

Covanta Marion, Inc.
4850 Brooklake Road NE
PO Box 9126
Brooks, OR 97305
Tel (503) 393-0890
Fax (503) 393-9714



February 1st, 2022

Ms. Kenzie Billings
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Re: Cleaner Air Oregon Air Toxics Test Report

Dear Ms. Billings:

On December 7 and 8, Montrose Air Quality Services, LLC (Montrose) was contracted to perform source testing as required by the Cleaner Air Oregon (CAO) program for the Covanta Marion, Inc. (CMI) facility. Testing was conducted according to the source test plan (STP) that was approved by the Oregon Department of Environmental Quality (ODEQ) on December 3, 2021. Due to an unanticipated interruption in the supply of leachate for liquid direct injection, completion of the remaining testing was suspended until leachate would be available to meet the minimum injection rates outlined in the STP.

Included in this submission are two separately bound test reports for the low-fire/reduced load acute risk operating scenario and the high-fire/maximum load chronic risk operating scenario. Additional source test information contained in this supplemental document includes:

- Table 1.1. - Profiled industrial waste streams received at CMI between December 6 through December.
- Table 1.2. - Operational parameters recorded during each test run.
- Appendix A - Source Testing Audit Report certification
- Appendix B - Leachate analytical reports (Method 300.0, Method 6020B, and Method 9020B)

CMI plans to complete the remaining testing for the CAO program during the week of March 7th, 2022.

Should you have any questions or need additional information please contact me or Kirk Little at 503-393-0890.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew Willis", is written over a horizontal line.

Andrew Willis
Environmental Compliance

TABLE 1.1
Profiled Industrial Waste Received

Date Received	Waste Type	Description	Feed Type	Tons
12/6/2021	Process and Production Waste	Expired agricultural seeds and production trash.	Pit	4.19
12/6/2021	USDA - Regulated Garbage	Garbage generated on means of conveyances from foreign regions and derived in whole or in part from fruits, vegetables, meats, or other plant or animal matter.	Modified-Direct	2.73
12/6/2021	Non-manufacturing Waste	Non-manufacturing waste to include floor sweepings, bathroom and food waste. Non-recyclable manufacturing waste to include cardboard/paper. Plastic scrap, wood scrap, and rubber.	Pit	3.04
12/6/2021	Consumer, Health and Beauty	Defective, recalled, or scrap retail products to include consumer health and beauty, furniture, car seats, etc.	Pit	6.67
12/6/2021	Manufacturing and Industrial Debris	Office trash, plastic film, coffee cups, plastic film canisters, film negatives, mouse pads empty containers, floor sweepings, cardboard.	Pit	8.06
12/6/2021	Process and Production Waste	Expired agricultural seeds and production trash.	Pit	5.00
12/6/2021	Process and Production Waste	Tyvek, PPE, paint and prep booth exhaust filters, cured paint sludge, absorbent pads, empty paint containers, masking tape, paper and plastic.	Pit	9.64
12/6/2021	Consumer, Health and Beauty	Expired and/or damaged retail products including apparel, food, and food packaging.	Pit	12.24
12/7/2021	Non-manufacturing Waste	Non-manufacturing waste to include office trash, breakroom trash, wood, paper, textiles.	Pit	4.75
12/7/2021	Consumer, Health and Beauty	Expired and/or damaged retail products including apparel, food, and food packaging.	Pit	13.22
12/7/2021	USDA - Regulated Garbage	Garbage generated on means of conveyances from foreign regions and derived in whole or in part from fruits, vegetables, meats, or other plant or animal matter.	Modified-Direct	5.37
12/7/2021	Manufacturing and Industrial Debris	Unused and off-specification paint brush bristles, rubber bands, janitorial waste, nylon/polyester fabric.	Pit	4.47
12/8/2021	USDA - Regulated Garbage	Garbage generated on means of conveyances from foreign regions and derived in whole or in part from fruits, vegetables, meats, or other plant or animal matter.	Modified-Direct	2.05
12/8/2021	Confidential Materials	Confiscated materials seized by law enforcement such to include non-hazardous drugs and weapons.	Direct	0.54
12/8/2021	Process and Production Waste	Food waste and packaging, wood scraps, food contaminated containers.	Pit	2.84
12/8/2021	Confidential Materials	Confidential documents, empty prescription pill containers.	Pit	6.73
12/8/2021	USDA - Regulated Garbage	Garbage generated on means of conveyances from foreign regions and derived in whole or in part from fruits, vegetables, meats, or other plant or animal matter.	Modified-Direct	0.95
12/8/2021	Confidential Materials	Confiscated materials seized by law enforcement such to include non-hazardous drugs and weapons.	Direct	0.13
12/8/2021	USDA - Regulated Garbage	Garbage generated on means of conveyances from foreign regions and derived in whole or in part from fruits, vegetables, meats, or other plant or animal matter.	Modified-Direct	0.87
12/8/2021	Confidential Materials	Uniforms, expired medical supplies, PPE.	Direct	1.65
12/8/2021	Pharmaceuticals and Debris	Discarded empty containers, gloves, glass vials, caps, PPE, rags from pharmaceutical production.	Pit	0.67

TABLE 1.2

SUMMARY OF SOURCE TEST OPERATIONAL PARAMETERS

Test Method, Run	Unit	RMW Processed (tons, single use packaging)	RMW Processed (tons, reusable containers)	RMW % of total Fuel	LDI Processed (gallons)	LDI Rate (gpm)	Natural Gas (kscf)	Average Steam Load (lbs/hr)	Baghouse Inlet Temperature (°F)	Lime Slurry Feed (dry lbs/hr)	Ammonia Injection (gal/hr)	Carbon Feed (lbs/hr)
29, 1	1 ¹	1.62	0.80	13%	336	3.0	25.8	58,900	295	255	0.8	9.5
29, 2	1 ¹	1.38	0.00	8%	296	2.4	25.0	54,400	310	254	0.9	9.5
26A, 1	1 ¹	0.70	0.60	12%	199	2.8	14.2	60,700	289	254	0.6	9.4
26A, 2	1 ¹	0.69	0.00	8%	139	2.3	12.2	55,300	312	254	0.6	9.6
SW-846 0031, 1	2	3.51	0.00	14%	496	3.3	0.0	68,100	304	249	0.0	9.8
SW-846 0031, 2	2	1.05	0.27	5%	450	3.0	0.0	66,900	313	251	0.0	9.8
SW-846 0031, 3	2	2.49	0.65	13%	460	3.1	0.0	67,800	306	273	0.0	9.8
26, 1	2	1.62	0.00	16%	181	3.0	0.0	68,300	303	249	0.2	9.8
26, 2	2	0.81	0.00	7%	211	3.0	0.0	67,900	304	249	0.1	9.8
26, 3	2	1.35	0.00	14%	172	2.9	0.0	66,700	304	283	0.0	9.9
BAAQMD, 1	2	1.62	0.00	16%	181	3.0	0.0	68,300	303	249	0.2	9.8
BAAQMD, 2	2	0.81	0.00	7%	211	3.0	0.0	67,900	304	249	4.0	9.8
BAAQMD, 3	2	0.00	0.00	0%	183	3.1	0.0	66,700	311	249	0.0	9.8
CARB 430, 1	2	0.54	0.00	5%	161	2.7	0.0	68,200	305	249	0.1	9.8
CARB 430, 2	2	0.00	0.00	0%	183	3.1	0.0	66,700	311	249	0.0	9.8
CARB 430, 3	2	1.05	0.00	10%	212	3.5	0.0	68,000	314	250	0.0	9.9

¹ Low-fire test conditions

Appendix A

Source Testing Audit Report Certification

SOURCE TESTING AUDIT REPORT: CERTIFICATION FORM

Facility: Covanta Marion Inc. Permit #: NA Test Date: 12-8-2021 (Chronic Health Risk)
Emission Unit: SWC Unit 2 Sampling Location: Exhaust

SECTION 1: TESTING PROGRAM CERTIFICATION INFORMATION

ITEM OF INQUIRY	Yes	No	EXPLANATION
A. Is the purpose(s) for the testing clearly defined within the test report?	X		
B. Did testing include all pollutants specified within the Source Test Plan (STP)?		X	Leakrate delivery disrupted. See section 4.1 of the report.
C. Were all issues within the Department's response to the STP fully addressed?	X		
D. Was the source operating within $\pm 10\%$ of normal maximum capacity?	X		
E. Are all appropriate operating conditions documented?	X		
F. Were there any test interruptions?	X		see 'D' above
G. Were there any variances or modifications to the STP? (if Yes; reply to i & ii)		X	
i. Were the variances or modifications approved by the Department?			
ii. Does the report include an evaluation of the impact the variances or modifications had on the test data?			

SECTION 2: SOURCE SAMPLING REPORT AUDITOR CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: Andy Vella Title: Sr Reporting /QC Specialist
Signature: [Signature] Date: 1-31-2022

SECTION 3: PERMITTEE REPRESENTATIVE CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: WICK LITTLE Title: Facility Manager
Signature: [Signature] Date: 2/2/22

SECTION 4: DEPARTMENT REPRESENTATIVE:

The Oregon Department of Environmental Quality has evaluated the Source Sampling Audit Report and has determined that the information provided is sufficient for accepting the results originating from the testing program. Although no deficiencies were exposed by the Source Sampling Audit Report, additional errors and/or inconsistencies may be detected through additional Departmental review at a later date, which may lead to a retest or an enforcement action against the permittee.

Name: _____ Title: _____
Signature: _____ Date: _____

SOURCE TESTING AUDIT REPORT: CERTIFICATION FORM

Facility: Covanta Marion Inc. Permit #: NA Test Date: 12-7-2021 (Acute Health Risk)
Emission Unit: SWC Unit 1 Sampling Location: Exhaust

SECTION 1: TESTING PROGRAM CERTIFICATION INFORMATION

ITEM OF INQUIRY	Yes	No	EXPLANATION
A. Is the purpose(s) for the testing clearly defined within the test report?	X		
B. Did testing include all pollutants specified within the Source Test Plan (STP)?		X	Leachate delivery disrupted. See section 4.1 of the report.
C. Were all issues within the Department's response to the STP fully addressed?		X	EPA 26A not sampled isokinetically.
D. Was the source operating within $\pm 10\%$ of normal maximum capacity?		X	80-90% of design load, see section 2.3 of the report
E. Are all appropriate operating conditions documented?	X		
F. Were there any test interruptions?	X		see 'B' above
G. Were there any variances or modifications to the STP? (if Yes; reply to i & ii)	X		see 'C' above
i. Were the variances or modifications approved by the Department?		X	
ii. Does the report include an evaluation of the impact the variances or modifications had on the test data?		X	

SECTION 2: SOURCE SAMPLING REPORT AUDITOR CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: Andy Vella Title: Sr. Reporting/QC Specialist
Signature: [Signature] Date: 1-31-2022

SECTION 3: PERMITTEE REPRESENTATIVE CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: KIRK LITTLE Title: Facility Manager
Signature: [Signature] Date: 2/2/22

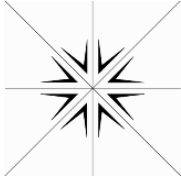
SECTION 4: DEPARTMENT REPRESENTATIVE:

The Oregon Department of Environmental Quality has evaluated the Source Sampling Audit Report and has determined that the information provided is sufficient for accepting the results originating from the testing program. Although no deficiencies were exposed by the Source Sampling Audit Report, additional errors and/or inconsistencies may be detected through additional Departmental review at a later date, which may lead to a retest or an enforcement action against the permittee.

Name: _____ Title: _____
Signature: _____ Date: _____

Appendix B

Leachate Analytical Reports



Specialty Analytical

9011 SE Jannsen Rd
Clackamas, OR 97015
TEL: (503) 607-1331

Website: www.specialtyanalytical.com

December 02, 2021

Randy Legler
River City Environmental
PO Box 30087
Portland, OR 97294
TEL: (503) 252-6144
FAX: (503) 288-3658

RE: Marion County Leachate

Order No.: 2111290

Dear Randy Legler:

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

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

Sincerely,

A handwritten signature in black ink, appearing to read "M. French".

Marty French
Lab Director

Specialty Analytical

WO#: 2111290

Date Reported: 12/2/2021

CLIENT: River City Environmental

Collection Date: 11/29/2021 1:00:00 PM

Project: Marion County Leachate

Lab ID: 2111290-001

Matrix: LIQUID

Client Sample ID Leachate Marion

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ANIONS BY IC						
				E300.0		Analyst: KH
Chloride	12800	200		mg/L	1000	11/30/2021 12:26:00 PM
RCRA 8 AQUEOUS						
ICP/MS METALS-TOTAL RECOVERABLE						
				SW 6020B	SW3010A	Analyst: EG
Aluminum	1.56	0.100		mg/L	10	11/30/2021 11:13:10 AM
Antimony	0.0105	0.00500		mg/L	10	11/30/2021 11:13:10 AM
Arsenic	0.0292	0.00100		mg/L	10	11/30/2021 11:13:10 AM
Barium	1.28	0.0100		mg/L	10	11/30/2021 11:13:10 AM
Beryllium	ND	0.0100	Q	mg/L	100	11/30/2021 1:54:26 PM
Cadmium	0.0789	0.00100		mg/L	10	11/30/2021 11:13:10 AM
Calcium	3780	100		mg/L	1000	12/1/2021 2:10:23 PM
Chromium	0.00246	0.00100		mg/L	10	11/30/2021 11:13:10 AM
Cobalt	0.0377	0.00500		mg/L	10	11/30/2021 11:13:10 AM
Copper	0.883	0.00500		mg/L	10	11/30/2021 11:13:10 AM
Iron	1.49	1.00		mg/L	10	11/30/2021 11:13:10 AM
Lead	0.0344	0.00100		mg/L	10	11/30/2021 11:13:10 AM
Magnesium	21.4	10.0		mg/L	100	11/30/2021 1:54:26 PM
Manganese	3.57	0.0500		mg/L	100	11/30/2021 1:54:26 PM
Nickel	0.0754	0.00500		mg/L	10	11/30/2021 11:13:10 AM
Potassium	1860	10.0		mg/L	100	11/30/2021 1:54:26 PM
Selenium	ND	0.0100		mg/L	10	11/30/2021 11:13:10 AM
Silver	0.00278	0.00100		mg/L	10	11/30/2021 11:13:10 AM
Sodium	3490	100		mg/L	1000	12/1/2021 2:10:23 PM
Thallium	ND	0.00500		mg/L	10	11/30/2021 11:13:10 AM
Vanadium	ND	0.00500		mg/L	10	11/30/2021 11:13:10 AM
Zinc	0.865	0.0200		mg/L	10	11/30/2021 11:13:10 AM
RCRA 8 AQUEOUS						
TOTAL MERCURY						
				E7470A	245.7	Analyst: EG
Mercury	0.000430	0.000100		mg/L	1	11/30/2021 12:04:00 PM

Qualifiers: E Value above quantitation range
S Spike Recovery outside accepted recovery limits

H Holding times for preparation or analysis exceeded

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 300_DW

Sample ID: A2111295-001AMSD		SampType: MSD		TestCode: 300_DW		Units: mg/L		Prep Date:		RunNo: 42837	
Client ID: BatchQC		Batch ID: R42837		TestNo: E300.0		Analysis Date: 11/30/2021		SeqNo: 549261			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12.2	0.200	10.00	2.186	100	75	125	11.99	1.88	20	

Sample ID: CCV CWS-2083	SampType: CCV	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837						
Client ID: CCV	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549267							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	21.7	0.200	20.00	0	108	90	110				

Sample ID: CCB	SampType: CCB	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837						
Client ID: CCB	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549268							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									

Sample ID: CCV CWS-2083	SampType: CCV	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837						
Client ID: CCV	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549269							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	20.7	0.200	20.00	0	103	90	110				

Qualifiers: E Value above quantitation range H Holding times for preparation or analysis exceeded S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 300_DW

Sample ID: CCV CWS-2083	SampType: CCV	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837
Client ID: CCV	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549269	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sample ID: CCB	SampType: CCB	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837
Client ID: CCB	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549270	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	0.200			

Sample ID: MBLK	SampType: MBLK	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837
Client ID: PBW	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549271	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	0.200			

Sample ID: LCS CWS-2074	SampType: LCS	TestCode: 300_DW	Units: mg/L	Prep Date:	RunNo: 42837
Client ID: LCSW	Batch ID: R42837	TestNo: E300.0	Analysis Date: 11/30/2021	SeqNo: 549272	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	10.6	0.200	10.00	0	106 85 115

Qualifiers: E Value above quantitation range H Holding times for preparation or analysis exceeded S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 300_DW

Sample ID: A2111295-001ADUP		SampType: DUP		TestCode: 300_DW		Units: mg/L		Prep Date:		RunNo: 42837			
Client ID: BatchQC		Batch ID: R42837		TestNo: E300.0				Analysis Date: 11/30/2021		SeqNo: 549274			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		2.17		0.200						2.186	0.809	20	

Sample ID: A2111295-001AMS		SampType: MS		TestCode: 300_DW		Units: mg/L		Prep Date:		RunNo: 42837			
Client ID: BatchQC		Batch ID: R42837		TestNo: E300.0				Analysis Date: 11/30/2021		SeqNo: 549275			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		12.0		0.200	10.00	2.186	98.1	75	125				

Qualifiers:

E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: ICV	SampType: ICV	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: ICV	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549137			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.483	0.0100	0.500	0	96.6	90	110				
Antimony	0.0504	0.000500	0.0500	0	101	90	110				
Arsenic	0.0491	0.000100	0.0500	0	98.1	90	110				
Barium	0.0486	0.00100	0.0500	0	97.2	90	110				
Beryllium	0.0484	0.000100	0.0500	0	96.8	90	110				
Cadmium	0.0492	0.000100	0.0500	0	98.5	90	110				
Calcium	4.90	0.100	5.00	0	98.1	90	110				
Chromium	0.0496	0.000100	0.0500	0	99.2	90	110				
Cobalt	0.0511	0.000500	0.0500	0	102	90	110				
Copper	0.0517	0.000500	0.0500	0	103	90	110				
Iron	5.06	0.100	5.00	0	101	90	110				
Lead	0.0484	0.000100	0.0500	0	96.8	90	110				
Magnesium	4.98	0.100	5.00	0	99.7	90	110				
Manganese	0.0505	0.000500	0.0500	0	101	90	110				
Nickel	0.0507	0.000500	0.0500	0	101	90	110				
Potassium	4.92	0.100	5.00	0	98.5	90	110				
Selenium	0.0488	0.00100	0.0500	0	97.5	90	110				
Silver	0.0486	0.000100	0.0500	0	97.3	90	110				
Sodium	4.88	0.100	5.00	0	97.6	90	110				
Thallium	0.0480	0.000500	0.0500	0	96.0	90	110				
Vanadium	0.0496	0.000500	0.0500	0	99.2	90	110				
Zinc	0.0502	0.00200	0.0500	0	100	90	110				

Qualifiers:

E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549143			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.511	0.0100	0.500	0	102	90	110				
Antimony	0.0488	0.000500	0.0500	0	97.6	90	110				
Arsenic	0.0491	0.000100	0.0500	0	98.1	90	110				
Barium	0.0500	0.00100	0.0500	0	100	90	110				
Beryllium	0.0527	0.000100	0.0500	0	105	90	110				
Cadmium	0.0498	0.000100	0.0500	0	99.7	90	110				
Calcium	5.11	0.100	5.00	0	102	90	110				
Chromium	0.0504	0.000100	0.0500	0	101	90	110				
Cobalt	0.0517	0.000500	0.0500	0	103	90	110				
Copper	0.0529	0.000500	0.0500	0	106	90	110				
Iron	5.12	0.100	5.00	0	102	90	110				
Lead	0.0505	0.000100	0.0500	0	101	90	110				
Magnesium	5.13	0.100	5.00	0	103	90	110				
Manganese	0.0499	0.000500	0.0500	0	99.8	90	110				
Nickel	0.0514	0.000500	0.0500	0	103	90	110				
Potassium	5.11	0.100	5.00	0	102	90	110				
Selenium	0.0492	0.00100	0.0500	0	98.4	90	110				
Silver	0.0495	0.000100	0.0500	0	99.0	90	110				
Sodium	5.07	0.100	5.00	0	101	90	110				
Thallium	0.0503	0.000500	0.0500	0	101	90	110				
Vanadium	0.0513	0.000500	0.0500	0	103	90	110				
Zinc	0.0505	0.00200	0.0500	0	101	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: MB-18842	SampType: MBLK	TestCode: 6020_W		Units: mg/L	Prep Date: 11/29/2021				RunNo: 42825		
Client ID: PBW	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021				SeqNo: 549144		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0100									
Antimony	ND	0.000500									
Arsenic	ND	0.000100									
Barium	ND	0.00100									
Beryllium	ND	0.000100									
Cadmium	ND	0.000100									
Calcium	ND	0.100									
Chromium	ND	0.000100									
Cobalt	ND	0.000500									
Copper	ND	0.000500									
Iron	ND	0.100									
Lead	ND	0.000100									
Magnesium	ND	0.100									
Manganese	ND	0.000500									
Nickel	ND	0.000500									
Potassium	ND	0.100									
Selenium	ND	0.00100									
Silver	ND	0.000100									
Sodium	ND	0.100									
Thallium	ND	0.000500									
Vanadium	ND	0.000500									
Zinc	ND	0.00200									

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: LCS-18842	SampType: LCS	TestCode: 6020_W	Units: mg/L	Prep Date: 11/29/2021	RunNo: 42825						
Client ID: LCSW	Batch ID: 18842	TestNo: SW 6020B	SW3010A	Analysis Date: 11/30/2021	SeqNo: 549145						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.447	0.0100	0.500	0	89.4	80	120				
Antimony	0.0498	0.000500	0.0500	0	99.6	80	120				
Arsenic	0.0479	0.000100	0.0500	0	95.9	80	120				
Barium	0.0500	0.00100	0.0500	0	100	80	120				
Beryllium	0.0420	0.000100	0.0500	0	83.9	80	120				
Cadmium	0.0509	0.000100	0.0500	0	102	80	120				
Calcium	4.90	0.100	5.00	0	98.0	80	120				
Chromium	0.0485	0.000100	0.0500	0	97.0	80	120				
Cobalt	0.0510	0.000500	0.0500	0	102	80	120				
Copper	0.0522	0.000500	0.0500	0	104	80	120				
Iron	4.92	0.100	5.00	0	98.4	80	120				
Lead	0.0503	0.000100	0.0500	0	101	80	120				
Magnesium	4.57	0.100	5.00	0	91.4	80	120				
Manganese	0.0505	0.000500	0.0500	0	101	80	120				
Nickel	0.0513	0.000500	0.0500	0	103	80	120				
Potassium	4.76	0.100	5.00	0	95.2	80	120				
Selenium	0.0474	0.00100	0.0500	0	94.7	80	120				
Silver	0.0504	0.000100	0.0500	0	101	80	120				
Sodium	4.42	0.100	5.00	0	88.4	80	120				
Thallium	0.0496	0.000500	0.0500	0	99.3	80	120				
Vanadium	0.0479	0.000500	0.0500	0	95.7	80	120				
Zinc	0.0512	0.00200	0.0500	0	102	80	120				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: A2111265-001ADUP		SampType: DUP		TestCode: 6020_W		Units: mg/L		Prep Date:			RunNo: 42825		
Client ID: BatchQC		Batch ID: 18842		TestNo: SW 6020B		SW3010A		Analysis Date: 11/30/2021			SeqNo: 549147		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		0.660		0.0100									
Antimony		ND		0.000500									
Arsenic		0.000447		0.000100									
Barium		0.0130		0.00100									
Beryllium		ND		0.000100									
Cadmium		ND		0.000100									
Calcium		5.75		0.100									
Chromium		0.000538		0.000100									
Cobalt		ND		0.000500									
Copper		0.00358		0.000500									
Iron		0.847		0.100									
Lead		0.000441		0.000100									
Magnesium		1.88		0.100									
Manganese		0.0718		0.000500									
Nickel		0.000658		0.000500									
Potassium		1.89		0.100									
Selenium		ND		0.00100									
Silver		ND		0.000100									
Sodium		6.05		0.100									
Thallium		ND		0.000500									
Vanadium		0.00120		0.000500									
Zinc		0.0204		0.00200									

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: A2111265-001AMS	SampType: MS	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: BatchQC	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549148			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.13	0.0100	0.500	0	227	70	130				SMI
Antimony	0.0464	0.000500	0.0500	0	92.8	70	130				
Arsenic	0.0488	0.000100	0.0500	0	97.5	70	130				
Barium	0.0597	0.00100	0.0500	0	119	70	130				
Beryllium	0.0431	0.000100	0.0500	0	86.2	70	130				
Cadmium	0.0480	0.000100	0.0500	0	95.9	70	130				
Calcium	10.7	0.100	5.00	0	213	70	130				SMC
Chromium	0.0486	0.000100	0.0500	0	97.3	70	130				
Cobalt	0.0505	0.000500	0.0500	0	101	70	130				
Copper	0.0543	0.000500	0.0500	0	109	70	130				
Iron	5.77	0.100	5.00	0	115	70	130				
Lead	0.0485	0.000100	0.0500	0	97.0	70	130				
Magnesium	6.84	0.100	5.00	0	137	70	130				SMC
Manganese	0.119	0.000500	0.0500	0	238	70	130				
Nickel	0.0503	0.000500	0.0500	0	101	70	130				
Potassium	6.97	0.100	5.00	0	139	70	130				SMC
Selenium	0.0484	0.00100	0.0500	0	96.8	70	130				
Silver	0.0486	0.000100	0.0500	0	97.2	70	130				
Sodium	11.2	0.100	5.00	0	225	70	130				SMC
Thallium	0.0481	0.000500	0.0500	0	96.2	70	130				
Vanadium	0.0520	0.000500	0.0500	0	104	70	130				
Zinc	0.0686	0.00200	0.0500	0	137	70	130				SMI

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: A2111265-001AMSD		SampType: MSD		TestCode: 6020_W		Units: mg/L		Prep Date:		RunNo: 42825		
Client ID: BatchQC		Batch ID: 18842		TestNo: SW 6020B		SW3010A		Analysis Date: 11/30/2021		SeqNo: 549149		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		1.23	0.0100	0.500	0	247	70	130				SMI
Antimony		0.0469	0.000500	0.0500	0	93.7	70	130				
Arsenic		0.0477	0.000100	0.0500	0	95.4	70	130				
Barium		0.0603	0.00100	0.0500	0	121	70	130				
Beryllium		0.0449	0.000100	0.0500	0	89.8	70	130				SMC
Cadmium		0.0476	0.000100	0.0500	0	95.2	70	130				
Calcium		10.7	0.100	5.00	0	214	70	130				
Chromium		0.0494	0.000100	0.0500	0	98.8	70	130				
Cobalt		0.0503	0.000500	0.0500	0	101	70	130				SMC
Copper		0.0535	0.000500	0.0500	0	107	70	130				
Iron		5.75	0.100	5.00	0	115	70	130				
Lead		0.0487	0.000100	0.0500	0	97.4	70	130				
Magnesium		6.95	0.100	5.00	0	139	70	130				SMC
Manganese		0.119	0.000500	0.0500	0	238	70	130				SMI
Nickel		0.0499	0.000500	0.0500	0	99.7	70	130				SMC
Potassium		7.11	0.100	5.00	0	142	70	130				
Selenium		0.0474	0.00100	0.0500	0	94.9	70	130				
Silver		0.0473	0.000100	0.0500	0	94.7	70	130				
Sodium		11.5	0.100	5.00	0	230	70	130				SMC
Thallium		0.0485	0.000500	0.0500	0	97.0	70	130				SMI
Vanadium		0.0521	0.000500	0.0500	0	104	70	130				
Zinc		0.0682	0.00200	0.0500	0	136	70	130				

Qualifiers:

E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549150			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.529	0.0100	0.500	0	106	90	110				
Antimony	0.0493	0.000500	0.0500	0	98.6	90	110				
Arsenic	0.0493	0.000100	0.0500	0	98.6	90	110				
Barium	0.0504	0.00100	0.0500	0	101	90	110				
Beryllium	0.0542	0.000100	0.0500	0	108	90	110				
Cadmium	0.0494	0.000100	0.0500	0	98.7	90	110				
Calcium	5.20	0.100	5.00	0	104	90	110				
Chromium	0.0507	0.000100	0.0500	0	101	90	110				
Cobalt	0.0510	0.000500	0.0500	0	102	90	110				
Copper	0.0534	0.000500	0.0500	0	107	90	110				
Iron	5.21	0.100	5.00	0	104	90	110				
Lead	0.0497	0.000100	0.0500	0	99.5	90	110				
Magnesium	5.46	0.100	5.00	0	109	90	110				
Manganese	0.0506	0.000500	0.0500	0	101	90	110				
Nickel	0.0520	0.000500	0.0500	0	104	90	110				
Potassium	5.26	0.100	5.00	0	105	90	110				
Selenium	0.0489	0.00100	0.0500	0	97.8	90	110				
Silver	0.0503	0.000100	0.0500	0	101	90	110				
Sodium	5.28	0.100	5.00	0	106	90	110				
Thallium	0.0499	0.000500	0.0500	0	99.8	90	110				
Vanadium	0.0513	0.000500	0.0500	0	103	90	110				
Zinc	0.0509	0.00200	0.0500	0	102	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV		SampType: CCV		TestCode: 6020_W		Units: mg/L		Prep Date:		RunNo: 42825		
Client ID: CCV		Batch ID: 18842		TestNo: SW 6020B		SW3010A		Analysis Date: 11/30/2021		SeqNo: 549152		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		0.464	0.0100	0.500	0	92.9	90	110				
Antimony		0.0475	0.000500	0.0500	0	94.9	90	110				
Arsenic		0.0488	0.000100	0.0500	0	97.6	90	110				
Barium		0.0463	0.00100	0.0500	0	92.5	90	110				
Cadmium		0.0475	0.000100	0.0500	0	95.0	90	110				
Calcium		5.44	0.100	5.00	0	109	90	110				
Chromium		0.0479	0.000100	0.0500	0	95.9	90	110				
Cobalt		0.0502	0.000500	0.0500	0	100	90	110				
Copper		0.0516	0.000500	0.0500	0	103	90	110				
Iron		5.03	0.100	5.00	0	101	90	110				
Lead		0.0471	0.000100	0.0500	0	94.1	90	110				
Manganese		0.0524	0.000500	0.0500	0	105	90	110				
Nickel		0.0500	0.000500	0.0500	0	100	90	110				
Potassium		5.15	0.100	5.00	0	103	90	110				
Selenium		0.0490	0.00100	0.0500	0	98.0	90	110				
Silver		0.0480	0.000100	0.0500	0	95.9	90	110				
Thallium		0.0478	0.000500	0.0500	0	95.6	90	110				
Vanadium		0.0496	0.000500	0.0500	0	99.2	90	110				
Zinc		0.0511	0.00200	0.0500	0	102	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: ICV	SampType: ICV	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: ICV	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549153			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.504	0.0100	0.500	0	101	90	110				
Antimony	0.0502	0.000500	0.0500	0	100	90	110				
Arsenic	0.0492	0.000100	0.0500	0	98.5	90	110				
Barium	0.0488	0.00100	0.0500	0	97.6	90	110				
Beryllium	0.0497	0.000100	0.0500	0	99.3	90	110				
Cadmium	0.0485	0.000100	0.0500	0	97.1	90	110				
Calcium	4.94	0.100	5.00	0	98.7	90	110				
Chromium	0.0500	0.000100	0.0500	0	99.9	90	110				
Cobalt	0.0500	0.000500	0.0500	0	99.9	90	110				
Copper	0.0500	0.000500	0.0500	0	99.9	90	110				
Iron	5.00	0.100	5.00	0	100	90	110				
Lead	0.0484	0.000100	0.0500	0	96.8	90	110				
Magnesium	5.06	0.100	5.00	0	101	90	110				
Manganese	0.0504	0.000500	0.0500	0	101	90	110				
Nickel	0.0503	0.000500	0.0500	0	101	90	110				
Potassium	4.93	0.100	5.00	0	98.5	90	110				
Selenium	0.0499	0.00100	0.0500	0	99.7	90	110				
Silver	0.0483	0.000100	0.0500	0	96.7	90	110				
Sodium	5.03	0.100	5.00	0	101	90	110				
Thallium	0.0479	0.000500	0.0500	0	95.7	90	110				
Vanadium	0.0485	0.000500	0.0500	0	97.1	90	110				
Zinc	0.0482	0.00200	0.0500	0	96.4	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549157			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.497	0.0100	0.500	0	99.5	90	110				
Antimony	0.0492	0.000500	0.0500	0	98.4	90	110				
Arsenic	0.0491	0.000100	0.0500	0	98.1	90	110				
Barium	0.0482	0.00100	0.0500	0	96.4	90	110				
Beryllium	0.0526	0.000100	0.0500	0	105	90	110				
Cadmium	0.0483	0.000100	0.0500	0	96.6	90	110				
Calcium	4.92	0.100	5.00	0	98.3	90	110				
Chromium	0.0501	0.000100	0.0500	0	100	90	110				
Cobalt	0.0489	0.000500	0.0500	0	97.8	90	110				
Copper	0.0510	0.000500	0.0500	0	102	90	110				
Iron	4.97	0.100	5.00	0	99.5	90	110				
Lead	0.0484	0.000100	0.0500	0	96.7	90	110				
Magnesium	5.02	0.100	5.00	0	100	90	110				
Manganese	0.0507	0.000500	0.0500	0	101	90	110				
Nickel	0.0494	0.000500	0.0500	0	98.8	90	110				
Potassium	4.99	0.100	5.00	0	99.8	90	110				
Selenium	0.0486	0.00100	0.0500	0	97.2	90	110				
Silver	0.0484	0.000100	0.0500	0	96.8	90	110				
Sodium	5.04	0.100	5.00	0	101	90	110				
Thallium	0.0478	0.000500	0.0500	0	95.5	90	110				
Vanadium	0.0485	0.000500	0.0500	0	96.9	90	110				
Zinc	0.0487	0.00200	0.0500	0	97.3	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W		Units: mg/L	Prep Date:			RunNo: 42825			
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B		SW3010A	Analysis Date: 11/30/2021			SeqNo: 549159			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.505	0.0100	0.500	0	101	90	110				
Antimony	0.0494	0.000500	0.0500	0	98.7	90	110				
Arsenic	0.0492	0.000100	0.0500	0	98.5	90	110				
Barium	0.0489	0.00100	0.0500	0	97.8	90	110				
Beryllium	0.0541	0.000100	0.0500	0	108	90	110				
Cadmium	0.0487	0.000100	0.0500	0	97.5	90	110				
Calcium	4.97	0.100	5.00	0	99.4	90	110				
Chromium	0.0506	0.000100	0.0500	0	101	90	110				
Cobalt	0.0501	0.000500	0.0500	0	100	90	110				
Copper	0.0511	0.000500	0.0500	0	102	90	110				
Iron	4.96	0.100	5.00	0	99.2	90	110				
Lead	0.0482	0.000100	0.0500	0	96.4	90	110				
Magnesium	5.12	0.100	5.00	0	102	90	110				
Manganese	0.0504	0.000500	0.0500	0	101	90	110				
Nickel	0.0509	0.000500	0.0500	0	102	90	110				
Potassium	4.94	0.100	5.00	0	98.8	90	110				
Selenium	0.0488	0.00100	0.0500	0	97.6	90	110				
Silver	0.0480	0.000100	0.0500	0	95.9	90	110				
Sodium	5.07	0.100	5.00	0	101	90	110				
Thallium	0.0479	0.000500	0.0500	0	95.8	90	110				
Vanadium	0.0490	0.000500	0.0500	0	98.1	90	110				
Zinc	0.0488	0.00200	0.0500	0	97.7	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: mg/L	Prep Date:	RunNo: 42825						
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B	SW3010A	Analysis Date: 11/30/2021	SeqNo: 549201						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	4.73	0.100	5.00	0	94.6	90	110				
Sodium	5.37	0.100	5.00	0	107	90	110				

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: mg/L	Prep Date:	RunNo: 42825						
Client ID: ICV	Batch ID: 18842	TestNo: SW 6020B	SW3010A	Analysis Date: 12/1/2021	SeqNo: 549409						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	4.81	0.100	5.00	0	96.2	90	110				
Sodium	4.88	0.100	5.00	0	97.6	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: mg/L	Prep Date:	RunNo: 42825						
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B	SW3010A	Analysis Date: 12/1/2021	SeqNo: 549415						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	4.95	0.100	5.00	0	99.0	90	110				
Sodium	4.99	0.100	5.00	0	99.8	90	110				

Qualifiers:

E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: mg/L	Prep Date:	RunNo: 42825						
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B	SW3010A	Analysis Date: 12/1/2021	SeqNo: 549416						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.17	0.100	5.00	0	103	90	110				
Sodium	5.38	0.100	5.00	0	108	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: mg/L	Prep Date:	RunNo: 42825						
Client ID: CCV	Batch ID: 18842	TestNo: SW 6020B	SW3010A	Analysis Date: 12/1/2021	SeqNo: 549418						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.15	0.100	5.00	0	103	90	110				
Sodium	5.14	0.100	5.00	0	103	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: HG_CT

Sample ID: LCS-R42828		SampType: LCS		TestCode: HG_CT		Units: mg/L		Prep Date:		RunNo: 42828			
Client ID: LCSW		Batch ID: 18848		TestNo: E7470A		245.7		Analysis Date: 11/30/2021		SeqNo: 549106			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00421		0.000100	0.00400	0	105	85.4	116				

Sample ID: LCSD-R42828		SampType: LCSD		TestCode: HG_CT		Units: mg/L		Prep Date:		RunNo: 42828			
Client ID: LCSS02		Batch ID: 18848		TestNo: E7470A		245.7		Analysis Date: 11/30/2021		SeqNo: 549107			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00417		0.000100	0.00400	0	104	85.4	116	0.00421	1.10	20	

Sample ID: MB-R42828	SampType: MBLK	TestCode: HG_CT	Units: mg/L	Prep Date:	RunNo: 42828						
Client ID: PBW	Batch ID: 18848	TestNo: E7470A	245.7	Analysis Date: 11/30/2021	SeqNo: 549108						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.000100									

Sample ID: 2111290-001BDUP	SampType: DUP	TestCode: HG_CT	Units: mg/L	Prep Date: 11/30/2021	RunNo: 42828						
Client ID: Leachate Marion	Batch ID: 18848	TestNo: E7470A	245.7	Analysis Date: 11/30/2021	SeqNo: 549111						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000367	0.000100						0.000430	15.8	20	

Qualifiers: E Value above quantitation range H Holding times for preparation or analysis exceeded S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: 2111290

12/2/2021

Client: River City Environmental

Project: Marion County Leachate

TestCode: HG_CT

Sample ID: 2111290-001BDUP	SampType: DUP	TestCode: HG_CT	Units: mg/L	Prep Date: 11/30/2021	RunNo: 42828						
Client ID: Leachate Marion	Batch ID: 18848	TestNo: E7470A	245.7	Analysis Date: 11/30/2021	SeqNo: 549111						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 2111290-001BMS	SampType: MS	TestCode: HG_CT	Units: mg/L	Prep Date: 11/30/2021	RunNo: 42828						
Client ID: Leachate Marion	Batch ID: 18848	TestNo: E7470A	245.7	Analysis Date: 11/30/2021	SeqNo: 549112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00341	0.000100	0.00400	0.000430	74.6	69.5	125				

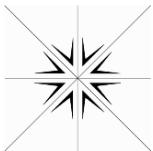
Sample ID: 2111290-001BMSD		SampType: MSD		TestCode: HG_CT		Units: mg/L		Prep Date: 11/30/2021		RunNo: 42828			
Client ID: Leachate Marion		Batch ID: 18848		TestNo: E7470A		245.7		Analysis Date: 11/30/2021		SeqNo: 549113			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00297		0.000100	0.00400	0.000430	63.5	69.5	125	0.00341	13.9	20	SMI

Sample ID: CCV-R42828		SampType: CCV		TestCode: HG_CT		Units: mg/L		Prep Date:			RunNo: 42828		
Client ID: CCV		Batch ID: 18848		TestNo: E7470A		245.7		Analysis Date: 11/30/2021			SeqNo: 549116		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00400		0.000100	0.00400	0	100	90	110				

Qualifiers: E Value above quantitation range

H Holding times for preparation or analysis exceeded

S Spike Recovery outside accepted recovery limits



Specialty Analytical
9011 SE Jannsen Rd
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

Sample Receipt Checklist

Client Name RIVER_CITY

Work Order Number 2111290

RcptNo: 1

Date and Time Received 11/29/2021 1:13:12 PM

Received by: Mandy Wehe

Completed by

Reviewed by:

Completed Date:

11/29/2021

Reviewed Date:

Carrier name: Client

Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐	Not Present	☐
Are matrices correctly identified on Chain of custody?	Yes ☒	No ☐		
Is it clear what analyses were requested?	Yes ☒	No ☐		
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present	☒
Samples in proper container/bottle?	Yes ☒	No ☐		
Were correct preservatives used and noted?	Yes ☒	No ☐	NA	☐
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
Were container labels complete (ID, Pres, Date)?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Was an attempt made to cool the samples?	Yes ☒	No ☐	NA	☐
All samples received at a temp. of > 0° C to 6.0° C?	Yes ☐	No ☒	NA	☐
Response when temperature is outside of range:	Samples were collected the same day and chilled.			
Preservative added to bottles:				
Sample Temp. taken and recorded upon receipt?	Yes ☒	No ☐	To 14.1 °C	
Water - Were bubbles absent in VOC vials?	Yes ☐	No ☐	No Vials	☒
Water - Was there Chlorine Present?	Yes ☐	No ☐	NA	☒
Water - pH acceptable upon receipt?	Yes ☒	No ☐	NA	☐
Are Samples considered acceptable?	Yes ☒	No ☐		
Custody Seals present?	Yes ☐	No ☒		
Traffic Report or Packing Lists present?	Yes ☐	No ☒		
Airbill or Sticker?	Air Bill ☐	Sticker ☐	Not Present	☒
Airbill No:				
Sample Tags Present?	Yes ☐	No ☒		
Sample Tags Listed on COC?	Yes ☐	No ☒		
Tag Numbers:				
Sample Condition?	Intact ☒	Broken ☐	Leaking	☐

Case Number:

SDG:

SAS:

Adjusted? _____ Checked by

Any No and/or NA (not applicable) response must be detailed in the comments section be



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Sample Receipt Checklist

Client Contacted? ☐ Yes ☒ No ☐ NA Person Contacted: _____ Comments: _____
Contact Mode: ☐ Phone: ☐ Fax: ☐ Email: ☐ In Person: _____
Client Instructions: _____
Date Contacted: _____ Contacted By: _____
Regarding: _____
CorrectiveAction: _____

Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Client: Specialty Analytical
Address: 9011 SE. Jannsen Rd.
Clackamas, OR 97015
Attn: Julie Clay

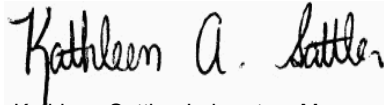
Work Order: WBK0915
Project: 2111290
Reported: 12/2/2021 12:59

Analytical Results Report

Sample Location: Leachate Marion
Lab/Sample Number: WBK0915-01 **Collect Date:** 11/29/21 13:00
Date Received: 11/30/21 11:33 **Collected By:**
Matrix: Liquid

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Hydrocarbons							
TOX	1100	ug/L	1000	12/2/21 11:05	JRS	EPA 9020B	

Authorized Signature,


Kathleen Sattler, Laboratory Manager

PQL Practical Quantitation Limit
ND Not Detected
MCL EPA's Maximum Contaminant Level
Dry Sample results reported on a dry weight basis
* Not a state-certified analyte

This report shall not be reproduced except in full, without the written approval of the laboratory
The results reported related only to the samples indicated.

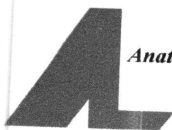
Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Quality Control Data

Hydrocarbons

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0037 - W TOX										
Blank (BBL0037-BLK1)										
TOX	ND		10.0	ug/L						
LCS (BBL0037-BS1)										
TOX	65.2		10.0	ug/L	80.9		80.6	80-120		
Duplicate (BBL0037-DUP1)										
Source: WBK0915-01										
TOX	1550		1000	ug/L		1100			34.0	20



Anatek Labs, Inc.

Sample Receipt and Preservation Form

WBK0915



Due: 12/01/21

Client Name: Specialty Analytical Project:

(apply Anatek sample label here)

TAT: Normal RUSH: 1 days

Samples Received From: FedEx UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: Yes No Custody Seals Intact: Yes No N/A

Number of Coolers/Boxes: 1 Type of Ice: Ice/Ice Packs Blue Ice Dry Ice None

Packing Material: Bubble Wrap Bags Foam/Peanuts None Other: _____

Cooler Temp As Read (°C): 3.9 Cooler Temp Corrected (°C): 3.8 Thermometer Used: IRI #

Samples Received Intact?	<u>Yes</u>	No	N/A
Chain of Custody Present?	<u>Yes</u>	No	N/A
Samples Received Within Hold Time?	<u>Yes</u>	No	N/A
Samples Properly Preserved?	<u>Yes</u>	No	N/A
VOC Vials Free of Headpace (<6mm)?	<u>Yes</u>	No	N/A
VOC Trip Blanks Present?	<u>Yes</u>	No	N/A
Labels and Chains Agree?	<u>Yes</u>	No	N/A
Total Number of Sample Bottles Received:			

Comments:

Chain of Custody Fully Completed?	<u>Yes</u>	No	N/A
Correct Containers Received?	<u>Yes</u>	No	N/A
Anatek Bottles Used?	<u>Yes</u>	<u>No</u>	Unknown

Record preservatives (and lot numbers, if known) for containers below:

H2SO4 client pros

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

Received/Inspected By: [Signature] Date/Time: 11:33 11/30/21

9011 SE Jannsen Rd
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Date: 11/29

Page: 1 of: 1

Laboratory Project No (internal): 2111290

Project Name: Marion County Leach and

Temperature on Receipt: 14.1 °C

Client: River City Environmental

Project No: PO No: *max len*

Cooling: cooler Shipped Via: client

Address:

Collected by: Randy Lynn

Custody Seal: Y / N Intact / Broken Cooler / Bottle

City, State, Zip: Portland, OR

State Collected: OR WA OTHER

MDL TIER IV EDD

Telephone: 573 - 252-6144

Report To (PM): Randy Lester

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 60 days)

AP Email: AP@Pwerchylisa.com

PM Email: randy.legler@wercityusa.com

*Matrix: A=Air, AQ=Aqueous, L=Liquid, O=Oil, P=Product, S=Soil, SD=Sediment, SL=Solid, W=Water, DW=Drinking Water, GW=Ground Water, SW=Storm Water, WW=Waste Water, M=Miscellaneous

Turn-around Time: Standard (5-7 Business): _____ 3 Day: _____ 2 Day: _____ Next Day: ☒ Same Day: _____

Expedited turn-around requests should be coordinated in advance

Relinquished Date/Time
x  11/29 1:11pm

Received	Date/Time
x <i>Carech</i>	11/29/21 13:11

Relinquished	Date/Time
--------------	-----------

Received	Date/Time
----------	-----------

Relinquished	Date/Time
--------------	-----------

Received _____ Date/Time _____

From: [Randy Legler](#)
To: julie@specialtyanalytical.com; mandy@specialtyanalytical.com
Subject: FW: Trace Metals
Date: Tuesday, November 30, 2021 12:01:55 PM
Attachments: [image002.png](#)
[image003.png](#)

Good afternoon,
Below is the list of metals that need to be tested for.

Randy Legler : Project Manager ♦ River City Environmental, Inc.
PO BOX 30087 : Portland, OR : 97294
5410 NE 109th Ave : Portland, OR : 97220
Direct 503-467-2674 ♦ Cell 503-545-5716 ♦ Office 503-252-6144
randy.legler@rivercityusa.com : www.rivercityusa.com



From: Gramm, Kristen [<mailto:KGramm@covanta.com>]
Sent: Tuesday, November 30, 2021 10:44 AM
To: Randy Legler
Cc: Jonathan Sheckard
Subject: RE: Trace Metals

Test for these.
KG

Element		CASRN ^a
Aluminum	(Al)	7429-90-5
Antimony	(Sb)	7440-36-0
Arsenic	(As)	7440-38-2
Barium	(Ba)	7440-39-3
Beryllium	(Be)	7440-41-7
Cadmium	(Cd)	7440-43-9
Calcium	(Ca)	7440-70-2
Chromium	(Cr)	7440-47-3
Cobalt	(Co)	7440-48-4
Copper	(Cu)	7440-50-8
Iron	(Fe)	7439-89-6
Lead	(Pb)	7439-92-1
Magnesium	(Mg)	7439-95-4
Manganese	(Mn)	7439-96-5
Mercury	(Hg)	7439-97-6
Nickel	(Ni)	7440-02-0
Potassium	(K)	7440-09-7
Selenium	(Se)	7782-49-2
Silver	(Ag)	7440-22-4
Sodium	(Na)	7440-23-5
Thallium	(Tl)	7440-28-0
Vanadium	(V)	7440-62-2
Zinc	(Zn)	7440-66-6

^aChemical Abstract Service Registry Number

From: Randy Legler <randy.legler@rivercityusa.com>
Sent: Tuesday, November 30, 2021 10:11 AM
To: Gramm,Kristen <KGramm@covanta.com>
Cc: Jonathan Sheckard <Jonathan.Sheckard@rivercityusa.com>
Subject: RE: Trace Metals
Importance: High

*** Warning: External message - exercise caution.***

Good morning Kristen,

I know this is a hot button for Covanta, I need the requested information below so we can provide the analytical as requested.

Randy Legler : Project Manager ♦ River City Environmental, Inc.
 PO BOX 30087 : Portland, OR : 97294
 5410 NE 109th Ave : Portland, OR : 97220
 Direct 503-467-2674 ♦ Cell 503-545-5716 ♦ Office 503-252-6144
randy.legler@rivercityusa.com : www.rivercityusa.com



Please consider the environment before printing this e-mail

From: Randy Legler
Sent: Monday, November 29, 2021 3:39 PM
To: mandy@specialtyanalytical.com; julie@specialtyanalytical.com
Cc: Gramm, Kristen; Jonathan Sheckard
Subject: RE: Trace Metals

Good afternoon Mandy & Julie,
I spoke with Kristen with Covanta, and she is going to verify that only RCRA 8 metals needs to be ran on the 6020A. I have added her to the email so she can reply directly to everyone with the requirement.

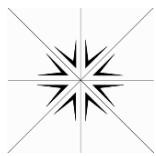
Thank you for all you help.

Randy Legler : Project Manager ♦ River City Environmental, Inc.
PO BOX 30087 : Portland, OR : 97294
5410 NE 109th Ave : Portland, OR : 97220
Direct 503-467-2674 ♦ Cell 503-545-5716 ♦ Office 503-252-6144
randy.legler@rivercityusa.com : www.rivercityusa.com



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9011 SE Jannsen Rd
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

Definition Only

WO#: 2111290
Date: 12/2/2021

Definitions:

KEY TO FLAGS

A: This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was qualified against gasoline calibration standards.

A1: This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was qualified against diesel calibration standards.

A2: This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was qualified against lube oil calibration standards.

A3: The results was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.

A4: The product appears to be aged or degraded.

B: The blank exhibited a positive result greater than the reporting limit for this compound.

CN: See Case Narrative.

E: Result exceeds the calibration range for this compound. The result should be considered an estimate.

F: The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.

FS: Follow-up testing is suggested.

G: Result may be biased high due to biogenic interferences. Clean up is recommended.

H: Sample was analyzed outside recommended holding time.

HT: ☐ At client's request, samples was analyzed outside of recommended holding time.

HP: Sample was analyzed outside recommended holding time due to VOA having pH >2.

J: The results for this analyte is between the MDL and the PQL and should be considered an



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Definition Only

WO#: 2111290
Date: 12/2/2021

Definitions:

estimated concentration.

K: Diesel result is biased high due to amount of Oil contained in the sample.

L: Diesel result is biased high due to amount of Gasoline contained in the sample.

M: Oil result is biased high due to amount of Diesel contained in the sample.

N: Gasoline result is biased high due to amount of Diesel contained in the sample.

MC: Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.

MI: Result is outside control limits due to matrix interference.

NH: Sample matrix is non-homogeneous

MSA: Value determined by Method of Standard Addition.

O: Laboratory Control Standard (LCS) exceeded laboratory control limits but meets CCV criteria. Data meets EPA requirements.

Q: Detection levels elevated due to sample matrix.

R: RPD control limits were exceeded

RF: Duplicate failed due to result being at or near the method-reporting limit.

RP: Matrix spike values exceed established QC limits; post digestion spike is in control.

S: Recovery is outside control limits.

SC: CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.

SL: LCS exceeded recovery control limits, but associated MS/MSD passing. Data meets EPA requirements.
