

APPENDICES

**Groundwater Monitoring Report, September 2023
Butler Green Industrial Landfill, Parcel 175(5)
(Permit No. 08-02)
McClellan, Anniston, Alabama**

APPENDIX A

Groundwater Sample Logs



Matrix Environmental Services
283 Rucker Street
Anniston, Alabama 36205
(256) 847-0780

Station Name/Sample ID

LF4-MW01

Project

McClellan

Project Number

22.094.23-07.1

GROUNDWATER SAMPLING LOG

Groundwater Depth (TOC) 19.11 feet	Sample Method Low Flow	Sampler David Abernathy	Date 9/6/2023
Well Depth (TOC) 42.5 feet		Location (Site) Landfill 4	Begin Time 10:10
Water Column Thickness 23.39 feet	Equipment Geotech Bladder Pump Geotech Geocontrol Pro	Laboratory Eurofins/TestAmerica	Sample Depth 32
Casing Diameter 4 inches		Sample Suite See COCs	
Casing Volume 15.20 gallons 1"=x0.04 2"=x0.16 4"=x0.65 6"=x1.47 8"=x10.4	Temperature (°F) 82°	Meters YSI Pro Plus Solinst Water Level Meter Micro TPW Turbidimeter	Serial numbers
Well Elevation (TOC) 739.79 feet	Weather Conditions Overcast	Calibration 9/6/2023	Ferrous Iron (Fe II) (mg/L) (for MNA sampling) Not Applicable
Groundwater Elevation 720.68 feet		Parameter Stabilization temp +/- 1° DO +/- 10% Turbidity +/- 10% cond +/- 3% ORP +/- 10mV pH +/- 0.1 unit	Product Observed (yes/no) No

Time	Volume removed (mL)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	TDS (g/L)	Turbidity (NTU)	pH	Description		
									clarity	color	odor
1015	0	20.9	127	1.0	122	0.08	41	4.6	cloudy	white	none
1020	750	20.1	125	0.4	120	0.08	43	4.6	cloudy	white	none
1025	750	19.9	125	0.4	119	0.08	55	4.7	cloudy	white	none
1030	750	19.9	125	0.3	117	0.08	68	4.7	cloudy	white	none
1035	750	19.7	124	0.3	116	0.08	81	4.7	cloudy	white	none
1040	750	20.4	123	0.4	114	0.08	83	4.8	cloudy	white	none
1045	750	20.2	123	0.4	113	0.08	82	5.1	cloudy	white	none
1050	750	20.0	121	0.4	118	0.08	82	5.0	cloudy	white	none
1055	750	20.1	121	0.4	120	0.08	82	4.8	cloudy	white	none
1100	750	20.1	120	0.5	120	0.08	82	4.8	cloudy	white	none
1105	750	20.0	119	0.5	118	0.08	82	4.9	cloudy	white	none
1110	Collect Sample										
Total Time (min.) 55	Total Volume Removed 7500	Well pumped dry (yes/no) No				Notes					
QA/QC Samples MS/MSD									Signature 		



Matrix Environmental Services
283 Rucker Street
Anniston, Alabama 36205
(256) 847-0780

Station Name/Sample ID

LF4-MW02

Project

McClellan

Project Number

22.094.23-07.1

GROUNDWATER SAMPLING LOG

Groundwater Depth (TOC)	Sample Method	Sampler	Date
24.34 feet	Low Flow	David Abernathy	9/6/2023
Well Depth (TOC)		Location (Site)	Begin Time
40.25 feet	Equipment Geotech Bladder Pump Geotech Geocontrol Pro	Landfill 4	1210
Water Column Thickness		Laboratory	Sample Depth
15.91 feet		Eurofins/Test America	32
Casing Diameter	Temperature (°F)	Sample Suite	
4 inches	88°	See COCs	
Casing Volume	Weather Conditions	Meters	Serial numbers
10.34 gallons 1"=x0.04 2"=x0.16 4"=x0.65 6"=x1.47 8"=x10.4		YSI Pro Plus	
Well Elevation (TOC)		Solinst Water Level Meter	
738.5	Sunny	Micro TPW Turbidimeter	
Groundwater Elevation		Calibration	Ferrous Iron (Fe II) (mg/L) (for MNA sampling)
714.16 feet	Parameter Stabilization temp +/- 1° DO +/- 10% Turbidity +/- 10% cond +/- 3% ORP +/- 10mV pH +/- 0.1 unit	9/6/2023	Not Applicable
		Product Observed (yes/no)	Depth to product
		No	Not Applicable

Time	Volume removed (gallon)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	TDS (g/L)	Turbidity (NTU)	pH	Description		
									clarity	color	odor
1215	0	21.2	547	0.8	75	0.36	230	5.1	Cloudy	Brown	None
1220	450	20.0	547	0.4	77	0.35	216	5.1	Cloudy	Brown	None
1225	450	19.9	546	0.4	74	0.35	199	5.2	Cloudy	Brown	None
1230	450	19.8	545	0.3	72	0.35	174	5.2	Cloudy	Brown	None
1235	450	19.7	544	0.3	71	0.35	159	5.3	Cloudy	Brown	None
1240	450	19.8	544	0.2	71	0.35	145	5.3	Cloudy	Brown	None
1245	450	20.0	543	0.2	71	0.35	137	5.3	Cloudy	Brown	None
1250	450	20.3	544	0.2	70	0.35	134	5.4	Cloudy	Brown	None
1255	450	20.1	543	0.2	71	0.35	132	5.4	Cloudy	Brown	None
1300	450	19.9	543	0.2	72	0.35	130	5.3	Cloudy	Brown	None
1305	450	19.7	543	0.2	70	0.35	131	5.3	Cloudy	Brown	None
1310	Collect Sample										
Total Time (min.)	Total Volume Removed		Well pumped dry (yes/no)			Notes					
55	4500		No								
QA/QC Samples									Signature		
N/A											



Matrix Environmental Services
283 Rucker Street
Anniston, Alabama 36205
(256) 847-0780

Station Name/Sample ID

LF4-MW03

Project

McClellan

Project Number

22.094.23-07.1

GROUNDWATER SAMPLING LOG

Groundwater Depth (TOC) 15.73 feet	Sample Method Low Flow	Sampler David Abernathy	Date 9/6/2023
Well Depth (TOC) 34.2 feet		Location (Site) Landfill 4	Begin Time 1350
Water Column Thickness 18.47 feet	Equipment Geotech Bladder Pump Geotech Geocontrol Pro	Laboratory Eurofins/Test America	Sample Depth 25
		Sample Suite See COCs	
Casing Diameter 4 inches	Temperature (°F) 89°	Meters YSI Pro Plus	Serial numbers Solinst Water Level Meter
Casing Volume 12.01 gallons 1"=x0.04 2"=x0.16 4"=x0.65 6"=x1.47 8"=x10.4	Weather Conditions Sunny	Micro TPW Turbidimeter	
Well Elevation (TOC) 739.78		Calibration 9/6/2023	Ferrous Iron (Fe II) (mg/L) (for MNA sampling) Not Applicable
Groundwater Elevation 724.05 feet	Parameter Stabilization temp +/- 1° DO +/- 10% Turbidity +/- 10% cond +/- 3% ORP +/- 10mV pH +/- 0.1 unit	Product Observed (yes/no) No	Depth to product Not Applicable

Time	Volume removed (gallon)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	TDS (g/L)	Turbidity (NTU)	pH	Description		
									clarity	color	odor
1355	0	23.1	69	1.8	197	0.05	37	5.0	Cloudy	White	None
1400	750	21.2	69	0.7	260	0.04	28	4.4	Clear	Clear	None
1405	750	21.0	66	0.4	275	0.04	27	4.3	Clear	Clear	None
1410	750	20.8	65	0.3	283	0.04	27	4.2	Clear	Clear	None
1415	750	20.6	64	0.3	282	0.04	27	4.2	Clear	Clear	None
1420	750	20.8	63	0.3	279	0.04	27	4.3	Clear	Clear	None
1425	750	21.0	63	0.3	276	0.04	27	4.4	Clear	Clear	None
1430	750	20.9	62	0.3	277	0.04	27	4.4	Clear	Clear	None
1435	750	20.9	62	0.3	278	0.04	27	4.4	Clear	Clear	None
1440	Collect Sample										
Total Time (min.)	Total Volume Removed	Well pumped dry (yes/no)				Notes					
45	6000	No									
QA/QC Samples									Signature		
N/A											



Matrix Environmental Services
283 Rucker Street
Anniston, Alabama 36205
(256) 847-0780

Station Name/Sample ID

LF4-MW04

Project

McClellan

Project Number

22.094.23-07.1

GROUNDWATER SAMPLING LOG

Groundwater Depth (TOC) 8.93 feet	Sample Method Low Flow	Sampler David Abernathy	Date 9/6/2023
Well Depth (TOC) 26.8 feet		Location (Site) Landfill 4	Begin Time 1515
Water Column Thickness 17.87 feet	Equipment Geotech Bladder Pump Geotech Geocontrol Pro	Laboratory Eurofins/TestAmerica	Sample Depth 20
		Sample Suite See COCs	
Casing Diameter 4 inches	Temperature (°F) 90°	Meters YSI Pro Plus	Serial numbers Solinst Water Level Meter
Casing Volume 11.62 gallons 1"=x0.04 2"=x0.16 4"=x0.65 6"=x1.47 8"=x10.4	Weather Conditions Sunny	Micro TPW Turbidimeter	
Well Elevation (TOC) 743.35 feet		Calibration 9/6/2023	Ferrous Iron (Fe II) (mg/L) (for MNA sampling) Not Applicable
Groundwater Elevation 734.42 feet	Parameter Stabilization temp +/- 1° DO +/- 10% Turbidity +/- 10% cond +/- 3% ORP +/- 10mV pH +/- 0.1 unit	Product Observed (yes/no) No	Depth to product Not Applicable

Time	Volume removed (mL)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	TDS (g/L)	Turbidity (NTU)	pH	Description		
									clarity	color	odor
1520	0	22.1	890	1.2	61	0.58	4	6.0	Clear	Clear	None
1525	750	21.5	891	1.1	70	0.58	4	5.8	Clear	Clear	None
1530	750	21.2	882	0.8	64	0.57	4	5.9	Clear	Clear	None
1535	750	21.0	875	0.5	61	0.57	4	5.9	Clear	Clear	None
1540	750	21.3	867	0.3	60	0.57	4	5.9	Clear	Clear	None
1545	750	21.5	863	0.3	55	0.56	4	6.0	Clear	Clear	None
1550	750	21.2	868	0.3	53	0.57	4	6.0	Clear	Clear	None
1555	750	21.0	867	0.2	53	0.57	4	6.0	Clear	Clear	None
1600	Collect Sample										
Total Time (min.)	Total Volume Removed	Well pumped dry (yes/no)				Notes					
40	5250	No									
QA/QC Samples									Signature		
N/A											



Matrix Environmental Services
283 Rucker Street
Anniston, Alabama 36205
(256) 847-0780

Station Name/Sample ID

LF4-MW05

Project

McClellan

Project Number

22.094.23-07.1

GROUNDWATER SAMPLING LOG

Groundwater Depth (TOC) 13.3 feet	Sample Method Low Flow	Sampler David Abernathy	Date 9/6/2023
Well Depth (TOC) 34.6 feet		Location (Site) Landfill 4	Begin Time 0845
Water Column Thickness 21.3 feet	Equipment Geotech Bladder Pump Geotech Geocontrol Pro	Laboratory Eurofins/TestAmerica	Sample Depth 25
		Sample Suite See COCs	
Casing Diameter 4 inches	Temperature (°F) 69°	Meters YSI Pro Plus	Serial numbers Solinst Water Level Meter
Casing Volume 13.85 gallons 1"=x0.04 2"=x0.16 4"=x0.65 6"=x1.47 8"=x10.4	Weather Conditions Overcast	Micro TPW Turbidimeter	
Well Elevation (TOC) 753.32 feet		Calibration 9/6/2023	Ferrous Iron (Fe II) (mg/L) (for MNA sampling) Not Applicable
Groundwater Elevation 740.02 feet	Parameter Stabilization temp +/- 1° DO +/- 10% Turbidity +/- 10% cond +/- 3% ORP +/- 10mV pH +/- 0.1 unit	Product Observed (yes/no) No	Depth to product Not Applicable

Time	Volume removed (mL)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	TDS (g/L)	Turbidity (NTU)	pH	Description		
									clarity	color	odor
0850	0	18.8	34	1.3	205	0.02	24	3.5	Clear	Clear	None
0855	750	19.0	34	1.1	196	0.02	24	3.7	Clear	Clear	None
0900	750	19.1	34	1.0	185	0.02	24	3.8	Clear	Clear	None
0905	750	19.1	34	0.7	173	0.02	24	4.0	Clear	Clear	None
0910	750	19.2	33	0.7	166	0.02	24	4.1	Clear	Clear	None
0915	750	19.1	33	0.6	163	0.02	24	4.2	Clear	Clear	None
0920	750	18.7	33	0.5	162	0.02	24	4.1	Clear	Clear	None
0925	750	18.6	33	0.5	163	0.02	24	4.1	Clear	Clear	None
0930	Collect Sample										

Total Time (min.) 40	Total Volume Removed 5250	Well pumped dry (yes/no) No	Notes
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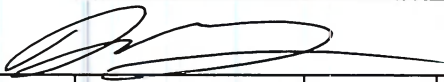
QA/QC Samples DUP 424	Signature
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APPENDIX B
Chains-of-Custody, September 2023

MATRIX ENVIRONMENTAL SERVICES CHAIN OF CUSTODY RECORD

Laboratory Eurofins
 Lab Contact Noel Savoie and Beth Daughtry
 MES Contact Betty Van Pelt
 MES Phone 801-699-1246
 Project Parcel 81(5), Landfill 4
 Task # 22.094.23-07.1
 Lab contract: 22.094.23-07.1.500

COC Number 68019843
 Cooler ID 1 of 1
 Page 1 of 1

Samplers Signature 

SWMU	Station ID	QC Code	Station Code	Matrix	Sample Method	Date Collected	Sample Time	Analysis			
								SW8260D - VOC 3 - 40 ml vials, HCl	6020A/7470A Metals (Total) 1 - 250 ml poly HNO3	SW8260D - VOC 2 - 40 ml vials, HCl	
Parcel 81(5), Landfill 4	LF4-MW1	NS	MW	Water	Grab	9/6/2023	11:10	X	X		
Parcel 81(5), Landfill 4	LF4-MW1	MS/MSD	MW	Water	Grab	9/6/2023	11:10	X	X		
Parcel 81(5), Landfill 4	LF4-MW2	NS	MW	Water	Grab	9/6/2023	13:10	X	X		
Parcel 81(5), Landfill 4	LF4-MW3	NS	MW	Water	Grab	9/6/2023	14:40	X	X		
Parcel 81(5), Landfill 4	LF4-MW4	NS	MW	Water	Grab	9/6/2023	16:00	X	X		
Parcel 81(5), Landfill 4	LF4-MW5	NS	MW	Water	Grab	9/6/2023	9:30	X	X		
Parcel 81(5), Landfill 4	DUP424	FD	MW	Water	Grab	9/6/2023	N/A	X	X		
Parcel 81(5), Landfill 4	TB614	TB	WQ	Water	Grab	9/7/2023	8:37			X	

NOTES:

QC Code: NS = Investigative Sample, FD = Field Duplicate, MS/MSD = Matrix Spike/Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water

Station Type = MW = Monitoring Well, BH = Bore Hole, SD = Sediment, SW = Surface Water, SS = Surface Soil, SU = Sump, WS = Waste Solid/Soil, WW = Waste Water

White Copy = Lab COC, Yellow COC = Field Copy, Pink COC = Data Mgmt

Double the number of bottles for MS/MSD

COMMENTS: See Task Order 22.094.23-07.1 500 for required list of VOCs and metals

**Collect FEII in the field

Relinquished by (Signature):

Date/Time:

9/7/2023

Received by (Signature):

FedEx

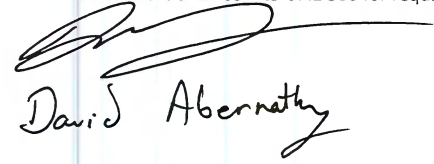
1030

Relinquished by (Signature):

Date/Time:

1030

Received by (Signature):


 David Abernathy
 9-8-23 959
 1.9/20



680-240065 Chain of Custody

APPENDIX C

Data Validation Summary, September 2023

Data Validation Review e-Checklist				
Laboratory Name:	TALSAV	Report Package Date:	9/19/2023	
Project Name:	LF4	Review Date:	12/5/2023	
Sample Delivery Group (SDG):	680-240065-1			
Reviewer Name:	BVP & OS			
Parameters:	Metals and VOC			
Methods:	SW6020B, SW7470A, SW8260D			
Matrix:	ground water			
		Yes	No	N/A
Report Completeness & Sample Log-In Condition				
1 Were holding times met?		X		
2 Were sample storage and preservation requirements met		X		
Laboratory Method Blanks and Field Blanks				
1 Were appropriate types of laboratory method blanks analyzed?		X		
2 Were the laboratory method blanks analyzed at the appropriate frequency?		X		
3 Was the method blank free of contamination (i.e., less than the MDL or RL)?			X	1
4 Did the method blank contamination affect the final results?		X		
5 Was a trip blank required and submitted with the samples?		X		
6 Was the trip blank free of contamination (i.e., less than the MDL or RL)?		X		
7 Did the trip blank contamination affect the final results?			X	
8 Was an equipment blank required and submitted with the samples?			X	
9 Was the equipment blank free of contamination (i.e., less than the MDL or RL)?				X
10 Did the equipment blank contamination affect the final results?				X
11 Were Continuing Calibration Blanks analyzed?		X		
12 Were Continuing Calibration Blanks within the control window?		X		
13 Did the Continuing Calibration Blanks contamination affect the final results?			X	
Surrogates				
1 Were surrogates added prior to extraction for all appropriate methods?		X		
2 Were surrogate percent recoveries within laboratory control limits?		X		
3 Did the surrogate percent recoveries affect the final results?		X		
Laboratory Control Samples				
1 Were Laboratory Control Sample analyzed at a frequency of one per batch?		X		
2 Were Laboratory Control Sample spiked with appropriate list of target compounds?		X		
3 Were Laboratory Control Sample percent recoveries within laboratory control limits?			X	2
4 Did the Laboratory Control Sample percent recoveries affect the final results?			X	
5 If performed, was Laboratory Control Sample Duplicate data provided?		X		
6 Were the LCS/LCSD relative percent difference values within laboratory control limits?		X		
Matrix Spikes				
1 Were matrix spike/matrix spike duplicates analyzed at a frequency of one per batch?			X	3
Sample used/methods:	LF4-MW1			
2 Were matrix spike/matrix spike duplicates performed on a project sample selected by the laboratory?			X	
Sample used/methods:	none			
3 Were matrix spike/matrix spike duplicates spiked with appropriate list of target compounds?		X		
4 Were matrix spike/matrix spike duplicate percent recoveries within laboratory control limits?			X	3
5 Did the matrix spike/matrix spike duplicate percent recoveries affect the final results? If yes, narrate.			X	3
6 Were the matrix spike/matrix spike duplicate relative percent difference values within laboratory control limits?			X	
7 Did the matrix spike/matrix spike duplicate relative percent differences affect the final results?		X		

Laboratory Name:	TALSAV	Report Package Date:	9/19/2023
Project Name:	LF4	Review Date:	12/5/2023
Sample Delivery Group (SDG):	680-240065-1		
Reviewer Name:	BVP & OS		
Parameters:	Metals and VOC		
Methods:	SW6020B, SW7470A, SW8260D		
Matrix:	ground water		
		Yes	No
		N/A	Comment

Field and Laboratory Duplicates				
1 Was a field duplicate submitted with this sample delivery group?	X			
Field Duplicate ID: LF4-MW5 = DUP424				
2 Were the field sample relative percent difference values less than review criteria?	X			
3 Did the field duplicate relative percent difference results affect the final results? If so, narrate.		X		
Other Laboratory QC Data				
1 Were internal standard data reported? (organics and inorganics by 6020)	X			
2 Were internal standard area counts and retention times within method required limits?	X			
3 Were data associated with manual integration flagged on the test reports?			X	
4 Did dual-column confirmation results meet method-required QC limits of <25% difference?			X	
5 Was an interference check sample analyzed and were percent recoveries within QC limits?	X			
6 If serial dilutions were analyzed using a project sample, were the percent differences within QC limits?		X		4
7 Was a CRDL check sample analyzed and were the percent recoveries within QC limits?	X			
8 If post-digestion spikes were performed for metals, were percent recoveries with QC limits?	X			
9 If ICV/CCV was stated in the case narrative, did the ICV/CCV affect the project samples?	X			
10 Were the total metal results greater than the dissolved metal results?			X	

Comment No.	Description (data usability; note any estimated and/or rejected data):
1	Method blank detections in : Batch 797541 Iodomethane 7.83 J µg/L - not detected in associated samples - no quals; Batch 797474 Nicke l1.31 J µg/L - LF4-MW3, LF4-MW4, and LF4-MW5 and its dup all UB qualified.
2	Batch 797541 - LCS and LCSD high recoveries for Iodomethane - not detected in associated samples - no quals, chloroethane relative percent difference high -LCS and LCSD met criteria - no quals Batch 798109 - LCS and LCSD high recoveries for Vinyl chloride - not detected in associated samples - no quals.
3	VOC - LF4-MW1 MS and/or MSD had many recoveries above criteria. See pages 21-23 in the lab report. Analytes not detected - no quals. Metals - LF4-MW1 Copper MS high recovery, MSD met criteria - no qual
4	Serial dilution on LF4-MW1 barium and cobalt failed % difference but concentrations not 50X reporting limit. No quals.

Notes: (only those not defined above)

CRDL - contract required detection limit

dup - duplicate

ICV/CCV - initial calibration verification/continuing calibration verification

LCS/LCSD - laboratory control sample/laboratory control sample duplicate

MS/MSD - matrix spike/matrix spike duplicate

MDL - method detection limit

µg/L - microgram per liter

N/A - not applicable

QC - quality control

RL - reporting limit

SDG - Sample delivery group

TALSAV - Eurofins Savannah (formerly TestAmerica)

VOC - Volatile organic compounds

Qualifiers (quals):

J - Data is estimated. Result is between the RL and MDL.

UB - Analyte considered not detected based on detection in an associated blank.

Table C1: Sample Index
Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

SiteName	Station	QCCode	Matrix	Sample Date	Lab	Delivery Group	LabSampleID	Method
PARCEL 81(5) LANDFILL 4	LF4-MW1	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-1	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW1	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-1	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW1	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-1	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW1	MS	WG	09/06/23	TALSAV	680-240065-1	680-240065-1 MS	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW1	MS	WG	09/06/23	TALSAV	680-240065-1	680-240065-1 MS	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW1	MS	WG	09/06/23	TALSAV	680-240065-1	680-240065-1 MS	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW1	MSD	WG	09/06/23	TALSAV	680-240065-1	680-240065-1 MSD	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW1	MSD	WG	09/06/23	TALSAV	680-240065-1	680-240065-1 MSD	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW1	MSD	WG	09/06/23	TALSAV	680-240065-1	680-240065-1 MSD	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW2	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-2	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW2	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-2	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW2	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-2	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW3	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-3	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW3	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-3	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW3	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-3	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW4	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-4	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW4	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-4	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW4	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-4	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW5	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-5	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW5	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-5	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW5	NS	WG	09/06/23	TALSAV	680-240065-1	680-240065-5	SW8260D
PARCEL 81(5) LANDFILL 4	LF4-MW5	FD	WG	09/06/23	TALSAV	680-240065-1	680-240065-6	SW6020B
PARCEL 81(5) LANDFILL 4	LF4-MW5	FD	WG	09/06/23	TALSAV	680-240065-1	680-240065-6	SW7470A
PARCEL 81(5) LANDFILL 4	LF4-MW5	FD	WG	09/06/23	TALSAV	680-240065-1	680-240065-6	SW8260D
MCCLELLAN FIELD QC	TRIP BLANK	TB	W	09/07/23	TALSAV	680-240065-1	680-240065-7	SW8260D

Notes:

FD - field duplicate
MS - matrix spike
MSD - matrix spike duplicate
NS - normal sample
QC - quality control
TALSAV - Eurofins Savannah (formerly TestAmerica)
TB - trip blank
W - water
WG - ground water

**Table C2 - Summary of Field Duplicate Relative Percent Recoveries.
Industrial Landfill, Parcel 175(5)**

Station	Sample Date	Parameter	Units	NS Value	NS Flag	FD Value	FD Flag	RPD	RPD Limit
LF4-MW5 (DUP424)	09/06/23	Arsenic	µg/L	1.9	J	1.9	J	0	50
LF4-MW5 (DUP424)	09/06/23	Barium	µg/L	12		12		0	50
LF4-MW5 (DUP424)	09/06/23	Cobalt	µg/L	4.7		5		6	50
LF4-MW5 (DUP424)	09/06/23	Lead	µg/L	2	J	2	J	0	50
LF4-MW5 (DUP424)	09/06/23	Nickel	µg/L	2.5	J	2.6	J	4	50
LF4-MW5 (DUP424)	09/06/23	Vanadium	µg/L	1.5	J	1.3	J	14	50
LF4-MW5 (DUP424)	09/06/23	Zinc	µg/L	5	J	5	J	0	50

Notes:

FD - field duplicate

µg/L - microgram per liter

NS - normal sample

RPD - relative percent difference

Flag:

J - Result is estimated. Result is between the reporting limit and method detection limit.

ATTACHMENT C1 Laboratory Data,
September 2023

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Betty Van Pelt
Matrix Environmental Services, LLC
707 17th Street
Suite 3150
Denver, Colorado 80202
Generated 9/19/2023 10:45:10 PM

JOB DESCRIPTION

Parcel 81(5), Landfill 4

JOB NUMBER

680-240065-1

Eurofins Savannah

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Noel Savoie, Project Manager I
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Definitions/Glossary

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-240065-1	LF4-MW1	Water	09/06/23 11:10	09/08/23 09:59
680-240065-2	LF4-MW2	Water	09/06/23 13:10	09/08/23 09:59
680-240065-3	LF4-MW3	Water	09/06/23 14:40	09/08/23 09:59
680-240065-4	LF4-MW4	Water	09/06/23 16:00	09/08/23 09:59
680-240065-5	LF4-MW5	Water	09/06/23 09:30	09/08/23 09:59
680-240065-6	DUP424	Water	09/06/23 00:00	09/08/23 09:59
680-240065-7	TB614	Water	09/07/23 08:37	09/08/23 09:59

Case Narrative

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Job ID: 680-240065-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative 680-240065-1

Receipt

The samples were received on 9/8/2023 9:59 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

GC/MS VOA

Method 8260D: The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-797541 recovered outside control limits for the following analyte: Trichlorofluoromethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The matrix spike/matrix spike duplicate (MS/MSD) and %RPD recoveries for analytical batch 680-797541 were outside advisory control limits for several analytes. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) met acceptance criteria; therefore, the results have been reported and qualified.

Method 8260D: The method blank for analytical batch 680-797541 contained Iodomethane above the method detection limit (MDL). Associated samples were not re-analyzed because the method blank results were less than the reporting limit (RL).

Method 8260D: The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-798109 recovered outside control limits for the following analyte: Vinyl chloride. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The %RPD of the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-798109 recovered outside control limits for the following analyte: Chloroethane.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-798109.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

Method 6020B: The matrix spike/matrix spike duplicate (MS/MSD) associated with prep batch 680-797270 and analytical batch 680-797474 recovered outside advisory control limits for Copper. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) met acceptance criteria; therefore, the results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW1

Lab Sample ID: 680-240065-1

Date Collected: 09/06/23 11:10

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U F1	10	3.7	ug/L			09/12/23 19:29	1
Acrylonitrile	5.5	U F1	20	5.5	ug/L			09/12/23 19:29	1
Benzene	0.27	U F1	1.0	0.27	ug/L			09/12/23 19:29	1
Bromochloromethane	0.34	U F1	1.0	0.34	ug/L			09/12/23 19:29	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/12/23 19:29	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/12/23 19:29	1
Bromomethane	3.7	U F1	5.0	3.7	ug/L			09/12/23 19:29	1
2-Butanone (MEK)	6.4	U F1	10	6.4	ug/L			09/12/23 19:29	1
Carbon disulfide	0.43	U F1	2.0	0.43	ug/L			09/12/23 19:29	1
Carbon tetrachloride	0.30	U F1	1.0	0.30	ug/L			09/12/23 19:29	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/12/23 19:29	1
Chloroethane	4.6	U F1 F2	5.0	4.6	ug/L			09/12/23 19:29	1
Chloroform	0.27	U F1	1.0	0.27	ug/L			09/12/23 19:29	1
Chloromethane	0.54	U F1	1.0	0.54	ug/L			09/12/23 19:29	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/12/23 19:29	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/12/23 19:29	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/12/23 19:29	1
Dibromomethane	0.34	U F1	1.0	0.34	ug/L			09/12/23 19:29	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 19:29	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 19:29	1
trans-1,4-Dichloro-2-butene	1.3	U F1	2.0	1.3	ug/L			09/12/23 19:29	1
1,1-Dichloroethane	0.33	U F1	1.0	0.33	ug/L			09/12/23 19:29	1
1,2-Dichloroethane	0.25	U F1	1.0	0.25	ug/L			09/12/23 19:29	1
cis-1,2-Dichloroethene	0.25	U F1	1.0	0.25	ug/L			09/12/23 19:29	1
trans-1,2-Dichloroethene	0.34	U F1	1.0	0.34	ug/L			09/12/23 19:29	1
1,1-Dichloroethene	0.33	U F1	1.0	0.33	ug/L			09/12/23 19:29	1
1,2-Dichloropropane	0.22	U F1	1.0	0.22	ug/L			09/12/23 19:29	1
1,3-Dichloropropane	0.36	U F1	1.0	0.36	ug/L			09/12/23 19:29	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/12/23 19:29	1
trans-1,3-Dichloropropene	0.23	U F1	1.0	0.23	ug/L			09/12/23 19:29	1
Ethylbenzene	0.20	U F1	1.0	0.20	ug/L			09/12/23 19:29	1
2-Hexanone	3.2	U F1	10	3.2	ug/L			09/12/23 19:29	1
Iodomethane	3.9	U F1	10	3.9	ug/L			09/12/23 19:29	1
Methylene Chloride	3.2	U F1	5.0	3.2	ug/L			09/12/23 19:29	1
4-Methyl-2-pentanone (MIBK)	2.7	U F1	10	2.7	ug/L			09/12/23 19:29	1
Methyl tert-butyl ether	0.81	U F1	5.0	0.81	ug/L			09/12/23 19:29	1
Styrene	0.27	U	1.0	0.27	ug/L			09/12/23 19:29	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/12/23 19:29	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/12/23 19:29	1
Tetrachloroethylene	0.35	U F1	1.0	0.35	ug/L			09/12/23 19:29	1
Toluene	0.25	U F1	1.0	0.25	ug/L			09/12/23 19:29	1
1,1,1-Trichloroethane	0.21	U F1	1.0	0.21	ug/L			09/12/23 19:29	1
1,1,2-Trichloroethane	0.32	U F1	1.0	0.32	ug/L			09/12/23 19:29	1
Trichloroethene	0.20	U F1	1.0	0.20	ug/L			09/12/23 19:29	1
Trichlorofluoromethane	0.33	U *+ F1	1.0	0.33	ug/L			09/12/23 19:29	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/12/23 19:29	1
Vinyl acetate	0.69	U F1	2.0	0.69	ug/L			09/12/23 19:29	1
Vinyl chloride	0.40	U F1	1.0	0.40	ug/L			09/12/23 19:29	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/12/23 19:29	1

Eurofins Savannah

Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW1

Lab Sample ID: 680-240065-1

Date Collected: 09/06/23 11:10

Matrix: Water

Date Received: 09/08/23 09:59

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		70 - 130		09/12/23 19:29	1
1,2-Dichloroethane-d4 (Surr)	114		60 - 124		09/12/23 19:29	1
Dibromofluoromethane (Surr)	117		70 - 130		09/12/23 19:29	1
4-Bromofluorobenzene (Surr)	96		70 - 130		09/12/23 19:29	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:23	09/11/23 15:32	1
Arsenic	5.4		3.0	0.86	ug/L		09/11/23 05:23	09/11/23 15:32	1
Barium	47		5.0	0.89	ug/L		09/11/23 05:23	09/11/23 15:32	1
Beryllium	0.26	J	0.50	0.20	ug/L		09/11/23 05:23	09/11/23 15:32	1
Cadmium	0.15	J	0.50	0.078	ug/L		09/11/23 05:23	09/11/23 15:32	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:23	09/11/23 15:32	1
Cobalt	23		0.50	0.22	ug/L		09/11/23 05:23	09/11/23 15:32	1
Copper	2.7	J F1	5.0	1.1	ug/L		09/11/23 05:23	09/11/23 15:32	1
Lead	1.1	J	2.5	0.21	ug/L		09/11/23 05:23	09/11/23 15:32	1
Nickel	15		5.0	0.42	ug/L		09/11/23 05:23	09/11/23 15:32	1
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:23	09/11/23 15:32	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:23	09/11/23 15:32	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:23	09/11/23 15:32	1
Vanadium	0.63	U	10	0.63	ug/L		09/11/23 05:23	09/11/23 15:32	1
Zinc	31		20	2.8	ug/L		09/11/23 05:23	09/11/23 15:32	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/11/23 11:54	09/12/23 12:11	1

Client Sample ID: LF4-MW2

Lab Sample ID: 680-240065-2

Date Collected: 09/06/23 13:10

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/12/23 19:51	1
Acrylonitrile	5.5	U	20	5.5	ug/L			09/12/23 19:51	1
Benzene	0.27	U	1.0	0.27	ug/L			09/12/23 19:51	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/12/23 19:51	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/12/23 19:51	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/12/23 19:51	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/12/23 19:51	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/12/23 19:51	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/12/23 19:51	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/12/23 19:51	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/12/23 19:51	1
Chloroethane	4.6	U	5.0	4.6	ug/L			09/12/23 19:51	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/12/23 19:51	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/12/23 19:51	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/12/23 19:51	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/12/23 19:51	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/12/23 19:51	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/12/23 19:51	1

Eurofins Savannah

Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW2

Lab Sample ID: 680-240065-2

Date Collected: 09/06/23 13:10

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 19:51	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 19:51	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/12/23 19:51	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/12/23 19:51	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/12/23 19:51	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/12/23 19:51	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/12/23 19:51	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/12/23 19:51	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/12/23 19:51	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/12/23 19:51	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/12/23 19:51	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/12/23 19:51	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/12/23 19:51	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/12/23 19:51	1
Iodomethane	3.9	U	10	3.9	ug/L			09/12/23 19:51	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/12/23 19:51	1
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/12/23 19:51	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/12/23 19:51	1
Styrene	0.27	U	1.0	0.27	ug/L			09/12/23 19:51	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/12/23 19:51	1
1,1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/12/23 19:51	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/12/23 19:51	1
Toluene	0.25	U	1.0	0.25	ug/L			09/12/23 19:51	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/12/23 19:51	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/12/23 19:51	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/12/23 19:51	1
Trichlorofluoromethane	0.33	U **	1.0	0.33	ug/L			09/12/23 19:51	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/12/23 19:51	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/12/23 19:51	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			09/12/23 19:51	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/12/23 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		70 - 130		09/12/23 19:51	1
1,2-Dichloroethane-d4 (Surr)	112		60 - 124		09/12/23 19:51	1
Dibromofluoromethane (Surr)	113		70 - 130		09/12/23 19:51	1
4-Bromofluorobenzene (Surr)	98		70 - 130		09/12/23 19:51	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:23	09/11/23 16:29	1
Arsenic	4.3		3.0	0.86	ug/L		09/11/23 05:23	09/11/23 16:29	1
Barium	96		5.0	0.89	ug/L		09/11/23 05:23	09/11/23 16:29	1
Beryllium	0.39	J	0.50	0.20	ug/L		09/11/23 05:23	09/11/23 16:29	1
Cadmium	0.32	J	0.50	0.078	ug/L		09/11/23 05:23	09/11/23 16:29	1
Chromium	3.2	J	5.0	1.2	ug/L		09/11/23 05:23	09/11/23 16:29	1
Cobalt	140		0.50	0.22	ug/L		09/11/23 05:23	09/11/23 16:29	1
Copper	8.3		5.0	1.1	ug/L		09/11/23 05:23	09/11/23 16:29	1
Lead	16		2.5	0.21	ug/L		09/11/23 05:23	09/11/23 16:29	1
Nickel	63		5.0	0.42	ug/L		09/11/23 05:23	09/11/23 16:29	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW2

Lab Sample ID: 680-240065-2

Date Collected: 09/06/23 13:10

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:23	09/11/23 16:29	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:23	09/11/23 16:29	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:23	09/11/23 16:29	1
Vanadium	0.63	U	10	0.63	ug/L		09/11/23 05:23	09/11/23 16:29	1
Zinc	480		20	2.8	ug/L		09/11/23 05:23	09/11/23 16:29	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/11/23 11:54	09/12/23 12:29	1

Client Sample ID: LF4-MW3

Lab Sample ID: 680-240065-3

Date Collected: 09/06/23 14:40

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/12/23 20:13	1
Acrylonitrile	5.5	U	20	5.5	ug/L			09/12/23 20:13	1
Benzene	0.27	U	1.0	0.27	ug/L			09/12/23 20:13	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/12/23 20:13	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/12/23 20:13	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/12/23 20:13	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/12/23 20:13	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/12/23 20:13	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/12/23 20:13	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/12/23 20:13	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/12/23 20:13	1
Chloroethane	4.6	U	5.0	4.6	ug/L			09/12/23 20:13	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/12/23 20:13	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/12/23 20:13	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/12/23 20:13	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/12/23 20:13	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/12/23 20:13	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/12/23 20:13	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 20:13	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 20:13	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/12/23 20:13	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/12/23 20:13	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/12/23 20:13	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/12/23 20:13	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/12/23 20:13	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/12/23 20:13	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/12/23 20:13	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/12/23 20:13	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/12/23 20:13	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/12/23 20:13	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/12/23 20:13	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/12/23 20:13	1
Iodomethane	3.9	U	10	3.9	ug/L			09/12/23 20:13	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/12/23 20:13	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW3

Lab Sample ID: 680-240065-3

Date Collected: 09/06/23 14:40

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/12/23 20:13	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/12/23 20:13	1
Styrene	0.27	U	1.0	0.27	ug/L			09/12/23 20:13	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/12/23 20:13	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/12/23 20:13	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/12/23 20:13	1
Toluene	0.25	U	1.0	0.25	ug/L			09/12/23 20:13	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/12/23 20:13	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/12/23 20:13	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/12/23 20:13	1
Trichlorofluoromethane	0.33	U *	1.0	0.33	ug/L			09/12/23 20:13	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/12/23 20:13	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/12/23 20:13	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			09/12/23 20:13	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/12/23 20:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		70 - 130		09/12/23 20:13	1
1,2-Dichloroethane-d4 (Surr)	110		60 - 124		09/12/23 20:13	1
Dibromofluoromethane (Surr)	117		70 - 130		09/12/23 20:13	1
4-Bromofluorobenzene (Surr)	100		70 - 130		09/12/23 20:13	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:31	09/12/23 00:00	1
Arsenic	0.86	U	3.0	0.86	ug/L		09/11/23 05:31	09/12/23 00:00	1
Barium	41		5.0	0.89	ug/L		09/11/23 05:31	09/12/23 00:00	1
Beryllium	0.30	J	0.50	0.20	ug/L		09/11/23 05:31	09/12/23 00:00	1
Cadmium	0.12	J	0.50	0.078	ug/L		09/11/23 05:31	09/12/23 00:00	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:31	09/12/23 00:00	1
Cobalt	9.3		0.50	0.22	ug/L		09/11/23 05:31	09/12/23 00:00	1
Copper	2.8	J	5.0	1.1	ug/L		09/11/23 05:31	09/12/23 00:00	1
Lead	2.2	J	2.5	0.21	ug/L		09/11/23 05:31	09/12/23 00:00	1
Nickel	2.8	J B	5.0	0.42	ug/L		09/11/23 05:31	09/12/23 00:00	1
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:31	09/12/23 00:00	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:31	09/12/23 00:00	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:31	09/12/23 00:00	1
Vanadium	0.63	U	10	0.63	ug/L		09/11/23 05:31	09/12/23 00:00	1
Zinc	5.5	J	20	2.8	ug/L		09/11/23 05:31	09/12/23 00:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/11/23 11:54	09/12/23 12:30	1

Client Sample ID: LF4-MW4

Lab Sample ID: 680-240065-4

Date Collected: 09/06/23 16:00

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/15/23 16:17	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW4

Lab Sample ID: 680-240065-4

Date Collected: 09/06/23 16:00

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	5.5	U	20	5.5	ug/L			09/15/23 16:17	1
Benzene	0.27	U	1.0	0.27	ug/L			09/15/23 16:17	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/15/23 16:17	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/15/23 16:17	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/15/23 16:17	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/15/23 16:17	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/15/23 16:17	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/15/23 16:17	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/15/23 16:17	1
Chlorobenzene	2.4		1.0	0.15	ug/L			09/15/23 16:17	1
Chloroethane	4.6	U *1	5.0	4.6	ug/L			09/15/23 16:17	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/15/23 16:17	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/15/23 16:17	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/15/23 16:17	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/15/23 16:17	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/15/23 16:17	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/15/23 16:17	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 16:17	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 16:17	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/15/23 16:17	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/15/23 16:17	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/15/23 16:17	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/15/23 16:17	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/15/23 16:17	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/15/23 16:17	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/15/23 16:17	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/15/23 16:17	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/15/23 16:17	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/15/23 16:17	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/15/23 16:17	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/15/23 16:17	1
Iodomethane	3.9	U	10	3.9	ug/L			09/15/23 16:17	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/15/23 16:17	1
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/15/23 16:17	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/15/23 16:17	1
Styrene	0.27	U	1.0	0.27	ug/L			09/15/23 16:17	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/15/23 16:17	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/15/23 16:17	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/15/23 16:17	1
Toluene	0.25	U	1.0	0.25	ug/L			09/15/23 16:17	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/15/23 16:17	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/15/23 16:17	1
Trichloroethene	0.37	J	1.0	0.20	ug/L			09/15/23 16:17	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			09/15/23 16:17	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/15/23 16:17	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/15/23 16:17	1
Vinyl chloride	0.40	U *+	1.0	0.40	ug/L			09/15/23 16:17	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/15/23 16:17	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW4

Lab Sample ID: 680-240065-4

Date Collected: 09/06/23 16:00

Matrix: Water

Date Received: 09/08/23 09:59

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		70 - 130		09/15/23 16:17	1
1,2-Dichloroethane-d4 (Surr)	77		60 - 124		09/15/23 16:17	1
Dibromofluoromethane (Surr)	85		70 - 130		09/15/23 16:17	1
4-Bromofluorobenzene (Surr)	95		70 - 130		09/15/23 16:17	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:23	09/11/23 16:37	1
Arsenic	1.6	J	3.0	0.86	ug/L		09/11/23 05:23	09/11/23 16:37	1
Barium	190		5.0	0.89	ug/L		09/11/23 05:23	09/11/23 16:37	1
Beryllium	0.20	U	0.50	0.20	ug/L		09/11/23 05:23	09/11/23 16:37	1
Cadmium	0.078	U	0.50	0.078	ug/L		09/11/23 05:23	09/11/23 16:37	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:23	09/11/23 16:37	1
Cobalt	3.9		0.50	0.22	ug/L		09/11/23 05:23	09/11/23 16:37	1
Copper	1.1	U	5.0	1.1	ug/L		09/11/23 05:23	09/11/23 16:37	1
Lead	0.75	J	2.5	0.21	ug/L		09/11/23 05:23	09/11/23 16:37	1
Nickel	3.2	J	5.0	0.42	ug/L		09/11/23 05:23	09/11/23 16:37	1
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:23	09/11/23 16:37	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:23	09/11/23 16:37	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:23	09/11/23 16:37	1
Vanadium	0.63	U	10	0.63	ug/L		09/11/23 05:23	09/11/23 16:37	1
Zinc	6.8	J	20	2.8	ug/L		09/11/23 05:23	09/11/23 16:37	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/11/23 11:54	09/12/23 12:32	1

Client Sample ID: LF4-MW5

Lab Sample ID: 680-240065-5

Date Collected: 09/06/23 09:30

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/15/23 16:55	1
Acrylonitrile	5.5	U	20	5.5	ug/L			09/15/23 16:55	1
Benzene	0.27	U	1.0	0.27	ug/L			09/15/23 16:55	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/15/23 16:55	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/15/23 16:55	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/15/23 16:55	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/15/23 16:55	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/15/23 16:55	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/15/23 16:55	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/15/23 16:55	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/15/23 16:55	1
Chloroethane	4.6	U *1	5.0	4.6	ug/L			09/15/23 16:55	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/15/23 16:55	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/15/23 16:55	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/15/23 16:55	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/15/23 16:55	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/15/23 16:55	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/15/23 16:55	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW5

Lab Sample ID: 680-240065-5

Date Collected: 09/06/23 09:30

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 16:55	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 16:55	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/15/23 16:55	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/15/23 16:55	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/15/23 16:55	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/15/23 16:55	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/15/23 16:55	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/15/23 16:55	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/15/23 16:55	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/15/23 16:55	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/15/23 16:55	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/15/23 16:55	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/15/23 16:55	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/15/23 16:55	1
Iodomethane	3.9	U	10	3.9	ug/L			09/15/23 16:55	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/15/23 16:55	1
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/15/23 16:55	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/15/23 16:55	1
Styrene	0.27	U	1.0	0.27	ug/L			09/15/23 16:55	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/15/23 16:55	1
1,1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/15/23 16:55	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/15/23 16:55	1
Toluene	0.25	U	1.0	0.25	ug/L			09/15/23 16:55	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/15/23 16:55	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/15/23 16:55	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/15/23 16:55	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			09/15/23 16:55	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/15/23 16:55	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/15/23 16:55	1
Vinyl chloride	0.40	U *	1.0	0.40	ug/L			09/15/23 16:55	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/15/23 16:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		70 - 130		09/15/23 16:55	1
1,2-Dichloroethane-d4 (Surr)	76		60 - 124		09/15/23 16:55	1
Dibromofluoromethane (Surr)	86		70 - 130		09/15/23 16:55	1
4-Bromofluorobenzene (Surr)	94		70 - 130		09/15/23 16:55	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:23	09/11/23 16:41	1
Arsenic	1.9	J	3.0	0.86	ug/L		09/11/23 05:23	09/11/23 16:41	1
Barium	12		5.0	0.89	ug/L		09/11/23 05:23	09/11/23 16:41	1
Beryllium	0.20	U	0.50	0.20	ug/L		09/11/23 05:23	09/11/23 16:41	1
Cadmium	0.078	U	0.50	0.078	ug/L		09/11/23 05:23	09/11/23 16:41	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:23	09/11/23 16:41	1
Cobalt	4.7		0.50	0.22	ug/L		09/11/23 05:23	09/11/23 16:41	1
Copper	1.1	J	5.0	1.1	ug/L		09/11/23 05:23	09/11/23 16:41	1
Lead	2.0	J	2.5	0.21	ug/L		09/11/23 05:23	09/11/23 16:41	1
Nickel	2.5	J	5.0	0.42	ug/L		09/11/23 05:23	09/11/23 16:41	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW5

Lab Sample ID: 680-240065-5

Date Collected: 09/06/23 09:30

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:23	09/11/23 16:41	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:23	09/11/23 16:41	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:23	09/11/23 16:41	1
Vanadium	1.5	J	10	0.63	ug/L		09/11/23 05:23	09/11/23 16:41	1
Zinc	5.0	J	20	2.8	ug/L		09/11/23 05:23	09/11/23 16:41	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/11/23 11:54	09/12/23 12:36	1

Client Sample ID: DUP424

Lab Sample ID: 680-240065-6

Date Collected: 09/06/23 00:00

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/15/23 17:14	1
Acrylonitrile	5.5	U	20	5.5	ug/L			09/15/23 17:14	1
Benzene	0.27	U	1.0	0.27	ug/L			09/15/23 17:14	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/15/23 17:14	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/15/23 17:14	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/15/23 17:14	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/15/23 17:14	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/15/23 17:14	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/15/23 17:14	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/15/23 17:14	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/15/23 17:14	1
Chloroethane	4.6	U *1	5.0	4.6	ug/L			09/15/23 17:14	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/15/23 17:14	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/15/23 17:14	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/15/23 17:14	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/15/23 17:14	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/15/23 17:14	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/15/23 17:14	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 17:14	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 17:14	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/15/23 17:14	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/15/23 17:14	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/15/23 17:14	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/15/23 17:14	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/15/23 17:14	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/15/23 17:14	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/15/23 17:14	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/15/23 17:14	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/15/23 17:14	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/15/23 17:14	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/15/23 17:14	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/15/23 17:14	1
Iodomethane	3.9	U	10	3.9	ug/L			09/15/23 17:14	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/15/23 17:14	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: DUP424

Lab Sample ID: 680-240065-6

Date Collected: 09/06/23 00:00

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/15/23 17:14	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/15/23 17:14	1
Styrene	0.27	U	1.0	0.27	ug/L			09/15/23 17:14	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/15/23 17:14	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/15/23 17:14	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/15/23 17:14	1
Toluene	0.25	U	1.0	0.25	ug/L			09/15/23 17:14	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/15/23 17:14	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/15/23 17:14	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/15/23 17:14	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			09/15/23 17:14	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/15/23 17:14	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/15/23 17:14	1
Vinyl chloride	0.40	U *	1.0	0.40	ug/L			09/15/23 17:14	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/15/23 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		09/15/23 17:14	1
1,2-Dichloroethane-d4 (Surr)	76		60 - 124		09/15/23 17:14	1
Dibromofluoromethane (Surr)	85		70 - 130		09/15/23 17:14	1
4-Bromofluorobenzene (Surr)	95		70 - 130		09/15/23 17:14	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:23	09/11/23 16:33	1
Arsenic	1.9	J	3.0	0.86	ug/L		09/11/23 05:23	09/11/23 16:33	1
Barium	12		5.0	0.89	ug/L		09/11/23 05:23	09/11/23 16:33	1
Beryllium	0.20	U	0.50	0.20	ug/L		09/11/23 05:23	09/11/23 16:33	1
Cadmium	0.078	U	0.50	0.078	ug/L		09/11/23 05:23	09/11/23 16:33	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:23	09/11/23 16:33	1
Cobalt	5.0		0.50	0.22	ug/L		09/11/23 05:23	09/11/23 16:33	1
Copper	1.1	U	5.0	1.1	ug/L		09/11/23 05:23	09/11/23 16:33	1
Lead	2.0	J	2.5	0.21	ug/L		09/11/23 05:23	09/11/23 16:33	1
Nickel	2.6	J	5.0	0.42	ug/L		09/11/23 05:23	09/11/23 16:33	1
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:23	09/11/23 16:33	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:23	09/11/23 16:33	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:23	09/11/23 16:33	1
Vanadium	1.3	J	10	0.63	ug/L		09/11/23 05:23	09/11/23 16:33	1
Zinc	5.0	J	20	2.8	ug/L		09/11/23 05:23	09/11/23 16:33	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/14/23 11:19	09/15/23 14:17	1

Client Sample ID: TB614

Lab Sample ID: 680-240065-7

Date Collected: 09/07/23 08:37

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/15/23 13:26	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: TB614

Lab Sample ID: 680-240065-7

Date Collected: 09/07/23 08:37

Matrix: Water

Date Received: 09/08/23 09:59

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	5.5	U	20	5.5	ug/L			09/15/23 13:26	1
Benzene	0.27	U	1.0	0.27	ug/L			09/15/23 13:26	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/15/23 13:26	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/15/23 13:26	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/15/23 13:26	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/15/23 13:26	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/15/23 13:26	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/15/23 13:26	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/15/23 13:26	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/15/23 13:26	1
Chloroethane	4.6	U *1	5.0	4.6	ug/L			09/15/23 13:26	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/15/23 13:26	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/15/23 13:26	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/15/23 13:26	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/15/23 13:26	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/15/23 13:26	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/15/23 13:26	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 13:26	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 13:26	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/15/23 13:26	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/15/23 13:26	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/15/23 13:26	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/15/23 13:26	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/15/23 13:26	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/15/23 13:26	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/15/23 13:26	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/15/23 13:26	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/15/23 13:26	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/15/23 13:26	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/15/23 13:26	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/15/23 13:26	1
Iodomethane	3.9	U	10	3.9	ug/L			09/15/23 13:26	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/15/23 13:26	1
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/15/23 13:26	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/15/23 13:26	1
Styrene	0.27	U	1.0	0.27	ug/L			09/15/23 13:26	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/15/23 13:26	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/15/23 13:26	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/15/23 13:26	1
Toluene	0.25	U	1.0	0.25	ug/L			09/15/23 13:26	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/15/23 13:26	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/15/23 13:26	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/15/23 13:26	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			09/15/23 13:26	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/15/23 13:26	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/15/23 13:26	1
Vinyl chloride	0.40	U *+	1.0	0.40	ug/L			09/15/23 13:26	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/15/23 13:26	1

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Client Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: TB614

Lab Sample ID: 680-240065-7

Date Collected: 09/07/23 08:37

Matrix: Water

Date Received: 09/08/23 09:59

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	103		70 - 130		09/15/23 13:26	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	76		60 - 124		09/15/23 13:26	1
<i>Dibromofluoromethane (Surr)</i>	85		70 - 130		09/15/23 13:26	1
<i>4-Bromofluorobenzene (Surr)</i>	93		70 - 130		09/15/23 13:26	1

QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 680-797541/8

Matrix: Water

Analysis Batch: 797541

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	3.7	U	10	3.7	ug/L			09/12/23 14:16	1
Acrylonitrile	5.5	U	20	5.5	ug/L			09/12/23 14:16	1
Benzene	0.27	U	1.0	0.27	ug/L			09/12/23 14:16	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/12/23 14:16	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/12/23 14:16	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/12/23 14:16	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/12/23 14:16	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/12/23 14:16	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/12/23 14:16	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/12/23 14:16	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/12/23 14:16	1
Chloroethane	4.6	U	5.0	4.6	ug/L			09/12/23 14:16	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/12/23 14:16	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/12/23 14:16	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/12/23 14:16	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/12/23 14:16	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/12/23 14:16	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/12/23 14:16	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 14:16	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/12/23 14:16	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/12/23 14:16	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/12/23 14:16	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/12/23 14:16	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/12/23 14:16	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/12/23 14:16	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/12/23 14:16	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/12/23 14:16	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/12/23 14:16	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/12/23 14:16	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/12/23 14:16	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/12/23 14:16	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/12/23 14:16	1
Iodomethane	7.83	J	10	3.9	ug/L			09/12/23 14:16	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/12/23 14:16	1
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/12/23 14:16	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/12/23 14:16	1
Styrene	0.27	U	1.0	0.27	ug/L			09/12/23 14:16	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/12/23 14:16	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/12/23 14:16	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/12/23 14:16	1
Toluene	0.25	U	1.0	0.25	ug/L			09/12/23 14:16	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/12/23 14:16	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/12/23 14:16	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/12/23 14:16	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			09/12/23 14:16	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/12/23 14:16	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/12/23 14:16	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			09/12/23 14:16	1

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-797541/8

Matrix: Water

Analysis Batch: 797541

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/12/23 14:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		70 - 130		09/12/23 14:16	1
1,2-Dichloroethane-d4 (Surr)	110		60 - 124		09/12/23 14:16	1
Dibromofluoromethane (Surr)	116		70 - 130		09/12/23 14:16	1
4-Bromofluorobenzene (Surr)	93		70 - 130		09/12/23 14:16	1

Lab Sample ID: LCS 680-797541/4

Matrix: Water

Analysis Batch: 797541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	250	231		ug/L		92	67 - 120
Acrylonitrile	500	495		ug/L		99	70 - 130
Benzene	50.0	51.2		ug/L		102	70 - 130
Bromochloromethane	50.0	48.5		ug/L		97	70 - 130
Bromodichloromethane	50.0	46.5		ug/L		93	70 - 130
Bromoform	50.0	55.7		ug/L		111	69 - 129
Bromomethane	50.0	67.1		ug/L		134	28 - 192
2-Butanone (MEK)	250	254		ug/L		102	69 - 120
Carbon disulfide	50.0	55.3		ug/L		111	70 - 130
Carbon tetrachloride	50.0	61.7		ug/L		123	70 - 130
Chlorobenzene	50.0	51.8		ug/L		104	70 - 130
Chloroethane	50.0	71.1		ug/L		142	31 - 213
Chloroform	50.0	48.9		ug/L		98	70 - 130
Chloromethane	50.0	57.5		ug/L		115	59 - 127
Dibromochloromethane	50.0	47.5		ug/L		95	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	47.4		ug/L		95	70 - 130
1,2-Dibromoethane	50.0	47.2		ug/L		94	70 - 130
Dibromomethane	50.0	48.6		ug/L		97	70 - 130
1,2-Dichlorobenzene	50.0	53.3		ug/L		107	70 - 130
1,4-Dichlorobenzene	50.0	50.4		ug/L		101	70 - 130
trans-1,4-Dichloro-2-butene	50.0	59.3		ug/L		119	67 - 120
1,1-Dichloroethane	50.0	50.1		ug/L		100	70 - 130
1,2-Dichloroethane	50.0	49.0		ug/L		98	70 - 130
cis-1,2-Dichloroethene	50.0	50.1		ug/L		100	70 - 130
trans-1,2-Dichloroethene	50.0	53.8		ug/L		108	70 - 130
1,1-Dichloroethene	50.0	55.5		ug/L		111	70 - 130
1,2-Dichloropropane	50.0	46.4		ug/L		93	70 - 130
1,3-Dichloropropane	50.0	52.0		ug/L		104	70 - 130
cis-1,3-Dichloropropene	50.0	46.5		ug/L		93	70 - 130
trans-1,3-Dichloropropene	50.0	47.9		ug/L		96	70 - 130
Ethylbenzene	50.0	55.8		ug/L		112	70 - 130
2-Hexanone	250	283		ug/L		113	70 - 130
Iodomethane	50.0	59.0		ug/L		118	52 - 129
Methylene Chloride	50.0	46.0		ug/L		92	70 - 130
4-Methyl-2-pentanone (MIBK)	250	277		ug/L		111	68 - 120

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-797541/4

Matrix: Water

Analysis Batch: 797541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methyl tert-butyl ether	50.0	51.0		ug/L		102	70 - 130
Styrene	50.0	51.3		ug/L		103	70 - 130
1,1,1,2-Tetrachloroethane	50.0	49.8		ug/L		100	70 - 130
1,1,2,2-Tetrachloroethane	50.0	54.4		ug/L		109	70 - 130
Tetrachloroethylene	50.0	52.6		ug/L		105	70 - 130
Toluene	50.0	51.3		ug/L		103	70 - 130
1,1,1-Trichloroethane	50.0	58.2		ug/L		116	70 - 130
1,1,2-Trichloroethane	50.0	48.1		ug/L		96	70 - 130
Trichloroethene	50.0	53.8		ug/L		108	70 - 130
Trichlorofluoromethane	50.0	192	*+	ug/L		384	63 - 142
1,2,3-Trichloropropane	50.0	52.1		ug/L		104	70 - 130
Vinyl acetate	100	112		ug/L		112	67 - 135
Vinyl chloride	50.0	59.5		ug/L		119	66 - 129
Xylenes, Total	100	103		ug/L		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		60 - 124
Dibromofluoromethane (Surr)	108		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 680-797541/5

Matrix: Water

Analysis Batch: 797541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	250	223		ug/L		89	67 - 120	3	30
Acrylonitrile	500	488		ug/L		98	70 - 130	1	30
Benzene	50.0	51.4		ug/L		103	70 - 130	0	30
Bromochloromethane	50.0	49.0		ug/L		98	70 - 130	1	30
Bromodichloromethane	50.0	47.3		ug/L		95	70 - 130	2	30
Bromoform	50.0	55.7		ug/L		111	69 - 129	0	30
Bromomethane	50.0	63.2		ug/L		126	28 - 192	6	30
2-Butanone (MEK)	250	251		ug/L		100	69 - 120	1	30
Carbon disulfide	50.0	61.6		ug/L		123	70 - 130	11	30
Carbon tetrachloride	50.0	60.9		ug/L		122	70 - 130	1	30
Chlorobenzene	50.0	50.7		ug/L		101	70 - 130	2	30
Chloroethane	50.0	78.4		ug/L		157	31 - 213	10	30
Chloroform	50.0	49.1		ug/L		98	70 - 130	0	30
Chloromethane	50.0	58.9		ug/L		118	59 - 127	2	30
Dibromochloromethane	50.0	48.2		ug/L		96	70 - 130	1	30
1,2-Dibromo-3-Chloropropane	50.0	48.1		ug/L		96	70 - 130	1	30
1,2-Dibromoethane	50.0	47.7		ug/L		95	70 - 130	1	30
Dibromomethane	50.0	48.5		ug/L		97	70 - 130	0	30
1,2-Dichlorobenzene	50.0	53.4		ug/L		107	70 - 130	0	30
1,4-Dichlorobenzene	50.0	50.6		ug/L		101	70 - 130	0	30
trans-1,4-Dichloro-2-butene	50.0	58.4		ug/L		117	67 - 120	2	30
1,1-Dichloroethane	50.0	50.4		ug/L		101	70 - 130	1	30

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-797541/5

Matrix: Water

Analysis Batch: 797541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	50.0	49.9		ug/L		100	70 - 130	2	50
cis-1,2-Dichloroethene	50.0	51.7		ug/L		103	70 - 130	3	30
trans-1,2-Dichloroethene	50.0	54.1		ug/L		108	70 - 130	1	30
1,1-Dichloroethene	50.0	57.1		ug/L		114	70 - 130	3	20
1,2-Dichloropropane	50.0	47.9		ug/L		96	70 - 130	3	20
1,3-Dichloropropane	50.0	52.0		ug/L		104	70 - 130	0	20
cis-1,3-Dichloropropene	50.0	46.5		ug/L		93	70 - 130	0	20
trans-1,3-Dichloropropene	50.0	49.3		ug/L		99	70 - 130	3	30
Ethylbenzene	50.0	54.5		ug/L		109	70 - 130	2	20
2-Hexanone	250	279		ug/L		112	70 - 130	1	20
Iodomethane	50.0	61.2		ug/L		122	52 - 129	4	30
Methylene Chloride	50.0	46.8		ug/L		94	70 - 130	2	30
4-Methyl-2-pentanone (MIBK)	250	275		ug/L		110	68 - 120	1	30
Methyl tert-butyl ether	50.0	51.9		ug/L		104	70 - 130	2	30
Styrene	50.0	51.1		ug/L		102	70 - 130	0	30
1,1,1,2-Tetrachloroethane	50.0	49.1		ug/L		98	70 - 130	2	30
1,1,2,2-Tetrachloroethane	50.0	53.3		ug/L		107	70 - 130	2	30
Tetrachloroethylene	50.0	51.5		ug/L		103	70 - 130	2	30
Toluene	50.0	50.6		ug/L		101	70 - 130	1	30
1,1,1-Trichloroethane	50.0	58.6		ug/L		117	70 - 130	1	30
1,1,2-Trichloroethane	50.0	48.5		ug/L		97	70 - 130	1	30
Trichloroethene	50.0	52.8		ug/L		106	70 - 130	2	30
Trichlorofluoromethane	50.0	181	*+	ug/L		362	63 - 142	6	30
1,2,3-Trichloropropane	50.0	51.1		ug/L		102	70 - 130	2	30
Vinyl acetate	100	113		ug/L		113	67 - 135	1	30
Vinyl chloride	50.0	56.4		ug/L		113	66 - 129	5	30
Xylenes, Total	100	101		ug/L		101	70 - 130	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		60 - 124
Dibromofluoromethane (Surr)	106		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 680-240065-1 MS

Matrix: Water

Analysis Batch: 797541

Client Sample ID: LF4-MW1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	3.7	U F1	250	305	F1	ug/L		122	67 - 120
Acrylonitrile	5.5	U F1	500	768	F1	ug/L		154	70 - 130
Benzene	0.27	U F1	50.0	79.6	F1	ug/L		159	70 - 130
Bromochloromethane	0.34	U F1	50.0	80.9	F1	ug/L		162	70 - 130
Bromodichloromethane	0.25	U	50.0	65.2		ug/L		130	70 - 130
Bromoform	0.59	U	50.0	51.2		ug/L		102	69 - 129
Bromomethane	3.7	U F1	50.0	106	F1	ug/L		213	28 - 192
2-Butanone (MEK)	6.4	U F1	250	370	F1	ug/L		148	69 - 120
Carbon disulfide	0.43	U F1	50.0	87.8	F1	ug/L		176	70 - 130

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 680-240065-1 MS

Matrix: Water

Analysis Batch: 797541

Client Sample ID: LF4-MW1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon tetrachloride	0.30	U F1	50.0	82.9	F1	ug/L		166	70 - 130
Chlorobenzene	0.15	U	50.0	60.4		ug/L		121	70 - 130
Chloroethane	4.6	U F1 F2	50.0	187	F1	ug/L		375	31 - 213
Chloroform	0.27	U F1	50.0	70.1	F1	ug/L		140	70 - 130
Chloromethane	0.54	U F1	50.0	97.2	F1	ug/L		194	59 - 127
Dibromochloromethane	0.39	U	50.0	61.6		ug/L		123	70 - 130
1,2-Dibromo-3-Chloropropane	1.8	U	50.0	41.9		ug/L		84	70 - 130
1,2-Dibromoethane	0.33	U	50.0	63.5		ug/L		127	70 - 130
Dibromomethane	0.34	U F1	50.0	70.7	F1	ug/L		141	70 - 130
1,2-Dichlorobenzene	0.31	U	50.0	60.1		ug/L		120	70 - 130
1,4-Dichlorobenzene	0.31	U	50.0	57.7		ug/L		115	70 - 130
trans-1,4-Dichloro-2-butene	1.3	U F1	50.0	71.3	F1	ug/L		143	67 - 120
1,1-Dichloroethane	0.33	U F1	50.0	79.8	F1	ug/L		160	70 - 130
1,2-Dichloroethane	0.25	U F1	50.0	72.4	F1	ug/L		145	70 - 130
cis-1,2-Dichloroethene	0.25	U F1	50.0	71.6	F1	ug/L		143	70 - 130
trans-1,2-Dichloroethene	0.34	U F1	50.0	75.7	F1	ug/L		151	70 - 130
1,1-Dichloroethene	0.33	U F1	50.0	78.6	F1	ug/L		157	70 - 130
1,2-Dichloropropane	0.22	U F1	50.0	80.3	F1	ug/L		161	70 - 130
1,3-Dichloropropane	0.36	U F1	50.0	79.1	F1	ug/L		158	70 - 130
cis-1,3-Dichloropropene	0.26	U	50.0	61.8		ug/L		124	70 - 130
trans-1,3-Dichloropropene	0.23	U F1	50.0	72.6	F1	ug/L		145	70 - 130
Ethylbenzene	0.20	U F1	50.0	66.4	F1	ug/L		133	70 - 130
2-Hexanone	3.2	U F1	250	448	F1	ug/L		179	70 - 130
Iodomethane	3.9	U F1	50.0	64.7		ug/L		129	52 - 129
Methylene Chloride	3.2	U F1	50.0	67.5	F1	ug/L		135	70 - 130
4-Methyl-2-pentanone (MIBK)	2.7	U F1	250	453	F1	ug/L		181	68 - 120
Methyl tert-butyl ether	0.81	U F1	50.0	69.5	F1	ug/L		139	70 - 130
Styrene	0.27	U	50.0	58.4		ug/L		117	70 - 130
1,1,1,2-Tetrachloroethane	0.36	U	50.0	51.7		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	0.40	U	50.0	62.9		ug/L		126	70 - 130
Tetrachloroethylene	0.35	U F1	50.0	72.2	F1	ug/L		144	70 - 130
Toluene	0.25	U F1	50.0	74.4	F1	ug/L		149	70 - 130
1,1,1-Trichloroethane	0.21	U F1	50.0	78.4	F1	ug/L		157	70 - 130
1,1,2-Trichloroethane	0.32	U F1	50.0	74.1	F1	ug/L		148	70 - 130
Trichloroethene	0.20	U F1	50.0	74.4	F1	ug/L		149	70 - 130
Trichlorofluoromethane	0.33	U *+ F1	50.0	389	E F1	ug/L		778	63 - 142
1,2,3-Trichloropropane	0.48	U	50.0	55.5		ug/L		111	70 - 130
Vinyl acetate	0.69	U F1	100	177	F1	ug/L		177	67 - 135
Vinyl chloride	0.40	U F1	50.0	112	F1	ug/L		224	66 - 129
Xylenes, Total	0.23	U	100	114		ug/L		114	70 - 130
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	112		70 - 130						
1,2-Dichloroethane-d4 (Surr)	109		60 - 124						
Dibromofluoromethane (Surr)	112		70 - 130						
4-Bromofluorobenzene (Surr)	94		70 - 130						

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 680-240065-1 MSD

Matrix: Water

Analysis Batch: 797541

Client Sample ID: LF4-MW1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	3.7	U F1	250	300		ug/L		120	67 - 120	2	30
Acrylonitrile	5.5	U F1	500	741	F1	ug/L		148	70 - 130	4	30
Benzene	0.27	U F1	50.0	80.1	F1	ug/L		160	70 - 130	1	30
Bromochloromethane	0.34	U F1	50.0	75.2	F1	ug/L		150	70 - 130	7	30
Bromodichloromethane	0.25	U	50.0	64.3		ug/L		129	70 - 130	1	30
Bromoform	0.59	U	50.0	49.3		ug/L		99	69 - 129	4	30
Bromomethane	3.7	U F1	50.0	110	F1	ug/L		220	28 - 192	3	30
2-Butanone (MEK)	6.4	U F1	250	366	F1	ug/L		146	69 - 120	1	30
Carbon disulfide	0.43	U F1	50.0	87.9	F1	ug/L		176	70 - 130	0	30
Carbon tetrachloride	0.30	U F1	50.0	68.6	F1	ug/L		137	70 - 130	19	30
Chlorobenzene	0.15	U	50.0	57.1		ug/L		114	70 - 130	6	30
Chloroethane	4.6	U F1 F2	50.0	133	F1 F2	ug/L		267	31 - 213	34	30
Chloroform	0.27	U F1	50.0	69.1	F1	ug/L		138	70 - 130	1	30
Chloromethane	0.54	U F1	50.0	99.0	F1	ug/L		198	59 - 127	2	30
Dibromochloromethane	0.39	U	50.0	59.9		ug/L		120	70 - 130	3	30
1,2-Dibromo-3-Chloropropane	1.8	U	50.0	43.0		ug/L		86	70 - 130	3	30
1,2-Dibromoethane	0.33	U	50.0	59.8		ug/L		120	70 - 130	6	30
Dibromomethane	0.34	U F1	50.0	67.8	F1	ug/L		136	70 - 130	4	30
1,2-Dichlorobenzene	0.31	U	50.0	59.4		ug/L		119	70 - 130	1	30
1,4-Dichlorobenzene	0.31	U	50.0	56.8		ug/L		114	70 - 130	2	30
trans-1,4-Dichloro-2-butene	1.3	U F1	50.0	66.0	F1	ug/L		132	67 - 120	8	30
1,1-Dichloroethane	0.33	U F1	50.0	78.5	F1	ug/L		157	70 - 130	2	30
1,2-Dichloroethane	0.25	U F1	50.0	70.1	F1	ug/L		140	70 - 130	3	50
cis-1,2-Dichloroethene	0.25	U F1	50.0	70.7	F1	ug/L		141	70 - 130	1	30
trans-1,2-Dichloroethene	0.34	U F1	50.0	74.9	F1	ug/L		150	70 - 130	1	30
1,1-Dichloroethene	0.33	U F1	50.0	81.1	F1	ug/L		162	70 - 130	3	20
1,2-Dichloropropane	0.22	U F1	50.0	77.4	F1	ug/L		155	70 - 130	4	20
1,3-Dichloropropane	0.36	U F1	50.0	76.2	F1	ug/L		152	70 - 130	4	20
cis-1,3-Dichloropropene	0.26	U	50.0	61.5		ug/L		123	70 - 130	1	20
trans-1,3-Dichloropropene	0.23	U F1	50.0	70.1	F1	ug/L		140	70 - 130	4	30
Ethylbenzene	0.20	U F1	50.0	63.6		ug/L		127	70 - 130	4	20
2-Hexanone	3.2	U F1	250	430	F1	ug/L		172	70 - 130	4	20
Iodomethane	3.9	U F1	50.0	74.9	F1	ug/L		150	52 - 129	15	30
Methylene Chloride	3.2	U F1	50.0	67.4	F1	ug/L		135	70 - 130	0	30
4-Methyl-2-pentanone (MIBK)	2.7	U F1	250	436	F1	ug/L		174	68 - 120	4	30
Methyl tert-butyl ether	0.81	U F1	50.0	71.1	F1	ug/L		142	70 - 130	2	30
Styrene	0.27	U	50.0	54.8		ug/L		110	70 - 130	6	30
1,1,1,2-Tetrachloroethane	0.36	U	50.0	48.7		ug/L		97	70 - 130	6	30
1,1,1,2,2-Tetrachloroethane	0.40	U	50.0	61.3		ug/L		123	70 - 130	3	30
Tetrachloroethylene	0.35	U F1	50.0	68.1	F1	ug/L		136	70 - 130	6	30
Toluene	0.25	U F1	50.0	72.4	F1	ug/L		145	70 - 130	3	30
1,1,1-Trichloroethane	0.21	U F1	50.0	77.9	F1	ug/L		156	70 - 130	1	30
1,1,2-Trichloroethane	0.32	U F1	50.0	70.8	F1	ug/L		142	70 - 130	5	30
Trichloroethene	0.20	U F1	50.0	72.1	F1	ug/L		144	70 - 130	3	30
Trichlorofluoromethane	0.33	U *+ F1	50.0	397	E F1	ug/L		795	63 - 142	2	30
1,2,3-Trichloropropane	0.48	U	50.0	52.8		ug/L		106	70 - 130	5	30
Vinyl acetate	0.69	U F1	100	172	F1	ug/L		172	67 - 135	3	30
Vinyl chloride	0.40	U F1	50.0	119	F1	ug/L		237	66 - 129	6	30

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 680-240065-1 MSD

Matrix: Water

Analysis Batch: 797541

Client Sample ID: LF4-MW1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Xylenes, Total	0.23	U	100	110		ug/L		110	70 - 130	3	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	112		70 - 130
1,2-Dichloroethane-d4 (Surr)	103		60 - 124
Dibromofluoromethane (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	94		70 - 130

Lab Sample ID: MB 680-798109/7

Matrix: Water

Analysis Batch: 798109

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.7	U	10	3.7	ug/L			09/15/23 12:43	1
Acrylonitrile	5.5	U	20	5.5	ug/L			09/15/23 12:43	1
Benzene	0.27	U	1.0	0.27	ug/L			09/15/23 12:43	1
Bromochloromethane	0.34	U	1.0	0.34	ug/L			09/15/23 12:43	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			09/15/23 12:43	1
Bromoform	0.59	U	1.0	0.59	ug/L			09/15/23 12:43	1
Bromomethane	3.7	U	5.0	3.7	ug/L			09/15/23 12:43	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			09/15/23 12:43	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			09/15/23 12:43	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			09/15/23 12:43	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			09/15/23 12:43	1
Chloroethane	4.6	U	5.0	4.6	ug/L			09/15/23 12:43	1
Chloroform	0.27	U	1.0	0.27	ug/L			09/15/23 12:43	1
Chloromethane	0.54	U	1.0	0.54	ug/L			09/15/23 12:43	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			09/15/23 12:43	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			09/15/23 12:43	1
1,2-Dibromoethane	0.33	U	1.0	0.33	ug/L			09/15/23 12:43	1
Dibromomethane	0.34	U	1.0	0.34	ug/L			09/15/23 12:43	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 12:43	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			09/15/23 12:43	1
trans-1,4-Dichloro-2-butene	1.3	U	2.0	1.3	ug/L			09/15/23 12:43	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			09/15/23 12:43	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			09/15/23 12:43	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			09/15/23 12:43	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			09/15/23 12:43	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			09/15/23 12:43	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			09/15/23 12:43	1
1,3-Dichloropropane	0.36	U	1.0	0.36	ug/L			09/15/23 12:43	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			09/15/23 12:43	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			09/15/23 12:43	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			09/15/23 12:43	1
2-Hexanone	3.2	U	10	3.2	ug/L			09/15/23 12:43	1
Iodomethane	3.9	U	10	3.9	ug/L			09/15/23 12:43	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			09/15/23 12:43	1
4-Methyl-2-pentanone (MIBK)	2.7	U	10	2.7	ug/L			09/15/23 12:43	1

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-798109/7

Matrix: Water

Analysis Batch: 798109

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			09/15/23 12:43	1
Styrene	0.27	U	1.0	0.27	ug/L			09/15/23 12:43	1
1,1,1,2-Tetrachloroethane	0.36	U	1.0	0.36	ug/L			09/15/23 12:43	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			09/15/23 12:43	1
Tetrachloroethylene	0.35	U	1.0	0.35	ug/L			09/15/23 12:43	1
Toluene	0.25	U	1.0	0.25	ug/L			09/15/23 12:43	1
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			09/15/23 12:43	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			09/15/23 12:43	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			09/15/23 12:43	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			09/15/23 12:43	1
1,2,3-Trichloropropane	0.48	U	1.0	0.48	ug/L			09/15/23 12:43	1
Vinyl acetate	0.69	U	2.0	0.69	ug/L			09/15/23 12:43	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			09/15/23 12:43	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			09/15/23 12:43	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	104		70 - 130		09/15/23 12:43	1
1,2-Dichloroethane-d4 (Surr)	76		60 - 124		09/15/23 12:43	1
Dibromofluoromethane (Surr)	85		70 - 130		09/15/23 12:43	1
4-Bromofluorobenzene (Surr)	97		70 - 130		09/15/23 12:43	1

Lab Sample ID: LCS 680-798109/3

Matrix: Water

Analysis Batch: 798109

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				Limits
Acetone	250	218		ug/L		87	67 - 120
Acrylonitrile	500	405		ug/L		81	70 - 130
Benzene	50.0	51.0		ug/L		102	70 - 130
Bromochloromethane	50.0	47.9		ug/L		96	70 - 130
Bromodichloromethane	50.0	45.0		ug/L		90	70 - 130
Bromoform	50.0	44.9		ug/L		90	69 - 129
Bromomethane	50.0	78.6		ug/L		157	28 - 192
2-Butanone (MEK)	250	235		ug/L		94	69 - 120
Carbon disulfide	50.0	55.7		ug/L		111	70 - 130
Carbon tetrachloride	50.0	47.9		ug/L		96	70 - 130
Chlorobenzene	50.0	51.2		ug/L		102	70 - 130
Chloroethane	50.0	70.9		ug/L		142	31 - 213
Chloroform	50.0	41.9		ug/L		84	70 - 130
Chloromethane	50.0	62.2		ug/L		124	59 - 127
Dibromochloromethane	50.0	46.0		ug/L		92	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	44.4		ug/L		89	70 - 130
1,2-Dibromoethane	50.0	46.6		ug/L		93	70 - 130
Dibromomethane	50.0	41.8		ug/L		84	70 - 130
1,2-Dichlorobenzene	50.0	50.5		ug/L		101	70 - 130
1,4-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 130
trans-1,4-Dichloro-2-butene	50.0	46.9		ug/L		94	67 - 120
1,1-Dichloroethane	50.0	48.0		ug/L		96	70 - 130

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-798109/3

Matrix: Water

Analysis Batch: 798109

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane	50.0	46.5		ug/L		93	70 - 130
cis-1,2-Dichloroethene	50.0	48.9		ug/L		98	70 - 130
trans-1,2-Dichloroethene	50.0	47.6		ug/L		95	70 - 130
1,1-Dichloroethene	50.0	52.1		ug/L		104	70 - 130
1,2-Dichloropropane	50.0	47.2		ug/L		94	70 - 130
1,3-Dichloropropane	50.0	47.0		ug/L		94	70 - 130
cis-1,3-Dichloropropene	50.0	49.7		ug/L		99	70 - 130
trans-1,3-Dichloropropene	50.0	48.5		ug/L		97	70 - 130
Ethylbenzene	50.0	54.8		ug/L		110	70 - 130
2-Hexanone	250	209		ug/L		84	70 - 130
Iodomethane	50.0	54.0		ug/L		108	52 - 129
Methylene Chloride	50.0	47.8		ug/L		96	70 - 130
4-Methyl-2-pentanone (MIBK)	250	210		ug/L		84	68 - 120
Methyl tert-butyl ether	50.0	42.9		ug/L		86	70 - 130
Styrene	50.0	53.8		ug/L		108	70 - 130
1,1,1,2-Tetrachloroethane	50.0	50.8		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	50.0	43.4		ug/L		87	70 - 130
Tetrachloroethylene	50.0	54.5		ug/L		109	70 - 130
Toluene	50.0	53.5		ug/L		107	70 - 130
1,1,1-Trichloroethane	50.0	52.7		ug/L		105	70 - 130
1,1,2-Trichloroethane	50.0	43.2		ug/L		86	70 - 130
Trichloroethene	50.0	53.0		ug/L		106	70 - 130
Trichlorofluoromethane	50.0	52.0		ug/L		104	63 - 142
1,2,3-Trichloropropane	50.0	44.1		ug/L		88	70 - 130
Vinyl acetate	100	86.4		ug/L		86	67 - 135
Vinyl chloride	50.0	70.3	*+	ug/L		141	66 - 129
Xylenes, Total	100	108		ug/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		70 - 130
1,2-Dichloroethane-d4 (Surr)	90		60 - 124
Dibromofluoromethane (Surr)	92		70 - 130
4-Bromofluorobenzene (Surr)	83		70 - 130

Lab Sample ID: LCSD 680-798109/4

Matrix: Water

Analysis Batch: 798109

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	250	224		ug/L		90	67 - 120	3	30
Acrylonitrile	500	415		ug/L		83	70 - 130	2	30
Benzene	50.0	51.1		ug/L		102	70 - 130	0	30
Bromochloromethane	50.0	48.5		ug/L		97	70 - 130	1	30
Bromodichloromethane	50.0	44.7		ug/L		89	70 - 130	1	30
Bromoform	50.0	45.7		ug/L		91	69 - 129	2	30
Bromomethane	50.0	81.2		ug/L		162	28 - 192	3	30
2-Butanone (MEK)	250	238		ug/L		95	69 - 120	1	30
Carbon disulfide	50.0	55.2		ug/L		110	70 - 130	1	30

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-798109/4

Matrix: Water

Analysis Batch: 798109

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon tetrachloride	50.0	47.5		ug/L		95	70 - 130	1	30
Chlorobenzene	50.0	50.9		ug/L		102	70 - 130	1	30
Chloroethane	50.0	100	*1	ug/L		200	31 - 213	34	30
Chloroform	50.0	42.0		ug/L		84	70 - 130	0	30
Chloromethane	50.0	47.1		ug/L		94	59 - 127	28	30
Dibromochloromethane	50.0	46.1		ug/L		92	70 - 130	0	30
1,2-Dibromo-3-Chloropropane	50.0	46.1		ug/L		92	70 - 130	4	30
1,2-Dibromoethane	50.0	47.1		ug/L		94	70 - 130	1	30
Dibromomethane	50.0	42.4		ug/L		85	70 - 130	2	30
1,2-Dichlorobenzene	50.0	50.9		ug/L		102	70 - 130	1	30
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 130	2	30
trans-1,4-Dichloro-2-butene	50.0	47.4		ug/L		95	67 - 120	1	30
1,1-Dichloroethane	50.0	48.3		ug/L		97	70 - 130	1	30
1,2-Dichloroethane	50.0	46.2		ug/L		92	70 - 130	1	50
cis-1,2-Dichloroethene	50.0	48.5		ug/L		97	70 - 130	1	30
trans-1,2-Dichloroethene	50.0	46.8		ug/L		94	70 - 130	2	30
1,1-Dichloroethene	50.0	52.0		ug/L		104	70 - 130	0	20
1,2-Dichloropropane	50.0	47.3		ug/L		95	70 - 130	0	20
1,3-Dichloropropane	50.0	47.0		ug/L		94	70 - 130	0	20
cis-1,3-Dichloropropene	50.0	48.7		ug/L		97	70 - 130	2	20
trans-1,3-Dichloropropene	50.0	48.2		ug/L		96	70 - 130	1	30
Ethylbenzene	50.0	54.5		ug/L		109	70 - 130	0	20
2-Hexanone	250	218		ug/L		87	70 - 130	4	20
Iodomethane	50.0	54.7		ug/L		109	52 - 129	1	30
Methylene Chloride	50.0	48.1		ug/L		96	70 - 130	1	30
4-Methyl-2-pentanone (MIBK)	250	216		ug/L		86	68 - 120	3	30
Methyl tert-butyl ether	50.0	42.6		ug/L		85	70 - 130	1	30
Styrene	50.0	53.6		ug/L		107	70 - 130	0	30
1,1,1,2-Tetrachloroethane	50.0	50.0		ug/L		100	70 - 130	2	30
1,1,2,2-Tetrachloroethane	50.0	44.2		ug/L		88	70 - 130	2	30
Tetrachloroethylene	50.0	54.3		ug/L		109	70 - 130	0	30
Toluene	50.0	53.5		ug/L		107	70 - 130	0	30
1,1,1-Trichloroethane	50.0	51.5		ug/L		103	70 - 130	2	30
1,1,2-Trichloroethane	50.0	43.1		ug/L		86	70 - 130	0	30
Trichloroethene	50.0	53.0		ug/L		106	70 - 130	0	30
Trichlorofluoromethane	50.0	50.6		ug/L		101	63 - 142	3	30
1,2,3-Trichloropropane	50.0	46.0		ug/L		92	70 - 130	4	30
Vinyl acetate	100	85.0		ug/L		85	67 - 135	2	30
Vinyl chloride	50.0	71.5	*+	ug/L		143	66 - 129	2	30
Xylenes, Total	100	107		ug/L		107	70 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	89		60 - 124
Dibromofluoromethane (Surr)	92		70 - 130
4-Bromofluorobenzene (Surr)	81		70 - 130

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 680-797270/1-A
Matrix: Water
Analysis Batch: 797474

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 797270

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:23	09/11/23 15:24	1
Arsenic	0.86	U	3.0	0.86	ug/L		09/11/23 05:23	09/11/23 15:24	1
Barium	0.89	U	5.0	0.89	ug/L		09/11/23 05:23	09/11/23 15:24	1
Beryllium	0.20	U	0.50	0.20	ug/L		09/11/23 05:23	09/11/23 15:24	1
Cadmium	0.078	U	0.50	0.078	ug/L		09/11/23 05:23	09/11/23 15:24	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:23	09/11/23 15:24	1
Cobalt	0.22	U	0.50	0.22	ug/L		09/11/23 05:23	09/11/23 15:24	1
Copper	1.1	U	5.0	1.1	ug/L		09/11/23 05:23	09/11/23 15:24	1
Lead	0.21	U	2.5	0.21	ug/L		09/11/23 05:23	09/11/23 15:24	1
Nickel	0.42	U	5.0	0.42	ug/L		09/11/23 05:23	09/11/23 15:24	1
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:23	09/11/23 15:24	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:23	09/11/23 15:24	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:23	09/11/23 15:24	1
Vanadium	0.63	U	10	0.63	ug/L		09/11/23 05:23	09/11/23 15:24	1
Zinc	2.8	U	20	2.8	ug/L		09/11/23 05:23	09/11/23 15:24	1

Lab Sample ID: LCS 680-797270/2-A
Matrix: Water
Analysis Batch: 797474

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 797270

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	50.0	50.6		ug/L		101	80 - 120
Arsenic	100	105		ug/L		105	80 - 120
Barium	100	103		ug/L		103	80 - 120
Beryllium	50.0	50.1		ug/L		100	80 - 120
Cadmium	50.0	48.9		ug/L		98	80 - 120
Chromium	100	105		ug/L		105	80 - 120
Cobalt	50.0	53.5		ug/L		107	80 - 120
Copper	100	109		ug/L		109	80 - 120
Lead	500	501		ug/L		100	80 - 120
Nickel	100	98.9		ug/L		99	80 - 120
Selenium	100	101		ug/L		101	80 - 120
Silver	50.0	52.4		ug/L		105	80 - 120
Thallium	50.0	48.5		ug/L		97	80 - 120
Vanadium	100	103		ug/L		103	80 - 120
Zinc	100	102		ug/L		102	80 - 120

Lab Sample ID: 680-240065-1 MS
Matrix: Water
Analysis Batch: 797474

Client Sample ID: LF4-MW1
Prep Type: Total Recoverable
Prep Batch: 797270

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.34	U	50.0	59.3		ug/L		119	75 - 125
Arsenic	5.4		100	122		ug/L		117	75 - 125
Barium	47		100	165		ug/L		118	75 - 125
Beryllium	0.26	J	50.0	54.4		ug/L		108	75 - 125
Cadmium	0.15	J	50.0	57.8		ug/L		115	75 - 125
Chromium	1.2	U	100	120		ug/L		120	75 - 125
Cobalt	23		50.0	82.2		ug/L		119	75 - 125

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 680-240065-1 MS

Matrix: Water

Analysis Batch: 797474

Client Sample ID: LF4-MW1

Prep Type: Total Recoverable

Prep Batch: 797270

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	2.7	J F1	100	129	F1	ug/L		127	75 - 125
Lead	1.1	J	500	577		ug/L		115	75 - 125
Nickel	15		100	131		ug/L		116	75 - 125
Selenium	0.99	U	100	114		ug/L		114	75 - 125
Silver	0.39	U	50.0	61.0		ug/L		122	75 - 125
Thallium	0.26	U	50.0	56.9		ug/L		114	75 - 125
Vanadium	0.63	U	100	117		ug/L		117	75 - 125
Zinc	31		100	147		ug/L		115	75 - 125

Lab Sample ID: 680-240065-1 MSD

Matrix: Water

Analysis Batch: 797474

Client Sample ID: LF4-MW1

Prep Type: Total Recoverable

Prep Batch: 797270

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.34	U	50.0	51.9		ug/L		104	75 - 125	13	20
Arsenic	5.4		100	111		ug/L		105	75 - 125	10	20
Barium	47		100	147		ug/L		100	75 - 125	11	20
Beryllium	0.26	J	50.0	51.7		ug/L		103	75 - 125	5	20
Cadmium	0.15	J	50.0	50.2		ug/L		100	75 - 125	14	20
Chromium	1.2	U	100	107		ug/L		107	75 - 125	11	20
Cobalt	23		50.0	74.5		ug/L		103	75 - 125	10	20
Copper	2.7	J F1	100	114		ug/L		111	75 - 125	13	20
Lead	1.1	J	500	519		ug/L		104	75 - 125	11	20
Nickel	15		100	117		ug/L		102	75 - 125	12	20
Selenium	0.99	U	100	105		ug/L		105	75 - 125	9	20
Silver	0.39	U	50.0	53.7		ug/L		107	75 - 125	13	20
Thallium	0.26	U	50.0	50.8		ug/L		102	75 - 125	11	20
Vanadium	0.63	U	100	105		ug/L		105	75 - 125	11	20
Zinc	31		100	131		ug/L		99	75 - 125	12	20

Lab Sample ID: MB 680-797272/1-A

Matrix: Water

Analysis Batch: 797474

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 797272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.34	U	5.0	0.34	ug/L		09/11/23 05:31	09/11/23 23:32	1
Arsenic	0.86	U	3.0	0.86	ug/L		09/11/23 05:31	09/11/23 23:32	1
Barium	0.89	U	5.0	0.89	ug/L		09/11/23 05:31	09/11/23 23:32	1
Beryllium	0.20	U	0.50	0.20	ug/L		09/11/23 05:31	09/11/23 23:32	1
Cadmium	0.078	U	0.50	0.078	ug/L		09/11/23 05:31	09/11/23 23:32	1
Chromium	1.2	U	5.0	1.2	ug/L		09/11/23 05:31	09/11/23 23:32	1
Cobalt	0.22	U	0.50	0.22	ug/L		09/11/23 05:31	09/11/23 23:32	1
Copper	1.1	U	5.0	1.1	ug/L		09/11/23 05:31	09/11/23 23:32	1
Lead	0.21	U	2.5	0.21	ug/L		09/11/23 05:31	09/11/23 23:32	1
Nickel	1.31	J	5.0	0.42	ug/L		09/11/23 05:31	09/11/23 23:32	1
Selenium	0.99	U	2.5	0.99	ug/L		09/11/23 05:31	09/11/23 23:32	1
Silver	0.39	U	1.0	0.39	ug/L		09/11/23 05:31	09/11/23 23:32	1
Thallium	0.26	U	1.0	0.26	ug/L		09/11/23 05:31	09/11/23 23:32	1
Vanadium	0.63	U	10	0.63	ug/L		09/11/23 05:31	09/11/23 23:32	1

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 680-797272/1-A

Matrix: Water

Analysis Batch: 797474

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 797272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	2.8	U	20	2.8	ug/L		09/11/23 05:31	09/11/23 23:32	1

Lab Sample ID: LCS 680-797272/2-A

Matrix: Water

Analysis Batch: 797474

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 797272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	50.0	49.9		ug/L		100	80 - 120
Arsenic	100	103		ug/L		103	80 - 120
Barium	100	100		ug/L		100	80 - 120
Beryllium	50.0	50.7		ug/L		101	80 - 120
Cadmium	50.0	46.7		ug/L		93	80 - 120
Chromium	100	104		ug/L		104	80 - 120
Cobalt	50.0	53.1		ug/L		106	80 - 120
Copper	100	106		ug/L		106	80 - 120
Lead	500	495		ug/L		99	80 - 120
Nickel	100	97.9		ug/L		98	80 - 120
Selenium	100	100		ug/L		100	80 - 120
Silver	50.0	52.7		ug/L		105	80 - 120
Thallium	50.0	47.9		ug/L		96	80 - 120
Vanadium	100	102		ug/L		102	80 - 120
Zinc	100	102		ug/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-797380/1-A

Matrix: Water

Analysis Batch: 797609

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 797380

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/11/23 11:54	09/12/23 12:08	1

Lab Sample ID: LCS 680-797380/2-A

Matrix: Water

Analysis Batch: 797609

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 797380

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.50	2.65		ug/L		106	80 - 120

Lab Sample ID: 680-240065-1 MS

Matrix: Water

Analysis Batch: 797609

Client Sample ID: LF4-MW1

Prep Type: Total/NA

Prep Batch: 797380

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.080	U	1.00	1.03		ug/L		103	80 - 120

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QC Sample Results

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 680-240065-1 MSD

Matrix: Water

Analysis Batch: 797609

Client Sample ID: LF4-MW1

Prep Type: Total/NA

Prep Batch: 797380

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.080	U	1.00	1.03		ug/L		103	80 - 120	0	20

Lab Sample ID: MB 680-797941/1-A

Matrix: Water

Analysis Batch: 798217

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 797941

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		09/14/23 11:19	09/15/23 13:55	1

Lab Sample ID: LCS 680-797941/2-A

Matrix: Water

Analysis Batch: 798217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 797941

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.50	2.56		ug/L		102	80 - 120

QC Association Summary

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

GC/MS VOA

Analysis Batch: 797541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-1	LF4-MW1	Total/NA	Water	8260D	
680-240065-2	LF4-MW2	Total/NA	Water	8260D	
680-240065-3	LF4-MW3	Total/NA	Water	8260D	
MB 680-797541/8	Method Blank	Total/NA	Water	8260D	
LCS 680-797541/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-797541/5	Lab Control Sample Dup	Total/NA	Water	8260D	
680-240065-1 MS	LF4-MW1	Total/NA	Water	8260D	
680-240065-1 MSD	LF4-MW1	Total/NA	Water	8260D	

Analysis Batch: 798109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-4	LF4-MW4	Total/NA	Water	8260D	
680-240065-5	LF4-MW5	Total/NA	Water	8260D	
680-240065-6	DUP424	Total/NA	Water	8260D	
680-240065-7	TB614	Total/NA	Water	8260D	
MB 680-798109/7	Method Blank	Total/NA	Water	8260D	
LCS 680-798109/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-798109/4	Lab Control Sample Dup	Total/NA	Water	8260D	

Metals

Prep Batch: 797270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-1	LF4-MW1	Total Recoverable	Water	3005A	
680-240065-2	LF4-MW2	Total Recoverable	Water	3005A	
680-240065-4	LF4-MW4	Total Recoverable	Water	3005A	
680-240065-5	LF4-MW5	Total Recoverable	Water	3005A	
680-240065-6	DUP424	Total Recoverable	Water	3005A	
MB 680-797270/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-797270/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-240065-1 MS	LF4-MW1	Total Recoverable	Water	3005A	
680-240065-1 MSD	LF4-MW1	Total Recoverable	Water	3005A	

Prep Batch: 797272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-3	LF4-MW3	Total Recoverable	Water	3005A	
MB 680-797272/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-797272/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 797380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-1	LF4-MW1	Total/NA	Water	7470A	
680-240065-2	LF4-MW2	Total/NA	Water	7470A	
680-240065-3	LF4-MW3	Total/NA	Water	7470A	
680-240065-4	LF4-MW4	Total/NA	Water	7470A	
680-240065-5	LF4-MW5	Total/NA	Water	7470A	
MB 680-797380/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-797380/2-A	Lab Control Sample	Total/NA	Water	7470A	
680-240065-1 MS	LF4-MW1	Total/NA	Water	7470A	
680-240065-1 MSD	LF4-MW1	Total/NA	Water	7470A	

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QC Association Summary

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Metals

Analysis Batch: 797474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-1	LF4-MW1	Total Recoverable	Water	6020B	797270
680-240065-2	LF4-MW2	Total Recoverable	Water	6020B	797270
680-240065-3	LF4-MW3	Total Recoverable	Water	6020B	797272
680-240065-4	LF4-MW4	Total Recoverable	Water	6020B	797270
680-240065-5	LF4-MW5	Total Recoverable	Water	6020B	797270
680-240065-6	DUP424	Total Recoverable	Water	6020B	797270
MB 680-797270/1-A	Method Blank	Total Recoverable	Water	6020B	797270
MB 680-797272/1-A	Method Blank	Total Recoverable	Water	6020B	797272
LCS 680-797270/2-A	Lab Control Sample	Total Recoverable	Water	6020B	797270
LCS 680-797272/2-A	Lab Control Sample	Total Recoverable	Water	6020B	797272
680-240065-1 MS	LF4-MW1	Total Recoverable	Water	6020B	797270
680-240065-1 MSD	LF4-MW1	Total Recoverable	Water	6020B	797270

Analysis Batch: 797609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-1	LF4-MW1	Total/NA	Water	7470A	797380
680-240065-2	LF4-MW2	Total/NA	Water	7470A	797380
680-240065-3	LF4-MW3	Total/NA	Water	7470A	797380
680-240065-4	LF4-MW4	Total/NA	Water	7470A	797380
680-240065-5	LF4-MW5	Total/NA	Water	7470A	797380
MB 680-797380/1-A	Method Blank	Total/NA	Water	7470A	797380
LCS 680-797380/2-A	Lab Control Sample	Total/NA	Water	7470A	797380
680-240065-1 MS	LF4-MW1	Total/NA	Water	7470A	797380
680-240065-1 MSD	LF4-MW1	Total/NA	Water	7470A	797380

Prep Batch: 797941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-6	DUP424	Total/NA	Water	7470A	
MB 680-797941/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-797941/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 798217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-240065-6	DUP424	Total/NA	Water	7470A	797941
MB 680-797941/1-A	Method Blank	Total/NA	Water	7470A	797941
LCS 680-797941/2-A	Lab Control Sample	Total/NA	Water	7470A	797941

Lab Chronicle

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW1

Lab Sample ID: 680-240065-1

Date Collected: 09/06/23 11:10

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	797541	09/12/23 19:29	P1C	EET SAV
Instrument ID: CMSAJ										
Total Recoverable	Prep	3005A			25 mL	125 mL	797270	09/11/23 05:23	RR	EET SAV
Total Recoverable	Analysis	6020B		1			797474	09/11/23 15:32	BWR	EET SAV
Instrument ID: ICPMSC										
Total/NA	Prep	7470A			50 mL	50 mL	797380	09/11/23 11:54	DW	EET SAV
Total/NA	Analysis	7470A		1			797609	09/12/23 12:11	DW	EET SAV
Instrument ID: QuickTrace2										

Client Sample ID: LF4-MW2

Lab Sample ID: 680-240065-2

Date Collected: 09/06/23 13:10

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	797541	09/12/23 19:51	P1C	EET SAV
Instrument ID: CMSAJ										
Total Recoverable	Prep	3005A			25 mL	125 mL	797270	09/11/23 05:23	RR	EET SAV
Total Recoverable	Analysis	6020B		1			797474	09/11/23 16:29	BWR	EET SAV
Instrument ID: ICPMSC										
Total/NA	Prep	7470A			50 mL	50 mL	797380	09/11/23 11:54	DW	EET SAV
Total/NA	Analysis	7470A		1			797609	09/12/23 12:29	DW	EET SAV
Instrument ID: QuickTrace2										

Client Sample ID: LF4-MW3

Lab Sample ID: 680-240065-3

Date Collected: 09/06/23 14:40

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	797541	09/12/23 20:13	P1C	EET SAV
Instrument ID: CMSAJ										
Total Recoverable	Prep	3005A			25 mL	125 mL	797272	09/11/23 05:31	RR	EET SAV
Total Recoverable	Analysis	6020B		1			797474	09/12/23 00:00	BWR	EET SAV
Instrument ID: ICPMSC										
Total/NA	Prep	7470A			50 mL	50 mL	797380	09/11/23 11:54	DW	EET SAV
Total/NA	Analysis	7470A		1			797609	09/12/23 12:30	DW	EET SAV
Instrument ID: QuickTrace2										

Client Sample ID: LF4-MW4

Lab Sample ID: 680-240065-4

Date Collected: 09/06/23 16:00

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	798109	09/15/23 16:17	RPG	EET SAV
Instrument ID: CMSC										

Eurofins Savannah

Lab Chronicle

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Client Sample ID: LF4-MW4

Lab Sample ID: 680-240065-4

Date Collected: 09/06/23 16:00

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	125 mL	797270	09/11/23 05:23	RR	EET SAV
Total Recoverable	Analysis	6020B		1			797474	09/11/23 16:37	BWR	EET SAV
Instrument ID: ICPMSC										
Total/NA	Prep	7470A			50 mL	50 mL	797380	09/11/23 11:54	DW	EET SAV
Total/NA	Analysis	7470A		1			797609	09/12/23 12:32	DW	EET SAV
Instrument ID: QuickTrace2										

Client Sample ID: LF4-MW5

Lab Sample ID: 680-240065-5

Date Collected: 09/06/23 09:30

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	798109	09/15/23 16:55	RPG	EET SAV
Instrument ID: CMSC										
Total Recoverable	Prep	3005A			25 mL	125 mL	797270	09/11/23 05:23	RR	EET SAV
Total Recoverable	Analysis	6020B		1			797474	09/11/23 16:41	BWR	EET SAV
Instrument ID: ICPMSC										
Total/NA	Prep	7470A			50 mL	50 mL	797380	09/11/23 11:54	DW	EET SAV
Total/NA	Analysis	7470A		1			797609	09/12/23 12:36	DW	EET SAV
Instrument ID: QuickTrace2										

Client Sample ID: DUP424

Lab Sample ID: 680-240065-6

Date Collected: 09/06/23 00:00

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	798109	09/15/23 17:14	RPG	EET SAV
Instrument ID: CMSC										
Total Recoverable	Prep	3005A			25 mL	125 mL	797270	09/11/23 05:23	RR	EET SAV
Total Recoverable	Analysis	6020B		1			797474	09/11/23 16:33	BWR	EET SAV
Instrument ID: ICPMSC										
Total/NA	Prep	7470A			50 mL	50 mL	797941	09/14/23 11:19	DW	EET SAV
Total/NA	Analysis	7470A		1			798217	09/15/23 14:17	DW	EET SAV
Instrument ID: QuickTrace2										

Client Sample ID: TB614

Lab Sample ID: 680-240065-7

Date Collected: 09/07/23 08:37

Matrix: Water

Date Received: 09/08/23 09:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	798109	09/15/23 13:26	RPG	EET SAV
Instrument ID: CMSC										

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Eurofins Savannah

Accreditation/Certification Summary

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E87052	06-30-24

1

2

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12

Method Summary

Client: Matrix Environmental Services, LLC
Project/Site: Parcel 81(5), Landfill 4

Job ID: 680-240065-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SAV
6020B	Metals (ICP/MS)	SW846	EET SAV
7470A	Mercury (CVAA)	SW846	EET SAV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET SAV
5030C	Purge and Trap	SW846	EET SAV
7470A	Preparation, Mercury	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MATRIX ENVIRONMENTAL SERVICES CHAIN OF CUSTODY RECORD

Laboratory Eurofins
 Lab Contact Noel Savoie and Beth Daughtry
 MES Contact Betty Van Pelt
 MES Phone 801-699-1246
 Project Parcel 81(5), Landfill 4
 Task # 22.094.23-07.1
 Lab contract: 22.094.23-07.1.500

COC Number 68019843
 Cooler ID 1 of 1
 Page 1 of 1

Analysis

SWMU	Station ID	QC Code	Station Code	Matrix	Sample Method	Date Collected	Sample Time	Analysis			
								SW8260D - VOC 3 - 40 ml vials, HCl	6020A/7470A Metals (Total) 1 - 250 ml poly HNO3	SW8260D - VOC 2 - 40 ml vials, HCl	
Parcel 81(5), Landfill 4	LF4-MW1	NS	MW	Water	Grab	9/6/2023	11:10	X	X		
Parcel 81(5), Landfill 4	LF4-MW1	MS/MSD	MW	Water	Grab	9/6/2023	11:10	X	X		
Parcel 81(5), Landfill 4	LF4-MW2	NS	MW	Water	Grab	9/6/2023	13:10	X	X		
Parcel 81(5), Landfill 4	LF4-MW3	NS	MW	Water	Grab	9/6/2023	14:40	X	X		
Parcel 81(5), Landfill 4	LF4-MW4	NS	MW	Water	Grab	9/6/2023	16:00	X	X		
Parcel 81(5), Landfill 4	LF4-MW5	NS	MW	Water	Grab	9/6/2023	9:30	X	X		
Parcel 81(5), Landfill 4	DUP424	FD	MW	Water	Grab	9/6/2023	N/A	X	X		
Parcel 81(5), Landfill 4	TB614	TB	WQ	Water	Grab	9/7/2023	8:37			X	

NOTES:

QC Code: NS = Investigative Sample, FD = Field Duplicate, MS/MSD = Matrix Spike/Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water
 Station Type = MW = Monitoring Well, BH = Bore Hole, SD = Sediment, SW = Surface Water, SS = Surface Soil, SU = Sump, WS = Waste Solid/Soil, WW = Waste Water

White Copy = Lab COC, Yellow COC = Field Copy, Pink COC = Data Mgmt

COMMENTS:

See Task Order 22.094.23-07.1 500 for required list of VOCs and metals

**Collect FEII in the field

Double the number of bottles for MS/MSD

Relinquished by (Signature):

Date/Time:

9/7/2023

Received by (Signature):

FedEx

1030

Relinquished by (Signature):

Date/Time:

1030

Received by (Signature):

DA TA 9-8-23 959
 1. 9/20



680-240065 Chain of Custody

Login Sample Receipt Checklist

Client: Matrix Environmental Services, LLC

Job Number: 680-240065-1

Login Number: 240065

List Source: Eurofins Savannah

List Number: 1

Creator: Sims, Robert D

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

Statistical Evaluation of Metals Date September 2023

Attachment D1. Analyses and Percent Non-Detects
McClellan Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Well ID	Antimony			Arsenic			Barium		
	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs
LF4-MW1	41	41	100%	48	36	75%	49	5	10%
LF4-MW2	41	39	95%	48	25	52%	48	0	0%
LF4-MW3	41	41	100%	48	34	71%	48	2	4%
LF4-MW4	41	37	90%	48	26	54%	48	0	0%
LF4-MW5	41	41	100%	48	41	85%	48	9	19%

Well ID	Beryllium			Cadmium			Chromium		
	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs
LF4-MW1	40	20	50%	47	36	77%	47	47	100%
LF4-MW2	40	16	40%	47	30	64%	47	24	51%
LF4-MW3	40	21	53%	47	37	79%	47	33	70%
LF4-MW4	40	35	88%	47	35	74%	47	32	68%
LF4-MW5	40	30	75%	47	45	96%	47	39	83%

Well ID	Cobalt			Copper			Lead		
	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs
LF4-MW1	40	0	0%	41	13	32%	48	14	29%
LF4-MW2	40	0	0%	41	10	24%	48	11	23%
LF4-MW3	40	13	33%	41	14	34%	48	16	33%
LF4-MW4	40	8	20%	41	24	59%	48	10	21%
LF4-MW5	40	6	15%	41	24	59%	48	20	42%

Well ID	Mercury			Nickel			Selenium		
	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs
LF4-MW1	48	48	100%	41	5	12%	48	48	100%
LF4-MW2	48	47	98%	41	3	7%	48	44	92%
LF4-MW3	48	48	100%	41	9	22%	48	47	98%
LF4-MW4	48	47	98%	41	13	32%	48	45	94%
LF4-MW5	48	48	100%	41	15	37%	48	48	100%

Well ID	Silver			Thallium			Vanadium		
	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs	Sample #	# of NDs	%NDs
LF4-MW1	40	40	100%	41	39	95%	41	36	88%
LF4-MW2	40	40	100%	41	39	95%	41	31	76%
LF4-MW3	40	40	100%	41	40	98%	41	33	80%
LF4-MW4	40	29	73%	41	37	90%	41	29	71%
LF4-MW5	40	40	100%	41	39	95%	41	31	76%

Well ID	Zinc		
	Sample #	# of NDs	%NDs
LF4-MW1	41	2	5%
LF4-MW2	41	2	5%
LF4-MW3	41	10	24%
LF4-MW4	41	12	29%
LF4-MW5	41	16	39%

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Barium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-2.638	1.86	0.86	0.86
LF4-MW1	9/13/06	-3.180	0.37	-0.63	0.23
LF4-MW1	3/6/07	-3.219	0.26	-0.74	0.00
LF4-MW1	9/24/07	-3.439	-0.34	-1.34	0.00
LF4-MW1	3/26/08	-2.990	0.89	-0.11	0.00
LF4-MW1	9/16/08	-3.464	-0.41	-1.41	0.00
LF4-MW1	3/17/09	-3.551	-0.65	-1.65	0.00
LF4-MW1	9/17/09	-3.408	-0.26	-1.26	0.00
LF4-MW1	3/17/10	-3.427	-0.31	-1.31	0.00
LF4-MW1	9/21/10	-3.510	-0.54	-1.54	0.00
LF4-MW1	3/15/11	-3.197	0.32	-0.68	0.00
LF4-MW1	9/8/11	-3.242	0.20	-0.80	0.00
LF4-MW1	3/14/12	-3.053	0.72	-0.28	0.00
LF4-MW1	9/6/12	-3.066	0.68	-0.32	0.00
LF4-MW1	3/5/13	-3.043	0.75	-0.25	0.00
LF4-MW1	9/11/13	-3.321	-0.02	-1.02	0.00
LF4-MW1	3/5/14	-3.294	0.06	-0.94	0.00
LF4-MW1	9/4/14	-3.324	-0.03	-1.03	0.00
LF4-MW1	3/13/15	-3.135	0.49	-0.51	0.00
LF4-MW1	9/16/15	-3.163	0.42	-0.58	0.00
LF4-MW1	3/16/16	-3.154	0.44	-0.56	0.00
LF4-MW1	9/21/16	-3.202	0.31	-0.69	0.00
LF4-MW1	3/15/17	-3.090	0.62	-0.38	0.00
LF4-MW1	9/8/17	-3.124	0.52	-0.48	0.00
LF4-MW1	3/8/18	-3.110	0.56	-0.44	0.00
LF4-MW1	9/11/18	-3.058	0.71	-0.29	0.00
LF4-MW1	3/7/19	-3.058	0.71	-0.29	0.00
LF4-MW1	9/5/19	-3.124	0.53	-0.47	0.00
LF4-MW1	3/12/20	-3.079	0.65	-0.35	0.00
LF4-MW1	9/15/20	-3.079	0.65	-0.35	0.00
LF4-MW1	3/4/21	-3.016	0.82	-0.18	0.00
LF4-MW1	9/9/21	-2.900	1.14	0.14	0.14
LF4-MW1	3/2/22	-2.957	0.98	-0.02	0.12
LF4-MW1	8/31/22	-3.170	0.40	-0.60	0.00
LF4-MW1	3/6/23	-3.170	0.40	-0.60	0.00
LF4-MW1	9/6/23	-3.058	0.71	-0.29	0.00
Background					
LF4-MW1	MEAN	-3.315			
LF4-MW1	STDEV	0.364			

Barium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-3.673	-3.70	-4.70	0.00
LF4-MW2	9/13/06	-2.198	0.41	-0.59	0.00
LF4-MW2	3/6/07	-2.357	-0.03	-1.03	0.00
LF4-MW2	9/24/07	-2.501	-0.44	-1.44	0.00
LF4-MW2	3/26/08	-2.017	0.91	-0.09	0.00
LF4-MW2	9/16/08	-2.327	0.05	-0.95	0.00
LF4-MW2	3/17/09	-2.079	0.74	-0.26	0.00
LF4-MW2	9/17/09	-2.371	-0.07	-1.07	0.00
LF4-MW2	3/17/10	-2.410	-0.18	-1.18	0.00
LF4-MW2	9/21/10	-2.306	0.11	-0.89	0.00
LF4-MW2	3/15/11	-2.283	0.17	-0.83	0.00
LF4-MW2	9/8/11	-2.235	0.31	-0.69	0.00
LF4-MW2	3/14/12	-2.235	0.31	-0.69	0.00
LF4-MW2	9/6/12	-2.216	0.36	-0.64	0.00
LF4-MW2	3/5/13	-2.056	0.80	-0.20	0.00
LF4-MW2	9/11/13	-2.585	-0.67	-1.67	0.00
LF4-MW2	3/5/14	-2.765	-1.17	-2.17	0.00
LF4-MW2	9/4/14	-2.854	-1.42	-2.42	0.00
LF4-MW2	3/13/15	-2.609	-0.74	-1.74	0.00
LF4-MW2	9/16/15	-2.537	-0.54	-1.54	0.00
LF4-MW2	3/16/16	-2.834	-1.36	-2.36	0.00
LF4-MW2	9/21/16	-2.664	-0.89	-1.89	0.00
LF4-MW2	3/15/17	-2.711	-1.02	-2.02	0.00
LF4-MW2	9/8/17	-2.438	-0.26	-1.26	0.00
LF4-MW2	3/8/18	-2.564	-0.61	-1.61	0.00
LF4-MW2	9/11/18	-2.604	-0.72	-1.72	0.00
LF4-MW2	3/7/19	-2.830	-1.35	-2.35	0.00
LF4-MW2	9/5/19	-2.688	-0.96	-1.96	0.00
LF4-MW2	3/12/20	-2.765	-1.17	-2.17	0.00
LF4-MW2	9/15/20	-2.674	-0.92	-1.92	0.00
LF4-MW2	3/4/21	-2.781	-1.22	-2.22	0.00
LF4-MW2	9/9/21	-2.303	0.12	-0.88	0.00
LF4-MW2	3/2/22	-2.813	-1.30	-2.30	0.00
LF4-MW2	8/31/22	-2.617	-0.76	-1.76	0.00
LF4-MW2	3/6/23	-2.688	-0.96	-1.96	0.00
LF4-MW2	9/6/23	-2.343	0.00	-1.00	0.00
Background					
LF4-MW2	MEAN	-2.344			
LF4-MW2	STDEV	0.359			

Barium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW3	3/13/06	-2.865	0.37	-0.63	0.00
LF4-MW3	9/14/06	-2.727	0.74	-0.26	0.00
LF4-MW3	3/6/07	-3.030	-0.08	-1.08	0.00
LF4-MW3	9/25/07	-2.818	0.49	-0.51	0.00
LF4-MW3	3/26/08	-2.662	0.92	-0.08	0.00
LF4-MW3	9/16/08	-2.958	0.11	-0.89	0.00
LF4-MW3	3/17/09	-2.928	0.19	-0.81	0.00
LF4-MW3	9/17/09	-2.573	1.16	0.16	0.16
LF4-MW3	3/17/10	-2.839	0.44	-0.56	0.00
LF4-MW3	9/21/10	-3.239	-0.65	-1.65	0.00
LF4-MW3	3/15/11	-2.671	0.90	-0.10	0.00
LF4-MW3	9/8/11	-2.863	0.37	-0.63	0.00
LF4-MW3	3/14/12	-2.800	0.54	-0.46	0.00
LF4-MW3	9/6/12	-2.830	0.46	-0.54	0.00
LF4-MW3	3/5/13	-2.581	1.14	0.14	0.14
LF4-MW3	9/11/13	-2.953	0.13	-0.87	0.00
LF4-MW3	3/5/14	-2.906	0.26	-0.74	0.00
LF4-MW3	9/4/14	-2.700	0.82	-0.18	0.00
LF4-MW3	3/13/15	-2.471	1.44	0.44	0.44
LF4-MW3	9/16/15	-2.325	1.84	0.84	1.28
LF4-MW3	3/16/16	-2.870	0.35	-0.65	0.63
LF4-MW3	9/21/16	-2.444	1.51	0.51	1.14
LF4-MW3	3/15/17	-2.808	0.52	-0.48	0.66
LF4-MW3	9/8/17	-2.825	0.47	-0.53	0.14
LF4-MW3	3/8/18	-2.846	0.42	-0.58	0.00
LF4-MW3	9/11/18	-2.865	0.37	-0.63	0.00
LF4-MW3	3/7/19	-2.688	0.85	-0.15	0.00
LF4-MW3	9/5/19	-2.617	1.04	0.04	0.04
LF4-MW3	3/12/20	-2.465	1.46	0.46	0.50
LF4-MW3	9/15/20	-3.170	-0.46	-1.46	0.00
LF4-MW3	3/4/21	-2.489	1.39	0.39	0.39
LF4-MW3	9/9/21	-2.813	0.51	-0.49	0.00
LF4-MW3	3/2/22	-2.813	0.51	-0.49	0.00
LF4-MW3	8/31/22	-2.957	0.12	-0.88	0.00
LF4-MW3	3/6/23	-2.919	0.22	-0.78	0.00
LF4-MW3	9/6/23	-3.194	-0.53	-1.53	0.00
Background					
LF4-MW3	MEAN	-3.000			
LF4-MW3	STDEV	0.367			

Barium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW4	3/14/06	-1.931	-1.61	-2.61	0.00
LF4-MW4	9/14/06	-1.715	-0.52	-1.52	0.00
LF4-MW4	3/7/07	-2.129	-2.60	-3.60	0.00
LF4-MW4	9/25/07	-1.565	0.22	-0.78	0.00
LF4-MW4	3/26/08	-1.945	-1.68	-2.68	0.00
LF4-MW4	9/17/08	-1.645	-0.17	-1.17	0.00
LF4-MW4	3/17/09	-1.973	-1.82	-2.82	0.00
LF4-MW4	9/21/09	-2.163	-2.77	-3.77	0.00
LF4-MW4	3/17/10	-2.048	-2.19	-3.19	0.00
LF4-MW4	9/21/10	-1.732	-0.61	-1.61	0.00
LF4-MW4	3/15/11	-2.410	-4.01	-5.01	0.00
LF4-MW4	9/8/11	-1.778	-0.84	-1.84	0.00
LF4-MW4	3/14/12	-1.995	-1.93	-2.93	0.00
LF4-MW4	9/6/12	-2.163	-2.77	-3.77	0.00
LF4-MW4	3/5/13	-1.820	-1.05	-2.05	0.00
LF4-MW4	9/11/13	-1.604	0.03	-0.97	0.00
LF4-MW4	3/5/14	-1.749	-0.69	-1.69	0.00
LF4-MW4	9/4/14	-1.671	-0.31	-1.31	0.00
LF4-MW4	3/13/15	-2.189	-2.90	-3.90	0.00
LF4-MW4	9/16/15	-1.749	-0.69	-1.69	0.00
LF4-MW4	3/16/16	-1.682	-0.36	-1.36	0.00
LF4-MW4	9/21/16	-1.833	-1.12	-2.12	0.00
LF4-MW4	3/15/17	-2.064	-2.27	-3.27	0.00
LF4-MW4	9/8/17	-1.492	0.59	-0.41	0.00
LF4-MW4	3/8/18	-1.625	-0.07	-1.07	0.00
LF4-MW4	9/11/18	-1.833	-1.11	-2.11	0.00
LF4-MW4	3/7/19	-1.715	-0.52	-1.52	0.00
LF4-MW4	9/5/19	-1.833	-1.11	-2.11	0.00
LF4-MW4	3/12/20	-1.772	-0.81	-1.81	0.00
LF4-MW4	9/15/20	-2.303	-3.47	-4.47	0.00
LF4-MW4	3/4/21	-1.661	-0.25	-1.25	0.00
LF4-MW4	9/9/21	-1.109	2.51	1.51	1.51
LF4-MW4	3/2/22	-1.514	0.48	-0.52	0.99
LF4-MW4	8/31/22	-2.207	-2.99	-3.99	0.00
LF4-MW4	3/6/23	-2.040	-2.15	-3.15	0.00
LF4-MW4	9/6/23	-1.661	-0.25	-1.25	0.00
Background					
LF4-MW4	MEAN	-1.610			
LF4-MW4	STDEV	0.200			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Barium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW5	3/14/06	-3.892	0.21	-0.79	0.00
LF4-MW5	9/14/06	-3.873	0.27	-0.73	0.00
LF4-MW5	3/7/07	-4.234	-0.73	-1.73	0.00
LF4-MW5	9/24/07	-3.887	0.23	-0.77	0.00
LF4-MW5	3/26/08	-4.406	-1.20	-2.20	0.00
LF4-MW5	9/16/08	-4.538	-1.56	-2.56	0.00
LF4-MW5	3/18/09	-4.335	-1.00	-2.00	0.00
LF4-MW5	9/17/09	-4.685	-1.97	-2.97	0.00
LF4-MW5	3/17/10	-4.298	-0.90	-1.90	0.00
LF4-MW5	9/21/10	-4.382	-1.13	-2.13	0.00
LF4-MW5	3/15/11	-3.544	1.17	0.17	0.17
LF4-MW5	9/8/11	-4.063	-0.26	-1.26	0.00
LF4-MW5	3/14/12	-4.382	-1.13	-2.13	0.00
LF4-MW5	9/6/12	-4.501	-1.46	-2.46	0.00
LF4-MW5	3/5/13	-4.423	-1.25	-2.25	0.00
LF4-MW5	9/11/13	-5.298	-3.65	-4.65	0.00
LF4-MW5	3/5/14	-4.457	-1.34	-2.34	0.00
LF4-MW5	9/4/14	-4.595	-1.72	-2.72	0.00
LF4-MW5	3/13/15	-4.305	-0.92	-1.92	0.00
LF4-MW5	9/16/15	-4.528	-1.54	-2.54	0.00
LF4-MW5	3/16/16	-4.123	-0.42	-1.42	0.00
LF4-MW5	9/21/16	-4.220	-0.69	-1.69	0.00
LF4-MW5	3/15/17	-4.213	-0.67	-1.67	0.00
LF4-MW5	9/8/17	-4.440	-1.29	-2.29	0.00
LF4-MW5	3/8/18	-4.051	-0.22	-1.22	0.00
LF4-MW5	9/11/18	-4.510	-1.48	-2.48	0.00
LF4-MW5	3/7/19	-3.772	0.54	-0.46	0.00
LF4-MW5	9/5/19	-4.343	-1.03	-2.03	0.00
LF4-MW5	3/12/20	-4.017	-0.13	-1.13	0.00
LF4-MW5	9/15/20	-4.135	-0.45	-1.45	0.00
LF4-MW5	3/4/21	-3.863	0.29	-0.71	0.00
LF4-MW5	9/9/21	-4.269	-0.82	-1.82	0.00
LF4-MW5	3/2/22	-3.912	0.16	-0.84	0.00
LF4-MW5	8/31/22	-4.423	-1.25	-2.25	0.00
LF4-MW5	3/6/23	-3.963	0.02	-0.98	0.00
LF4-MW5	9/6/23	-4.423	-1.25	-2.25	0.00
Background					
LF4-MW5	MEAN	-3.970			
LF4-MW5	STDEV	0.364			

Beryllium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-6.425	-1.53	-2.53	0.00
LF4-MW1	9/13/06	-6.786	-1.91	-2.91	0.00
LF4-MW1	3/6/07	-5.298	-0.33	-1.33	0.00
LF4-MW1	9/24/07	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/26/08	-5.298	-0.33	-1.33	0.00
LF4-MW1	9/16/08	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/17/09	-5.298	-0.33	-1.33	0.00
LF4-MW1	9/17/09	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/17/10	-2.996	2.12	1.12	1.12
LF4-MW1	9/21/10	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/15/11	-5.298	-0.33	-1.33	0.00
LF4-MW1	9/8/11	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/14/12	-5.298	-0.33	-1.33	0.00
LF4-MW1	9/6/12	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/5/13	-5.298	-0.33	-1.33	0.00
LF4-MW1	9/11/13	-5.298	-0.33	-1.33	0.00
LF4-MW1	3/5/14	-8.167	-3.38	-4.38	0.00
LF4-MW1	9/4/14	-7.847	-3.04	-4.04	0.00
LF4-MW1	3/13/15	-8.149	-3.36	-4.36	0.00
LF4-MW1	9/16/15	-7.607	-2.79	-3.79	0.00
LF4-MW1	3/16/16	-8.199	-3.41	-4.41	0.00
LF4-MW1	9/21/16	-7.754	-2.94	-3.94	0.00
LF4-MW1	3/15/17	-8.195	-3.41	-4.41	0.00
LF4-MW1	9/8/17	-8.404	-3.63	-4.63	0.00
LF4-MW1	3/8/18	-8.483	-3.72	-4.72	0.00
LF4-MW1	9/11/18	-8.568	-3.81	-4.81	0.00
LF4-MW1	3/7/19	-8.680	-3.93	-4.93	0.00
LF4-MW1	9/5/19	-7.987	-3.19	-4.19	0.00
LF4-MW1	3/12/20	-8.217	-3.43	-4.43	0.00
LF4-MW1	9/15/20	-8.112	-3.32	-4.32	0.00
LF4-MW1	3/4/21	-7.663	-2.84	-3.84	0.00
LF4-MW1	9/9/21	-8.680	-3.93	-4.93	0.00
LF4-MW1	3/2/22	-7.902	-3.10	-4.10	0.00
LF4-MW1	8/31/22	-8.146	-3.36	-4.36	0.00
LF4-MW1	3/6/23	-8.294	-3.52	-4.52	0.00
LF4-MW1	9/6/23	-8.255	-3.47	-4.47	0.00
Background					
LF4-MW1	MEAN	-4.989			
LF4-MW1	STDEV	0.940			

Beryllium

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-5.298	0.56	-0.44	0.00
LF4-MW2	9/13/06	-6.041	-0.58	-1.58	0.00
LF4-MW2	3/6/07	-5.298	0.56	-0.44	0.00
LF4-MW2	9/24/07	-5.298	0.56	-0.44	0.00
LF4-MW2	3/26/08	-5.298	0.56	-0.44	0.00
LF4-MW2	9/16/08	-5.298	0.56	-0.44	0.00
LF4-MW2	3/17/09	-6.849	-1.83	-2.83	0.00
LF4-MW2	9/17/09	-5.298	0.56	-0.44	0.00
LF4-MW2	3/17/10	-6.205	-0.84	-1.84	0.00
LF4-MW2	9/21/10	-5.298	0.56	-0.44	0.00
LF4-MW2	3/15/11	-5.298	0.56	-0.44	0.00
LF4-MW2	9/8/11	-5.298	0.56	-0.44	0.00
LF4-MW2	3/14/12	-5.298	0.56	-0.44	0.00
LF4-MW2	9/6/12	-5.298	0.56	-0.44	0.00
LF4-MW2	3/5/13	-5.298	0.56	-0.44	0.00
LF4-MW2	9/11/13	-5.298	0.56	-0.44	0.00
LF4-MW2	3/5/14	-7.131	-2.27	-3.27	0.00
LF4-MW2	9/4/14	-9.115	-5.33	-6.33	0.00
LF4-MW2	3/13/15	-7.252	-2.45	-3.45	0.00
LF4-MW2	9/16/15	-8.818	-4.87	-5.87	0.00
LF4-MW2	3/16/16	-7.972	-3.57	-4.57	0.00
LF4-MW2	9/21/16	-8.874	-4.96	-5.96	0.00
LF4-MW2	3/15/17	-9.036	-5.21	-6.21	0.00
LF4-MW2	9/8/17	-9.071	-5.26	-6.26	0.00
LF4-MW2	3/8/18	-7.520	-2.87	-3.87	0.00
LF4-MW2	9/11/18	-8.805	-4.85	-5.85	0.00
LF4-MW2	3/7/19	-6.645	-1.52	-2.52	0.00
LF4-MW2	9/5/19	-8.335	-4.13	-5.13	0.00
LF4-MW2	3/12/20	-7.131	-2.27	-3.27	0.00
LF4-MW2	9/15/20	-7.775	-3.26	-4.26	0.00
LF4-MW2	3/4/21	-8.294	-4.06	-5.06	0.00
LF4-MW2	9/9/21	-8.079	-3.73	-4.73	0.00
LF4-MW2	3/2/22	-7.601	-2.99	-3.99	0.00
LF4-MW2	8/31/22	-8.335	-4.13	-5.13	0.00
LF4-MW2	3/6/23	-8.181	-3.89	-4.89	0.00
LF4-MW2	9/6/23	-7.849	-3.38	-4.38	0.00
Background					
LF4-MW2	MEAN	-5.663			
LF4-MW2	STDEV	0.648			

Cobalt

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-4.029	0.50	-0.50	0.00
LF4-MW1	9/13/06	-4.734	-0.87	-1.87	0.00
LF4-MW1	3/6/07	-4.784	-0.97	-1.97	0.00
LF4-MW1	9/24/07	-4.641	-0.69	-1.69	0.00
LF4-MW1	3/26/08	-3.554	1.42	0.42	0.42
LF4-MW1	9/16/08	-4.547	-0.51	-1.51	0.00
LF4-MW1	3/17/09	-3.917	0.72	-0.28	0.00
LF4-MW1	9/17/09	-4.220	0.13	-0.87	0.00
LF4-MW1	3/17/10	-4.374	-0.17	-1.17	0.00
LF4-MW1	9/21/10	-3.830	0.89	-0.11	0.00
LF4-MW1	3/15/11	-3.623	1.29	0.29	0.29
LF4-MW1	9/8/11	-3.445	1.63	0.63	0.92
LF4-MW1	3/14/12	-3.417	1.69	0.69	1.61
LF4-MW1	9/6/12	-3.302	1.91	0.91	2.52
LF4-MW1	3/5/13	-3.411	1.70	0.70	3.22
LF4-MW1	9/11/13	-3.812	0.92	-0.08	3.14
LF4-MW1	3/5/14	-3.634	1.27	0.27	3.41
LF4-MW1	9/4/14	-3.717	1.11	0.11	3.51
LF4-MW1	3/13/15	-3.393	1.73	0.73	4.25
LF4-MW1	9/16/15	-3.689	1.16	0.16	4.41
LF4-MW1	3/16/16	-3.231	2.05	1.05	5.46
LF4-MW1	9/21/16	-3.493	1.54	0.54	6.00
LF4-MW1	3/15/17	-3.390	1.74	0.74	6.74
LF4-MW1	9/8/17	-3.278	1.96	0.96	7.70
LF4-MW1	3/8/18	-3.579	1.37	0.37	8.07
LF4-MW1	9/11/18	-3.411	1.70	0.70	8.77
LF4-MW1	3/7/19	-3.270	1.97	0.97	9.74
LF4-MW1	9/5/19	-3.381	1.76	0.76	10.50
LF4-MW1	3/12/20	-3.352	1.81	0.81	11.31
LF4-MW1	9/15/20	-3.270	1.97	0.97	12.29
LF4-MW1	3/4/21	-3.352	1.81	0.81	13.10
LF4-MW1	9/9/21	-3.297	1.92	0.92	14.02
LF4-MW1	3/2/22	-3.381	1.76	0.76	14.78
LF4-MW1	8/31/22	-3.442	1.64	0.64	15.42
LF4-MW1	3/6/23	-3.772	1.00	0.00	15.42
LF4-MW1	9/6/23	-3.772	1.00	0.00	15.42
Background					
LF4-MW1	MEAN	-4.286			
LF4-MW1	STDEV	0.515			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Cobalt

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-5.053	-1.17	-2.17	0.00
LF4-MW2	9/13/06	-4.200	0.12	-0.88	0.00
LF4-MW2	3/6/07	-4.227	0.08	-0.92	0.00
LF4-MW2	9/24/07	-4.366	-0.13	-1.13	0.00
LF4-MW2	3/26/08	-4.626	-0.53	-1.53	0.00
LF4-MW2	9/16/08	-3.942	0.50	-0.50	0.00
LF4-MW2	3/17/09	-2.339	2.92	1.92	1.92
LF4-MW2	9/17/09	-2.180	3.16	2.16	4.08
LF4-MW2	3/17/10	-2.442	2.77	1.77	5.85
LF4-MW2	9/21/10	-3.464	1.23	0.23	6.08
LF4-MW2	3/15/11	-3.751	0.79	-0.21	5.87
LF4-MW2	9/8/11	-3.705	0.86	-0.14	5.73
LF4-MW2	3/14/12	-3.917	0.54	-0.46	5.28
LF4-MW2	9/6/12	-3.979	0.45	-0.55	4.73
LF4-MW2	3/5/13	-1.952	3.51	2.51	7.23
LF4-MW2	9/11/13	-2.216	3.11	2.11	9.34
LF4-MW2	3/5/14	-1.743	3.82	2.82	12.16
LF4-MW2	9/4/14	-2.401	2.83	1.83	13.99
LF4-MW2	3/13/15	-1.973	3.47	2.47	16.46
LF4-MW2	9/16/15	-2.584	2.55	1.55	18.01
LF4-MW2	3/16/16	-2.377	2.86	1.86	19.88
LF4-MW2	9/21/16	-2.389	2.85	1.85	21.73
LF4-MW2	3/15/17	-2.888	2.09	1.09	22.82
LF4-MW2	9/8/17	-2.970	1.97	0.97	23.79
LF4-MW2	3/8/18	-2.079	3.31	2.31	26.10
LF4-MW2	9/11/18	-2.303	2.98	1.98	28.08
LF4-MW2	3/7/19	-1.833	3.68	2.68	30.77
LF4-MW2	9/5/19	-2.120	3.25	2.25	33.02
LF4-MW2	3/12/20	-2.303	2.98	1.98	34.99
LF4-MW2	9/15/20	-2.040	3.37	2.37	37.37
LF4-MW2	3/4/21	-2.733	2.33	1.33	38.70
LF4-MW2	9/9/21	-2.313	2.96	1.96	40.66
LF4-MW2	3/2/22	-2.645	2.46	1.46	42.12
LF4-MW2	8/31/22	-2.207	3.12	2.12	44.24
LF4-MW2	3/6/23	-2.386	2.85	1.85	46.09
LF4-MW2	9/6/23	-1.966	3.48	2.48	48.58
Background					
LF4-MW2	MEAN	-4.277			
LF4-MW2	STDEV	0.663			

Cobalt

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW3	3/13/06	-4.605	-0.50	-1.50	0.00
LF4-MW3	9/14/06	-4.269	2.75	1.75	1.75
LF4-MW3	3/6/07	-4.605	-0.50	-1.50	0.25
LF4-MW3	9/25/07	-4.905	-3.40	-4.40	0.00
LF4-MW3	3/26/08	-4.605	-0.50	-1.50	0.00
LF4-MW3	9/16/08	-4.605	-0.50	-1.50	0.00
LF4-MW3	3/17/09	-4.605	-0.50	-1.50	0.00
LF4-MW3	9/17/09	-4.605	-0.50	-1.50	0.00
LF4-MW3	3/17/10	-4.605	-0.50	-1.50	0.00
LF4-MW3	9/21/10	-5.687	-10.95	-11.95	0.00
LF4-MW3	3/15/11	-5.836	-12.39	-13.39	0.00
LF4-MW3	9/8/11	-5.900	-13.01	-14.01	0.00
LF4-MW3	3/14/12	-4.605	-0.50	-1.50	0.00
LF4-MW3	9/6/12	-4.605	-0.50	-1.50	0.00
LF4-MW3	3/5/13	-4.605	-0.50	-1.50	0.00
LF4-MW3	9/11/13	-4.628	-0.72	-1.72	0.00
LF4-MW3	3/5/14	-6.342	-17.28	-18.28	0.00
LF4-MW3	9/4/14	-5.514	-9.28	-10.28	0.00
LF4-MW3	3/13/15	-6.432	-18.14	-19.14	0.00
LF4-MW3	9/16/15	-4.034	5.02	4.02	4.02
LF4-MW3	3/16/16	-6.509	-18.89	-19.89	0.00
LF4-MW3	9/21/16	-6.888	-22.55	-23.55	0.00
LF4-MW3	3/15/17	-6.502	-18.83	-19.83	0.00
LF4-MW3	9/8/17	-6.287	-16.75	-17.75	0.00
LF4-MW3	3/8/18	-6.586	-19.63	-20.63	0.00
LF4-MW3	9/11/18	-5.051	-4.81	-5.81	0.00
LF4-MW3	3/7/19	-6.645	-20.21	-21.21	0.00
LF4-MW3	9/5/19	-7.435	-27.84	-28.84	0.00
LF4-MW3	3/12/20	-6.502	-18.83	-19.83	0.00
LF4-MW3	9/15/20	-6.812	-21.82	-22.82	0.00
LF4-MW3	3/4/21	-6.032	-14.28	-15.28	0.00
LF4-MW3	9/9/21	-5.067	-4.96	-5.96	0.00
LF4-MW3	3/2/22	-5.684	-10.92	-11.92	0.00
LF4-MW3	8/31/22	-4.510	0.42	-0.58	0.00
LF4-MW3	3/6/23	-6.166	-15.58	-16.58	0.00
LF4-MW3	9/6/23	-4.678	-1.20	-2.20	0.00
Background					
LF4-MW3	MEAN	-4.553			
LF4-MW3	STDEV	0.104			

Cobalt

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW4	3/14/06	-4.605	0.50	-0.50	0.00
LF4-MW4	9/14/06	-4.605	0.50	-0.50	0.00
LF4-MW4	3/7/07	-4.605	0.50	-0.50	0.00
LF4-MW4	9/25/07	-5.440	-3.31	-4.31	0.00
LF4-MW4	3/26/08	-4.969	-1.16	-2.16	0.00
LF4-MW4	9/17/08	-5.444	-3.33	-4.33	0.00
LF4-MW4	3/17/09	-5.242	-2.40	-3.40	0.00
LF4-MW4	9/21/09	-4.605	0.50	-0.50	0.00
LF4-MW4	3/17/10	-5.941	-5.59	-6.59	0.00
LF4-MW4	9/21/10	-5.406	-3.15	-4.15	0.00
LF4-MW4	3/15/11	-5.802	-4.96	-5.96	0.00
LF4-MW4	9/8/11	-5.461	-3.40	-4.40	0.00
LF4-MW4	3/14/12	-5.542	-3.77	-4.77	0.00
LF4-MW4	9/6/12	-4.605	0.50	-0.50	0.00
LF4-MW4	3/5/13	-5.857	-5.21	-6.21	0.00
LF4-MW4	9/11/13	-5.064	-1.59	-2.59	0.00
LF4-MW4	3/5/14	-5.793	-4.92	-5.92	0.00
LF4-MW4	9/4/14	-5.711	-4.54	-5.54	0.00
LF4-MW4	3/13/15	-5.233	-2.36	-3.36	0.00
LF4-MW4	9/16/15	-5.410	-3.17	-4.17	0.00
LF4-MW4	3/16/16	-6.161	-6.60	-7.60	0.00
LF4-MW4	9/21/16	-5.468	-3.44	-4.44	0.00
LF4-MW4	3/15/17	-4.949	-1.07	-2.07	0.00
LF4-MW4	9/8/17	-4.787	-0.33	-1.33	0.00
LF4-MW4	3/8/18	-5.911	-5.45	-6.45	0.00
LF4-MW4	9/11/18	-5.449	-3.35	-4.35	0.00
LF4-MW4	3/7/19	-6.266	-7.07	-8.07	0.00
LF4-MW4	9/5/19	-5.521	-3.68	-4.68	0.00
LF4-MW4	3/12/20	-6.119	-6.40	-7.40	0.00
LF4-MW4	9/15/20	-5.684	-4.42	-5.42	0.00
LF4-MW4	3/4/21	-5.714	-4.56	-5.56	0.00
LF4-MW4	9/9/21	-5.497	-3.57	-4.57	0.00
LF4-MW4	3/2/22	-6.215	-6.84	-7.84	0.00
LF4-MW4	8/31/22	-4.841	-0.58	-1.58	0.00
LF4-MW4	3/6/23	-5.745	-4.70	-5.70	0.00
LF4-MW4	9/6/23	-5.547	-3.79	-4.79	0.00
Background					
LF4-MW4	MEAN	-4.715			
LF4-MW4	STDEV	0.219			

Cobalt

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW5	3/14/06	-4.949	-2.04	-3.04	0.00
LF4-MW5	9/14/06	-5.048	-2.78	-3.78	0.00
LF4-MW5	3/7/07	-4.605	0.50	-0.50	0.00
LF4-MW5	9/24/07	-5.461	-5.83	-6.83	0.00
LF4-MW5	3/26/08	-5.956	-9.49	-10.49	0.00
LF4-MW5	9/16/08	-5.705	-7.63	-8.63	0.00
LF4-MW5	3/18/09	-5.840	-8.63	-9.63	0.00
LF4-MW5	9/17/09	-5.442	-5.69	-6.69	0.00
LF4-MW5	3/17/10	-5.077	-2.99	-3.99	0.00
LF4-MW5	9/21/10	-4.556	0.86	-0.14	0.00
LF4-MW5	3/15/11	-5.826	-8.53	-9.53	0.00
LF4-MW5	9/8/11	-4.925	-1.87	-2.87	0.00
LF4-MW5	3/14/12	-5.754	-7.99	-8.99	0.00
LF4-MW5	9/6/12	-6.058	-10.24	-11.24	0.00
LF4-MW5	3/5/13	-5.893	-9.02	-10.02	0.00
LF4-MW5	9/11/13	-4.605	0.50	-0.50	0.00
LF4-MW5	3/5/14	-5.516	-6.24	-7.24	0.00
LF4-MW5	9/4/14	-5.732	-7.83	-8.83	0.00
LF4-MW5	3/13/15	-5.760	-8.04	-9.04	0.00
LF4-MW5	9/16/15	-6.071	-10.33	-11.33	0.00
LF4-MW5	3/16/16	-5.431	-5.60	-6.60	0.00
LF4-MW5	9/21/16	-5.027	-2.62	-3.62	0.00
LF4-MW5	3/15/17	-5.926	-9.26	-10.26	0.00
LF4-MW5	9/8/17	-5.793	-8.28	-9.28	0.00
LF4-MW5	3/8/18	-5.499	-6.11	-7.11	0.00
LF4-MW5	9/11/18	-5.915	-9.18	-10.18	0.00
LF4-MW5	3/7/19	-5.499	-6.11	-7.11	0.00
LF4-MW5	9/5/19	-5.006	-2.46	-3.46	0.00
LF4-MW5	3/12/20	-5.627	-7.06	-8.06	0.00
LF4-MW5	9/15/20	-5.655	-7.26	-8.26	0.00
LF4-MW5	3/4/21	-5.426	-5.57	-6.57	0.00
LF4-MW5	9/9/21	-5.497	-6.09	-7.09	0.00
LF4-MW5	3/2/22	-5.221	-4.05	-5.05	0.00
LF4-MW5	8/31/22	-5.547	-6.46	-7.46	0.00
LF4-MW5	3/6/23	-5.473	-5.91	-6.91	0.00
LF4-MW5	9/6/23	-5.360	-5.08	-6.08	0.00
Background					
LF4-MW5	MEAN	-4.673			
LF4-MW5	STDEV	0.135			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Copper

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-4.193	1.14	0.14	0.14
LF4-MW1	9/13/06	-4.595	0.43	-0.57	0.00
LF4-MW1	3/6/07	-4.637	0.35	-0.65	0.00
LF4-MW1	9/24/07	-5.003	-0.29	-1.29	0.00
LF4-MW1	3/26/08	-4.699	0.24	-0.76	0.00
LF4-MW1	9/16/08	-5.048	-0.37	-1.37	0.00
LF4-MW1	3/17/09	-5.373	-0.95	-1.95	0.00
LF4-MW1	9/17/09	-5.375	-0.95	-1.95	0.00
LF4-MW1	3/17/10	-5.352	-0.91	-1.91	0.00
LF4-MW1	9/21/10	-6.156	-2.33	-3.33	0.00
LF4-MW1	3/15/11	-4.029	1.43	0.43	0.43
LF4-MW1	9/8/11	-4.605	0.41	-0.59	0.00
LF4-MW1	3/14/12	-4.605	0.41	-0.59	0.00
LF4-MW1	9/6/12	-4.605	0.41	-0.59	0.00
LF4-MW1	3/5/13	-4.605	0.41	-0.59	0.00
LF4-MW1	9/11/13	-5.773	-1.66	-2.66	0.00
LF4-MW1	3/5/14	-5.900	-1.88	-2.88	0.00
LF4-MW1	9/4/14	-5.911	-1.90	-2.90	0.00
LF4-MW1	3/13/15	-6.536	-3.00	-4.00	0.00
LF4-MW1	9/16/15	-5.325	-0.86	-1.86	0.00
LF4-MW1	3/16/16	-6.331	-2.64	-3.64	0.00
LF4-MW1	9/21/16	-6.138	-2.30	-3.30	0.00
LF4-MW1	3/15/17	-6.638	-3.18	-4.18	0.00
LF4-MW1	9/8/17	-6.623	-3.16	-4.16	0.00
LF4-MW1	3/8/18	-6.106	-2.24	-3.24	0.00
LF4-MW1	9/11/18	-4.605	0.41	-0.59	0.00
LF4-MW1	3/7/19	-6.377	-2.72	-3.72	0.00
LF4-MW1	9/5/19	-6.075	-2.19	-3.19	0.00
LF4-MW1	3/12/20	-5.952	-1.97	-2.97	0.00
LF4-MW1	9/15/20	-5.991	-2.04	-3.04	0.00
LF4-MW1	3/4/21	-5.599	-1.35	-2.35	0.00
LF4-MW1	9/9/21	-6.266	-2.53	-3.53	0.00
LF4-MW1	3/2/22	-6.166	-2.35	-3.35	0.00
LF4-MW1	8/31/22	-6.725	-3.34	-4.34	0.00
LF4-MW1	3/6/23	-5.991	-2.04	-3.04	0.00
LF4-MW1	9/6/23	-5.915	-1.91	-2.91	0.00
Background					
LF4-MW1	MEAN	-4.836			
LF4-MW1	STDEV	0.566			

Copper

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-4.538	0.00	-1.00	0.00
LF4-MW2	9/13/06	-4.129	0.37	-0.63	0.00
LF4-MW2	3/6/07	-4.663	-0.11	-1.11	0.00
LF4-MW2	9/24/07	-5.956	-1.29	-2.29	0.00
LF4-MW2	3/26/08	-5.302	-0.69	-1.69	0.00
LF4-MW2	9/16/08	-5.473	-0.85	-1.85	0.00
LF4-MW2	3/17/09	-5.684	-1.04	-2.04	0.00
LF4-MW2	9/17/09	-5.644	-1.00	-2.00	0.00
LF4-MW2	3/17/10	-3.717	0.75	-0.25	0.00
LF4-MW2	9/21/10	-6.215	-1.52	-2.52	0.00
LF4-MW2	3/15/11	-4.605	-0.06	-1.06	0.00
LF4-MW2	9/8/11	-4.605	-0.06	-1.06	0.00
LF4-MW2	3/14/12	-4.605	-0.06	-1.06	0.00
LF4-MW2	9/6/12	-5.341	-0.73	-1.73	0.00
LF4-MW2	3/5/13	-4.440	0.09	-0.91	0.00
LF4-MW2	9/11/13	-4.605	-0.06	-1.06	0.00
LF4-MW2	3/5/14	-3.751	0.72	-0.28	0.00
LF4-MW2	9/4/14	-6.287	-1.59	-2.59	0.00
LF4-MW2	3/13/15	-4.193	0.31	-0.69	0.00
LF4-MW2	9/16/15	-6.024	-1.35	-2.35	0.00
LF4-MW2	3/16/16	-4.566	-0.02	-1.02	0.00
LF4-MW2	9/21/16	-5.976	-1.31	-2.31	0.00
LF4-MW2	3/15/17	-6.071	-1.39	-2.39	0.00
LF4-MW2	9/8/17	-6.161	-1.47	-2.47	0.00
LF4-MW2	3/8/18	-4.519	0.02	-0.98	0.00
LF4-MW2	9/11/18	-6.075	-1.40	-2.40	0.00
LF4-MW2	3/7/19	-3.612	0.84	-0.16	0.00
LF4-MW2	9/5/19	-5.426	-0.81	-1.81	0.00
LF4-MW2	3/12/20	-3.963	0.52	-0.48	0.00
LF4-MW2	9/15/20	-5.279	-0.67	-1.67	0.00
LF4-MW2	3/4/21	-4.976	-0.40	-1.40	0.00
LF4-MW2	9/9/21	-4.667	-0.12	-1.12	0.00
LF4-MW2	3/2/22	-4.605	-0.06	-1.06	0.00
LF4-MW2	8/31/22	-5.339	-0.73	-1.73	0.00
LF4-MW2	3/6/23	-5.051	-0.47	-1.47	0.00
LF4-MW2	9/6/23	-4.791	-0.23	-1.23	0.00
Background					
LF4-MW2	MEAN	-4.539			
LF4-MW2	STDEV	1.100			

Copper

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW3	3/13/06	-5.039	0.53	-0.47	0.00
LF4-MW3	9/14/06	-4.959	0.60	-0.40	0.00
LF4-MW3	3/6/07	-6.215	-0.49	-1.49	0.00
LF4-MW3	9/25/07	-6.215	-0.49	-1.49	0.00
LF4-MW3	3/26/08	-6.008	-0.31	-1.31	0.00
LF4-MW3	9/16/08	-5.594	0.05	-0.95	0.00
LF4-MW3	3/17/09	-6.119	-0.41	-1.41	0.00
LF4-MW3	9/17/09	-6.215	-0.49	-1.49	0.00
LF4-MW3	3/17/10	-6.200	-0.48	-1.48	0.00
LF4-MW3	9/21/10	-6.215	-0.49	-1.49	0.00
LF4-MW3	3/15/11	-5.104	0.47	-0.53	0.00
LF4-MW3	9/8/11	-4.605	0.91	-0.09	0.00
LF4-MW3	3/14/12	-5.735	-0.08	-1.08	0.00
LF4-MW3	9/6/12	-5.793	-0.13	-1.13	0.00
LF4-MW3	3/5/13	-5.666	-0.02	-1.02	0.00
LF4-MW3	9/11/13	-4.605	0.91	-0.09	0.00
LF4-MW3	3/5/14	-6.354	-0.62	-1.62	0.00
LF4-MW3	9/4/14	-6.395	-0.65	-1.65	0.00
LF4-MW3	3/13/15	-6.250	-0.53	-1.53	0.00
LF4-MW3	9/16/15	-6.812	-1.01	-2.01	0.00
LF4-MW3	3/16/16	-6.261	-0.53	-1.53	0.00
LF4-MW3	9/21/16	-6.092	-0.39	-1.39	0.00
LF4-MW3	3/15/17	-6.645	-0.87	-1.87	0.00
LF4-MW3	9/8/17	-5.696	-0.04	-1.04	0.00
LF4-MW3	3/8/18	-6.450	-0.70	-1.70	0.00
LF4-MW3	9/11/18	-4.605	0.91	-0.09	0.00
LF4-MW3	3/7/19	-5.991	-0.30	-1.30	0.00
LF4-MW3	9/5/19	-5.991	-0.30	-1.30	0.00
LF4-MW3	3/12/20	-5.497	0.13	-0.87	0.00
LF4-MW3	9/15/20	-6.377	-0.64	-1.64	0.00
LF4-MW3	3/4/21	-6.032	-0.34	-1.34	0.00
LF4-MW3	9/9/21	-5.991	-0.30	-1.30	0.00
LF4-MW3	3/2/22	-6.215	-0.49	-1.49	0.00
LF4-MW3	8/31/22	-6.949	-1.13	-2.13	0.00
LF4-MW3	3/6/23	-6.725	-0.94	-1.94	0.00
LF4-MW3	9/6/23	-5.878	-0.20	-1.20	0.00
Background					
LF4-MW3	MEAN	-5.647			
LF4-MW3	STDEV	1.150			

Lead

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-5.298	0.21	-0.79	0.00
LF4-MW1	9/13/06	-5.857	-0.33	-1.33	0.00
LF4-MW1	3/6/07	-5.345	0.17	-0.83	0.00
LF4-MW1	9/24/07	-5.661	-0.14	-1.14	0.00
LF4-MW1	3/26/08	-4.935	0.56	-0.44	0.00
LF4-MW1	9/16/08	-5.298	0.21	-0.79	0.00
LF4-MW1	3/17/09	-5.298	0.21	-0.79	0.00
LF4-MW1	9/17/09	-5.684	-0.16	-1.16	0.00
LF4-MW1	3/17/10	-5.238	0.27	-0.73	0.00
LF4-MW1	9/21/10	-5.809	-0.28	-1.28	0.00
LF4-MW1	3/15/11	-5.298	0.21	-0.79	0.00
LF4-MW1	9/8/11	-5.754	-0.23	-1.23	0.00
LF4-MW1	3/14/12	-5.751	-0.22	-1.22	0.00
LF4-MW1	9/6/12	-5.298	0.21	-0.79	0.00
LF4-MW1	3/5/13	-5.726	-0.20	-1.20	0.00
LF4-MW1	9/11/13	-4.912	0.59	-0.41	0.00
LF4-MW1	3/5/14	-8.408	-2.80	-3.80	0.00
LF4-MW1	9/4/14	-7.881	-2.29	-3.29	0.00
LF4-MW1	3/13/15	-8.174	-2.57	-3.57	0.00
LF4-MW1	9/16/15	-5.581	-0.06	-1.06	0.00
LF4-MW1	3/16/16	-7.891	-2.30	-3.30	0.00
LF4-MW1	9/21/16	-7.233	-1.66	-2.66	0.00
LF4-MW1	3/15/17	-7.659	-2.07	-3.07	0.00
LF4-MW1	9/8/17	-7.907	-2.31	-3.31	0.00
LF4-MW1	3/8/18	-6.395	-0.85	-1.85	0.00
LF4-MW1	9/11/18	-5.298	0.21	-0.79	0.00
LF4-MW1	3/7/19	-6.377	-0.83	-1.83	0.00
LF4-MW1	9/5/19	-6.502	-0.95	-1.95	0.00
LF4-MW1	3/12/20	-6.438	-0.89	-1.89	0.00
LF4-MW1	9/15/20	-6.348	-0.80	-1.80	0.00
LF4-MW1	3/4/21	-5.952	-0.42	-1.42	0.00
LF4-MW1	9/9/21	-6.908	-1.34	-2.34	0.00
LF4-MW1	3/2/22	-5.809	-0.28	-1.28	0.00
LF4-MW1	8/31/22	-6.970	-1.40	-2.40	0.00
LF4-MW1	3/6/23	-7.621	-2.03	-3.03	0.00
LF4-MW1	9/6/23	-6.812	-1.25	-2.25	0.00
Background					
LF4-MW1	MEAN	-5.518			
LF4-MW1	STDEV	1.034			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Lead

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-4.595	0.39	-0.61	0.00
LF4-MW2	9/13/06	-4.415	0.54	-0.46	0.00
LF4-MW2	3/6/07	-4.855	0.16	-0.84	0.00
LF4-MW2	9/24/07	-5.415	-0.32	-1.32	0.00
LF4-MW2	3/26/08	-4.928	0.10	-0.90	0.00
LF4-MW2	9/16/08	-5.296	-0.22	-1.22	0.00
LF4-MW2	3/17/09	-5.298	-0.22	-1.22	0.00
LF4-MW2	9/17/09	-5.298	-0.22	-1.22	0.00
LF4-MW2	3/17/10	-4.678	0.32	-0.68	0.00
LF4-MW2	9/21/10	-5.809	-0.66	-1.66	0.00
LF4-MW2	3/15/11	-5.298	-0.22	-1.22	0.00
LF4-MW2	9/8/11	-5.298	-0.22	-1.22	0.00
LF4-MW2	3/14/12	-5.298	-0.22	-1.22	0.00
LF4-MW2	9/6/12	-5.298	-0.22	-1.22	0.00
LF4-MW2	3/5/13	-5.589	-0.47	-1.47	0.00
LF4-MW2	9/11/13	-5.447	-0.35	-1.35	0.00
LF4-MW2	3/5/14	-6.119	-0.93	-1.93	0.00
LF4-MW2	9/4/14	-6.921	-1.62	-2.62	0.00
LF4-MW2	3/13/15	-6.175	-0.98	-1.98	0.00
LF4-MW2	9/16/15	-6.266	-1.05	-2.05	0.00
LF4-MW2	3/16/16	-5.482	-0.38	-1.38	0.00
LF4-MW2	9/21/16	-6.320	-1.10	-2.10	0.00
LF4-MW2	3/15/17	-6.101	-0.91	-1.91	0.00
LF4-MW2	9/8/17	-6.250	-1.04	-2.04	0.00
LF4-MW2	3/8/18	-5.544	-0.43	-1.43	0.00
LF4-MW2	9/11/18	-5.298	-0.22	-1.22	0.00
LF4-MW2	3/7/19	-5.360	-0.27	-1.27	0.00
LF4-MW2	9/5/19	-6.119	-0.93	-1.93	0.00
LF4-MW2	3/12/20	-4.135	0.78	-0.22	0.00
LF4-MW2	9/15/20	-5.083	-0.03	-1.03	0.00
LF4-MW2	3/4/21	-4.906	0.12	-0.88	0.00
LF4-MW2	9/9/21	-5.221	-0.15	-1.15	0.00
LF4-MW2	3/2/22	-4.991	0.05	-0.95	0.00
LF4-MW2	8/31/22	-5.319	-0.24	-1.24	0.00
LF4-MW2	3/6/23	-5.382	-0.29	-1.29	0.00
LF4-MW2	9/6/23	-4.135	0.78	-0.22	0.00
Background					
LF4-MW2	MEAN	-5.045			
LF4-MW2	STDEV	1.159			

Lead

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW3	3/13/06	-5.216	0.40	-0.60	0.00
LF4-MW3	9/14/06	-5.806	-0.32	-1.32	0.00
LF4-MW3	3/6/07	-6.041	-0.61	-1.61	0.00
LF4-MW3	9/25/07	-5.298	0.30	-0.70	0.00
LF4-MW3	3/26/08	-5.341	0.25	-0.75	0.00
LF4-MW3	9/16/08	-5.298	0.30	-0.70	0.00
LF4-MW3	3/17/09	-5.298	0.30	-0.70	0.00
LF4-MW3	9/17/09	-3.537	2.46	1.46	1.46
LF4-MW3	3/17/10	-5.298	0.30	-0.70	0.76
LF4-MW3	9/21/10	-5.298	0.30	-0.70	0.06
LF4-MW3	3/15/11	-5.298	0.30	-0.70	0.00
LF4-MW3	9/8/11	-5.298	0.30	-0.70	0.00
LF4-MW3	3/14/12	-5.298	0.30	-0.70	0.00
LF4-MW3	9/6/12	-5.298	0.30	-0.70	0.00
LF4-MW3	3/5/13	-5.404	0.17	-0.83	0.00
LF4-MW3	9/11/13	-5.767	-0.28	-1.28	0.00
LF4-MW3	3/5/14	-6.210	-0.82	-1.82	0.00
LF4-MW3	9/4/14	-6.210	-0.82	-1.82	0.00
LF4-MW3	3/13/15	-5.444	0.12	-0.88	0.00
LF4-MW3	9/16/15	-6.482	-1.15	-2.15	0.00
LF4-MW3	3/16/16	-6.028	-0.60	-1.60	0.00
LF4-MW3	9/21/16	-5.757	-0.26	-1.26	0.00
LF4-MW3	3/15/17	-5.793	-0.31	-1.31	0.00
LF4-MW3	9/8/17	-6.975	-1.76	-2.76	0.00
LF4-MW3	3/8/18	-5.840	-0.36	-1.36	0.00
LF4-MW3	9/11/18	-5.298	0.30	-0.70	0.00
LF4-MW3	3/7/19	-5.497	0.06	-0.94	0.00
LF4-MW3	9/5/19	-6.502	-1.18	-2.18	0.00
LF4-MW3	3/12/20	-4.722	1.01	0.01	0.01
LF4-MW3	9/15/20	-6.215	-0.83	-1.83	0.00
LF4-MW3	3/4/21	-5.150	0.48	-0.52	0.00
LF4-MW3	9/9/21	-5.655	-0.14	-1.14	0.00
LF4-MW3	3/2/22	-4.991	0.68	-0.32	0.00
LF4-MW3	8/31/22	-6.320	-0.95	-1.95	0.00
LF4-MW3	3/6/23	-6.725	-1.45	-2.45	0.00
LF4-MW3	9/6/23	-6.119	-0.71	-1.71	0.00
Background					
LF4-MW3	MEAN	-5.542			
LF4-MW3	STDEV	0.816			

Lead

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW4	3/14/06	-4.457	1.08	0.08	0.08
LF4-MW4	9/14/06	-3.558	2.12	1.12	1.21
LF4-MW4	3/7/07	-5.298	0.11	-0.89	0.31
LF4-MW4	9/25/07	-5.298	0.11	-0.89	0.00
LF4-MW4	3/26/08	-5.298	0.11	-0.89	0.00
LF4-MW4	9/17/08	-5.181	0.24	-0.76	0.00
LF4-MW4	3/17/09	-5.310	0.09	-0.91	0.00
LF4-MW4	9/21/09	-5.298	0.11	-0.89	0.00
LF4-MW4	3/17/10	-5.708	-0.37	-1.37	0.00
LF4-MW4	9/21/10	-5.632	-0.28	-1.28	0.00
LF4-MW4	3/15/11	-5.638	-0.28	-1.28	0.00
LF4-MW4	9/8/11	-5.602	-0.24	-1.24	0.00
LF4-MW4	3/14/12	-5.298	0.11	-0.89	0.00
LF4-MW4	9/6/12	-5.298	0.11	-0.89	0.00
LF4-MW4	3/5/13	-5.298	0.11	-0.89	0.00
LF4-MW4	9/11/13	-5.339	0.06	-0.94	0.00
LF4-MW4	3/5/14	-6.898	-1.74	-2.74	0.00
LF4-MW4	9/4/14	-5.499	-0.12	-1.12	0.00
LF4-MW4	3/13/15	-7.417	-2.34	-3.34	0.00
LF4-MW4	9/16/15	-4.519	1.01	0.01	0.01
LF4-MW4	3/16/16	-7.807	-2.80	-3.80	0.00
LF4-MW4	9/21/16	-5.745	-0.41	-1.41	0.00
LF4-MW4	3/15/17	-7.249	-2.15	-3.15	0.00
LF4-MW4	9/8/17	-4.731	0.77	-0.23	0.00
LF4-MW4	3/8/18	-7.511	-2.45	-3.45	0.00
LF4-MW4	9/11/18	-4.934	0.53	-0.47	0.00
LF4-MW4	3/7/19	-6.725	-1.54	-2.54	0.00
LF4-MW4	9/5/19	-5.259	0.15	-0.85	0.00
LF4-MW4	3/12/20	-5.714	-0.37	-1.37	0.00
LF4-MW4	9/15/20	-5.259	0.15	-0.85	0.00
LF4-MW4	3/4/21	-6.812	-1.64	-2.64	0.00
LF4-MW4	9/9/21	-3.730	1.92	0.92	0.92
LF4-MW4	3/2/22	-2.564	3.27	2.27	3.20
LF4-MW4	8/31/22	-5.915	-0.60	-1.60	1.59
LF4-MW4	3/6/23	-6.438	-1.21	-2.21	0.00
LF4-MW4	9/6/23	-7.195	-2.09	-3.09	0.00
Background					
LF4-MW4	MEAN	-5.392			
LF4-MW4	STDEV	0.864			

Lead

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW5	3/14/06	-5.401	0.29	-0.71	0.00
LF4-MW5	9/14/06	-4.538	1.36	0.36	0.36
LF4-MW5	3/7/07	-5.745	-0.13	-1.13	0.00
LF4-MW5	9/24/07	-5.298	0.42	-0.58	0.00
LF4-MW5	3/26/08	-5.298	0.42	-0.58	0.00
LF4-MW5	9/16/08	-5.298	0.42	-0.58	0.00
LF4-MW5	3/18/09	-5.298	0.42	-0.58	0.00
LF4-MW5	9/17/09	-5.298	0.42	-0.58	0.00
LF4-MW5	3/17/10	-5.298	0.42	-0.58	0.00
LF4-MW5	9/16/10	-5.440	0.24	-0.76	0.00
LF4-MW5	3/15/11	-4.695	1.17	0.17	0.17
LF4-MW5	9/8/11	-5.298	0.42	-0.58	0.00
LF4-MW5	3/14/12	-5.298	0.42	-0.58	0.00
LF4-MW5	9/6/12	-5.298	0.42	-0.58	0.00
LF4-MW5	3/5/13	-5.298	0.42	-0.58	0.00
LF4-MW5	9/11/13	-5.298	0.42	-0.58	0.00
LF4-MW5	3/5/14	-6.966	-1.65	-2.65	0.00
LF4-MW5	9/4/14	-7.357	-2.13	-3.13	0.00
LF4-MW5	3/13/15	-6.988	-1.67	-2.67	0.00
LF4-MW5	9/16/15	-7.419	-2.21	-3.21	0.00
LF4-MW5	3/16/16	-6.084	-0.55	-1.55	0.00
LF4-MW5	9/21/16	-7.343	-2.11	-3.11	0.00
LF4-MW5	3/15/17	-6.693	-1.31	-2.31	0.00
LF4-MW5	9/8/17	-7.243	-1.99	-2.99	0.00
LF4-MW5	3/8/18	-5.751	-0.14	-1.14	0.00
LF4-MW5	9/11/18	-5.298	0.42	-0.58	0.00
LF4-MW5	3/7/19	-6.075	-0.54	-1.54	0.00
LF4-MW5	9/5/19	-6.685	-1.30	-2.30	0.00
LF4-MW5	3/12/20	-6.502	-1.07	-2.07	0.00
LF4-MW5	9/15/20	-5.809	-0.21	-1.21	0.00
LF4-MW5	3/4/21	-5.655	-0.02	-1.02	0.00
LF4-MW5	9/9/21	-6.685	-1.30	-2.30	0.00
LF4-MW5	3/2/22	-5.592	0.06	-0.94	0.00
LF4-MW5	8/31/22	-6.075	-0.54	-1.54	0.00
LF4-MW5	3/6/23	-5.809	-0.21	-1.21	0.00
LF4-MW5	9/6/23	-6.215	-0.72	-1.72	0.00
Background					
LF4-MW2	MEAN	-5.637			
LF4-MW2	STDEV	0.807			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Nickel

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-4.605	-0.59	-1.59	0.00
LF4-MW1	9/13/06	-4.351	0.46	-0.54	0.00
LF4-MW1	3/6/07	-4.605	-0.59	-1.59	0.00
LF4-MW1	9/24/07	-4.585	-0.51	-1.51	0.00
LF4-MW1	3/26/08	-4.117	1.42	0.42	0.42
LF4-MW1	9/16/08	-4.595	-0.55	-1.55	0.00
LF4-MW1	3/17/09	-4.398	0.26	-0.74	0.00
LF4-MW1	9/17/09	-4.510	-0.20	-1.20	0.00
LF4-MW1	3/17/10	-4.994	-2.19	-3.19	0.00
LF4-MW1	9/21/10	-4.283	0.74	-0.26	0.00
LF4-MW1	3/15/11	-3.958	2.07	1.07	1.07
LF4-MW1	9/8/11	-3.958	2.07	1.07	2.15
LF4-MW1	3/14/12	-3.887	2.36	1.36	3.51
LF4-MW1	9/6/12	-3.673	3.24	2.24	5.75
LF4-MW1	3/5/13	-3.768	2.85	1.85	7.61
LF4-MW1	9/11/13	-4.173	1.19	0.19	7.80
LF4-MW1	3/5/14	-4.034	1.76	0.76	8.56
LF4-MW1	9/4/14	-4.220	1.00	0.00	8.55
LF4-MW1	3/13/15	-3.942	2.14	1.14	9.69
LF4-MW1	9/16/15	-4.110	1.45	0.45	10.14
LF4-MW1	3/16/16	-3.812	2.67	1.67	11.81
LF4-MW1	9/21/16	-4.001	1.90	0.90	12.70
LF4-MW1	3/15/17	-3.826	2.62	1.62	14.32
LF4-MW1	9/8/17	-3.777	2.82	1.82	16.14
LF4-MW1	3/8/18	-4.001	1.90	0.90	17.04
LF4-MW1	9/11/18	-3.772	2.84	1.84	18.87
LF4-MW1	3/7/19	-3.772	2.84	1.84	20.71
LF4-MW1	9/5/19	-3.863	2.46	1.46	22.17
LF4-MW1	3/12/20	-3.817	2.65	1.65	23.83
LF4-MW1	9/15/20	-3.772	2.84	1.84	25.66
LF4-MW1	3/4/21	-3.772	2.84	1.84	27.50
LF4-MW1	9/9/21	-3.772	2.84	1.84	29.34
LF4-MW1	3/2/22	-3.772	2.84	1.84	31.18
LF4-MW1	8/31/22	-3.772	2.84	1.84	33.02
LF4-MW1	3/6/23	-4.017	1.83	0.83	33.84
LF4-MW1	9/6/23	-4.200	1.08	0.08	33.92
Background					
LF4-MW1	MEAN	-4.462			
LF4-MW1	STDEV	0.243			

Nickel

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-4.605	-0.82	-1.82	0.00
LF4-MW2	9/13/06	-3.979	0.46	-0.54	0.00
LF4-MW2	3/6/07	-4.528	-0.66	-1.66	0.00
LF4-MW2	9/24/07	-4.528	-0.66	-1.66	0.00
LF4-MW2	3/26/08	-4.628	-0.86	-1.86	0.00
LF4-MW2	9/16/08	-4.213	-0.02	-1.02	0.00
LF4-MW2	3/17/09	-2.684	3.11	2.11	2.11
LF4-MW2	9/17/09	-2.658	3.16	2.16	4.27
LF4-MW2	3/17/10	-2.736	3.00	2.00	6.26
LF4-MW2	9/21/10	-3.887	0.65	-0.35	5.91
LF4-MW2	3/15/11	-4.227	-0.04	-1.04	4.87
LF4-MW2	9/8/11	-4.200	0.01	-0.99	3.88
LF4-MW2	3/14/12	-4.457	-0.51	-1.51	2.37
LF4-MW2	9/6/12	-4.173	0.07	-0.93	1.44
LF4-MW2	3/5/13	-2.484	3.51	2.51	3.95
LF4-MW2	9/11/13	-2.787	2.90	1.90	5.85
LF4-MW2	3/5/14	-2.313	3.86	2.86	8.71
LF4-MW2	9/4/14	-3.119	2.22	1.22	9.93
LF4-MW2	3/13/15	-2.585	3.31	2.31	12.24
LF4-MW2	9/16/15	-3.192	2.07	1.07	13.31
LF4-MW2	3/16/16	-2.922	2.62	1.62	14.93
LF4-MW2	9/21/16	-3.014	2.43	1.43	16.36
LF4-MW2	3/15/17	-3.594	1.25	0.25	16.61
LF4-MW2	9/8/17	-3.677	1.08	0.08	16.69
LF4-MW2	3/8/18	-2.736	3.00	2.00	18.69
LF4-MW2	9/11/18	-2.937	2.59	1.59	20.27
LF4-MW2	3/7/19	-2.343	3.80	2.80	23.08
LF4-MW2	9/5/19	-2.765	2.94	1.94	25.02
LF4-MW2	3/12/20	-2.830	2.81	1.81	26.83
LF4-MW2	9/15/20	-2.733	3.01	2.01	28.83
LF4-MW2	3/4/21	-3.411	1.62	0.62	29.45
LF4-MW2	9/9/21	-2.996	2.47	1.47	30.92
LF4-MW2	3/2/22	-3.244	1.96	0.96	31.89
LF4-MW2	8/31/22	-3.016	2.43	1.43	33.32
LF4-MW2	3/6/23	-3.037	2.39	1.39	34.70
LF4-MW2	9/6/23	-2.765	2.94	1.94	36.64
Background					
LF4-MW2	MEAN	-4.206			
LF4-MW2	STDEV	0.490			

Nickel

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW3	3/13/06	-4.605	0.45	-0.55	0.00
LF4-MW3	9/14/06	-4.173	1.14	0.14	0.14
LF4-MW3	3/6/07	-4.605	0.45	-0.55	0.00
LF4-MW3	9/25/07	-4.989	-0.17	-1.17	0.00
LF4-MW3	3/26/08	-5.093	-0.34	-1.34	0.00
LF4-MW3	9/16/08	-5.537	-1.06	-2.06	0.00
LF4-MW3	3/17/09	-5.658	-1.25	-2.25	0.00
LF4-MW3	9/17/09	-4.981	-0.16	-1.16	0.00
LF4-MW3	3/17/10	-4.605	0.45	-0.55	0.00
LF4-MW3	9/21/10	-5.929	-1.69	-2.69	0.00
LF4-MW3	3/15/11	-5.555	-1.08	-2.08	0.00
LF4-MW3	9/8/11	-5.658	-1.25	-2.25	0.00
LF4-MW3	3/14/12	-5.675	-1.28	-2.28	0.00
LF4-MW3	9/6/12	-5.621	-1.19	-2.19	0.00
LF4-MW3	3/5/13	-5.431	-0.88	-1.88	0.00
LF4-MW3	9/11/13	-4.605	0.45	-0.55	0.00
LF4-MW3	3/5/14	-5.860	-1.58	-2.58	0.00
LF4-MW3	9/4/14	-5.684	-1.29	-2.29	0.00
LF4-MW3	3/13/15	-5.693	-1.31	-2.31	0.00
LF4-MW3	9/16/15	-5.116	-0.38	-1.38	0.00
LF4-MW3	3/16/16	-5.836	-1.54	-2.54	0.00
LF4-MW3	9/21/16	-5.539	-1.06	-2.06	0.00
LF4-MW3	3/15/17	-5.802	-1.48	-2.48	0.00
LF4-MW3	9/8/17	-5.675	-1.28	-2.28	0.00
LF4-MW3	3/8/18	-5.864	-1.58	-2.58	0.00
LF4-MW3	9/11/18	-5.360	-0.77	-1.77	0.00
LF4-MW3	3/7/19	-5.714	-1.34	-2.34	0.00
LF4-MW3	9/5/19	-5.655	-1.25	-2.25	0.00
LF4-MW3	3/12/20	-5.404	-0.84	-1.84	0.00
LF4-MW3	9/15/20	-5.915	-1.67	-2.67	0.00
LF4-MW3	3/4/21	-5.185	-0.49	-1.49	0.00
LF4-MW3	9/9/21	-5.878	-1.61	-2.61	0.00
LF4-MW3	3/2/22	-5.599	-1.16	-2.16	0.00
LF4-MW3	8/31/22	-5.809	-1.49	-2.49	0.00
LF4-MW3	3/6/23	-5.915	-1.66	-2.66	0.00
LF4-MW3	9/6/23	-5.878	-1.61	-2.61	0.00
Background					
LF4-MW3	MEAN	-4.882			
LF4-MW3	STDEV	0.620			

Nickel

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW4	3/14/06	-4.605	0.45	-0.55	0.00
LF4-MW4	9/14/06	-4.605	0.45	-0.55	0.00
LF4-MW4	3/7/07	-5.267	-0.62	-1.62	0.00
LF4-MW4	9/25/07	-5.468	-0.94	-1.94	0.00
LF4-MW4	3/26/08	-5.300	-0.67	-1.67	0.00
LF4-MW4	9/17/08	-5.428	-0.88	-1.88	0.00
LF4-MW4	3/17/09	-5.428	-0.88	-1.88	0.00
LF4-MW4	9/21/09	-5.867	-1.59	-2.59	0.00
LF4-MW4	3/17/10	-5.384	-0.81	-1.81	0.00
LF4-MW4	9/21/10	-5.539	-1.06	-2.06	0.00
LF4-MW4	3/15/11	-4.605	0.45	-0.55	0.00
LF4-MW4	9/8/11	-5.594	-1.15	-2.15	0.00
LF4-MW4	3/14/12	-4.605	0.45	-0.55	0.00
LF4-MW4	9/6/12	-4.605	0.45	-0.55	0.00
LF4-MW4	3/5/13	-4.605	0.45	-0.55	0.00
LF4-MW4	9/11/13	-4.751	0.21	-0.79	0.00
LF4-MW4	3/5/14	-5.964	-1.74	-2.74	0.00
LF4-MW4	9/4/14	-5.591	-1.14	-2.14	0.00
LF4-MW4	3/13/15	-6.161	-2.06	-3.06	0.00
LF4-MW4	9/16/15	-5.438	-0.90	-1.90	0.00
LF4-MW4	3/16/16	-6.119	-2.00	-3.00	0.00
LF4-MW4	9/21/16	-5.757	-1.41	-2.41	0.00
LF4-MW4	3/15/17	-6.079	-1.93	-2.93	0.00
LF4-MW4	9/8/17	-5.619	-1.19	-2.19	0.00
LF4-MW4	3/8/18	-6.522	-2.65	-3.65	0.00
LF4-MW4	9/11/18	-5.339	-0.74	-1.74	0.00
LF4-MW4	3/7/19	-5.991	-1.79	-2.79	0.00
LF4-MW4	9/5/19	-5.684	-1.29	-2.29	0.00
LF4-MW4	3/12/20	-6.119	-1.99	-2.99	0.00
LF4-MW4	9/15/20	-5.952	-1.73	-2.73	0.00
LF4-MW4	3/4/21	-6.032	-1.85	-2.85	0.00
LF4-MW4	9/9/21	-5.776	-1.44	-2.44	0.00
LF4-MW4	3/2/22	-6.320	-2.32	-3.32	0.00
LF4-MW4	8/31/22	-5.547	-1.07	-2.07	0.00
LF4-MW4	3/6/23	-6.502	-2.61	-3.61	0.00
LF4-MW4	9/6/23	-5.745	-1.39	-2.39	0.00
Background					
LF4-MW4	MEAN	-4.882			
LF4-MW4	STDEV	0.620			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Nickel

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW5	3/14/06	-4.605	0.45	-0.55	0.00
LF4-MW5	9/14/06	-4.605	0.45	-0.55	0.00
LF4-MW5	3/7/07	-4.605	0.45	-0.55	0.00
LF4-MW5	9/24/07	-5.741	-1.39	-2.39	0.00
LF4-MW5	3/26/08	-5.896	-1.64	-2.64	0.00
LF4-MW5	9/16/08	-5.960	-1.74	-2.74	0.00
LF4-MW5	3/18/09	-4.605	0.45	-0.55	0.00
LF4-MW5	9/17/09	-4.605	0.45	-0.55	0.00
LF4-MW5	3/17/10	-5.754	-1.41	-2.41	0.00
LF4-MW5	9/16/10	-5.526	-1.04	-2.04	0.00
LF4-MW5	3/15/11	-5.265	-0.62	-1.62	0.00
LF4-MW5	9/8/11	-5.764	-1.42	-2.42	0.00
LF4-MW5	3/14/12	-4.605	0.45	-0.55	0.00
LF4-MW5	9/6/12	-4.605	0.45	-0.55	0.00
LF4-MW5	3/5/13	-4.605	0.45	-0.55	0.00
LF4-MW5	9/11/13	-4.605	0.45	-0.55	0.00
LF4-MW5	3/5/14	-6.049	-1.88	-2.88	0.00
LF4-MW5	9/4/14	-6.432	-2.50	-3.50	0.00
LF4-MW5	3/13/15	-6.271	-2.24	-3.24	0.00
LF4-MW5	9/16/15	-6.529	-2.66	-3.66	0.00
LF4-MW5	3/16/16	-5.941	-1.71	-2.71	0.00
LF4-MW5	9/21/16	-5.714	-1.34	-2.34	0.00
LF4-MW5	3/15/17	-6.180	-2.09	-3.09	0.00
LF4-MW5	9/8/17	-6.529	-2.66	-3.66	0.00
LF4-MW5	3/8/18	-5.889	-1.62	-2.62	0.00
LF4-MW5	9/11/18	-5.547	-1.07	-2.07	0.00
LF4-MW5	3/7/19	-5.547	-1.07	-2.07	0.00
LF4-MW5	9/5/19	-5.776	-1.44	-2.44	0.00
LF4-MW5	3/12/20	-6.032	-1.85	-2.85	0.00
LF4-MW5	9/15/20	-5.952	-1.73	-2.73	0.00
LF4-MW5	3/4/21	-5.240	-0.58	-1.58	0.00
LF4-MW5	9/9/21	-5.991	-1.79	-2.79	0.00
LF4-MW5	3/2/22	-5.521	-1.03	-2.03	0.00
LF4-MW5	8/31/22	-6.119	-2.00	-3.00	0.00
LF4-MW5	3/6/23	-5.843	-1.55	-2.55	0.00
LF4-MW5	9/6/23	-5.991	-1.79	-2.79	0.00
Background					
LF4-MW5	MEAN	-4.882			
LF4-MW5	STDEV	0.620			

Zinc

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW1	3/13/06	-2.488	1.28	0.28	0.28
LF4-MW1	9/13/06	-3.493	2.24	1.24	1.52
LF4-MW1	3/6/07	-3.231	2.66	1.66	3.19
LF4-MW1	9/24/07	-2.996	3.04	2.04	5.23
LF4-MW1	3/26/08	-3.177	2.75	1.75	6.98
LF4-MW1	9/16/08	-3.734	1.85	0.85	7.83
LF4-MW1	3/17/09	-3.355	2.46	1.46	9.30
LF4-MW1	9/17/09	-3.464	2.29	1.29	10.58
LF4-MW1	3/17/10	-4.335	0.88	-0.12	10.47
LF4-MW1	9/21/10	-3.189	2.73	1.73	12.20
LF4-MW1	3/15/11	-2.720	3.49	2.49	14.69
LF4-MW1	9/8/11	-2.955	3.11	2.11	16.80
LF4-MW1	3/14/12	-2.941	3.13	2.13	18.93
LF4-MW1	9/6/12	-2.884	3.22	2.22	21.15
LF4-MW1	3/5/13	-2.766	3.41	2.41	23.56
LF4-MW1	9/11/13	-3.242	2.65	1.65	25.21
LF4-MW1	3/5/14	-3.140	2.81	1.81	27.02
LF4-MW1	9/4/14	-3.237	2.65	1.65	28.68
LF4-MW1	3/13/15	-2.822	3.32	2.32	31.00
LF4-MW1	9/16/15	-3.206	2.70	1.70	32.70
LF4-MW1	3/16/16	-2.805	3.35	2.35	35.05
LF4-MW1	9/21/16	-3.058	2.94	1.94	37.00
LF4-MW1	3/15/17	-2.886	3.22	2.22	39.22
LF4-MW1	9/8/17	-2.799	3.36	2.36	41.58
LF4-MW1	3/8/18	-2.990	3.05	2.05	43.63
LF4-MW1	9/11/18	-2.617	3.65	2.65	46.28
LF4-MW1	3/7/19	-2.847	3.28	2.28	48.57
LF4-MW1	9/5/19	-1.897	4.82	3.82	52.38
LF4-MW1	3/12/20	-2.865	3.25	2.25	54.64
LF4-MW1	9/15/20	-2.501	3.84	2.84	57.48
LF4-MW1	3/4/21	-2.453	3.92	2.92	60.40
LF4-MW1	9/9/21	-2.313	4.14	3.14	63.54
LF4-MW1	3/2/22	-1.966	4.70	3.70	67.25
LF4-MW1	8/31/22	-2.996	3.04	2.04	69.29
LF4-MW1	3/6/23	-3.411	2.37	1.37	70.66
LF4-MW1	9/6/23	-3.474	2.27	1.27	71.93
Background					
LF4-MW1	MEAN	-3.278			
LF4-MW1	STDEV	0.616			

Zinc

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW2	3/13/06	-2.915	-0.16	-1.16	0.00
LF4-MW2	9/13/06	-2.343	1.59	0.59	0.59
LF4-MW2	3/6/07	-3.338	-1.46	-2.46	0.00
LF4-MW2	9/24/07	-2.996	-0.41	-1.41	0.00
LF4-MW2	3/26/08	-4.069	-3.70	-4.70	0.00
LF4-MW2	9/16/08	-3.487	-1.91	-2.91	0.00
LF4-MW2	3/17/09	-0.691	6.66	5.66	5.66
LF4-MW2	9/17/09	-0.498	7.26	6.26	11.92
LF4-MW2	3/17/10	-0.120	8.41	7.41	19.33
LF4-MW2	9/21/10	-2.254	1.87	0.87	20.20
LF4-MW2	3/15/11	-2.655	0.64	-0.36	19.84
LF4-MW2	9/8/11	-2.608	0.78	-0.22	19.62
LF4-MW2	3/14/12	-2.902	-0.12	-1.12	18.50
LF4-MW2	9/6/12	-2.774	0.27	-0.73	17.77
LF4-MW2	3/5/13	-0.311	7.83	6.83	24.60
LF4-MW2	9/11/13	-0.892	6.05	5.05	29.65
LF4-MW2	3/5/14	0.020	8.84	7.84	37.49
LF4-MW2	9/4/14	-1.168	5.20	4.20	41.69
LF4-MW2	3/13/15	-0.191	8.20	7.20	48.89
LF4-MW2	9/16/15	-1.269	4.89	3.89	52.78
LF4-MW2	3/16/16	-0.835	6.22	5.22	58.00
LF4-MW2	9/21/16	-0.944	5.89	4.89	62.88
LF4-MW2	3/15/17	-1.743	3.44	2.44	65.32
LF4-MW2	9/8/17	-1.715	3.52	2.52	67.84
LF4-MW2	3/8/18	-0.312	7.82	6.82	74.67
LF4-MW2	9/11/18	-0.942	5.89	4.89	79.56
LF4-MW2	3/7/19	0.182	9.34	8.34	87.90
LF4-MW2	9/5/19	-0.654	6.78	5.78	93.68
LF4-MW2	3/12/20	-0.616	6.89	5.89	99.57
LF4-MW2	9/15/20	-0.777	6.40	5.40	104.97
LF4-MW2	3/4/21	-1.561	3.99	2.99	107.96
LF4-MW2	9/9/21	-1.022	5.65	4.65	112.61
LF4-MW2	3/2/22	-1.171	5.19	4.19	116.80
LF4-MW2	8/31/22	-0.916	5.97	4.97	121.77
LF4-MW2	3/6/23	-0.844	6.19	5.19	126.96
LF4-MW2	9/6/23	-0.734	6.53	5.53	132.49
Background					
LF4-MW2	MEAN	-2.863			
LF4-MW2	STDEV	0.326			

Zinc

Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW3	3/13/06	-3.858	-0.21	-1.21	0.00
LF4-MW3	9/14/06	-3.685	-0.05	-1.05	0.00
LF4-MW3	3/6/07	-3.642	-0.01	-1.01	0.00
LF4-MW3	9/25/07	-4.160	-0.48	-1.48	0.00
LF4-MW3	3/26/08	-4.141	-0.47	-1.47	0.00
LF4-MW3	9/16/08	-4.820	-1.09	-2.09	0.00
LF4-MW3	3/17/09	-4.200	-0.52	-1.52	0.00
LF4-MW3	9/17/09	-3.627	0.00	-1.00	0.00
LF4-MW3	3/17/10	-4.892	-1.15	-2.15	0.00
LF4-MW3	9/21/10	-5.124	-1.36	-2.36	0.00
LF4-MW3	3/15/11	-3.882	-0.23	-1.23	0.00
LF4-MW3	9/8/11	-4.595	-0.88	-1.88	0.00
LF4-MW3	3/14/12	-4.220	-0.54	-1.54	0.00
LF4-MW3	9/6/12	-4.069	-0.40	-1.40	0.00
LF4-MW3	3/5/13	-4.098	-0.43	-1.43	0.00
LF4-MW3	9/11/13	-2.996	0.58	-0.42	0.00
LF4-MW3	3/5/14	-4.605	-0.89	-1.89	0.00
LF4-MW3	9/4/14	-4.605	-0.89	-1.89	0.00
LF4-MW3	3/13/15	-4.206	-0.53	-1.53	0.00
LF4-MW3	9/16/15	-4.605	-0.89	-1.89	0.00
LF4-MW3	3/16/16	-4.605	-0.89	-1.89	0.00
LF4-MW3	9/21/16	-4.492	-0.79	-1.79	0.00
LF4-MW3	3/15/17	-4.566	-0.85	-1.85	0.00
LF4-MW3	9/8/17	-4.017	-0.35	-1.35	0.00
LF4-MW3	3/8/18	-4.255	-0.57	-1.57	0.00
LF4-MW3	9/11/18	-4.200	-0.52	-1.52	0.00
LF4-MW3	3/7/19	-4.135	-0.46	-1.46	0.00
LF4-MW3	9/5/19	-3.194	0.40	-0.60	0.00
LF4-MW3	3/12/20	-3.963	-0.30	-1.30	0.00
LF4-MW3	9/15/20	-2.937	0.63	-0.37	0.00
LF4-MW3	3/4/21	-3.124	0.46	-0.54	0.00
LF4-MW3	9/9/21	-4.605	-0.89	-1.89	0.00
LF4-MW3	3/2/22	-4.510	-0.80	-1.80	0.00
LF4-MW3	8/31/22	-4.605	-0.89	-1.89	0.00
LF4-MW3	3/6/23	-4.906	-1.16	-2.16	0.00
LF4-MW3	9/6/23	-5.203	-1.44	-2.44	0.00
Background					
LF4-MW3	MEAN	-3.629			
LF4-MW3	STDEV	1.096			

Attachment D2. Calculations for CUSUM Control Charts
Butler Green Industrial Landfill, Parcel 175(5)
McClellan, Anniston, Alabama

Zinc

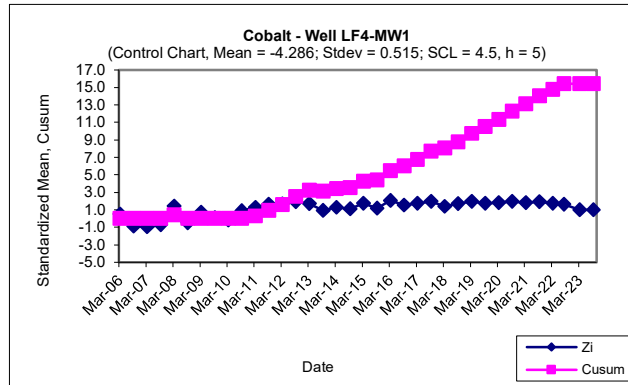
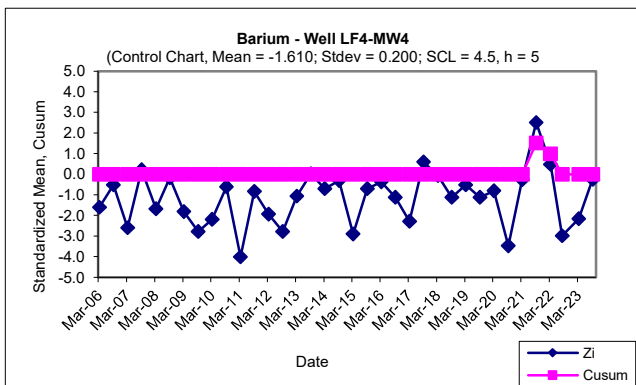
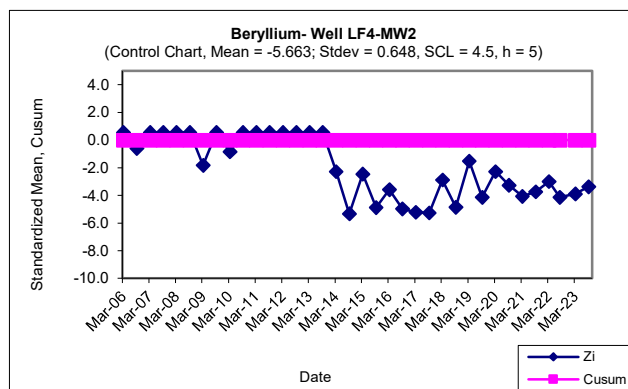
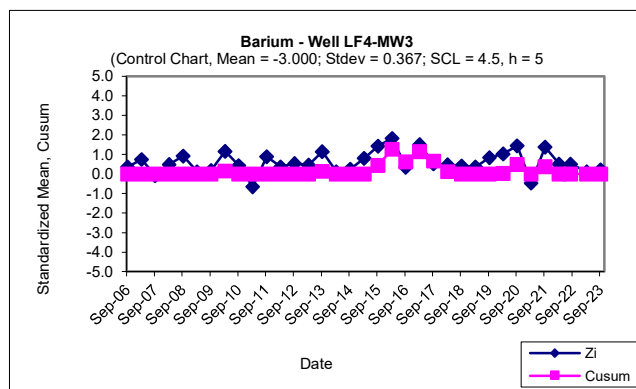
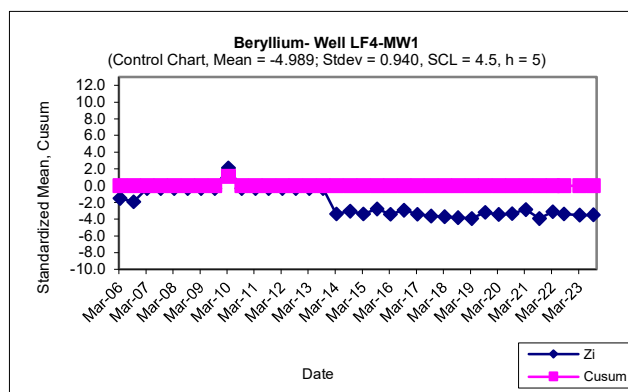
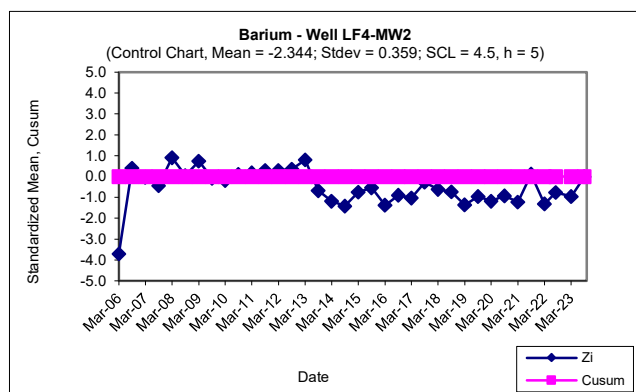
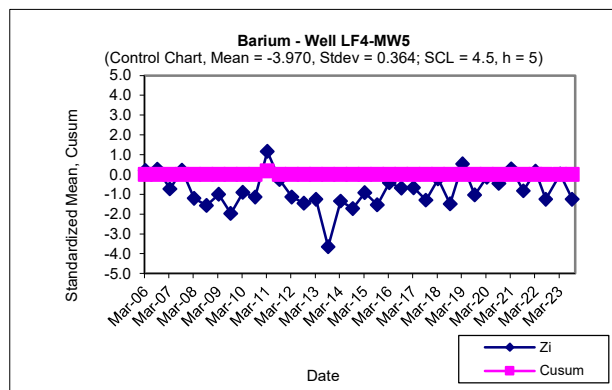
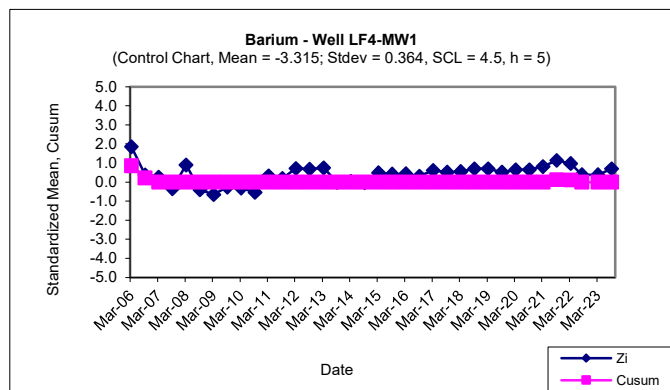
Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW4	3/14/06	-3.669	0.13	-0.87	0.00
LF4-MW4	9/14/06	-3.101	0.91	-0.09	0.00
LF4-MW4	3/7/07	-4.623	-1.19	-2.19	0.00
LF4-MW4	9/25/07	-4.269	-0.70	-1.70	0.00
LF4-MW4	3/26/08	-4.946	-1.64	-2.64	0.00
LF4-MW4	9/17/08	-4.029	-0.37	-1.37	0.00
LF4-MW4	3/17/09	-3.948	-0.26	-1.26	0.00
LF4-MW4	9/21/09	-4.941	-1.63	-2.63	0.00
LF4-MW4	3/17/10	-4.991	-1.70	-2.70	0.00
LF4-MW4	9/21/10	-4.351	-0.82	-1.82	0.00
LF4-MW4	3/15/11	-4.366	-0.84	-1.84	0.00
LF4-MW4	9/8/11	-4.585	-1.14	-2.14	0.00
LF4-MW4	3/14/12	-2.996	1.06	0.06	0.06
LF4-MW4	9/6/12	-2.996	1.06	0.06	0.11
LF4-MW4	3/5/13	-4.366	-0.84	-1.84	0.00
LF4-MW4	9/11/13	-4.440	-0.94	-1.94	0.00
LF4-MW4	3/5/14	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/4/14	-4.605	-1.17	-2.17	0.00
LF4-MW4	3/13/15	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/16/15	-4.057	-0.41	-1.41	0.00
LF4-MW4	3/16/16	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/21/16	-4.069	-0.43	-1.43	0.00
LF4-MW4	3/15/17	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/8/17	-3.423	0.47	-0.53	0.00
LF4-MW4	3/8/18	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/11/18	-3.079	0.94	-0.06	0.00
LF4-MW4	3/7/19	-2.880	1.22	0.22	0.22
LF4-MW4	9/5/19	-2.386	1.90	0.90	1.12
LF4-MW4	3/12/20	-4.422	-0.91	-1.91	0.00
LF4-MW4	9/15/20	-3.612	0.21	-0.79	0.00
LF4-MW4	3/4/21	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/9/21	-3.474	0.40	-0.60	0.00
LF4-MW4	3/2/22	-4.510	-1.04	-2.04	0.00
LF4-MW4	8/31/22	-3.474	0.40	-0.60	0.00
LF4-MW4	3/6/23	-4.605	-1.17	-2.17	0.00
LF4-MW4	9/6/23	-4.991	-1.70	-2.70	0.00
Background					
LF4-MW4	MEAN	-3.761			
LF4-MW4	STDEV	0.723			

Zinc

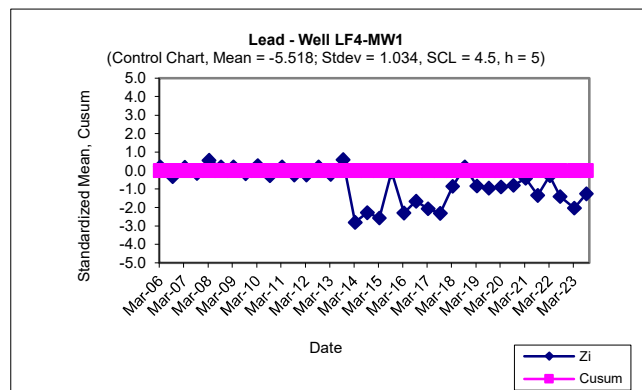
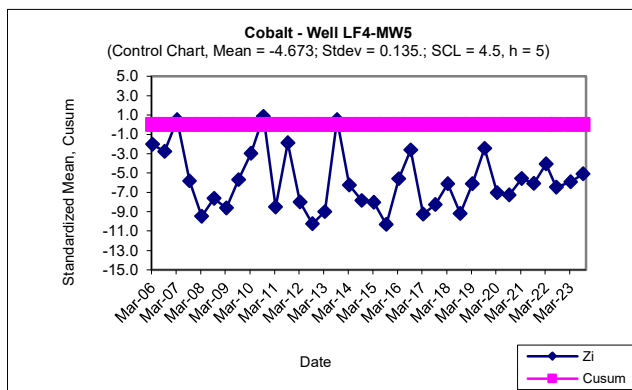
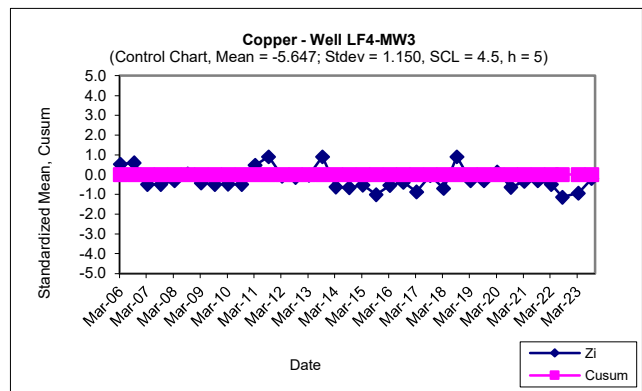
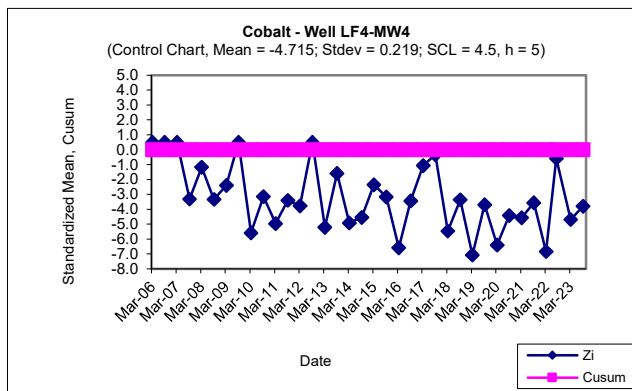
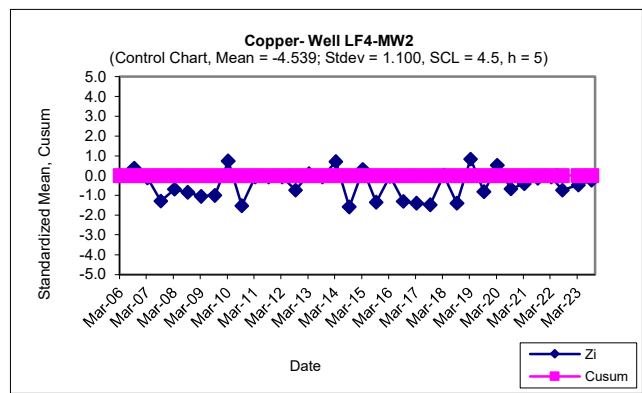
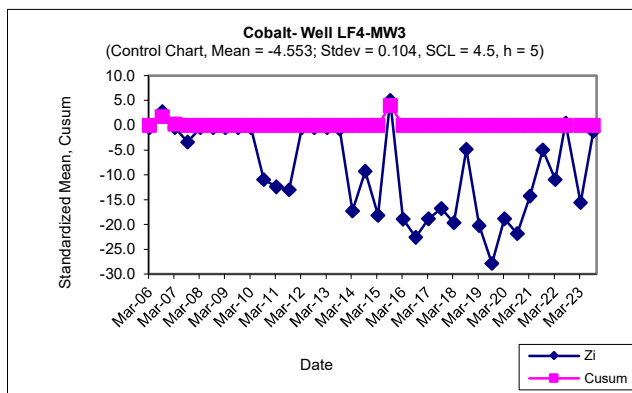
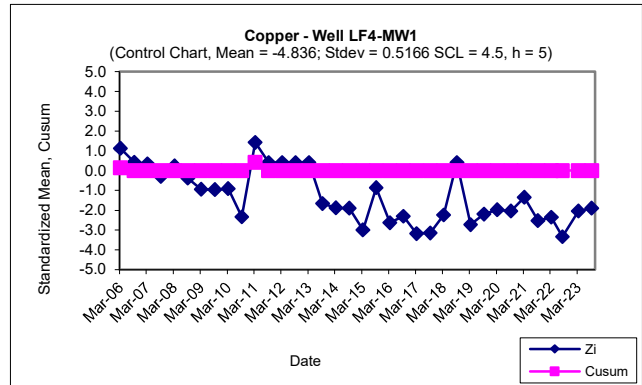
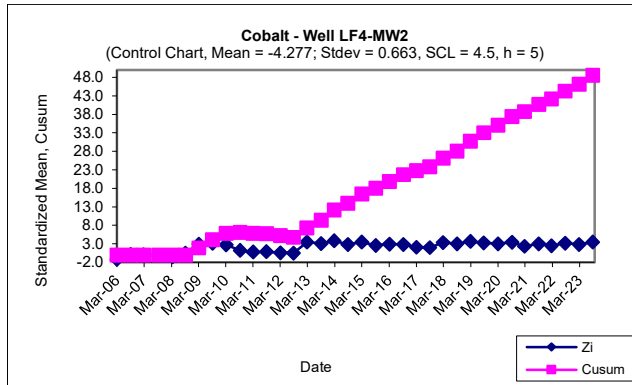
Well ID	Date	Ln Conc	Zi	Zi - k	Cusum
LF4-MW5	3/14/06	-4.358	-0.88	-1.88	0.00
LF4-MW5	9/14/06	-3.868	-0.35	-1.35	0.00
LF4-MW5	3/7/07	-3.974	-0.47	-1.47	0.00
LF4-MW5	9/24/07	-2.996	0.59	-0.41	0.00
LF4-MW5	3/26/08	-5.028	-1.61	-2.61	0.00
LF4-MW5	9/16/08	-5.067	-1.65	-2.65	0.00
LF4-MW5	3/18/09	-4.753	-1.31	-2.31	0.00
LF4-MW5	9/17/09	-5.176	-1.77	-2.77	0.00
LF4-MW5	3/17/10	-2.996	0.59	-0.41	0.00
LF4-MW5	9/16/10	-4.683	-1.23	-2.23	0.00
LF4-MW5	3/15/11	-4.200	-0.71	-1.71	0.00
LF4-MW5	9/8/11	-2.996	0.59	-0.41	0.00
LF4-MW5	3/14/12	-4.465	-1.00	-2.00	0.00
LF4-MW5	9/6/12	-2.996	0.59	-0.41	0.00
LF4-MW5	3/5/13	-4.510	-1.05	-2.05	0.00
LF4-MW5	9/11/13	-2.996	0.59	-0.41	0.00
LF4-MW5	3/5/14	-4.605	-1.15	-2.15	0.00
LF4-MW5	9/4/14	-4.605	-1.15	-2.15	0.00
LF4-MW5	3/13/15	-4.605	-1.15	-2.15	0.00
LF4-MW5	9/16/15	-4.605	-1.15	-2.15	0.00
LF4-MW5	3/16/16	-4.457	-0.99	-1.99	0.00
LF4-MW5	9/21/16	-4.605	-1.15	-2.15	0.00
LF4-MW5	3/15/17	-4.605	-1.15	-2.15	0.00
LF4-MW5	9/8/17	-4.605	-1.15	-2.15	0.00
LF4-MW5	3/8/18	-2.818	0.79	-0.21	0.00
LF4-MW5	9/11/18	-2.120	1.54	0.54	0.54
LF4-MW5	3/7/19	-3.863	-0.35	-1.35	0.00
LF4-MW5	9/5/19	-4.510	-1.05	-2.05	0.00
LF4-MW5	3/12/20	-4.343	-0.87	-1.87	0.00
LF4-MW5	9/15/20	0.000	3.84	2.84	2.84
LF4-MW5	3/4/21	-3.576	-0.03	-1.03	1.80
LF4-MW5	9/9/21	-3.612	-0.07	-1.07	0.73
LF4-MW5	3/2/22	-5.521	-2.14	-3.14	0.00
LF4-MW5	8/31/22	-5.521	-2.14	-3.14	0.00
LF4-MW5	3/6/23	-5.099	-1.69	-2.69	0.00
LF4-MW5	9/6/23	-5.298	-1.90	-2.90	0.00
Background					
LF4-MW2	MEAN	-3.544			
LF4-MW2	STDEV	0.923			

Attachment D3. Control Charts

Butler Green Industrial Landfill, Parcel 175(5), McClellan, Anniston, Alabama

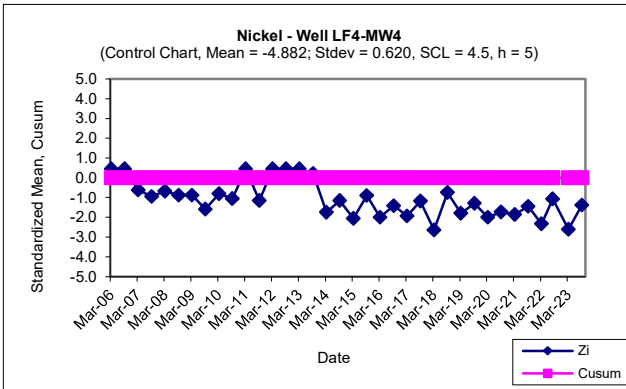
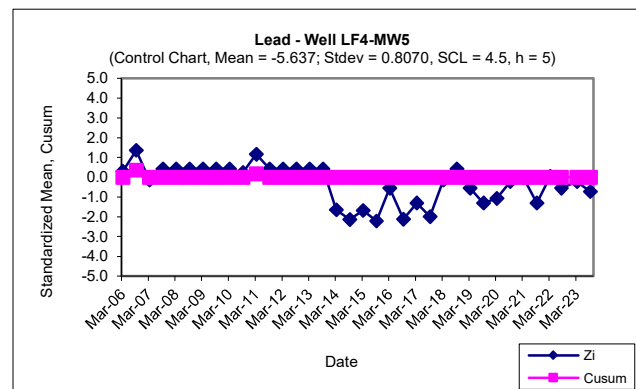
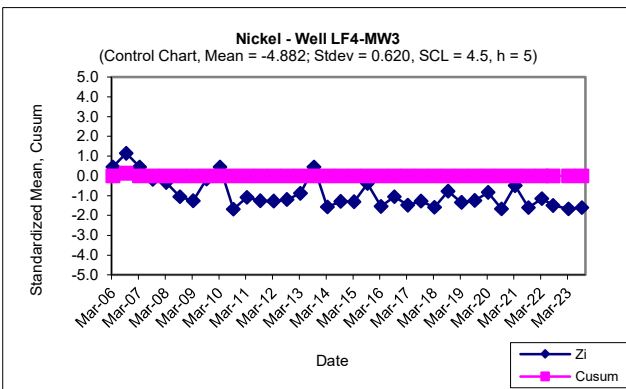
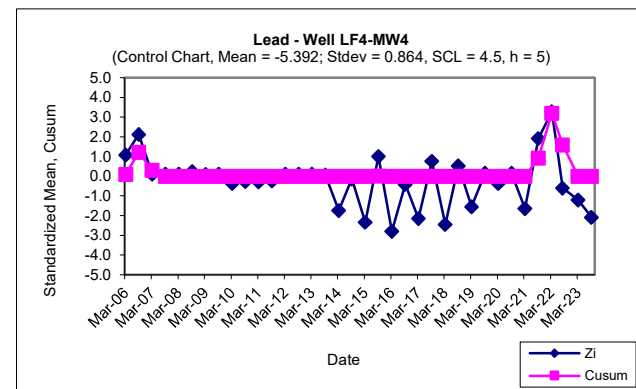
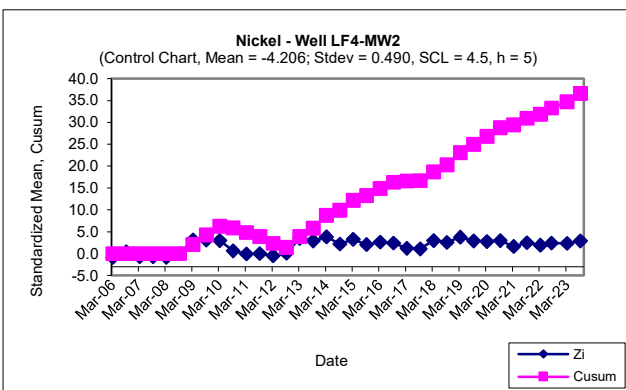
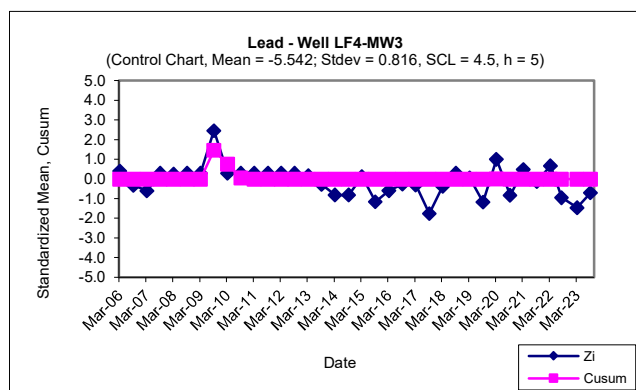
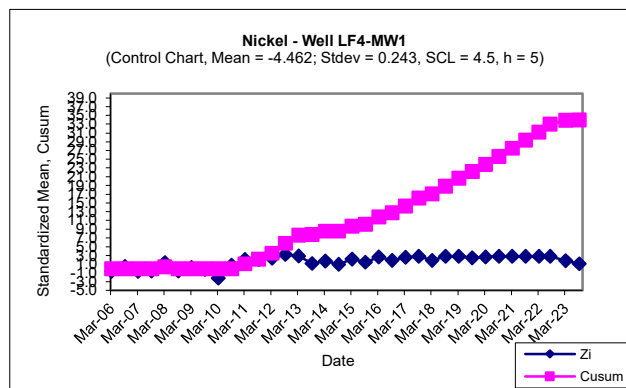
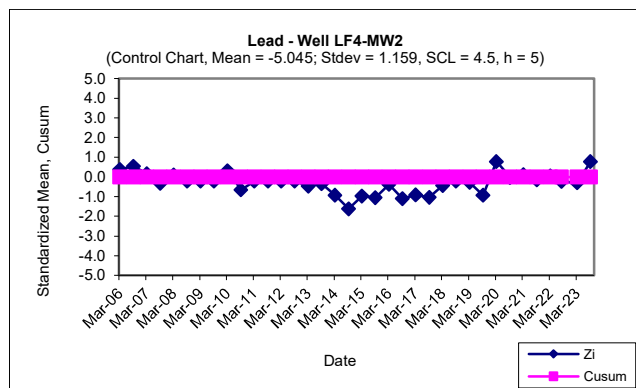


Attachment D3. Control Charts
Butler Green Industrial Landfill, Parcel 175(5), McClellan, Anniston, Alabama



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