:21:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003981-001E	MW-18	Groundwater	3/16/2020 4:51:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003981-002E	MW-11	Groundwater	3/16/2020 5:26:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003981-003E	MW-9	Groundwater	3/16/2020 6:49:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003984-001E	Effluent Comp	Leachate	3/17/2020 7:30:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003984-001EDUP		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003984-001ELFM		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003997-001G	Shank	Groundwater	3/17/2020 9:09:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003997-002G	Rt 696	Groundwater	3/17/2020 9:41:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A04-001C	Basin T West Main Swale	Storm Water	3/17/2020 8:00:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A14-001C	MP-9	Groundwater	3/17/2020 8:07:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A14-002D	MP-8R	Groundwater	3/17/2020 9:20:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A16-001E	MW-12	Groundwater	3/16/2020 6:01:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A16-002E	MW-15	Groundwater	3/16/2020 6:25:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A16-003E	Field Blank	Aqueous	3/16/2020 6:55:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A19-005B	PERD03	Groundwater	3/17/2020 2:17:00 PM	100	100		1.000	3/19/2020	3/19/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 12:10:00 AM**
Prep End Date: **3/19/2020 12:50:00 AM**

Prep Factor Units: **mL / mL**

Prep Batch **175878** Prep Code: **INPR_IC** Technician: **Michael B. Galish**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A19-006B	PERD02	Groundwater	3/17/2020 3:13:00 PM	100	100		1.000	3/19/2020	3/19/2020
G2003A22-005D	MW-20	Groundwater	3/17/2020 10:50:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A22-005DDUP		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003A22-005DLFM		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003A22-006D	MW-21	Groundwater	3/17/2020 11:40:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A22-007D	MW-15	Groundwater	3/17/2020 12:30:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A22-008D	MW-5A	Groundwater	3/17/2020 1:15:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A22-009D	SW-3	Surface Water	3/17/2020 1:25:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A22-010D	MW-12R	Groundwater	3/17/2020 2:10:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A22-011D	SW-1	Surface Water	3/17/2020 2:20:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A23-001D	Leachate	Groundwater	3/17/2020 11:00:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A27-002A	Roytown 004	Surface Water	3/17/2020 10:25:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-003A	Roytown 001	Surface Water	3/17/2020 10:35:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-004A	Roytown 002	Surface Water	3/17/2020 10:45:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-004ADUP		Aqueous	3/19/2020	100	100		1.000	3/19/2020	3/19/2020
G2003A27-004ALFM		Aqueous	3/19/2020	100	100		1.000	3/19/2020	3/19/2020
G2003A27-005A	Milford3 001	Surface Water	3/18/2020 7:50:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-006A	Acosta Deep 003	Surface Water	3/18/2020 11:20:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-007A	Quecreek 003	Surface Water	3/18/2020 11:40:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-008A	Quecreek 002	Surface Water	3/18/2020 11:50:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A27-009A	Quecreek 001	Surface Water	3/18/2020 11:55:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A28-001B	Wm Penn Road 0211	Potable Water	3/17/2020 3:00:00 PM	100	100		1.000	3/18/2020	3/18/2020
G2003A34-001C	LEI	Leachate	3/18/2020 11:45:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A35-001B	Fox Twp Reservoir	Leachate	3/18/2020 1:30:00 PM	100	100		1.000	3/19/2020	3/19/2020
G2003A36-001E	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	100	100		1.000	3/19/2020	3/19/2020
G2003A37-001E	P-1	Groundwater	3/16/2020 5:29:00 PM	100	100		1.000	3/19/2020	3/19/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 12:10:00 AM**
Prep End Date: **3/19/2020 12:50:00 AM**

Prep Batch **175878** Prep Code: **INPR_IC** Technician: **Michael B. Galish**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A41-001A	Cooling Tower	Waste Water	3/18/2020 8:00:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A41-002A	Reservoir	Aqueous	3/18/2020 7:50:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A41-002ADUP		Aqueous	3/19/2020	100	100		1.000	3/19/2020	3/19/2020
G2003A41-002ALFM		Aqueous	3/19/2020	100	100		1.000	3/19/2020	3/19/2020
G2003A52-010A	Outfall 004	Aqueous	3/16/2020 8:45:00 AM	100	100		1.000	3/19/2020	3/19/2020
G2003A53-001C	LSI-2	Groundwater	3/18/2020 8:10:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A53-001CDUP		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003A53-001CLFM		Aqueous	3/18/2020	100	100		1.000	3/18/2020	3/18/2020
G2003A53-002C	MW-102R	Groundwater	3/18/2020 8:00:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A53-003C	MW-104R	Groundwater	3/18/2020 8:50:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A53-004C	MW-105	Groundwater	3/18/2020 10:18:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A53-005C	MW-103	Groundwater	3/18/2020 10:18:00 AM	100	100		1.000	3/18/2020	3/18/2020
G2003A53-006C	MW-107	Groundwater	3/18/2020 12:38:00 PM	100	100		1.000	3/18/2020	3/18/2020
HRQC 1000-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
HRQC-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
IPC-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
LFB-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
LFB2-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
LLOQ-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
LRB-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020
QCS-175878		Aqueous	3/17/2020	100	100		1.000	3/17/2020	3/17/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/23/2020 9:48:00 AM**
Prep End Date: **3/23/2020 1:25:00 PM**

Prep Batch **176147** Prep Code: **INPR_NO3** Technician: **Alberto M. Vanhecke**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
Blank-176147		Aqueous	3/23/2020	50	50		1.000	3/23/2020	3/23/2020
G2003A32-001B	MW-10	Groundwater	3/17/2020 12:10:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A33-001B	P-10	Groundwater	3/17/2020 10:49:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A36-001B	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A37-001B	P-1	Groundwater	3/16/2020 5:29:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A38-001B	HP-2	Groundwater	3/17/2020 9:39:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-001B	MW-16	Groundwater	3/17/2020 10:05:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-002B	MW-23D	Groundwater	3/17/2020 11:22:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-003B	MW-23S	Groundwater	3/17/2020 11:01:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-004B	MW-24D	Groundwater	3/17/2020 12:56:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-005B	MW-24S	Groundwater	3/17/2020 12:31:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-006B	MW-25D	Groundwater	3/17/2020 2:00:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-007B	MW-25S	Groundwater	3/17/2020 2:34:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A44-008B	P-21S	Groundwater	3/17/2020 3:45:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A52-011A	Outfall 006	Aqueous	3/16/2020 9:15:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A74-001A	Outfall 001	Surface Water	3/18/2020 7:10:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A88-001B	LCZ	Waste Water	3/18/2020 2:30:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A91-001B	LIT	Leachate	3/18/2020 1:30:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A91-002B	Fulkroad Lndfll Toe Drain	Leachate	3/18/2020 1:55:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A93-001A	PUH19	Groundwater	3/18/2020 1:19:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A93-002A	PUH19S	Groundwater	3/18/2020 2:19:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A93-003A	PDE04	Groundwater	3/18/2020 11:02:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A93-004A	PDG30	Groundwater	3/18/2020 1:02:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A93-005A	PDG29	Groundwater	3/18/2020 1:34:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A94-001B	HP-3IRNR	Groundwater	3/18/2020 11:37:00 AM	50	50		1.000	3/23/2020	3/23/2020
G2003A94-002B	HP-3DR	Groundwater	3/18/2020 12:28:00 PM	50	50		1.000	3/23/2020	3/23/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/23/2020 9:48:00 AM**
Prep End Date: **3/23/2020 1:25:00 PM**

Prep Batch **176147** Prep Code: **INPR_NO3** Technician: **Alberto M. Vanhecke**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A94-003B	Rep-2	Groundwater	3/18/2020 12:28:00 PM	50	50		1.000	3/23/2020	3/23/2020
G2003A94-004B	MW-11	Groundwater	3/18/2020 9:12:00 AM	50	50		1.000	3/23/2020	3/23/2020
LCS-176147		Aqueous	3/23/2020	50	50		1.000	3/23/2020	3/23/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/20/2020 7:30:49 AM**
Prep End Date: **3/20/2020 1:36:56 PM**

Prep Batch **176032** Prep Code: **ORPR_PEST_SPE** Technician: **Hayley B. Baer**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003942-001B	SWN Brown	Solid	3/16/2020 11:00:00 AM	100	10		0.100	3/20/2020	3/20/2020
G2003942-001BMS		Aqueous	3/20/2020	100	10		0.100	3/20/2020	3/20/2020
G2003942-001BMSD		Aqueous	3/20/2020	100	10		0.100	3/20/2020	3/20/2020
G2003984-001H	Effluent Comp	Leachate	3/17/2020 7:30:00 AM	910	10		0.011	3/20/2020	3/20/2020
G2003984-001HMS		Aqueous	3/20/2020	1000	10		0.010	3/20/2020	3/20/2020
G2003992-001A	Outfall 001 Comp.	Waste Water	3/17/2020 12:35:00 AM	1000	5		0.005	3/20/2020	3/20/2020
G2003A25-001F	Rep-1	Groundwater	3/17/2020 9:39:00 AM	1000	10		0.010	3/20/2020	3/20/2020
G2003A26-001F	P-15S	Groundwater	3/17/2020 11:50:00 AM	1000	10		0.010	3/20/2020	3/20/2020
G2003A31-001F	MW-4I	Groundwater	3/17/2020 3:20:00 PM	1000	10		0.010	3/20/2020	3/20/2020
G2003A32-001F	MW-10	Groundwater	3/17/2020 12:10:00 PM	1000	10		0.010	3/20/2020	3/20/2020
G2003A33-001F	P-10	Groundwater	3/17/2020 10:49:00 AM	1000	10		0.010	3/20/2020	3/20/2020
G2003A36-001F	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	1000	10		0.010	3/20/2020	3/20/2020
G2003A37-001F	P-1	Groundwater	3/16/2020 5:29:00 PM	1000	10		0.010	3/20/2020	3/20/2020
G2003A38-001F	HP-2	Groundwater	3/17/2020 9:39:00 AM	1000	10		0.010	3/20/2020	3/20/2020
LCS-176032		Aqueous	3/20/2020	1000	10		0.010	3/20/2020	3/20/2020
LCSD-176032		Aqueous	3/20/2020	1000	10		0.010	3/20/2020	3/20/2020
MBLK-176032		Aqueous	3/20/2020	1000	10		0.010	3/20/2020	3/20/2020
TOX LCS-176032		Aqueous	3/20/2020	1000	10		0.010	3/20/2020	3/20/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 7:00:10 AM**
Prep End Date: **3/19/2020 2:17:53 PM**

Prep Factor Units: **mL / mL**

Prep Batch **175951** Prep Code: **ORPR_SPE_SEMI** Technician: **Hayley B. Baer**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003838-001B	Horseheads Spill Liquid	Oil	3/10/2020 2:00:00 PM	50	1		0.020	3/19/2020	3/19/2020
G2003942-001B	SWN Brown	Solid	3/16/2020 11:00:00 AM	50	1		0.020	3/19/2020	3/19/2020
G2003943-001B	Oily Gravel	Solid	3/16/2020 10:00:00 AM	50	1		0.020	3/19/2020	3/19/2020
G2003944-001B	Desiccant	Solid	3/16/2020 10:00:00 AM	50	1		0.020	3/19/2020	3/19/2020
G2003946-001B	Waste Water Tank	Waste Water	3/16/2020 10:00:00 AM	50	1		0.020	3/19/2020	3/19/2020
G2003946-001BMS		Aqueous	3/19/2020	50	1		0.020	3/19/2020	3/19/2020
G2003946-001BMSD		Aqueous	3/19/2020	50	1		0.020	3/19/2020	3/19/2020
G2003947-001B	Unit 3 Bottle Fluid	Oil	3/16/2020 10:20:00 AM	50	1		0.020	3/19/2020	3/19/2020
G2003960-001H	Outfall 001	Waste Water	3/17/2020 1:36:00 PM	920	1		0.001	3/19/2020	3/19/2020
G2003960-001HMS		Aqueous	3/19/2020	960	1		0.001	3/19/2020	3/19/2020
G2003976-001A	TCLP 1 Blank	Solid	3/17/2020 12:00:00 PM	50	1		0.020	3/19/2020	3/19/2020
G2003A05-001D	Effluent	Waste Water	3/17/2020 4:23:00 AM	970	1		0.001	3/19/2020	3/19/2020
G2003A25-001G	Rep-1	Groundwater	3/17/2020 9:39:00 AM	1000	1		0.001	3/19/2020	3/19/2020
G2003A26-001G	P-15S	Groundwater	3/17/2020 11:50:00 AM	1000	1		0.001	3/19/2020	3/19/2020
G2003A31-001G	MW-4I	Groundwater	3/17/2020 3:20:00 PM	1000	1		0.001	3/19/2020	3/19/2020
G2003A32-001G	MW-10	Groundwater	3/17/2020 12:10:00 PM	1000	1		0.001	3/19/2020	3/19/2020
G2003A33-001G	P-10	Groundwater	3/17/2020 10:49:00 AM	1000	1		0.001	3/19/2020	3/19/2020
G2003A36-001G	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	1000	1		0.001	3/19/2020	3/19/2020
G2003A37-001G	P-1	Groundwater	3/16/2020 5:29:00 PM	1000	1		0.001	3/19/2020	3/19/2020
G2003A38-001G	HP-2	Groundwater	3/17/2020 9:39:00 AM	1000	1		0.001	3/19/2020	3/19/2020
LCS-175951		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020
LCS3-175951		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020
LCS4-175951		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020
LCSD-175951		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020
LLOQ Benz 10-17595		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020
LLOQ Benz 5-175951		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 7:00:10 AM**
Prep End Date: **3/19/2020 2:17:53 PM**

Prep Factor Units: **mL / mL**

Prep Batch **175951** Prep Code: **ORPR_SPE_SEMI** Technician: **Hayley B. Baer**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
LLOQ Benz 7.5-1759		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020
MBLK-175951		Aqueous	3/19/2020	1000	1		0.001	3/19/2020	3/19/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/24/2020 4:45:00 PM**
Prep End Date: **3/24/2020 6:00:00 PM**

Prep Batch **176231** Prep Code: **INPR_SO4** Technician: **Christina M. Lehman**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
CCB 2-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCB 3-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCB 4-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCB 5-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCB-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCV 2-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCV 3-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCV 4-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCV 5-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
CCV-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003877-001C	002	Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003955-001C	15	Surface Water	3/17/2020 8:20:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-002C	17	Surface Water	3/17/2020 9:35:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-003C	24	Surface Water	3/17/2020 8:45:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-004C	200	Surface Water	3/17/2020 9:10:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-005C	201	Surface Water	3/17/2020 9:50:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-006C	202	Surface Water	3/17/2020 10:30:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-007C	203	Surface Water	3/17/2020 10:05:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-008C	204	Surface Water	3/17/2020 9:20:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003955-008CMS		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003955-008CMSD		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A24-001D	Leachate	Leachate	3/17/2020 11:50:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A25-001E	Rep-1	Groundwater	3/17/2020 9:39:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A25-001EMS		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A25-001EMSD		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A26-001E	P-15S	Groundwater	3/17/2020 11:50:00 AM	50	50		1.000	3/24/2020	3/24/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/24/2020 4:45:00 PM**
Prep End Date: **3/24/2020 6:00:00 PM**

Prep Batch **176231** Prep Code: **INPR_SO4** Technician: **Christina M. Lehman**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A31-001E	MW-4I	Groundwater	3/17/2020 3:20:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A32-001E	MW-10	Groundwater	3/17/2020 12:10:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A33-001E	P-10	Groundwater	3/17/2020 10:49:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A36-001E	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A37-001E	P-1	Groundwater	3/16/2020 5:29:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A38-001E	HP-2	Groundwater	3/17/2020 9:39:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-001C	MW-16	Groundwater	3/17/2020 10:05:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-002C	MW-23D	Groundwater	3/17/2020 11:22:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-003C	MW-23S	Groundwater	3/17/2020 11:01:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-004C	MW-24D	Groundwater	3/17/2020 12:56:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-004CMS		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A44-004CMSD		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A44-005C	MW-24S	Groundwater	3/17/2020 12:31:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-006C	MW-25D	Groundwater	3/17/2020 2:00:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-007C	MW-25S	Groundwater	3/17/2020 2:34:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A44-008C	P-21S	Groundwater	3/17/2020 3:45:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A66-001C	002	Storm Water	3/18/2020 4:15:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A66-002C	004	Storm Water	3/18/2020 4:55:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A67-001C	002	Groundwater	3/17/2020 12:30:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A67-002C	ARP	Storm Water	3/17/2020 12:50:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-001C	SW3	Surface Water	3/18/2020 9:35:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-001CMS		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A68-001CMSD		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
G2003A68-002C	GW4	Groundwater	3/18/2020 10:20:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-003C	SW8	Surface Water	3/18/2020 4:45:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-004C	SW9	Surface Water	3/18/2020 4:35:00 PM	50	50		1.000	3/24/2020	3/24/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/24/2020 4:45:00 PM**
Prep End Date: **3/24/2020 6:00:00 PM**

Prep Batch **176231** Prep Code: **INPR_SO4** Technician: **Christina M. Lehman**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
G2003A68-005C	SW10	Surface Water	3/18/2020 4:25:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-006C	SW17	Surface Water	3/18/2020 8:50:00 AM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-007C	SW4	Surface Water	3/18/2020 1:35:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-008C	SW5	Surface Water	3/18/2020 1:40:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-009C	4	Surface Water	3/18/2020 12:10:00 PM	50	50		1.000	3/24/2020	3/24/2020
G2003A68-010C	8	Surface Water	3/18/2020 12:30:00 PM	50	50		1.000	3/24/2020	3/24/2020
LCS 2-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
LCS 3-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
LCS 4-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
LCS 5-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020
LCS-176231		Aqueous	3/24/2020	50	50		1.000	3/24/2020	3/24/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/20/2020 10:30:00 AM**
Prep End Date: **3/20/2020 11:00:00 AM**

Prep Batch **176043** Prep Code: **INPR_SULFIDE** Technician: **Brandon E. Herman**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
Blank-176043		Aqueous	3/20/2020	100	100		1.000	3/20/2020	3/20/2020
CCV-176043		Aqueous	3/20/2020	100	100		1.000	3/20/2020	3/20/2020
G2003984-001J	Effluent Comp	Leachate	3/17/2020 7:30:00 AM	100	100		1.000	3/20/2020	3/20/2020
G2003986-001A	Influent	Waste Water	3/17/2020 9:00:00 AM	100	100		1.000	3/20/2020	3/20/2020
G2003986-002A	Effluent	Waste Water	3/17/2020 9:00:00 AM	100	100		1.000	3/20/2020	3/20/2020
G2003A25-001H	Rep-1	Groundwater	3/17/2020 9:39:00 AM	100	100		1.000	3/20/2020	3/20/2020
G2003A26-001H	P-15S	Groundwater	3/17/2020 11:50:00 AM	100	100		1.000	3/20/2020	3/20/2020
G2003A31-001H	MW-4I	Groundwater	3/17/2020 3:20:00 PM	100	100		1.000	3/20/2020	3/20/2020
G2003A32-001H	MW-10	Groundwater	3/17/2020 12:10:00 PM	100	100		1.000	3/20/2020	3/20/2020
G2003A33-001H	P-10	Groundwater	3/17/2020 10:49:00 AM	100	100		1.000	3/20/2020	3/20/2020
G2003A36-001H	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	100	100		1.000	3/20/2020	3/20/2020
G2003A37-001H	P-1	Groundwater	3/16/2020 5:29:00 PM	100	100		1.000	3/20/2020	3/20/2020
G2003A37-001HLFM		Aqueous	3/20/2020	100	100		1.000	3/20/2020	3/20/2020
G2003A37-001HLFM		Aqueous	3/20/2020	100	100		1.000	3/20/2020	3/20/2020
G2003A38-001H	HP-2	Groundwater	3/17/2020 9:39:00 AM	100	100		1.000	3/20/2020	3/20/2020
LCS-176043		Aqueous	3/20/2020	100	100		1.000	3/20/2020	3/20/2020
LOQ-176043		Aqueous	3/20/2020	100	100		1.000	3/20/2020	3/20/2020

Geochemical Testing

PREP BATCH REPORT

Prep Start Date: **3/19/2020 12:30:00 PM**
Prep End Date: **3/19/2020 12:35:00 PM**

Prep Batch **176009** Prep Code: **WATERPR_TDS** Technician: **Glenn M. Giles**

Prep Factor Units: **mL / mL**

Sample ID	ClientSampID	Matrix	CollectionDate	SampAmt	Fin Vol	PQual	factor	PrepStart	PrepEnd
Blank-176009			3/19/2020	50	50		1.000	3/19/2020	3/19/2020
G2003A25-001A	Rep-1	Groundwater	3/17/2020 9:39:00 AM	10	50		5.000	3/19/2020	3/19/2020
G2003A25-001ADUP			3/19/2020	10	50		5.000	3/19/2020	3/19/2020
G2003A26-001A	P-15S	Groundwater	3/17/2020 11:50:00 AM	10	50		5.000	3/19/2020	3/19/2020
G2003A31-001A	MW-4I	Groundwater	3/17/2020 3:20:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A32-001A	MW-10	Groundwater	3/17/2020 12:10:00 PM	10	50		5.000	3/19/2020	3/19/2020
G2003A33-001A	P-10	Groundwater	3/17/2020 10:49:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A35-001D	Fox Twp Reservoir	Leachate	3/18/2020 1:30:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A36-001A	HSW-4S	Groundwater	3/16/2020 4:14:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A37-001A	P-1	Groundwater	3/16/2020 5:29:00 PM	10	50		5.000	3/19/2020	3/19/2020
G2003A38-001A	HP-2	Groundwater	3/17/2020 9:39:00 AM	10	50		5.000	3/19/2020	3/19/2020
G2003A39-001A	SP-1	Surface Water	3/18/2020 11:15:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A39-001ADUP			3/19/2020	50	50		1.000	3/19/2020	3/19/2020
G2003A41-003B	RO Unit	Waste Water	3/18/2020 7:40:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-001A	MW-16	Groundwater	3/17/2020 10:05:00 AM	10	50		5.000	3/19/2020	3/19/2020
G2003A44-002A	MW-23D	Groundwater	3/17/2020 11:22:00 AM	10	50		5.000	3/19/2020	3/19/2020
G2003A44-003A	MW-23S	Groundwater	3/17/2020 11:01:00 AM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-004A	MW-24D	Groundwater	3/17/2020 12:56:00 PM	10	50		5.000	3/19/2020	3/19/2020
G2003A44-005A	MW-24S	Groundwater	3/17/2020 12:31:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-006A	MW-25D	Groundwater	3/17/2020 2:00:00 PM	10	50		5.000	3/19/2020	3/19/2020
G2003A44-007A	MW-25S	Groundwater	3/17/2020 2:34:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A44-008A	P-21S	Groundwater	3/17/2020 3:45:00 PM	50	50		1.000	3/19/2020	3/19/2020
G2003A52-001D	Outfall 007	Aqueous	3/18/2020 7:00:00 AM	10	50		5.000	3/19/2020	3/19/2020
LCS-176009			3/19/2020	50	50		1.000	3/19/2020	3/19/2020

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **BLANK** SampType: **MBLK** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	< 1.00	1.00									
1,1,1-Trichloroethane	< 1.00	1.00									
1,1,2,2-Tetrachloroethane	< 1.00	1.00									
1,1,2-Trichloroethane	< 1.00	1.00									
1,1-Dichloroethane	< 1.00	1.00									
1,1-Dichloroethene	< 1.00	1.00									
1,1-Dichloropropene	< 1.00	1.00									
1,2,3-Trichlorobenzene	< 5.00	5.00									
1,2,3-Trichloropropane	< 1.00	1.00									
1,2,4-Trichlorobenzene	< 1.00	1.00									
1,2,4-Trimethylbenzene	< 1.00	1.00									
1,2-Dibromo-3-chloropropane	< 5.00	5.00									
1,2-Dibromoethane	< 1.00	1.00									
1,2-Dichlorobenzene	< 1.00	1.00									
1,2-Dichloroethane	< 1.00	1.00									
1,2-Dichloropropane	< 1.00	1.00									
1,3,5-Trimethylbenzene	< 1.00	1.00									
1,3-Dichlorobenzene	< 1.00	1.00									
1,3-Dichloropropane	< 1.00	1.00									
1,4-Dichlorobenzene	< 1.00	1.00									
1,4-Dioxane	< 50.0	50.0									
1-Propanol	< 100	100									
2,2-Dichloropropane	< 1.00	1.00									
2-Butanone	< 5.00	5.00									
2-chloro-1,3-butadiene	< 1.00	1.00									
2-Chlorotoluene	< 1.00	1.00									
2-Hexanone	< 5.00	5.00									
2-Methyl-1-propanol	< 50.0	50.0									
2-Methylnaphthalene	< 20.0	20.0									
2-Nitropropane	< 1.00	1.00									
2-Propanol	< 100	100									
3-Chloro-1-Propene	< 1.00	1.00									
4-Chlorotoluene	< 1.00	1.00									
4-Isopropyltoluene	< 1.00	1.00									

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **BLANK** SampType: **MBLK** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Methyl-2-Pentanone	< 1.00	1.00									
Acetone	< 10.0	10.0									
Acetonitrile	< 20.0	20.0									
Allyl chloride	< 1.00	1.00									
Benzene	< 1.00	1.00									
Benzyl chloride	< 5.00	5.00									
Bromobenzene	< 1.00	1.00									
Bromochloromethane	< 1.00	1.00									
Bromodichloromethane	< 1.00	1.00									
Bromoform	< 1.00	1.00									
Bromomethane	< 1.00	1.00									
Carbon Disulfide	< 1.00	1.00									
Carbon Tetrachloride	< 1.00	1.00									
Chlorobenzene	< 1.00	1.00									
Chlorodibromomethane	< 1.00	1.00									
Chloroethane	< 1.00	1.00									
Chloroform	< 1.00	1.00									
Chloromethane	< 1.00	1.00									
Chloroprene	< 1.00	1.00									
cis-1,2-Dichloroethene	< 1.00	1.00									
cis-1,3-Dichloropropene	< 1.00	1.00									
Cyclohexane	< 5.00	5.00									
Dibromomethane	< 1.00	1.00									
Dichlorobromomethane	< 1.00	1.00									
Dichlorodifluoromethane	< 1.00	1.00									
Dichlorofluoromethane	< 1.00	1.00									
Diethyl Ether	< 5.00	5.00									
Diisopropyl ether	< 1.00	1.00									
Ethyl acetate	< 5.00	5.00									
Ethyl Methacrylate	< 1.00	1.00									
Ethylbenzene	< 1.00	1.00									
Hexachlorobutadiene	< 5.00	5.00									
Hexachloroethane	< 5.00	5.00									
Iodomethane	< 5.00	5.00									
Isobutyl alcohol	< 50.0	50.0									
Isopropylbenzene	< 1.00	1.00									

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **BLANK** SampType: **MBLK** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	< 2.00	2.00									
Methacrylonitrile	< 10.0	10.0									
Methyl Ethyl Ketone	< 5.00	5.00									
Methyl methacrylate	< 1.00	1.00									
Methylcyclohexane	< 1.00	1.00									
Methylene Chloride	< 1.00	1.00									
Methyl-tert-butyl ether	< 1.00	1.00									
Naphthalene	< 5.00	5.00									
n-Butanol	< 20.0	20.0									
n-Butylbenzene	< 1.00	1.00									
n-Propylbenzene	< 1.00	1.00									
o-Xylene	< 1.00	1.00									
Pentachloroethane	< 2.00	2.00									
p-Isopropyltoluene	< 1.00	1.00									
Propionitrile	< 10.0	10.0									
sec-Butylbenzene	< 1.00	1.00									
Styrene	< 1.00	1.00									
tert-Butylbenzene	< 1.00	1.00									
Tetrachloroethene	< 1.00	1.00									
Tetrahydrofuran	< 5.00	5.00									
Toluene	< 1.00	1.00									
Total Xylene	< 2.00	2.00									
trans-1,2-Dichloroethene	< 1.00	1.00									
trans-1,3-Dichloropropene	< 1.00	1.00									
trans-1,4-Dichloro-2-butene	< 2.00	2.00									
Tribromomethane	< 1.00	1.00									
Trichloroethene	< 1.00	1.00									
Trichlorofluoromethane	< 1.00	1.00									
Trichloromethane	< 1.00	1.00									
Vinyl Acetate	< 1.00	1.00									
Vinyl Chloride	< 1.00	1.00									
Surr: 1,2-Dichloroethane-d4	29.07	0	30	0	96.9	70	130				
Surr: 4-Bromofluorobenzene	29.15	0	30	0	97.2	70	130				
Surr: Dibromofluoromethane	28.19	0	30	0	94.0	70	130				
Surr: Toluene-d8	30.42	0	30	0	101	70	130				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **20 PPB LCS** SampType: **LCS** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	19.64	1.00	20	0	98.2	81	125				
1,1,1-Trichloroethane	18.23	1.00	20	0	91.1	71	125				
1,1,2,2-Tetrachloroethane	18.78	1.00	20	0	93.9	80	116				
1,1,2-Trichloroethane	18.82	1.00	20	0	94.1	83	126				
1,1-Dichloroethane	17.97	1.00	20	0	89.8	73	122				
1,1-Dichloroethene	17.80	1.00	20	0	89.0	74	121				
1,1-Dichloropropene	18.04	1.00	20	0	90.2	74	120				
1,2,3-Trichlorobenzene	17.31	5.00	20	0	86.5	61	136				
1,2,3-Trichloropropane	18.12	1.00	20	0	90.6	77	118				
1,2,4-Trichlorobenzene	17.31	1.00	20	0	86.5	68	126				
1,2,4-Trimethylbenzene	19.01	1.00	20	0	95.0	78	128				
1,2-Dibromo-3-chloropropane	16.91	5.00	20	0	84.6	64	126				
1,2-Dibromoethane	18.96	1.00	20	0	94.8	83	119				
1,2-Dichlorobenzene	18.83	1.00	20	0	94.2	85	119				
1,2-Dichloroethane	18.58	1.00	20	0	92.9	72	123				
1,2-Dichloropropane	18.94	1.00	20	0	94.7	83	122				
1,3,5-Trimethylbenzene	19.32	1.00	20	0	96.6	85	119				
1,3-Dichlorobenzene	18.79	1.00	20	0	94.0	82	119				
1,3-Dichloropropane	18.52	1.00	20	0	92.6	80	118				
1,4-Dichlorobenzene	19.12	1.00	20	0	95.6	83	120				
1,4-Dioxane	189.4	50.0	200	0	94.7	39	186				
1-Propanol	185.3	100	200	0	92.7	36	170				
2,2-Dichloropropane	13.16	1.00	20	0	65.8	32	157				
2-Butanone	18.01	5.00	20	0	90.1	61	125				
2-chloro-1,3-butadiene	18.31	1.00	20	0	91.5	70	124				
2-Chlorotoluene	19.00	1.00	20	0	95.0	82	123				
2-Hexanone	17.55	5.00	20	0	87.8	58	132				
2-Methyl-1-propanol	150.1	50.0	200	0	75.1	29	163				
2-Methylnaphthalene	< 20.0	20.0	20	0	83.6	41	143				
2-Nitropropane	16.86	1.00	20	0	84.3	60	138				
2-Propanol	180.2	100	200	0	90.1	43	161				
3-Chloro-1-Propene	17.08	1.00	20	0	85.4	65	127				
4-Chlorotoluene	18.90	1.00	20	0	94.5	80	121				
4-Isopropyltoluene	19.22	1.00	20	0	96.1	83	117				
4-Methyl-2-Pentanone	17.96	1.00	20	0	89.8	68	127				
Acetone	19.16	10.0	20	0	95.8	60	133				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **20 PPB LCS** SampType: **LCS** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetonitrile	195.2	20.0	200	0	97.6	61	132				
Allyl chloride	17.08	1.00	20	0	85.4	65	127				
Benzene	18.30	1.00	20	0	91.5	76	122				
Benzyl chloride	10.65	5.00	20	0	53.3	20	154				
Bromobenzene	18.61	1.00	20	0	93.1	78	120				
Bromochloromethane	18.65	1.00	20	0	93.3	78	124				
Bromodichloromethane	18.38	1.00	20	0	91.9	71	138				
Bromoform	17.15	1.00	20	0	85.7	71	125				
Bromomethane	18.66	1.00	20	0	93.3	47	152				
Carbon Disulfide	16.96	1.00	20	0	84.8	63	123				
Carbon Tetrachloride	17.99	1.00	20	0	89.9	68	133				
Chlorobenzene	19.05	1.00	20	0	95.2	83	118				
Chlorodibromomethane	17.99	1.00	20	0	90.0	74	131				
Chloroethane	17.88	1.00	20	0	89.4	56	127				
Chloroform	18.37	1.00	20	0	91.8	73	123				
Chloromethane	17.69	1.00	20	0	88.4	65	129				
Chloroprene	18.31	1.00	20	0	91.5	70	124				
cis-1,2-Dichloroethene	18.11	1.00	20	0	90.5	75	121				
cis-1,3-Dichloropropene	17.98	1.00	20	0	89.9	71	129				
Cyclohexane	17.79	5.00	20	0	89.0	72	119				
Dibromomethane	18.98	1.00	20	0	94.9	83	118				
Dichlorobromomethane	18.38	1.00	20	0	91.9	56	145				
Dichlorodifluoromethane	18.35	1.00	20	0	91.7	60	138				
Dichlorofluoromethane	18.58	1.00	20	0	92.9	74	123				
Diethyl Ether	17.66	5.00	20	0	88.3	54	142				
Diisopropyl ether	18.17	1.00	20	0	90.9	72	132				
Ethyl acetate	16.89	5.00	20	0	84.5	77	123				
Ethyl Methacrylate	18.42	1.00	20	0	92.1	72	126				
Ethylbenzene	19.53	1.00	20	0	97.6	84	120				
Hexachlorobutadiene	17.85	5.00	20	0	89.2	70	118				
Hexachloroethane	17.76	5.00	20	0	88.8	59	130				
Iodomethane	19.25	5.00	20	0	96.2	29	162				
Isobutyl alcohol	150.1	50.0	200	0	75.1	29	163				
Isopropylbenzene	19.12	1.00	20	0	95.6	83	124				
m,p-Xylene	38.91	2.00	40	0	97.3	86	117				
Methacrylonitrile	181.0	10.0	200	0	90.5	69	126				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **20 PPB LCS** SampType: **LCS** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl Ethyl Ketone	18.01	5.00	20	0	90.1	72	131				
Methyl methacrylate	18.40	1.00	20	0	92.0	74	122				
Methylcyclohexane	18.69	1.00	20	0	93.4	76	116				
Methylene Chloride	18.37	1.00	20	0	91.9	73	133				
Methyl-tert-butyl ether	18.39	1.00	20	0	91.9	75	125				
Naphthalene	17.21	5.00	20	0	86.0	59	134				
n-Butanol	148.0	20.0	200	0	74.0	56	152				
n-Butylbenzene	18.94	1.00	20	0	94.7	79	116				
n-Propylbenzene	19.46	1.00	20	0	97.3	82	119				
o-Xylene	19.28	1.00	20	0	96.4	86	117				
Pentachloroethane	18.13	2.00	20	0	90.6	73	123				
p-Isopropyltoluene	19.22	1.00	20	0	96.1	83	117				
Propionitrile	174.6	10.0	200	0	87.3	63	129				
sec-Butylbenzene	18.41	1.00	20	0	92.1	82	119				
Styrene	19.66	1.00	20	0	98.3	88	116				
tert-Butylbenzene	19.16	1.00	20	0	95.8	79	127				
Tetrachloroethene	18.79	1.00	20	0	93.9	76	127				
Tetrahydrofuran	17.01	5.00	20	0	85.0	62	129				
Toluene	18.98	1.00	20	0	94.9	80	118				
Total Xylene	58.18	2.00	60	0	97.0	87	116				
trans-1,2-Dichloroethene	18.26	1.00	20	0	91.3	73	120				
trans-1,3-Dichloropropene	17.98	1.00	20	0	89.9	70	126				
trans-1,4-Dichloro-2-butene	16.48	2.00	20	0	82.4	46	137				
Tribromomethane	17.15	1.00	20	0	85.7	71	125				
Trichloroethene	18.64	1.00	20	0	93.2	73	123				
Trichlorofluoromethane	17.85	1.00	20	0	89.3	69	125				
Trichloromethane	18.37	1.00	20	0	91.8	73	123				
Vinyl Acetate	17.73	1.00	20	0	88.6	67	131				
Vinyl Chloride	18.12	1.00	20	0	90.6	56	125				
Surr: 1,2-Dichloroethane-d4	30.09	0	30	0	100	70	130				
Surr: 4-Bromofluorobenzene	30.00	0	30	0	100	70	130				
Surr: Dibromofluoromethane	29.73	0	30	0	99.1	70	130				
Surr: Toluene-d8	30.83	0	30	0	103	70	130				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **G2003A38-001JMS** SampType: **MS** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.72	1.00	20	0	93.6	76	117				
1,1,1-Trichloroethane	18.82	1.00	20	0	94.1	72	122				
1,1,2,2-Tetrachloroethane	19.70	1.00	20	0	98.5	72	110				
1,1,2-Trichloroethane	18.91	1.00	20	0	94.6	76	126				
1,1-Dichloroethane	18.47	1.00	20	0	92.4	66	126				
1,1-Dichloroethene	18.85	1.00	20	0	94.3	66	121				
1,1-Dichloropropene	18.80	1.00	20	0	94.0	71	120				
1,2,3-Trichlorobenzene	15.93	5.00	20	0	79.7	43	148				
1,2,3-Trichloropropane	20.20	1.00	20	0	101	72	112				
1,2,4-Trichlorobenzene	15.93	1.00	20	0	79.7	61	127				
1,2,4-Trimethylbenzene	17.62	1.00	20	0	88.1	78	128				
1,2-Dibromo-3-chloropropane	21.19	5.00	20	0	106	57	121				
1,2-Dibromoethane	19.06	1.00	20	0	95.3	75	113				
1,2-Dichlorobenzene	18.06	1.00	20	0	90.3	76	108				
1,2-Dichloroethane	18.47	1.00	20	0	92.3	69	116				
1,2-Dichloropropane	18.82	1.00	20	0	94.1	78	122				
1,3,5-Trimethylbenzene	17.50	1.00	20	0	87.5	79	111				
1,3-Dichlorobenzene	17.81	1.00	20	0	89.1	71	120				
1,3-Dichloropropane	18.58	1.00	20	0	92.9	76	110				
1,4-Dichlorobenzene	17.74	1.00	20	0	88.7	70	121				
1,4-Dioxane	252.5	50.0	200	45.624	103	33	189				
1-Propanol	175.8	100	200	0	87.9	46	146				
2,2-Dichloropropane	11.93	1.00	20	0	59.6	29	160				
2-Butanone	22.37	5.00	20	0	112	59	118				
2-chloro-1,3-butadiene	18.78	1.00	20	0	93.9	74	122				
2-Chlorotoluene	18.14	1.00	20	0	90.7	76	115				
2-Hexanone	25.26	5.00	20	0	126	63	120				S
2-Methyl-1-propanol	202.9	50.0	200	0	101	37	145				
2-Methylnaphthalene	< 20.0	20.0	20	0	76.9	24	165				
2-Nitropropane	19.02	1.00	20	0	95.1	57	128				
2-Propanol	220.0	100	200	0	110	43	152				
3-Chloro-1-Propene	16.80	1.00	20	0	84.0	64	124				
4-Chlorotoluene	18.36	1.00	20	0	91.8	75	118				
4-Isopropyltoluene	16.77	1.00	20	0	83.9	76	114				
4-Methyl-2-Pentanone	24.28	1.00	20	0	121	68	116				S
Acetone	23.88	10.0	20	0	119	51	133				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **G2003A38-001JMS** SampType: **MS** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetonitrile	211.1	20.0	200	0	106	50	134				
Benzene	18.67	1.00	20	0	93.4	52	125				
Benzyl chloride	10.59	5.00	20	0	53.0	13	141				
Bromobenzene	18.89	1.00	20	0	94.4	75	116				
Bromochloromethane	18.43	1.00	20	0	92.2	71	117				
Bromodichloromethane	17.86	1.00	20	0	89.3	68	132				
Bromoform	17.72	1.00	20	0	88.6	65	117				
Bromomethane	14.19	1.00	20	0	71.0	40	156				
Carbon Disulfide	17.26	1.00	20	0	86.3	60	123				
Carbon Tetrachloride	18.40	1.00	20	0	92.0	67	132				
Chlorobenzene	18.74	1.00	20	0	93.7	78	111				
Chlorodibromomethane	17.94	1.00	20	0	89.7	70	123				
Chloroethane	18.67	1.00	20	0	93.4	46	132				
Chloroform	18.89	1.00	20	0	94.4	69	117				
Chloromethane	19.23	1.00	20	0	96.2	51	129				
Chloroprene	18.78	1.00	20	0	93.9	68	120				
cis-1,2-Dichloroethene	18.29	1.00	20	0	91.4	71	117				
cis-1,3-Dichloropropene	17.42	1.00	20	0	87.1	71	117				
Cyclohexane	16.38	5.00	20	0	81.9	73	120				
Dibromomethane	18.69	1.00	20	0	93.5	77	110				
Dichlorobromomethane	17.86	1.00	20	0	89.3	74	117				
Dichlorodifluoromethane	18.28	1.00	20	0	91.4	34	140				
Dichlorofluoromethane	19.10	1.00	20	0	95.5	70	123				
Diethyl Ether	19.72	5.00	20	2.19	87.7	54	142				
Ethyl acetate	19.50	5.00	20	0	97.5	50	128				
Ethyl Methacrylate	20.09	1.00	20	0	100	71	127				
Ethylbenzene	18.89	1.00	20	0	94.4	72	122				
Hexachlorobutadiene	16.08	5.00	20	0	80.4	63	129				
Hexachloroethane	16.22	5.00	20	0	81.1	59	123				
Iodomethane	18.11	5.00	20	0	90.6	34	150				
Isobutyl alcohol	202.9	50.0	200	0	101	38	142				
Isopropylbenzene	17.75	1.00	20	0	88.7	73	124				
m,p-Xylene	37.24	2.00	40	0	93.1	75	119				
Methacrylonitrile	204.0	10.0	200	0	102	65	119				
Methyl Ethyl Ketone	22.37	5.00	20	0	112	59	121				
Methyl methacrylate	20.23	1.00	20	0	101	71	121				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **G2003A38-001JMS** SampType: **MS** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylcyclohexane	14.60	1.00	20	0	73.0	70	118				
Methylene Chloride	17.72	1.00	20	0	88.6	64	121				
Methyl-tert-butyl ether	18.78	1.00	20	0	93.9	71	123				
Naphthalene	18.46	5.00	20	0	92.3	48	140				
n-Butanol	201.8	20.0	200	0	101	30	146				
n-Butylbenzene	16.31	1.00	20	0	81.6	68	131				
n-Propylbenzene	17.72	1.00	20	0	88.6	72	124				
o-Xylene	18.59	1.00	20	0	93.0	76	118				
Pentachloroethane	18.20	2.00	20	0	91.0	70	122				
p-Isopropyltoluene	16.77	1.00	20	0	83.9	76	114				
Propionitrile	203.2	10.0	200	0	102	59	122				
sec-Butylbenzene	16.38	1.00	20	0	81.9	73	120				
Styrene	18.98	1.00	20	0	94.9	78	117				
tert-Butylbenzene	17.63	1.00	20	0	88.1	73	121				
Tetrachloroethene	17.72	1.00	20	0	88.6	67	122				
Tetrahydrofuran	30.04	5.00	20	8.905	106	44	135				
Toluene	18.67	1.00	20	0	93.3	75	115				
Total Xylene	55.84	2.00	60	0	93.1	72	120				
trans-1,2-Dichloroethene	18.62	1.00	20	0	93.1	69	118				
trans-1,3-Dichloropropene	17.42	1.00	20	0	87.1	66	122				
trans-1,4-Dichloro-2-butene	18.45	2.00	20	0	92.2	46	131				
Tribromomethane	17.72	1.00	20	0	88.6	65	117				
Trichloroethene	18.46	1.00	20	0	92.3	75	117				
Trichlorofluoromethane	17.99	1.00	20	0	90.0	69	125				
Trichloromethane	18.89	1.00	20	0	94.4	69	117				
Vinyl Acetate	16.89	1.00	20	0	84.4	46	126				
Vinyl Chloride	18.29	1.00	20	0	91.5	54	128				
Surr: 1,2-Dichloroethane-d4	31.08	0	30	0	104	70	130				
Surr: 4-Bromofluorobenzene	30.65	0	30	0	102	70	130				
Surr: Dibromofluoromethane	30.47	0	30	0	102	70	130				
Surr: Toluene-d8	30.71	0	30	0	102	70	130				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **G2003A38-001JMSD** SampType: **MSD** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.06	1.00	20	0	90.3	76	117	18.72	3.64	11	
1,1,1-Trichloroethane	17.80	1.00	20	0	89.0	72	122	18.82	5.58	12	
1,1,2,2-Tetrachloroethane	18.84	1.00	20	0	94.2	72	110	19.7	4.50	14	
1,1,2-Trichloroethane	17.92	1.00	20	0	89.6	76	126	18.91	5.40	15	
1,1-Dichloroethane	17.35	1.00	20	0	86.8	66	126	18.47	6.25	12	
1,1-Dichloroethene	17.68	1.00	20	0	88.4	66	121	18.85	6.39	14	
1,1-Dichloropropene	17.69	1.00	20	0	88.4	71	120	18.8	6.13	13	
1,2,3-Trichlorobenzene	15.22	5.00	20	0	76.1	43	148	15.93	4.60	30	
1,2,3-Trichloropropane	19.23	1.00	20	0	96.2	72	112	20.2	4.92	14	
1,2,4-Trichlorobenzene	15.22	1.00	20	0	76.1	61	127	15.93	4.60	23	
1,2,4-Trimethylbenzene	16.92	1.00	20	0	84.6	78	128	17.62	4.06	13	
1,2-Dibromo-3-chloropropane	20.17	5.00	20	0	101	57	121	21.19	4.96	20	
1,2-Dibromoethane	18.36	1.00	20	0	91.8	75	113	19.06	3.71	17	
1,2-Dichlorobenzene	17.33	1.00	20	0	86.6	76	108	18.06	4.15	13	
1,2-Dichloroethane	17.70	1.00	20	0	88.5	69	116	18.47	4.27	11	
1,2-Dichloropropane	18.09	1.00	20	0	90.5	78	122	18.82	3.92	12	
1,3,5-Trimethylbenzene	17.06	1.00	20	0	85.3	79	111	17.5	2.53	13	
1,3-Dichlorobenzene	17.35	1.00	20	0	86.7	71	120	17.81	2.64	16	
1,3-Dichloropropane	18.27	1.00	20	0	91.3	76	110	18.58	1.69	17	
1,4-Dichlorobenzene	17.30	1.00	20	0	86.5	70	121	17.74	2.56	16	
1,4-Dioxane	266.0	50.0	200	45.624	110	33	189	252.5	5.20	41	
1-Propanol	169.2	100	200	0	84.6	46	146	175.8	3.83	38	
2,2-Dichloropropane	11.14	1.00	20	0	55.7	29	160	11.93	6.84	13	
2-Butanone	21.02	5.00	20	0	105	59	118	22.37	6.23	23	
2-chloro-1,3-butadiene	17.77	1.00	20	0	88.9	74	122	18.78	5.49	12	
2-Chlorotoluene	17.86	1.00	20	0	89.3	76	115	18.14	1.58	16	
2-Hexanone	24.07	5.00	20	0	120	63	120	25.26	4.84	18	S
2-Methyl-1-propanol	192.3	50.0	200	0	96.1	37	145	202.9	5.37	24	
2-Methylnaphthalene	< 20.0	20.0	20	0	84.6	24	165	15.38	0	52	
2-Nitropropane	18.50	1.00	20	0	92.5	57	128	19.02	2.75	17	
2-Propanol	219.7	100	200	0	110	43	152	220	0.119	31	
3-Chloro-1-Propene	15.86	1.00	20	0	79.3	64	124	16.8	5.78	24	
4-Chlorotoluene	17.35	1.00	20	0	86.7	75	118	18.36	5.68	15	
4-Isopropyltoluene	16.04	1.00	20	0	80.2	76	114	16.77	4.48	13	
4-Methyl-2-Pentanone	23.84	1.00	20	0	119	68	116	24.28	1.82	18	S
Acetone	20.73	10.0	20	0	104	51	133	23.88	14.1	23	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **G2003A38-001JMSD** SampType: **MSD** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetonitrile	193.5	20.0	200	0	96.7	50	134	211.1	8.70	28	
Benzene	17.62	1.00	20	0	88.1	52	125	18.67	5.80	15	
Benzyl chloride	9.733	5.00	20	0	48.7	13	141	10.59	8.44	22	
Bromobenzene	18.22	1.00	20	0	91.1	75	116	18.89	3.62	15	
Bromochloromethane	17.01	1.00	20	0	85.1	71	117	18.43	8.02	12	
Bromodichloromethane	17.62	1.00	20	0	88.1	68	132	17.86	1.34	18	
Bromoform	17.16	1.00	20	0	85.8	65	117	17.72	3.20	14	
Bromomethane	12.51	1.00	20	0	62.6	40	156	14.19	12.6	22	
Carbon Disulfide	16.58	1.00	20	0	82.9	60	123	17.26	4.04	13	
Carbon Tetrachloride	17.72	1.00	20	0	88.6	67	132	18.4	3.78	12	
Chlorobenzene	18.12	1.00	20	0	90.6	78	111	18.74	3.36	10	
Chlorodibromomethane	17.53	1.00	20	0	87.7	70	123	17.94	2.30	16	
Chloroethane	18.06	1.00	20	0	90.3	46	132	18.67	3.35	17	
Chloroform	17.72	1.00	20	0	88.6	69	117	18.89	6.41	13	
Chloromethane	19.09	1.00	20	0	95.5	51	129	19.23	0.746	16	
Chloroprene	17.77	1.00	20	0	88.9	68	120	18.78	5.49	13	
cis-1,2-Dichloroethene	17.31	1.00	20	0	86.6	71	117	18.29	5.51	12	
cis-1,3-Dichloropropene	16.96	1.00	20	0	84.8	71	117	17.42	2.65	16	
Cyclohexane	16.25	5.00	20	0	81.3	73	120	16.38	0.754	13	
Dibromomethane	18.17	1.00	20	0	90.8	77	110	18.69	2.86	14	
Dichlorobromomethane	17.62	1.00	20	0	88.1	74	117	17.86	1.34	13	
Dichlorodifluoromethane	19.11	1.00	20	0	95.5	34	140	18.28	4.41	18	
Dichlorofluoromethane	17.89	1.00	20	0	89.4	70	123	19.1	6.57	17	
Diethyl Ether	19.14	5.00	20	2.19	84.7	54	142	19.72	3.04	18	
Ethyl acetate	17.86	5.00	20	0	89.3	50	128	19.5	8.79	22	
Ethyl Methacrylate	19.52	1.00	20	0	97.6	71	127	20.09	2.92	17	
Ethylbenzene	18.34	1.00	20	0	91.7	72	122	18.89	2.95	16	
Hexachlorobutadiene	15.48	5.00	20	0	77.4	63	129	16.08	3.77	21	
Hexachloroethane	15.25	5.00	20	0	76.2	59	123	16.22	6.17	17	
Iodomethane	17.20	5.00	20	0	86.0	34	150	18.11	5.15	19	
Isobutyl alcohol	192.3	50.0	200	0	96.1	38	142	202.9	5.37	23	
Isopropylbenzene	17.15	1.00	20	0	85.7	73	124	17.75	3.43	15	
m,p-Xylene	36.29	2.00	40	0	90.7	75	119	37.24	2.59	14	
Methacrylonitrile	190.9	10.0	200	0	95.5	65	119	204	6.64	14	
Methyl Ethyl Ketone	21.02	5.00	20	0	105	59	121	22.37	6.23	21	
Methyl methacrylate	19.27	1.00	20	0	96.4	71	121	20.23	4.86	14	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: EPA8260_VOA

Sample ID: **G2003A38-001JMSD** SampType: **MSD** TestCode: **EPA8260_VO** Units: **µg/L** Prep Date: RunNo: **230105**
Client ID: Batch ID: **R230105** TestNo: **EPA 8260 D** Analysis Date: **3/19/2020** SeqNo: **5789130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylcyclohexane	15.24	1.00	20	0	76.2	70	118	14.6	4.27	12	
Methylene Chloride	16.61	1.00	20	0	83.1	64	121	17.72	6.42	17	
Methyl-tert-butyl ether	17.89	1.00	20	0	89.4	71	123	18.78	4.88	14	
Naphthalene	17.89	5.00	20	0	89.5	48	140	18.46	3.13	33	
n-Butanol	193.7	20.0	200	0	96.9	30	146	201.8	4.06	21	
n-Butylbenzene	15.66	1.00	20	0	78.3	68	131	16.31	4.07	14	
n-Propylbenzene	17.35	1.00	20	0	86.8	72	124	17.72	2.12	15	
o-Xylene	17.99	1.00	20	0	90.0	76	118	18.59	3.28	12	
Pentachloroethane	17.46	2.00	20	0	87.3	70	122	18.2	4.17	14	
p-Isopropyltoluene	16.04	1.00	20	0	80.2	76	114	16.77	4.48	13	
Propionitrile	189.4	10.0	200	0	94.7	59	122	203.2	7.04	22	
sec-Butylbenzene	16.15	1.00	20	0	80.8	73	120	16.38	1.37	13	
Styrene	18.34	1.00	20	0	91.7	78	117	18.98	3.42	12	
tert-Butylbenzene	16.95	1.00	20	0	84.8	73	121	17.63	3.91	17	
Tetrachloroethene	17.36	1.00	20	0	86.8	67	122	17.72	2.05	16	
Tetrahydrofuran	29.19	5.00	20	8.905	101	44	135	30.04	2.85	21	
Toluene	18.35	1.00	20	0	91.8	75	115	18.67	1.72	13	
Total Xylene	54.28	2.00	60	0	90.5	72	120	55.84	0	18	
trans-1,2-Dichloroethene	17.43	1.00	20	0	87.2	69	118	18.62	6.57	13	
trans-1,3-Dichloropropene	16.96	1.00	20	0	84.8	66	122	17.42	2.65	15	
trans-1,4-Dichloro-2-butene	17.32	2.00	20	0	86.6	46	131	18.45	6.32	17	
Tribromomethane	17.16	1.00	20	0	85.8	65	117	17.72	3.20	13	
Trichloroethene	18.12	1.00	20	0	90.6	75	117	18.46	1.83	11	
Trichlorofluoromethane	17.31	1.00	20	0	86.6	69	125	17.99	3.85	15	
Trichloromethane	17.72	1.00	20	0	88.6	69	117	18.89	6.41	12	
Vinyl Acetate	15.81	1.00	20	0	79.0	46	126	16.89	6.61	11	
Vinyl Chloride	17.63	1.00	20	0	88.2	54	128	18.29	3.69	15	
Surr: 1,2-Dichloroethane-d4	30.80	0	30	0	103	70	130	31.08	0	0	
Surr: 4-Bromofluorobenzene	30.62	0	30	0	102	70	130	30.65	0	0	
Surr: Dibromofluoromethane	30.26	0	30	0	101	70	130	30.47	0	0	
Surr: Toluene-d8	30.51	0	30	0	102	70	130	30.71	0	0	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: GCSEMI_HERB

Sample ID: **MBLK-176041** SampType: **MBLK** TestCode: **GCSEMI_HE** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230324**
Client ID: Batch ID: **176041** TestNo: **SM 6640 B-06** Analysis Date: **3/25/2020** SeqNo: **5796443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-T	< 0.500	0.500									
2,4-D	< 0.500	0.500									
Dinoseb	< 0.500	0.500									
Pentachlorophenol	< 0.500	0.500									
Silvex	< 0.500	0.500									
Surr: 2,4-Dichlorophenyl acetic acid	10.71	0	10	0	107	70	130				

Sample ID: **LCS-176041** SampType: **LCS** TestCode: **GCSEMI_HE** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230324**
Client ID: Batch ID: **176041** TestNo: **SM 6640 B-06** Analysis Date: **3/25/2020** SeqNo: **5796479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-T	4.516	0.500	4	0	113	70	130				
2,4-D	4.598	0.500	4	0	115	70	130				
Dinoseb	4.324	0.500	4	0	108	70	130				
Pentachlorophenol	4.426	0.500	4	0	111	70	130				
Silvex	4.254	0.500	4	0	106	70	130				
Surr: 2,4-Dichlorophenyl acetic acid	8.407	0	8	0	105	70	130				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0_28

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.748	0.200	5	0	95.0	90	110				
Chloride	49.19	1.00	50	0	98.4	90	110				
Fluoride	5.142	0.100	5	0	103	90	110				
Sulfate	49.02	2.00	50	0	98.0	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **HRQC** SampType: **HRQC** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	252.9	1.00	250	0	101	90	110				
Sulfate	253.1	2.00	250	0	101	90	110				

Sample ID: **G2003979-001BLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	20.74	2.00	20	0	104	80	120				

Sample ID: **G2003984-001ELFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	56.63	2.00	50	5.9723	101	80	120				
Chloride	1833	10.0	150	1754.3	52.7	80	120				1
Fluoride	25.79	1.00	25	0	103	80	120				
Sulfate	261.2	20.0	200	55.464	103	80	120				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0_28

Sample ID: **G2003A22-005DLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	208.1	1.00	15	199.37	58.3	80	120				1
Fluoride	2.786	0.100	2.5	0.092906	108	80	120				
Sulfate	165.1	2.00	20	148.63	82.3	80	120				

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.793	0.200	5	0	95.9	90	110				
Chloride	49.91	1.00	50	0	99.8	90	110				
Fluoride	5.159	0.100	5	0	103	90	110				
Sulfate	49.81	2.00	50	0	99.6	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **G2003A53-001CLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	17.83	1.00	15	2.7759	100	80	120				
Fluoride	2.614	0.100	2.5	0.12343	99.6	80	120				
Sulfate	179.5	2.00	20	162.12	87.0	80	120				

Sample ID: **G2003A27-004ALFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	20.18	1.00	15	6.0562	94.1	80	120				

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TestCode: IC_300.0_28

Sample ID: **G2003A41-002ALFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	15.11	1.00	15	0.39924	98.1	80	120				
Sulfate	21.64	2.00	20	2.2211	97.1	80	120				

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.776	0.200	5	0	95.5	90	110				
Chloride	49.76	1.00	50	0	99.5	90	110				
Fluoride	5.211	0.100	5	0	104	90	110				
Sulfate	49.27	2.00	50	0	98.5	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **QCS** SampType: **QCS** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.925	0.200	8	0	99.1	90	110				
Chloride	23.66	1.00	24	0	98.6	90	110				
Fluoride	4.237	0.100	4	0	106	90	110				
Sulfate	31.55	2.00	32	0	98.6	90	110				

Sample ID: **HRQC** SampType: **HRQC** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	258.8	1.00	250	0	104	90	110				

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TestCode: IC_300.0_28

Sample ID: **HRQC** SampType: **HRQC** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	258.9	2.00	250	0	104	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230156**
Client ID: Batch ID: **R230156** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5791175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **G2003A91-002ELFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230156**
Client ID: Batch ID: **176029** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5791189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	36.53	1.00	15	23.734	85.3	80	120				
Fluoride	2.598	0.100	2.5	0	104	80	120				
Sulfate	25.45	2.00	20	6.6548	94.0	80	120				

Sample ID: **G2003A93-001BLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230156**
Client ID: Batch ID: **176029** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5791194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	232.1	1.00	15	224.42	51.3	80	120				1
Fluoride	2.661	0.100	2.5	0	106	80	120				
Sulfate	35.67	2.00	20	17.463	91.0	80	120				

Sample ID: **G2003B05-005CLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230156**
Client ID: Batch ID: **176029** TestNo: **EPA 300.0** Analysis Date: **3/20/2020** SeqNo: **5791208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	125.3	1.00	15	114.22	73.7	80	120				1
Sulfate	110.8	2.00	20	92.847	90.0	80	120				

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TestCode: IC_300.0_28

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **230156**
Client ID: Batch ID: **R230156** TestNo: **EPA 300.0** Analysis Date: **3/20/2020** SeqNo: **5791221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **G2003979-001BDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	< 2.00	2.00						0	0	20	

Sample ID: **G2003984-001EDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	5.986	2.00						5.972	0.229	20	
Chloride	1752	10.0						1754	0.139	20	
Fluoride	< 1.00	1.00						0	0	20	
Sulfate	55.65	20.0						55.46	0.342	20	

Sample ID: **G2003A22-005DDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/18/2020** SeqNo: **5789468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	199.8	1.00						199.4	0.205	20	
Fluoride	< 0.100	0.100						0.09291	0	20	
Sulfate	148.9	2.00						148.6	0.187	20	

Sample ID: **G2003A53-001CDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/18/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.767	1.00						2.776	0.312	20	
Fluoride	0.1320	0.100						0.1234	6.68	20	
Sulfate	161.7	2.00						162.1	0.279	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0_28

Sample ID: **G2003A27-004ADUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6.023	1.00						6.056	0.548	20	

Sample ID: **G2003A41-002ADUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230108**
Client ID: Batch ID: **175878** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5789519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	< 1.00	1.00						0.3992	0	20	
Sulfate	2.176	2.00						2.221	2.07	20	

Sample ID: **G2003A91-002EDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230156**
Client ID: Batch ID: **176029** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5791188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23.77	1.00						23.73	0.143	20	
Fluoride	< 0.100	0.100						0	0	20	
Sulfate	6.566	2.00						6.655	1.35	20	

Sample ID: **G2003A93-001BDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230156**
Client ID: Batch ID: **176029** TestNo: **EPA 300.0** Analysis Date: **3/19/2020** SeqNo: **5791193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	224.6	1.00						224.4	0.0684	20	
Fluoride	< 0.100	0.100						0	0	20	
Sulfate	17.46	2.00						17.46	0	20	

Sample ID: **G2003B05-005CDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230156**
Client ID: Batch ID: **176029** TestNo: **EPA 300.0** Analysis Date: **3/20/2020** SeqNo: **5791207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	114.0	1.00						114.2	0.161	20	
Sulfate	92.71	2.00						92.85	0.153	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: IN_CN_GD_ASTM

Sample ID: **LCS** SampType: **LCS** TestCode: **IN_CN_GD_A** Units: **mg/L** Prep Date: RunNo: **230104**
Client ID: Batch ID: **R230104** TestNo: **ASTM D7511-** Analysis Date: **3/19/2020** SeqNo: **5789106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, total	0.08854	0.020	0.1	0	88.5	86	114				

Sample ID: **G2003A36-001CMS** SampType: **MS** TestCode: **IN_CN_GD_A** Units: **mg/L** Prep Date: RunNo: **230104**
Client ID: Batch ID: **R230104** TestNo: **ASTM D7511-** Analysis Date: **3/19/2020** SeqNo: **5789117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, total	0.05945	0.020	0.05	0	119	75	125				

Sample ID: **G2003A36-001CMS** SampType: **MSD** TestCode: **IN_CN_GD_A** Units: **mg/L** Prep Date: RunNo: **230104**
Client ID: Batch ID: **R230104** TestNo: **ASTM D7511-** Analysis Date: **3/19/2020** SeqNo: **5789118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, total	0.05406	0.020	0.05	0	108	75	125	0.05945	9.51	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: MET-6010B-VA

Sample ID: **LCS1-175966** SampType: **LCS1** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5806897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.9968	0.100	1	0	99.7	85	115				
Arsenic	0.9294	0.0200	1	0	92.9	85	115				
Barium	0.8991	0.0100	1	0	89.9	85	115				
Beryllium	0.1780	0.00100	0.2	0	89.0	85	115				
Boron	0.9030	0.0500	1	0	90.3	85	115				
Cadmium	0.4032	0.00200	0.4	0	101	85	115				
Calcium	9.100	0.100	10	0	91.0	85	115				
Chromium	1.044	0.0100	1	0	104	85	115				
Cobalt	0.4066	0.00500	0.4	0	102	85	115				
Copper	0.8970	0.0100	1	0	89.7	85	115				
Iron	9.119	0.0500	10	0	91.2	85	115				
Lead	0.9910	0.0200	1	0	99.1	85	115				
Magnesium	1.935	0.100	2	0	96.8	85	115				
Manganese	0.9270	0.0100	1	0	92.7	85	115				
Molybdenum	0.3885	0.0200	0.4	0	97.1	85	115				
Nickel	1.036	0.0100	1	0	104	85	115				
Potassium	8.628	0.500	10	0	86.3	85	115				
Selenium	0.9408	0.0200	1	0	94.1	85	115				
Silver	0.009600	0.00500	0.01	0	96.0	85	115				
Sodium	9.329	0.200	10	0	93.3	85	115				
Strontium	0.9120	0.0100	1	0	91.2	85	115				
Thallium	1.011	0.0200	1	0	101	85	115				
Tin	0.9822	0.100	1	0	98.2	85	115				
Titanium	0.9447	0.00500	1	0	94.5	85	115				
Vanadium	0.3646	0.00500	0.4	0	91.2	85	115				
Zinc	1.054	0.0100	1	0	105	85	115				

Sample ID: **PB-175966** SampType: **PB** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5806898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 0.100	0.100									
Arsenic	< 0.0200	0.0200									
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									

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ANALYTICAL QC SUMMARY REPORT

TestCode: MET-6010B-VA

Sample ID: **PB-175966** SampType: **PB** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5806898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	< 0.0500	0.0500									
Cadmium	< 0.00200	0.00200									
Calcium	< 0.100	0.100									
Chromium	< 0.0100	0.0100									
Cobalt	< 0.00500	0.00500									
Copper	< 0.0100	0.0100									
Iron	< 0.0500	0.0500									
Lead	< 0.0200	0.0200									
Magnesium	< 0.100	0.100									
Manganese	< 0.0100	0.0100									
Molybdenum	< 0.0200	0.0200									
Nickel	< 0.0100	0.0100									
Potassium	< 0.500	0.500									
Selenium	< 0.0200	0.0200									
Silver	< 0.00500	0.00500									
Sodium	< 0.200	0.200									
Strontium	< 0.0100	0.0100									
Thallium	< 0.0200	0.0200									
Tin	< 0.100	0.100									
Titanium	< 0.00500	0.00500									
Vanadium	< 0.00500	0.00500									
Zinc	< 0.0100	0.0100									

Sample ID: **G2003A44-003DMS** SampType: **MS** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5789603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.024	0.100	1	0	102	75	125				
Arsenic	0.9589	0.0200	1	0	95.9	75	125				
Barium	0.8891	0.0100	1	0.0326	85.7	75	125				
Boron	7.845	0.0500	1	6.897	94.8	75	125				
Cadmium	0.3955	0.00200	0.4	0	98.9	75	125				
Calcium	128.8	0.100	10	123.7	51.0	75	125				1
Chromium	1.011	0.0100	1	0	101	75	125				
Cobalt	0.3869	0.00500	0.4	0	96.7	75	125				

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ANALYTICAL QC SUMMARY REPORT

TestCode: MET-6010B-VA

Sample ID: **G2003A44-003DMS** SampType: **MS** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5789603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	8.588	0.0500	10	0.0498	85.4	75	125				
Lead	0.9851	0.0200	1	0	98.5	75	125				
Magnesium	67.56	0.100	2	64.66	145	75	125				1
Molybdenum	0.3962	0.0200	0.4	0	99.1	75	125				
Nickel	0.9710	0.0100	1	0	97.1	75	125				
Selenium	0.9746	0.0200	1	0	97.5	75	125				
Silver	0.009800	0.00500	0.01	0	98.0	75	125				
Sodium	457.8	0.200	10	441	168	75	125				1
Strontium	8.994	0.0100	1	8.371	62.3	75	125				1
Thallium	0.9585	0.0200	1	0	95.9	75	125				
Tin	0.9517	0.100	1	0	95.2	75	125				
Titanium	0.8788	0.00500	1	0	87.9	75	125				
Vanadium	0.3392	0.00500	0.4	0	84.8	75	125				
Zinc	1.056	0.0100	1	0	106	75	125				

Sample ID: **G2003A44-003DMS** SampType: **MS** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230178**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/20/2020** SeqNo: **5791902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	0.1831	0.00100	0.2	0	91.6	75	125				
Copper	0.9878	0.0100	1	0	98.8	75	125				
Manganese	1.021	0.0100	1	0.052335	96.9	75	125				
Potassium	34.68	0.500	10	25.121	95.6	75	125				

Sample ID: **G2003A44-003DDUP** SampType: **DUP** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5789602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 0.100	0.100						0	0	20	
Arsenic	< 0.0200	0.0200						0	0	20	
Barium	0.03130	0.0100						0.0326	4.07	20	
Boron	6.852	0.0500						6.897	0.655	20	
Cadmium	< 0.00200	0.00200						0	0	20	
Calcium	121.3	0.100						123.7	1.96	20	
Chromium	< 0.0100	0.0100						0	0	20	

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TestCode: MET-6010B-VA

Sample ID: **G2003A44-003DDUP** SampType: **DUP** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230110**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/19/2020** SeqNo: **5789602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	< 0.00500	0.00500						0	0	20	
Iron	< 0.0500	0.0500						0.0498	0	20	
Lead	< 0.0200	0.0200						0	0	20	
Magnesium	64.35	0.100						64.66	0.481	20	
Molybdenum	< 0.0200	0.0200						0	0	20	
Nickel	< 0.0100	0.0100						0	0	20	
Selenium	< 0.0200	0.0200						0	0	20	
Silver	< 0.00500	0.00500						0	0	20	
Sodium	445.0	0.200						441	0.903	20	
Strontium	8.258	0.0100						8.371	1.36	20	
Thallium	< 0.0200	0.0200						0	0	20	
Tin	< 0.100	0.100						0	0	20	
Titanium	< 0.00500	0.00500						0	0	20	
Vanadium	< 0.00500	0.00500						0	0	20	
Zinc	< 0.0100	0.0100						0	0	20	

Sample ID: **G2003A44-003DDUP** SampType: **DUP** TestCode: **MET-6010B-V** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230178**
Client ID: Batch ID: **175966** TestNo: **EPA 6010 D** Analysis Date: **3/20/2020** SeqNo: **5791901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	< 0.00100	0.00100						0	0	20	
Copper	< 0.0100	0.0100						0	0	20	
Manganese	0.05170	0.0100						0.05234	1.22	20	
Potassium	24.91	0.500						25.12	0.860	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: METALS_6020

Sample ID: **LCS2-175967** SampType: **LCS2** TestCode: **METALS_602** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230181**
Client ID: Batch ID: **175967** TestNo: **EPA 6020 B** Analysis Date: **3/20/2020** SeqNo: **5806899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	6.253	1.00	6	0	104	85	115				
Arsenic	11.37	1.00	10	0	114	85	115				
Barium	51.36	5.00	50	0	103	85	115				
Beryllium	4.101	1.00	4	0	103	85	115				
Cadmium	5.110	0.200	5	0	102	85	115				
Chromium	50.16	1.00	50	0	100	85	115				
Cobalt	20.22	0.500	20	0	101	85	115				
Copper	51.97	1.00	50	0	104	85	115				
Lead	5.244	1.00	5	0	105	85	115				
Nickel	51.06	0.500	50	0	102	85	115				
Selenium	20.02	1.00	20	0	100	85	115				
Silver	5.254	0.200	5	0	105	85	115				
Thallium	2.061	0.200	2	0	103	85	115				

Sample ID: **PB-175967** SampType: **PB** TestCode: **METALS_602** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230181**
Client ID: Batch ID: **175967** TestNo: **EPA 6020 B** Analysis Date: **3/20/2020** SeqNo: **5806900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 1.00	1.00									
Arsenic	< 1.00	1.00									
Barium	< 5.00	5.00									
Beryllium	< 1.00	1.00									
Cadmium	< 0.200	0.200									
Chromium	< 1.00	1.00									
Cobalt	< 0.500	0.500									
Copper	< 1.00	1.00									
Lead	< 1.00	1.00									
Nickel	< 0.500	0.500									
Selenium	< 1.00	1.00									
Silver	< 0.200	0.200									
Thallium	< 0.200	0.200									

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ANALYTICAL QC SUMMARY REPORT

TestCode: METALS_6020

Sample ID: **G2003A44-008DMS** SampType: **MS** TestCode: **METALS_602** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230181**
Client ID: Batch ID: **175967** TestNo: **EPA 6020 B** Analysis Date: **3/20/2020** SeqNo: **5792090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	4.878	3.00	6	0	81.3	75	125				
Barium	53.44	15.0	50	18.048	70.8	75	125				NA
Beryllium	3.773	3.00	4	0	94.3	75	125				
Cadmium	3.769	0.600	5	0	75.4	75	125				
Chromium	37.50	3.00	50	0	75.0	75	125				
Cobalt	15.64	1.50	20	0	78.2	75	125				
Copper	38.75	3.00	50	0	77.5	75	125				
Nickel	33.05	1.50	50	3.64	58.8	75	125				NA
Silver	4.117	0.600	5	0	82.3	75	125				
Thallium	1.674	0.600	2	0	83.7	75	125				

Sample ID: **G2003A44-008DMS** SampType: **MS** TestCode: **METALS_602** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230181**
Client ID: Batch ID: **175967** TestNo: **EPA 6020 B** Analysis Date: **3/20/2020** SeqNo: **5792099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.476	3.00	10	0	94.8	75	125				
Lead	5.941	3.00	5	0.878	101	75	125				
Selenium	18.94	3.00	20	0	94.7	75	125				

Sample ID: **G2003A44-003DDUP** SampType: **DUP** TestCode: **METALS_602** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230181**
Client ID: Batch ID: **175967** TestNo: **EPA 6020 B** Analysis Date: **3/20/2020** SeqNo: **5792078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 3.00	3.00						0	0	20	
Arsenic	< 3.00	3.00						1.778	0	20	
Barium	36.34	15.0						39.46	8.24	20	
Beryllium	< 3.00	3.00						0	0	20	
Cadmium	< 0.600	0.600						0	0	20	
Chromium	< 3.00	3.00						2.279	0	20	
Cobalt	< 1.50	1.50						0.719	0	20	
Copper	< 3.00	3.00						1.732	0	20	
Lead	< 3.00	3.00						0	0	20	
Nickel	3.317	1.50						8.124	84.0	20	R
Selenium	< 3.00	3.00						0	0	20	
Silver	< 0.600	0.600						0	0	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: METALS_6020

Sample ID: **G2003A44-003DDUP** SampType: **DUP** TestCode: **METALS_602** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230181**
Client ID: Batch ID: **175967** TestNo: **EPA 6020 B** Analysis Date: **3/20/2020** SeqNo: **5792078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	< 0.600	0.600						0	0	20	
Uranium	< 3.00	3.00						0	0	20	
Zinc	< 15.0	15.0						0	0	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: NH3_350.1

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.8299	0.100	0.82	0	101	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.8100	0.100	0.82	0	98.8	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.8099	0.100	0.82	0	98.8	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.8318	0.100	0.82	0	101	90	110				

Sample ID: **G2003A19-004AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.031	0.100	1	0	103	90	110				

Sample ID: **G2003A22-005BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.031	0.100	1	0	103	90	110				

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TestCode: NH3_350.1

Sample ID: **G2003A44-008BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.031	0.100	1	0	103	90	110				

Sample ID: **G2003A53-005AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.080	0.100	1	0	108	90	110				

Sample ID: **G2003A34-002BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	2876	100	1000	1800.4	108	90	110				

Sample ID: **G2003A40-003AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	6.541	0.200	2	4.4892	103	90	110				

Sample ID: **G2003A19-004ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

Sample ID: **G2003A22-005BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: NH3_350.1

Sample ID: **G2003A44-008BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

Sample ID: **G2003A53-005ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

Sample ID: **G2003A34-002BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1808	100						1800	0.435	20	

Sample ID: **G2003A40-003ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **230113**
Client ID: Batch ID: **R230113** TestNo: **EPA 350.1** Analysis Date: **3/19/2020** SeqNo: **5789928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	4.467	0.200						4.489	0.485	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: NO3-NO2_353.2

Sample ID: **LCS-176147** SampType: **LCS** TestCode: **NO3-NO2_35** Units: **mg/L as N** Prep Date: **3/23/2020** RunNo: **230342**
Client ID: Batch ID: **176147** TestNo: **EPA 353.2** Analysis Date: **3/24/2020** SeqNo: **5797624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	1.038	0.0500	1	0	104	90	110				

Sample ID: **G2003A38-001BMS** SampType: **MS** TestCode: **NO3-NO2_35** Units: **mg/L as N** Prep Date: **3/23/2020** RunNo: **230342**
Client ID: Batch ID: **176147** TestNo: **EPA 353.2** Analysis Date: **3/24/2020** SeqNo: **5797442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	1.083	0.0500	1	0	108	90	110				

Sample ID: **G2003A44-005BMS** SampType: **MS** TestCode: **NO3-NO2_35** Units: **mg/L as N** Prep Date: **3/23/2020** RunNo: **230342**
Client ID: Batch ID: **176147** TestNo: **EPA 353.2** Analysis Date: **3/24/2020** SeqNo: **5797449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	1.627	0.0500	1	0.548	108	90	110				

Sample ID: **G2003A38-001BDUP** SampType: **DUP** TestCode: **NO3-NO2_35** Units: **mg/L as N** Prep Date: **3/23/2020** RunNo: **230342**
Client ID: Batch ID: **176147** TestNo: **EPA 353.2** Analysis Date: **3/24/2020** SeqNo: **5797441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	< 0.0500	0.0500						0	0	20	

Sample ID: **G2003A44-005BDUP** SampType: **DUP** TestCode: **NO3-NO2_35** Units: **mg/L as N** Prep Date: **3/23/2020** RunNo: **230342**
Client ID: Batch ID: **176147** TestNo: **EPA 353.2** Analysis Date: **3/24/2020** SeqNo: **5797448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	0.5400	0.0500						0.548	1.47	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: PEST_8081

Sample ID: **MBLK-176032** SampType: **MBLK** TestCode: **PEST_8081** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230189**
Client ID: Batch ID: **176032** TestNo: **EPA 8081 B** Analysis Date: **3/20/2020** SeqNo: **5792255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4-DDD	< 0.050	0.050									
4,4-DDE	< 0.050	0.050									
4,4-DDT	< 0.050	0.050									
Aldrin	< 0.050	0.050									
Alpha BHC	< 0.050	0.050									
Alpha Endosulfan	< 0.050	0.050									
Beta BHC	< 0.050	0.050									
Beta Endosulfan	< 0.050	0.050									
Chlordane	< 1.0	1.0									
Delta BHC	< 0.050	0.050									
Dieldrin	< 0.050	0.050									
Endosulfan Sulfate	< 0.050	0.050									
Endrin	< 0.050	0.050									
Endrin Aldehyde	< 0.050	0.050									
Gamma BHC (Lindane)	< 0.050	0.050									
Heptachlor	< 0.050	0.050									
Heptachlor epoxide	< 0.050	0.050									
Hexachlorobenzene	< 0.10	0.10									
Methoxychlor	< 0.050	0.050									
Toxaphene	< 2.0	2.0									
Surr: Decachlorobiphenyl	0.09966	0	0.51	0	19.5	10	110				
Surr: Tetrachloro-m-xylene	0.3185	0	0.51	0	62.5	15.9	102				

Sample ID: **LCS-176032** SampType: **LCS** TestCode: **PEST_8081** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230189**
Client ID: Batch ID: **176032** TestNo: **EPA 8081 B** Analysis Date: **3/20/2020** SeqNo: **5792252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4-DDD	0.5039	0.050	0.5	0	101	50	120				
4,4-DDE	0.4429	0.050	0.5	0	88.6	50	110				
4,4-DDT	0.4910	0.050	0.5	0	98.2	50	130				
Aldrin	0.4304	0.050	0.5	0	86.1	50	100				
Alpha BHC	0.4688	0.050	0.5	0	93.8	50	110				
Alpha Endosulfan	0.4736	0.050	0.5	0	94.7	50	110				
alpha-Chlordane	0.4314	0.050	0.5	0	86.3	50	120				
Beta BHC	0.4585	0.050	0.5	0	91.7	50	110				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: PEST_8081

Sample ID: **LCS-176032** SampType: **LCS** TestCode: **PEST_8081** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230189**
Client ID: Batch ID: **176032** TestNo: **EPA 8081 B** Analysis Date: **3/20/2020** SeqNo: **5792252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beta Endosulfan	0.4798	0.050	0.5	0	96.0	50	130				
Delta BHC	0.4894	0.050	0.5	0	97.9	50	110				
Dieldrin	0.4709	0.050	0.5	0	94.2	50	120				
Endosulfan Sulfate	0.5036	0.050	0.5	0	101	50	130				
Endrin	0.4668	0.050	0.5	0	93.4	50	130				
Endrin Aldehyde	0.4919	0.050	0.5	0	98.4	50	130				
Endrin ketone	0.4935	0.050	0.5	0	98.7	50	120				
Gamma BHC (Lindane)	0.4721	0.050	0.5	0	94.4	50	110				
gamma-Chlordane	0.4479	0.050	0.5	0	89.6	50	120				
Heptachlor	0.4525	0.050	0.5	0	90.5	50	110				
Heptachlor epoxide	0.3696	0.050	0.5	0	73.9	50	110				
Hexachlorobenzene	0.3309	0.10	0.5	0	66.2	50	100				
Methoxychlor	0.4933	0.050	0.5	0	98.7	50	130				
Surr: Decachlorobiphenyl	0.3916	0	0.5	0	78.3	23.8	130				
Surr: Tetrachloro-m-xylene	0.3484	0	0.5	0	69.7	42.7	104				

Sample ID: **TOX LCS-176032** SampType: **LCS** TestCode: **PEST_8081** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230189**
Client ID: Batch ID: **176032** TestNo: **EPA 8081 B** Analysis Date: **3/20/2020** SeqNo: **5792254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toxaphene	4.235	2.0									
Surr: Decachlorobiphenyl	0.3828	0	0.5	0	76.6	23.8	130				
Surr: Tetrachloro-m-xylene	0.3554	0	0.5	0	71.1	42.7	104				

Sample ID: **LCSD-176032** SampType: **LCSD** TestCode: **PEST_8081** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230189**
Client ID: Batch ID: **176032** TestNo: **EPA 8081 B** Analysis Date: **3/20/2020** SeqNo: **5792253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4-DDD	0.4834	0.050	0.5	0	96.7	50	120	0.5039	4.15	20	
4,4-DDE	0.4231	0.050	0.5	0	84.6	50	110	0.4429	4.56	20	
4,4-DDT	0.4621	0.050	0.5	0	92.4	50	130	0.491	6.06	20	
Aldrin	0.3827	0.050	0.5	0	76.5	50	100	0.4304	11.7	20	
Alpha BHC	0.4395	0.050	0.5	0	87.9	50	110	0.4688	6.46	20	
Alpha Endosulfan	0.4452	0.050	0.5	0	89.0	50	110	0.4736	6.18	20	
alpha-Chlordane	0.4114	0.050	0.5	0	82.3	50	120	0.4314	4.76	0	

CLIENT: RUMPKE SANITARY LANDFILL
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ANALYTICAL QC SUMMARY REPORT

TestCode: PEST_8081

Sample ID: **LCSD-176032** SampType: **LCSD** TestCode: **PEST_8081** Units: **µg/L** Prep Date: **3/20/2020** RunNo: **230189**
Client ID: Batch ID: **176032** TestNo: **EPA 8081 B** Analysis Date: **3/20/2020** SeqNo: **5792253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beta BHC	0.4309	0.050	0.5	0	86.2	50	110	0.4585	6.19	20	
Beta Endosulfan	0.4686	0.050	0.5	0	93.7	50	130	0.4798	2.35	20	
Delta BHC	0.4645	0.050	0.5	0	92.9	50	110	0.4894	5.22	20	
Dieldrin	0.4576	0.050	0.5	0	91.5	50	120	0.4709	2.88	20	
Endosulfan Sulfate	0.4642	0.050	0.5	0	92.8	50	130	0.5036	8.14	20	
Endrin	0.4475	0.050	0.5	0	89.5	50	130	0.4668	4.22	20	
Endrin Aldehyde	0.4723	0.050	0.5	0	94.5	50	130	0.4919	4.07	20	
Endrin ketone	0.4709	0.050	0.5	0	94.2	50	120	0.4935	4.68	0	
Gamma BHC (Lindane)	0.4386	0.050	0.5	0	87.7	50	110	0.4721	7.35	20	
gamma-Chlordane	0.4205	0.050	0.5	0	84.1	50	120	0.4479	6.30	0	
Heptachlor	0.4170	0.050	0.5	0	83.4	50	110	0.4525	8.15	20	
Heptachlor epoxide	0.3458	0.050	0.5	0	69.2	50	110	0.3696	6.64	20	
Hexachlorobenzene	0.3255	0.10	0.5	0	65.1	50	100	0.3309	1.65	20	
Methoxychlor	0.4788	0.050	0.5	0	95.8	50	130	0.4933	2.98	20	
Surr: Decachlorobiphenyl	0.3888	0	0.5	0	77.8	23.8	130	0.3916	0	20	
Surr: Tetrachloro-m-xylene	0.3124	0	0.5	0	62.5	42.7	104	0.3484	0	20	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: SULFATE_D516-02

Sample ID: **LCS-176231** SampType: **LCS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	26.56	5.00	25	0	106	85	115				

Sample ID: **LCS 2-176231** SampType: **LCS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	26.28	5.00	25	0	105	85	115				

Sample ID: **LCS 3-176231** SampType: **LCS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	24.85	5.00	25	0	99.4	85	115				

Sample ID: **LCS 4-176231** SampType: **LCS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	26.81	5.00	25	0	107	85	115				

Sample ID: **LCS 5-176231** SampType: **LCS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	25.70	5.00	25	0	103	85	115				

Sample ID: **G2003955-008CMS** SampType: **MS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	53.26	5.00	20	36.452	84.0	75	125				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: SULFATE_D516-02

Sample ID: **G2003A44-004CMS** SampType: **MS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2276	250	1000	1279.2	99.6	75	125				

Sample ID: **G2003A68-001CMS** SampType: **MS** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	73.57	10.0	40	35.242	95.8	75	125				

Sample ID: **G2003955-008CMSD** SampType: **MSD** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	48.20	5.00	20	36.452	58.8	75	125	53.26	9.97	20	

Sample ID: **G2003A44-004CMS** SampType: **MSD** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	2230	250	1000	1279.2	95.0	75	125	2276	2.04	20	

Sample ID: **G2003A68-001CMS** SampType: **MSD** TestCode: **SULFATE_D5** Units: **mg/L** Prep Date: **3/24/2020** RunNo: **230291**
Client ID: Batch ID: **176231** TestNo: **ASTM D 516-** Analysis Date: **3/24/2020** SeqNo: **5795674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	77.03	10.0	40	35.242	104	75	125	73.57	4.59	20	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: SULFIDE_4500S D

Sample ID: **G2003A37-001HLFM** SampType: **LFM** TestCode: **SULFIDE_45** Units: **mg/L** Prep Date: **3/20/2020** RunNo: **230202**
Client ID: **P-1** Batch ID: **176043** TestNo: **SM 4500-S2-** Analysis Date: **3/20/2020** SeqNo: **5792589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.1650	0.100	0.25	0	66.0	75	125				S

Sample ID: **LCS-176043** SampType: **LCS** TestCode: **SULFIDE_45** Units: **mg/L** Prep Date: **3/20/2020** RunNo: **230202**
Client ID: Batch ID: **176043** TestNo: **SM 4500-S2-** Analysis Date: **3/20/2020** SeqNo: **5792570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.5060	0.100	0.5	0	101	90	110				

Sample ID: **LCS-176043** SampType: **LCS** TestCode: **SULFIDE_45** Units: **mg/L** Prep Date: **3/20/2020** RunNo: **230202**
Client ID: Batch ID: **176043** TestNo: **SM 4500-S2-** Analysis Date: **3/20/2020** SeqNo: **5792586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.5050	0.100	0.5	0	101	90	110				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: SVOC_8270

Sample ID: **LCS-175951** SampType: **LCS** TestCode: **SVOC_8270** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230131**
Client ID: Batch ID: **175951** TestNo: **EPA 8270 E** Analysis Date: **3/19/2020** SeqNo: **5806904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	29.10	10.0	50	0	58.2	33	95				
1,2-Dichlorobenzene	29.29	10.0	50	0	58.6	25	99				
1,3-Dichlorobenzene	26.98	10.0	50	0	54.0	23	95				
1,4-Dichlorobenzene	27.63	10.0	50	0	55.3	24	94				
2,3,4,6-Tetrachlorophenol	41.61	20.0	50	0	83.2	35	134				
2,4,5-Trichlorophenol	39.18	10.0	50	0	78.4	40	134				
2,4,6-Trichlorophenol	40.34	10.0	50	0	80.7	41	133				
2,4-Dichlorophenol	37.93	10.0	50	0	75.9	27	115				
2,4-Dimethylphenol	48.25	10.0	50	0	96.5	39	144				
2,4-Dinitrophenol	42.00	20.0	50	0	84.0	32	138				
2,4-Dinitrotoluene	46.33	10.0	50	0	92.7	39	142				
2,6-Dichlorophenol	36.92	10.0	50	0	73.8	33	102				
2,6-Dinitrotoluene	46.20	10.0	50	0	92.4	43	130				
2-Chloro-Naphthalene	39.61	10.0	50	0	79.2	42	112				
2-Chlorophenol	39.23	10.0	50	0	78.5	38	108				
2-Methyl-4,6-dinitrophenol	37.52	20.0	50	0	75.0	31	126				
2-Methylnaphthalene	35.00	10.0	50	0	70.0	40	110				
2-Methylphenol	38.74	10.0	50	0	77.5	32	107				
2-Nitroaniline	45.60	10.0	50	0	91.2	46	121				
2-Nitrophenol	34.29	10.0	50	0	68.6	29	104				
3-Nitroaniline	39.13	10.0	50	0	78.3	33	125				
4,6-Dinitro-2-methylphenol	37.52	20.0	50	0	75.0	31	126				
4-Bromophenylphenylether	36.30	10.0	50	0	72.6	45	125				
4-Chloro-3-methylphenol	39.86	10.0	50	0	79.7	38	119				
4-Chloroaniline	30.01	10.0	50	0	60.0	31	108				
4-Chlorophenylphenylether	39.23	10.0	50	0	78.5	43	135				
4-Nitroaniline	44.86	10.0	50	0	89.7	47	131				
4-Nitrophenol	43.20	20.0	50	0	86.4	33	136				
Acenaphthene	40.88	10.0	50	0	81.8	38	118				
Acenaphthylene	46.49	10.0	50	0	93.0	44	126				
Aniline	< 20.0	20.0	50	0	21.3	10	115				
Anthracene	42.33	10.0	50	0	84.7	46	128				
Azobenzene	38.91	10.0	50	0	77.8	38	125				
Benzo(a)anthracene	42.70	10.0	50	0	85.4	45	132				
Benzo(a)pyrene	37.74	10.0	50	0	75.5	42	127				
Benzo(b)fluoranthene	37.96	10.0	50	0	75.9	40	122				

CLIENT: RUMPKE SANITARY LANDFILL
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ANALYTICAL QC SUMMARY REPORT

TestCode: SVOC_8270

Sample ID: **LCS-175951** SampType: **LCS** TestCode: **SVOC_8270** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230131**
Client ID: Batch ID: **175951** TestNo: **EPA 8270 E** Analysis Date: **3/19/2020** SeqNo: **5806904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(g,h,i)perylene	34.53	10.0	50	0	69.1	29	133				
Benzo(k)fluoranthene	39.37	10.0	50	0	78.7	39	125				
Benzoic Acid	36.79	20.0	50	0	73.6	16	122				
Benzyl Alcohol	38.53	20.0	50	0	77.1	31	141				
bis(2-Chloroethoxy)methane	39.75	10.0	50	0	79.5	39	108				
bis(2-Chloroethyl)ether	41.62	10.0	50	0	83.2	36	108				
bis(2-Chloroisopropyl)ether	45.98	10.0	50	0	92.0	35	119				
bis(2-Ethylhexyl)phthalate	30.94	5.00	50	0	61.9	25	125				
Butyl benzylphthalate	35.25	10.0	50	0	70.5	30	114				
Chrysene	38.76	10.0	50	0	77.5	38	124				
Dibenzo(a,h)anthracene	36.04	10.0	50	0	72.1	32	125				
Dibenzofuran	38.82	10.0	50	0	77.6	42	104				
Diethyl Phthalate	44.59	10.0	50	0	89.2	7	117				
Dimethyl Phthalate	45.90	10.0	50	0	91.8	7	128				
Di-N-Butyl Phthalate	37.94	10.0	50	0	75.9	32	119				
Di-N-Octylphthalate	31.69	10.0	50	0	63.4	35	131				
Di-n-propylnitrosamine	47.30	10.0	50	0	94.6	40	120				
Ethyl Methanesulfonate	43.13	10.0	50	0	86.3	38	118				
Fluoranthene	41.33	10.0	50	0	82.7	47	136				
Fluorene	42.74	10.0	50	0	85.5	41	127				
Hexachlorobenzene	36.62	10.0	50	0	73.2	41	122				
Hexachlorobutadiene	24.85	10.0	50	0	49.7	25	105				
Hexachlorocyclopentadiene	41.47	10.0	50	0	82.9	10	132				
Hexachloroethane	25.41	10.0	50	0	50.8	21	107				
Indeno(1,2,3-cd)pyrene	35.81	10.0	50	0	71.6	30	126				
Isophorone	43.10	10.0	50	0	86.2	45	133				
m,p-Cresol	37.05	10.0	50	0	74.1	31	112				
Methyl Methanesulfonate	36.82	10.0	50	0	73.6	19	93				
Naphthalene	33.63	10.0	50	0	67.3	35	110				
Nitrobenzene	37.91	10.0	50	0	75.8	38	98				
n-Nitrosodimethylamine	33.05	10.0	50	0	66.1	17	105				
n-Nitrosodiphenylamine	48.46	20.0	50	0	96.9	44	149				
N-nitrosodipropylamine	47.30	10.0	50	0	94.6	44	120				
o-Cresol	38.74	10.0	50	0	77.5	32	107				
Pentachlorophenol	39.07	20.0	50	0	78.1	20	130				
Phenanthrene	41.34	10.0	50	0	82.7	43	120				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: SVOC_8270

Sample ID: **LCS-175951** SampType: **LCS** TestCode: **SVOC_8270** Units: **µg/L** Prep Date: **3/19/2020** RunNo: **230131**
Client ID: Batch ID: **175951** TestNo: **EPA 8270 E** Analysis Date: **3/19/2020** SeqNo: **5806904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	16.08	10.0	50	0	32.2	11	118				
Pyrene	42.74	10.0	50	0	85.5	47	116				
Pyridine	< 20.0	20.0	50	0	37.6	6	97				
Total Cresol	75.78	20.0	100	0	75.8	38	118				
Total Methyl Phenol	38.74	20.0	100	0	38.7	38	118				
Surr: 2,4,6-Tribromophenol	65.37	0	75	0	87.2	34	131				
Surr: 2-Fluorobiphenyl	64.49	0	75	0	86.0	34	118				
Surr: 2-Fluorophenol	36.35	0	75	0	48.5	10	115				
Surr: Nitrobenzene-d5	57.93	0	75	0	77.2	32	119				
Surr: Phenol-d6	25.81	0	75	0	34.4	11	119				
Surr: p-Terphenyl-d14	66.75	0	75	0	89.0	35	125				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: TDS_SM 2540-C

Sample ID: **LCS-176009** SampType: **LCS** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230147**
Client ID: Batch ID: **176009** TestNo: **SM 2540 C** Analysis Date: **3/19/2020** SeqNo: **5790951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	274.0	20.0	292	0	93.8	85	115				

Sample ID: **G2003A25-001ADUP** SampType: **DUP** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230147**
Client ID: Batch ID: **176009** TestNo: **SM 2540 C** Analysis Date: **3/19/2020** SeqNo: **5790907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	52360	100						52250	0.210	10	

Sample ID: **G2003A39-001ADUP** SampType: **DUP** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **3/19/2020** RunNo: **230147**
Client ID: Batch ID: **176009** TestNo: **SM 2540 C** Analysis Date: **3/19/2020** SeqNo: **5790918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	372.0	20.0						380	2.13	10	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5788770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	48.00	10.0	47.5	0	101	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5788833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	49.00	10.0	47.5	0	103	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5788883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5788906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	48.00	10.0	47.5	0	101	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	49.00	10.0	47.5	0	103	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	49.00	10.0	47.5	0	103	85	115				

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	48.00	10.0	47.5	0	101	85	115				

Sample ID: **G2003837-001ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5788818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	101.0	10.0						102	0.985	20	

Sample ID: **G2003950-002ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5788859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	103.0	10.0						105	1.92	20	

Sample ID: **G2003A16-002ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	168.0	10.0						169	0.593	20	

Sample ID: **G2003A19-001CDUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	234.0	10.0						237	1.27	20	

CLIENT: RUMPKE SANITARY LANDFILL
Work Order: G2003A37
Project: RSL - Corrective Measures Mon.

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **G2003A22-010ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	195.0	10.0						197	1.02	20	

Sample ID: **G2003A44-001ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **230094**
Client ID: Batch ID: **R230094** TestNo: **ASTM D 1067** Analysis Date: **3/19/2020** SeqNo: **5790553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	135.0	10.0						136	0.738	20	

GLOSSARY OF TERMS

Aliquot: A separate measured and representative portion of a sample used for analysis.

Analyte: The specific chemicals or components that a sample is used for analysis.

Acceptance Criteria: Specified limits established either from a method or by the laboratory for a target analyte.

Accuracy: The measured agreement between an observed value and an accepted reference value.

Corporate Detection Limit (CDL): The value based on method detection limits that may encompass multiple studies generated from several instruments. The CDL is based on the highest MDL study and is rounded to a useable value.

Corporate Quantitation Limit (CQL): The laboratory's lowest level of data quantification for reporting a target analyte at a concentration level that does not require use of data qualifiers. The CQL is calculated as two times the Corporate Detection Limit (CDL) or two times the CDL times any dilution factor.

Batch: Samples prepared or analyzed together with the same process and personnel, using the same lot(s) of reagents. A **preparation batch** is a group of one to twenty samples of the same defined matrix, meeting the above-mentioned conditions and with a maximum time between the start of processing of the first and last sample in the batch to be 24 hours. An **analytical batch** is compromised of prepared samples (extracts, digestate or concentrates) that are analyzed together as a group. An analytical batch can include prepared samples originating from various sample matrices and may exceed 20 samples.

Chain of Custody: A form that documents the possession of the samples from the time of collection to lab receipt. This record includes: sample matrix, the number and types of containers; the mode of collection; collector; time of collection; preservation and requested analyses.

Equipment Blank: Sampling equipment rinsed with laboratory water immediately before use in sampling with the rinsing submitted to the laboratory as a sample for analysis. Data from the analysis of equipment blanks provides a check on sampling device cleanliness.

Field Duplicate: Two separate samples taken from the same source (e.g. monitoring well) and analyzed independently. The data obtained from field duplicate samples is used to evaluate the variability of the sampling procedures and the source form which the sample was obtained. There are no acceptance criteria for comparing field duplicate data results.

Laboratory Control Sample (LCS): A sample matrix, free from the analytes of interest, spiked with known amounts of analytes or a material containing known and verified amounts of analytes. It is used to establish intra-laboratory or analyst-specific precision and bias or to assess the performance of a method.

Matrix: The component or substrate that contains the analyte of interest. For purposes of batch and QC requirement determinations, the following matrix distinctions are used:

Aqueous: Any aqueous sample excluded from the definition of Drinking Water matrix or Saline/Estuarine source. Includes surface water, groundwater, effluents and TCLP or other extracts.

Drinking water: Any aqueous sample designated a potable or potential potable water source.

Non-aqueous Liquid: Any organic liquid with < 15% settable solids.

Solids: Includes soils, sediments, sludges and other matrices with > 15% settable solids.

Chemical Waste: A product or by-product of an industrial process that results in a matrix not previously defined.

Matrix Spike (MS): A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. Matrix spikes are used to determine the effect of the matrix on a method's recovery efficiency. Calculation of recovery data is not quality assessed when the concentration of the target analyte in the unspiked sample is greater than or equal to 4x the spiking concentration.

Matrix Spike Duplicate (MSD): A second replicate matrix spike prepared in the laboratory and analyzed to obtain a measure of the precision of the recovery for each analyte. Calculation of recovery data is not required when the concentration of the target analyte in the unspiked sample is greater than or equal to 4x the spiking solution.

Method Detection Limit (MDL): The minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in deionized water containing the analyte. MDLs are verified annually and are subject to change.

Preservation: Refrigeration and/or reagents added at the time of sample collection to maintain the chemical and/or biological integrity of the sample.

Recovery: the total amount of the analyte found in the sample divided by the amount of the analyte added into the sample as a spike.

Relative Percent Difference (RPD): The difference between two values divided by the average of the values, expressed as percent. Quality assessment on RPD is not used when at least one of the two values is less than or equal to 5x the reporting limit; assessment between the two values is based on whether the absolute difference is at or within 2x the reporting limit.

Reporting Limit: A data value set by the laboratory based on the CDL and CQL. Any value at or above the CQL requires no qualification. Any reported values required by the client from an analysis that shows non-detect at the CDL is flagged with a "U" qualifier. Any reported value required by the client when an analyte is detected between the CDL and CQL is flagged with a "J" and that reports the result as an estimated value.

Sample: A portion for analysis in a single, or multiple containers with a composition known to the submitter and identified by the lab number to the analyst.

Surrogate: Compounds added to the sample before preparation, then measured after analysis to detect problems in the sample preparation procedure.

Qualifier Exception Code

1) Spike recovery limits are not applicable when the sample concentration exceeds the spike concentration by a factor of four or greater.

2) Batch data is acceptable when the matrix spike exceeds control limits but the corresponding LCS is within control limits.

3) Laboratory duplicate. If one or both of the values is less than 5 times the PQL, the allowed difference is +/- the PQL.

4) The TNI standard allows for a specific number of LCS parameters to be within four standard deviations, also known as a Marginal Exceedance. The recovery for this analyte is outside the standard limits but within the allowed marginal exceedance.

GEOCHEMICAL TESTING
Environmental and Energy Analysis

Sample Receipt Log

Date: 03/18/2020 **Time:** 14:03 **Initials:** JKS **Client:** RUMPKE SANITARY LANDFILL **Workorder:** G2003A24

Thermometer Certification Number: CP 336490

Shuttle #: 136A **CusSeal:** NA **ICE:** Yes **Temp:** 4 °C

Site	Leachate	Trip Blank
GT ID #	001	002
Number of Bottles	15	3
Number of Unfixed Bottles	4	0
Number of Micro Bottles	0	0
Num of Low Level Hg Bottles	0	0
Num of HAA5 Bottles	0	0
Num of TCLP / ASTM / Cups	0	0
Num of Oil and Grease Bottles	0	0
Num of Unfixed DW Bottles	0	0
Num of Sub Bottles	0	0
Shuttle #	136A	136A
Sample Type	Leachate	Aqueous
pH < 2		
T-metals + Hg & T-hardness	> 2	
Dissolved Metals + Hg		
NH3 / COD / NO3+NO2 / TKN / P_tot	< 2	
# Phenolics pH < 2	0	0
# Phenolics pH > 2	0	0
TOC pH (Vial 1)		
TOC pH (Vial 2)		
TOC Amber (Vial 1)		
TOC Amber (Vial 2)		
Ferrous Iron		
# EDB / DBCP (NO Air) Pass	3	3
# EDB / DBCP (NO Air) Fail	0	0
TOX Amber Bottle		
# VOC / THM / BTEX (NO Air) Pass	6	0
# VOC / THM / BTEX (NO Air) Fail	0	0
Sulfide pH		
# Cyanide pH > 12	0	0
# Cyanide pH < 12	0	0
# Cyanide Free Cl OK	0	0
# Cyanide Free Cl Pink	0	0
# Amber Free Cl OK	0	0
# Amber Free Cl Pink	0	0
# Amber Bottle Yes	0	0
# Amber Bottle No	0	0
TOX (only if dechlorinated)		
# Cyanide Sulfide Test OK	0	0
# Cyanide Sulfide Test Black	0	0
Rad Test (mR/hr)		

Form F-5079, 01.15
Geochemical Testing G20003A24

REQUEST FOR LABORATORY ANALYTICAL SERVICES

Chain of Custody (COC) for State of Ohio

Shuttle/Cooler ID# 136A

Landfill Site	GT Quote No.	Client Job No.	Date Results Required
Pumpke Sanitary Landfill	—	—	Standard

REPORT RESULTS TO:

Name	Title	Mailing Address
Chris Cobel	Project Manager	100 N. Old Wilson Bridge Rd. Ste. 115
Company	**Dept.**	**City, State, Zip**
Eagon and Associates, Inc.	—	Worthington, OH 43085
Telephone No.	**E-mail Address**	
614-888-5760	Ccobel@eagoninc.com	

Special Instructions:
Sampled for Ohio App I (1-78) + PCBs.

*EDB/DBCP + VOC's collected unpreserved

ANALYSIS REQUESTED
Enter 'X' in box below to indicate request

CLIENT SAMPLE ID	DATE SAMPLED	TIME (24 hr)	COMP	GRAB	SAMPLE TYPE (MATRIX)	Number of Containers	Appendix I: Ammonia-N (Preservative: 1:1 H2SO4)	Total Metals (Preservative: 1:1 HNO3)	Alkalinity (Preservative: NONE)	Chloride, NO3+NO2, Sulfate (Preservative: NONE)	TDS (Lab Filtered) (Preservative: NONE)	EDB/ DBCP (Preservative: ~~1:1 HCl~~ None) 3/17/20 @10:37	VOC (Preservative: ~~1:1 HCl~~ None) (JMH)	Appendix II: Semivolatiles (EPA 8270) (Preservative: NONE)	Pest/PCB/Hexachlorobenzene (Preservative: NONE)	Herbicides (Preservative: NONE)	Sulfide (Preservative: NaOH / Zinc acetate)	Cyanide (Preservative: NaOH)	Other Analysis: Acrylonitrile (Preservative: None)	Lab Number
Leachate	3/17/2020	11:50		X	Leachate	15	X	X	X	X	X	X	X		X				X	0001
Cooler #136A Trip Blank	—	—	—	—	W	3														—
Trip Blank	—	—	—	—	W	3						X								0002

SR 1st Review: [illegible]
CS 2nd Review: [illegible]

CHAIN OF CUSTODY		
Relinquished by: Andrew Badrowsky	Date/Time: 3-17-20 / 17:30	Received by: [signature]
Relinquished by:	Date/Time:	Received at lab by: [signature]
Method of Shipment: Lab Courier		Comments: (Joshua K. Small)

Received by: Date/Time: 3/17/2020 17:30
Received at lab by: Date/Time: 3-18-20 1403

Ice present on receipt: Yes or No

Cooler Temp (°C) on receipt: 4

Authorized by: Andrew Badrowsky Date: 3/17/20
(Client Signature MUST Accompany Request)

Please return completed form and samples to **Geochemical Testing • 2005 N Center Ave • Somerset, PA • 15501** • 814-443-1671 • (Fax: 814-445-6729)

FIELD INFORMATION FORM

Site Name: *Rumpke Sanitary Landfill*

Sample Point: G2003A Z4 Leachate

WELL DATA

Water-Level Date: (MM/DD/YY) | Water-Level Time: | Purge/Sample Method: LF = Low Flow MP = Minimum Purge Dry = Dry V = Volumetric

Well Elevation (at TOC) (ft/msl) | Depth to Water (DTW) (from TOC) (ft) | Groundwater Elevation (site datum, from TOC) (ft/msl)

Total Well Depth (from TOC) (ft) | Water Column Height (well depth - DTW) (ft) | Casing ID (in)

PURGE/SAMPLE EQUIPMENT

Is Purging and Sampling Equipment Dedicated? Y or N | Filter Device: Y or N 0.45µ or ____ µ (circle or fill in)

Purging Device ____ A-Submersible Pump, B-Peristaltic Pump, C-Bladder Pump, D-Bailer, E-Piston Pump, E-Dipper/Bottle

Sampling Device ____

X - Other ____

Pump Type (Vol) ____ A-P1200M (495 mL), B-P1101M (395 mL), C-P1150 (130 mL), X-Other

Tubing ID (Vol/Ft) ____ A-3/8 inch (22 mL/ft), B-1/4 inch (10 mL/ft), C-0.17 inch (4.5 mL/ft), X-Other

PURGE INFO

PURGE DATE (MM/DD/YY)	START PURGE TIME (2400 Hr. Clock)	ELAPSED HRS (hrs:min)	WATER VOL (L : Gal) IN (PUMP/TUBING:WELL CASING) circle one of each	TOTAL VOL PURGED (Liters : Gallons) circle one	PUMP/TUBING:WELL VOLS PURGED (optional)

STABILIZATION DATA

Time (2400 Hr. Clock)	DTW (ft)	Vol. Purged (L : Gals)	pH (S.U.)	Spec. Conductance (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Rate (mL/min)

SAMPLE DATA

SAMPLE DATE (MM/DD/YY)	SAMPLE TIME (2400 Hr. Clock)	VOL. PURGED (L : Gals)	pH (S.U.)	SPEC. CONDUCTANCE (µmhos/cm)	TEMPERATURE (°C)	TURBIDITY (NTU)	RATE (mL/min)
013/17/20	1115 10	—	8.13	1110 10	17.7	809	—

Sample Appearance: Cloudy | Odor: Strong | Color: Brown/Black | Other: —

Weather Conditions (at sample time): Wind Speed / Direction: 7 MPH from NW | Air Temp: 43°F | Precipitation: Y or N

Comments (including purge/well volume calculations if required): Collected using a new disposable bailer from the open leachate pit behind round leachate tanks

* EDB/DBCP & VOC's collected unpreserved.

SAMPLES COLLECTED

PARAMETER LIST: Detection (Appendix I) | LABORATORY: GeoChemical Testing

CONTAINER SIZE	CONTAINER TYPE	PRESERVATIVE	ANALYSIS
40 mL x 19	Glass Vial	None, HCl	Acrylonitrile, VOCs, EDB/DBCP
250 mL	Plastic	HNO_3	Total Metals
250 mL	Plastic	H_2SO_4	NH_3, NO_2-NO_3
500 mL	Plastic	None	TDS, Alkalinity
250 mL	Plastic	None	Chloride, Sulfate
1L x 2	Glass Amber	None	PCB's

I certify that sampling procedures were in accordance with applicable EPA, State, and Site protocols:

3/17/2020 Date | Joe Lonsert Name | Signature

EAGON

EA-100 R: 2/16

FIGURE 4. FIELD INFORMATION FORM

FIELD METER CALIBRATION RECORD

Project Name: RSL Sampler(s): K. Lager-Lowe, J. Lorsert, A. Barchausky

pH Meter(s): Make/Model/Serial No: Oakton/PC450/2873220

Buffer Brand/Expiration: pH 4 IE/2/15/20 ; pH 7 IE/11/3/20 ; pH 10 IE/7/27/21

Date	Time	Calibrate/Check	pH 4 Buffer Result (S.U.)	pH 7 Buffer Result (S.U.)	pH 10 Buffer Result (S.U.)	Temp. of Cal. Soln' (°C)
3/17/20	09:10	Calibrate	4.01	7.00	10.00	11.1
3/18/20	09:09	Calibrate	4.00	7.00	10.02	11.0

Conductivity/Temp. Meter(s): Make/Model/Serial No: Oakton/PC450/2873220

Cond. Solution Brand/Expiration: IE/7/30/20 Cond. Solution Value (@ 25 °C): 1413/100,000

Date	Time	Calibrate/Check	Cond. Standard Result (µmhos/cm)	Temp. of Cond. Soln' (°C)	Notes:
3/17/20	09:10	Calibrate	1413/100,000	11.1	
3/18/20	09:09	Calibrate	1413/101,000	11.0	

Turbidity Meter(s): Make/Model/Serial No: HACH/2100P/08010C027205

Date	Time	Calibrate/Check	Gel Value (NTU)	Reading (NTU)	Notes:
3/17/20	09:10	Check	3.80	3.81	
3/18/20	09:09	Check	3.80	3.81	

Sampler (Name): Kain Lager-Lowe Sampler (Signature): [signature]

FIELD METER CALIBRATION RECORD

Project Name: *Rumpke Sanitary Landfill* Sampler(s): Andrew Barchowsky

pH Meter(s): Make/Model/Serial No: Oakton/PC450/2907615

Buffer Brand/Expiration: pH 4 IE/7-27-21 ; pH 7 IE/8-14-21 ; pH 10 —

Date	Time	Calibrate/Check	pH 4 Buffer Result (S.U.)	pH 7 Buffer Result (S.U.)	pH 10 Buffer Result (S.U.)	Temp. of Cal. Soln' (°C)
3/16/20	1417	calibrate	3.99	7.02	—	19.7
3/17/20	(AB) 0833	calibrate	3.99	7.02	—	15.6
3/17/20	1245	calibrate	3.99	7.03	—	13.8
3/18/20	0815	calibrate	3.99	7.02	—	20.4

Conductivity/Temp. Meter(s): Make/Model/Serial No: Oakton/PC450/2907615

Cond. Solution Brand/Expiration: IE/10-16-20 Cond. Solution Value (@ 25 °C): 1413/100,000

Date	Time	Calibrate/Check	Cond. Standard Result (µmhos/cm)	Temp. of Cond. Soln' (°C)	Notes:
3/16/20	1417	calibrate	1413 /99,900	19.7	
3/17/20	0833	calibrate	1413/100,000	15.6	
3/17/20	1245	calibrate	1413/100,000	13.8	
3/18/20	0815	calibrate	1413/99,800	20.4	

Turbidity Meter(s): Make/Model/Serial No.: Hach/2100Q/18070C067769

Date	Time	Calibrate/Check	Gel Value (NTU)	Reading (NTU)	Notes:
3/16/20	1417	(AB) ~~calibrate~~ check	6.30	5.89	
3/17/20	0833	check	6.30	6.31	
3/17/20	1245	check	6.30	6.43	
3/18/20	0815	check	6.30	6.38	

Sampler (Name): Andrew Barchowsky Sampler (Signature): Andrew Barchowsky

FIGURE 6. FIELD METER CALIBRATION RECORD

FIELD METER CALIBRATION RECORD

Project Name: RSL Sampler(s): J. Lonsert, A. Barchowsky, K. Layer-Lowe

pH Meter(s): Make/Model/Serial No: OAKTON / PC 450 / 2871994

Buffer Brand/Expiration: pH 4 IE - 2/15/2020 ; pH 7 IE - 11/3/2020 ; pH 10 —

Date	Time	Calibrate/Check	pH 4 Buffer Result (S.U.)	pH 7 Buffer Result (S.U.)	pH 10 Buffer Result (S.U.)	Temp. of Cal. Soln' (°C)
3/17/2020	09:05	Calibrate	4.00	7.03	—	11.9
3/17/2020	13:54	Calibrate	3.97	7.07	—	9.8
3/18/2020	07:48	Calibrate	3.93	7.04	—	8.3
3/18/2020	13:18	Calibrate	3.99	7.06	—	7.9

Conductivity/Temp. Meter(s): Make/Model/Serial No: OAKTON / PC 450 / 2871994

Cond. Solution Brand/Expiration: IE - 7/30/2020 Cond. Solution Value (@ 25 °C): 1413/100,000

Date	Time	Calibrate/Check	Cond. Standard Result (µmhos/cm)	Temp. of Cond. Soln' (°C)	Notes:
3/17/2020	09:10	Calibrate	1414 / 101,100	11.8 / 15.3	
3/17/2020	13:58	Calibrate	1411 / 100,900	9.9 ~~11.5~~ / 11.3	
3/18/2020	0752	Calibrate	1412 / 100,300	8.3 / 8.6	
3/18/2020	13:24	Calibrate	1426 / 100,300	7.9 / 8.5	

Turbidity Meter(s): Make/Model/Serial No.: HACH / 2100Q / 16090C0502605

Date	Time	Calibrate/Check	Gel Value (NTU)	Reading (NTU)	Notes:
3/17/2020	09:04	Check	6.46	~~4~~ 6.01	
3/17/2020	13:52	Check	6.46	6.35	
3/18/2020	07:54	Check	6.46	6.19	
3/18/2020		Check	6.46	6.71	

Sampler (Name): Joe Lonsert Sampler (Signature): [signature]

Table 1

Analytical Data Summary for 3/16/2020 to 3/19/2020

Constituents	Units	LEACHATE TANK
1,1,1,2-Tetrachloroethane	ug/L	<1
1,1,1-Trichloroethane	ug/L	<1
1,1,2,2-Tetrachloroethane	ug/L	<1
1,1,2-Trichloroethane	ug/L	<1
1,1-Dichloroethane	ug/L	<1
1,1-Dichloroethene	ug/L	<1
1,2,3-Trichloropropane	ug/L	<1
1,2-Dibromo-3-chloropropane	ug/L	<.04
1,2-Dibromoethane	ug/L	<.04
1,2-Dichlorobenzene	ug/L	<1
1,2-dichloroethane	ug/L	<1.0 .6J
1,2-Dichloropropane	ug/L	<1
1,4-Dichlorobenzene	ug/L	1.5
2-Butanone	ug/L	1860
2-Hexanone	ug/L	<5
4-Methyl-2-pentanone	ug/L	21.3
Acetone	ug/L	1490
Acrylonitrile	ug/L	<5
Alkalinity, Total	mg/L	4220
Antimony	mg/L	.0122
Aroclor-1016	ug/L	<2
Aroclor-1221	ug/L	<2
Aroclor-1232	ug/L	<2
Aroclor-1242	ug/L	<2
Aroclor-1248	ug/L	<2
Aroclor-1254	ug/L	<2
Aroclor-1260	ug/L	<2
Arsenic	mg/L	.094
Barium	mg/L	.203
Benzene	ug/L	2.6
Beryllium	mg/L	<.001
Bromochloromethane	ug/L	<1
Bromodichloromethane	ug/L	<1
Bromoform	ug/L	<1
Bromomethane	ug/L	<1
Cadmium	mg/L	<.002 .001J
Calcium	mg/L	139
Carbon disulfide	ug/L	<1
Carbon tetrachloride	ug/L	<1
Chloride - Automated	mg/L	1750
Chlorobenzene	ug/L	<1
Chloroethane	ug/L	<1
Chloroform	ug/L	<1
Chloromethane	ug/L	<1
Chromium	mg/L	.19
cis-1,2-Dichloroethene	ug/L	1.7
cis-1,3-Dichloropropene	ug/L	<1
Cobalt	mg/L	.028
Copper	mg/L	.101
Dibromochloromethane	ug/L	<1
Dibromomethane	ug/L	<1
Ethylbenzene	ug/L	6.3
Iodomethane	ug/L	<5
Iron	mg/L	13.1
Lead	mg/L	.0217
Magnesium	mg/L	81.1
Manganese	mg/L	.532
Methylene chloride	ug/L	<1
Nickel	mg/L	.148
Nitrate- Nitrite (Automated)	mg/L	.61
Nitrogen, Ammonia (ISE)	mg/L	902
Potassium	mg/L	393
Selenium	mg/L	<.003
Silver	mg/L	<.005
Sodium	mg/L	1370
Solids, Filterable (TDS)	mg/L	5770
Specific Conductance (Conductivity)	umhos/cm	11010
Styrene	ug/L	<1
Sulfate (SO4), Automated	mg/L	37
Tetrachloroethene	ug/L	<1
Thallium	mg/L	<.0006
Toluene	ug/L	19.2
trans-1,2-Dichloroethene	ug/L	<1
trans-1,3-Dichloropropene	ug/L	<1
trans-1,4-Dichloro-2-butene	ug/L	<2
Trichloroethene	ug/L	<1
Trichlorofluoromethane	ug/L	<1
Turbidity	NTU	809
Vanadium	mg/L	.051
Vinyl acetate	ug/L	<1
Vinyl chloride	ug/L	<1
Xylenes, Total	ug/L	14.1
Zinc	mg/L	.324

* - The displayed value is the arithmetic mean of multiple database matches.

CERTIFICATION

ANNUAL | 2020

Rumpke Sanitary Landfill

21. NOTARIZED CERTIFICATION

A notarized statement, as described in OAC 3745-27-19(M)(8), must be uploaded attesting to the fact that the information contained in this report is true and accurate. A template for this statement can be found here. If ready to upload the notarized statement, click “Save” below and an upload button will appear.

Note, the owner/operator must maintain the paper copy of the notarized statement

File Attachments

Click the 'Upload File' button to attach supporting documents as required.
* Maximum file size is 10 MB.

Notarized Statement *

RSL Cert Statement.pdf

Response created on: Mar 29, 2021 at 10:20 AM EDT by john.butler@rumpke.com

Response last updated on: Apr 12, 2021 at 10:27 AM EDT by Maria.Lammers@epa.ohio.gov

MSW, ISW, and RSW Landfills

NOTARIZED CERTIFICATION STATEMENT

I, Chris Jaquet (print name), Rumpke Engineering and Landfill Operations Director (title) as a representative of Rumpke Sanitary Landfill, Inc solid waste facility, do hereby swear that, to the best of my knowledge, the information contained in this report is true and accurate.

Signature: _____, Date: 3/24/2021

Sworn to and subscribed in my presence this 24th day of March 2021.

Notary Public Jean Lakamp Hetzer

My commission expires: 1 / 11 / 2026

SEAL

Jean Lakamp Hetzer
Notary Public
State of Ohio
Recorded in Hamilton County
My Commission Expires
January 11, 2026