ATTACHMENT 4

August 6, 2020 Stormwater Laboratory Analysis Reports



City of Portland Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656



August 26, 2020

Peter Abrams MS4

 Work Order
 Project
 Received

 W20H047
 Riot Control Agent Stormwater
 08/06/20 10:23

Enclosed are the results of analysis for the above work order. If you have questions concerning this report, please contact your project coordinator Peter Abrams at 503-823-5533.

Jennifer Shackelford

Jennifer Shackelford

Laboratory Manager





City of Portland Water Pollution Control Laboratory



6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

LABORATORY ANALYSIS REPORT

Project: Riot Control Agent Stormwater

Work Order: W20H047

Received: 8/6/20 10:23 Submitted By: Field Operations Client: MS4

Project Mgr: Peter Abrams

		Sample Collection Date					
Sample	Laboratory ID	Matrix	Туре	Start	End	Qualifier	
ABQ484	W20H047-01	Water	Grab	08/06/20 08:19	08/06/20 08:19	_	
ABQ608	W20H047-02	Water	Grab	08/06/20 08:52	08/06/20 08:52		

Case Narrative

Hexavalent chromium analysis: the subcontract lab indicated that the results for hexavalent chromium are reported as 'dissolved' per their method.

								_
Analyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	
					•	-		
Total Metals								
Total Metals by ICPMS								
ABQ484 : W20H047-01								
Barium	3540 ug/L	12.5	5	B20H192	08/13/20	08/13/20	EPA 200.8	
Chromium	24.8 ug/L	1.00	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Copper	191 ug/L	1.00	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Lead	49.2 ug/L	0.500	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Zinc	2540 ug/L	12.5	5	B20H192	08/13/20	08/13/20	EPA 200.8	
ABQ608 : W20H047-02								
Barium	113 ug/L	2.50	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Chromium	4.43 ug/L	1.00	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Copper	84.9 ug/L	1.00	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Lead	11.8 ug/L	0.500	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Zinc	506 ug/L	2.50	1	B20H192	08/13/20	08/13/20	EPA 200.8	

Reported: 08/26/20 15:07

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Page 2 of 60



City of Portland Water Pollution Control Laboratory



6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Stormwater

Work Order: W20H047

Client: MS4

Received: 08/06/20 10:23

Quality Control Report

Total Metals - QC

Analyte	Result Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch I	B20H192							
Blank (B20H192-BLK1)								
Barium	ND ug/L	0.556					08/13/20 :08/13/20	
Chromium	ND ug/L	0.222					08/13/20 :08/13/20	
Copper	ND ug/L	0.222					08/13/20 :08/13/20	
Lead	ND ug/L	0.111					08/13/20 :08/13/20	
Zinc	ND ug/L	0.556					08/13/20 :08/13/20	
LCS (B20H192-BS1)								
Barium	5.64 ug/L	0.556	5.56		101% (85-115)		08/13/20 :08/13/20	
Chromium	5.24 ug/L	0.222	5.56		94% (85-115)		08/13/20 :08/13/20	
Copper	5.03 ug/L	0.222	5.56		91% (85-115)		08/13/20 :08/13/20	
Lead	5.64 ug/L	0.111	5.56		101% (85-115)		08/13/20 :08/13/20	
Zinc	27.2 ug/L	0.556	27.8		98% (85-115)		08/13/20 :08/13/20	
Duplicate (B20H192-DUP1)		Source: W20H10	2-01					
Barium	81.4 ug/L	0.556		83.7		3 (20)	08/13/20 :08/13/20	
Chromium	0.266 ug/L	0.222		0.305		14 (20)	08/13/20 :08/13/20	
Copper	8.51 ug/L	0.222		8.52		0.2 (20)	08/13/20 :08/13/20	
Lead	0.464 ug/L	0.111		0.481		4 (20)	08/13/20 :08/13/20	
Zinc	19.8 ug/L	0.556		20.1		2 (20)	08/13/20 :08/13/20	
Matrix Spike (B20H192-MS1)		Source: W20H10	2-01					
Barium	89.3 ug/L	0.556	5.56	83.7	101% (70-130)		08/13/20 :08/13/20	
Chromium	5.46 ug/L	0.222	5.56	0.305	93% (70-130)		08/13/20 :08/13/20	
Copper	13.2 ug/L	0.222	5.56	8.52	85% (70-130)		08/13/20 :08/13/20	
Lead	6.33 ug/L	0.111	5.56	0.481	105% (70-130)		08/13/20 :08/13/20	
Zinc	45.5 ug/L	0.556	27.8	20.1	91% (70-130)		08/13/20 :08/13/20	

Definitions

DET Analyte Not Detected at or above the reporting limit Analyte Detected ND Method Reporting Limit MDL Method Detection Limit MRL NR Not Reportable Sample results reported on a dry weight basis dry Percent Recovery Relative Percent Difference % Rec. RPD This analyte is not certified under NELAP

Reported: 08/26/20 15:07

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Date: 8-6-20

Water Pollution Control Laboratory 6543 N. Burlington Ave. Portland, Oregon 97203-4552 Sample Custodian: (503) 823-5696

General Lab: (503) 823-5681

City of Portland
Chain-of-Custody
Bureau of Environmental Services

Work Order #: W20H047

Page

Collected By: MJS/ECP/JXB/

JXL

	AC 8/6/20			
Client Name:	-Strategy/ MS4	 	Project Number (if applicable):	 · · · · · · · · · · · · · · · · · · ·

Project Contact: Barb Adkins **Riot Control Agent Stormwater** Project Name: **Requested Analyses** Special Instructions: Turn-Around-Time Request: Standard (10 business days) Rush (5 business days) Lab Number Other: # of Location Sample Sample Sample Sample Containers Sample Name Code* Date Time Type Matrix Remarks 01 ABQ484 8-6-20 6819 ABQ 608 8 6 20 0852 Received By: Relinquished By: Received By: Relinquished By: Signature: Signature: Signature: 8/6/90 8/6/20 Date: Date: Time: Time: Printed Name: Time: 10 1023 Page 4 of 60

WPCL Cooler Receipt Form

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1	HNO ₃ (1:1) to	pH <2	2000696		0.5mL/250mL; 1.0mL/500mL; 4				50mL cen	trifuge tube
2	H₂SO₄ (18N) t	·			0.4mL/250mL; 0.8mL/500mL;					
3	HCI (1:1) to p				1.0mL/500mL; 2.0mL/1000mL					
4	HCI (1:1) to p				For TOC: 2-5 drops/250mL					
5	NaOH (pellets			4-10 pellets/500mL; 8-20 pelle				1000ml	_	
6	Ammonium S				5ml/250		1			<u>-</u>
Date	Time	Analyst	Sample LI	VIS ID	Bottle ID	Pres. #				
8/6/21	0 1143	MC	W20 H047-	01,02	ß	6	Pre - pr 1.25 ml	esenvel i - additi	in Lield	-01 required routive02
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S:\LAB\Forms\WPCL Cooler Receipt Form February 2020.doc



August 21, 2020

Jennifer Shackelford City of Portland

6543 N. Burlington Ave Portland. OR 97203 ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

Analytical Report for Service Request No: K2006782

RE: Riot Control Agent Stormwater / W20H047

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006782**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes Project Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Chain of Custody
Subcontract Lab Results

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case parrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab W20H047

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SENDING LABORATORY:		RECEIVING LAB	ORATORY:					
City of Portland Water Pol 6543 N. Burlington Ave Portland, OR 97203 Phone: 503-823-5600 Fax: 503-823-5656 Invoice To: Charles Lytle	lution Control Lab	1317 S. 13th Av Kelso, WA 9862 Phone :(360) 57	ALS Environmental 1317 S. 13th Avenue Kelso, WA 98626 Phone :(360) 577-7222 Fax: (360) 636-1068					
WPCL Project Name Riot Control Agent Storr	nwater	X Standar						
Analysis	Due	Expires	Laboratory ID Comments					
Sample ID: W20H047-01	Water	Sampled:08/06/20 08:19						
Out-Perchlorate	08/20/20 17:00	09/03/20 08:19						
Out-Cr+6	08/20/20 17:00	09/05/20 08:19						
Containers Supplied:								
P 250ml (B)	P 250ml (C)							
Sample ID: W20H047-02	Water	Sampled:08/06/20 08:52						
Out-Perchlorate	08/20/20 17:00	09/03/20 08:52						
Out-Cr+6	08/20/20 17:00	09/05/20 08:52						
Containers Supplied:								
P 250ml (B)	P 250ml (C)							

ALS Texted

Received By

Page 1 of 1 Page 12 of 60

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Were samples	s received within th	ie method speci and same day a	fied temperature rangus collected? If not, no rozen Partially Th	es? otate the		# belov			NA Y	и	
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	Sample ID		Bottle Count Bottle Type	Head- space	Broke	рΗ	Reagent	Volume added	Reagent Lot Number	Initials	Time
Notes, Disci	repancies, Reso	lutions:			I						



Subcontract Lab Results

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER



Service Request No:E2000728

Howard Holmes ALS Environmental - Kelso

Laboratory Results for: K2006782

Dear Howard,

Enclosed are the results of the sample(s) submitted to our laboratory August 11, 2020 For your reference, these analyses have been assigned our service request number **E2000728**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

Page 15 of 60



Certificate of Analysis

ALS Environmental - Houston HRMS 10450 Stancliff Rd, Suite 210, Houston TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

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ALS Environmental

Client:ALS KelsoService Request No.:E2000728Project:K2006782Date Received:08/11/20

Sample Matrix: W

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 08/06/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000337: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US Service Request:E2000728

Project: K2006782

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	<u>HIME</u>
E2000728-001	W20H047-01	8/6/2020	0819
E2000728-002	W20H047-02	8/6/2020	0852

Service Request Summary

Folder #: E2000728

Client Name: ALS Environmental - US

Project Name: K2006782

Project Number:

Project Chemist: Corey Grandits

Originating Lab: HOUSTON

Logged By: CGRANDITS

250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

EHRMS-WIC 6C

Location:

Pressure Gas:

Date Received: 08/11/20
Internal Due Date: 8/20/2020

QAP: LAB QAP

Qualifier Set: Lab Standard

Formset: Lab Standard

Merged?: Y

Report to MDL?: Y

P.O. Number: K2006782

EDD: No EDD Specified

HOUST ON CIO4/6850 Lab Samp No. **Client Samp No** Matrix Collected W20H047-01 08/06/20 0819 E2000728-001 Ш Water 08/06/20 0852 W20H047-02 Ш E2000728-002 Water

Page 19 of 60

Service Request Summary

Folder #: E2000728 Pr
Client Name: ALS Environmental - US O

Project Name: K2006782

Project Number:

Project Chemist: Corey Grandits

Originating Lab: HOUSTON

Logged By: CGRANDITS

Date Received: 08/11/20
Internal Due Date: 8/20/2020

QAP: LAB QAP

Qualifier Set: Lab Standard

Formset: Lab Standard

Merged?: Y

Report to MDL?: Y

P.O. Number: K2006782

EDD: No EDD Specified

2 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 6C

Pressure Gas:

Page 20 of 60

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section >=10% front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.
- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal Calibration
Conc CONCentration

Dioxin(s) Polychlorinated dibenzo-p-dioxin(s)

EDL Estimated Detection Limit

EMPC Estimated Maximum Possible Concentration

Flags Data qualifiers

Furan(s) Polychlorinated dibenzofuran(s)

g Grams

ICAL Initial CALibration

ID IDentifier

Ions Masses monitored for the analyte during data acquisition

L Liter (s)

LCS Laboratory Control Sample

DLCS Duplicate Laboratory Control Sample

MB Method Blank

MCL Method Calibration Limit
MDL Method Detection Limit

mL Milliliters

MS Matrix Spiked sample

DMS Duplicate Matrix Spiked sample

NO Number of peaks meeting all identification criteria

PCDD(s) Polychlorinated dibenzo-p-dioxin(s)
PCDF(s) Polychlorinated dibenzofuran(s)

ppb Parts per billion
ppm Parts per million
ppq Parts per quadrillion
ppt Parts per trillion
QA Quality Assurance
QC Quality Control

Ratio Ratio of areas from monitored ions for an analyte

% Rec. Percent recovery

RPD Relative Percent Difference RRF Relative Response Factor

RT Retention Time

SDG Sample Delivery Group S/N Signal-to-noise ratio

TEF Toxicity Equivalence Factor
TEQ Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	Т104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020



Chain of Custody

ALS Environmental - Houston HRMS 10450 Stancliff Rd, Suite 210, Houston TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Howard Holmes

Project Number:

K2006782

Project Manager:

Howard Holmes

QAP:

LAB QAP

Aisc Out 1 None

				Sam	pie		≥
Lab Code	Sample ID	# of Cont.	Matrix	Date	Time	Lab ID	
K2006782-001	W20H047-01	/	Water	8/6/20	0819	Houston Full	Х
K2006782-002	W20H047-02		Water	8/6/20	0852	Houston Full	Х

Test Comments

Misc Out 1 - None

K2006782-001,2

Perchlorate 6850

Folder Comments:

Tier II

Turnaround Requirements	Report Requirements	Invoice Information
RUSH (Surcharges Apply)	I. Results Only	
PLEASE CIRCLE WORK DAYS	II. Results + QC Summaries	PO#
1 2 3 4 5	III. Results + QC and Calibration Summaries	51K2006782
STANDARD	IV. Data Validation Report with Raw Data	
Requested FAX Date:	PQL/MDL/J <u>Y</u>	Bill to
Requested Report Date: 08/20/20	EDD <u>Y</u>	
	RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 STANDARD Requested FAX Date:	RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 STANDARD Requested FAX Date:PQL/MDL/JY FDDY II. Results Only III. Results + QC summaries IV. Data Validation Report with Raw Data

Received By:

Airbill Number:

A	
(ALS)	Environmental

Cooler Receipt Form

Project Chemist i મ

2. Samples received in: Cooler Box Envelope Other	Client/Project	AUS	h		T)	ermometer ID	183	<u> </u>
2. Samples received in: Cooler CBox CEnvelope Other 3. Were custody seals on coolers? Yes No If yes, how many and where? Were they intact? Yes No CN/A Were they signed and dated? Yes No CN/A 4. Packing Material: CInserts CBaggies Bubble Wrap Gel Packs CWet Ice CSleeves Other 5. Foreign or Regulated Soil? Yes No Location of Sampling: Cooler Tracking Number COCID Date Opened Time Opened By CBlant State Sta	Date/Time Received:	Elmizo	lni:	tials: <u>1</u> Da	te/Time Log	ged in:	li lizu lr	nitials (
3. Were custody seals on coolers? Were they intact? Yes ONO ON/A Were they signed and dated? Yes ONO ON/A 4. Packing Material: Clinserts Baggies Bubble Wrap Gel Packs O Wet Ice O Sleeves O Other 5. Foreign or Regulated Soil? OYes ONO Location of Sampling: Cooler Tracking Number COCID Date Opened Opened Opened By College Bland Silvery (College Bland Silvery)	1. Method of delivery:					○ Courier ○ ○ Cl	ient	
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. Did all bottles arrive in good condition (not broken, no signs of leakage)? . Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? (Yes ONo								
Were appropriate bottles/containers and volumes received for the requested tests? (No) (No	Did all bottles arrive in go Were all sample labels co Were appropriate bottles	ood condition (not bro mplete (i.e., sample ID, /containers and volum	ken, no sigi , analysis, p ies received	ns of leakage)? reservation, etc)? d for the requeste		GYes ON	10 10 10	

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS Page 22 of 55

Page 27 of 60



10450 Stancliff Rd., Suite 210 Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental - Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS 10450 Stancliff Rd., Suite 210, Houston, TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Preparation Information Benchsheet

Prep Run#: 363303

Prep WorkFlow: GenExt28Day Status: Prepped Semivoa GCMS/GRIVERA **Prep Date/Time:** 8/11/20 15:47 Team: Prep Method: Method

#	Lab Code	Client ID	B#	Method /Test	рН	CI	Matrix	Amt. Ext.	Sample Description
1	E2000711-001	W20H006-01	.01	6850/C1O4	=		Water	10mL	
2	E2000711 - 002	W20H006-02	.01	6850/C1O4			Water	10mL	
3	E2000723-001	PT Lot 8213-53	.01	6850/ClO4			Water	10mL	
4	E2000724 - 001	GW-MW-29D-20200806-01	.01	6850/C1O4			Water	10mL	
5	E2000724 - 002	GW-MW-66D2-20200806-01	.01	6850/C1O4			Water	10mL	
6	E2000724 - 003	GW-MW-89D-20200806-01	.01	6850/CIO4			Water	10mL	
7	E2000724 - 004	GW-MW-98D-20200806-01	.01	6850/C1O4			Water	10mL	
8	E2000728-001	W20H047-01	.01	6850/C1O4			Water	10mL	
9	E2000728-002	W20H047-02	.01	6850/CIO4			Water	10mL	
10	E2000729 - 001	W20H048-01	.01	6850/C1O4			Water	10mL	
11	EQ2000337-01	MB		6850/ClO4			Liquid	10mL	
12	EQ2000337-02	LCS		6850/ClO4			Liquid	10mL	
13	EQ2000337-03	DLCS		6850/ClO4			Liquid	10mL	

Spiking Solutions

Name:	Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID	202037	Logbook Ref:	Sodium Perchlorate	Expires On:	05/22/2021
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100.00μL E2000723-001 EQ2000337**-**01 100.00μL EQ2000337**-**02 100.00μL EQ2000337-03 100.00μL

Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020 Name:

EQ2000337-02 100.00μL EQ2000337-03 $100.00\mu L$

Preparation Steps

Step: Preparation Started: 8/11/20 15:47 8/11/20 17:00 Finished: By: **GRIVERA**

Comments

-01	TILL	ICI	us.	
	1			_

Page 30 of 60 iewed By: Date:

Preparation Information Benchsheet

Prep Run#:363303Prep WorkFlow:GenExt28DayStatus:PreppedTeam:Semivoa GCMS/GRIVERAPrep Method:MethodPrep Date/Time:8/11/20 15:47

Pa	in of Custody			
ge 3	in of Custody linquished By:	Date:	Extracts E	xamined
으	ceived By:	Date:	Yes	No
ി	· ·			

ted 8/19/20 16:04



Analytical Results

ALS Environmental - Houston HRMS 10450 Stancliff Rd., Suite 210, Houston, TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US

Service Request: E2000728 Project: K2006782 **Date Collected:** 8/6/20 0819 **Date Received:** 8/11/20 Sample Matrix: Water

Sample Name: W20H047-01 Units: µg/L Lab Code: E2000728-001 Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 Prep Method: Method

					Dilution	Date	Date	Extraction	Analysis	
Analyte Name	Result Q	LOQ	LOD	MDL	Factor	Extracted	Analyzed	Lot	Lot	Note
Perchlorate	320	1 00	0.500	0.250	10	8/11/20	8/20/20 14:27	363303	691901	

Form 1A Printed 8/21/20 9:46

Page 33 of 60 20-0000560 $\verb|\alprews001\rangle starlims LIMSReps\| Analytical Report.rpt|$ SuperSet Reference: Page 28 of 55

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US

Project: K2006782
Sample Matrix: Water

 Service Request:
 E2000728

 Date Collected:
 8/ 6/20 0852

 Date Received:
 8/11/20

 Sample Name:
 W20H047-02

 Lab Code:
 E2000728-002

Units: μg/L Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

Analyte Name	Result Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	49.2	0.100	0.0500	0.0250	1	8/11/20	8/19/20 20:46	363303	691901	

Printed 8/21/20 9:46 Form 1A

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US Service Request: E2000728

Project:K2006782Date Collected:NASample Matrix:WaterDate Received:NA

 Sample Name:
 Method Blank
 Units:
 μg/L

 Lab Code:
 EQ2000337-01
 Basis:
 NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

Analyte Name	Result Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND U	0.100	0.0500	0.0250	1	8/11/20	8/19/20 12:38	363303	691901	

Printed 8/21/20 9:46 Form 1A

\\alprews001\starlims\$\LIMSReps\AnalyticalReport.rpt \qquad Page 30 of 55 \qquad SuperSet Reference: \qquad \qquad 20-00056 \qquad Page 35 of 60



Accuracy & Precision

ALS Environmental - Houston HRMS 10450 Stancliff Rd., Suite 210, Houston TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

QA/QC Report

Client: ALS Environmental - US

K2006782 Project: Water Sample Matrix:

Service Request: E2000728 **Date Analyzed:** 8/19/20

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: Prep Method:

6850 Method Units: µg/L Basis: NA

Extraction Lot: 363303

Lab Control Sample

Duplicate Lab Control Sample

E02000337-02

EO2000337-03

	,	Spike	2	Spike			% Rec		RPD	
Analyte Name	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit	
Perchlorate	9.42	10.0	94	9.92	10.0	99	80 - 120	5	15	

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 8/21/20 9:46

Form 3C

Page 37 of 60 20-0000560

Analytical Report

Client: ALS Environmental - US Service Request: E2000728

Project:K2006782Date Collected:NASample Matrix:WaterDate Received:NA

 Sample Name:
 Lab Control Sample
 Units: μg/L

 Lab Code:
 EQ2000337-02
 Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

Analyte Name	Result Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	9.42	0.100	0.0500	0.0250	1	8/11/20	8/19/20 12:46	363303	691901	

Printed 8/21/20 9:46 Form 1A

Analytical Report

Client: ALS Environmental - US Service Request: E2000728

Project:K2006782Date Collected:NASample Matrix:WaterDate Received:NA

Sample Name:Duplicate Lab Control SampleUnits: μg/LLab Code:EQ2000337-03Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

Analyte Name	Result Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	9.92	0.100	0.0500	0.0250	1	8/11/20	8/19/20 12:53	363303	691901	

Printed 8/21/20 9:46 Form 1A



Service Request No:K2006782

Jennifer Shackelford City of Portland 6543 N. Burlington Ave Portland, OR 97203

Laboratory Results for: Riot Control Agent Stormwater

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006782**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Brady Kalkman

Jamanesto

For Janice Jaeger

Project Manager



Narrative Documents

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Client:Portland, City ofService Request: K2006782Project:Riot Control Agent StormwaterDate Received: 08/07/2020

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 08/07/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Janan Say	
Approved by Date	08/18/2020



SAMPLE DETECTION SUMMARY

CLIENT ID: W20H047-01						
Analyte	Results	Flag	MDL	MRL	Units	Method
Chromium, Hexavalent, Dissolved	1.80		0.05	0.10	ug/L	218.6
CLIENT ID: W20H047-02		Lab	ID: K2006	782-002		
Analyte	Results	Flag	MDL	MRL	Units	Method
Chromium, Hexavalent, Dissolved	0.272		0.010	0.020	ug/L	218.6



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Client: Portland, City of Service Request:K2006782

Project: Riot Control Agent Stormwater/W20H047

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	<u>HME</u>
K2006782-001	W20H047-01	8/6/2020	0819
K2006782-002	W20H047-02	8/6/2020	0852

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Howard Holmes

Project Name:

Riot Control Agent Stormwater

Project Number:

W20H047

Project Manager:

Jennifer Shackelford City of Portland

Company: QAP:

LAB QAP

Cr6 D LL 218.6 LL

Airbill Number:

Lab Code	Client Sample ID	# of Cont.	Matrix	Sam _l Date		Date Received	Send To	
K2006782-001	W20H047-01	1	Water	8/6/20	0819	8/7/20	ROCHESTER	II
K2006782-002	W20H047-02	1	Water	8/6/20	0852	8/7/20	ROCHESTER	П

2 CAG 2186 LL

Folder Comments:

Tier II

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.	RUSH (Surcharges Apply)	1. Results Only	
AERES.Data@asgiobal.voiii.	PLEASE CIRCLE WORK DAYS	11. Results + QC Summaries	PO#
Send report to ALKIS. Data & Howards Holmes	1 2 13 4 5	III. Results + QC and Calibration Summaries	51K2006782
7 16 C -1 Haines	STANDARD	IV. Data Validation Report with Raw Data	
4 DOWONA CITOURES	Requested FAX Date:	PQL/MDL/J <u>Y</u>	Bill to
pH Checked	Requested Report Date: 08/20/20	EDD <u>Y</u> K200	6782 5
	World &	City of Partie	

Page 41 of 55

(ALS)

Cooler Receipt and Preservation Check Form

K2006782	5	_
City of Portland Riot Control Agent Stormwater		

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	ed on <u>Solfal</u>	<u> </u>	by: <u>∬</u> ∑	<u>, </u>		COU	RIER:	ALS	UPS	FEDI	EX) VE	LOCITY	CLIEN	Т	
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Custody	papers proper	ly completed (in	k, signe	xd)? (ΥN	. 5b	Did V	OA via	ls, Alk,	or Sülfi	de have :	sig* bubb		N	
Did all bo	ottles arrive in	good condition (unbrok	en)? (Ý N	6	Where	e did the	bottles	origin	ate?	ALS/R	oc (CLIE	NT/
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Observed Te	mp (°C)	23													
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Cooler Bre	eakdown/Prese Vere all bottle	orage location: rvation Check** labels complete (: Date	·:	V/II		Time:	_ at		within b		of sampl	ing?	Y	N
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CHUK HTR FLDT
CHUK SUB HGFB
ALS LL3541

Labels secondary reviewed by: _______
PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm: WC > 1 in. diameter

1/16/2020



Miscellaneous Forms

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL Method Reporting Limit. Also known as:
- LOQ Limit of Quantitation (LOQ)

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a

substance allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

POL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring
TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but

greater than or equal to the MDL.

Analyst Summary report

Client: Portland, City of Service Request: K2006782

Project: Riot Control Agent Stormwater/W20H047

Sample Name: W20H047-01 Date Collected: 08/6/20

Lab Code: K2006782-001 **Date Received:** 08/7/20

Sample Matrix: Water

Analysis Method Extracted/Digested By Analyzed By

218.6 LL CWOODS

Sample Name: W20H047-02 Date Collected: 08/6/20

Lab Code: K2006782-002 **Date Received:** 08/7/20

Sample Matrix: Water

Analysis Method Extracted/Digested By Analyzed By

218.6 LL CWOODS



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Preparation
Method
3050B
3050B
3005A/3010A
3005A/3010A
3060A
DI extraction
the preparation
cal method



Sample Results

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



General Chemistry

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Analytical Report

Client: Portland, City of

Service Request: K2006782 **Date Collected:** 08/06/20 08:19 **Project:** Riot Control Agent Stormwater/W20H047

Sample Matrix: Water **Date Received:** 08/07/20 12:45

W20H047-01 Basis: NA Sample Name:

Lab Code: K2006782-001

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	1.80	ug/L	0.10	0.05	5	08/14/20 19:09	

Analytical Report

Client: Portland, City of

Project: Riot Control Agent Stormwater/W20H047 Date Collected: 08/06/20 08:52

Sample Matrix: Water Date Received: 08/07/20 12:45

Sample Name: W20H047-02 Basis: NA

Lab Code: K2006782-002

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	0.272	ug/L	0.020	0.010	1	08/14/20 18:26	

Service Request: K2006782



QC Summary Forms

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General Chemistry

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Analytical Report

Client: Portland, City of Service Request: K2006782

Project:Riot Control Agent Stormwater/W20H047Date Collected:NASample Matrix:WaterDate Received:NA

Sample Name: Method Blank Basis: NA

Lab Code: K2006782-MB

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	ND U	ug/L	0.020	0.010	1	08/14/20 12:45	

QA/QC Report

Client: Portland, City of

Riot Control Agent Stormwater/W20H047

Sample Matrix:

Project:

Water

Service Request: K2006782 Date Analyzed: 08/14/20

Lab Control Sample Summary General Chemistry Parameters

Units:ug/L Basis:NA

Lab Control Sample

K2006782-LCS

	Analytical				
Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6	0.214	0.200	107	90-110

Printed 8/18/2020 4:36:25 PM

Superset Reference:20-0000559651 rev 00



City of Portland Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656



August 26, 2020

Peter Abrams MS4

 Work Order
 Project
 Received

 W20H048
 Riot Control Agent Stormwater
 08/06/20 10:23

Enclosed are the results of analysis for the above work order. If you have questions concerning this report, please contact your project coordinator Peter Abrams at 503-823-5533.

Jennifer Shackelford

Jennifer Shackelford

Laboratory Manager





City of Portland Water Pollution Control Laboratory



6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

LABORATORY ANALYSIS REPORT

Project: Riot Control Agent Stormwater

Work Order: **W20H048**Received: 8/6/20 10:23

Submitted By: Field Operations

Client: MS4

Project Mgr: Peter Abrams

		Sample Collection Date							
Sample	Laboratory ID	Matrix	Type	Start	End	Qualifier			
ABQ669	W20H048-01	Water	Grab	08/06/20 08:53	08/06/20 08:53				

Case Narrative

Hexavalent chromium analysis: the subcontract lab indicated that the results for hexavalent chromium are reported as 'dissolved' per their method.

Analyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	Qualifier
ABQ669 : W20H048-01								
Total Metals								
Total Metals by ICPMS								
Barium	48.7 ug/L	2.50	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Chromium	2.83 ug/L	1.00	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Copper	143 ug/L	1.00	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Lead	5.65 ug/L	0.500	1	B20H192	08/13/20	08/13/20	EPA 200.8	
Zinc	621 ug/L	2.50	1	B20H192	08/13/20	08/13/20	EPA 200.8	

Reported: 08/26/20 15:07

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Page 2 of 58



City of Portland Water Pollution Control Laboratory



6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Stormwater

Work Order: W20H048

Client: MS4

Received: 08/06/20 10:23

Quality Control Report

Total Metals - QC

			Spike	Source	%Rec	RPD	Prepared:	
Analyte	Result Ur	its MRL	Level	Result	(Limits)	(Limit)	Analyzed	Qualifier
Total Metals by ICPMS - Batch I	B20H192							
Blank (B20H192-BLK1)								
Barium	ND ug/L	0.556					08/13/20 :08/13/20	
Chromium	ND ug/L	0.222					08/13/20 :08/13/20	
Copper	ND ug/L	0.222					08/13/20 :08/13/20	
Lead	ND ug/L	0.111					08/13/20 :08/13/20	
Zinc	ND ug/L	0.556					08/13/20 :08/13/20	
LCS (B20H192-BS1)								
Barium	5.64 ug/L	0.556	5.56		101% (85-115)		08/13/20 :08/13/20	
Chromium	5.24 ug/L	0.222	5.56		94% (85-115)		08/13/20 :08/13/20	
Copper	5.03 ug/L	0.222	5.56		91% (85-115)		08/13/20 :08/13/20	
Lead	5.64 ug/L	0.111	5.56		101% (85-115)		08/13/20 :08/13/20	
Zinc	27.2 ug/L	0.556	27.8		98% (85-115)		08/13/20 :08/13/20	
Duplicate (B20H192-DUP1)		Source: W20H10	2-01					
Barium	81.4 ug/L	0.556		83.7		3 (20)	08/13/20 :08/13/20	
Chromium	0.266 ug/L	0.222		0.305		14 (20)	08/13/20 :08/13/20	
Copper	8.51 ug/L	0.222		8.52		0.2 (20)	08/13/20 :08/13/20	
Lead	0.464 ug/L	0.111		0.481		4 (20)	08/13/20 :08/13/20	
Zinc	19.8 ug/L	0.556		20.1		2 (20)	08/13/20 :08/13/20	
Matrix Spike (B20H192-MS1)		Source: W20H10	2-01					
Barium	89.3 ug/L	0.556	5.56	83.7	101% (70-130)		08/13/20 :08/13/20	
Chromium	5.46 ug/L	0.222	5.56	0.305	93% (70-130)		08/13/20 :08/13/20	
Copper	13.2 ug/L	0.222	5.56	8.52	85% (70-130)		08/13/20 :08/13/20	
Lead	6.33 ug/L	0.111	5.56	0.481	105% (70-130)		08/13/20 :08/13/20	
Zinc	45.5 ug/L	0.556	27.8	20.1	91% (70-130)		08/13/20 :08/13/20	

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference
*	This analyte is not certified under NEL AP		

Reported: 08/26/20 15:07

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Water Pollution Control Laboratory 6543 N. Burlington Ave. Portland, Oregon 97203-4552 Sample Custodian: (503) 823-5696 General Lab: (503) 823-5681



Date: 8/6/2020

Work Order #: W20H048

Collected By: JXL, JXB

	MC 8/6/20	
Client Name:	- Strategy/ MS4	Project Number (if applicable):
Project Name:	Riot Control Agent Stormwater	Project Contact: Barb Adkins

Requested Analyses Special Instructions: Turn-Around-Time Request: Standard (10 business days) Rush (5 business days) Lab Number ☐ Other: Total Metal # of Sample Sample Location Sample Sample Containers Remarks Sample Name Code* Date Time Type Matrix ABQ669 ACIACZO 0853 ST Received By: Relinquished By: Received By: Relinquished By: Date: Signature: Date: Signature: 8/6/20 Time: 5/6/20 Printed Name: Time: 1023

				WPCL COOL	err	keceipt r	orm				•
						er Receipt	Form Fil	led O	ut By: _	MC	
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2	H ₂ SO ₄ (200014	+	4mL/250mL;					
3	HCI (1:					0mL/500mL;					
4	HCI (1:				+	or TOC: 2-5 d					
5	NaOH (pellets)	to pH >12			10 pellets/500			s/1000m	L	
ò	Ammoni	um Sulf	Pale Buffer	2001073		5mL/250					
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										<u></u>	

S:\LAB\Forms\WPCL Cooler Receipt Form February 2020.doc



August 21, 2020

Jennifer Shackelford City of Portland

6543 N. Burlington Ave Portland. OR 97203 ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

Analytical Report for Service Request No: K2006781

RE: Riot Control Agent Stormwater / W20H048

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006781**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Chain of Custody
Subcontract Lab Results

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case parrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab W20H048

		W20H048		1(200/0781					
SENDING LABORATORY:		RECEIVING LA	RECEIVING LABORATORY:						
City of Portland Water Po	Illution Control Lab	ALS Environme	ALS Environmental						
6543 N. Burlington Ave		1317 S. 13th Av	1317 S. 13th Avenue						
Portland, OR 97203		Kelso, WA 9862	Kelso, WA 98626						
Phone: 503-823-5600		Phone :(360) 5	Phone :(360) 577-7222						
Fax: 503-823-5656	Fax: (360) 636-	1068							
Invoice To: Charles Lytle									
WPCL Project Name	mwata	X Standa	TURNAROUND REQUEST X Standard						
Riot Control Agent Stor	mwater		_day(s)						
Analysis	Due	Expires	Laboratory ID	Comments					
Sample ID: W20H048-01	Water	Sampled:08/06/20 08:53							
Out-Perchlorate	08/20/20 17:	00 09/03/20 08:53							
Out-Cr+6	08/20/20 17:	00 09/05/20 08:53							
Containers Supplied:									
P 250ml (B)	P 250ml (C)								

ALS Textel.

Released By Date Received By HS 817/20 0915
Released By Date Received By Date

Received By Date

Received By Date

Page 1 of 1 Page 12 of 58

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Subcontract Lab Results

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com



Service Request No:E2000729

Howard Holmes ALS Environmental - Kelso

Laboratory Results for: K2006781

Dear Howard,

Enclosed are the results of the sample(s) submitted to our laboratory August 11, 2020 For your reference, these analyses have been assigned our service request number **E2000729**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager



Certificate of Analysis

ALS Environmental - Houston HRMS 10450 Stancliff Rd, Suite 210, Houston TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

ALS Environmental

Client:ALS KelsoService Request No.:E2000729Project:K2006781Date Received:08/11/20

Sample Matrix: W

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 08/11/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000337: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental Service Request:E2000729

Project: K2006781

SAMPLE CROSS-REFERENCE

<u>SAMPLE # CLIENT SAMPLE ID</u> <u>DATE</u> <u>TIME</u> E2000729-001 W20H048-01 8/6/2020 0853

Service Request Summary

Folder #: E2000729

Client Name: ALS Environmental - US

Project Name: K2006781

Project Number:

Project Chemist: Corey Grandits

Originating Lab: HOUSTON

Logged By: CGRANDITS

250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

EHRMS-WIC 6C

Location:

Pressure Gas:

Date Received: 08/11/20
Internal Due Date: 8/20/2020

QAP: LAB QAP

Qualifier Set: Lab Standard

Formset: Lab Standard

Merged?: Y

Report to MDL?: Y

P.O. Number: K2006781

EDD: No EDD Specified

Page 19 of 58

Folder #: E2000729

Client Name: ALS Environmental - US

Project Name: K2006781

Project Number:

Service Request Summary

Project Chemist: Corey Grandits

Originating Lab: HOUSTON

Logged By: CGRANDITS

Date Received: 08/11/20
Internal Due Date: 8/20/2020

QAP: LAB QAP

Qualifier Set: Lab Standard

Formset: Lab Standard

Merged?: Y

Report to MDL?: Y

P.O. Number: K2006781

EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 6C

Pressure Gas:

Page 20 of 58

nted 8/21/2020 10:16:44 AM

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section >=10% front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.
- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal Calibration
Conc CONCentration

Dioxin(s) Polychlorinated dibenzo-p-dioxin(s)

EDL Estimated Detection Limit

EMPC Estimated Maximum Possible Concentration

Flags Data qualifiers

Furan(s) Polychlorinated dibenzofuran(s)

g Grams

ICAL Initial CALibration

ID IDentifier

Ions Masses monitored for the analyte during data acquisition

L Liter (s)

LCS Laboratory Control Sample

DLCS Duplicate Laboratory Control Sample

MB Method Blank

MCL Method Calibration Limit
MDL Method Detection Limit

mL Milliliters

MS Matrix Spiked sample

DMS Duplicate Matrix Spiked sample

NO Number of peaks meeting all identification criteria

PCDD(s) Polychlorinated dibenzo-p-dioxin(s) PCDF(s) Polychlorinated dibenzofuran(s)

ppb Parts per billion
ppm Parts per million
ppq Parts per quadrillion
ppt Parts per trillion
QA Quality Assurance
QC Quality Control

Ratio Ratio of areas from monitored ions for an analyte

% Rec. Percent recovery

RPD Relative Percent Difference RRF Relative Response Factor

RT Retention Time

SDG Sample Delivery Group S/N Signal-to-noise ratio

TEF Toxicity Equivalence Factor
TEQ Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	Т104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020



Chain of Custody

ALS Environmental - Houston HRMS 10450 Stancliff Rd, Suite 210, Houston TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

ALS Environmental Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

Time

0853

8/6/20

Lab ID

Houston Full

Misc Out None

Х

ALS Contact: Howard Holmes

Project Number: K2006781

Project Manager: Howard Holmes

QAP: LAB QAP

Sample
Lab Code Sample ID # of Cont. Matrix Date

Test Comments

Misc Out 1 - None

K2006781-001

W20H048-01

K2006781-001

Perchlorate 6850

Received By:

Water

Folder Comments:

nguished By:

Tier II

Special Instructions/Comments Turnaround Requirements Report Requirements Please provide the electronic (PDF and EDD) report to the following e-mail address: Invoice Information ALKLS.Data@alsglobal.com. √ Results Only RUSH (Surcharges Apply) II. Results + QC Summaries PLEASE CIRCLE WORK DAYS Send report & EDD to ALKLEO Datas & Howard - to lives PO# 1 2 3 4 5 __ III. Results + QC and Calibration Summaries 51K2006781 __ STANDARD _ IV. Data Validation Report with Raw Data Requested FAX Date: Bill to PQL/MDL/J <u>Y</u> - Test is On Hold P - Test is Authorized for Prep Only **EDD** <u>Y</u> Requested Report Date: _08/20/20

Page 21 of 53

3/11/20 1616

Airbill Number:

A	
(ALS)	Environmental

Cooler Receipt Form

Project Chemist i h

2. Samples received in: Cooler C Box 3. Were custody seals on coolers? Yes Were they intact? Yes Were they signed and dated? Yes	ed Ex OUP CEnvelope C No No No No No No No No	Other	Courier CC	AIRD	tials (%
2. Samples received in: Cooler CBox 3. Were custody seals on coolers? Yes Were they intact? Yes Were they signed and dated? Yes	C Envelope C No No CN/A	Other		ient	
3. Were custody seals on coolers? Were they intact? Yes Were they signed and dated? Yes	ONO ON/A	If yes, how m	any		
Were they intact? CYes Were they signed and dated? CYes	ONO ON/A		any		
Were they signed and dated? (Yes	ONO ON/A	and where:			
Were they signed and dated? / //es 4. Packing Material: / Inserts / Baggies / Bub	○No ON/A				
4. Packing Material: Clnserts & Baggies Bub					
	ble Wrap Gel	Packs () Wet	lce 🦳 Sleeves (○ Other	
5. Foreign or Regulated Soil? Yes	•	n of Sampling:		P	
		Time		Temp.	Temp
Cooler Tracking Number Co	OCID Date Ope	ned Opened	Opened By	, ,	Blank?
-	85922	1977	हिंद	3.2	冰
					Γ!
Were custody papers properly filled out (ink, signed Did all bottles arrive in good condition (not broken, Were all sample labels complete (i.e., sample ID, and Were appropriate bottles/containers and volumes rown by Did sample labels and tags agree with custody doctors, Discrepancies, & Resolutions:	no signs of leakag llysis, preservation eceived for the req	, etc)?	OYes ON OYes ON OYes ON OYes ON	10 10 10	

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS Page 22 of 53

Page 27 of 58



10450 Stancliff Rd., Suite 210 Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental - Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS 10450 Stancliff Rd., Suite 210, Houston, TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 363303 Prep WorkFlow: GenExt28Day Status: Prepped

Semivoa GCMS/GRIVERA **Prep Date/Time:** 8/11/20 15:47 Team: Prep Method: Method

#	Lab Code	Client ID	B#	Method /Test	рН	CI	Matrix	Amt. Ext.	Sample Description
1	E2000711-001	W20H006-01	.01	6850/C1O4			Water	10mL	
2	E2000711-002	W20H006-02	.01	6850/C1O4			Water	10mL	
3	E2000723-001	PT Lot 8213-53	.01	6850/C1O4			Water	10mL	
4	E2000724-001	GW-MW-29D-20200806-01	.01	6850/C1O4			Water	10mL	
5	E2000724-002	GW-MW-66D2-20200806-01	.01	6850/C1O4			Water	10mL	
6	E2000724-003	GW-MW-89D-20200806-01	.01	6850/C1O4			Water	10mL	
7	E2000724-004	GW-MW-98D-20200806-01	.01	6850/C1O4			Water	10mL	
8	E2000728-001	W20H047-01	.01	6850/C1O4			Water	10mL	
9	E2000728-002	W20H047-02	.01	6850/C1O4			Water	10mL	
10	E2000729-001	W20H048-01	.01	6850/C1O4			Water	10mL	
11	EQ2000337-01	MB		6850/C1O4			Liquid	10mL	
12	EQ2000337-02	LCS		6850/CIO4			Liquid	10mL	
13	EQ2000337-03	DLCS		6850/C1O4			Liquid	10mL	

Spiking Solutions

Name:	Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4		202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
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100.00μL E2000723-001 EQ2000337**-**01 100.00μL EQ2000337**-**02 100.00μL EQ2000337-03 100.00μL

Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020 Name:

EQ2000337-02 100.00μL EQ2000337-03 100.00μL

Preparation Steps

Step: Preparation Started: 8/11/20 15:47 8/11/20 17:00 Finished: By: **GRIVERA**

Comments

Cor	nments:	
	'	

Page 30 of 58 iewed By: Date:

Preparation Information Benchsheet

Prep Run#: 363303 Prep WorkFlow: GenExt28Day Status: Prepped

Team: Semivoa GCMS/GRIVERA Prep Method: Method **Prep Date/Time:** 8/11/20 15:47

Pa	in of Custody			
ge 3	in of Custody linquished By:	Date:	Extracts E:	xamined
<u>-</u>	ceived By:	Date:	Yes	No
lσ	·			



Analytical Results

ALS Environmental - Houston HRMS 10450 Stancliff Rd., Suite 210, Houston, TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

Analytical Report

Client: ALS Environmental - US

Service Request: E2000729 Project: K2006781 **Date Collected:** 8/6/20 0853 **Date Received:** 8/11/20 Sample Matrix: Water

Sample Name: W20H048-01 Units: µg/L Lab Code: E2000729-001 Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 Prep Method: Method

					Dilution	Date	Date	Extraction	Analysis	
Analyte Name	Result Q	LOQ	LOD	MDL	Factor	Extracted	Analyzed	Lot	Lot	Note
Perchlorate	10.2	0.100	0.0500	0.0250	1	8/11/20	8/19/20 20:54	363303	691901	

Form 1A Printed 8/21/20 10:03

Analytical Report

Client: ALS Environmental - US Service Request: E2000729

Project:K2006781Date Collected:NASample Matrix:WaterDate Received:NA

 Sample Name:
 Method Blank
 Units:
 μg/L

 Lab Code:
 EQ2000337-01
 Basis:
 NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

Analyte Name	Result Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND U	0.100	0.0500	0.0250	1	8/11/20	8/19/20 12:38	363303	691901	

Printed 8/21/20 10:03 Form 1A



Accuracy & Precision

ALS Environmental - Houston HRMS 10450 Stancliff Rd., Suite 210, Houston TX 77099 Phone (713)266-1599 Fax (713)266-0130 www.alsglobal.com

QA/QC Report

Client: ALS Environmental - US Service Request: E2000729 K2006781 Project: **Date Analyzed:** 8/19/20

Water Sample Matrix:

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

6850 **Analytical Method:** Units: µg/L Prep Method: Method Basis: NA

Extraction Lot: 363303

Lab Control Sample **Duplicate Lab Control Sample**

	ŀ	EQ2000337 - 02	2		EQ2000337 - 0.					
		Spike			Spike			% Rec		
Analyte Name	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit	
Perchlorate	9.42	10.0	94	9.92	10.0	99	80 - 120	5	15	

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 8/21/20 10:03

Form 3C

Page 36 of 58 20-0000560

Analytical Report

Client: ALS Environmental - US Service Request: E2000729

Project:K2006781Date Collected:NASample Matrix:WaterDate Received:NA

 Sample Name:
 Lab Control Sample
 Units: μg/L

 Lab Code:
 EQ2000337-02
 Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

					Dilution	Date	Date	Extraction	Analysis	
Analyte Name	Result Q	LOQ	LOD	MDL	Factor	Extracted	Analyzed	Lot	Lot	Note
Perchlorate	9.42	0.100	0.0500	0.0250	1	8/11/20	8/19/20 12:46	363303	691901	

Printed 8/21/20 10:03 Form 1A

Analytical Report

Client: ALS Environmental - US Service Request: E2000729

Project:K2006781Date Collected:NASample Matrix:WaterDate Received:NA

 Sample Name:
 Duplicate Lab Control Sample

 Units:
 μg/L

Lab Code: EQ2000337-03 Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850 **Prep Method:** Method

					Dilution	Date	Date	Extraction	Analysis	
Analyte Name	Result Q	LOQ	LOD	MDL	Factor	Extracted	Analyzed	Lot	Lot	Note
Perchlorate	9.92	0.100	0.0500	0.0250	1	8/11/20	8/19/20 12:53	363303	691901	

Printed 8/21/20 10:03 Form 1A



Service Request No:K2006781

Jennifer Shackelford City of Portland 6543 N. Burlington Ave Portland, OR 97203

Laboratory Results for: Riot Control Agent Stormwater

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006781**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Brady Kalkman

Jamanesto

For

Janice Jaeger

Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | FAX +1 585 288 8475

5380 | FAX +1 585 288 8475 ALS Group USA, Corp.

dba ALS Environmental



Narrative Documents

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Client:Portland, City ofService Request: K2006781Project:Riot Control Agent StormwaterDate Received: 08/07/2020

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 08/07/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Date 08/		Cym armag	χ		
	pproved by	by\		Date	08/18/2020

Clamate took



SAMPLE DETECTION SUMMARY

CLIENT ID: W20H048-01		Lab	ID: K2006	781-001		
Analyte	Results	Flag	MDL	MRL	Units	Method
Chromium, Hexavalent, Dissolved	0.352		0.010	0.020	ug/L	218.6



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Client: Portland, City of Service Request:K2006781

Project: Riot Control Agent Stormwater/W20H048

SAMPLE CROSS-REFERENCE

<u>SAMPLE # CLIENT SAMPLE ID</u> <u>DATE</u> <u>TIME</u> K2006781-001 W20H048-01 8/6/2020 0853

Printed 8/18/2020 4:35:10 PM Page 39 of 53 Page 44 of 58

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Howard Holmes

Project Name:

Riot Control Agent Stormwater

Project Number:

W20H048

Project Manager:

Jennifer Shackelford City of Portland

Company: QAP:

LAB QAP

Cr6 D LL 218.6 LL

					Samj	ple	Date		
Lab Code	Client Sample ID	# of Cont.		Matrix	Date	Time	Received	Send To	
K2006781-001	W20H048-01		ſ	Water	8/6/20	0853	8/7/20	ROCHESTER	11

1 CA16 218.6 LL 862020 091.53

Folder Comments:

Tier II

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS. Data@alsglobal.com.	RUSH (Surcharges Apply)	I. Results Only	
	PLEASE CIRCLE WORK DAYS	II. Results + QC Summarics	PO#
Send report 4000 to	1 2 3 4 5	III. Results + QC and Calibration Summaries	51K2006781
Send report & ETDD to ALKLSO Data & Houler do Holices	STANDARD	IV. Data Validation Report with Raw Data	Bill to
	Requested FAX Date:	PQL/MDL/J <u>Y</u> EDD Y	BIII to
pH Checked	Requested Report Date: 08/20/20		781 5 <u>-</u>
	that the dia	City of Portland Riot Control Agen	

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ALS)11	_
· / / / /	7

Cooler Receipt and Preservation Check Form



oject/Clien		- 4	77											
oler received	1 on <u>541720</u>	<u>1910 </u>	by:∭∑		~	COURIER:		•						
Were Cust	tody seals on	outside of cooler	?	(YN	5a Perch	lorate s	amples	have req	uired hea	dspace?	?	Y 1(NA
Custody p	papers proper	ly completed (inl	k, signe	d)? (ΥN	5b Did V	OA vial	s, Alk,o	r Súlfide	e have sig	* bubb	les?	YN	(NA/
Did all bot	tles arrive in g	good condition (unbrok	en)?	Ŷ) N	6 Wher	e did the	bottles	originat	e?	ALS/R	oc (CLIE	TP.
Circle: W	et Ice Dry	Ice Gel packs	pres	ent? (y) и	7 Soil V	OA rec	eived as	: Bu	ılk En	core	5035s	et N	A
Temperature	Readings	Date: 811dl	70	Time:	10:31	ID:	IR#7	IR#10)	From:	Temp	Blank	Samp	le Bottle
bserved Ten	np (°C)	7,2												
Vithin 0-6°C	?	N (X)		Y	N	Y N	, Y	N	Y	N		N	Y	N
<0°C, were	samples froze	en? Y N		Y.	N	Y N	Y	N	Y	N	Y	N	Y	N
all samples h	neld in storage	un Samples: e location: orage location:	BMO	ь	y NE	on Hid		133_		8 hours o			Y	 N
	<u> </u>													
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9. W 10. Di 11. W 12. W	/ere all bottle l id all bottle lal /ere correct co /ere 5035 vials	abels complete (bels and tags agr ntainers used for s acceptable (no	i.e. ana ee with the tes extra la	llysis, custo its indi ibels, r	preservati dy papers cated? not leaking	on, etc.)? ?	12	ZY Y Y	ES) ES) ES	NO NO NO NO			<u> </u>	_
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9. W 10. Di 11. W 12. W 13. A pH ≥12 ≤2 <4 5-9 Residual	/ere all bottle laid all bottle laid all bottle laid /ere correct co/ere 5035 vials ir Samples: C	abels complete (bels and tags agritainers used for a acceptable (no assettes / Tubes) Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	i.e. and ee with the tes extra la Intact	llysis, custo its indi ibels, r with M ved?	preservati dy papers cated? not leaking IS? Ca Lot Rec No=Not If+, cont Na ₂ S ₂ O ₃	on, etc.)? ? s)? nisters Pressueived ffy for 3day act PM to add (625, 608,	rized	Y Y Samp	ES) ES) ES ES Fedlar® le ID	NO NO NO NO Bags Inf		t Adde	NA NA	
9. W 10. Di 11. W 12. W 13. A pH ≥12 ≤2 <4 5-9 Residual Chlorine	/ere all bottle laid all bottle laid all bottle laid /ere correct co/ere 5035 vials ir Samples: C	abels complete (bels and tags agrantainers used for a acceptable (no assettes / Tubes) Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃	i.e. and ee with the tes extra la Intact	llysis, custo its indi ibels, r with M ved?	preservati dy papers cated? not leaking IS? Ca Lot Rec No=Not If+, cont Na ₂ S ₂ O ₃	on, etc.)? ? s)? nisters Pressueived ffy for 3day act PM to add (625, 608,	rized	Samp	ES ES ES Fedlar® le ID ted	NO NO NO NO Bags Inf Vol. Added	Lot	efore ana	alysis.	pH
9. W 10. Di 11. W 12. W 13. A pH ≥12 ≤2 <4 5-9 Residual Chlorine	/ere all bottle laid all bottle laid all bottle laid /ere correct co/ere 5035 vials ir Samples: C	abels complete (bels and tags agritainers used for a acceptable (no assettes / Tubes) Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	i.e. ana ee with the tes extra la Intact Preser Yes	llysis, custo its indi ibels, r with M ved?	preservati dy papers cated? not leaking IS? Ca Lot Rec No=Not If+, cont Na ₂ S ₂ O ₃	on, etc.)? ? s)? nisters Pressueived ffy for 3day act PM to add (625, 608,	rized	Samp Adjus	ES ES ES Fedlar® le ID ted	NO NO NO NO Bags Inf Vol. Added	Lot	efore anzwith cher	alysis.	pH
9. W 10. Di 11. W 12. W 13. A pH ≥12 ≤2 <4 5-9 Residual Chlorine	/ere all bottle laid all bottle laid all bottle laid /ere correct co/ere 5035 vials ir Samples: C	abels complete (bels and tags agrantainers used for acceptable (no assettes / Tubes) Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate	i.e. ana ee with the tes extra la Intact Preser Yes	alysis, custo sts indibels, rwith M	preservati dy papers cated? not leaking IS? Ca Lot Rec No=Not If+, cont Na ₂ S ₂ O ₃	on, etc.)? ? s)? nisters Pressueived ffy for 3day act PM to add (625, 608,	rized	Samp Adjus	ES ES ES Fedlar® le ID ted	NO NO NO NO Bags Inf Vol. Added	Lot	efore anzwith cher	alysis.	pH

Check HPROD BULK

HTR FLDT

SUB HGFB

ALS LL3541

Labels secondary reviewed by: PC Secondary Review:

*significant air bubbles: VOA > 5-6 mm: WC > 1 in. diameter

1/16/2020



Miscellaneous Forms

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www.alsglobal.com



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL Method Reporting Limit. Also known as:
- LOQ Limit of Quantitation (LOQ)

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a

substance allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

POL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring
TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but

greater than or equal to the MDL.

ALS Group USA, Corp. dba ALS Environmental

Analyst Summary report

Client: Portland, City of Service Request: K2006781

Project: Riot Control Agent Stormwater/W20H048

 Sample Name:
 W20H048-01
 Date Collected:
 08/6/20

 Lab Code:
 K2006781-001
 Date Received:
 08/7/20

Sample Matrix: Water

Analysis Method Extracted/Digested By Analyzed By

218.6 LL CWOODS

Printed 8/18/2020 4:35:13 PM Superset Reference:20-0000559650 rev 00

Page 50 of 58



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual	SM 4500-CN-G
Cyanide	
SM 4500-CN-E WAD	SM 4500-CN-I
Cyanide	

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation					
	Method					
6010C	3050B					
6020A	3050B					
6010C TCLP (1311)	3005A/3010A					
extract						
6010 SPLP (1312) extract	3005A/3010A					
7199	3060A					
300.0 Anions/ 350.1/	DI extraction					
353.2/ SM 2320B/ SM						
5210B/ 9056A Anions						
For analytical methods not listed,						
method is the same as the analytical method						
reference.						



Sample Results

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General Chemistry

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Portland, City of

Project: Riot Control Agent Stormwater/W20H048 Date Collected: 08/06/20 08:53

Sample Matrix: Water Date Received: 08/07/20 12:45

 Sample Name:
 W20H048-01
 Basis: NA

 Lab Code:
 K2006781-001

Inorganic Parameters

Analysis

	Tilling Sis							
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	0.352	ug/L	0.020	0.010	1	08/14/20 17:55	

Service Request: K2006781



QC Summary Forms

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General Chemistry

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Portland, City of Service Request: K2006781

Project:Riot Control Agent Stormwater/W20H048Date Collected:NASample Matrix:WaterDate Received:NA

Sample Name: Method Blank Basis: NA

Lab Code: K2006781-MB

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	ND U	ug/L	0.020	0.010	1	08/14/20 12:45	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Portland, City of

Riot Control Agent Stormwater/W20H048

Sample Matrix:

Project:

Water

Service Request: K2006781

Date Analyzed: 08/14/20

Lab Control Sample Summary General Chemistry Parameters

Units:ug/L Basis:NA

Lab Control Sample

K2006781-LCS

	Analytical				
Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6	0.214	0.200	107	90-110



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August 26, 2020

Kevin Veaudry-Casaus Spill Protection and Citizen Response

Work OrderProjectReceivedW20H056Riot Control Agent Residual Investigation08/07/20 08:41

Enclosed are the results of analysis for the above work order. If you have questions concerning this report, please contact your project coordinator Peter Abrams at 503-823-5533.

Jennifer Shackelford

Jennifer Shackelford

Laboratory Manager







6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

LABORATORY ANALYSIS REPORT

Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Received: 8/7/20 8:41 Submitted By: Field Operations

Client: Spill Protection and Citizen Response

Project Mgr: Kevin Veaudry-Casaus

				Sample Collection Date						
Sample	Laboratory ID	Matrix	Type	Start	End	Qualifier				
ABQ669	W20H056-01	Stormwater	Grab	08/06/20 08:53	08/06/20 08:53					

Case Narrative

EPA 8270: Diphenylamine is reported as N-nitrosodiphenylamine.

The following compounds were either not detected as TICs or not detectable by method 8270:

Centralite 1,3-diethyldiphenylurea, Malononitrile, and o-chlorobenzaldehyde.

Analyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	Qualifier
ABQ669 : W20H056-01								
General Chemistry								
Cyanide	ND mg/L	0.0100		B20H176	08/12/20	08/12/20	SM 4500-CN E	
Nutrients								
Chloride	13.9 mg/L	1.00	1	B20H171	08/12/20	08/12/20	EPA 300.0	
Dissolved Metals								
Dissolved Metals by ICPMS								
Barium, dissolved	39.8 ug/L	2.50	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Chromium, dissolved	2.14 ug/L	1.00	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Copper, dissolved	127 ug/L	1.00	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Lead, dissolved	2.11 ug/L	0.500	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Zinc, dissolved	565 ug/L	2.50	1	B20H190	08/13/20	08/13/20	EPA 200.8	

Reported: 08/26/20 15:02

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Page 2 of 49





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 **ORELAP Certification ID 4023**

Received:

Project: **Riot Control Agent Residual**

Investigation

W20H056 Work Order:

Client: Spill Protection and Citizen Response

08/07/20 08:41

nalyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	Qualifie
ivolatile Organics								
mivolatile Organic Compound	ds by GCMS							
Acenaphthene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Acenaphthylene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Anthracene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(a)anthracene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(a)pyrene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(b)fluoranthene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(g,h,i)perylene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(k)fluoranthene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Bromophenylphenyl ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Butyl benzyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Chloro-3-methylphenol	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Chloroaniline	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-chloroethoxy) methane	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-chloroethyl) ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-chloroisopropyl) ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Chloronaphthalene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Chlorophenol	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Chlorophenylphenyl ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Chrysene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Di-n-butyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Di-n-octyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Dibenzo(a,h)anthracene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Dibenzofuran	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
1,2-Dichlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
1,3-Dichlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
1,4-Dichlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
3,3'-Dichlorobenzidine	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
•	· ·	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4-Dichlorophenol	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Diethyl phthalate	ND ug/L		1					
2,4-Dimethylphenol	ND ug/L	6.0		B20H170	08/12/20	08/12/20	EPA 8270	
Dimethyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4,6-Dinitro-2-methylphenol	ND ug/L	6.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4-Dinitrophenol	ND ug/L	15	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4-Dinitrotoluene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,6-Dinitrotoluene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Diphenylamine*	ND ug/L	10	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-ethylhexyl) phthalate	ND ug/L	4.5	1	B20H170	08/12/20	08/12/20	EPA 8270	
Fluoranthene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Fluorene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Hexachlorobenzene Hexachlorobutadiene	ND ug/L	3.0 3.0	1	B20H170 B20H170	08/12/20 08/12/20	08/12/20 08/12/20	EPA 8270 EPA 8270	

Reported: 08/26/20 15:02





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Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client: Spill

Spill Protection and Citizen Response

Received: 08/07/20 08:41

Analyte	Result Units	MRL		Dil.	Batch	Prepared	Analyzed	Method	Qualifier
Semivolatile Organics									
Semivolatile Organic Compou	nds by GCMS								
Hexachlorocyclopentadiene	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	L′
Hexachloroethane	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Indeno(1,2,3-cd)pyrene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Isophorone	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Methylnaphthalene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Methylphenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
3- & 4-Methylphenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Naphthalene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	Ľ
2-Nitroaniline	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
3-Nitroaniline	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Nitroaniline	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Nitrobenzene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Nitrophenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Nitrophenol	ND ug/L	15		1	B20H170	08/12/20	08/12/20	EPA 8270	
N-Nitrosodimethylamine*	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
N-Nitrosodi-n-propylamine	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
N-Nitrosodiphenylamine	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	N
Pentachlorophenol	3.3 ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Phenanthrene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Phenol	3.6 ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Pyrene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2,3,4,6-Tetrachlorophenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
1,2,4-Trichlorobenzene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	L
2,4,5-Trichlorophenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4,6-Trichlorophenol	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Surrogate	Result	Expected	%Rec	Limits(%	.)				
2-Fluorophenol	24 ug/L	24.2	98%	34-84	B20H170	08/12/20	08/12/20	EPA 8270	SU
Phenol-d6	19 ug/L	24.2	79%	26-77	B20H170	08/12/20	08/12/20	EPA 8270	SU
Nitrobenzene-d5	26 ug/L	24.2		52-126	B20H170	08/12/20	08/12/20	EPA 8270	
2-Fluorobiphenyl	23 ug/L	24.2	94%	44-130	B20H170	08/12/20	08/12/20	EPA 8270	
2,4,6-Tribromophenol p-Terphenyl-d14	26 ug/L 15 ug/L	24.2 24.2	107% 62%	42-141 38-175	B20H170 B20H170	08/12/20 08/12/20	08/12/20 08/12/20	EPA 8270 EPA 8270	

Reported: 08/26/20 15:02

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford





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Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Quality Control Report

General Chemistry - QC

MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier

Analyte	Result	Units	MRL	Level	Result	(Limits)	(Limit)	Analyzed	Qualifier
Total Cyanide - Batch B20H176									
Blank (B20H176-BLK1)									
Cyanide	ND mg/	/L	0.0100					08/12/20 :08/12/20	
LCS (B20H176-BS1)									
Cyanide	0.0440 mg/	/L	0.0100	0.0500		88% (85-115)		08/12/20 :08/12/20	
Duplicate (B20H176-DUP1)			Source: W20H0	56-01					
Cyanide	ND mg/	/L	0.0100		ND		(20)	08/12/20 :08/12/20	
Matrix Spike (B20H176-MS1)			Source: W20H0	56-01					
Cyanide	0.0455 mg/	/L	0.0100	0.0500	ND	91% (80-120)		08/12/20 :08/12/20	
Matrix Spike Dup (B20H176-MSD1)			Source: W20H0	56-01					
Cyanide	0.0448 mg/	/L	0.0100	0.0500	ND	90% (80-120)	2 (20)	08/12/20 :08/12/20	

Nutrients - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier		
7 11017 10	result	Jt3		20701	TOSUIT	(=)	(=:::::)	, mary 200	Qualifici		
Chloride - Batch B20H171											
Blank (B20H171-BLK1)											
Chloride	ND mg	/L	1.00					08/12/20 :08/12/20			
LCS (B20H171-BS1)											
Chloride	3.93 mg	/L	1.00	4.00		98% (90-110)		08/12/20 :08/12/20			
Duplicate (B20H171-DUP1)		Source: W20H090-01									
Chloride	8.34 mg	/L	1.00		8.33		0.06 (20)	08/12/20 :08/12/20			
Duplicate (B20H171-DUP2)			Source: W20H05	6-01							
Chloride	13.9 mg	/L	1.00		13.9		0.03 (20)	08/12/20 :08/12/20			
Duplicate (B20H171-DUP3)			Source: W20H01	5-02							
Chloride	46.7 mg	/L	2.00		46.8		0.2 (20)	08/12/20 :08/12/20			
Duplicate (B20H171-DUP4)			Source: W20H09	9-03							
Chloride	40.7 mg	/L	5.00		40.6		0.04 (20)	08/13/20 :08/13/20			
Matrix Spike (B20H171-MS1)			Source: W20H09	0-01							
Chloride	12.5 mg	/L	1.00	4.08	8.33	102% (80-120)		08/12/20 :08/12/20			

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Nutrients - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Chloride - Batch B20H171									
Matrix Spike (B20H171-MS2)			Source: W20H056	6-01					
Chloride	22.0 mg/L	-	2.00	8.00	13.9	101% (80-120)		08/12/20 :08/12/20	D2
Matrix Spike (B20H171-MS3)			Source: W20H01	5-02					
Chloride	66.9 mg/L	-	5.00	20.0	46.8	101% (80-120)		08/12/20 :08/12/20	D2
Matrix Spike (B20H171-MS4)			Source: W20H099	9-03					
Chloride	60.9 mg/L	-	5.00	20.0	40.6	101% (80-120)		08/13/20 :08/13/20	

Dissolved Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Dissolved Metals by ICPMS - Ba	atch B20H190								
Blank (B20H190-BLK1)									
Barium, dissolved	ND ug/L		0.529					08/13/20 :08/13/20	
Chromium, dissolved	ND ug/L		0.211					08/13/20 :08/13/20	
Copper, dissolved	ND ug/L		0.211					08/13/20 :08/13/20	
Lead, dissolved	ND ug/L		0.106					08/13/20 :08/13/20	
Zinc, dissolved	ND ug/L		0.529					08/13/20 :08/13/20	
LCS (B20H190-BS1)									
Barium, dissolved	5.42 ug/L		0.529	5.29		103% (85-115)		08/13/20 :08/13/20	
Chromium, dissolved	5.21 ug/L		0.211	5.29		98% (85-115)		08/13/20 :08/13/20	
Copper, dissolved	5.31 ug/L		0.211	5.29		100% (85-115)		08/13/20 :08/13/20	
Lead, dissolved	5.30 ug/L		0.106	5.29		100% (85-115)		08/13/20 :08/13/20	
Zinc, dissolved	26.6 ug/L		0.529	26.4		101% (85-115)		08/13/20 :08/13/20	
Duplicate (B20H190-DUP1)			Source: W20H0	57-01					
Barium, dissolved	78.9 ug/L		2.50		77.0		2 (20)	08/13/20 :08/13/20	
Chromium, dissolved	3.98 ug/L		1.00		4.05		2 (20)	08/13/20 :08/13/20	
Copper, dissolved	54.0 ug/L		1.00		54.5		1 (20)	08/13/20 :08/13/20	
Lead, dissolved	0.590 ug/L		0.500		0.569		4 (20)	08/13/20 :08/13/20	
Zinc, dissolved	276 ug/L		2.50		281		2 (20)	08/13/20 :08/13/20	
Matrix Spike (B20H190-MS1)			Source: W20H0	57-01					
Barium, dissolved	103 ug/L		2.50	25.0	77.0	104% (70-130)		08/13/20 :08/13/20	
Chromium, dissolved	27.9 ug/L		1.00	25.0	4.05	96% (70-130)		08/13/20 :08/13/20	
Copper, dissolved	77.0 ug/L		1.00	25.0	54.5	90% (70-130)		08/13/20 :08/13/20	
Lead, dissolved	25.8 ug/L		0.500	25.0	0.569	101% (70-130)		08/13/20 :08/13/20	
Zinc, dissolved	403 ug/L		2.50	125	281	98% (70-130)		08/13/20 :08/13/20	

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Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
Semivolatile Organic Compou	ınds by GCMS - Batch E	20H170						
Blank (B20H170-BLK1)								
Acenaphthene	ND ug/L	3.0					08/12/20 :08/12/20	
Acenaphthylene	ND ug/L	3.0					08/12/20 :08/12/20	
Anthracene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(a)anthracene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(a)pyrene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(b)fluoranthene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(g,h,i)perylene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(k)fluoranthene	ND ug/L	3.0					08/12/20 :08/12/20	
4-Bromophenylphenyl ether	ND ug/L	3.0					08/12/20 :08/12/20	
Butyl benzyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
4-Chloro-3-methylphenol	ND ug/L	3.0					08/12/20 :08/12/20	
4-Chloroaniline	ND ug/L	3.0					08/12/20 :08/12/20	
Bis(2-chloroethoxy) methane	ND ug/L	3.0					08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	ND ug/L	3.0					08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	ND ug/L	3.0					08/12/20 :08/12/20	
2-Chloronaphthalene	ND ug/L	3.0					08/12/20 :08/12/20	I
2-Chlorophenol	ND ug/L	3.0					08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	ND ug/L	3.0					08/12/20 :08/12/20	
Chrysene	ND ug/L	3.0					08/12/20 :08/12/20	
Di-n-butyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
Di-n-octyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
Dibenzo(a,h)anthracene	ND ug/L	3.0					08/12/20 :08/12/20	
Dibenzofuran	ND ug/L	3.0					08/12/20 :08/12/20	
1,2-Dichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
1,3-Dichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
1,4-Dichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
3,3'-Dichlorobenzidine	ND ug/L	3.0					08/12/20 :08/12/20	
2,4-Dichlorophenol	ND ug/L	3.0					08/12/20 :08/12/20	
Diethyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
2,4-Dimethylphenol	ND ug/L	6.0					08/12/20 :08/12/20	
Dimethyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	ND ug/L	6.0					08/12/20 :08/12/20	
2,4-Dinitrophenol	ND ug/L	15					08/12/20 :08/12/20	I
2,4-Dinitrotoluene	ND ug/L	3.0					08/12/20 :08/12/20	
2,6-Dinitrotoluene	ND ug/L	3.0					08/12/20 :08/12/20	
Diphenylamine	ND ug/L	10					08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	ND ug/L	4.5					08/12/20 :08/12/20	
Fluoranthene	ND ug/L	3.0					08/12/20 :08/12/20	
Fluorene	ND ug/L	3.0					08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compo	unds by GCMS - Batch E	320H170						
Blank (B20H170-BLK1)								
Hexachlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
Hexachlorobutadiene	ND ug/L	3.0					08/12/20 :08/12/20	L1
Hexachlorocyclopentadiene	ND ug/L	6.0					08/12/20 :08/12/20	L1
Hexachloroethane	ND ug/L	3.0					08/12/20 :08/12/20	
Indeno(1,2,3-cd)pyrene	ND ug/L	3.0					08/12/20 :08/12/20	
Isophorone	ND ug/L	3.0					08/12/20 :08/12/20	
2-Methylnaphthalene	ND ug/L	3.0					08/12/20 :08/12/20	
2-Methylphenol	ND ug/L	6.0					08/12/20 :08/12/20	
3- & 4-Methylphenol	ND ug/L	6.0					08/12/20 :08/12/20	
Naphthalene	ND ug/L	3.0					08/12/20 :08/12/20	L1
2-Nitroaniline	ND ug/L	6.0					08/12/20 :08/12/20	
3-Nitroaniline	ND ug/L	6.0					08/12/20 :08/12/20	
4-Nitroaniline	ND ug/L	6.0					08/12/20 :08/12/20	
Nitrobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
2-Nitrophenol	ND ug/L	6.0					08/12/20 :08/12/20	
4-Nitrophenol	ND ug/L	15					08/12/20 :08/12/20	
N-Nitrosodimethylamine	ND ug/L	3.0					08/12/20 :08/12/20	
N-Nitrosodi-n-propylamine	ND ug/L	3.0					08/12/20 :08/12/20	
N-Nitrosodiphenylamine	ND ug/L	3.0					08/12/20 :08/12/20	
Pentachlorophenol	ND ug/L	3.0					08/12/20 :08/12/20	
Phenanthrene		3.0						
	ND ug/L	3.0					08/12/20 :08/12/20	
Phenol	ND ug/L						08/12/20 :08/12/20	
Pyrene	ND ug/L	3.0					08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	ND ug/L	6.0					08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	ND ug/L	6.0					08/12/20 :08/12/20	
2,4,6-Trichlorophenol	ND ug/L	3.0					08/12/20 :08/12/20	
Surrogate								
2-Fluorophenol	19 ug/L		24.2		79% (34-84)		08/12/20 :08/12/20	
Phenol-d6	18 ug/L		24.2		75% (26-77)		08/12/20 :08/12/20	
Nitrobenzene-d5	24 ug/L 22 ug/L		24.2		98% (52-126) 92% (44-130)		08/12/20 :08/12/20 08/12/20 :08/12/20	
2-Fluorobiphenyl 2,4,6-Tribromophenol	22 ug/L 18 ug/L		24.2 24.2		72% (42-141)		08/12/20 :08/12/20	
p-Terphenyl-d14	24 ug/L		24.2		97% (38-175)		08/12/20 :08/12/20	
LCS (B20H170-BS1)					(, , ,			
Acenaphthene	9.27 ug/L	3.0	12.1		76% (70-120)		08/12/20 :08/12/20	
Acenaphthylene	8.71 ug/L	3.0	12.1		72% (70-127)		08/12/20 :08/12/20	
Anthracene	11.0 ug/L	3.0	12.1		91% (76-129)		08/12/20 :08/12/20	
Benzo(a)anthracene	12.0 ug/L	3.0	12.1		99% (80-130)		08/12/20 :08/12/20	
Benzo(a)pyrene	10.8 ug/L	3.0	12.1		89% (75-127)		08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

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Investigation

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Spill Protection and Citizen Response

Received: 08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
Semivolatile Organic Compou	unds by GCMS -	Batch B20)H170						
-CS (B20H170-BS1)									
Benzo(b)fluoranthene	11.1 ug/	L	3.0	12.1		91% (72-124)		08/12/20 :08/12/20	
Benzo(g,h,i)perylene	11.3 ug/	L	3.0	12.1		93% (68-126)		08/12/20 :08/12/20	
Benzo(k)fluoranthene	11.4 ug/	L	3.0	12.1		94% (71-122)		08/12/20 :08/12/20	
4-Bromophenylphenyl ether	10.6 ug/	L	3.0	12.1		87% (70-130)		08/12/20 :08/12/20	
Butyl benzyl phthalate	13.9 ug/	L	3.0	12.1		115% (73-140)		08/12/20 :08/12/20	
4-Chloro-3-methylphenol	14.4 ug/	L	3.0	12.1		119% (68-123)		08/12/20 :08/12/20	
4-Chloroaniline	11.1 ug/	L	3.0	12.1		92% (57-124)		08/12/20 :08/12/20	
Bis(2-chloroethoxy) methane	11.8 ug/	L	3.0	12.1		97% (69-130)		08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	11.4 ug/	L	3.0	12.1		94% (72-130)		08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	10.8 ug/	L	3.0	12.1		89% (63-130)		08/12/20 :08/12/20	
2-Chloronaphthalene	7.28 ug/	L	3.0	12.1		60% (70-126)		08/12/20 :08/12/20	L
2-Chlorophenol	11.3 ug/	L	3.0	12.1		93% (58-119)		08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	9.83 ug/	L	3.0	12.1		81% (59-123)		08/12/20 :08/12/20	
Chrysene	11.4 ug/	L	3.0	12.1		94% (76-125)		08/12/20 :08/12/20	
Di-n-butyl phthalate	13.0 ug/	L	3.0	12.1		107% (65-130)		08/12/20 :08/12/20	
Di-n-octyl phthalate	14.0 ug/	L	3.0	12.1		116% (61-150)		08/12/20 :08/12/20	
Dibenzo(a,h)anthracene	11.4 ug/	L	3.0	12.1		94% (70-126)		08/12/20 :08/12/20	
Dibenzofuran	9.47 ug/	L	3.0	12.1		78% (67-121)		08/12/20 :08/12/20	
1,2-Dichlorobenzene	7.58 ug/	L	3.0	12.1		63% (47-119)		08/12/20 :08/12/20	
1,3-Dichlorobenzene	7.37 ug/	L	3.0	12.1		61% (45-120)		08/12/20 :08/12/20	
1,4-Dichlorobenzene	7.27 ug/	L	3.0	12.1		60% (45-121)		08/12/20 :08/12/20	
2,4-Dichlorophenol	10.4 ug/	L	3.0	12.1		86% (67-123)		08/12/20 :08/12/20	
Diethyl phthalate	11.7 ug/	L	3.0	12.1		97% (51-130)		08/12/20 :08/12/20	
2,4-Dimethylphenol	13.9 ug/	L	6.0	12.1		115% (59-124)		08/12/20 :08/12/20	
Dimethyl phthalate	12.2 ug/	L	3.0	12.1		101% (66-130)		08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	1.78 ug/	L	1.2	12.1		15% (56-118)		08/12/20 :08/12/20	Ľ
2,4-Dinitrophenol	ND ug/	L	15	60.6		% (39-123)		08/12/20 :08/12/20	L
2,4-Dinitrotoluene	9.47 ug/	L	3.0	12.1		78% (76-133)		08/12/20 :08/12/20	
2,6-Dinitrotoluene	11.1 ug/	L	3.0	12.1		92% (77-133)		08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	14.8 ug/	L	4.5	12.1		122% (58-137)		08/12/20 :08/12/20	
Fluoranthene	11.2 ug/	L	3.0	12.1		93% (74-130)		08/12/20 :08/12/20	
Fluorene	10.1 ug/	L	3.0	12.1		83% (70-122)		08/12/20 :08/12/20	
Hexachlorobenzene	11.4 ug/	L	3.0	12.1		94% (62-142)		08/12/20 :08/12/20	
Hexachlorobutadiene	6.12 ug/	L	3.0	12.1		50% (68-128)		08/12/20 :08/12/20	L
Hexachlorocyclopentadiene	2.73 ug/	L	0.60	12.1		23% (28-108)		08/12/20 :08/12/20	L
Hexachloroethane	6.82 ug/	L	3.0	12.1		56% (55-118)		08/12/20 :08/12/20	
Indeno(1,2,3-cd)pyrene	11.4 ug/	L	3.0	12.1		94% (69-130)		08/12/20 :08/12/20	
Isophorone	12.3 ug/	L	3.0	12.1		101% (62-136)		08/12/20 :08/12/20	
2-Methylnaphthalene	7.42 ug/	I	3.0	12.1		61% (58-117)		08/12/20 :08/12/20	

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Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received: 08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compour	nds by GCMS -	Batch B2	0H170						
LCS (B20H170-BS1)									
2-Methylphenol	12.2 ug/	L	6.0	12.1		101% (55-123)		08/12/20 :08/12/20	
3- & 4-Methylphenol	12.0 ug/	L	6.0	12.1		99% (50-119)		08/12/20 :08/12/20	
Naphthalene	8.09 ug/	L	3.0	12.1		67% (70-119)		08/12/20 :08/12/20	L1
2-Nitroaniline	10.6 ug/	L	6.0	12.1		88% (74-143)		08/12/20 :08/12/20	
3-Nitroaniline	10.1 ug/	L	6.0	12.1		83% (53-135)		08/12/20 :08/12/20	
4-Nitroaniline	9.28 ug/	L	6.0	12.1		77% (42-147)		08/12/20 :08/12/20	
Nitrobenzene	10.8 ug/	L	3.0	12.1		89% (65-123)		08/12/20 :08/12/20	
2-Nitrophenol	9.99 ug/	L	6.0	12.1		82% (65-120)		08/12/20 :08/12/20	
4-Nitrophenol	26.8 ug/	L	15	60.6		44% (35-54)		08/12/20 :08/12/20	
N-Nitrosodimethylamine	6.98 ug/	L	3.0	12.1		58% (33-69)		08/12/20 :08/12/20	
N-Nitrosodi-n-propylamine	12.8 ug/	L	3.0	12.1		105% (59-131)		08/12/20 :08/12/20	
N-Nitrosodiphenylamine	11.6 ug/	L	3.0	12.1		96% (72-127)		08/12/20 :08/12/20	
Pentachlorophenol	9.17 ug/	L	3.0	12.1		76% (42-130)		08/12/20 :08/12/20	
Phenanthrene	10.6 ug/	L	3.0	12.1		88% (73-126)		08/12/20 :08/12/20	
Phenol	9.79 ug/	L	3.0	12.1		81% (48-88)		08/12/20 :08/12/20	
Pyrene	10.9 ug/	L	3.0	12.1		90% (72-130)		08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	9.15 ug/	L	6.0	12.1		75% (52-114)		08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	7.05 ug/	L	3.0	12.1		58% (61-124)		08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	11.2 ug/		6.0	12.1		93% (63-120)		08/12/20 :08/12/20	
2,4,6-Trichlorophenol	10.5 ug/		3.0	12.1		86% (71-119)		08/12/20 :08/12/20	
Surrogate						, ,			
2-Fluorophenol	21 ug/	L		24.2		86% (34-84)		08/12/20 :08/12/20	SU2
Phenol-d6	19 ug/			24.2		79% (26-77)		08/12/20 :08/12/20	SU2
Nitrobenzene-d5	26 ug/			24.2		108% (52-126)		08/12/20 :08/12/20	
2-Fluorobiphenyl	23 ug/			24.2		97% (44-130)		08/12/20 :08/12/20	
2,4,6-Tribromophenol	20 ug/			24.2		80% (42-141)		08/12/20 :08/12/20	
p-Terphenyl-d14	24 ug/	L		24.2		98% (38-175)		08/12/20 :08/12/20	
Matrix Spike (B20H170-MS1)			Source: W20H0	57-02					
Acenaphthene	10.9 ug/	L	3.0	12.1	ND	90% (70-130)		08/12/20 :08/12/20	
Acenaphthylene	11.2 ug/	L	3.0	12.1	ND	92% (70-130)		08/12/20 :08/12/20	
Anthracene	12.4 ug/	L	3.0	12.1	ND	102% (70-130)		08/12/20 :08/12/20	
Benzo(a)anthracene	12.6 ug/	L	3.0	12.1	ND	104% (70-130)		08/12/20 :08/12/20	
Benzo(a)pyrene	11.3 ug/	L	3.0	12.1	ND	93% (70-130)		08/12/20 :08/12/20	
Benzo(b)fluoranthene	11.6 ug/	L	3.0	12.1	ND	96% (70-130)		08/12/20 :08/12/20	
Benzo(g,h,i)perylene	12.1 ug/	L	3.0	12.1	ND	100% (70-130)		08/12/20 :08/12/20	
Benzo(k)fluoranthene	11.4 ug/	L	3.0	12.1	ND	94% (70-130)		08/12/20 :08/12/20	
4-Bromophenylphenyl ether	11.4 ug/	L	3.0	12.1	ND	94% (70-130)		08/12/20 :08/12/20	
Butyl benzyl phthalate	16.0 ug/	L	3.0	12.1	ND	132% (70-130)		08/12/20 :08/12/20	M11
4-Chloro-3-methylphenol	18.9 ug/	L	3.0	12.1	ND	156% (70-130)		08/12/20 :08/12/20	M11
4-Chloroaniline	2.82 ug/		0.60	12.1	ND	23% (70-130)		08/12/20 :08/12/20	M4

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 **ORELAP Certification ID 4023**

Project: **Riot Control Agent Residual**

Investigation

Work Order: W20H056 Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier

Semivolatile Organic Compounds by GCMS - Batch B20H170

atrix Spike (B20H170-MS1)		Source: W20H05	7-02				
Bis(2-chloroethoxy) methane	13.0 ug/L	3.0	12.1	ND	107% (70-130)	08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	12.9 ug/L	3.0	12.1	ND	106% (70-130)	08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	12.1 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
2-Chloronaphthalene	9.59 ug/L	3.0	12.1	ND	79% (70-130)	08/12/20 :08/12/20	L
2-Chlorophenol	12.6 ug/L	3.0	12.1	ND	104% (70-130)	08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	11.3 ug/L	3.0	12.1	ND	93% (70-130)	08/12/20 :08/12/20	
Chrysene	11.8 ug/L	3.0	12.1	ND	97% (70-130)	08/12/20 :08/12/20	
Di-n-butyl phthalate	14.9 ug/L	3.0	12.1	ND	123% (70-130)	08/12/20 :08/12/20	
Di-n-octyl phthalate	18.4 ug/L	3.0	12.1	ND	152% (70-130)	08/12/20 :08/12/20	M1′
Dibenzo(a,h)anthracene	12.1 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
Dibenzofuran	11.1 ug/L	3.0	12.1	ND	92% (70-130)	08/12/20 :08/12/20	
1,2-Dichlorobenzene	8.58 ug/L	3.0	12.1	ND	71% (70-130)	08/12/20 :08/12/20	
1,3-Dichlorobenzene	8.40 ug/L	3.0	12.1	ND	69% (70-130)	08/12/20 :08/12/20	M ²
1,4-Dichlorobenzene	8.57 ug/L	3.0	12.1	ND	71% (70-130)	08/12/20 :08/12/20	
2,4-Dichlorophenol	13.4 ug/L	3.0	12.1	ND	110% (70-130)	08/12/20 :08/12/20	
Diethyl phthalate	14.5 ug/L	3.0	12.1	ND	120% (70-130)	08/12/20 :08/12/20	
2,4-Dimethylphenol	16.2 ug/L	6.0	12.1	ND	134% (70-130)	08/12/20 :08/12/20	M1
Dimethyl phthalate	13.6 ug/L	3.0	12.1	ND	112% (70-130)	08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	13.6 ug/L	6.0	12.1	ND	113% (50-150)	08/12/20 :08/12/20	L.
2,4-Dinitrophenol	65.2 ug/L	15	60.6	ND	108% (50-150)	08/12/20 :08/12/20	L.
2,4-Dinitrotoluene	11.8 ug/L	3.0	12.1	ND	97% (70-130)	08/12/20 :08/12/20	
2,6-Dinitrotoluene	11.6 ug/L	3.0	12.1	ND	96% (70-130)	08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	23.1 ug/L	4.5	12.1	6.67	135% (70-130)	08/12/20 :08/12/20	M
Fluoranthene	12.2 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
Fluorene	11.4 ug/L	3.0	12.1	ND	94% (70-130)	08/12/20 :08/12/20	
Hexachlorobenzene	11.9 ug/L	3.0	12.1	ND	98% (70-130)	08/12/20 :08/12/20	
Hexachlorobutadiene	7.43 ug/L	3.0	12.1	ND	61% (70-130)	08/12/20 :08/12/20	L.
Hexachlorocyclopentadiene	7.13 ug/L	6.0	12.1	ND	59% (70-130)	08/12/20 :08/12/20	L.
Hexachloroethane	8.22 ug/L	3.0	12.1	ND	68% (70-130)	08/12/20 :08/12/20	M4
Indeno(1,2,3-cd)pyrene	12.1 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
Isophorone	15.3 ug/L	3.0	12.1	ND	126% (70-130)	08/12/20 :08/12/20	
2-Methylnaphthalene	10.4 ug/L	3.0	12.1	ND	85% (70-130)	08/12/20 :08/12/20	
2-Methylphenol	16.8 ug/L	6.0	12.1	ND	138% (70-130)	08/12/20 :08/12/20	M1
3- & 4-Methylphenol	19.2 ug/L	6.0	12.1	ND	158% (70-130)	08/12/20 :08/12/20	M1
Naphthalene	9.44 ug/L	3.0	12.1	ND	78% (70-130)	08/12/20 :08/12/20	L
2-Nitroaniline	13.8 ug/L	6.0	12.1	ND	113% (70-130)	08/12/20 :08/12/20	
3-Nitroaniline	2.88 ug/L	1.2	12.1	ND	24% (70-130)	08/12/20 :08/12/20	M
4-Nitroaniline	4.73 ug/L	1.2	12.1	ND	39% (70-130)	08/12/20 :08/12/20	M
Nitrobenzene	12.8 ug/L	3.0	12.1	ND	105% (70-130)	08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compounds	by GCMS -	Batch B20	DH170						
Matrix Spike (B20H170-MS1)			Source: W20H05	57-02					
2-Nitrophenol	12.1 ug/L		6.0	12.1	ND	100% (70-130)		08/12/20 :08/12/20	
4-Nitrophenol	52.9 ug/L		15	60.6	ND	87% (50-150)		08/12/20 :08/12/20	
N-Nitrosodimethylamine	7.37 ug/L		3.0	12.1	ND	61% <i>(70-130)</i>		08/12/20 :08/12/20	M4
N-Nitrosodi-n-propylamine	14.8 ug/L		3.0	12.1	ND	122% (70-130)		08/12/20 :08/12/20	
N-Nitrosodiphenylamine	12.6 ug/L		3.0	12.1	ND	104% (70-130)		08/12/20 :08/12/20	
Pentachlorophenol	22.3 ug/L		3.0	12.1	ND	184% (70-130)		08/12/20 :08/12/20	M11
Phenanthrene	11.8 ug/L		3.0	12.1	ND	98% (70-130)		08/12/20 :08/12/20	
Phenol	12.8 ug/L		3.0	12.1	ND	106% (50-150)		08/12/20 :08/12/20	
Pyrene	12.0 ug/L		3.0	12.1	ND	99% (70-130)		08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	12.3 ug/L		6.0	12.1	ND	102% (70-130)		08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	8.27 ug/L		3.0	12.1	ND	68% (70-130)		08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	14.1 ug/L		6.0	12.1	ND	117% (70-130)		08/12/20 :08/12/20	
2,4,6-Trichlorophenol	13.6 ug/L		3.0	12.1	ND	112% (70-130)		08/12/20 :08/12/20	
Surrogate	13.0 ug/L	•	3.0	12.1	ND	112 /0 (70-730)		00/12/20 .00/12/20	
· ·	25//			24.2		1020/ (24.94)		00/40/20 +00/40/20	SU2
2-Fluorophenol Phenol-d6	25 ug/L 21 ug/L			24.2 24.2		103% <i>(34-84)</i> 87% <i>(</i> 26-77)		08/12/20 :08/12/20 08/12/20 :08/12/20	SU2
Nitrobenzene-d5	27 ug/L 29 ug/L			24.2		119% (52-126)		08/12/20 :08/12/20	302
2-Fluorobiphenyl	24 ug/L			24.2		100% (44-130)		08/12/20 :08/12/20	
2,4,6-Tribromophenol	28 ug/L			24.2		115% (42-141)		08/12/20 :08/12/20	
p-Terphenyl-d14	19 ug/L			24.2		78% (38-175)		08/12/20 :08/12/20	
Matrix Spike Dup (B20H170-MSD1)			Source: W20H05	57-02					
Acenaphthene	11.2 ug/L		3.0	12.1	ND	92% (70-130) 2	? (50)	08/12/20 :08/12/20	
Acenaphthylene	11.6 ug/L		3.0	12.1	ND	96% (70-130) 4	(50)	08/12/20 :08/12/20	
Anthracene	12.1 ug/L		3.0	12.1	ND	100% (70-130) 2	2 (50)	08/12/20 :08/12/20	
Benzo(a)anthracene	12.7 ug/L		3.0	12.1	ND	104% (70-130) 0	0.2 (50)	08/12/20 :08/12/20	
Benzo(a)pyrene	11.0 ug/L		3.0	12.1	ND	91% (70-130) 3		08/12/20 :08/12/20	
Benzo(b)fluoranthene	10.8 ug/L		3.0	12.1	ND	89% (70-130) 7	` '	08/12/20 :08/12/20	
Benzo(g,h,i)perylene	11.6 ug/L		3.0	12.1	ND	96% (70-130) 5		08/12/20 :08/12/20	
Benzo(k)fluoranthene	10.7 ug/L		3.0	12.1	ND	88% (70-130) 7	` '	08/12/20 :08/12/20	
4-Bromophenylphenyl ether	11.3 ug/L		3.0	12.1	ND	93% (70-130) 0	` '	08/12/20 :08/12/20	
Butyl benzyl phthalate	15.3 ug/L		3.0	12.1	ND	126% (70-130) 4		08/12/20 :08/12/20	
4-Chloro-3-methylphenol	18.1 ug/L		3.0	12.1	ND	150% (70-130) 4	` '	08/12/20 :08/12/20	M1 ²
4-Chloroaniline	3.14 ug/L		3.0	12.1	ND		(50)	08/12/20 :08/12/20	M ₄
Bis(2-chloroethoxy) methane			3.0	12.1	ND	106% (70-130) 1	` '	08/12/20 :08/12/20	1014
·	12.8 ug/L					·	` '		
Bis(2-chloroethyl) ether	12.2 ug/L		3.0	12.1	ND	101% (70-130) 6		08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	11.1 ug/L		3.0	12.1	ND	91% (70-130) 9		08/12/20 :08/12/20	
2-Chloronaphthalene	10.3 ug/L		3.0	12.1	ND	85% (70-130) 7		08/12/20 :08/12/20	L,
2-Chlorophenol	12.2 ug/L		3.0	12.1	ND	101% (70-130) 3		08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	10.8 ug/L		3.0	12.1	ND	89% (70-130) 5		08/12/20 :08/12/20	
Chrysene	11.5 ug/L		3.0	12.1	ND	94% (70-130) 3	3 (50)	08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H056

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
Semivolatile Organic Compounds	by GCMS -	Batch B20H170						
Matrix Spike Dup (B20H170-MSD1)		Source: W2	0H057-02					
Di-n-butyl phthalate	14.4 ug/	L 3.0	12.1	ND	119% (70-130)	3 (50)	08/12/20 :08/12/20	
Di-n-octyl phthalate	17.7 ug/	L 3.0	12.1	ND	146% (70-130)	3 (50)	08/12/20 :08/12/20	M11
Dibenzo(a,h)anthracene	11.8 ug/	L 3.0	12.1	ND	98% (70-130)	2 (50)	08/12/20 :08/12/20	
Dibenzofuran	11.2 ug/	L 3.0	12.1	ND	93% (70-130)	1 (50)	08/12/20 :08/12/20	
1,2-Dichlorobenzene	8.87 ug/	L 3.0	12.1	ND	73% (70-130)	3 (50)	08/12/20 :08/12/20	
1,3-Dichlorobenzene	9.06 ug/	L 3.0	12.1	ND	75% (70-130)	8 (50)	08/12/20 :08/12/20	M4
1,4-Dichlorobenzene	9.09 ug/	L 3.0	12.1	ND	75% (70-130)	6 (50)	08/12/20 :08/12/20	
2,4-Dichlorophenol	13.0 ug/	L 3.0	12.1	ND	108% (70-130)	3 (50)	08/12/20 :08/12/20	
Diethyl phthalate	14.1 ug/	L 3.0	12.1	ND	116% (70-130)	3 (50)	08/12/20 :08/12/20	
2,4-Dimethylphenol	15.5 ug/	L 6.0	12.1	ND	128% (70-130)	4 (50)	08/12/20 :08/12/20	
Dimethyl phthalate	13.2 ug/	L 3.0	12.1	ND	109% (70-130)	3 (50)	08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	13.9 ug/	L 6.0	12.1	ND	114% (50-150)	2 (50)	08/12/20 :08/12/20	L1
2,4-Dinitrophenol	65.8 ug/	L 15	60.6	ND	109% (50-150)	0.9 (50)	08/12/20 :08/12/20	L1
2,4-Dinitrotoluene	11.8 ug/	L 3.0	12.1	ND	98% (70-130)	0.4 (50)	08/12/20 :08/12/20	
2,6-Dinitrotoluene	11.8 ug/	L 3.0	12.1	ND	98% (70-130)	2 (50)	08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	24.2 ug/	L 4.5	12.1	6.67	145% (70-130)	5 (50)	08/12/20 :08/12/20	M5
Fluoranthene	12.2 ug/	L 3.0	12.1	ND	100% (70-130)	0.02 (50)	08/12/20 :08/12/20	
Fluorene	11.4 ug/	L 3.0	12.1	ND	94% (70-130)	0.1 (50)	08/12/20 :08/12/20	
Hexachlorobenzene	11.7 ug/	L 3.0	12.1	ND	96% (70-130)	2 (50)	08/12/20 :08/12/20	
Hexachlorobutadiene	8.48 ug/	L 3.0	12.1	ND	70% (70-130)	13 (50)	08/12/20 :08/12/20	L1
Hexachlorocyclopentadiene	7.81 ug/	L 6.0	12.1	ND	64% (70-130)	9 (50)	08/12/20 :08/12/20	L1
Hexachloroethane	8.86 ug/	L 3.0	12.1	ND	73% (70-130)	7 (50)	08/12/20 :08/12/20	M4
Indeno(1,2,3-cd)pyrene	11.7 ug/	L 3.0	12.1	ND	96% (70-130)	4 (50)	08/12/20 :08/12/20	
Isophorone	15.0 ug/	L 3.0	12.1	ND	124% (70-130)	2 (50)	08/12/20 :08/12/20	
2-Methylnaphthalene	11.3 ug/	L 3.0	12.1	ND	93% (70-130)	9 (50)	08/12/20 :08/12/20	
2-Methylphenol	13.7 ug/	L 6.0	12.1	ND	113% (70-130)	20 (50)	08/12/20 :08/12/20	
3- & 4-Methylphenol	17.9 ug/	L 6.0	12.1	ND	148% (70-130)	7 (50)	08/12/20 :08/12/20	M11
Naphthalene	10.5 ug/	L 3.0	12.1	ND	87% (70-130)	11 (50)	08/12/20 :08/12/20	L1
2-Nitroaniline	13.9 ug/	L 6.0	12.1	ND	115% (70-130)	1 (50)	08/12/20 :08/12/20	
3-Nitroaniline	3.15 ug/	L 0.60	12.1	1.05	17% (70-130)	(50)	08/12/20 :08/12/20	M4
4-Nitroaniline	4.82 ug/	L 0.60	12.1	0.898	32% (70-130)	(50)	08/12/20 :08/12/20	M4
Nitrobenzene	12.5 ug/	L 3.0	12.1	ND	103% (70-130)	2 (50)	08/12/20 :08/12/20	
2-Nitrophenol	12.6 ug/	L 6.0	12.1	ND	104% (70-130)	4 (50)	08/12/20 :08/12/20	
4-Nitrophenol	51.0 ug/	L 15	60.6	ND	84% (50-150)	4 (50)	08/12/20 :08/12/20	
N-Nitrosodimethylamine	6.99 ug/	L 3.0	12.1	ND	58% (70-130)		08/12/20 :08/12/20	M4
N-Nitrosodi-n-propylamine	14.4 ug/	L 3.0	12.1	ND	119% (70-130)	2 (50)	08/12/20 :08/12/20	
N-Nitrosodiphenylamine	12.1 ug/		12.1	ND	100% (70-130)		08/12/20 :08/12/20	
Pentachlorophenol	22.8 ug/	L 3.0	12.1	ND	188% (70-130)	2 (50)	08/12/20 :08/12/20	M11
Phenanthrene	11.4 ug/		12.1	ND	94% (70-130)		08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 **ORELAP Certification ID 4023**

Project: **Riot Control Agent Residual**

Investigation

Work Order: W20H056 Client:

Spill Protection and Citizen Response

08/07/20 08:41 Received:

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compou	nds by GCMS .	. Batch B20	H170						

Semivolatile Organic Compounds by GCMS - Batch B20H170

Matrix Spike Dup (B20H170-MSD1)		Source: W20H057-02					
Phenol	12.4 ug/L	3.0	12.1	ND	102% (50-150) 4 (50)	08/12/20 :08/12/20	
Pyrene	11.5 ug/L	3.0	12.1	ND	95% (70-130) 5 (50)	08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	12.2 ug/L	6.0	12.1	ND	101% (70-130) 1 (50)	08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	8.97 ug/L	3.0	12.1	ND	74% (70-130) 8 (50)	08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	13.9 ug/L	6.0	12.1	ND	115% (70-130) 1 (50)	08/12/20 :08/12/20	
2,4,6-Trichlorophenol	13.7 ug/L	3.0	12.1	ND	113% (70-130) 1 (50)	08/12/20 :08/12/20	
Surrogate							
2-Fluorophenol	24 ug/L		24.2		98% (34-84)	08/12/20 :08/12/20	SU2
Phenol-d6	20 ug/L		24.2		83% (26-77)	08/12/20 :08/12/20	SU2
Nitrobenzene-d5	28 ug/L		24.2		116% <i>(52-126)</i>	08/12/20 :08/12/20	
2-Fluorobiphenyl	23 ug/L		24.2		93% (44-130)	08/12/20 :08/12/20	
2,4,6-Tribromophenol	27 ug/L		24.2		111% <i>(42-141)</i>	08/12/20 :08/12/20	
p-Terphenyl-d14	17 ug/L		24.2		69% (38-175)	08/12/20 :08/12/20	

Qualifiers

D2	The sample required dilution due to high levels of target an	alvtes
D2	The sample required unumbir due to migh levels of target an	aiyics.

Recovery for this analyte in the laboratory control sample was outside the acceptance range (low). Sample results may be L1 low estimates.

Matrix spike recovery for this analyte was high; the analyte was not detected in the sample and results are not affected.

Based on low matrix spike recovery, the sample result may be a low estimate due to matrix interference. M4

M5 Based on high matrix spike recovery, the sample result should be considered an estimate due to matrix effect and/or

non-homogeneous matrix.

Refer to case narrative. Ν

M11

Recovery for one or more surrogate compounds was outside the acceptance range (high). Sample results may be high SU₂

estimates.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference
*	This analyte is not certified under NELAP		

Reported: 08/26/20 15:02

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Water Pollution Control Laboratory 6543 N. Burlington Ave. Portland, Oregon 97203-4552 Sample Custodian: (503) 823-5696 General Lab: (503) 823-5681



Work Order #: WZoH 05%
Collected By: JXL, JXB

Client Name:	SPCR	Project Number (if applicable):
Project Name:	Riot Control Agent Residual Investigation	Project Contact: Kevin Veaudry-Casaus

										1	Requ	este	ed Ana	alyse	es				
T F	Stormwater Samples Total Metals (Ba, Cu, C Perchlorate were analy the Riot Control Agent DEQ (W20H047, W20H	Cr, Pb, Zn), To rzed on these Stormwater p	otal Hexava same sam project in re	nples submesponse to	itted under		Dissolved Metals	Diss. Hexavalent Chromium	36;	Breight Onto								□ Standa	nd-Time Request: rd (10 business days) 5 business days)
	Sample Name	Sample Date	Sample Time	Sample Type	Sample Matrix	Total Cyanide	Dissolved Metals	Diss. Hey	Chlor	2107))	:		:				# of Containers	Remarks
	48Q669	8/6/20	0853	<u>G</u>	\$T		4	\$										3	total metals total nexavalen chromium and perchlosite or workerder
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WizoHos 6 54/7/20 WPCL Cooler Receipt Fo	rm		٠									
Work Order Number: 500 ftot Co Cooler Receipt Form Filled Out By: 5												
Project: SICR / Rist Control Agent												
Received on ice: YES NO (circle one) [If directly from field, inc												
Sample(s) Received From: CBWTP fridge Client	_ Co	urier										
Temperature (°C):												
		Yes	No	N/A								
Is the COC present and signed?		- 7	110									
Are sample bottles intact?												
Do the COC and sample labels match?												
Are the appropriate containers used?												
Are samples appropriately preserved?		V										
Do VOA vials or alkalinity bottles have Headspace? (circle which this a												
Are samples received within holding times (except for pH and residual	chlorine	e)? / /										
Pres. # Preservative LIMS ID Standard Preservative	ryation /	Amounts										
	eservative LIMS ID Standard Preservation Amounts 103 (1:1) to pH <2 7.000 (9 (4) 0.5mL/250mL; 1.0mL/500mL; 4-5 drops/50mL 104mL/250mL; 0.8mL/500mL; 1.6mL/1000mL 10mL/500mL; 2.0mL/1000mL 110mL/500mL; 2.0mL/1000mL 110mL/500mL; 2.0mL/1000mL											
	0.4mL/250mL; 0.8mL/500mL; 1.6mL/1000mL											
		Dre- or	- VAHAV									
5 NaOH (pellets) to pH > 12 1800 987 4-10 pellets/500r 6 Ammonium Sn Late Buffer 2001073 2.5 ml/2			- f · · · · · ·	-3. F11 OF								
	Pres. #	Comments										
8/7/20 09/0 G W20H056-01 B	(
C	5	pre-pres	. off a	5 <i>Y</i>								
	6	1	- 1 :									
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Comments:												

S:\LAB\Forms\WPCL Cooler Receipt Form February 2020.doc

WPCL Cooler Receipt Form

Work C	Order Number	WZOHOS	6 Co	ooler Receipt	Form Fill	ed Ou	t By: _	Ph	
Projec	t: Riot Con	trol Agent	Residual Inve	stigation					
			ircle one) [If direc						
Sample	e(s) Received	From: C	BWTP fridge	_ Client <u>/</u>	Co	uri er			
	rature (°C): _								
							Yes	No	N/A
Is the C	COC present a	nd signed?							
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	mples appropri			منطة مامنطيب عامية	annlina t	2)			
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Pres.#	Preservative		LIMS ID	Standard Pres	ervation /	Amoun	ts		
1	HNO ₃ (1:1) to	pH <2		0.5mL/250mL;				/50mL cer	trifuge tube
2	H ₂ SO ₄ (18N) to			0.4mL/250mL;					
3	HCI (1:1) to p			1.0mL/500mL;	2.0mL/100	00mL			
4	HCI (1:1) to p			For TOC: 2-5 d	rops/250n	٦L			
5	NaOH (pellets	s) to pH >12		4-10 pellets/50	0mL; 8-20	pellets	/1000m	L	
Date	Time	Analyst	Sample LIMS ID	Bottle ID	Pres. #	Com	ments		
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Comm	nents: 🔻 For	additions	il samples, recei	ved in sump	re lecei	ding	on 8/	10/20	
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	*** *** ***		<u>. </u>	4*					
S:\LAE	3\Forms\WPCI	L Cooler Rec	eipt Form February	2020.doc					



Service Request No:K2006772

Jennifer Shackelford City of Portland 6543 N. Burlington Ave Portland, OR 97203

Laboratory Results for: Riot Control Agent Residual Investigation

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006772**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes Project Manager

Howaldblum



Narrative Documents

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com



Client:Portland, City ofService Request: K2006772Project:Riot Control Agent Residual InvestigationDate Received: 08/07/2020

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 08/07/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Subcontracted Analytical Parameters:

Chromium (VI) by EPA Method 218.6

Chromium (VI) analysis by EPA Method 218.6 was performed at ALS Rochester, NY Laboratory. The data for this analysis is included in the corresponding section of this report.

Approved by

Howaldblum

Date

08/19/2020



Sample Receipt Information

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com

Client: Portland, City of Service Request:K2006772

Project: Riot Control Agent Residual Investigation/W20H056

SAMPLE CROSS-REFERENCE

<u>SAMPLE # CLIENT SAMPLE ID</u> <u>DATE</u> <u>TIME</u> K2006772-001 W20H056-01 8/6/2020 0853

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab W20H056

	\	N20H056		1/200 6772
SENDING LABORATORY:		RECEIVING L	ABORATORY:	
City of Portland Water Pollution	n Control Lab	ALS Environr	mental	
6543 N. Burlington Ave		1317 S. 13th	Avenue	
Portland, OR 97203		Kelso, WA 98	3626	
Phone: 503-823-5600		Phone :(360)	577-7222	
Fax: 503-823-5656		Fax: (360) 63	36-1068	
Invoice To: Charles Lytle				
WPCL Project Name Riot Control Agent Residual	X Stan	TURNAROUI ndard h _ day(s)	ND REQUEST	
Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: W20H056-01	Water San	npled:08/06/20 08:5	53	
Out-Cr+6 diss	08/21/20 17:00	09/05/20 08:5	53	, , , , , , , , , , , , , , , , , , ,
Containers Supplied:				
P 250ml (D)				

Released By Date Received By Date

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Miscellaneous Forms

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case parrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.



Subcontracted Analytical Parameters

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com



Service Request No:K2006772

Jennifer Shackelford City of Portland 6543 N. Burlington Ave Portland, OR 97203

Laboratory Results for: Riot Control Agent Residual Investigation

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006772**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Brady Kalkman

Jamasks of

For

Janice Jaeger Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | FAX +1 585 288 8475

ALS Group USA, Corp.



Narrative Documents

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Client:Portland, City ofService Request: K2006772Project:Riot Control Agent Residual InvestigationDate Received: 08/07/2020

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 08/07/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

	- qui atrias	7\Y		
Approved by		U	Date	08/18/2020

Clamate took



SAMPLE DETECTION SUMMARY

CLIENT ID: W20H056-01	Lab ID: K2006772-001					
Analyte	Results	Flag	MDL	MRL	Units	Method
Chromium, Hexavalent, Dissolved	0.24		0.05	0.10	ug/L	218.6



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Client: Portland, City of Service Request:K2006772

Project: Riot Control Agent Residual Investigation/W20H056

SAMPLE CROSS-REFERENCE

SAMPLE # CLIENT SAMPLE ID DATE TIME

K2006772-001 W20H056-01 8/6/2020 0853

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Howard Holmes

Project Name:

Riot Control Agent Residual Investigation

of Cont.

Matrix

Water

Project Number:

W20H056

Jennifer Shackelford Project Manager:

Company:

Lab Code

K2006772-001

City of Portland

QAP:

LAB QAP

Client Sample ID

W20H056-01

				Cr6 D LL 218.6 LL
Sample		Date		
Date	Time	Received	Send To	
8/6/20	0853	8/7/20	ROCHESTER	II

86-20 0853

Folder Comments:

Tier II

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address:

.ALKLS.Data@alsglobal.com.

Send report & =Dt to ALKIS. Data & Howard Holmas

pH Checked

Received By:

Turnaround Requirements

RUSH (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

STANDARD

Requested FAX Date:

Requested Report Date: 08/20/20

Report Requirements

I. Results Only

II. Results + QC Summaries

III. Results + QC and Calibration Summaries

IV. Data Validation Report with Raw Data

Airbill Number:

PQL/MDL/J <u>Y</u> <u>Y</u> EDD

5-11-2000

PO#

Bill to

51K2006772

Invoice Information

Page 19 of 32

Page 1

	5) 71 7 ,	Cooler I	Recei	pt a	nd Pi	reservation	Che	eck F	orm	Rio	t Control			
roject/Clie	nt ALS	Kelso _			Fold	er Number								
_	ed on 541-21)a0	by:∬∑	,	_	COURIER:	ALS	UPS	FEDE	X) VELO	OCITY	CLIE	NT	
Were Cu	stody seals on	outside of cooler	г?	7	YN	5a Perch	lorate s	amples	have re	quired hea	dspace	?	YN	NA
Custody	papers proper	ly completed (in	k, signe	d)? (YN	5b Did V	OA vial	s, Alk,	or Sulfid	e have sig	g* bubł	oles?	YN	V (NA
Did all bo	ttles arrive in	good condition (unbroke	en)? (V N	6 Where	did the	bottles	origina	te?	ALS/F	ROC (CLIE	NT
Circle: V	Wet Ice Dry	Ice Gel packs	prese	nt? (Y N	7 Soil V	OA rec	eived a	s: B	ulk Er	соге	5035	set 1	VA
Temperatur	e Readings	Date: 811dl	720	Fime:	10:31	ID:	IR#7	IR#10	D .	From:	Temp	Blank	Sam	ple Bottle
Observed Te	mp (°C)	123												
Within 0-6°C	7?	(V) N		Y	N	Y N	Y	N	Y	N		N	Y	
f<0°C, wer	e samples froz	en? Y N		Y	N	Y N	Y	Ν.	Y	N	Y	N	Y	N
-	akdown/Prese	orage location:	: Date		8/11/	2020 Time:		45	by	18 hours o				-
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9. V 10. E 11. V 12. V	Vere all bottle Did all bottle la Vere correct convere 5035 vial Air Samples: Converted to the Converted Lot of test	labels complete (bels and tags agr ontainers used for s acceptable (no	i.e. anal ee with the test extra lal	lysis, custoots indi bels, r	preserva dy paper icated? not leaki 15? (tion, etc.)? rs? ng)?		\display \text{\frac{1}{2}}{2}	TES) TES) TES TES Tedlar®	NO NO NO	Lo	t Adde	ØA Ø/A) d	Final pH
9. V 10. E 11. V 12. V 13. A	Vere all bottle Did all bottle la Vere correct co Vere 5035 vial Air Samples: C	labels complete (bels and tags agr ontainers used for s acceptable (no cassettes / Tubes	i.e. analee with the test extra lale. Intact v	lysis, custoots indi bels, r vith M	preserva dy paper icated? not leaki 15? (tion, etc.)? rs? ng)? Canisters Pressur	ized	Samp	TES) TES) TES TES Tedlar®	NO NO NO Bags Inf	Lo	t Adde	₹ ₹ /A) ød	L.
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9. V 10. E 11. V 12. V 13. A pH ≥12 ≤2 ≤2 <4	Vere all bottle Did all bottle la Vere correct convere 5035 vial Air Samples: Converted to the Converted Lot of test	labels complete (bels and tags agrontainers used for acceptable (no assettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest	i.e. analee with the test extra lale. Intact v	lysis, custoots indi bels, r vith M	preserva dy paper icated? not leaki IS? C Lot Re	tion, etc.)? rs? ng)? Canisters Pressureceived	ized	Samp	TES) TES) TES TES Tedlar®	NO NO NO Bags Inf	Lo	t Adde	₹¶A ₹I/A) ad	L.
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9. V 10. E 11. V 12. V 13. A pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine	Vere all bottle Did all bottle la Vere correct convere 5035 vial Air Samples: Converted to the Converted Lot of test	labels complete (bels and tags agrontainers used for acceptable (no assettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃	i.e. analee with the test extra lale. Intact v	lysis, custoots indi bels, r vith M	preserva dy paper icated? not leaki 1S? C Lot Re	ng)? Canisters Pressureceived otify for 3day ntact PM to add of (625, 608,	ized	Samp	TES) TES TES TES Tedlar® ole ID sted	NO NO NO Bags Inf Vol. Added	Lo	pefore an	alysis.	pH
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- the per reid but not fittered

	HPROD	BULK
dung	HTR	FLDT
	SUB	HGFB
	ALS	LL3541

Labels secondary reviewed by:	
PC Secondary Review:	-

P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r17.doc

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

1/16/2020



Miscellaneous Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL Method Reporting Limit. Also known as:
- LOQ Limit of Quantitation (LOQ)

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a

substance allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

POL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring
TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but

greater than or equal to the MDL.

ALS Group USA, Corp. dba ALS Environmental

Analyst Summary report

Client: Portland, City of Service Request: K2006772

Project: Riot Control Agent Residual Investigation/W20H056

 Sample Name:
 W20H056-01
 Date Collected:
 08/6/20

 Lab Code:
 K2006772-001
 Date Received:
 08/7/20

Sample Matrix: Water

Analysis Method Extracted/Digested By Analyzed By

218.6 LL CWOODS

Printed 8/18/2020 4:32:30 PM



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
/a., c.caca.	Tropanacion mounos.
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual	SM 4500-CN-G
Cyanide	
Cyanide	
SM 4500-CN-E WAD	SM 4500-CN-I
	3111 1300 CIVI
Cyanide	

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation
	Method
6010C	3050B
6020A	3050B
6010C TCLP (1311)	3005A/3010A
extract	
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/	DI extraction
353.2/ SM 2320B/ SM	
5210B/ 9056A Anions	
For analytical methods not listed,	
method is the same as the analyti	cal method



Sample Results

ALS Environmental—Rochester Laboratory

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General Chemistry

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Portland, City of

Service Request: K2006772

Project: Riot Control Agent Residual Investigation/W20H056

Date Collected: 08/06/20 08:53

Sample Matrix: Water

Date Received: 08/07/20 12:45

vv ater

Basis: NA

Sample Name: Lab Code: W20H056-01 K2006772-001

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	0.24	ug/L	0.10	0.05	5	08/12/20 16:05	



QC Summary Forms

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



General Chemistry

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Portland, City of Service Request: K2006772

Project:Riot Control Agent Residual Investigation/W20H056Date Collected:NASample Matrix:WaterDate Received:NA

Sample Name: Method Blank Basis: NA

Lab Code: K2006772-MB

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	ND U	ug/L	0.020	0.010	1	08/12/20 11:27	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Portland, City of

Riot Control Agent Residual Investigation/W20H056 **Date Analyzed:** 08/12/20

Sample Matrix: Water

Project:

Lab Control Sample Summary General Chemistry Parameters

Units:ug/L Basis:NA

Service Request: K2006772

Lab Control Sample

K2006772-LCS

	Analytical				
Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6	0.208	0.200	104	90-110



6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656



August 26, 2020

Kevin Veaudry-Casaus Spill Protection and Citizen Response

Work OrderProjectReceivedW20H057Riot Control Agent Residual Investigation08/07/20 08:41

Enclosed are the results of analysis for the above work order. If you have questions concerning this report, please contact your project coordinator Peter Abrams at 503-823-5533.

Jennifer Shackelford

Jennifer Shackelford

Laboratory Manager







6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

LABORATORY ANALYSIS REPORT

Project: Riot Control Agent Residual

Investigation

Work Order: **W20H057**

Received: 8/7/20 8:41 Submitted By: Field Operations

Client: Spill Protection and Citizen Response

Project Mgr: Kevin Veaudry-Casaus

				Sample Collection Date						
Sample	Laboratory ID	Matrix	Type	Start	End	Qualifier				
ABQ484	W20H057-01	Stormwater	Grab	08/06/20 08:19	08/06/20 08:19					
ABQ608	W20H057-02	Stormwater	Grab	08/06/20 08:52	08/06/20 08:52					

Case Narrative

EPA 8270: Diphenylamine is reported as N-nitrosodiphenylamine.

The following compounds were either not detected as TICs or not detectable by method 8270:

Centralite 1,3-diethyldiphenylurea, Malononitrile, and o-chlorobenzaldehyde.

Analyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	Qualifier
General Chemistry								
Total Cyanide								
ABQ484 : W20H057-01 Cyanide	ND mg/L	0.0100		B20H176	08/12/20	08/12/20	SM 4500-CN E	
ABQ608 : W20H057-02 Cyanide	ND mg/L	0.0100		B20H176	08/12/20	08/12/20	SM 4500-CN E	
Nutrients								
Chloride								
ABQ484 : W20H057-01 Chloride	34.6 mg/L	2.00	2	B20H171	08/13/20	08/13/20	EPA 300.0	
ABQ608 : W20H057-02 Chloride	84.2 mg/L	10.0	10	B20H171	08/13/20	08/13/20	EPA 300.0	

Reported: 08/26/20 15:02

Jennifer Shackelford

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Page 2 of 55





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received: 08/07/20 08:41

Analyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	Qualifier
Dissolved Metals								
Dissolved Metals by ICPMS								
ABQ484: W20H057-01								
Barium, dissolved	77.0 ug/L	2.50	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Chromium, dissolved	4.05 ug/L	1.00	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Copper, dissolved	54.5 ug/L	1.00	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Lead, dissolved	0.569 ug/L	0.500	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Zinc, dissolved	281 ug/L	2.50	1	B20H190	08/13/20	08/13/20	EPA 200.8	
ABQ608: W20H057-02								
Barium, dissolved	56.9 ug/L	2.50	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Chromium, dissolved	1.26 ug/L	1.00	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Copper, dissolved	55.6 ug/L	1.00	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Lead, dissolved	1.02 ug/L	0.500	1	B20H190	08/13/20	08/13/20	EPA 200.8	
Zinc, dissolved	304 ug/L	2.50	1	B20H190	08/13/20	08/13/20	EPA 200.8	

Reported: 08/26/20 15:02

Jennifer Shackelford

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager





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Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client: Spill Protection and Citizen Response

Received: 08/07/20 08:41

Result Units MRL Dil. Batch Analyte Prepared Analyzed Method Qualifier Semivolatile Organics Semivolatile Organic Compounds by GCMS ABQ484: W20H057-01 3.0 B20H170 08/12/20 08/12/20 EPA 8270 Acenaphthene ND ua/L 1 3.0 B20H170 08/12/20 08/12/20 ND ug/L 1 FPA 8270 Acenaphthylene Anthracene ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 Benzo(a)anthracene ND ug/L 3.0 B20H170 08/12/20 08/12/20 EPA 8270 1 ND ug/L 3.0 B20H170 08/12/20 08/12/20 EPA 8270 Benzo(a)pyrene Benzo(b)fluoranthene ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 Benzo(g,h,i)perylene ND ug/L 3.0 B20H170 08/12/20 08/12/20 EPA 8270 B20H170 08/12/20 08/12/20 EPA 8270 Benzo(k)fluoranthene ND ug/L 3.0 1 ND ug/L B20H170 08/12/20 EPA 8270 4-Bromophenylphenyl ether 3.0 1 08/12/20 Butyl benzyl phthalate ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 4-Chloro-3-methylphenol ND ug/L 3.0 B20H170 08/12/20 08/12/20 EPA 8270 3.0 B20H170 08/12/20 08/12/20 4-Chloroaniline ND ug/L 1 FPA 8270 Bis(2-chloroethoxy) methane ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 B20H170 08/12/20 08/12/20 EPA 8270 Bis(2-chloroethyl) ether ND ug/L 3.0 1 3.0 B20H170 08/12/20 08/12/20 EPA 8270 Bis(2-chloroisopropyl) ether ND ua/L 1 B20H170 08/12/20 08/12/20 FPA 8270 L1 2-Chloronaphthalene ND ug/L 3.0 1 B20H170 2-Chlorophenol ND ug/L 3.0 1 08/12/20 08/12/20 EPA 8270 B20H170 08/12/20 08/12/20 4-Chlorophenylphenyl ether ND ug/L 3.0 EPA 8270 B20H170 08/12/20 08/12/20 EPA 8270 Chrysene ND ug/L 3.0 Di-n-butyl phthalate ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 Di-n-octyl phthalate B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 3.0 Dibenzo(a,h)anthracene 3.0 B20H170 08/12/20 08/12/20 EPA 8270 ND ua/L 1 Dibenzofuran ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 1,2-Dichlorobenzene ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 1,3-Dichlorobenzene ND ug/L 3.0 B20H170 08/12/20 08/12/20 EPA 8270 1.4-Dichlorobenzene ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 B20H170 08/12/20 3.3'-Dichlorobenzidine ND ug/L 3.0 1 08/12/20 FPA 8270 2,4-Dichlorophenol 3.0 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 1 Diethyl phthalate ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 FPA 8270 B20H170 08/12/20 08/12/20 6.0 FPA 8270 2,4-Dimethylphenol ND ug/L 1 B20H170 08/12/20 08/12/20 Dimethyl phthalate ND ug/L 3.0 1 EPA 8270 B20H170 08/12/20 08/12/20 EPA 8270 L1 4,6-Dinitro-2-methylphenol ND ug/L 6.0 2,4-Dinitrophenol ND ug/L 30 B20H170 08/12/20 08/12/20 EPA 8270 D4. L1 1 08/12/20 2,4-Dinitrotoluene ND ug/L 3.0 B20H170 08/12/20 EPA 8270 2,6-Dinitrotoluene ND ug/L 3.0 B20H170 08/12/20 08/12/20 EPA 8270 Diphenylamine* ND ug/L 10 1 B20H170 08/12/20 08/12/20 EPA 8270

Reported: 08/26/20 15:02

Hexachlorobenzene

Hexachlorobutadiene

Bis(2-ethylhexyl) phthalate

Fluoranthene

Fluorene

13 ug/L

ND ug/L

ND ug/L

ND ug/L

ND ug/L

4.5

3.0

3.0

3.0

3.0

1

1

1

1

B20H170

B20H170

B20H170

B20H170

B20H170

Jennifer Shackelford

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

08/12/20

08/12/20

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08/12/20

EPA 8270

EPA 8270

EPA 8270

EPA 8270

EPA 8270

L1





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client: Spill Protection and Citizen Response

Received: 08/07/20 08:41

Analyte	Result Units	MRL		Dil.	Batch	Prepared	Analyzed	Method	Qualifier
Semivolatile Organics									
Semivolatile Organic Compound	s by GCMS								
ABQ484 : W20H057-01									
Hexachlorocyclopentadiene	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	L1
Hexachloroethane	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Indeno(1,2,3-cd)pyrene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Isophorone	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Methylnaphthalene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Methylphenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
3- & 4-Methylphenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Naphthalene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	L1
2-Nitroaniline	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
3-Nitroaniline	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Nitroaniline	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Nitrobenzene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Nitrophenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Nitrophenol	ND ug/L	15		1	B20H170	08/12/20	08/12/20	EPA 8270	
N-Nitrosodimethylamine*	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
N-Nitrosodi-n-propylamine	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
N-Nitrosodiphenylamine	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	N
Pentachlorophenol	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Phenanthrene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Phenol	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Pyrene	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2,3,4,6-Tetrachlorophenol	ū								L1
1,2,4-Trichlorobenzene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	LI
2,4,5-Trichlorophenol	ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4,6-Trichlorophenol	ND ug/L Result	3.0	%Boo	1 	B20H170	08/12/20	08/12/20	EPA 8270	
Surrogate 2-Fluorophenol	23 ug/L	Expected 24.2		34-84	») В20Н170	08/12/20	08/12/20	EPA 8270	SU2
Phenol-d6	20 ug/L	24.2	83%	26-77	B20H170	08/12/20	08/12/20	EPA 8270	SU2
Nitrobenzene-d5	25 ug/L	24.2		52-126	B20H170	08/12/20	08/12/20	EPA 8270	
2-Fluorobiphenyl	21 ug/L	24.2	88%	44-130	B20H170	08/12/20	08/12/20	EPA 8270	
2,4,6-Tribromophenol	25 ug/L	24.2	101%	42-141	B20H170	08/12/20	08/12/20	EPA 8270	
p-Terphenyl-d14	17 ug/L	24.2	69%	38-175	B20H170	08/12/20	08/12/20	EPA 8270	
ABQ608: W20H057-02									
Acenaphthene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Acenaphthylene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Anthracene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(a)anthracene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(a)pyrene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(b)fluoranthene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(g,h,i)perylene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Benzo(k)fluoranthene	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Bromophenylphenyl ether	ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client: Spill Protection and Citizen Response

08/07/20 08:41

Received:

Analyte	Result Units	MRL	Dil.	Batch	Prepared	Analyzed	Method	Qualifier
emivolatile Organics								
emivolatile Organic Compounds	s by GCMS							
ABQ608 : W20H057-02								
Butyl benzyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Chloro-3-methylphenol	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Chloroaniline	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	M4
Bis(2-chloroethoxy) methane	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-chloroethyl) ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-chloroisopropyl) ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Chloronaphthalene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	L1
2-Chlorophenol	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4-Chlorophenylphenyl ether	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Chrysene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Di-n-butyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Di-n-octyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Dibenzo(a,h)anthracene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Dibenzofuran	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
1,2-Dichlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
1,3-Dichlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	M4
1,4-Dichlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
3,3'-Dichlorobenzidine	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4-Dichlorophenol	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Diethyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,4-Dimethylphenol	ND ug/L	6.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Dimethyl phthalate	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
4,6-Dinitro-2-methylphenol	ND ug/L	6.0	1	B20H170	08/12/20	08/12/20	EPA 8270	L1
2,4-Dinitrophenol	ND ug/L	15	1	B20H170	08/12/20	08/12/20	EPA 8270	L1
2,4-Dinitrotoluene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2,6-Dinitrotoluene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Diphenylamine*	ND ug/L	10	1	B20H170	08/12/20	08/12/20	EPA 8270	
Bis(2-ethylhexyl) phthalate	6.7 ug/L	4.5	1	B20H170	08/12/20	08/12/20	EPA 8270	M5
Fluoranthene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	Wie
Fluorene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Hexachlorobenzene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
Hexachlorobutadiene	-	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	L1
	ND ug/L	6.0	1	B20H170	08/12/20	08/12/20	EPA 8270	L1
Hexachlorocyclopentadiene	ND ug/L		1		08/12/20			M4
Hexachloroethane	ND ug/L	3.0	1			08/12/20	EPA 8270	1014
Indeno(1,2,3-cd)pyrene	ND ug/L	3.0	1		08/12/20	08/12/20	EPA 8270	
Isophorone	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Methylnaphthalene	ND ug/L	3.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
2-Methylphenol	ND ug/L	6.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
3- & 4-Methylphenol	ND ug/L	6.0	1	B20H170	08/12/20	08/12/20	EPA 8270	
•	-		1					L1
Naphthalene 2-Nitroaniline	ND ug/L ND ug/L	3.0 6.0	1 1	B20H170 B20H170	08/12/20 08/12/20	08/12/20 08/12/20	EPA 8270 EPA 8270	

Reported: 08/26/20 15:02

Jennifer Shackelford





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Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received: 08/07/20 08:41

				Batch	Prepared	Analyzed	Method	Qualifier
by GCMS								
ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	M4
ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	M4
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	15		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	M4
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	N
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ug/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	L1
ND ug/L	6.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
ND ua/L	3.0		1	B20H170	08/12/20	08/12/20	EPA 8270	
Result	Expected	%Rec	Limits(%	5)				
25 ug/L	24.2			B20H170	08/12/20	08/12/20	EPA 8270	SU2
21 ug/L	24.2	85%	26-77	B20H170	08/12/20	08/12/20	EPA 8270	SU2
26 ug/L	24.2			B20H170	08/12/20	08/12/20	EPA 8270	
23 ug/L	24.2			B20H170	08/12/20	08/12/20	EPA 8270	
	ND ug/L SOURCE SO	ND ug/L ND ug/L ND ug/L ND ug/L 3.0 ND ug/L 3.0 ND ug/L 15 ND ug/L 3.0 ND ug/L 4.0 ND ug/L 5.0 Result Expected 25 ug/L 24.2 24.2 26 ug/L 24.2 23 ug/L 24.2 24.2	ND ug/L 6.0 ND ug/L 3.0 ND ug/L 3.0 ND ug/L 15 ND ug/L 3.0	ND ug/L 6.0 1 ND ug/L 3.0 1 ND ug/L 6.0 1 ND ug/L 3.0 1 ND ug/L 15 1 ND ug/L 3.0 5 ND ug/L 3.0 6.0 1 N	ND ug/L ND ug/	ND ug/L ND ug/	ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 ND ug/L 15 1 B20H170 08/12/20 08/12/20 ND ug/L 3.0 1 B20H170 08/12/20 08/12/20	ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 6.0 1 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 15 1 B20H170 08/12/20 08/12/20 EPA 8270 ND ug/L 3.0 1 B20H170 08/12/20 08/12/20 EPA 8270 PA 827

Reported: 08/26/20 15:02

Jennifer Shackelford

Jennifer Shackelford, Laboratory Manager

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Page 7 of 55





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Quality Control Report

General Chemistry - QC

Sniko	Source	% Pos	PPD	Propared:

Analyte	Result	Units	MRL	Level	Result	(Limits)	(Limit)	Analyzed	Qualifier
Total Cyanide - Batch B20H176									
Blank (B20H176-BLK1)									
Cyanide	ND mg	g/L	0.0100					08/12/20 :08/12/20	
LCS (B20H176-BS1)									
Cyanide	0.0440 mg	g/L	0.0100	0.0500		88% (85-115)		08/12/20 :08/12/20	
Duplicate (B20H176-DUP1)			Source: W20H0	56-01					
Cyanide	ND mg	g/L	0.0100		ND		(20)	08/12/20 :08/12/20	
Matrix Spike (B20H176-MS1)			Source: W20H0	56-01					
Cyanide	0.0455 mg	g/L	0.0100	0.0500	ND	91% (80-120)		08/12/20 :08/12/20	
Matrix Spike Dup (B20H176-MSD1)			Source: W20H0	56-01					
Cyanide	0.0448 mg	g/L	0.0100	0.0500	ND	90% (80-120)	2 (20)	08/12/20 :08/12/20	

Nutrients - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
Chloride - Batch B20H171									
Blank (B20H171-BLK1)									
Chloride	ND mg	g/L	1.00					08/12/20 :08/12/20	
LCS (B20H171-BS1)									
Chloride	3.93 mg	g/L	1.00	4.00		98% (90-110)		08/12/20 :08/12/20	
Duplicate (B20H171-DUP1)			Source: W20H09	0-01					
Chloride	8.34 mg	g/L	1.00		8.33		0.06 (20)	08/12/20 :08/12/20	
Duplicate (B20H171-DUP2)			Source: W20H05	6-01					
Chloride	13.9 mg	g/L	1.00		13.9		0.03 (20)	08/12/20 :08/12/20	
Duplicate (B20H171-DUP3)			Source: W20H01	5-02					
Chloride	46.7 mg	g/L	2.00		46.8		0.2 (20)	08/12/20 :08/12/20	
Duplicate (B20H171-DUP4)			Source: W20H09	9-03					
Chloride	40.7 mg	g/L	5.00		40.6		0.04 (20)	08/13/20 :08/13/20	
Matrix Spike (B20H171-MS1)			Source: W20H09	0-01					
Chloride	12.5 mg	g/L	1.00	4.08	8.33	102% (80-120)		08/12/20 :08/12/20	

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08/07/20 08:41

Nutrients - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Chloride - Batch B20H171									
Matrix Spike (B20H171-MS2)			Source: W20H056	6-01					
Chloride	22.0 mg/L		2.00	8.00	13.9	101% (80-120)		08/12/20 :08/12/20	D2
Matrix Spike (B20H171-MS3)			Source: W20H01	5-02					
Chloride	66.9 mg/L		5.00	20.0	46.8	101% (80-120)		08/12/20 :08/12/20	D2
Matrix Spike (B20H171-MS4)			Source: W20H099	9-03					
Chloride	60.9 mg/L		5.00	20.0	40.6	101% (80-120)		08/13/20 :08/13/20	

Dissolved Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Dissolved Metals by ICPMS - Ba	atch B20H190								
Blank (B20H190-BLK1)									
Barium, dissolved	ND ug/L		0.529					08/13/20 :08/13/20	
Chromium, dissolved	ND ug/L		0.211					08/13/20 :08/13/20	
Copper, dissolved	ND ug/L		0.211					08/13/20 :08/13/20	
Lead, dissolved	ND ug/L		0.106					08/13/20 :08/13/20	
Zinc, dissolved	ND ug/L		0.529					08/13/20 :08/13/20	
LCS (B20H190-BS1)									
Barium, dissolved	5.42 ug/L		0.529	5.29		103% (85-115)		08/13/20 :08/13/20	
Chromium, dissolved	5.21 ug/L		0.211	5.29		98% (85-115)		08/13/20 :08/13/20	
Copper, dissolved	5.31 ug/L		0.211	5.29		100% (85-115)		08/13/20 :08/13/20	
Lead, dissolved	5.30 ug/L		0.106	5.29		100% (85-115)		08/13/20 :08/13/20	
Zinc, dissolved	26.6 ug/L		0.529	26.4		101% (85-115)		08/13/20 :08/13/20	
Duplicate (B20H190-DUP1)		S	Source: W20H0	57-01					
Barium, dissolved	78.9 ug/L		2.50		77.0		2 (20)	08/13/20 :08/13/20	
Chromium, dissolved	3.98 ug/L		1.00		4.05		2 (20)	08/13/20 :08/13/20	
Copper, dissolved	54.0 ug/L		1.00		54.5		1 (20)	08/13/20 :08/13/20	
Lead, dissolved	0.590 ug/L		0.500		0.569		4 (20)	08/13/20 :08/13/20	
Zinc, dissolved	276 ug/L		2.50		281		2 (20)	08/13/20 :08/13/20	
Matrix Spike (B20H190-MS1)		S	ource: W20H0	57-01					
Barium, dissolved	103 ug/L		2.50	25.0	77.0	104% (70-130)		08/13/20 :08/13/20	
Chromium, dissolved	27.9 ug/L		1.00	25.0	4.05	96% (70-130)		08/13/20 :08/13/20	
Copper, dissolved	77.0 ug/L		1.00	25.0	54.5	90% (70-130)		08/13/20 :08/13/20	
Lead, dissolved	25.8 ug/L		0.500	25.0	0.569	101% (70-130)		08/13/20 :08/13/20	
Zinc, dissolved	403 ug/L		2.50	125	281	98% (70-130)		08/13/20 :08/13/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compou	nds by GCMS - B	atch B20H170						
Blank (B20H170-BLK1)								
Acenaphthene	ND ug/L	3.0					08/12/20 :08/12/20	
Acenaphthylene	ND ug/L	3.0					08/12/20 :08/12/20	
Anthracene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(a)anthracene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(a)pyrene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(b)fluoranthene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(g,h,i)perylene	ND ug/L	3.0					08/12/20 :08/12/20	
Benzo(k)fluoranthene	ND ug/L	3.0					08/12/20 :08/12/20	
4-Bromophenylphenyl ether	ND ug/L	3.0					08/12/20 :08/12/20	
Butyl benzyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
4-Chloro-3-methylphenol	ND ug/L	3.0					08/12/20 :08/12/20	
4-Chloroaniline	ND ug/L	3.0					08/12/20 :08/12/20	
Bis(2-chloroethoxy) methane	ND ug/L	3.0					08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	ND ug/L	3.0					08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	ND ug/L	3.0					08/12/20 :08/12/20	
2-Chloronaphthalene	ND ug/L	3.0					08/12/20 :08/12/20	L1
2-Chlorophenol	ND ug/L	3.0					08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	ND ug/L	3.0					08/12/20 :08/12/20	
Chrysene	ND ug/L	3.0					08/12/20 :08/12/20	
Di-n-butyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
Di-n-octyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
Dibenzo(a,h)anthracene	ND ug/L	3.0					08/12/20 :08/12/20	
Dibenzofuran	ND ug/L	3.0					08/12/20 :08/12/20	
1,2-Dichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
1,3-Dichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
1,4-Dichlorobenzene	ND ug/L	3.0					08/12/20 :08/12/20	
3,3'-Dichlorobenzidine	ND ug/L	3.0					08/12/20 :08/12/20	
2,4-Dichlorophenol	ND ug/L	3.0					08/12/20 :08/12/20	
Diethyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
2,4-Dimethylphenol	ND ug/L	6.0					08/12/20 :08/12/20	
Dimethyl phthalate	ND ug/L	3.0					08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	ND ug/L	6.0					08/12/20 :08/12/20	L1
2,4-Dinitrophenol	ND ug/L	15					08/12/20 :08/12/20	L1
2,4-Dinitrotoluene	ND ug/L	3.0					08/12/20 :08/12/20	
2,6-Dinitrotoluene	ND ug/L	3.0					08/12/20 :08/12/20	
Diphenylamine	ND ug/L	10					08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	ND ug/L	4.5					08/12/20 :08/12/20	
Fluoranthene	ND ug/L	3.0					08/12/20 :08/12/20	
Fluorene	ND ug/L	3.0					08/12/20 :08/12/20	

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Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compo	unds by GCMS -	Batch B2	OH170						
Blank (B20H170-BLK1)	,								
Hexachlorobenzene	ND ug	/L	3.0					08/12/20 :08/12/20	
Hexachlorobutadiene	ND ug	/L	3.0					08/12/20 :08/12/20	L1
Hexachlorocyclopentadiene	ND ug	/L	6.0					08/12/20 :08/12/20	L1
Hexachloroethane	ND ug		3.0					08/12/20 :08/12/20	
Indeno(1,2,3-cd)pyrene	ND ug	/L	3.0					08/12/20 :08/12/20	
Isophorone	ND ug		3.0					08/12/20 :08/12/20	
2-Methylnaphthalene	ND ug		3.0					08/12/20 :08/12/20	
2-Methylphenol	ND ug	/L	6.0					08/12/20 :08/12/20	
3- & 4-Methylphenol	ND ug		6.0					08/12/20 :08/12/20	
Naphthalene	ND ug		3.0					08/12/20 :08/12/20	L1
2-Nitroaniline	ND ug		6.0					08/12/20 :08/12/20	
3-Nitroaniline	ND ug		6.0					08/12/20 :08/12/20	
4-Nitroaniline	ND ug		6.0					08/12/20 :08/12/20	
Nitrobenzene	ND ug		3.0					08/12/20 :08/12/20	
2-Nitrophenol	ND ug		6.0					08/12/20 :08/12/20	
4-Nitrophenol	ND ug		15					08/12/20 :08/12/20	
·			3.0					08/12/20 :08/12/20	
N-Nitrosodimethylamine	ND ug		3.0						
N-Nitrosodi-n-propylamine	ND ug							08/12/20 :08/12/20	
N-Nitrosodiphenylamine	ND ug		3.0					08/12/20 :08/12/20	
Pentachlorophenol	ND ug		3.0					08/12/20 :08/12/20	
Phenanthrene	ND ug		3.0					08/12/20 :08/12/20	
Phenol	ND ug		3.0					08/12/20 :08/12/20	
Pyrene	ND ug		3.0					08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	ND ug		6.0					08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	ND ug		3.0					08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	ND ug		6.0					08/12/20 :08/12/20	
2,4,6-Trichlorophenol	ND ug	/L	3.0					08/12/20 :08/12/20	
Surrogate									
2-Fluorophenol	19 ug			24.2		79% (34-84)		08/12/20 :08/12/20	
Phenol-d6	18 ug			24.2		75% (26-77)		08/12/20 :08/12/20	
Nitrobenzene-d5	24 ug			24.2		98% (52-126)		08/12/20 :08/12/20	
2-Fluorobiphenyl	22 ug 18 ug			24.2 24.2		92% (44-130)		08/12/20 :08/12/20 08/12/20 :08/12/20	
2,4,6-Tribromophenol p-Terphenyl-d14	76 ug 24 ug			24.2		72% (42-141) 97% (38-175)		08/12/20 :08/12/20	
LCS (B20H170-BS1)	9	-				()			
Acenaphthene	9.27 ug	/I	3.0	12.1		76% (70-120)		08/12/20 :08/12/20	
Acenaphthylene	9.27 ug 8.71 ug		3.0	12.1		76% (70-120)		08/12/20 :08/12/20	
Anthracene			3.0	12.1					
	11.0 ug					91% (76-129)		08/12/20 :08/12/20	
Benzo(a)anthracene	12.0 ug		3.0	12.1		99% (80-130)		08/12/20 :08/12/20	
Benzo(a)pyrene	10.8 ug	/L	3.0	12.1		89% (75-127)		08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





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Spill Protection and Citizen Response

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Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
Semivolatile Organic Compou	inds by GCMS -	Batch B20)H170						
CS (B20H170-BS1)	,								
Benzo(b)fluoranthene	11.1 ug/l	1	3.0	12.1		91% (72-124)		08/12/20 :08/12/20	
Benzo(g,h,i)perylene	11.3 ug/l		3.0	12.1		93% (68-126)		08/12/20 :08/12/20	
Benzo(k)fluoranthene	11.4 ug/l		3.0	12.1		94% (71-122)		08/12/20 :08/12/20	
4-Bromophenylphenyl ether	10.6 ug/l		3.0	12.1		87% (70-130)		08/12/20 :08/12/20	
Butyl benzyl phthalate	13.9 ug/l		3.0	12.1		115% (73-140)		08/12/20 :08/12/20	
4-Chloro-3-methylphenol	14.4 ug/l		3.0	12.1		119% (68-123)		08/12/20 :08/12/20	
4-Chloroaniline	11.1 ug/l		3.0	12.1		92% (57-124)		08/12/20 :08/12/20	
Bis(2-chloroethoxy) methane	11.8 ug/l		3.0	12.1		97% (69-130)		08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	11.4 ug/l		3.0	12.1		94% (72-130)		08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	10.8 ug/l		3.0	12.1		89% (63-130)		08/12/20 :08/12/20	
2-Chloronaphthalene	7.28 ug/l		3.0	12.1		60% (70-126)		08/12/20 :08/12/20	L,
2-Chlorophenol	11.3 ug/l		3.0	12.1		93% (58-119)		08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	9.83 ug/l		3.0	12.1		81% (59-123)		08/12/20 :08/12/20	
Chrysene	11.4 ug/l		3.0	12.1		94% (76-125)		08/12/20 :08/12/20	
Di-n-butyl phthalate	13.0 ug/l		3.0	12.1		107% (65-130)		08/12/20 :08/12/20	
Di-n-octyl phthalate	14.0 ug/l		3.0	12.1		116% (61-150)		08/12/20 :08/12/20	
Dibenzo(a,h)anthracene	11.4 ug/l		3.0	12.1		94% (70-126)		08/12/20 :08/12/20	
Dibenzofuran	9.47 ug/l		3.0	12.1		78% (67-121)		08/12/20 :08/12/20	
1,2-Dichlorobenzene	7.58 ug/l		3.0	12.1		63% (47-119)		08/12/20 :08/12/20	
1,3-Dichlorobenzene	7.37 ug/l		3.0	12.1		61% (45-120)		08/12/20 :08/12/20	
1,4-Dichlorobenzene	7.27 ug/l		3.0	12.1		60% (45-121)		08/12/20 :08/12/20	
2,4-Dichlorophenol	10.4 ug/l		3.0	12.1		86% (67-123)		08/12/20 :08/12/20	
Diethyl phthalate	11.7 ug/l		3.0	12.1		97% (51-130)		08/12/20 :08/12/20	
2,4-Dimethylphenol	13.9 ug/l		6.0	12.1		115% (59-124)		08/12/20 :08/12/20	
Dimethyl phthalate	12.2 ug/l		3.0	12.1		101% (66-130)		08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	1.78 ug/l		1.2	12.1		15% (56-118)		08/12/20 :08/12/20	L.
2,4-Dinitrophenol	ND ug/l		15	60.6		% (39-123)		08/12/20 :08/12/20	L,
2,4-Dinitrotoluene	9.47 ug/l		3.0	12.1		78% (76-133)		08/12/20 :08/12/20	
2,6-Dinitrotoluene	11.1 ug/l		3.0	12.1		92% (77-133)		08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	14.8 ug/l		4.5	12.1		122% (58-137)		08/12/20 :08/12/20	
Fluoranthene	11.2 ug/l		3.0	12.1		93% (74-130)		08/12/20 :08/12/20	
Fluorene	10.1 ug/l		3.0	12.1		83% (70-122)		08/12/20 :08/12/20	
Hexachlorobenzene	11.4 ug/l		3.0	12.1		94% (62-142)		08/12/20 :08/12/20	
Hexachlorobutadiene	6.12 ug/l		3.0	12.1		50% (68-128)		08/12/20 :08/12/20	L.
Hexachlorocyclopentadiene	2.73 ug/l		0.60	12.1		23% (28-108)		08/12/20 :08/12/20	L'
Hexachloroethane	6.82 ug/l		3.0	12.1		56% (55-118)		08/12/20 :08/12/20	
Indeno(1,2,3-cd)pyrene	11.4 ug/l		3.0	12.1		94% (69-130)		08/12/20 :08/12/20	
Isophorone	12.3 ug/l		3.0	12.1		101% (62-136)		08/12/20 :08/12/20	
2-Methylnaphthalene	7.42 ug/l		3.0	12.1		61% (58-117)		08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





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Investigation

Work Order: **W20H057**

Client:

Spill Protection and Citizen Response

Received: 08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compoun	ds by GCMS -	Batch B2)H170						
LCS (B20H170-BS1)									
2-Methylphenol	12.2 ug/	L	6.0	12.1		101% (55-123)		08/12/20 :08/12/20	
3- & 4-Methylphenol	12.0 ug/	L	6.0	12.1		99% (50-119)		08/12/20 :08/12/20	
Naphthalene	8.09 ug/	L	3.0	12.1		67% (70-119)		08/12/20 :08/12/20	Ľ
2-Nitroaniline	10.6 ug/	L	6.0	12.1		88% (74-143)		08/12/20 :08/12/20	
3-Nitroaniline	10.1 ug/	L	6.0	12.1		83% (53-135)		08/12/20 :08/12/20	
4-Nitroaniline	9.28 ug/	L	6.0	12.1		77% (42-147)		08/12/20 :08/12/20	
Nitrobenzene	10.8 ug/	L	3.0	12.1		89% (65-123)		08/12/20 :08/12/20	
2-Nitrophenol	9.99 ug/	L	6.0	12.1		82% (65-120)		08/12/20 :08/12/20	
4-Nitrophenol	26.8 ug/	L	15	60.6		44% (35-54)		08/12/20 :08/12/20	
N-Nitrosodimethylamine	6.98 ug/	L	3.0	12.1		58% (33-69)		08/12/20 :08/12/20	
N-Nitrosodi-n-propylamine	12.8 ug/	L	3.0	12.1		105% (59-131)		08/12/20 :08/12/20	
N-Nitrosodiphenylamine	11.6 ug/	L	3.0	12.1		96% (72-127)		08/12/20 :08/12/20	
Pentachlorophenol	9.17 ug/	L	3.0	12.1		76% (42-130)		08/12/20 :08/12/20	
Phenanthrene	10.6 ug/	L	3.0	12.1		88% (73-126)		08/12/20 :08/12/20	
Phenol	9.79 ug/	L	3.0	12.1		81% (48-88)		08/12/20 :08/12/20	
Pyrene	10.9 ug/	L	3.0	12.1		90% (72-130)		08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	9.15 ug/	L	6.0	12.1		75% (52-114)		08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	7.05 ug/	L	3.0	12.1		58% (61-124)		08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	11.2 ug/	L	6.0	12.1		93% (63-120)		08/12/20 :08/12/20	
2,4,6-Trichlorophenol	10.5 ug/	L	3.0	12.1		86% (71-119)		08/12/20 :08/12/20	
Surrogate									
2-Fluorophenol	21 ug/	L		24.2		86% (34-84)		08/12/20 :08/12/20	SU2
Phenol-d6	19 ug/	L		24.2		79% (26-77)		08/12/20 :08/12/20	SU2
Nitrobenzene-d5	26 ug/	L		24.2		108% (52-126)		08/12/20 :08/12/20	
2-Fluorobiphenyl	23 ug/			24.2		97% (44-130)		08/12/20 :08/12/20	
2,4,6-Tribromophenol	20 ug/			24.2 24.2		80% (42-141)		08/12/20 :08/12/20	
p-Terphenyl-d14	24 ug/	L				98% (38-175)		08/12/20 :08/12/20	
Matrix Spike (B20H170-MS1)			Source: W20H0	57-02					
Acenaphthene	10.9 ug/	L	3.0	12.1	ND	90% (70-130)		08/12/20 :08/12/20	
Acenaphthylene	11.2 ug/	L	3.0	12.1	ND	92% (70-130)		08/12/20 :08/12/20	
Anthracene	12.4 ug/	L	3.0	12.1	ND	102% (70-130)		08/12/20 :08/12/20	
Benzo(a)anthracene	12.6 ug/	L	3.0	12.1	ND	104% (70-130)		08/12/20 :08/12/20	
Benzo(a)pyrene	11.3 ug/	L	3.0	12.1	ND	93% (70-130)		08/12/20 :08/12/20	
Benzo(b)fluoranthene	11.6 ug/	L	3.0	12.1	ND	96% (70-130)		08/12/20 :08/12/20	
Benzo(g,h,i)perylene	12.1 ug/	L	3.0	12.1	ND	100% (70-130)		08/12/20 :08/12/20	
Benzo(k)fluoranthene	11.4 ug/	L	3.0	12.1	ND	94% (70-130)		08/12/20 :08/12/20	
4-Bromophenylphenyl ether	11.4 ug/	L	3.0	12.1	ND	94% (70-130)		08/12/20 :08/12/20	
Butyl benzyl phthalate	16.0 ug/	L	3.0	12.1	ND	132% (70-130)		08/12/20 :08/12/20	M11
4-Chloro-3-methylphenol	18.9 ug/	L	3.0	12.1	ND	156% (70-130)		08/12/20 :08/12/20	M11
4-Chloroaniline	2.82 ug/	L	0.60	12.1	ND	23% (70-130)		08/12/20 :08/12/20	M4

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier

Semivolatile Organic Compounds by GCMS - Batch B20H170

atrix Spike (B20H170-MS1)		Source: W20H05	7-02				
Bis(2-chloroethoxy) methane	13.0 ug/L	3.0	12.1	ND	107% (70-130)	08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	12.9 ug/L	3.0	12.1	ND	106% (70-130)	08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	12.1 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
2-Chloronaphthalene	9.59 ug/L	3.0	12.1	ND	79% (70-130)	08/12/20 :08/12/20	L
2-Chlorophenol	12.6 ug/L	3.0	12.1	ND	104% (70-130)	08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	11.3 ug/L	3.0	12.1	ND	93% (70-130)	08/12/20 :08/12/20	
Chrysene	11.8 ug/L	3.0	12.1	ND	97% (70-130)	08/12/20 :08/12/20	
Di-n-butyl phthalate	14.9 ug/L	3.0	12.1	ND	123% (70-130)	08/12/20 :08/12/20	
Di-n-octyl phthalate	18.4 ug/L	3.0	12.1	ND	152% (70-130)	08/12/20 :08/12/20	M1
Dibenzo(a,h)anthracene	12.1 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
Dibenzofuran	11.1 ug/L	3.0	12.1	ND	92% (70-130)	08/12/20 :08/12/20	
1,2-Dichlorobenzene	8.58 ug/L	3.0	12.1	ND	71% (70-130)	08/12/20 :08/12/20	
1,3-Dichlorobenzene	8.40 ug/L	3.0	12.1	ND	69% (70-130)	08/12/20 :08/12/20	M
1,4-Dichlorobenzene	8.57 ug/L	3.0	12.1	ND	71% (70-130)	08/12/20 :08/12/20	
2,4-Dichlorophenol	13.4 ug/L	3.0	12.1	ND	110% (70-130)	08/12/20 :08/12/20	
Diethyl phthalate	14.5 ug/L	3.0	12.1	ND	120% (70-130)	08/12/20 :08/12/20	
2,4-Dimethylphenol	16.2 ug/L	6.0	12.1	ND	134% (70-130)	08/12/20 :08/12/20	M
Dimethyl phthalate	13.6 ug/L	3.0	12.1	ND	112% (70-130)	08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	13.6 ug/L	6.0	12.1	ND	113% (50-150)	08/12/20 :08/12/20	L
2,4-Dinitrophenol	65.2 ug/L	15	60.6	ND	108% (50-150)	08/12/20 :08/12/20	L
2,4-Dinitrotoluene	11.8 ug/L	3.0	12.1	ND	97% (70-130)	08/12/20 :08/12/20	
2,6-Dinitrotoluene	11.6 ug/L	3.0	12.1	ND	96% (70-130)	08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	23.1 ug/L	4.5	12.1	6.67	135% (70-130)	08/12/20 :08/12/20	M
Fluoranthene	12.2 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
Fluorene	11.4 ug/L	3.0	12.1	ND	94% (70-130)	08/12/20 :08/12/20	
Hexachlorobenzene	11.9 ug/L	3.0	12.1	ND	98% (70-130)	08/12/20 :08/12/20	
Hexachlorobutadiene	7.43 ug/L	3.0	12.1	ND	61% (70-130)	08/12/20 :08/12/20	L
Hexachlorocyclopentadiene	7.13 ug/L	6.0	12.1	ND	59% (70-130)	08/12/20 :08/12/20	L
Hexachloroethane	8.22 ug/L	3.0	12.1	ND	68% (70-130)	08/12/20 :08/12/20	N
Indeno(1,2,3-cd)pyrene	12.1 ug/L	3.0	12.1	ND	100% (70-130)	08/12/20 :08/12/20	
Isophorone	15.3 ug/L	3.0	12.1	ND	126% (70-130)	08/12/20 :08/12/20	
2-Methylnaphthalene	10.4 ug/L	3.0	12.1	ND	85% (70-130)	08/12/20 :08/12/20	
2-Methylphenol	16.8 ug/L	6.0	12.1	ND	138% (70-130)	08/12/20 :08/12/20	M
3- & 4-Methylphenol	19.2 ug/L	6.0	12.1	ND	158% (70-130)	08/12/20 :08/12/20	M
Naphthalene	9.44 ug/L	3.0	12.1	ND	78% (70-130)	08/12/20 :08/12/20	L
2-Nitroaniline	13.8 ug/L	6.0	12.1	ND	113% (70-130)	08/12/20 :08/12/20	
3-Nitroaniline	2.88 ug/L	1.2	12.1	ND	24% (70-130)	08/12/20 :08/12/20	N
4-Nitroaniline	4.73 ug/L	1.2	12.1	ND	39% (70-130)	08/12/20 :08/12/20	N
Nitrobenzene	12.8 ug/L	3.0	12.1	ND	105% (70-130)	08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received: 08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result U	nits	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Semivolatile Organic Compounds	by GCMS - Ba	tch B20H170							
Matrix Spike (B20H170-MS1)		Sourc	e: W20H0	57-02					
2-Nitrophenol	12.1 ug/L		6.0	12.1	ND	100% (70-130)		08/12/20 :08/12/20	
4-Nitrophenol	52.9 ug/L		15	60.6	ND	87% (50-150)		08/12/20 :08/12/20	
N-Nitrosodimethylamine	7.37 ug/L		3.0	12.1	ND	61% (70-130)		08/12/20 :08/12/20	M4
N-Nitrosodi-n-propylamine	14.8 ug/L		3.0	12.1	ND	122% (70-130)		08/12/20 :08/12/20	
N-Nitrosodiphenylamine	12.6 ug/L		3.0	12.1	ND	104% (70-130)		08/12/20 :08/12/20	
Pentachlorophenol	22.3 ug/L		3.0	12.1	ND	184% (70-130)		08/12/20 :08/12/20	M11
Phenanthrene	11.8 ug/L		3.0	12.1	ND	98% (70-130)		08/12/20 :08/12/20	
Phenol	12.8 ug/L		3.0	12.1	ND	106% (50-150)		08/12/20 :08/12/20	
Pyrene	12.0 ug/L		3.0	12.1	ND	99% (70-130)		08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	12.3 ug/L		6.0	12.1	ND	102% (70-130)		08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	8.27 ug/L		3.0	12.1	ND	68% (70-130)		08/12/20 :08/12/20	L1
2,4,5-Trichlorophenol	14.1 ug/L		6.0	12.1	ND	117% (70-130)		08/12/20 :08/12/20	
2,4,6-Trichlorophenol	13.6 ug/L		3.0	12.1	ND	112% (70-130)		08/12/20 :08/12/20	
Surrogate									
2-Fluorophenol	25 ug/L			24.2		103% (34-84)		08/12/20 :08/12/20	SU2
Phenol-d6	21 ug/L			24.2		87% (26-77)		08/12/20 :08/12/20	SU2
Nitrobenzene-d5	29 ug/L			24.2		119% (52-126)		08/12/20 :08/12/20	
2-Fluorobiphenyl	24 ug/L			24.2		100% (44-130)		08/12/20 :08/12/20	
2,4,6-Tribromophenol	28 ug/L			24.2		115% (42-141)		08/12/20 :08/12/20	
p-Terphenyl-d14	19 ug/L			24.2		78% (38-175)		08/12/20 :08/12/20	
Matrix Spike Dup (B20H170-MSD1)		Sourc	e: W20H0	57-02					
Acenaphthene	11.2 ug/L		3.0	12.1	ND	92% (70-130) 2	2 (50)	08/12/20 :08/12/20	
Acenaphthylene	11.6 ug/L		3.0	12.1	ND	96% (70-130)	1 (50)	08/12/20 :08/12/20	
Anthracene	12.1 ug/L		3.0	12.1	ND	100% (70-130) 2	2 (50)	08/12/20 :08/12/20	
Benzo(a)anthracene	12.7 ug/L		3.0	12.1	ND	104% (70-130)	0.2 (50)	08/12/20 :08/12/20	
Benzo(a)pyrene	11.0 ug/L		3.0	12.1	ND	91% (70-130)	3 (50)	08/12/20 :08/12/20	
Benzo(b)fluoranthene	10.8 ug/L		3.0	12.1	ND	89% (70-130)	7 (50)	08/12/20 :08/12/20	
Benzo(g,h,i)perylene	11.6 ug/L		3.0	12.1	ND	96% (70-130)	5 (50)	08/12/20 :08/12/20	
Benzo(k)fluoranthene	10.7 ug/L		3.0	12.1	ND	88% (70-130)	7 (50)	08/12/20 :08/12/20	
4-Bromophenylphenyl ether	11.3 ug/L		3.0	12.1	ND	93% (70-130)	. ,	08/12/20 :08/12/20	
Butyl benzyl phthalate	15.3 ug/L		3.0	12.1	ND	126% (70-130)	. ,	08/12/20 :08/12/20	
4-Chloro-3-methylphenol	18.1 ug/L		3.0	12.1	ND	150% (70-130)	· ,	08/12/20 :08/12/20	M11
4-Chloroaniline	3.14 ug/L		3.0	12.1	ND	, ,	(50)	08/12/20 :08/12/20	M4
Bis(2-chloroethoxy) methane	12.8 ug/L		3.0	12.1	ND	106% (70-130)	` '	08/12/20 :08/12/20	
Bis(2-chloroethyl) ether	12.2 ug/L		3.0	12.1	ND	101% (70-130)		08/12/20 :08/12/20	
Bis(2-chloroisopropyl) ether	11.1 ug/L		3.0	12.1	ND	91% (70-130)		08/12/20 :08/12/20	
2-Chloronaphthalene	10.3 ug/L		3.0	12.1	ND	85% (70-130)		08/12/20 :08/12/20	L1
2-Chlorophenol	12.2 ug/L		3.0	12.1	ND	101% (70-130)		08/12/20 :08/12/20	
4-Chlorophenylphenyl ether	12.2 ug/L 10.8 ug/L		3.0	12.1	ND	89% (70-130) 5		08/12/20 :08/12/20	
- Gilorophenyiphenyi etilei	10.0 ug/L		3.0	14.1	140	00 /0 (10-130)	(30)	30/12/20 .00/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford





6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Work Order: W20H057

Client:

Spill Protection and Citizen Response

Received:

08/07/20 08:41

Semivolatile Organics - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
Semivolatile Organic Compounds	by GCMS -	Batch B	20H170						
Matrix Spike Dup (B20H170-MSD1)			Source: W20H05	57-02					
Di-n-butyl phthalate	14.4 ug	/L	3.0	12.1	ND	119% (70-130)	3 (50)	08/12/20 :08/12/20	
Di-n-octyl phthalate	17.7 ug	/L	3.0	12.1	ND	146% (70-130)	3 (50)	08/12/20 :08/12/20	M1′
Dibenzo(a,h)anthracene	11.8 ug	/L	3.0	12.1	ND	98% (70-130)	2 (50)	08/12/20 :08/12/20	
Dibenzofuran	11.2 ug	/L	3.0	12.1	ND	93% (70-130)	1 (50)	08/12/20 :08/12/20	
1,2-Dichlorobenzene	8.87 ug	/L	3.0	12.1	ND	73% (70-130)	3 (50)	08/12/20 :08/12/20	
1,3-Dichlorobenzene	9.06 ug	/L	3.0	12.1	ND	75% (70-130)	8 (50)	08/12/20 :08/12/20	M4
1,4-Dichlorobenzene	9.09 ug	/L	3.0	12.1	ND	75% (70-130)	6 (50)	08/12/20 :08/12/20	
2,4-Dichlorophenol	13.0 ug	/L	3.0	12.1	ND	108% (70-130)	3 (50)	08/12/20 :08/12/20	
Diethyl phthalate	14.1 ug	/L	3.0	12.1	ND	116% (70-130)	3 (50)	08/12/20 :08/12/20	
2,4-Dimethylphenol	15.5 ug	/L	6.0	12.1	ND	128% (70-130)	4 (50)	08/12/20 :08/12/20	
Dimethyl phthalate	13.2 ug	/L	3.0	12.1	ND	109% (70-130)	3 (50)	08/12/20 :08/12/20	
4,6-Dinitro-2-methylphenol	13.9 ug	/L	6.0	12.1	ND	114% (50-150)	2 (50)	08/12/20 :08/12/20	Ľ
2,4-Dinitrophenol	65.8 ug	/L	15	60.6	ND	109% (50-150)	0.9 (50)	08/12/20 :08/12/20	L
2,4-Dinitrotoluene	11.8 ug	/L	3.0	12.1	ND	98% (70-130)	0.4 (50)	08/12/20 :08/12/20	
2,6-Dinitrotoluene	11.8 ug	/L	3.0	12.1	ND	98% (70-130)	2 (50)	08/12/20 :08/12/20	
Bis(2-ethylhexyl) phthalate	24.2 ug	/L	4.5	12.1	6.67	145% (70-130)	5 (50)	08/12/20 :08/12/20	Ms
Fluoranthene	12.2 ug	/L	3.0	12.1	ND	100% (70-130)	0.02 (50)	08/12/20 :08/12/20	
Fluorene	11.4 ug	/L	3.0	12.1	ND	94% (70-130)	0.1 (50)	08/12/20 :08/12/20	
Hexachlorobenzene	11.7 ug	/L	3.0	12.1	ND	96% (70-130)	2 (50)	08/12/20 :08/12/20	
Hexachlorobutadiene	8.48 ug	/L	3.0	12.1	ND	70% (70-130)	13 (50)	08/12/20 :08/12/20	L
Hexachlorocyclopentadiene	7.81 ug		6.0	12.1	ND	64% (70-130)	9 (50)	08/12/20 :08/12/20	Ľ
Hexachloroethane	8.86 ug	/L	3.0	12.1	ND	73% (70-130)	7 (50)	08/12/20 :08/12/20	M4
Indeno(1,2,3-cd)pyrene	11.7 ug	/L	3.0	12.1	ND	96% (70-130)	4 (50)	08/12/20 :08/12/20	
Isophorone	15.0 ug		3.0	12.1	ND	124% (70-130)	2 (50)	08/12/20 :08/12/20	
2-Methylnaphthalene	11.3 ug	/L	3.0	12.1	ND	93% (70-130)	9 (50)	08/12/20 :08/12/20	
2-Methylphenol	13.7 ug	/L	6.0	12.1	ND	113% (70-130)	20 (50)	08/12/20 :08/12/20	
3- & 4-Methylphenol	17.9 ug	/L	6.0	12.1	ND	148% (70-130)	7 (50)	08/12/20 :08/12/20	M1′
Naphthalene	10.5 ug	/L	3.0	12.1	ND	87% (70-130)	11 (50)	08/12/20 :08/12/20	Ľ
2-Nitroaniline	13.9 ug	/L	6.0	12.1	ND	115% (70-130)	1 (50)	08/12/20 :08/12/20	
3-Nitroaniline	3.15 ug	/L	0.60	12.1	1.05	17% (70-130)	(50)	08/12/20 :08/12/20	M ²
4-Nitroaniline	4.82 ug	/L	0.60	12.1	0.898	32% (70-130)	(50)	08/12/20 :08/12/20	M4
Nitrobenzene	12.5 ug	/L	3.0	12.1	ND	103% (70-130)	2 (50)	08/12/20 :08/12/20	
2-Nitrophenol	12.6 ug		6.0	12.1	ND	104% (70-130)	4 (50)	08/12/20 :08/12/20	
4-Nitrophenol	51.0 ug		15	60.6	ND	84% (50-150)	` '	08/12/20 :08/12/20	
N-Nitrosodimethylamine	6.99 ug		3.0	12.1	ND	58% (70-130)	. ,	08/12/20 :08/12/20	M
N-Nitrosodi-n-propylamine	14.4 ug		3.0	12.1	ND	119% (70-130)	. ,	08/12/20 :08/12/20	
N-Nitrosodiphenylamine	12.1 ug		3.0	12.1	ND	100% (70-130)	, ,	08/12/20 :08/12/20	
Pentachlorophenol	22.8 ug		3.0	12.1	ND	188% (70-130)	. ,	08/12/20 :08/12/20	M1′
Phenanthrene	11.4 ug		3.0	12.1	ND	94% (70-130)	. ,	08/12/20 :08/12/20	

Reported: 08/26/20 15:02

Jennifer Shackelford



Analyte

Phenol-d6

Nitrobenzene-d5

2-Fluorobiphenyl

p-Terphenyl-d14

2,4,6-Tribromophenol

City of Portland Water Pollution Control Laboratory



Qualifier

SU2

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656 ORELAP Certification ID 4023

Project: Riot Control Agent Residual

Investigation

Result

Units

Work Order: W20H057

Client:

Spike

Level

24.2

24.2

24.2

24.2

Spill Protection and Citizen Response

Prepared:

Analyzed

08/12/20 :08/12/20

08/12/20 :08/12/20

08/12/20 :08/12/20

08/12/20 :08/12/20

08/12/20 :08/12/20

RPD

(Limit)

Received: 08/07/20 08:41

%Rec

(Limits)

83% (26-77)

116% (52-126)

93% (44-130)

111% (42-141)

69% (38-175)

Source

Result

Semivolatile Organics - QC

MRL

Semivolatile Organic Compounds b	y GCMS - Batch	Source: W20H057-	no				
Matrix Spike Dup (B20H170-MSD1) Phenol	12.4 ug/L	3.0	12.1	ND	102% (50-150) 4 (50)	08/12/20 :08/12/20	
Pyrene	11.5 ug/L	3.0	12.1	ND	95% (70-130) 5 (50)	08/12/20 :08/12/20	
2,3,4,6-Tetrachlorophenol	12.2 ug/L	6.0	12.1	ND	101% (70-130) 1 (50)	08/12/20 :08/12/20	
1,2,4-Trichlorobenzene	8.97 ug/L	3.0	12.1	ND	74% (70-130) 8 (50)	08/12/20 :08/12/20	L
2,4,5-Trichlorophenol	13.9 ug/L	6.0	12.1	ND	115% <i>(70-130)</i> 1 (50)	08/12/20 :08/12/20	
2,4,6-Trichlorophenol	13.7 ug/L	3.0	12.1	ND	113% (70-130) 1 (50)	08/12/20 :08/12/20	
Surrogate							
2-Fluorophenol	24 ug/L		24.2		98% (34-84)	08/12/20 :08/12/20	SU

Qualifiers

D2	The sample required dilution due to high levels of target analytes.

D4 Reporting limit is raised for this analyte due to non-target matrix interference.

20 ug/L

28 ug/L

23 ug/L

27 ug/L

17 ug/L

L1 Recovery for this analyte in the laboratory control sample was outside the acceptance range (low). Sample results may be

low estimates.

M11 Matrix spike recovery for this analyte was high; the analyte was not detected in the sample and results are not affected.

M4 Based on low matrix spike recovery, the sample result may be a low estimate due to matrix interference.

M5 Based on high matrix spike recovery, the sample result should be considered an estimate due to matrix effect and/or

non-homogeneous matrix.

N Refer to case narrative.

SU2 Recovery for one or more surrogate compounds was outside the acceptance range (high). Sample results may be high

estimates.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference
*	This analyte is not certified under NELAP		

Reported: 08/26/20 15:02

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford, Laboratory Manager

Jennifer Shackelford

Water Pollution Control Laboratory 6543 N. Burlington Ave. Portland, Oregon 97203-4552 Sample Custodian: (503) 823-5696

2020-08-07 Riot Control Agent Residual Investigation COC

General Lab: (503) 823-5681



Date: <u>용/6/3</u>

Work Order #: W264057

Collected By: MJ5 , ECF, JXB, JXL

Client Name: SPCR Project Number (if applicable): Project Name: **Riot Control Agent Residual Investigation** Project Contact: Kevin Veaudry-Casaus

	12:		<u> </u>			<u>, .</u>						R	eque	este	d A	nal	yse	!S							
ber	Stormwater Samples Total Metals (Ba, Cu, C Perchlorate were analy the Riot Control Agent DEQ (W20H047, W20H	Cr, Pb, Zn), To zed on these Stormwater p	otal Hexava same sam	ples subm	itted under		etals		alent Chromium	2101	EXT ONLY	266270	:	:		!	:	:		1	:			☐ Standard	d-Time Request:
Lab Number		Sample	Sample	Sample	Sample	Total Cyanide	Dissolved Metals	Cu, Cr,	Hexav	10 C. J. J. C. J. J. C. J.	AAIC	S S		÷				,	· ·		:			Other:	business days)
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WPCL	Cooler	Recei	pt Form
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Work Order Number: W 201	₹ Cooler Receipt Form Fi	lled Out By:
Project: Spcn / Rio+		
	circle one) [If directly from field, indicate i	here:]
	CBWTP fridge Client C	ourier
Tomporatura (°C):	,	

	Yes	No	N/A
Is the COC present and signed?	V		
Are sample bottles intact?	~		
Do the COC and sample labels match?	v	.,	
Are the appropriate containers used?	/		
Are samples appropriately preserved?			
Do VOA vials or alkalinity bottles have Headspace? (circle which this applies to)			/
Are samples received within holding times (except for pH and residual chlorine)?	/		

Pres. #	Preservative	LIMS ID	Standard Preservation Amounts
1	HNO ₃ (1:1) to pH <2	2000696	0.5mL/250mL; 1.0mL/500mL; 4-5 drops/50mL centrifuge tube
2	H ₂ SO ₄ (18N) to pH <2		0.4mL/250mL; 0.8mL/500mL; 1.6mL/1000mL
3	HCl (1:1) to pH <2		1.0mL/500mL; 2.0mL/1000mL
4	HCI (1:1) to pH 2-3		For TOC: 2-5 drops/250mL
5	NaOH (pellets) to pH >12	1800987	4-10 pellets/500mL; 8-20 pellets/1000mL

6 Ammorium Sulfate Buffer 2001073 2.5 ml/250 ml

	D	aţe		Time	Analyst	Sample LIMS ID	Bottle ID	Pres. #	Comments
4		7/2	٥	6910	5	W20H057-01 702	B	1	
	- 1	1		}			C	5	pre-pres. pH ok
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Comments:	 	
	 	 ,

WPCL Cooler Receipt Form

Work C	Order Number	: W20H05	<u>† </u>	ooler Receipt	Form Fil	led Oı	ut By: _/	Rec_	
Project	: Riot Cont	101 Agent R	esidual Inves	tigation					
Receiv	ed on ice: Y	ES (NO) (ci	rcle one) [If direc	ctly from field, i	indicate h	ere:			
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	rature (°C): _		-	-					
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Ale Sai	riples received	i within noidh	ig times (except for	pri and residue	ai Ciliotilik	=) <u>:</u>			
Pres. #	Preservative		LIMS ID	Standard Pres	ervation	Amoui	nts		
1	HNO ₃ (1:1) to	pH <2		0.5mL/250mL;	1.0mL/500	0mL; 4	-5 drops/	50mL cen	trifuge tube
2	H ₂ SO ₄ (18N) to	o pH <2		0.4mL/250mL;	0.8mL/500	0mL ; 1	.6mL/10	00mL	
3	HCI (1:1) to p	H <2		1.0mL/500mL;	2.0mL/100	00mL			
4	HCI (1:1) to p	H 2-3		For TOC: 2-5 d	lrops/250n	nL			
5	NaOH (pellets	s) to pH >12		4-10 pellets/50	0mL; 8-20	pellets	s/1000ml		
D-4-	T:	A1	Commis LIME ID	Bottle ID	Pres. #	Com	ments		
Date	Time	Analyst	Sample LIMS ID	Bottle ID	F165.#	COIII		<u>-</u> .	
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Service Request No:K2006780

Jennifer Shackelford City of Portland 6543 N. Burlington Ave Portland, OR 97203

Laboratory Results for: Riot Control Agent Residual Investigation

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006780**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes Project Manager

Howaldblum



Narrative Documents

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com



Client:Portland, City ofService Request: K2006780Project:Riot Control Agent Residual InvestigationDate Received: 08/07/2020

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 08/07/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Subcontracted Analytical Parameters:

Chromium (VI) by EPA Method 218.6

Chromium (VI) analysis by EPA Method 218.6 was performed at ALS Rochester, NY Laboratory. The data for this analysis is included in the corresponding section of this report.

Approved by

Howard Holen

Date 08/18/2020

Page 23 of 55



Sample Receipt Information

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com

Client: Portland, City of Service Request:K2006780

Project: Riot Control Agent Residual Investigation/W20H057

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	HIME
K2006780-001	W20H057-01	8/6/2020	0819
K2006780-002	W20H057-02	8/6/2020	0852

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab W20H057

	RECEIVING LAB	RECEIVING LABORATORY:					
City of Portland Water Pollution Control Lab 6543 N. Burlington Ave Portland, OR 97203 Phone: 503-823-5600 Fax: 503-823-5656 Invoice To: Charles Lytle			ALS Environmental 1317 S. 13th Avenue Kelso, WA 98626 Phone :(360) 577-7222 Fax: (360) 636-1068				
nvestigation		rd	D REQUEST				
Due	Expires	Laboratory ID	Comments				
Water	Sampled:08/06/20 08:19						
08/21/20 17:00	09/05/20 08:19		, PARTY TAXABLE	And the state of t			
Water	Sampled:08/06/20 08:52						
08/21/20 17:00	09/05/20 08:52						
	Due Water 08/21/20 17:00	Control Lab ALS Environme 1317 S. 13th Av Kelso, WA 9862 Phone :(360) 57 Fax: (360) 636- Nestigation X Standa Rush Due Expires Water Sampled:08/06/20 08:19 08/21/20 17:00 09/05/20 08:19	ALS Environmental 1317 S. 13th Avenue Kelso, WA 98626 Phone :(360) 577-7222 Fax: (360) 636-1068 TURNAROUN X Standard Rush day(s) Due Expires Laboratory ID Water Sampled:08/06/20 08:19 08/21/20 17:00 09/05/20 08:19 Water Sampled:08/06/20 08:52	ALS Environmental 1317 S. 13th Avenue Kelso, WA 98626 Phone :(360) 577-7222 Fax: (360) 636-1068 TURNAROUND REQUEST X Standard Rush _ day(s) Due Expires Laboratory ID Comments Water Sampled:08/06/20 08:19 08/21/20 17:00 09/05/20 08:52			

Released By Date Received By Date

Released By Date

Received By Date

Received By Date

Page 1 of 1 Page 26 of 55

		,	Coolor Bessint		3		- Fa			PM	
Client	. WPC	l _ `	Cooler Receipt	anu r	rese			¥00			
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	vere custody seals i						ned and dated	17	Y	 N	
-	erature Blank prese		<i>(</i>)	-	•				column below:	.,	
5. Were sample If no, were t	es received within the	ne method speci and same day a	sample bottle contain fied temperature rang as collected? If not, no cozen Partially Th	ges? otate the		# below			nple Temp": NA NA Y	, И И	
Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID/N		Out o	f temp	PM Notifi If out of	ed	Tracking Numb	er/NA	Filed
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		<u> </u>		}							
=	aterial: Inserts ody papers properly	' (ble Wrap (Sel Pack	é Wei	lice D	ry Ice	Sleeves		NA (Y)	N	
	ples received in goo		•						NA (Y	N	
	-		preservation, etc.)?			1			NA (V)	N	
	nple labels and tags opriate bottles/cont	_	mes received for the t	ests ind	icated?				NA (Y)	N N	
	•		N SOP) received at th			H? Indi	icate in the tal	ble below	(A) Y	N	
13. Were VOA	A vials received wit	hout headspace	? Indicate in the tabl	e below					() Y	N	
14. Was C12/I	Res negative?								(ÑA) Y	N	
S	ample ID on Bot	tie	Sample	iD on	COC				identified by:		
											11111111
			Bottle Count	Head				Volume	Reagent Lot	T I	
	Sample ID		Bottle Type	space	Broke	рH	Reagent	added	Number	initiais	Time
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Notes, Disc	repancies, Reso	lutions:		1	<u> </u>	<u> </u>		<u> </u>		1. 1	
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Miscellaneous Forms

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case parrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.



Subcontracted Analytical Parameters

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360) 577-7222 Fax (360) 425-9096 www.alsglobal.com



Service Request No:K2006780

Jennifer Shackelford City of Portland 6543 N. Burlington Ave Portland, OR 97203

Laboratory Results for: Riot Control Agent Residual Investigation

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2020 For your reference, these analyses have been assigned our service request number **K2006780**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Brady Kalkman

Jamasks of

For

Janice Jaeger

Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | FAX +1 585 288 8475

ALS Group USA, Corp.

dba ALS Environmental



Narrative Documents

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Client:Portland, City ofService Request: K2006780Project:Riot Control Agent Residual InvestigationDate Received: 08/07/2020

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 08/07/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

	- quit sorra	1/1		
Approved by		U	_ Date	08/18/2020

Clamanetras 1



SAMPLE DETECTION SUMMARY

CLIENT ID: W20H057-01		Lab ID: K2006780-001					
Analyte	Results	Flag	MDL	MRL	Units	Method	
Chromium, Hexavalent, Dissolved	2.33		0.05	0.10	ug/L	218.6	
CLIENT ID: W20H057-02		Lab	ID: K2006	780-002			
Analyte	Results	Flag	MDL	MRL	Units	Method	
Chromium, Hexavalent, Dissolved	0.16		0.05	0.10	ug/L	218.6	



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Client: Portland, City of Service Request:K2006780

Project: Riot Control Agent Residual Investigation/W20H057

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>IIME</u>
K2006780-001	W20H057-01	8/6/2020	0819
K2006780-002	W20H057-02	8/6/2020	0852

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

Project Name:

Riot Control Agent Residual Investigation

Project Number:

W20H057

Project Manager:

Jennifer Shackelford

Company:

City of Portland

QAP:

LAB QAP

Cr6 D LL 218.6 LL

				Sam	ple	Date		
Lab Code	Client Sample ID	# of Cont.	Matrix	Date	Time	Received	Send To	
K2006780-001	W20H057-01	1	Water	8/6/20	0819	8/7/20	ROCHESTER	II
K2006780-002	W20H057-02	1	Water	8/6/20	0852	8/7/20	ROCHESTER	II

2 C76 218.6 LL 86-2020 08-19-08:52

ALS Contact: Howard Holmes

Folder Comments:

Tier II

Invoice Information **Turnaround Requirements** Report Requirements Special Instructions/Comments I. Results Only Please provide the electronic (PDF and EDD) report to the following e-mail address: RUSH (Surcharges Apply) ALKLS.Data@alsglobal.com. II. Results + QC Summaries PLEASE CIRCLE WORK DAYS PO# 1 2 3 4 5 III. Results + QC and Calibration Summaries Send report & EDD to ALKES. Defa 51K2006780 IV. Data Validation Report with Raw Data STANDARD Bill to Requested FAX Date: PQL/MDL/J <u>Y</u> Page 39 of <u>Y</u> EDD Requested Report Date: 08/20/20 K2006780
City of Portland
Riot Control Agent Residual Investigation pH Checked 8412020 Received By: Airbill Number:

Page 19 of 35

(ALS)

Cooler Receipt and Preservation Check Form

K2006780	5
Riot Control Agent Residual Inv	

B Did all bottles arrive in good condition (unbroken)? W N 6 Where did the bottles originate? ALS/ROC CLIENT	Project/Clie	ent_ALS	Kelso			Folde	r Number_				_•			
Were Custedy seabs on outside of cooler No Sa Perchlorate samples have required headspace? No Sa Did all bottles arrive in good condition (unbroken)? No Soil VOA vials, Alk, or Sudifide have sigh bubbles? No No No Soil VOA vials, Alk, or Sudifide have sigh bubbles? No No No No No No No N	Cooler receive	ed on_&11-2	020	by:∭	<u>{ </u>	_	COURIER:	ALS	UPS	FEDE	X) VEL	OCITY CL	IENT	
Did all bottles arrive in good condition (unbroken)? N	1 Were Cu	stody seals on			[(<u> </u>	5a Percl	alorate s	samples	have re	quired he	adspace?	T Y	N NA
Cooler Breakdown/Preservation Check**: Date: Planton Time: Did at within 48 hours of sampling? Y N Cooler Breakdown/Preservation Check**: Date: Planton Time: Did at within 48 hours of sampling? Y N Were all bottle labels complete (i.e. analysis, preservation, etc.)? Were 5035 vials acceptable (no extra labels, not leaking)? 13. Al Samples: Coorect containers used for the test indicated? YES STD HNO, 13. Al Samples: Reagent Preserved? Lot Received Exp Sample ID Vol. Lot Added PH No. 5.9 Hours, 14.5 His Option Phenol, 625, Nas. 50, 623, 608, CN), ascentic (phenol). Bottle lot numbers: Labels and lots are seed to the seed to the means of the phenol, 625, Nas. 50, 623, 608, CN), ascentic (phenol). Detail Discrepancies/ Other Comments: PM. World In Samples with chemical preservatives are ehecked (not just representatives). All samples and the seed of the test indicated? YES STD Were 3035 vials acceptable (no extra labels, not leaking)? YES STD Tedar Days Indicate (Preserved) In Storage (Pre	2 Custody	papers proper	rly completed (in	k, sign	ed)?	YN	5b Did V	OA via	ls, Alk,	or Sulfid	le have si	g* bubbles?	Y _	N (NA)
Temperature Readings Date: Did Time: Did ID: IR#T (R#10) From Temp Blank Sample Bottle Observed Temp (°C) Within 6-6°C? N N Y N Y N Y N Y N Y N Y N Y N Y N Y	3 Did all b	ottles arrive in	good condition	unbro	ken)?	V N	6 Wher	e did the	bottle	origina	te?	ALS/ROC	CLI	
Observed Temp (°C) Within 66°C? N Y N Y N Y N Y N Y N Y N Y N Y N Y N	4 Circle:	Wet Ice Dry	Ice Gel packs) pre	sent?	V N	7 Soil	OA rec	eived a	s: B	ulk E	ncore 503	35set	NA
Within 0-6°C? N			Date: 8-118	OD D	Time	10:31	ID:	IR#7	IR#10)	From	Temp Blan	y San	nple Bottle
House of the samples frozen? Y N Y N Y N Y N Y N Y N Y N Y N Y N Y														
If out of Temperature, note packing/ice condition: Ice melted Poorly Packed (described below) Same Day Rule &Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:			 _										_ +	
**Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:														
All samples held in storage location: SMO by at on at within 48 hours of sampling? Y N		-							-			-	Same	Day Rule
Cooler Breakdown/Preservation Check**: Date: Plu/Dob Time: 1246 by: B9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? 9. Were all bottle labels and tags agree with custody papers? 10. Did all bottle labels and tags agree with custody papers? 11. Were correct containers used for the tests indicated? 12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized 14. Use of test paper 15. Do Received Exp Sample ID Vol. Lot Added Final paper 16. PH Lot of test paper 17. Pressreed? 18. NaOH 19. Lot Received Exp Sample ID Vol. Lot Added PH Adjusted Added Added PH Adjusted Added PH Adjusted Added PH Adjusted Added PH No. 19. HisGo. 19. HisGo. 19. HisGo. 19. For 608pest Nos-Northy for 3day Residual For CN. 19. NaSsyO. 10. Did all bottle labels and tags agree with chemical preservatives are checked (not just representatives). 10. Did all bottle labels and tags agree with chemical preservatives are checked (not just representatives). 10. Lot Added Final PH No. 10. Stags Hisgo. 10. NassyO. 10. Stags Hisgo. 11. Were correct containers used to the labels and part preservatives are checked (not just representatives). 11. Were correct containers used to the labels and part place of the page	& Chem A	Approvat to N	run Sanibies:						-	-011 C	meni non			
Cooler Breakdown/Preservation Check**: Date:				SMO	۱	y //2	on 8/12	0 at (0	133_					
9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? 10. Did all bottle labels and tags agree with custody appers? 11. Were correct containers used for the tests indicated? 12. Were \$035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact with MS? 13. Air Samples: Cassettes / Tubes Intact with MS? 14. Lot of test Reagent Preserved? 15. Lot of test Reagent Preserved? 16. Lot of test Reagent Preserved? 17. Lot of test Reagent Preserved? 18. Lot Received Exp Sample ID Vol. Lot Added Final Adjusted Added Added Lot Added PH PH Physiology (1988) 19. Lot Added PH	5035 sample	es placed in st	orage location:		ا	ру	on	at		within 4	18 hours	of sampling?	Y	N
9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? 10. Did all bottle labels and tags agree with custody appers? 11. Were correct containers used for the tests indicated? 12. Were \$035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact with MS? 13. Air Samples: Cassettes / Tubes Intact with MS? 14. Lot of test Reagent Preserved? 15. Lot of test Reagent Preserved? 16. Lot of test Reagent Preserved? 17. Lot of test Reagent Preserved? 18. Lot Received Exp Sample ID Vol. Lot Added Final Adjusted Added Added Lot Added PH PH Physiology (1988) 19. Lot Added PH		-												
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11. Were correct containers used for the tests indicated? 12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact with MS? PH									(NO			_
12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized PH Lot of test Reagent Pressreve? Lot Received Exp Sample ID Vol. Lot Added Final paper 12. NaOH 12. NaOH 12. NaOH 13. NaHSOa 14. NaHSOa 15. Per 608pest No=Noiffy for 3day Residual For CN, If+ contact PM to add NaSs O3 (625, 608, C1) 15. NaSs O3 (625, 608, C2) 15. NaSs O3 (625, 608, C3) 16. NaSs O3 (625, 608, C3) 17. NaOH 18. Natle Medical Pinal phenol. 18. NaSs O3 (625, 608, C3) 18. Nass O3 (625, 608, C3) 19. Nass O3 (625, 608, C3) 19. Nass O3 (625, 608, C3) 19. Nass O3 (625, 608, C3) 20. Landetate Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives). 19. Details of all samples with chemical preservatives are checked (not just representatives). 10. Labels secondary reviewed by: 10. Labels secondary reviewed by: 10. Acceptable Not Nass Nass Nass Nass Nass Nass Nass Nas	10. I	Did all bottle la	bels and tags agr	ree with	h custo	dy papers			(ÉS	· NO			
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated V/A														
Description													M/A	
paper Yes No Adjusted Added pH ≥12		, 	1					rized					_ <u>N/A)</u>	
Signature Sign	pΗ	1	Reagent			Lot Red	ceived	Exp			1		ded	
Secondary reviewed by: Als Ll3541 Labels secondary reviewed by: Als Ll3541 Ll3541 Labels secondary reviewed by: Als Ll3541 Ll354		paper	N. 011	Yes	No				Adju	sted	Added	l l		pH
Substitute Sub				┼	+		· · · · · · · · · · · · · · · · · · ·	-			ļ			+
NaHSO4 No=Notify for 3day				 	 	 		 	<u> </u>		-			
S-9		<u> </u>		+	+						+			
Residual Chlorine Phenol, 625, Phenol, 625, 608, CN), ascorbic (phenol). Na2S2O3 Phenol, 625, 608, CN), ascorbic (phenol). Na2S2O3 Phenol, 625, 608, CN), ascorbic (phenol). Na2S2O3 Phenol, 625, 608, CN), ascorbic (phenol). Na2S2O3 Phenol, 625, 608, CN, ascorbic (phenol). Na2S2O3 Phenol, 625, 608, CN, ascorbic (phenol). Na2S2O3 Phenol, 625, 608, CN, ascorbic (phenol). Phenol, 625, 60				+	1	No=Not	ify for 3day				1			+
Chlorine (-)			• 	1	+			1	 		1		•	+
Na ₂ S ₂ O ₃	Chlorine	,	Phenol, 625,											
ZnAcetate	(-)	 		1	+	1	-		<u> </u>		+			+
Bottle lot numbers: Explain all Discrepancies Other Comments: Pus. Wellles seed and nut fillers HPROD BULK HTR FLDT SUB HGFB ALS LL3541 Labels secondary reviewed by:			 	†-	1-				**VO	As and 16	64 Not to b	e tested before	analysis.	
Bottle lot numbers:				**	**				Otherv	vise, all bo	ottles of all	samples with cl		eservatives
Explain all Discrepancies Other Comments: Press. Itelles second and not fillered HPROD BULK HTR FLDT				1			•		are che	-cver (1101	Just repres	emanves).		
Explain all Discrepancies Other Comments: Press. Itelles second and not fillered HPROD BULK HTR FLDT	Bottle lot	numbers: /	Lent								_			
Labels secondary reviewed by: HPROD BULK HTR FLDT SUB HGFB ALS LL3541			es/ Other Comm	ents:										
Labels secondary reviewed by: HPROD BULK HTR FLDT SUB HGFB ALS LL3541	- · ·													
Labels secondary reviewed by: HPROD BULK HTR FLDT SUB HGFB ALS LL3541														
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Labels secondary reviewed by: ALS LL3541												1. h > -	_	
Labels secondary reviewed by:											a	 		
				_								AL	S L	L3541
PC Secondary Review: *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter		_		(D)										
	PC Seco	ondary Revi	ew:				*significant	air bub	bles: V	OA > 5-	-6 mm : V	WC >1 in. di	ameter	
P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r17.doc 1/16/2020	P:\INTRAN	ET\OAOC\Form	s Controlled\Cooler	Receipt	r17.doc						1/16/202	20		



Miscellaneous Forms

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL Method Reporting Limit. Also known as:
- LOQ Limit of Quantitation (LOQ)

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a

substance allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

POL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring
TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but

greater than or equal to the MDL.

Analyst Summary report

Client: Portland, City of Service Request: K2006780

Project: Riot Control Agent Residual Investigation/W20H057

 Sample Name:
 W20H057-01
 Date Collected:
 08/6/20

 Lab Code:
 K2006780-001
 Date Received:
 08/7/20

Sample Matrix: Water

Analysis Method Extracted/Digested By Analyzed By

218.6 LL CWOODS

Sample Name: W20H057-02 Date Collected: 08/6/20

Lab Code: K2006780-002 **Date Received:** 08/7/20

Sample Matrix: Water

Analysis Method Extracted/Digested By Analyzed By

218.6 LL CWOODS

Superset Reference:20-0000559649 rev 00



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Preparation
Method
3050B
3050B
3005A/3010A
3005A/3010A
3060A
DI extraction
the preparation
cal method



Sample Results

ALS Environmental—Rochester Laboratory

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General Chemistry

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Analytical Report

Portland, City of **Client:**

Service Request: K2006780 **Date Collected:** 08/06/20 08:19

Project: Riot Control Agent Residual Investigation/W20H057

Date Received: 08/07/20 12:45

Sample Matrix: Water

Sample Name:

W20H057-01 Basis: NA

Lab Code: K2006780-001

Inorganic Parameters

Analysis

	1 22242 3 525								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q	
Chromium, Hexavalent, Dissolved	218.6	2.33	ug/L	0.10	0.05	5	08/14/20 18:41		

Analytical Report

Client: Portland, City of

Riot Control Agent Residual Investigation/W20H057

Date Collected: 08/06/20 08:52

Service Request: K2006780

Sample Matrix: W

Water

Date Received: 08/07/20 12:45

Sample Name:

Project:

W20H057-02

Basis: NA

Lab Code: K2006780-002

Inorganic Parameters

Analysis

	randing Sis							
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	0.16	ug/L	0.10	0.05	5	08/12/20 16:20	



QC Summary Forms

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General Chemistry

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Analytical Report

Client: Portland, City of

Service Request: K2006780

Project: Riot Control Agent Residual Investigation/W20H057

Date Collected: NA

Sample Matrix: Water

Date Received: NA

Sample Name:

Basis: NA

Lab Code:

Method Blank K2006780-MB1

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	ND U	ug/L	0.020	0.010	1	08/12/20 11:27	

Analytical Report

Client: Portland, City of Service

Service Request: K2006780

Project: Riot Control Agent Residual Investigation/W20H057

Date Collected: NA

Date Received: NA

Sample Name: Lab Code:

Sample Matrix:

Method Blank K2006780-MB2

Water

Basis: NA

Inorganic Parameters

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chromium, Hexavalent, Dissolved	218.6	ND U	ug/L	0.020	0.010	1	08/14/20 12:45	

QA/QC Report

Client: Portland, City of

Service Request: K2006780

Project: Riot Control Agent Residual Investigation/W20H057

Date Analyzed: 08/12/20

Sample Matrix: Water

Lab Control Sample Summary General Chemistry Parameters

Units:ug/L Basis:NA

Lab Control Sample

K2006780-LCS1

	Analytical				
Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6	0.208	0.200	104	90-110

QA/QC Report

Client: Portland, City of

Service Request: K2006780

Project: Riot Control Agent Residual Investigation/W20H057

Date Analyzed: 08/14/20

Sample Matrix: Water

Lab Control Sample Summary General Chemistry Parameters

Units:ug/L Basis:NA

Lab Control Sample

K2006780-LCS2

	Analytical				
Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6	0.214	0.200	107	90-110

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Superset Reference:20-0000559649 rev 00