



El Paso Natural Gas
Company, L.L.C.
a Kinder Morgan company



APPROVED

By OCD Dr Oberding at 3:26 pm, Nov 29, 2016

Kristen D. Lynch
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
1625 N. French Drive
Hobbs, New Mexico 88240

RE: El Paso Natural Gas Company Line No. 3031 Inadvertent Release – Rupture No. 3
Request for Closure of RP No. 4397

Dear Ms. Lynch,

El Paso Natural Gas Company (EPNG) is formally requesting the closure of RP No. 4397. This RP number was assigned to the notification record for the inadvertent release of hydrostatic test water (Rupture No. 3) during the spike test of EPNG's Line No. 3031 located in Lea County, New Mexico. The attached document includes all of the documentation and email correspondence related to the rupture event which took place on July 28, 2016.

Included in the attached document:

- Final Form C-141_with signature
- Initial Form C-141_with signature
- Email Correspondence related to the submittal of Initial Form C-141
- Email Correspondence related to the assignment of RP#
- Email Correspondence granting permission to backfill the trench at the rupture site
- Soil Analysis Report
- Water Analysis Report

Thank you very much for your assistance with the NMOCD process and documentation of this hydrostatic test rupture event. Please feel free to contact me if you have any questions or require any additional information.

Sincerely,

KINDER MORGAN

Sheila Castellano - Contractor Consultant
2 North Nevada Ave
Colorado Springs, CO 80903
o: 719 520-3719
c: 719 352-1367

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Rupture #3 - RP#4397

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company El Paso Natural Gas Company, LLC (a Kinder Morgan owned company)	Contact Sheila Castellano
Address approximately 0.6 miles south of McDonald Road and 1.9 miles east of Heidel Road	Telephone No. (719) 520-3719
Facility Name El Paso Natural Gas Company Line 3031	Facility Type 8-inch Natural Gas Pipeline

Surface Owner Fred Richardson	Mineral Owner	API No.
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LOCATION OF RELEASE

Unit Letter	Section SE/4 Sec5	Township 14S	Range 38E	Feet from the 2,300	North/South Line South	Feet from the 300	East/West Line East	County Lea County, NM
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Latitude 33.132511 Longitude -103.111687

NATURE OF RELEASE

Type of Release Inadvertent release of hydrostatic test water	Volume of Release approximately 1,500 gallons	Volume Recovered none
Source of Release 8-inch natural gas pipeline	Date and Hour of Occurrence 7/28/16 9:29a MDT	Date and Hour of Discovery 7/28/16 9:29a MDT
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD Santa Fe Office: Jim Griswold NMOCD Santa Fe Office: Tomas Oberding NMOCD District 1 Office: Maxey Brown	
By Whom? Sheila Castellano	Date and Hour 7/28/16 2:00p MDT	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

Describe Cause of Problem and Remedial Action Taken.* EPNG was conducting a hydrostatic spike test of the existing L3031 and the pipeline failed during the test. Maxey Brown (NMOCD District 1) requested that we take a water sample and soil samples from all of the affected areas at the locations of Rupture #1, Rupture #2 and Rupture #3. A control sample was also taken for analysis. Tomas Oberding (NMOCD Santa Fe Office) requested that water and soil samples be analyzed using Test 8260B.

Describe Area Affected and Cleanup Action Taken.*
Test water release was contained within the existing 50-foot right of way. Affected soil has been piled and covered. Soil sample was taken from within the affected area. Analysis results are pending.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <u>Sheila F. Castellano</u>	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Sheila F. Castellano	Approved by Environmental Specialist:	
Title: Consultant/Contractor	Approval Date:	Expiration Date:
E-mail Address: <u>sheila_castellano@kindermorgan.com</u>	Conditions of Approval:	Attached ☐
Date: November 9, 2016 Phone: (719) 520-3719		

* Attach Additional Sheets If Necessary

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Form C-141
Revised August 8, 2011

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Rupture #3

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Facility Name: El Paso Natural Gas Company Line 3031	Facility Type: 8-inch Natural Gas Pipeline	
Surface Owner: Fred Richardson	Mineral Owner	API No.

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Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Sheila F. Castellano	Approved by Environmental Specialist:	
Title: Consultant/Contractor	Approval Date:	Expiration Date:
E-mail Address: sheila.castellano@kindermorgan.com	Conditions of Approval:	Attached ☐
Date: August 9, 2016 Phone: (719) 520-3719		

* Attach Additional Sheets If Necessary

Castellano, Sheila Fennell (Contractor)

From: Castellano, Sheila Fennell (Contractor)
Sent: Tuesday, August 09, 2016 4:44 PM
To: Jim.Griswold@state.nm.us
Cc: tomas.oberding@state.nm.us; MaxeyG.Brown@state.nm.us
Subject: El Paso Natural Gas Company_Line No. 3031 Spike Test_Form C141 Release Notification_Rupture #3
Attachments: NMOCD_Form C-141_Rupture#3.pdf; Rupture#3_water sample analysis.pdf

Mr. Griswold,

Attached is El Paso Natural Gas Company's (EPNG) submittal of Form C-141, as NMOCD's required Written Notification, for the unauthorized release of hydrostatic test water in Lea County, New Mexico. The event (**RUPTURE #3**) occurred during a hydrostatic spike test of EPNG's existing 8-inch O.D. Tipperary – Denten Crossover Line (Line No. 3031) on July 28, 2016.

Project Background:

As part of the Kinder Morgan Inc. Integrity Management Program, EPNG is conducting a hydrostatic spike test of the existing 8-inch O.D. Line No. 3031, located approximately 15 miles northeast of the City of Lovington in Lea County, New Mexico. The pipeline originates at the Davis Gas Processing Plant and extends northward 7.02 miles where it ties into EPNG's existing 1300 Line System. Line No. 3031 was constructed by EPNG in 1954 and is in a Class 1 location. EPNG determined that a total of 110,000 gallons of water for cleaning and testing would be required for the test. In general, a spike test consists of filling the pipeline with water and testing within a pressure range determined by percentage of specified minimum yield strength (SMYS) of the lowest strength pipe in the test segment. The hydrostatic spike test duration is a total of eight (8) hours at pressures near the pipe yield strength.

To date, EPNG has experience failures at **seven** different locations during the spike test process. Each event was communicated to NMOCD within 24 hours and efforts to compile more detailed information for the required written notification Form C-141 are ongoing.

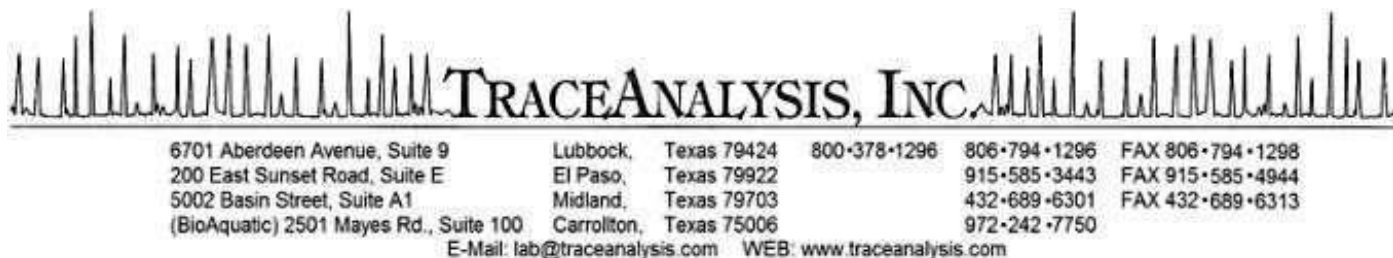
Also included as an attachment to this email is the water analysis report, generated from the water sample taken at the rupture site.

Please feel free to contact me directly if you have any questions.

Thank you,
Sheila Castellano



Sheila Castellano - Contractor Consultant
2 North Nevada Ave
Colorado Springs, CO 80903
o: 719 520-3719
c: 719 352-1367



Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Glen Thompson
Kinder Morgan/El Paso Natural Gas-Odessa
1550 Windway
Odessa, TX, 79761

Report Date: August 2, 2016

Work Order: 16072912



Project Name: Lovington Leak
Project Number: Lovington Leak

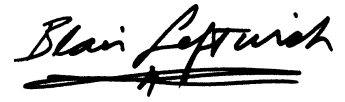
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
425442	Site 1 Spill	soil	2016-07-28	20:00	2016-07-29
425443	Site 1 Background	soil	2016-07-28	20:00	2016-07-29
425444	Site 2 Spill	soil	2016-07-28	20:15	2016-07-29
425445	Site 2 Background	soil	2016-07-28	20:15	2016-07-29
425446	Site 3 Spill	soil	2016-07-28	20:45	2016-07-29
425447	Site 3 Background	soil	2016-07-28	20:45	2016-07-29

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.

This report consists of a total of 44 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink, reading "Blair Leftwich". The signature is written in a cursive style with a prominent horizontal stroke at the bottom.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Johnny Grindstaff, Operations Manager

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Case Narrative

Samples for project Lovington Leak were received by TraceAnalysis, Inc. on 2016-07-29 and assigned to work order 16072912. Samples for work order 16072912 were received intact at a temperature of 4.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	111704	2016-07-29 at 15:05	131816	2016-07-29 at 21:59
TPH DRO	S 8015 D	111686	2016-07-29 at 14:00	131801	2016-08-01 at 07:32
TPH DRO	S 8015 D	111719	2016-08-01 at 10:00	131830	2016-08-01 at 15:40
TPH GRO	S 8015 D	111698	2016-07-29 at 14:00	131808	2016-07-29 at 14:00
Volatiles	S 8260 C	111708	2016-07-29 at 12:00	131821	2016-07-29 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 16072912 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 425442 - Site 1 Spill

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131816	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111704				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		3,4	46.8	mg/Kg	1	25.0

Sample: 425442 - Site 1 Spill

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131830	Sample Preparation:	2016-08-01	Prepared By:	HJ
Prep Batch:	111719				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1,2,3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			21.8	mg/Kg	1	25.0	87	58.2 - 150

Sample: 425442 - Site 1 Spill

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131808	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111698				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,U	1,2,3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.49	mg/Kg	1	2.00	125	76.4 - 123

continued ...

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

Page Number: 6 of 44

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.29	mg/Kg	1	2.00	114	69.4 - 120

Sample: 425442 - Site 1 Spill

Laboratory: Lubbock
Analysis: Volatiles
QC Batch: 131821
Prep Batch: 111708

Analytical Method: S 8260 C
Date Analyzed: 2016-07-29
Sample Preparation: 2016-07-29

Prep Method: S 5030B
Analyzed By: KB
Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dichlorodifluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloromethane (methyl chloride)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Vinyl Chloride	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromomethane (methyl bromide)	U	1,2,3,4	<100	µg/Kg	1	100
Chloroethane	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichlorofluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acetone	Qc,U	1,2,3,4	<200	µg/Kg	1	200
Iodomethane (methyl iodide)	Qs,U	1,2,3,4	<100	µg/Kg	1	100
Carbon Disulfide	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acrylonitrile	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Butanone (MEK)	Qc,Qr,U	1,2,3,4	<100	µg/Kg	1	100
4-Methyl-2-pentanone (MIBK)	Qr,U	1,2,3,4	<100	µg/Kg	1	100
2-Hexanone	Qc,U	1,2,3,4	<100	µg/Kg	1	100
trans 1,4-Dichloro-2-butene	Qc,Qr,U	1,2,3,4	<200	µg/Kg	1	200
1,1-Dichloroethene	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Methylene chloride	B,Qs,U	1,2,3,4	<100	µg/Kg	1	100
MTBE	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,2-Dichloroethene	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloroethane	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,2-Dichloroethene	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2,2-Dichloropropane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloroethane (EDC)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloroform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1-Trichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloropropene	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Benzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Carbon Tetrachloride	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloropropane	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichloroethene (TCE)	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromomethane (methylene bromide)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromodichloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0

continued ...

sample 425442 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
2-Chloroethyl vinyl ether	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Toluene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2-Trichloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichloropropane	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromochloromethane	Qr,U	1,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromoethane (EDB)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Tetrachloroethene (PCE)	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chlorobenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Ethylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
m,p-Xylene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromoform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Styrene	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
o-Xylene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2,2-Tetrachloroethane	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chlorotoluene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,3-Trichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Isopropylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromobenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Propylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3,5-Trimethylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
tert-Butylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,4-Trimethylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,4-Dichlorobenzene (para)	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
sec-Butylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichlorobenzene (meta)	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
p-Isopropyltoluene	Qs,U	1,2,3	<20.0	µg/Kg	1	20.0
4-Chlorotoluene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichlorobenzene (ortho)	Qr,Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Butylbenzene	Qs,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromo-3-chloropropane	Qr,U	1,3,4	<100	µg/Kg	1	100
1,2,3-Trichlorobenzene	Qs,U	1,2,3,4	<100	µg/Kg	1	100
1,2,4-Trichlorobenzene	Qs,U	1,2,3,4	<100	µg/Kg	1	100
Naphthalene	Qs,U	1,2,3,4	<100	µg/Kg	1	100
Hexachlorobutadiene	Qs,U	1,2,3,4	<100	µg/Kg	1	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	793	µg/Kg	1	840	94	78 - 119
Toluene-d8			863	µg/Kg	1	840	103	85 - 116
4-Bromofluorobenzene (4-BFB)			804	µg/Kg	1	840	96	79 - 119

Report Date: August 2, 2016
Lovington Leak

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Sample: 425443 - Site 1 Background

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131816	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111704				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		3,4	<25.0	mg/Kg	1	25.0

Sample: 425443 - Site 1 Background

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131801	Sample Preparation:	2016-07-29	Prepared By:	HJ
Prep Batch:	111686				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			20.8	mg/Kg	1	25.0	83	58.2 - 150

Sample: 425443 - Site 1 Background

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131808	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111698				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,Jb	1,2,3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.36	mg/Kg	1	2.00	118	76.4 - 123
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	69.4 - 120

Sample: 425443 - Site 1 Background

Laboratory: Lubbock
 Analysis: Volatiles
 QC Batch: 131821
 Prep Batch: 111708

Analytical Method: S 8260 C
 Date Analyzed: 2016-07-29
 Sample Preparation: 2016-07-29

Prep Method: S 5030B
 Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dichlorodifluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloromethane (methyl chloride)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Vinyl Chloride	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromomethane (methyl bromide)	U	1,2,3,4	<100	µg/Kg	1	100
Chloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichlorofluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acetone	Qc,U	1,2,3,4	<200	µg/Kg	1	200
Iodomethane (methyl iodide)	U	1,2,3,4	<100	µg/Kg	1	100
Carbon Disulfide	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acrylonitrile	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Butanone (MEK)	Qc,Qr,U	1,2,3,4	<100	µg/Kg	1	100
4-Methyl-2-pentanone (MIBK)	Qr,U	1,2,3,4	<100	µg/Kg	1	100
2-Hexanone	Qc,U	1,2,3,4	<100	µg/Kg	1	100
trans 1,4-Dichloro-2-butene	Qc,Qr,U	1,2,3,4	<200	µg/Kg	1	200
1,1-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Methylene chloride	B,Jb	1,2,3,4	<100	µg/Kg	1	100
MTBE	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2,2-Dichloropropane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloroethane (EDC)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloroform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1-Trichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloropropene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Benzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Carbon Tetrachloride	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichloroethene (TCE)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromomethane (methylene bromide)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromodichloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chloroethyl vinyl ether	U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Toluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2-Trichloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromochloromethane	Qr,U	1,3,4	<20.0	µg/Kg	1	20.0

continued ...

sample 425443 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Tetrachloroethene (PCE)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chlorobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Ethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
m,p-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromoform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Styrene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
o-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,3-Trichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Isopropylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Propylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3,5-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
tert-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,4-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,4-Dichlorobenzene (para)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
sec-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
p-Isopropyltoluene		1,2,3	22.8	µg/Kg	1	20.0
4-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichlorobenzene (ortho)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromo-3-chloropropane	Qr,U	1,3,4	<100	µg/Kg	1	100
1,2,3-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
1,2,4-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
Naphthalene	U	1,2,3,4	<100	µg/Kg	1	100
Hexachlorobutadiene	U	1,2,3,4	<100	µg/Kg	1	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	900	µg/Kg	1	980	92	78 - 119
Toluene-d8			999	µg/Kg	1	980	102	85 - 116
4-Bromofluorobenzene (4-BFB)			916	µg/Kg	1	980	93	79 - 119

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Sample: 425444 - Site 2 Spill

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131816	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111704				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		3,4	603	mg/Kg	5	25.0

Sample: 425444 - Site 2 Spill

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131830	Sample Preparation:	2016-08-01	Prepared By:	HJ
Prep Batch:	111719				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1,2,3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			23.2	mg/Kg	1	25.0	93	58.2 - 150

Sample: 425444 - Site 2 Spill

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131808	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111698				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,U	1,2,3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.28	mg/Kg	1	2.00	114	76.4 - 123
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	69.4 - 120

Sample: 425444 - Site 2 Spill

Laboratory: Lubbock
 Analysis: Volatiles
 QC Batch: 131821
 Prep Batch: 111708

Analytical Method: S 8260 C
 Date Analyzed: 2016-07-29
 Sample Preparation: 2016-07-29

Prep Method: S 5030B
 Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dichlorodifluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloromethane (methyl chloride)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Vinyl Chloride	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromomethane (methyl bromide)	U	1,2,3,4	<100	µg/Kg	1	100
Chloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichlorofluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acetone	Qc,U	1,2,3,4	<200	µg/Kg	1	200
Iodomethane (methyl iodide)	U	1,2,3,4	<100	µg/Kg	1	100
Carbon Disulfide	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acrylonitrile	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Butanone (MEK)	Qc,Qr,U	1,2,3,4	<100	µg/Kg	1	100
4-Methyl-2-pentanone (MIBK)	Qr,U	1,2,3,4	<100	µg/Kg	1	100
2-Hexanone	Qc,U	1,2,3,4	<100	µg/Kg	1	100
trans 1,4-Dichloro-2-butene	Qc,Qr,U	1,2,3,4	<200	µg/Kg	1	200
1,1-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Methylene chloride	B,Jb	1,2,3,4	<100	µg/Kg	1	100
MTBE	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2,2-Dichloropropane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloroethane (EDC)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloroform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1-Trichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloropropene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Benzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Carbon Tetrachloride	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichloroethene (TCE)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromomethane (methylene bromide)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromodichloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chloroethyl vinyl ether	U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Toluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2-Trichloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromochloromethane	Qr,U	1,3,4	<20.0	µg/Kg	1	20.0

continued ...

sample 425444 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Tetrachloroethene (PCE)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chlorobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Ethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
m,p-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromoform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Styrene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
o-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,3-Trichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Isopropylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Propylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3,5-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
tert-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,4-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,4-Dichlorobenzene (para)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
sec-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
p-Isopropyltoluene	U	1,2,3	<20.0	µg/Kg	1	20.0
4-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichlorobenzene (ortho)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromo-3-chloropropane	Qr,U	1,3,4	<100	µg/Kg	1	100
1,2,3-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
1,2,4-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
Naphthalene	U	1,2,3,4	<100	µg/Kg	1	100
Hexachlorobutadiene	U	1,2,3,4	<100	µg/Kg	1	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	874	µg/Kg	1	965	90	78 - 119
Toluene-d8			989	µg/Kg	1	965	102	85 - 116
4-Bromofluorobenzene (4-BFB)			904	µg/Kg	1	965	94	79 - 119

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Sample: 425445 - Site 2 Background

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131816	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111704				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		3,4	<25.0	mg/Kg	1	25.0

Sample: 425445 - Site 2 Background

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131801	Sample Preparation:	2016-07-29	Prepared By:	HJ
Prep Batch:	111686				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			19.0	mg/Kg	1	25.0	76	58.2 - 150

Sample: 425445 - Site 2 Background

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131808	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111698				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,U	1,2,3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.34	mg/Kg	1	2.00	117	76.4 - 123
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	69.4 - 120

Sample: 425445 - Site 2 Background

Laboratory: Lubbock
 Analysis: Volatiles
 QC Batch: 131821
 Prep Batch: 111708

Analytical Method: S 8260 C
 Date Analyzed: 2016-07-29
 Sample Preparation: 2016-07-29

Prep Method: S 5030B
 Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dichlorodifluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloromethane (methyl chloride)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Vinyl Chloride	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromomethane (methyl bromide)	U	1,2,3,4	<100	µg/Kg	1	100
Chloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichlorofluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acetone	Qc,U	1,2,3,4	<200	µg/Kg	1	200
Iodomethane (methyl iodide)	U	1,2,3,4	<100	µg/Kg	1	100
Carbon Disulfide	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acrylonitrile	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Butanone (MEK)	Qc,Qr,U	1,2,3,4	<100	µg/Kg	1	100
4-Methyl-2-pentanone (MIBK)	Qr,U	1,2,3,4	<100	µg/Kg	1	100
2-Hexanone	Qc,U	1,2,3,4	<100	µg/Kg	1	100
trans 1,4-Dichloro-2-butene	Qc,Qr,U	1,2,3,4	<200	µg/Kg	1	200
1,1-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Methylene chloride	B,Jb	1,2,3,4	<100	µg/Kg	1	100
MTBE	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2,2-Dichloropropane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloroethane (EDC)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloroform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1-Trichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloropropene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Benzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Carbon Tetrachloride	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichloroethene (TCE)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromomethane (methylene bromide)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromodichloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chloroethyl vinyl ether	U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Toluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2-Trichloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromochloromethane	Qr,U	1,3,4	<20.0	µg/Kg	1	20.0

continued ...

sample 425445 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Tetrachloroethene (PCE)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chlorobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Ethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
m,p-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromoform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Styrene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
o-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,3-Trichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Isopropylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Propylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3,5-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
tert-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,4-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,4-Dichlorobenzene (para)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
sec-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
p-Isopropyltoluene	U	1,2,3	<20.0	µg/Kg	1	20.0
4-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichlorobenzene (ortho)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromo-3-chloropropane	Qr,U	1,3,4	<100	µg/Kg	1	100
1,2,3-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
1,2,4-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
Naphthalene	U	1,2,3,4	<100	µg/Kg	1	100
Hexachlorobutadiene	U	1,2,3,4	<100	µg/Kg	1	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	827	µg/Kg	1	965	86	78 - 119
Toluene-d8			975	µg/Kg	1	965	101	85 - 116
4-Bromofluorobenzene (4-BFB)			906	µg/Kg	1	965	94	79 - 119

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
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Sample: 425446 - Site 3 Spill

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131816	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111704				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		3,4	27.9	mg/Kg	1	25.0

Sample: 425446 - Site 3 Spill

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131830	Sample Preparation:	2016-08-01	Prepared By:	HJ
Prep Batch:	111719				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			22.7	mg/Kg	1	25.0	91	58.2 - 150

Sample: 425446 - Site 3 Spill

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131808	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111698				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,Jb	1,2,3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	76.4 - 123
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	69.4 - 120

Sample: 425446 - Site 3 Spill

Laboratory: Lubbock
 Analysis: Volatiles
 QC Batch: 131821
 Prep Batch: 111708

Analytical Method: S 8260 C
 Date Analyzed: 2016-07-29
 Sample Preparation: 2016-07-29

Prep Method: S 5030B
 Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dichlorodifluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloromethane (methyl chloride)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Vinyl Chloride	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromomethane (methyl bromide)	U	1,2,3,4	<100	µg/Kg	1	100
Chloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichlorofluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acetone	Qc,U	1,2,3,4	<200	µg/Kg	1	200
Iodomethane (methyl iodide)	U	1,2,3,4	<100	µg/Kg	1	100
Carbon Disulfide	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acrylonitrile	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Butanone (MEK)	Qc,Qr,U	1,2,3,4	<100	µg/Kg	1	100
4-Methyl-2-pentanone (MIBK)	Qr,U	1,2,3,4	<100	µg/Kg	1	100
2-Hexanone	Qc,U	1,2,3,4	<100	µg/Kg	1	100
trans 1,4-Dichloro-2-butene	Qc,Qr,U	1,2,3,4	<200	µg/Kg	1	200
1,1-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Methylene chloride	B,Jb	1,2,3,4	<100	µg/Kg	1	100
MTBE	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2,2-Dichloropropane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloroethane (EDC)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloroform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1-Trichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloropropene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Benzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Carbon Tetrachloride	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichloroethene (TCE)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromomethane (methylene bromide)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromodichloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chloroethyl vinyl ether	U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Toluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2-Trichloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromochloromethane	Qr,U	1,3,4	<20.0	µg/Kg	1	20.0

continued ...

sample 425446 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Tetrachloroethene (PCE)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chlorobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Ethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
m,p-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromoform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Styrene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
o-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,3-Trichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Isopropylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Propylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3,5-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
tert-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,4-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,4-Dichlorobenzene (para)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
sec-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
p-Isopropyltoluene	U	1,2,3	<20.0	µg/Kg	1	20.0
4-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichlorobenzene (ortho)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromo-3-chloropropane	Qr,U	1,3,4	<100	µg/Kg	1	100
1,2,3-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
1,2,4-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
Naphthalene	U	1,2,3,4	<100	µg/Kg	1	100
Hexachlorobutadiene	U	1,2,3,4	<100	µg/Kg	1	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	787	µg/Kg	1	915	86	78 - 119
Toluene-d8			919	µg/Kg	1	915	100	85 - 116
4-Bromofluorobenzene (4-BFB)			855	µg/Kg	1	915	93	79 - 119

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Lovington Leak

Work Order: 16072912
Lovington Leak

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Sample: 425447 - Site 3 Background

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131816	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111704				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		3,4	<25.0	mg/Kg	1	25.0

Sample: 425447 - Site 3 Background

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131801	Sample Preparation:	2016-07-29	Prepared By:	HJ
Prep Batch:	111686				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			22.0	mg/Kg	1	25.0	88	58.2 - 150

Sample: 425447 - Site 3 Background

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131808	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111698				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,U	1,2,3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.25	mg/Kg	1	2.00	112	76.4 - 123
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	69.4 - 120

Sample: 425447 - Site 3 Background

Laboratory: Lubbock
 Analysis: Volatiles
 QC Batch: 131821
 Prep Batch: 111708

Analytical Method: S 8260 C
 Date Analyzed: 2016-07-29
 Sample Preparation: 2016-07-29

Prep Method: S 5030B
 Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dichlorodifluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloromethane (methyl chloride)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Vinyl Chloride	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromomethane (methyl bromide)	U	1,2,3,4	<100	µg/Kg	1	100
Chloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichlorofluoromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acetone	Qc,U	1,2,3,4	<200	µg/Kg	1	200
Iodomethane (methyl iodide)	U	1,2,3,4	<100	µg/Kg	1	100
Carbon Disulfide	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Acrylonitrile	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Butanone (MEK)	Qc,Qr,U	1,2,3,4	<100	µg/Kg	1	100
4-Methyl-2-pentanone (MIBK)	Qr,U	1,2,3,4	<100	µg/Kg	1	100
2-Hexanone	Qc,U	1,2,3,4	<100	µg/Kg	1	100
trans 1,4-Dichloro-2-butene	Qc,Qr,U	1,2,3,4	<200	µg/Kg	1	200
1,1-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Methylene chloride	B,Jb	1,2,3,4	<100	µg/Kg	1	100
MTBE	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,2-Dichloroethene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2,2-Dichloropropane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloroethane (EDC)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chloroform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1-Trichloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1-Dichloropropene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Benzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Carbon Tetrachloride	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Trichloroethene (TCE)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromomethane (methylene bromide)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromodichloromethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chloroethyl vinyl ether	U	1,2,3,4	<20.0	µg/Kg	1	20.0
cis-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
trans-1,3-Dichloropropene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Toluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2-Trichloroethane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Dibromochloromethane	Qr,U	1,3,4	<20.0	µg/Kg	1	20.0

continued ...

sample 425447 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Tetrachloroethene (PCE)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Chlorobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,1,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Ethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
m,p-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromoform	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
Styrene	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
o-Xylene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,1,2,2-Tetrachloroethane	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
2-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,3-Trichloropropane	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Isopropylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
Bromobenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Propylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3,5-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
tert-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2,4-Trimethylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,4-Dichlorobenzene (para)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
sec-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<20.0	µg/Kg	1	20.0
p-Isopropyltoluene	U	1,2,3	<20.0	µg/Kg	1	20.0
4-Chlorotoluene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dichlorobenzene (ortho)	Qr,U	1,2,3,4	<20.0	µg/Kg	1	20.0
n-Butylbenzene	U	1,2,3,4	<20.0	µg/Kg	1	20.0
1,2-Dibromo-3-chloropropane	Qr,U	1,3,4	<100	µg/Kg	1	100
1,2,3-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
1,2,4-Trichlorobenzene	U	1,2,3,4	<100	µg/Kg	1	100
Naphthalene	U	1,2,3,4	<100	µg/Kg	1	100
Hexachlorobutadiene	U	1,2,3,4	<100	µg/Kg	1	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	884	µg/Kg	1	990	89	78 - 119
Toluene-d8			987	µg/Kg	1	990	100	85 - 116
4-Bromofluorobenzene (4-BFB)			901	µg/Kg	1	990	91	79 - 119

Method Blanks

Method Blank (1) QC Batch: 131801

QC Batch: 131801 Date Analyzed: 2016-08-01 Analyzed By: HJ
Prep Batch: 111686 QC Preparation: 2016-07-29 Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1,2,3	<8.47	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			26.8	mg/Kg	1	25.0	107	58.2 - 150

Method Blank (1) QC Batch: 131808

QC Batch: 131808 Date Analyzed: 2016-07-29 Analyzed By: MT
Prep Batch: 111698 QC Preparation: 2016-07-29 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO	B	B	0.376	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{sr}	Q _{sr}	2.47	mg/Kg	1	2.00	124	76.4 - 123
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	69.4 - 120

Method Blank (1) QC Batch: 131816

QC Batch: 131816 Date Analyzed: 2016-07-29 Analyzed By: RL
Prep Batch: 111704 QC Preparation: 2016-07-29 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		3,4	<4.44	mg/Kg	25

Method Blank (1) QC Batch: 131821

QC Batch: 131821
 Prep Batch: 111708

Date Analyzed: 2016-07-29
 QC Preparation: 2016-07-29

Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	MDL Result	Units	RL
Bromochloromethane		1,2,3,4	<9.28	µg/Kg	20
Dichlorodifluoromethane		1,2,3,4	<9.82	µg/Kg	20
Chloromethane (methyl chloride)		1,2,3,4	<11.7	µg/Kg	20
Vinyl Chloride		1,2,3,4	<10.6	µg/Kg	20
Bromomethane (methyl bromide)		1,2,3,4	<13.5	µg/Kg	100
Chloroethane		1,2,3,4	<9.16	µg/Kg	20
Trichlorofluoromethane		1,2,3,4	<12.4	µg/Kg	20
Acetone		1,2,3,4	<7.34	µg/Kg	200
Iodomethane (methyl iodide)		1,2,3,4	<8.64	µg/Kg	100
Carbon Disulfide		1,2,3,4	<9.90	µg/Kg	20
Acrylonitrile		1,2,3,4	<9.14	µg/Kg	20
2-Butanone (MEK)		1,2,3,4	<13.4	µg/Kg	100
4-Methyl-2-pentanone (MIBK)		1,2,3,4	<14.1	µg/Kg	100
2-Hexanone		1,2,3,4	<10.6	µg/Kg	100
trans 1,4-Dichloro-2-butene		1,2,3,4	<8.49	µg/Kg	200
1,1-Dichloroethene		1,2,3,4	<10.4	µg/Kg	20
Methylene chloride	B	B	21.9	µg/Kg	100
MTBE		1,2,3,4	<11.4	µg/Kg	20
trans-1,2-Dichloroethene		1,2,3,4	<9.80	µg/Kg	20
1,1-Dichloroethane		1,2,3,4	<9.82	µg/Kg	20
cis-1,2-Dichloroethene		1,2,3,4	<9.58	µg/Kg	20
2,2-Dichloropropane		1,2,3,4	<8.99	µg/Kg	20
1,2-Dichloroethane (EDC)		1,2,3,4	<9.58	µg/Kg	20
Chloroform		1,2,3,4	<9.68	µg/Kg	20
1,1,1-Trichloroethane		1,2,3,4	<10.6	µg/Kg	20
1,1-Dichloropropene		1,2,3,4	<9.74	µg/Kg	20
Benzene		1,2,3,4	<10.3	µg/Kg	20
Carbon Tetrachloride		1,2,3,4	<8.88	µg/Kg	20
1,2-Dichloropropane		1,2,3,4	<9.48	µg/Kg	20
Trichloroethene (TCE)		1,2,3,4	<10.4	µg/Kg	20
Dibromomethane (methylene bromide)		1,2,3,4	<9.65	µg/Kg	20
Bromodichloromethane		1,2,3,4	<9.23	µg/Kg	20
2-Chloroethyl vinyl ether		1,2,3,4	<10.8	µg/Kg	20
cis-1,3-Dichloropropene		1,2,3,4	<9.76	µg/Kg	20
trans-1,3-Dichloropropene		1,2,3,4	<9.24	µg/Kg	20
Toluene		1,2,3,4	<9.74	µg/Kg	20
1,1,2-Trichloroethane		1,2,3,4	<11.1	µg/Kg	20
1,3-Dichloropropane		1,2,3,4	<10.4	µg/Kg	20
Dibromochloromethane		1,3,4	<9.66	µg/Kg	20
1,2-Dibromoethane (EDB)		1,2,3,4	<10.8	µg/Kg	20
Tetrachloroethene (PCE)		1,2,3,4	<6.38	µg/Kg	20

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Chlorobenzene		1,2,3,4	<10.5	µg/Kg	20
1,1,1,2-Tetrachloroethane		1,2,3,4	<10.2	µg/Kg	20
Ethylbenzene		1,2,3,4	<10.8	µg/Kg	20
m,p-Xylene		1,2,3,4	<11.0	µg/Kg	20
Bromoform		1,2,3,4	<8.43	µg/Kg	20
Styrene		1,2,3,4	<9.62	µg/Kg	20
o-Xylene		1,2,3,4	<11.0	µg/Kg	20
1,1,2,2-Tetrachloroethane		1,2,3,4	<10.2	µg/Kg	20
2-Chlorotoluene		1,2,3,4	<11.5	µg/Kg	20
1,2,3-Trichloropropane		1,2,3,4	<9.22	µg/Kg	20
Isopropylbenzene		1,2,3,4	<10.2	µg/Kg	20
Bromobenzene		1,2,3,4	<11.2	µg/Kg	20
n-Propylbenzene		1,2,3,4	<10.6	µg/Kg	20
1,3,5-Trimethylbenzene		1,2,3,4	<11.5	µg/Kg	20
tert-Butylbenzene		1,2,3,4	<10.3	µg/Kg	20
1,2,4-Trimethylbenzene		1,2,3,4	<11.0	µg/Kg	20
1,4-Dichlorobenzene (para)		1,2,3,4	<12.0	µg/Kg	20
sec-Butylbenzene		1,2,3,4	<11.3	µg/Kg	20
1,3-Dichlorobenzene (meta)		1,2,3,4	<11.6	µg/Kg	20
p-Isopropyltoluene		1,2,3	<11.1	µg/Kg	20
4-Chlorotoluene		1,2,3,4	<11.7	µg/Kg	20
1,2-Dichlorobenzene (ortho)		1,2,3,4	<12.0	µg/Kg	20
n-Butylbenzene		1,2,3,4	<11.0	µg/Kg	20
1,2-Dibromo-3-chloropropane		1,3,4	<9.07	µg/Kg	100
1,2,3-Trichlorobenzene		1,2,3,4	<12.6	µg/Kg	100
1,2,4-Trichlorobenzene		1,2,3,4	<12.4	µg/Kg	100
Naphthalene		1,2,3,4	<10.7	µg/Kg	100
Hexachlorobutadiene		1,2,3,4	<17.2	µg/Kg	100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4	950	µg/Kg	1	1000	95	78 - 119
Toluene-d8			977	µg/Kg	1	1000	98	85 - 116
4-Bromofluorobenzene (4-BFB)			921	µg/Kg	1	1000	92	79 - 119

Method Blank (1) QC Batch: 131830

QC Batch: 131830
 Prep Batch: 111719

Date Analyzed: 2016-08-01
 QC Preparation: 2016-08-01

Analyzed By: HJ
 Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1,2,3	<8.47	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			21.8	mg/Kg	1	25.0	87	58.2 - 150

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 131801
Prep Batch: 111686

Date Analyzed: 2016-08-01
QC Preparation: 2016-07-29

Analyzed By: HJ
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	391	mg/Kg	1	500	<8.47	78	68.5 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	396	mg/Kg	1	500	<8.47	79	68.5 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	26.4	25.9	mg/Kg	1	25.0	106	104	58.2 - 150

Laboratory Control Spike (LCS-1)

QC Batch: 131808
Prep Batch: 111698

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3	22.3	mg/Kg	1	20.0	0.376	110	64.2 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3	22.3	mg/Kg	1	20.0	0.376	110	64.2 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

				LCS	LCSD		Spike	LCS	LCSD	Rec.	
Surrogate				Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)				2.33	2.18	mg/Kg	1	2.00	116	109	76.4 - 123
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}		2.44	2.43	mg/Kg	1	2.00	122	122	69.4 - 120

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

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Laboratory Control Spike (LCS-1)

QC Batch: 131816
Prep Batch: 111704

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		3,4	243	mg/Kg	1	250	<4.44	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		3,4	244	mg/Kg	1	250	<4.44	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 131821
Prep Batch: 111708

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: KB
Prepared By: KB

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		1,2,3,4	966	µg/Kg	1	1000	<9.28	97	78 - 125
Dichlorodifluoromethane		1,2,3,4	941	µg/Kg	1	1000	<9.82	94	29 - 149
Chloromethane (methyl chloride)		1,2,3,4	830	µg/Kg	1	1000	<11.7	83	50 - 136
Vinyl Chloride		1,2,3,4	884	µg/Kg	1	1000	<10.6	88	56 - 135
Bromomethane (methyl bromide)		1,2,3,4	851	µg/Kg	1	1000	<13.5	85	53 - 143
Chloroethane		1,2,3,4	892	µg/Kg	1	1000	<9.16	89	59 - 139
Trichlorofluoromethane		1,2,3,4	923	µg/Kg	1	1000	<12.4	92	62 - 140
Acetone		1,2,3,4	748	µg/Kg	1	1000	<7.34	75	36 - 164
Iodomethane (methyl iodide)		1,2,3,4	980	µg/Kg	1	1000	<8.64	98	71 - 131
Carbon Disulfide		1,2,3,4	985	µg/Kg	1	1000	<9.90	98	63 - 132
Acrylonitrile		1,2,3,4	836	µg/Kg	1	1000	<9.14	84	65 - 134
2-Butanone (MEK)		1,2,3,4	572	µg/Kg	1	1000	<13.4	57	51 - 148
4-Methyl-2-pentanone (MIBK)		1,2,3,4	870	µg/Kg	1	1000	<14.1	87	65 - 135
2-Hexanone		1,2,3,4	780	µg/Kg	1	1000	<10.6	78	53 - 145
trans 1,4-Dichloro-2-butene		1,2,3,4	1270	µg/Kg	1	1000	<8.49	127	62 - 136
1,1-Dichloroethene		1,2,3,4	972	µg/Kg	1	1000	<10.4	97	70 - 131
Methylene chloride		1,2,3,4	904	µg/Kg	1	1000	21.9	88	70 - 128
MTBE		1,2,3,4	927	µg/Kg	1	1000	<11.4	93	73 - 125
trans-1,2-Dichloroethene		1,2,3,4	966	µg/Kg	1	1000	<9.80	97	74 - 125
1,1-Dichloroethane		1,2,3,4	951	µg/Kg	1	1000	<9.82	95	76 - 125
cis-1,2-Dichloroethene		1,2,3,4	972	µg/Kg	1	1000	<9.58	97	77 - 123

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
2,2-Dichloropropane		1,2,3,4	1090	µg/Kg	1	1000	<8.99	109	67 - 133
1,2-Dichloroethane (EDC)		1,2,3,4	957	µg/Kg	1	1000	<9.58	96	73 - 128
Chloroform		1,2,3,4	1010	µg/Kg	1	1000	<9.68	101	78 - 123
1,1,1-Trichloroethane		1,2,3,4	1040	µg/Kg	1	1000	<10.6	104	73 - 130
1,1-Dichloropropene		1,2,3,4	1010	µg/Kg	1	1000	<9.74	101	76 - 125
Benzene		1,2,3,4	969	µg/Kg	1	1000	<10.3	97	77 - 121
Carbon Tetrachloride		1,2,3,4	1050	µg/Kg	1	1000	<8.88	105	80 - 120
1,2-Dichloropropane		1,2,3,4	1030	µg/Kg	1	1000	<9.48	103	76 - 123
Trichloroethene (TCE)		1,2,3,4	958	µg/Kg	1	1000	<10.4	96	77 - 123
Dibromomethane (methylene bromide)		1,2,3,4	950	µg/Kg	1	1000	<9.65	95	78 - 125
Bromodichloromethane		1,2,3,4	1010	µg/Kg	1	1000	<9.23	101	75 - 127
2-Chloroethyl vinyl ether		1,2,3,4	1020	µg/Kg	1	1000	<10.8	102	43 - 149
cis-1,3-Dichloropropene		1,2,3,4	957	µg/Kg	1	1000	<9.76	96	74 - 126
trans-1,3-Dichloropropene		1,2,3,4	952	µg/Kg	1	1000	<9.24	95	71 - 130
Toluene		1,2,3,4	983	µg/Kg	1	1000	<9.74	98	77 - 121
1,1,2-Trichloroethane		1,2,3,4	928	µg/Kg	1	1000	<11.1	93	78 - 121
1,3-Dichloropropane		1,2,3,4	957	µg/Kg	1	1000	<10.4	96	77 - 121
Dibromochloromethane		1,3,4	990	µg/Kg	1	1000	<9.66	99	74 - 126
1,2-Dibromoethane (EDB)		1,2,3,4	958	µg/Kg	1	1000	<10.8	96	78 - 122
Tetrachloroethene (PCE)		1,2,3,4	967	µg/Kg	1	1000	<6.38	97	73 - 128
Chlorobenzene		1,2,3,4	1020	µg/Kg	1	1000	<10.5	102	79 - 120
1,1,1,2-Tetrachloroethane		1,2,3,4	1030	µg/Kg	1	1000	<10.2	103	78 - 125
Ethylbenzene		1,2,3,4	1000	µg/Kg	1	1000	<10.8	100	76 - 122
m,p-Xylene		1,2,3,4	2060	µg/Kg	1	2000	<11.0	103	77 - 124
Bromoform		1,2,3,4	1000	µg/Kg	1	1000	<8.43	100	67 - 132
Styrene		1,2,3,4	969	µg/Kg	1	1000	<9.62	97	76 - 124
o-Xylene		1,2,3,4	1040	µg/Kg	1	1000	<11.0	104	77 - 123
1,1,2,2-Tetrachloroethane		1,2,3,4	888	µg/Kg	1	1000	<10.2	89	70 - 124
2-Chlorotoluene		1,2,3,4	1010	µg/Kg	1	1000	<11.5	101	75 - 122
1,2,3-Trichloropropane		1,2,3,4	914	µg/Kg	1	1000	<9.22	91	73 - 125
Isopropylbenzene		1,2,3,4	990	µg/Kg	1	1000	<10.2	99	68 - 134
Bromobenzene		1,2,3,4	985	µg/Kg	1	1000	<11.2	98	78 - 121
n-Propylbenzene		1,2,3,4	994	µg/Kg	1	1000	<10.6	99	73 - 125
1,3,5-Trimethylbenzene		1,2,3,4	1020	µg/Kg	1	1000	<11.5	102	73 - 124
tert-Butylbenzene		1,2,3,4	1000	µg/Kg	1	1000	<10.3	100	73 - 125
1,2,4-Trimethylbenzene		1,2,3,4	1030	µg/Kg	1	1000	<11.0	103	75 - 123
1,4-Dichlorobenzene (para)		1,2,3,4	1030	µg/Kg	1	1000	<12.0	103	75 - 120
sec-Butylbenzene		1,2,3,4	1000	µg/Kg	1	1000	<11.3	100	73 - 126
1,3-Dichlorobenzene (meta)		1,2,3,4	1020	µg/Kg	1	1000	<11.6	102	77 - 121
p-Isopropyltoluene		1,2,3	1020	µg/Kg	1	1000	<11.1	102	73 - 127
4-Chlorotoluene		1,2,3,4	997	µg/Kg	1	1000	<11.7	100	72 - 124
1,2-Dichlorobenzene (ortho)		1,2,3,4	996	µg/Kg	1	1000	<12.0	100	78 - 121
n-Butylbenzene		1,2,3,4	1040	µg/Kg	1	1000	<11.0	104	70 - 128
1,2-Dibromo-3-chloropropane		1,3,4	895	µg/Kg	1	1000	<9.07	90	61 - 132

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,2,3-Trichlorobenzene		1,2,3,4	995	µg/Kg	1	1000	<12.6	100	66 - 130
1,2,4-Trichlorobenzene		1,2,3,4	1050	µg/Kg	1	1000	<12.4	105	67 - 129
Naphthalene		1,2,3,4	993	µg/Kg	1	1000	<10.7	99	62 - 129
Hexachlorobutadiene		1,2,3,4	1060	µg/Kg	1	1000	<17.2	106	31 - 135

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		1,2,3,4	944	µg/Kg	1	1000	<9.28	94	78 - 125	2	20
Dichlorodifluoromethane		1,2,3,4	861	µg/Kg	1	1000	<9.82	86	29 - 149	9	20
Chloromethane (methyl chloride)		1,2,3,4	795	µg/Kg	1	1000	<11.7	80	50 - 136	4	20
Vinyl Chloride		1,2,3,4	850	µg/Kg	1	1000	<10.6	85	56 - 135	4	20
Bromomethane (methyl bromide)		1,2,3,4	836	µg/Kg	1	1000	<13.5	84	53 - 143	2	20
Chloroethane		1,2,3,4	843	µg/Kg	1	1000	<9.16	84	59 - 139	6	20
Trichlorofluoromethane		1,2,3,4	866	µg/Kg	1	1000	<12.4	87	62 - 140	6	20
Acetone		1,2,3,4	774	µg/Kg	1	1000	<7.34	77	36 - 164	3	20
Iodomethane (methyl iodide)		1,2,3,4	945	µg/Kg	1	1000	<8.64	94	71 - 131	4	20
Carbon Disulfide		1,2,3,4	935	µg/Kg	1	1000	<9.90	94	63 - 132	5	20
Acrylonitrile		1,2,3,4	848	µg/Kg	1	1000	<9.14	85	65 - 134	1	20
2-Butanone (MEK)	Qr	Qr 1,2,3,4	746	µg/Kg	1	1000	<13.4	75	51 - 148	26	20
4-Methyl-2-pentanone (MIBK)		1,2,3,4	811	µg/Kg	1	1000	<14.1	81	65 - 135	7	20
2-Hexanone		1,2,3,4	784	µg/Kg	1	1000	<10.6	78	53 - 145	0	20
trans 1,4-Dichloro-2-butene		1,2,3,4	1130	µg/Kg	1	1000	<8.49	113	62 - 136	12	20
1,1-Dichloroethene		1,2,3,4	918	µg/Kg	1	1000	<10.4	92	70 - 131	6	20
Methylene chloride		1,2,3,4	874	µg/Kg	1	1000	21.9	85	70 - 128	3	20
MTBE		1,2,3,4	878	µg/Kg	1	1000	<11.4	88	73 - 125	5	20
trans-1,2-Dichloroethene		1,2,3,4	951	µg/Kg	1	1000	<9.80	95	74 - 125	2	20
1,1-Dichloroethane		1,2,3,4	900	µg/Kg	1	1000	<9.82	90	76 - 125	6	20
cis-1,2-Dichloroethene		1,2,3,4	950	µg/Kg	1	1000	<9.58	95	77 - 123	2	20
2,2-Dichloropropane		1,2,3,4	945	µg/Kg	1	1000	<8.99	94	67 - 133	14	20
1,2-Dichloroethane (EDC)		1,2,3,4	907	µg/Kg	1	1000	<9.58	91	73 - 128	5	20
Chloroform		1,2,3,4	975	µg/Kg	1	1000	<9.68	98	78 - 123	4	20
1,1,1-Trichloroethane		1,2,3,4	973	µg/Kg	1	1000	<10.6	97	73 - 130	7	20
1,1-Dichloropropene		1,2,3,4	968	µg/Kg	1	1000	<9.74	97	76 - 125	4	20
Benzene		1,2,3,4	932	µg/Kg	1	1000	<10.3	93	77 - 121	4	20
Carbon Tetrachloride		1,2,3,4	976	µg/Kg	1	1000	<8.88	98	80 - 120	7	20
1,2-Dichloropropane		1,2,3,4	980	µg/Kg	1	1000	<9.48	98	76 - 123	5	20
Trichloroethene (TCE)		1,2,3,4	940	µg/Kg	1	1000	<10.4	94	77 - 123	2	20
Dibromomethane (methylene bromide)		1,2,3,4	890	µg/Kg	1	1000	<9.65	89	78 - 125	6	20
Bromodichloromethane		1,2,3,4	978	µg/Kg	1	1000	<9.23	98	75 - 127	3	20
2-Chloroethyl vinyl ether		1,2,3,4	951	µg/Kg	1	1000	<10.8	95	43 - 149	7	20
cis-1,3-Dichloropropene		1,2,3,4	921	µg/Kg	1	1000	<9.76	92	74 - 126	4	20
trans-1,3-Dichloropropene		1,2,3,4	908	µg/Kg	1	1000	<9.24	91	71 - 130	5	20
Toluene		1,2,3,4	941	µg/Kg	1	1000	<9.74	94	77 - 121	4	20

continued ...

control spikes continued ...

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec.		RPD	
			Result	Units					Limit		RPD	Limit
1,1,2-Trichloroethane		1,2,3,4	910	µg/Kg	1	1000	<11.1	91	78 - 121		2	20
1,3-Dichloropropane		1,2,3,4	925	µg/Kg	1	1000	<10.4	92	77 - 121		3	20
Dibromochloromethane		1,3,4	942	µg/Kg	1	1000	<9.66	94	74 - 126		5	20
1,2-Dibromoethane (EDB)		1,2,3,4	916	µg/Kg	1	1000	<10.8	92	78 - 122		4	20
Tetrachloroethene (PCE)		1,2,3,4	983	µg/Kg	1	1000	<6.38	98	73 - 128		2	20
Chlorobenzene		1,2,3,4	984	µg/Kg	1	1000	<10.5	98	79 - 120		4	20
1,1,1,2-Tetrachloroethane		1,2,3,4	1000	µg/Kg	1	1000	<10.2	100	78 - 125		3	20
Ethylbenzene		1,2,3,4	988	µg/Kg	1	1000	<10.8	99	76 - 122		1	20
m,p-Xylene		1,2,3,4	1980	µg/Kg	1	2000	<11.0	99	77 - 124		4	20
Bromoform		1,2,3,4	983	µg/Kg	1	1000	<8.43	98	67 - 132		2	20
Styrene		1,2,3,4	946	µg/Kg	1	1000	<9.62	95	76 - 124		2	20
o-Xylene		1,2,3,4	1010	µg/Kg	1	1000	<11.0	101	77 - 123		3	20
1,1,2,2-Tetrachloroethane		1,2,3,4	831	µg/Kg	1	1000	<10.2	83	70 - 124		7	20
2-Chlorotoluene		1,2,3,4	968	µg/Kg	1	1000	<11.5	97	75 - 122		4	20
1,2,3-Trichloropropane		1,2,3,4	882	µg/Kg	1	1000	<9.22	88	73 - 125		4	20
Isopropylbenzene		1,2,3,4	956	µg/Kg	1	1000	<10.2	96	68 - 134		4	20
Bromobenzene		1,2,3,4	960	µg/Kg	1	1000	<11.2	96	78 - 121		3	20
n-Propylbenzene		1,2,3,4	967	µg/Kg	1	1000	<10.6	97	73 - 125		3	20
1,3,5-Trimethylbenzene		1,2,3,4	963	µg/Kg	1	1000	<11.5	96	73 - 124		6	20
tert-Butylbenzene		1,2,3,4	965	µg/Kg	1	1000	<10.3	96	73 - 125		4	20
1,2,4-Trimethylbenzene		1,2,3,4	980	µg/Kg	1	1000	<11.0	98	75 - 123		5	20
1,4-Dichlorobenzene (para)		1,2,3,4	1000	µg/Kg	1	1000	<12.0	100	75 - 120		3	20
sec-Butylbenzene		1,2,3,4	974	µg/Kg	1	1000	<11.3	97	73 - 126		3	20
1,3-Dichlorobenzene (meta)		1,2,3,4	997	µg/Kg	1	1000	<11.6	100	77 - 121		2	20
p-Isopropyltoluene		1,2,3	983	µg/Kg	1	1000	<11.1	98	73 - 127		4	20
4-Chlorotoluene		1,2,3,4	964	µg/Kg	1	1000	<11.7	96	72 - 124		3	20
1,2-Dichlorobenzene (ortho)		1,2,3,4	968	µg/Kg	1	1000	<12.0	97	78 - 121		3	20
n-Butylbenzene		1,2,3,4	996	µg/Kg	1	1000	<11.0	100	70 - 128		4	20
1,2-Dibromo-3-chloropropane		1,3,4	887	µg/Kg	1	1000	<9.07	89	61 - 132		1	20
1,2,3-Trichlorobenzene		1,2,3,4	1030	µg/Kg	1	1000	<12.6	103	66 - 130		3	20
1,2,4-Trichlorobenzene		1,2,3,4	1020	µg/Kg	1	1000	<12.4	102	67 - 129		3	20
Naphthalene		1,2,3,4	971	µg/Kg	1	1000	<10.7	97	62 - 129		2	20
Hexachlorobutadiene		1,2,3,4	1030	µg/Kg	1	1000	<17.2	103	31 - 135		3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS		LCSD		Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
		Result	Result	Units	Dil.				
Dibromofluoromethane	4	994	991	µg/Kg	1	1000	99	99	78 - 119
Toluene-d8		1000	993	µg/Kg	1	1000	100	99	85 - 116
4-Bromofluorobenzene (4-BFB)		1010	990	µg/Kg	1	1000	101	99	79 - 119

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Laboratory Control Spike (LCS-1)

QC Batch: 131830
Prep Batch: 111719

Date Analyzed: 2016-08-01
QC Preparation: 2016-08-01

Analyzed By: HJ
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	440	mg/Kg	1	500	<8.47	88	68.5 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	450	mg/Kg	1	500	<8.47	90	68.5 - 136	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	24.9	25.7	mg/Kg	1	25.0	100	103	58.2 - 150

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 425237

QC Batch: 131801
Prep Batch: 111686

Date Analyzed: 2016-08-01
QC Preparation: 2016-07-29

Analyzed By: HJ
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	395	mg/Kg	1	500	<8.47	79	49.3 - 138

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	390	mg/Kg	1	500	<8.47	78	49.3 - 138	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	25.1	24.9	mg/Kg	1	25	100	100	58.2 - 150

Matrix Spike (MS-1) Spiked Sample: 425442

QC Batch: 131808
Prep Batch: 111698

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3	16.1	mg/Kg	1	20.0	<0.271	80	35.3 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3	19.2	mg/Kg	1	20.0	<0.271	96	35.3 - 129	18	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.09	2.24	mg/Kg	1	2	104	112	76.4 - 123
4-Bromofluorobenzene (4-BFB)	2.18	2.34	mg/Kg	1	2	109	117	69.4 - 120

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Matrix Spike (MS-1) Spiked Sample: 425226

QC Batch: 131816
Prep Batch: 111704

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		3,4	254	mg/Kg	1	250	9.33	98	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		3,4	250	mg/Kg	1	250	9.33	96	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 425442

QC Batch: 131821
Prep Batch: 111708

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: KB
Prepared By: KB

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	Qs	Qs	1,2,3,4 1630	µg/Kg	1	950	<9.28	172	78 - 125
Dichlorodifluoromethane			1,2,3,4 1250	µg/Kg	1	950	<9.82	132	29 - 149
Chloromethane (methyl chloride)			1,2,3,4 1130	µg/Kg	1	950	<11.7	119	50 - 136
Vinyl Chloride			1,2,3,4 1240	µg/Kg	1	950	<10.6	130	56 - 135
Bromomethane (methyl bromide)			1,2,3,4 758	µg/Kg	1	950	<13.5	80	53 - 143
Chloroethane	Qs	Qs	1,2,3,4 554	µg/Kg	1	950	<9.16	58	59 - 139
Trichlorofluoromethane			1,2,3,4 1130	µg/Kg	1	950	<12.4	119	62 - 140
Acetone			1,2,3,4 1170	µg/Kg	1	950	<7.34	123	36 - 164
Iodomethane (methyl iodide)	Qs	Qs	1,2,3,4 1620	µg/Kg	1	950	<8.64	170	71 - 131
Carbon Disulfide	Qs	Qs	1,2,3,4 1490	µg/Kg	1	950	<9.90	157	63 - 132
Acrylonitrile	Qs	Qs	1,2,3,4 1360	µg/Kg	1	950	<9.14	143	65 - 134
2-Butanone (MEK)			1,2,3,4 1310	µg/Kg	1	950	<13.4	138	51 - 148
4-Methyl-2-pentanone (MIBK)			1,2,3,4 1260	µg/Kg	1	950	<14.1	133	65 - 135
2-Hexanone			1,2,3,4 1100	µg/Kg	1	950	<10.6	116	53 - 145
trans 1,4-Dichloro-2-butene			1,2,3,4 967	µg/Kg	1	950	<8.49	102	62 - 136
1,1-Dichloroethene	Qs	Qs	1,2,3,4 1660	µg/Kg	1	950	<10.4	175	70 - 131
Methylene chloride	Qs	Qs	1,2,3,4 1490	µg/Kg	1	950	<11.0	157	70 - 128
MTBE	Qs	Qs	1,2,3,4 1420	µg/Kg	1	950	<11.4	149	73 - 125
trans-1,2-Dichloroethene	Qs	Qs	1,2,3,4 1670	µg/Kg	1	950	<9.80	176	74 - 125
1,1-Dichloroethane	Qs	Qs	1,2,3,4 1520	µg/Kg	1	950	<9.82	160	76 - 125
cis-1,2-Dichloroethene	Qs	Qs	1,2,3,4 1640	µg/Kg	1	950	<9.58	173	77 - 123

continued ...

matrix spikes continued . . .

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
2,2-Dichloropropane		1,2,3,4	1090	µg/Kg	1	950	<8.99	115	67 - 133
1,2-Dichloroethane (EDC)		1,2,3,4	1190	µg/Kg	1	950	<9.58	125	73 - 128
Chloroform	Qs	Qs	1480	µg/Kg	1	950	<9.68	156	78 - 123
1,1,1-Trichloroethane	Qs	Qs	1290	µg/Kg	1	950	<10.6	136	73 - 130
1,1-Dichloropropene	Qs	Qs	1580	µg/Kg	1	950	<9.74	166	76 - 125
Benzene	Qs	Qs	1550	µg/Kg	1	950	<10.3	163	77 - 121
Carbon Tetrachloride		1,2,3,4	1050	µg/Kg	1	950	<8.88	110	80 - 120
1,2-Dichloropropane	Qs	Qs	1580	µg/Kg	1	950	<9.48	166	76 - 123
Trichloroethene (TCE)	Qs	Qs	2210	µg/Kg	1	950	<10.4	233	77 - 123
Dibromomethane (methylene bromide)	Qs	Qs	1300	µg/Kg	1	950	<9.65	137	78 - 125
Bromodichloromethane		1,2,3,4	1190	µg/Kg	1	950	<9.23	125	75 - 127
2-Chloroethyl vinyl ether	Qs	Qs	1830	µg/Kg	1	950	<10.8	193	43 - 149
cis-1,3-Dichloropropene	Qs	Qs	1310	µg/Kg	1	950	<9.76	138	74 - 126
trans-1,3-Dichloropropene		1,2,3,4	1210	µg/Kg	1	950	<9.24	127	71 - 130
Toluene	Qs	Qs	1630	µg/Kg	1	950	<9.74	172	77 - 121
1,1,2-Trichloroethane	Qs	Qs	1360	µg/Kg	1	950	<11.1	143	78 - 121
1,3-Dichloropropane	Qs	Qs	1390	µg/Kg	1	950	<10.4	146	77 - 121
Dibromochloromethane		1,3,4	1090	µg/Kg	1	950	<9.66	115	74 - 126
1,2-Dibromoethane (EDB)	Qs	Qs	1380	µg/Kg	1	950	<10.8	145	78 - 122
Tetrachloroethene (PCE)	Qs	Qs	2990	µg/Kg	1	950	<6.38	315	73 - 128
Chlorobenzene	Qs	Qs	1730	µg/Kg	1	950	<10.5	182	79 - 120
1,1,1,2-Tetrachloroethane	Qs	Qs	1340	µg/Kg	1	950	<10.2	141	78 - 125
Ethylbenzene	Qs	Qs	1640	µg/Kg	1	950	<10.8	173	76 - 122
m,p-Xylene	Qs	Qs	3320	µg/Kg	1	1900	<11.0	175	77 - 124
Bromoform		1,2,3,4	884	µg/Kg	1	950	<8.43	93	67 - 132
Styrene	Qs	Qs	1640	µg/Kg	1	950	<9.62	173	76 - 124
o-Xylene	Qs	Qs	1640	µg/Kg	1	950	<11.0	173	77 - 123
1,1,2,2-Tetrachloroethane		1,2,3,4	671	µg/Kg	1	950	<10.2	71	70 - 124
2-Chlorotoluene	Qs	Qs	1610	µg/Kg	1	950	<11.5	169	75 - 122
1,2,3-Trichloropropane	Qs	Qs	1210	µg/Kg	1	950	<9.22	127	73 - 125
Isopropylbenzene	Qs	Qs	1680	µg/Kg	1	950	<10.2	177	68 - 134
Bromobenzene	Qs	Qs	1430	µg/Kg	1	950	<11.2	150	78 - 121
n-Propylbenzene	Qs	Qs	1700	µg/Kg	1	950	<10.6	179	73 - 125
1,3,5-Trimethylbenzene	Qs	Qs	1710	µg/Kg	1	950	<11.5	180	73 - 124
tert-Butylbenzene	Qs	Qs	1840	µg/Kg	1	950	<10.3	194	73 - 125
1,2,4-Trimethylbenzene	Qs	Qs	1750	µg/Kg	1	950	<11.0	184	75 - 123
1,4-Dichlorobenzene (para)	Qs	Qs	1800	µg/Kg	1	950	<12.0	189	75 - 120
sec-Butylbenzene	Qs	Qs	1880	µg/Kg	1	950	<11.3	198	73 - 126
1,3-Dichlorobenzene (meta)	Qs	Qs	1810	µg/Kg	1	950	<11.6	190	77 - 121
p-Isopropyltoluene	Qs	Qs	1950	µg/Kg	1	950	<11.1	205	73 - 127
4-Chlorotoluene	Qs	Qs	1540	µg/Kg	1	950	<11.7	162	72 - 124
1,2-Dichlorobenzene (ortho)	Qs	Qs	1670	µg/Kg	1	950	<12.0	176	78 - 121
n-Butylbenzene	Qs	Qs	1950	µg/Kg	1	950	<11.0	205	70 - 128
1,2-Dibromo-3-chloropropane		1,3,4	852	µg/Kg	1	950	<9.07	90	61 - 132

continued . . .

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,2,3-Trichlorobenzene	Qs	Qs	1,2,3,4	1480	µg/Kg	1	950	<12.6	156 66 - 130
1,2,4-Trichlorobenzene	Qs	Qs	1,2,3,4	1840	µg/Kg	1	950	<12.4	194 67 - 129
Naphthalene	Qs	Qs	1,2,3,4	1260	µg/Kg	1	950	<10.7	133 62 - 129
Hexachlorobutadiene	Qs	Qs	1,2,3,4	2050	µg/Kg	1	950	<17.2	216 31 - 135

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	Qs	Qs	1,2,3,4	1340	µg/Kg	1	960	<9.28	140 78 - 125	20	20
Dichlorodifluoromethane			1,2,3,4	1140	µg/Kg	1	960	<9.82	119 29 - 149	9	20
Chloromethane (methyl chloride)			1,2,3,4	1050	µg/Kg	1	960	<11.7	109 50 - 136	7	20
Vinyl Chloride			1,2,3,4	1190	µg/Kg	1	960	<10.6	124 56 - 135	4	20
Bromomethane (methyl bromide)			1,2,3,4	668	µg/Kg	1	960	<13.5	70 53 - 143	13	20
Chloroethane	Qs	Qs	1,2,3,4	474	µg/Kg	1	960	<9.16	49 59 - 139	16	20
Trichlorofluoromethane			1,2,3,4	1030	µg/Kg	1	960	<12.4	107 62 - 140	9	20
Acetone			1,2,3,4	1210	µg/Kg	1	960	<7.34	126 36 - 164	3	20
Iodomethane (methyl iodide)	Qs	Qs	1,2,3,4	1340	µg/Kg	1	960	<8.64	140 71 - 131	19	20
Carbon Disulfide	Qr	Qr	1,2,3,4	1180	µg/Kg	1	960	<9.90	123 63 - 132	23	20
Acrylonitrile	Qr	Qr	1,2,3,4	1080	µg/Kg	1	960	<9.14	112 65 - 134	23	20
2-Butanone (MEK)			1,2,3,4	1140	µg/Kg	1	960	<13.4	119 51 - 148	14	20
4-Methyl-2-pentanone (MIBK)	Qr	Qr	1,2,3,4	1000	µg/Kg	1	960	<14.1	104 65 - 135	23	20
2-Hexanone			1,2,3,4	953	µg/Kg	1	960	<10.6	99 53 - 145	14	20
trans 1,4-Dichloro-2-butene	Qr	Qr	1,2,3,4	790	µg/Kg	1	960	<8.49	82 62 - 136	20	20
1,1-Dichloroethene	Qr,Qs	Qr,Qs	1,2,3,4	1330	µg/Kg	1	960	<10.4	138 70 - 131	22	20
Methylene chloride	Qs	Qs	1,2,3,4	1230	µg/Kg	1	960	<11.0	128 70 - 128	19	20
MTBE	Qr	Qr	1,2,3,4	1120	µg/Kg	1	960	<11.4	117 73 - 125	24	20
trans-1,2-Dichloroethene	Qr,Qs	Qr,Qs	1,2,3,4	1340	µg/Kg	1	960	<9.80	140 74 - 125	22	20
1,1-Dichloroethane	Qr,Qs	Qr,Qs	1,2,3,4	1210	µg/Kg	1	960	<9.82	126 76 - 125	23	20
cis-1,2-Dichloroethene	Qr,Qs	Qr,Qs	1,2,3,4	1330	µg/Kg	1	960	<9.58	138 77 - 123	21	20
2,2-Dichloropropane	Qr	Qr	1,2,3,4	875	µg/Kg	1	960	<8.99	91 67 - 133	22	20
1,2-Dichloroethane (EDC)	Qr	Qr	1,2,3,4	960	µg/Kg	1	960	<9.58	100 73 - 128	21	20
Chloroform	Qr	Qr	1,2,3,4	1180	µg/Kg	1	960	<9.68	123 78 - 123	23	20
1,1,1-Trichloroethane	Qr	Qr	1,2,3,4	1020	µg/Kg	1	960	<10.6	106 73 - 130	23	20
1,1-Dichloropropene	Qr,Qs	Qr,Qs	1,2,3,4	1240	µg/Kg	1	960	<9.74	129 76 - 125	24	20
Benzene	Qs	Qs	1,2,3,4	1290	µg/Kg	1	960	<10.3	134 77 - 121	18	20
Carbon Tetrachloride	Qr	Qr	1,2,3,4	838	µg/Kg	1	960	<8.88	87 80 - 120	22	20
1,2-Dichloropropane	Qs	Qs	1,2,3,4	1380	µg/Kg	1	960	<9.48	144 76 - 123	14	20
Trichloroethene (TCE)	Qs	Qs	1,2,3,4	1970	µg/Kg	1	960	<10.4	205 77 - 123	12	20
Dibromomethane (methylene bromide)			1,2,3,4	1120	µg/Kg	1	960	<9.65	117 78 - 125	15	20
Bromodichloromethane			1,2,3,4	1020	µg/Kg	1	960	<9.23	106 75 - 127	15	20
2-Chloroethyl vinyl ether	Qs	Qs	1,2,3,4	1590	µg/Kg	1	960	<10.8	166 43 - 149	14	20
cis-1,3-Dichloropropene			1,2,3,4	1110	µg/Kg	1	960	<9.76	116 74 - 126	16	20
trans-1,3-Dichloropropene			1,2,3,4	1020	µg/Kg	1	960	<9.24	106 71 - 130	17	20
Toluene	Qs	Qs	1,2,3,4	1350	µg/Kg	1	960	<9.74	141 77 - 121	19	20

continued ...

matrix spikes continued ...

Param			MSD		Dil.	Spike Amount	Matrix Result	Rec.		RPD	Limit
	F	C	Result	Units				Rec.	Limit		
1,1,2-Trichloroethane			1,2,3,4 1140	µg/Kg	1	960	<11.1	119	78 - 121	18	20
1,3-Dichloropropane	Qs	Qs	1,2,3,4 1170	µg/Kg	1	960	<10.4	122	77 - 121	17	20
Dibromochloromethane	Qr	Qr	1,3,4 873	µg/Kg	1	960	<9.66	91	74 - 126	22	20
1,2-Dibromoethane (EDB)			1,2,3,4 1150	µg/Kg	1	960	<10.8	120	78 - 122	18	20
Tetrachloroethene (PCE)	Qr, Qs	Qr, Qs	1,2,3,4 2380	µg/Kg	1	960	<6.38	248	73 - 128	23	20
Chlorobenzene	Qs	Qs	1,2,3,4 1420	µg/Kg	1	960	<10.5	148	79 - 120	20	20
1,1,1,2-Tetrachloroethane	Qr	Qr	1,2,3,4 1090	µg/Kg	1	960	<10.2	114	78 - 125	21	20
Ethylbenzene	Qs	Qs	1,2,3,4 1360	µg/Kg	1	960	<10.8	142	76 - 122	19	20
m,p-Xylene	Qs	Qs	1,2,3,4 2740	µg/Kg	1	1920	<11.0	143	77 - 124	19	20
Bromoform	Qr	Qr	1,2,3,4 670	µg/Kg	1	960	<8.43	70	67 - 132	28	20
Styrene	Qr, Qs	Qr, Qs	1,2,3,4 1320	µg/Kg	1	960	<9.62	138	76 - 124	22	20
o-Xylene	Qs	Qs	1,2,3,4 1350	µg/Kg	1	960	<11.0	141	77 - 123	19	20
1,1,2,2-Tetrachloroethane	Qr, Qs	Qr, Qs	1,2,3,4 397	µg/Kg	1	960	<10.2	41	70 - 124	51	20
2-Chlorotoluene	Qs	Qs	1,2,3,4 1370	µg/Kg	1	960	<11.5	143	75 - 122	16	20
1,2,3-Trichloropropane			1,2,3,4 1020	µg/Kg	1	960	<9.22	106	73 - 125	17	20
Isopropylbenzene	Qs	Qs	1,2,3,4 1410	µg/Kg	1	960	<10.2	147	68 - 134	18	20
Bromobenzene	Qs	Qs	1,2,3,4 1220	µg/Kg	1	960	<11.2	127	78 - 121	16	20
n-Propylbenzene	Qs	Qs	1,2,3,4 1440	µg/Kg	1	960	<10.6	150	73 - 125	17	20
1,3,5-Trimethylbenzene	Qs	Qs	1,2,3,4 1460	µg/Kg	1	960	<11.5	152	73 - 124	16	20
tert-Butylbenzene	Qs	Qs	1,2,3,4 1520	µg/Kg	1	960	<10.3	158	73 - 125	19	20
1,2,4-Trimethylbenzene	Qs	Qs	1,2,3,4 1460	µg/Kg	1	960	<11.0	152	75 - 123	18	20
1,4-Dichlorobenzene (para)	Qr, Qs	Qr, Qs	1,2,3,4 1450	µg/Kg	1	960	<12.0	151	75 - 120	22	20
sec-Butylbenzene	Qs	Qs	1,2,3,4 1570	µg/Kg	1	960	<11.3	164	73 - 126	18	20
1,3-Dichlorobenzene (meta)	Qs	Qs	1,2,3,4 1490	µg/Kg	1	960	<11.6	155	77 - 121	19	20
p-Isopropyltoluene	Qs	Qs	1,2,3 1610	µg/Kg	1	960	<11.1	168	73 - 127	19	20
4-Chlorotoluene	Qs	Qs	1,2,3,4 1350	µg/Kg	1	960	<11.7	141	72 - 124	13	20
1,2-Dichlorobenzene (ortho)	Qr, Qs	Qr, Qs	1,2,3,4 1350	µg/Kg	1	960	<12.0	141	78 - 121	21	20
n-Butylbenzene	Qs	Qs	1,2,3,4 1640	µg/Kg	1	960	<11.0	171	70 - 128	17	20
1,2-Dibromo-3-chloropropane	Qr	Qr	1,3,4 623	µg/Kg	1	960	<9.07	65	61 - 132	31	20
1,2,3-Trichlorobenzene	Qs	Qs	1,2,3,4 1480	µg/Kg	1	960	<12.6	154	66 - 130	0	20
1,2,4-Trichlorobenzene	Qs	Qs	1,2,3,4 1600	µg/Kg	1	960	<12.4	167	67 - 129	14	20
Naphthalene	Qs	Qs	1,2,3,4 1260	µg/Kg	1	960	<10.7	131	62 - 129	0	20
Hexachlorobutadiene	Qs	Qs	1,2,3,4 1710	µg/Kg	1	960	<17.2	178	31 - 135	18	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MSD		Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
		MS Result	Result	Units					
Dibromofluoromethane	4	839	818	µg/Kg	1	950	88	85	78 - 119
Toluene-d8		897	944	µg/Kg	1	950	94	98	85 - 116
4-Bromofluorobenzene (4-BFB)		859	866	µg/Kg	1	950	90	90	79 - 119

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

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Matrix Spike (MS-1) Spiked Sample:

QC Batch: 131830
Prep Batch: 111719

Date Analyzed: 2016-08-01
QC Preparation: 2016-08-01

Analyzed By: HJ
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	436	mg/Kg	1	500	<8.47	87	49.3 - 138

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	487	mg/Kg	1	500	<8.47	97	49.3 - 138	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	26.1	28.1	mg/Kg	1	25	104	112	58.2 - 150

Calibration Standards

Standard (CCV-1)

QC Batch: 131801

Date Analyzed: 2016-08-01

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/Kg	500	410	82	80 - 120	2016-08-01

Standard (CCV-2)

QC Batch: 131801

Date Analyzed: 2016-08-01

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/Kg	500	417	83	80 - 120	2016-08-01

Standard (CCV-1)

QC Batch: 131808

Date Analyzed: 2016-07-29

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3	mg/Kg	1.00	1.08	108	80 - 120	2016-07-29

Standard (CCV-2)

QC Batch: 131808

Date Analyzed: 2016-07-29

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3	mg/Kg	1.00	0.878	88	80 - 120	2016-07-29

Standard (CCV-1)

QC Batch: 131816

Date Analyzed: 2016-07-29

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		3,4	mg/Kg	25.0	24.7	99	90 - 110	2016-07-29

Standard (CCV-2)

QC Batch: 131816

Date Analyzed: 2016-07-29

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		3,4	mg/Kg	25.0	24.6	98	90 - 110	2016-07-29

Standard (CCV-1)

QC Batch: 131821

Date Analyzed: 2016-07-29

Analyzed By: KB

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane			1,2,3,4 $\mu\text{g/Kg}$	50.0	51.5	103	80 - 120	2016-07-29
Dichlorodifluoromethane			1,2,3,4 $\mu\text{g/Kg}$	50.0	45.2	90	80 - 120	2016-07-29
Chloromethane (methyl chloride)			1,2,3,4 $\mu\text{g/Kg}$	50.0	41.1	82	80 - 120	2016-07-29
Vinyl Chloride			1,2,3,4 $\mu\text{g/Kg}$	50.0	43.3	87	80 - 120	2016-07-29
Bromomethane (methyl bromide)			1,2,3,4 $\mu\text{g/Kg}$	50.0	41.4	83	80 - 120	2016-07-29
Chloroethane			1,2,3,4 $\mu\text{g/Kg}$	50.0	44.6	89	80 - 120	2016-07-29
Trichlorofluoromethane			1,2,3,4 $\mu\text{g/Kg}$	50.0	45.9	92	80 - 120	2016-07-29
Acetone	Qc	Qc	1,2,3,4 $\mu\text{g/Kg}$	50.0	35.8	72	80 - 120	2016-07-29
Iodomethane (methyl iodide)			1,2,3,4 $\mu\text{g/Kg}$	50.0	49.5	99	80 - 120	2016-07-29
Carbon Disulfide			1,2,3,4 $\mu\text{g/Kg}$	50.0	49.7	99	80 - 120	2016-07-29
Acrylonitrile			1,2,3,4 $\mu\text{g/Kg}$	50.0	45.7	91	80 - 120	2016-07-29
2-Butanone (MEK)	Qc	Qc	1,2,3,4 $\mu\text{g/Kg}$	50.0	39.4	79	80 - 120	2016-07-29
4-Methyl-2-pentanone (MIBK)			1,2,3,4 $\mu\text{g/Kg}$	50.0	40.2	80	80 - 120	2016-07-29
2-Hexanone	Qc	Qc	1,2,3,4 $\mu\text{g/Kg}$	50.0	38.2	76	80 - 120	2016-07-29
trans 1,4-Dichloro-2-butene	Qc	Qc	1,2,3,4 $\mu\text{g/Kg}$	50.0	66.8	134	80 - 120	2016-07-29
1,1-Dichloroethene			1,2,3,4 $\mu\text{g/Kg}$	50.0	49.3	99	80 - 120	2016-07-29
Methylene chloride			1,2,3,4 $\mu\text{g/Kg}$	50.0	46.8	94	80 - 120	2016-07-29
MTBE			1,2,3,4 $\mu\text{g/Kg}$	50.0	47.8	96	80 - 120	2016-07-29

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
trans-1,2-Dichloroethene		1,2,3,4	µg/Kg	50.0	50.2	100	80 - 120	2016-07-29
1,1-Dichloroethane		1,2,3,4	µg/Kg	50.0	49.0	98	80 - 120	2016-07-29
cis-1,2-Dichloroethene		1,2,3,4	µg/Kg	50.0	49.0	98	80 - 120	2016-07-29
2,2-Dichloropropane		1,2,3,4	µg/Kg	50.0	53.1	106	80 - 120	2016-07-29
1,2-Dichloroethane (EDC)		1,2,3,4	µg/Kg	50.0	51.1	102	80 - 120	2016-07-29
Chloroform		1,2,3,4	µg/Kg	50.0	51.4	103	80 - 120	2016-07-29
1,1,1-Trichloroethane		1,2,3,4	µg/Kg	50.0	53.8	108	80 - 120	2016-07-29
1,1-Dichloropropene		1,2,3,4	µg/Kg	50.0	52.4	105	80 - 120	2016-07-29
Benzene		1,2,3,4	µg/Kg	50.0	50.1	100	80 - 120	2016-07-29
Carbon Tetrachloride		1,2,3,4	µg/Kg	50.0	53.8	108	80 - 120	2016-07-29
1,2-Dichloropropane		1,2,3,4	µg/Kg	50.0	52.4	105	80 - 120	2016-07-29
Trichloroethene (TCE)		1,2,3,4	µg/Kg	50.0	48.3	97	80 - 120	2016-07-29
Dibromomethane (methylene bromide)		1,2,3,4	µg/Kg	50.0	47.9	96	80 - 120	2016-07-29
Bromodichloromethane		1,2,3,4	µg/Kg	50.0	53.3	107	80 - 120	2016-07-29
2-Chloroethyl vinyl ether		1,2,3,4	µg/Kg	50.0	51.4	103	80 - 120	2016-07-29
cis-1,3-Dichloropropene		1,2,3,4	µg/Kg	50.0	49.3	99	80 - 120	2016-07-29
trans-1,3-Dichloropropene		1,2,3,4	µg/Kg	50.0	49.8	100	80 - 120	2016-07-29
Toluene		1,2,3,4	µg/Kg	50.0	50.8	102	80 - 120	2016-07-29
1,1,2-Trichloroethane		1,2,3,4	µg/Kg	50.0	48.0	96	80 - 120	2016-07-29
1,3-Dichloropropane		1,2,3,4	µg/Kg	50.0	49.9	100	80 - 120	2016-07-29
Dibromochloromethane		1,3,4	µg/Kg	50.0	51.8	104	80 - 120	2016-07-29
1,2-Dibromoethane (EDB)		1,2,3,4	µg/Kg	50.0	48.1	96	80 - 120	2016-07-29
Tetrachloroethene (PCE)		1,2,3,4	µg/Kg	50.0	47.6	95	80 - 120	2016-07-29
Chlorobenzene		1,2,3,4	µg/Kg	50.0	52.6	105	80 - 120	2016-07-29
1,1,1,2-Tetrachloroethane		1,2,3,4	µg/Kg	50.0	53.8	108	80 - 120	2016-07-29
Ethylbenzene		1,2,3,4	µg/Kg	50.0	52.4	105	80 - 120	2016-07-29
m,p-Xylene		1,2,3,4	µg/Kg	100	107	107	80 - 120	2016-07-29
Bromoform		1,2,3,4	µg/Kg	50.0	52.4	105	80 - 120	2016-07-29
Styrene		1,2,3,4	µg/Kg	50.0	50.8	102	80 - 120	2016-07-29
o-Xylene		1,2,3,4	µg/Kg	50.0	54.3	109	80 - 120	2016-07-29
1,1,2,2-Tetrachloroethane		1,2,3,4	µg/Kg	50.0	46.6	93	80 - 120	2016-07-29
2-Chlorotoluene		1,2,3,4	µg/Kg	50.0	50.5	101	80 - 120	2016-07-29
1,2,3-Trichloropropane		1,2,3,4	µg/Kg	50.0	48.5	97	80 - 120	2016-07-29
Isopropylbenzene		1,2,3,4	µg/Kg	50.0	49.2	98	80 - 120	2016-07-29
Bromobenzene		1,2,3,4	µg/Kg	50.0	49.2	98	80 - 120	2016-07-29
n-Propylbenzene		1,2,3,4	µg/Kg	50.0	49.4	99	80 - 120	2016-07-29
1,3,5-Trimethylbenzene		1,2,3,4	µg/Kg	50.0	50.7	101	80 - 120	2016-07-29
tert-Butylbenzene		1,2,3,4	µg/Kg	50.0	49.6	99	80 - 120	2016-07-29
1,2,4-Trimethylbenzene		1,2,3,4	µg/Kg	50.0	50.8	102	80 - 120	2016-07-29
1,4-Dichlorobenzene (para)		1,2,3,4	µg/Kg	50.0	51.3	103	80 - 120	2016-07-29
sec-Butylbenzene		1,2,3,4	µg/Kg	50.0	50.2	100	80 - 120	2016-07-29
1,3-Dichlorobenzene (meta)		1,2,3,4	µg/Kg	50.0	50.9	102	80 - 120	2016-07-29
p-Isopropyltoluene		1,2,3	µg/Kg	50.0	49.9	100	80 - 120	2016-07-29

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
4-Chlorotoluene		1,2,3,4	µg/Kg	50.0	49.6	99	80 - 120	2016-07-29
1,2-Dichlorobenzene (ortho)		1,2,3,4	µg/Kg	50.0	50.1	100	80 - 120	2016-07-29
n-Butylbenzene		1,2,3,4	µg/Kg	50.0	50.7	101	80 - 120	2016-07-29
1,2-Dibromo-3-chloropropane		1,3,4	µg/Kg	50.0	43.7	87	80 - 120	2016-07-29
1,2,3-Trichlorobenzene		1,2,3,4	µg/Kg	50.0	42.3	85	80 - 120	2016-07-29
1,2,4-Trichlorobenzene		1,2,3,4	µg/Kg	50.0	48.7	97	80 - 120	2016-07-29
Naphthalene		1,2,3,4	µg/Kg	50.0	43.1	86	80 - 120	2016-07-29
Hexachlorobutadiene		1,2,3,4	µg/Kg	50.0	48.4	97	80 - 120	2016-07-29

Standard (CCV-1)

QC Batch: 131830

Date Analyzed: 2016-08-01

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/Kg	500	431	86	80 - 120	2016-08-01

Standard (CCV-2)

QC Batch: 131830

Date Analyzed: 2016-08-01

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/Kg	500	430	86	80 - 120	2016-08-01

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	NELAP	T104704219-16-12	Lubbock
4		2015-066	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

Summary Report

Glen Thompson
Kinder Morgan/El Paso Natural Gas-Odessa
1550 Windway
Odessa, TX 79761

Report Date: August 2, 2016

Work Order: 16072912



Project Name: Lovington Leak

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
425442	Site 1 Spill	soil	2016-07-28	20:00	2016-07-29
425443	Site 1 Background	soil	2016-07-28	20:00	2016-07-29
425444	Site 2 Spill	soil	2016-07-28	20:15	2016-07-29
425445	Site 2 Background	soil	2016-07-28	20:15	2016-07-29
425446	Site 3 Spill	soil	2016-07-28	20:45	2016-07-29
425447	Site 3 Background	soil	2016-07-28	20:45	2016-07-29

Sample - Field Code	TPH DRO DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
425442 - Site 1 Spill	<50.0	<4.00 B
425443 - Site 1 Background	<50.0	<4.00 B
425444 - Site 2 Spill	<50.0	<4.00 B
425445 - Site 2 Background	<50.0	<4.00 B
425446 - Site 3 Spill	<50.0	<4.00 B
425447 - Site 3 Background	<50.0	<4.00 B

Sample: 425442 - Site 1 Spill

Param	Flag	Result	Units	RL
Chloride		46.8	mg/Kg	25
Bromochloromethane	Qs	<20.0	µg/Kg	20
Dichlorodifluoromethane		<20.0	µg/Kg	20
Chloromethane (methyl chloride)		<20.0	µg/Kg	20
Vinyl Chloride		<20.0	µg/Kg	20
Bromomethane (methyl bromide)		<100	µg/Kg	100
Chloroethane	Qs	<20.0	µg/Kg	20
Trichlorofluoromethane		<20.0	µg/Kg	20
Acetone	Qc	<200	µg/Kg	200
Iodomethane (methyl iodide)	Qs	<100	µg/Kg	100

continued ...

sample 425442 continued ...

Param	Flag	Result	Units	RL
Carbon Disulfide	Q _r	<20.0	µg/Kg	20
Acrylonitrile	Q _r	<20.0	µg/Kg	20
2-Butanone (MEK)	Q _c , Q _r	<100	µg/Kg	100
4-Methyl-2-pentanone (MIBK)	Q _r	<100	µg/Kg	100
2-Hexanone	Q _c	<100	µg/Kg	100
trans 1,4-Dichloro-2-butene	Q _c , Q _r	<200	µg/Kg	200
1,1-Dichloroethene	Q _r , Q _s	<20.0	µg/Kg	20
Methylene chloride	B, Q _s	<100	µg/Kg	100
MTBE	Q _r	<20.0	µg/Kg	20
trans-1,2-Dichloroethene	Q _r , Q _s	<20.0	µg/Kg	20
1,1-Dichloroethane	Q _r , Q _s	<20.0	µg/Kg	20
cis-1,2-Dichloroethene	Q _r , Q _s	<20.0	µg/Kg	20
2,2-Dichloropropane	Q _r	<20.0	µg/Kg	20
1,2-Dichloroethane (EDC)	Q _r	<20.0	µg/Kg	20
Chloroform	Q _r	<20.0	µg/Kg	20
1,1,1-Trichloroethane	Q _r	<20.0	µg/Kg	20
1,1-Dichloropropene	Q _r , Q _s	<20.0	µg/Kg	20
Benzene	Q _s	<20.0	µg/Kg	20
Carbon Tetrachloride	Q _r	<20.0	µg/Kg	20
1,2-Dichloropropane	Q _s	<20.0	µg/Kg	20
Trichloroethene (TCE)	Q _s	<20.0	µg/Kg	20
Dibromomethane (methylene bromide)		<20.0	µg/Kg	20
Bromodichloromethane		<20.0	µg/Kg	20
2-Chloroethyl vinyl ether	Q _s	<20.0	µg/Kg	20
cis-1,3-Dichloropropene		<20.0	µg/Kg	20
trans-1,3-Dichloropropene		<20.0	µg/Kg	20
Toluene	Q _s	<20.0	µg/Kg	20
1,1,2-Trichloroethane		<20.0	µg/Kg	20
1,3-Dichloropropane	Q _s	<20.0	µg/Kg	20
Dibromochloromethane	Q _r	<20.0	µg/Kg	20
1,2-Dibromoethane (EDB)		<20.0	µg/Kg	20
Tetrachloroethene (PCE)	Q _r , Q _s	<20.0	µg/Kg	20
Chlorobenzene	Q _s	<20.0	µg/Kg	20
1,1,1,2-Tetrachloroethane	Q _r	<20.0	µg/Kg	20
Ethylbenzene	Q _s	<20.0	µg/Kg	20
m,p-Xylene	Q _s	<20.0	µg/Kg	20
Bromoform	Q _r	<20.0	µg/Kg	20
Styrene	Q _r , Q _s	<20.0	µg/Kg	20
o-Xylene	Q _s	<20.0	µg/Kg	20
1,1,2,2-Tetrachloroethane	Q _r , Q _s	<20.0	µg/Kg	20
2-Chlorotoluene	Q _s	<20.0	µg/Kg	20
1,2,3-Trichloropropane		<20.0	µg/Kg	20
Isopropylbenzene	Q _s	<20.0	µg/Kg	20
Bromobenzene	Q _s	<20.0	µg/Kg	20
n-Propylbenzene	Q _s	<20.0	µg/Kg	20
1,3,5-Trimethylbenzene	Q _s	<20.0	µg/Kg	20
tert-Butylbenzene	Q _s	<20.0	µg/Kg	20

continued ...

sample 425442 continued ...

Param	Flag	Result	Units	RL
1,2,4-Trimethylbenzene	Qs	<20.0	µg/Kg	20
1,4-Dichlorobenzene (para)	Qr, Qs	<20.0	µg/Kg	20
sec-Butylbenzene	Qs	<20.0	µg/Kg	20
1,3-Dichlorobenzene (meta)	Qs	<20.0	µg/Kg	20
p-Isopropyltoluene	Qs	<20.0	µg/Kg	20
4-Chlorotoluene	Qs	<20.0	µg/Kg	20
1,2-Dichlorobenzene (ortho)	Qr, Qs	<20.0	µg/Kg	20
n-Butylbenzene	Qs	<20.0	µg/Kg	20
1,2-Dibromo-3-chloropropane	Qr	<100	µg/Kg	100
1,2,3-Trichlorobenzene	Qs	<100	µg/Kg	100
1,2,4-Trichlorobenzene	Qs	<100	µg/Kg	100
Naphthalene	Qs	<100	µg/Kg	100
Hexachlorobutadiene	Qs	<100	µg/Kg	100

Sample: 425443 - Site 1 Background

Param	Flag	Result	Units	RL
Chloride		<25.0	mg/Kg	25
Bromochloromethane		<20.0	µg/Kg	20
Dichlorodifluoromethane		<20.0	µg/Kg	20
Chloromethane (methyl chloride)		<20.0	µg/Kg	20
Vinyl Chloride		<20.0	µg/Kg	20
Bromomethane (methyl bromide)		<100	µg/Kg	100
Chloroethane		<20.0	µg/Kg	20
Trichlorofluoromethane		<20.0	µg/Kg	20
Acetone	Qc	<200	µg/Kg	200
Iodomethane (methyl iodide)		<100	µg/Kg	100
Carbon Disulfide	Qr	<20.0	µg/Kg	20
Acrylonitrile	Qr	<20.0	µg/Kg	20
2-Butanone (MEK)	Qc, Qr	<100	µg/Kg	100
4-Methyl-2-pentanone (MIBK)	Qr	<100	µg/Kg	100
2-Hexanone	Qc	<100	µg/Kg	100
trans 1,4-Dichloro-2-butene	Qc, Qr	<200	µg/Kg	200
1,1-Dichloroethene	Qr	<20.0	µg/Kg	20
Methylene chloride	B	<100	µg/Kg	100
MTBE	Qr	<20.0	µg/Kg	20
trans-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
1,1-Dichloroethane	Qr	<20.0	µg/Kg	20
cis-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
2,2-Dichloropropane	Qr	<20.0	µg/Kg	20
1,2-Dichloroethane (EDC)	Qr	<20.0	µg/Kg	20
Chloroform	Qr	<20.0	µg/Kg	20
1,1,1-Trichloroethane	Qr	<20.0	µg/Kg	20
1,1-Dichloropropene	Qr	<20.0	µg/Kg	20
Benzene		<20.0	µg/Kg	20
Carbon Tetrachloride	Qr	<20.0	µg/Kg	20

continued ...

sample 425443 continued ...

Param	Flag	Result	Units	RL
1,2-Dichloropropane		<20.0	µg/Kg	20
Trichloroethene (TCE)		<20.0	µg/Kg	20
Dibromomethane (methylene bromide)		<20.0	µg/Kg	20
Bromodichloromethane		<20.0	µg/Kg	20
2-Chloroethyl vinyl ether		<20.0	µg/Kg	20
cis-1,3-Dichloropropene		<20.0	µg/Kg	20
trans-1,3-Dichloropropene		<20.0	µg/Kg	20
Toluene		<20.0	µg/Kg	20
1,1,2-Trichloroethane		<20.0	µg/Kg	20
1,3-Dichloropropane		<20.0	µg/Kg	20
Dibromochloromethane	Qr	<20.0	µg/Kg	20
1,2-Dibromoethane (EDB)		<20.0	µg/Kg	20
Tetrachloroethene (PCE)	Qr	<20.0	µg/Kg	20
Chlorobenzene		<20.0	µg/Kg	20
1,1,1,2-Tetrachloroethane	Qr	<20.0	µg/Kg	20
Ethylbenzene		<20.0	µg/Kg	20
m,p-Xylene		<20.0	µg/Kg	20
Bromoform	Qr	<20.0	µg/Kg	20
Styrene	Qr	<20.0	µg/Kg	20
o-Xylene		<20.0	µg/Kg	20
1,1,2,2-Tetrachloroethane	Qr	<20.0	µg/Kg	20
2-Chlorotoluene		<20.0	µg/Kg	20
1,2,3-Trichloropropane		<20.0	µg/Kg	20
Isopropylbenzene		<20.0	µg/Kg	20
Bromobenzene		<20.0	µg/Kg	20
n-Propylbenzene		<20.0	µg/Kg	20
1,3,5-Trimethylbenzene		<20.0	µg/Kg	20
tert-Butylbenzene		<20.0	µg/Kg	20
1,2,4-Trimethylbenzene		<20.0	µg/Kg	20
1,4-Dichlorobenzene (para)	Qr	<20.0	µg/Kg	20
sec-Butylbenzene		<20.0	µg/Kg	20
1,3-Dichlorobenzene (meta)		<20.0	µg/Kg	20
p-Isopropyltoluene		22.8	µg/Kg	20
4-Chlorotoluene		<20.0	µg/Kg	20
1,2-Dichlorobenzene (ortho)	Qr	<20.0	µg/Kg	20
n-Butylbenzene		<20.0	µg/Kg	20
1,2-Dibromo-3-chloropropane	Qr	<100	µg/Kg	100
1,2,3-Trichlorobenzene		<100	µg/Kg	100
1,2,4-Trichlorobenzene		<100	µg/Kg	100
Naphthalene		<100	µg/Kg	100
Hexachlorobutadiene		<100	µg/Kg	100

Sample: 425444 - Site 2 Spill

Param	Flag	Result	Units	RL
Chloride		603	mg/Kg	25

continued ...

sample 425444 continued ...

Param	Flag	Result	Units	RL
Bromochloromethane		<20.0	µg/Kg	20
Dichlorodifluoromethane		<20.0	µg/Kg	20
Chloromethane (methyl chloride)		<20.0	µg/Kg	20
Vinyl Chloride		<20.0	µg/Kg	20
Bromomethane (methyl bromide)		<100	µg/Kg	100
Chloroethane		<20.0	µg/Kg	20
Trichlorofluoromethane		<20.0	µg/Kg	20
Acetone	Qc	<200	µg/Kg	200
Iodomethane (methyl iodide)		<100	µg/Kg	100
Carbon Disulfide	Qr	<20.0	µg/Kg	20
Acrylonitrile	Qr	<20.0	µg/Kg	20
2-Butanone (MEK)	Qc, Qr	<100	µg/Kg	100
4-Methyl-2-pentanone (MIBK)	Qr	<100	µg/Kg	100
2-Hexanone	Qc	<100	µg/Kg	100
trans 1,4-Dichloro-2-butene	Qc, Qr	<200	µg/Kg	200
1,1-Dichloroethene	Qr	<20.0	µg/Kg	20
Methylene chloride	B	<100	µg/Kg	100
MTBE	Qr	<20.0	µg/Kg	20
trans-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
1,1-Dichloroethane	Qr	<20.0	µg/Kg	20
cis-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
2,2-Dichloropropane	Qr	<20.0	µg/Kg	20
1,2-Dichloroethane (EDC)	Qr	<20.0	µg/Kg	20
Chloroform	Qr	<20.0	µg/Kg	20
1,1,1-Trichloroethane	Qr	<20.0	µg/Kg	20
1,1-Dichloropropene	Qr	<20.0	µg/Kg	20
Benzene		<20.0	µg/Kg	20
Carbon Tetrachloride	Qr	<20.0	µg/Kg	20
1,2-Dichloropropane		<20.0	µg/Kg	20
Trichloroethene (TCE)		<20.0	µg/Kg	20
Dibromomethane (methylene bromide)		<20.0	µg/Kg	20
Bromodichloromethane		<20.0	µg/Kg	20
2-Chloroethyl vinyl ether		<20.0	µg/Kg	20
cis-1,3-Dichloropropene		<20.0	µg/Kg	20
trans-1,3-Dichloropropene		<20.0	µg/Kg	20
Toluene		<20.0	µg/Kg	20
1,1,2-Trichloroethane		<20.0	µg/Kg	20
1,3-Dichloropropane		<20.0	µg/Kg	20
Dibromochloromethane	Qr	<20.0	µg/Kg	20
1,2-Dibromoethane (EDB)		<20.0	µg/Kg	20
Tetrachloroethene (PCE)	Qr	<20.0	µg/Kg	20
Chlorobenzene		<20.0	µg/Kg	20
1,1,1,2-Tetrachloroethane	Qr	<20.0	µg/Kg	20
Ethylbenzene		<20.0	µg/Kg	20
m,p-Xylene		<20.0	µg/Kg	20
Bromoform	Qr	<20.0	µg/Kg	20
Styrene	Qr	<20.0	µg/Kg	20

continued ...

sample 425444 continued ...

Param	Flag	Result	Units	RL
o-Xylene		<20.0	µg/Kg	20
1,1,2,2-Tetrachloroethane	Qr	<20.0	µg/Kg	20
2-Chlorotoluene		<20.0	µg/Kg	20
1,2,3-Trichloropropane		<20.0	µg/Kg	20
Isopropylbenzene		<20.0	µg/Kg	20
Bromobenzene		<20.0	µg/Kg	20
n-Propylbenzene		<20.0	µg/Kg	20
1,3,5-Trimethylbenzene		<20.0	µg/Kg	20
tert-Butylbenzene		<20.0	µg/Kg	20
1,2,4-Trimethylbenzene		<20.0	µg/Kg	20
1,4-Dichlorobenzene (para)	Qr	<20.0	µg/Kg	20
sec-Butylbenzene		<20.0	µg/Kg	20
1,3-Dichlorobenzene (meta)		<20.0	µg/Kg	20
p-Isopropyltoluene		<20.0	µg/Kg	20
4-Chlorotoluene		<20.0	µg/Kg	20
1,2-Dichlorobenzene (ortho)	Qr	<20.0	µg/Kg	20
n-Butylbenzene		<20.0	µg/Kg	20
1,2-Dibromo-3-chloropropane	Qr	<100	µg/Kg	100
1,2,3-Trichlorobenzene		<100	µg/Kg	100
1,2,4-Trichlorobenzene		<100	µg/Kg	100
Naphthalene		<100	µg/Kg	100
Hexachlorobutadiene		<100	µg/Kg	100

Sample: 425445 - Site 2 Background

Param	Flag	Result	Units	RL
Chloride		<25.0	mg/Kg	25
Bromochloromethane		<20.0	µg/Kg	20
Dichlorodifluoromethane		<20.0	µg/Kg	20
Chloromethane (methyl chloride)		<20.0	µg/Kg	20
Vinyl Chloride		<20.0	µg/Kg	20
Bromomethane (methyl bromide)		<100	µg/Kg	100
Chloroethane		<20.0	µg/Kg	20
Trichlorofluoromethane		<20.0	µg/Kg	20
Acetone	Qc	<200	µg/Kg	200
Iodomethane (methyl iodide)		<100	µg/Kg	100
Carbon Disulfide	Qr	<20.0	µg/Kg	20
Acrylonitrile	Qr	<20.0	µg/Kg	20
2-Butanone (MEK)	Qc, Qr	<100	µg/Kg	100
4-Methyl-2-pentanone (MIBK)	Qr	<100	µg/Kg	100
2-Hexanone	Qc	<100	µg/Kg	100
trans 1,4-Dichloro-2-butene	Qc, Qr	<200	µg/Kg	200
1,1-Dichloroethene	Qr	<20.0	µg/Kg	20
Methylene chloride	B	<100	µg/Kg	100
MTBE	Qr	<20.0	µg/Kg	20
trans-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20

continued ...

sample 425445 continued ...

Param	Flag	Result	Units	RL
1,1-Dichloroethane	Qr	<20.0	µg/Kg	20
cis-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
2,2-Dichloropropane	Qr	<20.0	µg/Kg	20
1,2-Dichloroethane (EDC)	Qr	<20.0	µg/Kg	20
Chloroform	Qr	<20.0	µg/Kg	20
1,1,1-Trichloroethane	Qr	<20.0	µg/Kg	20
1,1-Dichloropropene	Qr	<20.0	µg/Kg	20
Benzene		<20.0	µg/Kg	20
Carbon Tetrachloride	Qr	<20.0	µg/Kg	20
1,2-Dichloropropane		<20.0	µg/Kg	20
Trichloroethene (TCE)		<20.0	µg/Kg	20
Dibromomethane (methylene bromide)		<20.0	µg/Kg	20
Bromodichloromethane		<20.0	µg/Kg	20
2-Chloroethyl vinyl ether		<20.0	µg/Kg	20
cis-1,3-Dichloropropene		<20.0	µg/Kg	20
trans-1,3-Dichloropropene		<20.0	µg/Kg	20
Toluene		<20.0	µg/Kg	20
1,1,2-Trichloroethane		<20.0	µg/Kg	20
1,3-Dichloropropane		<20.0	µg/Kg	20
Dibromochloromethane	Qr	<20.0	µg/Kg	20
1,2-Dibromoethane (EDB)		<20.0	µg/Kg	20
Tetrachloroethene (PCE)	Qr	<20.0	µg/Kg	20
Chlorobenzene		<20.0	µg/Kg	20
1,1,1,2-Tetrachloroethane	Qr	<20.0	µg/Kg	20
Ethylbenzene		<20.0	µg/Kg	20
m,p-Xylene		<20.0	µg/Kg	20
Bromoform	Qr	<20.0	µg/Kg	20
Styrene	Qr	<20.0	µg/Kg	20
o-Xylene		<20.0	µg/Kg	20
1,1,2,2-Tetrachloroethane	Qr	<20.0	µg/Kg	20
2-Chlorotoluene		<20.0	µg/Kg	20
1,2,3-Trichloropropane		<20.0	µg/Kg	20
Isopropylbenzene		<20.0	µg/Kg	20
Bromobenzene		<20.0	µg/Kg	20
n-Propylbenzene		<20.0	µg/Kg	20
1,3,5-Trimethylbenzene		<20.0	µg/Kg	20
tert-Butylbenzene		<20.0	µg/Kg	20
1,2,4-Trimethylbenzene		<20.0	µg/Kg	20
1,4-Dichlorobenzene (para)	Qr	<20.0	µg/Kg	20
sec-Butylbenzene		<20.0	µg/Kg	20
1,3-Dichlorobenzene (meta)		<20.0	µg/Kg	20
p-Isopropyltoluene		<20.0	µg/Kg	20
4-Chlorotoluene		<20.0	µg/Kg	20
1,2-Dichlorobenzene (ortho)	Qr	<20.0	µg/Kg	20
n-Butylbenzene		<20.0	µg/Kg	20
1,2-Dibromo-3-chloropropane	Qr	<100	µg/Kg	100
1,2,3-Trichlorobenzene		<100	µg/Kg	100

continued ...

sample 425445 continued ...

Param	Flag	Result	Units	RL
1,2,4-Trichlorobenzene		<100	µg/Kg	100
Naphthalene		<100	µg/Kg	100
Hexachlorobutadiene		<100	µg/Kg	100

Sample: 425446 - Site 3 Spill

Param	Flag	Result	Units	RL
Chloride		27.9	mg/Kg	25
Bromochloromethane		<20.0	µg/Kg	20
Dichlorodifluoromethane		<20.0	µg/Kg	20
Chloromethane (methyl chloride)		<20.0	µg/Kg	20
Vinyl Chloride		<20.0	µg/Kg	20
Bromomethane (methyl bromide)		<100	µg/Kg	100
Chloroethane		<20.0	µg/Kg	20
Trichlorofluoromethane		<20.0	µg/Kg	20
Acetone	Qc	<200	µg/Kg	200
Iodomethane (methyl iodide)		<100	µg/Kg	100
Carbon Disulfide	Qr	<20.0	µg/Kg	20
Acrylonitrile	Qr	<20.0	µg/Kg	20
2-Butanone (MEK)	Qc, Qr	<100	µg/Kg	100
4-Methyl-2-pentanone (MIBK)	Qr	<100	µg/Kg	100
2-Hexanone	Qc	<100	µg/Kg	100
trans 1,4-Dichloro-2-butene	Qc, Qr	<200	µg/Kg	200
1,1-Dichloroethene	Qr	<20.0	µg/Kg	20
Methylene chloride	B	<100	µg/Kg	100
MTBE	Qr	<20.0	µg/Kg	20
trans-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
1,1-Dichloroethane	Qr	<20.0	µg/Kg	20
cis-1,2-Dichloroethene	Qr	<20.0	µg/Kg	20
2,2-Dichloropropane	Qr	<20.0	µg/Kg	20
1,2-Dichloroethane (EDC)	Qr	<20.0	µg/Kg	20
Chloroform	Qr	<20.0	µg/Kg	20
1,1,1-Trichloroethane	Qr	<20.0	µg/Kg	20
1,1-Dichloropropene	Qr	<20.0	µg/Kg	20
Benzene		<20.0	µg/Kg	20
Carbon Tetrachloride	Qr	<20.0	µg/Kg	20
1,2-Dichloropropane		<20.0	µg/Kg	20
Trichloroethene (TCE)		<20.0	µg/Kg	20
Dibromomethane (methylene bromide)		<20.0	µg/Kg	20
Bromodichloromethane		<20.0	µg/Kg	20
2-Chloroethyl vinyl ether		<20.0	µg/Kg	20
cis-1,3-Dichloropropene		<20.0	µg/Kg	20
trans-1,3-Dichloropropene		<20.0	µg/Kg	20
Toluene		<20.0	µg/Kg	20
1,1,2-Trichloroethane		<20.0	µg/Kg	20
1,3-Dichloropropane		<20.0	µg/Kg	20

continued ...

sample 425446 continued ...

Param	Flag	Result	Units	RL
Dibromochloromethane	Q _r	<20.0	µg/Kg	20
1,2-Dibromoethane (EDB)		<20.0	µg/Kg	20
Tetrachloroethene (PCE)	Q _r	<20.0	µg/Kg	20
Chlorobenzene		<20.0	µg/Kg	20
1,1,1,2-Tetrachloroethane	Q _r	<20.0	µg/Kg	20
Ethylbenzene		<20.0	µg/Kg	20
m,p-Xylene		<20.0	µg/Kg	20
Bromoform	Q _r	<20.0	µg/Kg	20
Styrene	Q _r	<20.0	µg/Kg	20
o-Xylene		<20.0	µg/Kg	20
1,1,2,2-Tetrachloroethane	Q _r	<20.0	µg/Kg	20
2-Chlorotoluene		<20.0	µg/Kg	20
1,2,3-Trichloropropane		<20.0	µg/Kg	20
Isopropylbenzene		<20.0	µg/Kg	20
Bromobenzene		<20.0	µg/Kg	20
n-Propylbenzene		<20.0	µg/Kg	20
1,3,5-Trimethylbenzene		<20.0	µg/Kg	20
tert-Butylbenzene		<20.0	µg/Kg	20
1,2,4-Trimethylbenzene		<20.0	µg/Kg	20
1,4-Dichlorobenzene (para)	Q _r	<20.0	µg/Kg	20
sec-Butylbenzene		<20.0	µg/Kg	20
1,3-Dichlorobenzene (meta)		<20.0	µg/Kg	20
p-Isopropyltoluene		<20.0	µg/Kg	20
4-Chlorotoluene		<20.0	µg/Kg	20
1,2-Dichlorobenzene (ortho)	Q _r	<20.0	µg/Kg	20
n-Butylbenzene		<20.0	µg/Kg	20
1,2-Dibromo-3-chloropropane	Q _r	<100	µg/Kg	100
1,2,3-Trichlorobenzene		<100	µg/Kg	100
1,2,4-Trichlorobenzene		<100	µg/Kg	100
Naphthalene		<100	µg/Kg	100
Hexachlorobutadiene		<100	µg/Kg	100

Sample: 425447 - Site 3 Background

Param	Flag	Result	Units	RL
Chloride		<25.0	mg/Kg	25
Bromochloromethane		<20.0	µg/Kg	20
Dichlorodifluoromethane		<20.0	µg/Kg	20
Chloromethane (methyl chloride)		<20.0	µg/Kg	20
Vinyl Chloride		<20.0	µg/Kg	20
Bromomethane (methyl bromide)		<100	µg/Kg	100
Chloroethane		<20.0	µg/Kg	20
Trichlorofluoromethane		<20.0	µg/Kg	20
Acetone	Q _c	<200	µg/Kg	200
Iodomethane (methyl iodide)		<100	µg/Kg	100
Carbon Disulfide	Q _r	<20.0	µg/Kg	20

continued ...

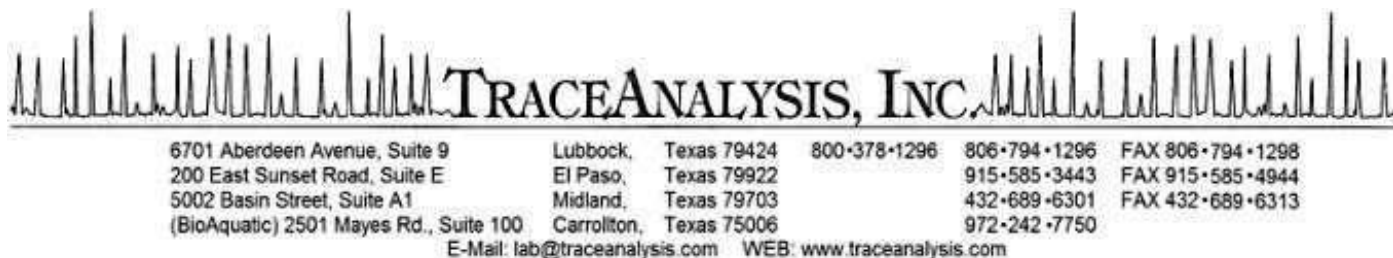
sample 425447 continued ...

Param	Flag	Result	Units	RL
Acrylonitrile	Q _r	<20.0	µg/Kg	20
2-Butanone (MEK)	Q _c , Q _r	<100	µg/Kg	100
4-Methyl-2-pentanone (MIBK)	Q _r	<100	µg/Kg	100
2-Hexanone	Q _c	<100	µg/Kg	100
trans 1,4-Dichloro-2-butene	Q _c , Q _r	<200	µg/Kg	200
1,1-Dichloroethene	Q _r	<20.0	µg/Kg	20
Methylene chloride	B	<100	µg/Kg	100
MTBE	Q _r	<20.0	µg/Kg	20
trans-1,2-Dichloroethene	Q _r	<20.0	µg/Kg	20
1,1-Dichloroethane	Q _r	<20.0	µg/Kg	20
cis-1,2-Dichloroethene	Q _r	<20.0	µg/Kg	20
2,2-Dichloropropane	Q _r	<20.0	µg/Kg	20
1,2-Dichloroethane (EDC)	Q _r	<20.0	µg/Kg	20
Chloroform	Q _r	<20.0	µg/Kg	20
1,1,1-Trichloroethane	Q _r	<20.0	µg/Kg	20
1,1-Dichloropropene	Q _r	<20.0	µg/Kg	20
Benzene		<20.0	µg/Kg	20
Carbon Tetrachloride	Q _r	<20.0	µg/Kg	20
1,2-Dichloropropane		<20.0	µg/Kg	20
Trichloroethene (TCE)		<20.0	µg/Kg	20
Dibromomethane (methylene bromide)		<20.0	µg/Kg	20
Bromodichloromethane		<20.0	µg/Kg	20
2-Chloroethyl vinyl ether		<20.0	µg/Kg	20
cis-1,3-Dichloropropene		<20.0	µg/Kg	20
trans-1,3-Dichloropropene		<20.0	µg/Kg	20
Toluene		<20.0	µg/Kg	20
1,1,2-Trichloroethane		<20.0	µg/Kg	20
1,3-Dichloropropane		<20.0	µg/Kg	20
Dibromochloromethane	Q _r	<20.0	µg/Kg	20
1,2-Dibromoethane (EDB)		<20.0	µg/Kg	20
Tetrachloroethene (PCE)	Q _r	<20.0	µg/Kg	20
Chlorobenzene		<20.0	µg/Kg	20
1,1,1,2-Tetrachloroethane	Q _r	<20.0	µg/Kg	20
Ethylbenzene		<20.0	µg/Kg	20
m,p-Xylene		<20.0	µg/Kg	20
Bromoform	Q _r	<20.0	µg/Kg	20
Styrene	Q _r	<20.0	µg/Kg	20
o-Xylene		<20.0	µg/Kg	20
1,1,2,2-Tetrachloroethane	Q _r	<20.0	µg/Kg	20
2-Chlorotoluene		<20.0	µg/Kg	20
1,2,3-Trichloropropane		<20.0	µg/Kg	20
Isopropylbenzene		<20.0	µg/Kg	20
Bromobenzene		<20.0	µg/Kg	20
n-Propylbenzene		<20.0	µg/Kg	20
1,3,5-Trimethylbenzene		<20.0	µg/Kg	20
tert-Butylbenzene		<20.0	µg/Kg	20
1,2,4-Trimethylbenzene		<20.0	µg/Kg	20

continued ...

sample 425447 continued ...

Param	Flag	Result	Units	RL
1,4-Dichlorobenzene (para)	Qr	<20.0	µg/Kg	20
sec-Butylbenzene		<20.0	µg/Kg	20
1,3-Dichlorobenzene (meta)		<20.0	µg/Kg	20
p-Isopropyltoluene		<20.0	µg/Kg	20
4-Chlorotoluene		<20.0	µg/Kg	20
1,2-Dichlorobenzene (ortho)	Qr	<20.0	µg/Kg	20
n-Butylbenzene		<20.0	µg/Kg	20
1,2-Dibromo-3-chloropropane	Qr	<100	µg/Kg	100
1,2,3-Trichlorobenzene		<100	µg/Kg	100
1,2,4-Trichlorobenzene		<100	µg/Kg	100
Naphthalene		<100	µg/Kg	100
Hexachlorobutadiene		<100	µg/Kg	100



Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Glen Thompson
Kinder Morgan/El Paso Natural Gas-Odessa
1550 Windway
Odessa, TX, 79761

Report Date: August 2, 2016

Work Order: 16072912



Project Name: Lovington Leak
Project Number: Lovington Leak

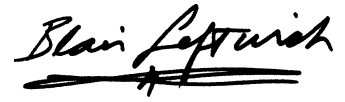
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
425440	Site 3	water	2016-07-28	19:30	2016-07-29
425441	Frac	water	2016-07-28	19:30	2016-07-29

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.

This report consists of a total of 32 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink, reading "Blair Leftwich". The signature is written in a cursive style with a prominent horizontal line underneath the name.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Johnny Grindstaff, Operations Manager

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Case Narrative

Samples for project Lovington Leak were received by TraceAnalysis, Inc. on 2016-07-29 and assigned to work order 16072912. Samples for work order 16072912 were received intact at a temperature of 4.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	111703	2016-07-29 at 10:30	131815	2016-07-29 at 12:26
TPH DRO	S 8015 D	111688	2016-07-29 at 15:00	131805	2016-08-01 at 07:44
TPH DRO	S 8015 D	111720	2016-08-01 at 15:57	131836	2016-08-02 at 10:56
TPH GRO	S 8015 D	111697	2016-07-29 at 14:00	131807	2016-07-29 at 14:00
Volatiles	S 8260 C	111707	2016-07-29 at 12:00	131820	2016-07-29 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 16072912 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 425440 - Site 3

Laboratory: Lubbock
Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 131815 Date Analyzed: 2016-07-29 Analyzed By: RL
Prep Batch: 111703 Sample Preparation: 2016-07-29 Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	B	1,2,3,4	98.9	mg/L	10	2.50

Sample: 425440 - Site 3

Laboratory: Lubbock
Analysis: TPH DRO Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 131836 Date Analyzed: 2016-08-02 Analyzed By: HJ
Prep Batch: 111720 Sample Preparation: Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1,2,3	<5.00	mg/L	1	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			2.03	mg/L	1	2.50	81	70 - 130

Sample: 425440 - Site 3

Laboratory: Lubbock
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5030B
QC Batch: 131807 Date Analyzed: 2016-07-29 Analyzed By: MT
Prep Batch: 111697 Sample Preparation: 2016-07-29 Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	1 B,Jb	1,2,3	<10.0	mg/L	50	0.200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			6.40	mg/L	50	5.00	128	72.8 - 136

continued ...

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
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sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			5.44	mg/L	50	5.00	109	73.3 - 120

Sample: 425440 - Site 3

Laboratory: Lubbock
Analysis: Volatiles
QC Batch: 131820
Prep Batch: 111707

Analytical Method: S 8260 C
Date Analyzed: 2016-07-29
Sample Preparation: 2016-07-29

Prep Method: S 5030B
Analyzed By: KB
Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Dichlorodifluoromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Chloromethane (methyl chloride)	U	1,2,3,4	<5.00	µg/L	5	1.00
Vinyl Chloride	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromomethane (methyl bromide)	U	1,2,3,4	<25.0	µg/L	5	5.00
Chloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Trichlorofluoromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Acetone	Qc,U	1,2,3,4	<50.0	µg/L	5	10.0
Iodomethane (methyl iodide)	U	1,2,3,4	<25.0	µg/L	5	5.00
Carbon Disulfide		1,2,3,4	<5.00	µg/L	5	1.00
Acrylonitrile	U	1,2,3,4	<5.00	µg/L	5	1.00
2-Butanone (MEK)	U	1,2,3,4	<25.0	µg/L	5	5.00
4-Methyl-2-pentanone (MIBK)	U	1,2,3,4	<25.0	µg/L	5	5.00
2-Hexanone	U	1,2,3,4	<25.0	µg/L	5	5.00
trans 1,4-Dichloro-2-butene	Qc,Qs,U	1,2,3,4	<50.0	µg/L	5	10.0
1,1-Dichloroethene	U	1,2,3,4	<5.00	µg/L	5	1.00
Methylene chloride	U	1,2,3,4	<25.0	µg/L	5	5.00
MTBE	U	1,2,3,4	<5.00	µg/L	5	1.00
trans-1,2-Dichloroethene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1-Dichloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
cis-1,2-Dichloroethene	U	1,2,3,4	<5.00	µg/L	5	1.00
2,2-Dichloropropane	Qc,U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dichloroethane (EDC)	U	1,2,3,4	<5.00	µg/L	5	1.00
Chloroform	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,1-Trichloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1-Dichloropropene	U	1,2,3,4	<5.00	µg/L	5	1.00
Benzene		1,2,3,4	10.1	µg/L	5	1.00
Carbon Tetrachloride	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dichloropropane	U	1,2,3,4	<5.00	µg/L	5	1.00
Trichloroethene (TCE)	U	1,2,3,4	<5.00	µg/L	5	1.00
Dibromomethane (methylene bromide)	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromodichloromethane	U	1,2,3,4	<5.00	µg/L	5	1.00

continued ...

sample 425440 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
2-Chloroethyl vinyl ether	Qr,U	1,2,3,4	<25.0	µg/L	5	5.00
cis-1,3-Dichloropropene	U	1,2,3,4	<5.00	µg/L	5	1.00
trans-1,3-Dichloropropene	U	1,2,3,4	<5.00	µg/L	5	1.00
Toluene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,2-Trichloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
1,3-Dichloropropane	U	1,2,3,4	<5.00	µg/L	5	1.00
Dibromochloromethane	U	1,3,4	<5.00	µg/L	5	1.00
1,2-Dibromoethane (EDB)	U	1,2,3,4	<5.00	µg/L	5	1.00
Tetrachloroethene (PCE)	U	1,2,3,4	<5.00	µg/L	5	1.00
Chlorobenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,1,2-Tetrachloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Ethylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
m,p-Xylene	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromoform	U	1,2,3,4	<5.00	µg/L	5	1.00
Styrene	U	1,2,3,4	<5.00	µg/L	5	1.00
o-Xylene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,2,2-Tetrachloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
2-Chlorotoluene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2,3-Trichloropropane	U	1,2,3,4	<5.00	µg/L	5	1.00
Isopropylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromobenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
n-Propylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,3,5-Trimethylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
tert-Butylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2,4-Trimethylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,4-Dichlorobenzene (para)	U	1,2,3,4	<5.00	µg/L	5	1.00
sec-Butylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<5.00	µg/L	5	1.00
p-Isopropyltoluene	U	1,2,3	<5.00	µg/L	5	1.00
4-Chlorotoluene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dichlorobenzene (ortho)	U	1,2,3,4	<5.00	µg/L	5	1.00
n-Butylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dibromo-3-chloropropane	U	1,3	<25.0	µg/L	5	5.00
1,2,3-Trichlorobenzene	U	1,2,3,4	<25.0	µg/L	5	5.00
1,2,4-Trichlorobenzene	U	1,2,3,4	<25.0	µg/L	5	5.00
Naphthalene	U	1,2,3,4	<25.0	µg/L	5	5.00
Hexachlorobutadiene	B,U	1,2,3,4	<25.0	µg/L	5	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane			253	µg/L	5	250	101	70 - 130
Toluene-d8			247	µg/L	5	250	99	70 - 130
4-Bromofluorobenzene (4-BFB)			243	µg/L	5	250	97	70 - 130

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

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Sample: 425441 - Frac

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-07-29	Analyzed By:	RL
QC Batch:	131815	Sample Preparation:	2016-07-29	Prepared By:	RL
Prep Batch:	111703				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	B	1,2,3,4	188	mg/L	10	2.50

Sample: 425441 - Frac

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-01	Analyzed By:	HJ
QC Batch:	131805	Sample Preparation:	2016-07-29	Prepared By:	HJ
Prep Batch:	111688				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3	980	mg/L	10	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	61.6	mg/L	10	2.50	2464	70 - 130

Sample: 425441 - Frac

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5030B
Analysis:	TPH GRO	Date Analyzed:	2016-07-29	Analyzed By:	MT
QC Batch:	131807	Sample Preparation:	2016-07-29	Prepared By:	MT
Prep Batch:	111697				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	2	B,Jb	<10.0	mg/L	50	0.200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			6.06	mg/L	50	5.00	121	72.8 - 136
4-Bromofluorobenzene (4-BFB)			5.33	mg/L	50	5.00	107	73.3 - 120

Sample: 425441 - Frac

Laboratory: Lubbock
 Analysis: Volatiles
 QC Batch: 131820
 Prep Batch: 111707

Analytical Method: S 8260 C
 Date Analyzed: 2016-07-29
 Sample Preparation: 2016-07-29

Prep Method: S 5030B
 Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Dichlorodifluoromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Chloromethane (methyl chloride)	U	1,2,3,4	<5.00	µg/L	5	1.00
Vinyl Chloride	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromomethane (methyl bromide)	U	1,2,3,4	<25.0	µg/L	5	5.00
Chloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Trichlorofluoromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Acetone	Qc,U	1,2,3,4	<50.0	µg/L	5	10.0
Iodomethane (methyl iodide)	U	1,2,3,4	<25.0	µg/L	5	5.00
Carbon Disulfide		1,2,3,4	<5.00	µg/L	5	1.00
Acrylonitrile	U	1,2,3,4	<5.00	µg/L	5	1.00
2-Butanone (MEK)	U	1,2,3,4	<25.0	µg/L	5	5.00
4-Methyl-2-pentanone (MIBK)	U	1,2,3,4	<25.0	µg/L	5	5.00
2-Hexanone	U	1,2,3,4	<25.0	µg/L	5	5.00
trans 1,4-Dichloro-2-butene	Qc,U	1,2,3,4	<50.0	µg/L	5	10.0
1,1-Dichloroethene	U	1,2,3,4	<5.00	µg/L	5	1.00
Methylene chloride	U	1,2,3,4	<25.0	µg/L	5	5.00
MTBE	U	1,2,3,4	<5.00	µg/L	5	1.00
trans-1,2-Dichloroethene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1-Dichloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
cis-1,2-Dichloroethene	U	1,2,3,4	<5.00	µg/L	5	1.00
2,2-Dichloropropane	Qc,U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dichloroethane (EDC)	U	1,2,3,4	<5.00	µg/L	5	1.00
Chloroform	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,1-Trichloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1-Dichloropropene	U	1,2,3,4	<5.00	µg/L	5	1.00
Benzene		1,2,3,4	13.5	µg/L	5	1.00
Carbon Tetrachloride	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dichloropropane	U	1,2,3,4	<5.00	µg/L	5	1.00
Trichloroethene (TCE)	U	1,2,3,4	<5.00	µg/L	5	1.00
Dibromomethane (methylene bromide)	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromodichloromethane	U	1,2,3,4	<5.00	µg/L	5	1.00
2-Chloroethyl vinyl ether	Qc,U	1,2,3,4	<25.0	µg/L	5	5.00
cis-1,3-Dichloropropene	U	1,2,3,4	<5.00	µg/L	5	1.00
trans-1,3-Dichloropropene	U	1,2,3,4	<5.00	µg/L	5	1.00
Toluene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,2-Trichloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
1,3-Dichloropropane	U	1,2,3,4	<5.00	µg/L	5	1.00
Dibromochloromethane	U	1,3,4	<5.00	µg/L	5	1.00

continued ...

sample 425441 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<5.00	µg/L	5	1.00
Tetrachloroethene (PCE)	U	1,2,3,4	<5.00	µg/L	5	1.00
Chlorobenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,1,2-Tetrachloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
Ethylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
m,p-Xylene	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromoform	U	1,2,3,4	<5.00	µg/L	5	1.00
Styrene	U	1,2,3,4	<5.00	µg/L	5	1.00
o-Xylene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,1,2,2-Tetrachloroethane	U	1,2,3,4	<5.00	µg/L	5	1.00
2-Chlorotoluene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2,3-Trichloropropane	U	1,2,3,4	<5.00	µg/L	5	1.00
Isopropylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
Bromobenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
n-Propylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,3,5-Trimethylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
tert-Butylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2,4-Trimethylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,4-Dichlorobenzene (para)	U	1,2,3,4	<5.00	µg/L	5	1.00
sec-Butylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<5.00	µg/L	5	1.00
p-Isopropyltoluene	U	1,2,3	<5.00	µg/L	5	1.00
4-Chlorotoluene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dichlorobenzene (ortho)	U	1,2,3,4	<5.00	µg/L	5	1.00
n-Butylbenzene	U	1,2,3,4	<5.00	µg/L	5	1.00
1,2-Dibromo-3-chloropropane	U	1,3	<25.0	µg/L	5	5.00
1,2,3-Trichlorobenzene	U	1,2,3,4	<25.0	µg/L	5	5.00
1,2,4-Trichlorobenzene	U	1,2,3,4	<25.0	µg/L	5	5.00
Naphthalene	U	1,2,3,4	<25.0	µg/L	5	5.00
Hexachlorobutadiene	B,U	1,2,3,4	<25.0	µg/L	5	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane			244	µg/L	5	250	98	70 - 130
Toluene-d8			249	µg/L	5	250	100	70 - 130
4-Bromofluorobenzene (4-BFB)			248	µg/L	5	250	99	70 - 130

Method Blanks

Method Blank (1) QC Batch: 131805

QC Batch: 131805 Date Analyzed: 2016-08-01 Analyzed By: HJ
Prep Batch: 111688 QC Preparation: 2016-07-29 Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1,2,3	<0.890	mg/L	5

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			2.51	mg/L	1	2.50	100	70 - 130

Method Blank (1) QC Batch: 131807

QC Batch: 131807 Date Analyzed: 2016-07-29 Analyzed By: MT
Prep Batch: 111697 QC Preparation: 2016-07-29 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO	B	B	0.0595	mg/L	0.2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.126	mg/L	1	0.100	126	72.8 - 136
4-Bromofluorobenzene (4-BFB)			0.106	mg/L	1	0.100	106	73.3 - 120

Method Blank (1) QC Batch: 131815

QC Batch: 131815 Date Analyzed: 2016-07-29 Analyzed By: RL
Prep Batch: 111703 QC Preparation: 2016-07-29 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride	B	B	0.638	mg/L	2.5

Method Blank (1) QC Batch: 131820

QC Batch: 131820
 Prep Batch: 111707

Date Analyzed: 2016-07-29
 QC Preparation: 2016-07-29

Analyzed By: KB
 Prepared By: KB

Parameter	Flag	Cert	MDL Result	Units	RL
Bromochloromethane		1,2,3,4	<0.330	µg/L	1
Dichlorodifluoromethane		1,2,3,4	<0.350	µg/L	1
Chloromethane (methyl chloride)		1,2,3,4	<0.330	µg/L	1
Vinyl Chloride		1,2,3,4	<0.410	µg/L	1
Bromomethane (methyl bromide)		1,2,3,4	<1.69	µg/L	5
Chloroethane		1,2,3,4	<0.420	µg/L	1
Trichlorofluoromethane		1,2,3,4	<0.410	µg/L	1
Acetone		1,2,3,4	<1.09	µg/L	10
Iodomethane (methyl iodide)		1,2,3,4	<2.47	µg/L	5
Carbon Disulfide		1,2,3,4	<0.400	µg/L	1
Acrylonitrile		1,2,3,4	<0.360	µg/L	1
2-Butanone (MEK)		1,2,3,4	<1.67	µg/L	5
4-Methyl-2-pentanone (MIBK)		1,2,3,4	<2.14	µg/L	5
2-Hexanone		1,2,3,4	<1.49	µg/L	5
trans 1,4-Dichloro-2-butene		1,2,3,4	<1.75	µg/L	10
1,1-Dichloroethene		1,2,3,4	<0.330	µg/L	1
Methylene chloride		1,2,3,4	<2.04	µg/L	5
MTBE		1,2,3,4	<0.320	µg/L	1
trans-1,2-Dichloroethene		1,2,3,4	<0.360	µg/L	1
1,1-Dichloroethane		1,2,3,4	<0.330	µg/L	1
cis-1,2-Dichloroethene		1,2,3,4	<0.330	µg/L	1
2,2-Dichloropropane		1,2,3,4	<0.380	µg/L	1
1,2-Dichloroethane (EDC)		1,2,3,4	<0.280	µg/L	1
Chloroform		1,2,3,4	<0.390	µg/L	1
1,1,1-Trichloroethane		1,2,3,4	<0.370	µg/L	1
1,1-Dichloropropene		1,2,3,4	<0.320	µg/L	1
Benzene		1,2,3,4	<0.340	µg/L	1
Carbon Tetrachloride		1,2,3,4	<0.350	µg/L	1
1,2-Dichloropropane		1,2,3,4	<0.270	µg/L	1
Trichloroethene (TCE)		1,2,3,4	<0.310	µg/L	1
Dibromomethane (methylene bromide)		1,2,3,4	<0.230	µg/L	1
Bromodichloromethane		1,2,3,4	<0.320	µg/L	1
2-Chloroethyl vinyl ether		1,2,3,4	<0.480	µg/L	5
cis-1,3-Dichloropropene		1,2,3,4	<0.210	µg/L	1
trans-1,3-Dichloropropene		1,2,3,4	<0.310	µg/L	1
Toluene		1,2,3,4	<0.350	µg/L	1
1,1,2-Trichloroethane		1,2,3,4	<0.390	µg/L	1
1,3-Dichloropropane		1,2,3,4	<0.310	µg/L	1
Dibromochloromethane		1,3,4	<0.370	µg/L	1
1,2-Dibromoethane (EDB)		1,2,3,4	<0.310	µg/L	1
Tetrachloroethene (PCE)		1,2,3,4	<0.190	µg/L	1

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Chlorobenzene		1,2,3,4	<0.290	µg/L	1
1,1,1,2-Tetrachloroethane		1,2,3,4	<0.300	µg/L	1
Ethylbenzene		1,2,3,4	<0.260	µg/L	1
m,p-Xylene		1,2,3,4	<0.480	µg/L	1
Bromoform		1,2,3,4	<0.480	µg/L	1
Styrene		1,2,3,4	<0.250	µg/L	1
o-Xylene		1,2,3,4	<0.260	µg/L	1
1,1,2,2-Tetrachloroethane		1,2,3,4	<0.560	µg/L	1
2-Chlorotoluene		1,2,3,4	<0.250	µg/L	1
1,2,3-Trichloropropane		1,2,3,4	<0.450	µg/L	1
Isopropylbenzene		1,2,3,4	<0.260	µg/L	1
Bromobenzene		1,2,3,4	<0.280	µg/L	1
n-Propylbenzene		1,2,3,4	<0.240	µg/L	1
1,3,5-Trimethylbenzene		1,2,3,4	<0.260	µg/L	1
tert-Butylbenzene		1,2,3,4	<0.270	µg/L	1
1,2,4-Trimethylbenzene		1,2,3,4	<0.270	µg/L	1
1,4-Dichlorobenzene (para)		1,2,3,4	<0.310	µg/L	1
sec-Butylbenzene		1,2,3,4	<0.200	µg/L	1
1,3-Dichlorobenzene (meta)		1,2,3,4	<0.280	µg/L	1
p-Isopropyltoluene		1,2,3	<0.200	µg/L	1
4-Chlorotoluene		1,2,3,4	<0.290	µg/L	1
1,2-Dichlorobenzene (ortho)		1,2,3,4	<0.250	µg/L	1
n-Butylbenzene		1,2,3,4	<0.170	µg/L	1
1,2-Dibromo-3-chloropropane		1,3	<1.70	µg/L	5
1,2,3-Trichlorobenzene		1,2,3,4	<0.400	µg/L	5
1,2,4-Trichlorobenzene		1,2,3,4	<2.12	µg/L	5
Naphthalene		1,2,3,4	<2.23	µg/L	5
Hexachlorobutadiene	B	B	0.820	µg/L	5

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane			50.2	µg/L	1	50.0	100	70 - 130
Toluene-d8			50.2	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)			48.6	µg/L	1	50.0	97	70 - 130

Method Blank (1) QC Batch: 131836

QC Batch: 131836
 Prep Batch: 111720

Date Analyzed: 2016-08-02
 QC Preparation: 2016-08-01

Analyzed By: HJ
 Prepared By: HJ

Parameter	Flag		Cert		MDL Result		Units	RL
DRO			1,2,3		<0.890		mg/L	5

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			2.54	mg/L	1	2.50	102	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 131805
Prep Batch: 111688

Date Analyzed: 2016-08-01
QC Preparation: 2016-07-29

Analyzed By: HJ
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	42.1	mg/L	1	50.0	<0.890	84	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	40.3	mg/L	1	50.0	<0.890	81	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	2.57	2.51	mg/L	1	2.50	103	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 131807
Prep Batch: 111697

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3	1.21	mg/L	1	1.00	0.0595	116	74.6 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3	1.22	mg/L	1	1.00	0.0595	116	74.6 - 123	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.125	0.115	mg/L	1	0.100	125	115	72.8 - 136
4-Bromofluorobenzene (4-BFB)	0.114	0.112	mg/L	1	0.100	114	112	73.3 - 120

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Laboratory Control Spike (LCS-1)

QC Batch: 131815
Prep Batch: 111703

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4	24.4	mg/L	1	25.0	0.638	95	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4	24.5	mg/L	1	25.0	0.638	95	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 131820
Prep Batch: 111707

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: KB
Prepared By: KB

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		1,2,3,4	49.8	µg/L	1	50.0	<0.330	100	74.4 - 128
Dichlorodifluoromethane		1,2,3,4	48.5	µg/L	1	50.0	<0.350	97	46.8 - 148
Chloromethane (methyl chloride)		1,2,3,4	44.6	µg/L	1	50.0	<0.330	89	63.8 - 125
Vinyl Chloride		1,2,3,4	48.1	µg/L	1	50.0	<0.410	96	60.3 - 129
Bromomethane (methyl bromide)		1,2,3,4	44.3	µg/L	1	50.0	<1.69	89	49.7 - 141
Chloroethane		1,2,3,4	45.8	µg/L	1	50.0	<0.420	92	62.4 - 131
Trichlorofluoromethane		1,2,3,4	45.3	µg/L	1	50.0	<0.410	91	53.5 - 152
Acetone		1,2,3,4	53.4	µg/L	1	50.0	<1.09	107	20 - 190
Iodomethane (methyl iodide)		1,2,3,4	49.0	µg/L	1	50.0	<2.47	98	67.8 - 135
Carbon Disulfide		1,2,3,4	49.0	µg/L	1	50.0	<0.400	98	68.9 - 136
Acrylonitrile		1,2,3,4	43.5	µg/L	1	50.0	<0.360	87	67.6 - 131
2-Butanone (MEK)		1,2,3,4	41.4	µg/L	1	50.0	<1.67	83	45 - 137
4-Methyl-2-pentanone (MIBK)		1,2,3,4	44.0	µg/L	1	50.0	<2.14	88	61.4 - 142
2-Hexanone		1,2,3,4	46.7	µg/L	1	50.0	<1.49	93	51.7 - 145
trans 1,4-Dichloro-2-butene		1,2,3,4	61.2	µg/L	1	50.0	<1.75	122	44.3 - 137
1,1-Dichloroethene		1,2,3,4	48.6	µg/L	1	50.0	<0.330	97	70.6 - 132
Methylene chloride		1,2,3,4	45.3	µg/L	1	50.0	<2.04	91	66.5 - 135
MTBE		1,2,3,4	45.3	µg/L	1	50.0	<0.320	91	72.1 - 130
trans-1,2-Dichloroethene		1,2,3,4	50.0	µg/L	1	50.0	<0.360	100	75.5 - 127
1,1-Dichloroethane		1,2,3,4	45.8	µg/L	1	50.0	<0.330	92	73.7 - 129
cis-1,2-Dichloroethene		1,2,3,4	47.6	µg/L	1	50.0	<0.330	95	75.5 - 127

continued ...

control spikes continued . . .

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
2,2-Dichloropropane		1,2,3,4	54.3	µg/L	1	50.0	<0.380	109	24.3 - 158
1,2-Dichloroethane (EDC)		1,2,3,4	42.0	µg/L	1	50.0	<0.280	84	71 - 134
Chloroform		1,2,3,4	46.8	µg/L	1	50.0	<0.390	94	74 - 131
1,1,1-Trichloroethane		1,2,3,4	47.2	µg/L	1	50.0	<0.370	94	59.2 - 150
1,1-Dichloropropene		1,2,3,4	47.8	µg/L	1	50.0	<0.320	96	77.7 - 128
Benzene		1,2,3,4	47.1	µg/L	1	50.0	<0.340	94	73 - 124
Carbon Tetrachloride		1,2,3,4	47.6	µg/L	1	50.0	<0.350	95	61.2 - 146
1,2-Dichloropropane		1,2,3,4	48.6	µg/L	1	50.0	<0.270	97	78 - 125
Trichloroethene (TCE)		1,2,3,4	48.6	µg/L	1	50.0	<0.310	97	70.9 - 137
Dibromomethane (methylene bromide)		1,2,3,4	44.6	µg/L	1	50.0	<0.230	89	76.2 - 127
Bromodichloromethane		1,2,3,4	46.2	µg/L	1	50.0	<0.320	92	73.6 - 130
2-Chloroethyl vinyl ether		1,2,3,4	51.2	µg/L	1	50.0	<0.480	102	61.1 - 136
cis-1,3-Dichloropropene		1,2,3,4	45.7	µg/L	1	50.0	<0.210	91	79 - 125
trans-1,3-Dichloropropene		1,2,3,4	44.2	µg/L	1	50.0	<0.310	88	77.1 - 128
Toluene		1,2,3,4	48.0	µg/L	1	50.0	<0.350	96	75.4 - 126
1,1,2-Trichloroethane		1,2,3,4	43.7	µg/L	1	50.0	<0.390	87	72.9 - 122
1,3-Dichloropropane		1,2,3,4	44.6	µg/L	1	50.0	<0.310	89	75 - 120
Dibromochloromethane		1,3,4	47.0	µg/L	1	50.0	<0.370	94	64.8 - 128
1,2-Dibromoethane (EDB)		1,2,3,4	46.0	µg/L	1	50.0	<0.310	92	74.6 - 121
Tetrachloroethene (PCE)		1,2,3,4	44.5	µg/L	1	50.0	<0.190	89	28.6 - 177
Chlorobenzene		1,2,3,4	49.6	µg/L	1	50.0	<0.290	99	73.5 - 120
1,1,1,2-Tetrachloroethane		1,2,3,4	48.8	µg/L	1	50.0	<0.300	98	67 - 128
Ethylbenzene		1,2,3,4	47.6	µg/L	1	50.0	<0.260	95	73 - 123
m,p-Xylene		1,2,3,4	95.9	µg/L	1	100	<0.480	96	71 - 126
Bromoform		1,2,3,4	49.7	µg/L	1	50.0	<0.480	99	55.5 - 131
Styrene		1,2,3,4	47.3	µg/L	1	50.0	<0.250	95	75.7 - 122
o-Xylene		1,2,3,4	48.7	µg/L	1	50.0	<0.260	97	70.2 - 125
1,1,2,2-Tetrachloroethane		1,2,3,4	42.9	µg/L	1	50.0	<0.560	86	61.1 - 133
2-Chlorotoluene		1,2,3,4	46.8	µg/L	1	50.0	<0.250	94	71.8 - 120
1,2,3-Trichloropropane		1,2,3,4	40.3	µg/L	1	50.0	<0.450	81	67.2 - 132
Isopropylbenzene		1,2,3,4	46.5	µg/L	1	50.0	<0.260	93	72.2 - 123
Bromobenzene		1,2,3,4	45.2	µg/L	1	50.0	<0.280	90	66.7 - 121
n-Propylbenzene		1,2,3,4	46.8	µg/L	1	50.0	<0.240	94	72.9 - 121
1,3,5-Trimethylbenzene		1,2,3,4	48.0	µg/L	1	50.0	<0.260	96	68.4 - 126
tert-Butylbenzene		1,2,3,4	48.0	µg/L	1	50.0	<0.270	96	68.7 - 128
1,2,4-Trimethylbenzene		1,2,3,4	48.2	µg/L	1	50.0	<0.270	96	70.4 - 124
1,4-Dichlorobenzene (para)		1,2,3,4	50.5	µg/L	1	50.0	<0.310	101	73.5 - 120
sec-Butylbenzene		1,2,3,4	48.4	µg/L	1	50.0	<0.200	97	69.6 - 128
1,3-Dichlorobenzene (meta)		1,2,3,4	50.4	µg/L	1	50.0	<0.280	101	74.2 - 120
p-Isopropyltoluene		1,2,3	49.6	µg/L	1	50.0	<0.200	99	73.1 - 124
4-Chlorotoluene		1,2,3,4	45.7	µg/L	1	50.0	<0.290	91	72.8 - 120
1,2-Dichlorobenzene (ortho)		1,2,3,4	49.4	µg/L	1	50.0	<0.250	99	65.2 - 126
n-Butylbenzene		1,2,3,4	49.4	µg/L	1	50.0	<0.170	99	70.1 - 127
1,2-Dibromo-3-chloropropane		1,3	41.1	µg/L	1	50.0	<1.70	82	50.5 - 136

continued . . .

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,2,3-Trichlorobenzene		1,2,3,4	54.0	µg/L	1	50.0	<0.400	108	43.3 - 153
1,2,4-Trichlorobenzene		1,2,3,4	54.0	µg/L	1	50.0	<2.12	108	59.6 - 134
Naphthalene		1,2,3,4	51.1	µg/L	1	50.0	<2.23	102	38.5 - 159
Hexachlorobutadiene		1,2,3,4	53.0	µg/L	1	50.0	0.82	104	35.8 - 175

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		1,2,3,4	52.2	µg/L	1	50.0	<0.330	104	74.4 - 128	5	20
Dichlorodifluoromethane		1,2,3,4	44.5	µg/L	1	50.0	<0.350	89	46.8 - 148	9	20
Chloromethane (methyl chloride)		1,2,3,4	45.1	µg/L	1	50.0	<0.330	90	63.8 - 125	1	20
Vinyl Chloride		1,2,3,4	48.3	µg/L	1	50.0	<0.410	97	60.3 - 129	0	20
Bromomethane (methyl bromide)		1,2,3,4	43.4	µg/L	1	50.0	<1.69	87	49.7 - 141	2	20
Chloroethane		1,2,3,4	45.5	µg/L	1	50.0	<0.420	91	62.4 - 131	1	20
Trichlorofluoromethane		1,2,3,4	48.6	µg/L	1	50.0	<0.410	97	53.5 - 152	7	20
Acetone		1,2,3,4	63.8	µg/L	1	50.0	<1.09	128	20 - 190	18	20
Iodomethane (methyl iodide)		1,2,3,4	50.6	µg/L	1	50.0	<2.47	101	67.8 - 135	3	20
Carbon Disulfide		1,2,3,4	51.9	µg/L	1	50.0	<0.400	104	68.9 - 136	6	20
Acrylonitrile		1,2,3,4	47.2	µg/L	1	50.0	<0.360	94	67.6 - 131	8	20
2-Butanone (MEK)		1,2,3,4	49.0	µg/L	1	50.0	<1.67	98	45 - 137	17	20
4-Methyl-2-pentanone (MIBK)		1,2,3,4	44.6	µg/L	1	50.0	<2.14	89	61.4 - 142	1	20
2-Hexanone		1,2,3,4	50.3	µg/L	1	50.0	<1.49	101	51.7 - 145	7	20
trans 1,4-Dichloro-2-butene		1,2,3,4	68.3	µg/L	1	50.0	<1.75	137	44.3 - 137	11	20
1,1-Dichloroethene		1,2,3,4	51.6	µg/L	1	50.0	<0.330	103	70.6 - 132	6	20
Methylene chloride		1,2,3,4	47.8	µg/L	1	50.0	<2.04	96	66.5 - 135	5	20
MTBE		1,2,3,4	50.5	µg/L	1	50.0	<0.320	101	72.1 - 130	11	20
trans-1,2-Dichloroethene		1,2,3,4	51.8	µg/L	1	50.0	<0.360	104	75.5 - 127	4	20
1,1-Dichloroethane		1,2,3,4	50.5	µg/L	1	50.0	<0.330	101	73.7 - 129	10	20
cis-1,2-Dichloroethene		1,2,3,4	51.6	µg/L	1	50.0	<0.330	103	75.5 - 127	8	20
2,2-Dichloropropane		1,2,3,4	56.3	µg/L	1	50.0	<0.380	113	24.3 - 158	4	20
1,2-Dichloroethane (EDC)		1,2,3,4	47.8	µg/L	1	50.0	<0.280	96	71 - 134	13	20
Chloroform		1,2,3,4	51.2	µg/L	1	50.0	<0.390	102	74 - 131	9	20
1,1,1-Trichloroethane		1,2,3,4	51.3	µg/L	1	50.0	<0.370	103	59.2 - 150	8	20
1,1-Dichloropropene		1,2,3,4	51.9	µg/L	1	50.0	<0.320	104	77.7 - 128	8	20
Benzene		1,2,3,4	50.4	µg/L	1	50.0	<0.340	101	73 - 124	7	20
Carbon Tetrachloride		1,2,3,4	51.8	µg/L	1	50.0	<0.350	104	61.2 - 146	8	20
1,2-Dichloropropane		1,2,3,4	52.9	µg/L	1	50.0	<0.270	106	78 - 125	8	20
Trichloroethene (TCE)		1,2,3,4	49.7	µg/L	1	50.0	<0.310	99	70.9 - 137	2	20
Dibromomethane (methylene bromide)		1,2,3,4	47.6	µg/L	1	50.0	<0.230	95	76.2 - 127	6	20
Bromodichloromethane		1,2,3,4	50.6	µg/L	1	50.0	<0.320	101	73.6 - 130	9	20
2-Chloroethyl vinyl ether		1,2,3,4	51.4	µg/L	1	50.0	<0.480	103	61.1 - 136	0	20
cis-1,3-Dichloropropene		1,2,3,4	49.0	µg/L	1	50.0	<0.210	98	79 - 125	7	20
trans-1,3-Dichloropropene		1,2,3,4	48.8	µg/L	1	50.0	<0.310	98	77.1 - 128	10	20
Toluene		1,2,3,4	50.9	µg/L	1	50.0	<0.350	102	75.4 - 126	6	20

continued ...

control spikes continued ...

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,2-Trichloroethane		1,2,3,4	47.6	µg/L	1	50.0	<0.390	95	72.9 - 122	8	20
1,3-Dichloropropane		1,2,3,4	48.8	µg/L	1	50.0	<0.310	98	75 - 120	9	20
Dibromochloromethane		1,3,4	50.7	µg/L	1	50.0	<0.370	101	64.8 - 128	8	20
1,2-Dibromoethane (EDB)		1,2,3,4	49.1	µg/L	1	50.0	<0.310	98	74.6 - 121	6	20
Tetrachloroethene (PCE)		1,2,3,4	46.5	µg/L	1	50.0	<0.190	93	28.6 - 177	4	20
Chlorobenzene		1,2,3,4	52.3	µg/L	1	50.0	<0.290	105	73.5 - 120	5	20
1,1,1,2-Tetrachloroethane		1,2,3,4	51.5	µg/L	1	50.0	<0.300	103	67 - 128	5	20
Ethylbenzene		1,2,3,4	51.2	µg/L	1	50.0	<0.260	102	73 - 123	7	20
m,p-Xylene		1,2,3,4	105	µg/L	1	100	<0.480	105	71 - 126	9	20
Bromoform		1,2,3,4	52.3	µg/L	1	50.0	<0.480	105	55.5 - 131	5	20
Styrene		1,2,3,4	50.1	µg/L	1	50.0	<0.250	100	75.7 - 122	6	20
o-Xylene		1,2,3,4	52.2	µg/L	1	50.0	<0.260	104	70.2 - 125	7	20
1,1,2,2-Tetrachloroethane		1,2,3,4	45.3	µg/L	1	50.0	<0.560	91	61.1 - 133	5	20
2-Chlorotoluene		1,2,3,4	52.3	µg/L	1	50.0	<0.250	105	71.8 - 120	11	20
1,2,3-Trichloropropane		1,2,3,4	48.7	µg/L	1	50.0	<0.450	97	67.2 - 132	19	20
Isopropylbenzene		1,2,3,4	50.9	µg/L	1	50.0	<0.260	102	72.2 - 123	9	20
Bromobenzene		1,2,3,4	52.0	µg/L	1	50.0	<0.280	104	66.7 - 121	14	20
n-Propylbenzene		1,2,3,4	52.3	µg/L	1	50.0	<0.240	105	72.9 - 121	11	20
1,3,5-Trimethylbenzene		1,2,3,4	52.9	µg/L	1	50.0	<0.260	106	68.4 - 126	10	20
tert-Butylbenzene		1,2,3,4	52.1	µg/L	1	50.0	<0.270	104	68.7 - 128	8	20
1,2,4-Trimethylbenzene		1,2,3,4	52.4	µg/L	1	50.0	<0.270	105	70.4 - 124	8	20
1,4-Dichlorobenzene (para)		1,2,3,4	54.1	µg/L	1	50.0	<0.310	108	73.5 - 120	7	20
sec-Butylbenzene		1,2,3,4	52.9	µg/L	1	50.0	<0.200	106	69.6 - 128	9	20
1,3-Dichlorobenzene (meta)		1,2,3,4	53.4	µg/L	1	50.0	<0.280	107	74.2 - 120	6	20
p-Isopropyltoluene		1,2,3	53.5	µg/L	1	50.0	<0.200	107	73.1 - 124	8	20
4-Chlorotoluene		1,2,3,4	51.4	µg/L	1	50.0	<0.290	103	72.8 - 120	12	20
1,2-Dichlorobenzene (ortho)		1,2,3,4	51.9	µg/L	1	50.0	<0.250	104	65.2 - 126	5	20
n-Butylbenzene		1,2,3,4	54.2	µg/L	1	50.0	<0.170	108	70.1 - 127	9	20
1,2-Dibromo-3-chloropropane		1,3	48.1	µg/L	1	50.0	<1.70	96	50.5 - 136	16	20
1,2,3-Trichlorobenzene		1,2,3,4	57.7	µg/L	1	50.0	<0.400	115	43.3 - 153	7	20
1,2,4-Trichlorobenzene		1,2,3,4	57.4	µg/L	1	50.0	<2.12	115	59.6 - 134	6	20
Naphthalene		1,2,3,4	55.2	µg/L	1	50.0	<2.23	110	38.5 - 159	8	20
Hexachlorobutadiene		1,2,3,4	56.1	µg/L	1	50.0	0.82	110	35.8 - 175	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.4	µg/L	1	50.0	96	99	70 - 130
Toluene-d8	48.6	49.5	µg/L	1	50.0	97	99	70 - 130
4-Bromofluorobenzene (4-BFB)	48.2	49.4	µg/L	1	50.0	96	99	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 131836
Prep Batch: 111720

Date Analyzed: 2016-08-02
QC Preparation: 2016-08-01

Analyzed By: HJ
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	40.6	mg/L	1	50.0	<0.890	81	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	42.8	mg/L	1	50.0	<0.890	86	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	2.37	2.44	mg/L	1	2.50	95	98	70 - 130

Matrix Spikes

Matrix Spike (xMS-1) Spiked Sample: 425297

QC Batch: 131805
Prep Batch: 111688

Date Analyzed: 2016-08-01
QC Preparation: 2016-07-29

Analyzed By: HJ
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	40.6	mg/L	1	50.0	<0.890	81	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	36.9	mg/L	1	50.0	<0.890	74	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	2.60	2.34	mg/L	1	2.5	104	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 425440

QC Batch: 131807
Prep Batch: 111697

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3	53.2	mg/L	50	50.0	<1.84	106	57 - 134

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3	54.1	mg/L	50	50.0	<1.84	108	57 - 134	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.92	5.92	mg/L	50	5	118	118	72.8 - 136
4-Bromofluorobenzene (4-BFB)	5.76	5.76	mg/L	50	5	115	115	73.3 - 120

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Matrix Spike (MS-1) Spiked Sample: 425440

QC Batch: 131815
Prep Batch: 111703

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4	362	mg/L	10	250	98.9	105	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4	355	mg/L	10	250	98.9	102	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 425440

QC Batch: 131820
Prep Batch: 111707

Date Analyzed: 2016-07-29
QC Preparation: 2016-07-29

Analyzed By: KB
Prepared By: KB

Param			MS		Dil.	Spike	Matrix	Rec.	
	F	C	Result	Units		Amount	Result	Rec.	Limit
Bromochloromethane		1,2,3,4	230	µg/L	5	250	<1.65	92	64.4 - 146
Dichlorodifluoromethane		1,2,3,4	201	µg/L	5	250	<1.75	80	36.2 - 162
Chloromethane (methyl chloride)		1,2,3,4	198	µg/L	5	250	<1.65	79	56.1 - 142
Vinyl Chloride		1,2,3,4	212	µg/L	5	250	<2.05	85	12 - 172
Bromomethane (methyl bromide)		1,2,3,4	196	µg/L	5	250	<8.45	78	43.6 - 159
Chloroethane		1,2,3,4	209	µg/L	5	250	<2.10	84	58 - 148
Trichlorofluoromethane		1,2,3,4	216	µg/L	5	250	<2.05	86	52.2 - 163
Acetone		1,2,3,4	198	µg/L	5	250	<5.45	79	12.8 - 120
Iodomethane (methyl iodide)		1,2,3,4	228	µg/L	5	250	<12.4	91	10 - 200
Carbon Disulfide		1,2,3,4	235	µg/L	5	250	3.9	92	57.6 - 149
Acrylonitrile		1,2,3,4	214	µg/L	5	250	<1.80	86	67.2 - 134
2-Butanone (MEK)		1,2,3,4	181	µg/L	5	250	<8.35	72	31.3 - 124
4-Methyl-2-pentanone (MIBK)		1,2,3,4	210	µg/L	5	250	<10.7	84	56.5 - 143
2-Hexanone		1,2,3,4	190	µg/L	5	250	<7.45	76	29 - 144
trans 1,4-Dichloro-2-butene	Qs	Qs	399	µg/L	5	250	<8.75	160	10 - 143
1,1-Dichloroethene		1,2,3,4	230	µg/L	5	250	<1.65	92	34.6 - 166
Methylene chloride		1,2,3,4	220	µg/L	5	250	<10.2	88	64.3 - 140
MTBE		1,2,3,4	231	µg/L	5	250	<1.60	92	41.6 - 161
trans-1,2-Dichloroethene		1,2,3,4	232	µg/L	5	250	<1.80	93	63.2 - 146
1,1-Dichloroethane		1,2,3,4	231	µg/L	5	250	<1.65	92	69.2 - 143
cis-1,2-Dichloroethene		1,2,3,4	226	µg/L	5	250	<1.65	90	64.8 - 144

continued ...

matrix spikes continued . . .

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
2,2-Dichloropropane		1,2,3,4	276	µg/L	5	250	<1.90	110	21.7 - 152
1,2-Dichloroethane (EDC)		1,2,3,4	222	µg/L	5	250	<1.40	89	62 - 157
Chloroform		1,2,3,4	237	µg/L	5	250	<1.95	95	64.9 - 150
1,1,1-Trichloroethane		1,2,3,4	238	µg/L	5	250	<1.85	95	62.3 - 163
1,1-Dichloropropene		1,2,3,4	237	µg/L	5	250	<1.60	95	31 - 174
Benzene		1,2,3,4	236	µg/L	5	250	10.1	90	62 - 139
Carbon Tetrachloride		1,2,3,4	243	µg/L	5	250	<1.75	97	58 - 164
1,2-Dichloropropane		1,2,3,4	238	µg/L	5	250	<1.35	95	68.1 - 140
Trichloroethene (TCE)		1,2,3,4	222	µg/L	5	250	<1.55	89	49.9 - 163
Dibromomethane (methylene bromide)		1,2,3,4	221	µg/L	5	250	<1.15	88	66.8 - 142
Bromodichloromethane		1,2,3,4	240	µg/L	5	250	<1.60	96	63.9 - 152
2-Chloroethyl vinyl ether		1,2,3,4	25.2	µg/L	5	250	<2.40	10	0 - 120
cis-1,3-Dichloropropene		1,2,3,4	231	µg/L	5	250	<1.05	92	32.6 - 160
trans-1,3-Dichloropropene		1,2,3,4	236	µg/L	5	250	<1.55	94	31.4 - 163
Toluene		1,2,3,4	236	µg/L	5	250	<1.75	94	40.7 - 160
1,1,2-Trichloroethane		1,2,3,4	225	µg/L	5	250	<1.95	90	66 - 130
1,3-Dichloropropane		1,2,3,4	227	µg/L	5	250	<1.55	91	66.2 - 131
Dibromochloromethane		1,3,4	247	µg/L	5	250	<1.85	99	58.8 - 143
1,2-Dibromoethane (EDB)		1,2,3,4	231	µg/L	5	250	<1.55	92	66.8 - 132
Tetrachloroethene (PCE)		1,2,3,4	216	µg/L	5	250	<0.950	86	28.8 - 126
Chlorobenzene		1,2,3,4	238	µg/L	5	250	<1.45	95	61.6 - 134
1,1,1,2-Tetrachloroethane		1,2,3,4	252	µg/L	5	250	<1.50	101	63.1 - 139
Ethylbenzene		1,2,3,4	240	µg/L	5	250	<1.30	96	43 - 148
m,p-Xylene		1,2,3,4	494	µg/L	5	500	<2.40	99	21.5 - 165
Bromoform		1,2,3,4	269	µg/L	5	250	<2.40	108	49 - 144
Styrene		1,2,3,4	234	µg/L	5	250	<1.25	94	10 - 192
o-Xylene		1,2,3,4	250	µg/L	5	250	<1.30	100	28.4 - 160
1,1,2,2-Tetrachloroethane		1,2,3,4	218	µg/L	5	250	<2.80	87	65.3 - 133
2-Chlorotoluene		1,2,3,4	235	µg/L	5	250	<1.25	94	56 - 134
1,2,3-Trichloropropane		1,2,3,4	226	µg/L	5	250	<2.25	90	62.8 - 126
Isopropylbenzene		1,2,3,4	227	µg/L	5	250	<1.30	91	31.4 - 156
Bromobenzene		1,2,3,4	237	µg/L	5	250	<1.40	95	57.8 - 128
n-Propylbenzene		1,2,3,4	233	µg/L	5	250	<1.20	93	30.5 - 154
1,3,5-Trimethylbenzene		1,2,3,4	238	µg/L	5	250	<1.30	95	10 - 183
tert-Butylbenzene		1,2,3,4	232	µg/L	5	250	<1.35	93	42.8 - 148
1,2,4-Trimethylbenzene		1,2,3,4	236	µg/L	5	250	<1.35	94	10 - 179
1,4-Dichlorobenzene (para)		1,2,3,4	241	µg/L	5	250	<1.55	96	66 - 123
sec-Butylbenzene		1,2,3,4	234	µg/L	5	250	<1.00	94	30.8 - 155
1,3-Dichlorobenzene (meta)		1,2,3,4	242	µg/L	5	250	<1.40	97	66 - 124
p-Isopropyltoluene		1,2,3	238	µg/L	5	250	<1.00	95	20.9 - 164
4-Chlorotoluene		1,2,3,4	232	µg/L	5	250	<1.45	93	54.8 - 136
1,2-Dichlorobenzene (ortho)		1,2,3,4	235	µg/L	5	250	<1.25	94	65.9 - 124
n-Butylbenzene		1,2,3,4	244	µg/L	5	250	<0.850	98	31.3 - 153
1,2-Dibromo-3-chloropropane		1,3	228	µg/L	5	250	<8.50	91	49.3 - 138

continued . . .

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,2,3-Trichlorobenzene		1,2,3,4	220	µg/L	5	250	<2.00	88	37.5 - 146
1,2,4-Trichlorobenzene		1,2,3,4	239	µg/L	5	250	<10.6	96	55.3 - 132
Naphthalene		1,2,3,4	215	µg/L	5	250	<11.2	86	10 - 169
Hexachlorobutadiene		1,2,3,4	238	µg/L	5	250	<3.80	95	47.4 - 146

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec. Rec.	Rec. Limit	RPD	RPD Limit	
Bromochloromethane		1,2,3,4	230	µg/L	5	250	<1.65	92	64.4 - 146	0	20	
Dichlorodifluoromethane		1,2,3,4	222	µg/L	5	250	<1.75	89	36.2 - 162	10	20	
Chloromethane (methyl chloride)		1,2,3,4	211	µg/L	5	250	<1.65	84	56.1 - 142	6	20	
Vinyl Chloride		1,2,3,4	228	µg/L	5	250	<2.05	91	12 - 172	7	20	
Bromomethane (methyl bromide)		1,2,3,4	209	µg/L	5	250	<8.45	84	43.6 - 159	6	20	
Chloroethane		1,2,3,4	210	µg/L	5	250	<2.10	84	58 - 148	0	20	
Trichlorofluoromethane		1,2,3,4	221	µg/L	5	250	<2.05	88	52.2 - 163	2	20	
Acetone		1,2,3,4	210	µg/L	5	250	<5.45	84	12.8 - 120	6	20	
Iodomethane (methyl iodide)		1,2,3,4	232	µg/L	5	250	<12.4	93	10 - 200	2	20	
Carbon Disulfide		1,2,3,4	244	µg/L	5	250	3.9	96	57.6 - 149	4	20	
Acrylonitrile		1,2,3,4	225	µg/L	5	250	<1.80	90	67.2 - 134	5	20	
2-Butanone (MEK)		1,2,3,4	196	µg/L	5	250	<8.35	78	31.3 - 124	8	20	
4-Methyl-2-pentanone (MIBK)		1,2,3,4	205	µg/L	5	250	<10.7	82	56.5 - 143	2	20	
2-Hexanone		1,2,3,4	198	µg/L	5	250	<7.45	79	29 - 144	4	20	
trans 1,4-Dichloro-2-butene	Qs	Qs	1,2,3,4	404	µg/L	5	250	<8.75	162	10 - 143	1	20
1,1-Dichloroethene		1,2,3,4	234	µg/L	5	250	<1.65	94	34.6 - 166	2	20	
Methylene chloride		1,2,3,4	218	µg/L	5	250	<10.2	87	64.3 - 140	1	20	
MTBE		1,2,3,4	239	µg/L	5	250	<1.60	96	41.6 - 161	3	20	
trans-1,2-Dichloroethene		1,2,3,4	234	µg/L	5	250	<1.80	94	63.2 - 146	1	20	
1,1-Dichloroethane		1,2,3,4	235	µg/L	5	250	<1.65	94	69.2 - 143	2	20	
cis-1,2-Dichloroethene		1,2,3,4	229	µg/L	5	250	<1.65	92	64.8 - 144	1	20	
2,2-Dichloropropane		1,2,3,4	282	µg/L	5	250	<1.90	113	21.7 - 152	2	20	
1,2-Dichloroethane (EDC)		1,2,3,4	233	µg/L	5	250	<1.40	93	62 - 157	5	20	
Chloroform		1,2,3,4	244	µg/L	5	250	<1.95	98	64.9 - 150	3	20	
1,1,1-Trichloroethane		1,2,3,4	249	µg/L	5	250	<1.85	100	62.3 - 163	4	20	
1,1-Dichloropropene		1,2,3,4	243	µg/L	5	250	<1.60	97	31 - 174	2	20	
Benzene		1,2,3,4	242	µg/L	5	250	10.1	93	62 - 139	2	20	
Carbon Tetrachloride		1,2,3,4	250	µg/L	5	250	<1.75	100	58 - 164	3	20	
1,2-Dichloropropane		1,2,3,4	246	µg/L	5	250	<1.35	98	68.1 - 140	3	20	
Trichloroethene (TCE)		1,2,3,4	228	µg/L	5	250	<1.55	91	49.9 - 163	3	20	
Dibromomethane (methylene bromide)		1,2,3,4	224	µg/L	5	250	<1.15	90	66.8 - 142	1	20	
Bromodichloromethane		1,2,3,4	250	µg/L	5	250	<1.60	100	63.9 - 152	4	20	
2-Chloroethyl vinyl ether	Qr	Qr	1,2,3,4	<2.40	µg/L	5	250	<2.40	0	0 - 120	200	20
cis-1,3-Dichloropropene		1,2,3,4	240	µg/L	5	250	<1.05	96	32.6 - 160	4	20	
trans-1,3-Dichloropropene		1,2,3,4	240	µg/L	5	250	<1.55	96	31.4 - 163	2	20	
Toluene		1,2,3,4	239	µg/L	5	250	<1.75	96	40.7 - 160	1	20	

continued ...

matrix spikes continued . . .

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,2-Trichloroethane		1,2,3,4	227	µg/L	5	250	<1.95	91	66 - 130	1	20
1,3-Dichloropropane		1,2,3,4	229	µg/L	5	250	<1.55	92	66.2 - 131	1	20
Dibromochloromethane		1,3,4	247	µg/L	5	250	<1.85	99	58.8 - 143	0	20
1,2-Dibromoethane (EDB)		1,2,3,4	226	µg/L	5	250	<1.55	90	66.8 - 132	2	20
Tetrachloroethene (PCE)		1,2,3,4	214	µg/L	5	250	<0.950	86	28.8 - 126	1	20
Chlorobenzene		1,2,3,4	239	µg/L	5	250	<1.45	96	61.6 - 134	0	20
1,1,1,2-Tetrachloroethane		1,2,3,4	249	µg/L	5	250	<1.50	100	63.1 - 139	1	20
Ethylbenzene		1,2,3,4	237	µg/L	5	250	<1.30	95	43 - 148	1	20
m,p-Xylene		1,2,3,4	481	µg/L	5	500	<2.40	96	21.5 - 165	3	20
Bromoform		1,2,3,4	268	µg/L	5	250	<2.40	107	49 - 144	0	20
Styrene		1,2,3,4	232	µg/L	5	250	<1.25	93	10 - 192	1	20
o-Xylene		1,2,3,4	245	µg/L	5	250	<1.30	98	28.4 - 160	2	20
1,1,2,2-Tetrachloroethane		1,2,3,4	215	µg/L	5	250	<2.80	86	65.3 - 133	1	20
2-Chlorotoluene		1,2,3,4	238	µg/L	5	250	<1.25	95	56 - 134	1	20
1,2,3-Trichloropropane		1,2,3,4	223	µg/L	5	250	<2.25	89	62.8 - 126	1	20
Isopropylbenzene		1,2,3,4	231	µg/L	5	250	<1.30	92	31.4 - 156	2	20
Bromobenzene		1,2,3,4	237	µg/L	5	250	<1.40	95	57.8 - 128	0	20
n-Propylbenzene		1,2,3,4	236	µg/L	5	250	<1.20	94	30.5 - 154	1	20
1,3,5-Trimethylbenzene		1,2,3,4	240	µg/L	5	250	<1.30	96	10 - 183	1	20
tert-Butylbenzene		1,2,3,4	234	µg/L	5	250	<1.35	94	42.8 - 148	1	20
1,2,4-Trimethylbenzene		1,2,3,4	244	µg/L	5	250	<1.35	98	10 - 179	3	20
1,4-Dichlorobenzene (para)		1,2,3,4	246	µg/L	5	250	<1.55	98	66 - 123	2	20
sec-Butylbenzene		1,2,3,4	239	µg/L	5	250	<1.00	96	30.8 - 155	2	20
1,3-Dichlorobenzene (meta)		1,2,3,4	242	µg/L	5	250	<1.40	97	66 - 124	0	20
p-Isopropyltoluene		1,2,3	241	µg/L	5	250	<1.00	96	20.9 - 164	1	20
4-Chlorotoluene		1,2,3,4	233	µg/L	5	250	<1.45	93	54.8 - 136	0	20
1,2-Dichlorobenzene (ortho)		1,2,3,4	240	µg/L	5	250	<1.25	96	65.9 - 124	2	20
n-Butylbenzene		1,2,3,4	249	µg/L	5	250	<0.850	100	31.3 - 153	2	20
1,2-Dibromo-3-chloropropane		1,3	228	µg/L	5	250	<8.50	91	49.3 - 138	0	20
1,2,3-Trichlorobenzene		1,2,3,4	259	µg/L	5	250	<2.00	104	37.5 - 146	16	20
1,2,4-Trichlorobenzene		1,2,3,4	263	µg/L	5	250	<10.6	105	55.3 - 132	10	20
Naphthalene		1,2,3,4	260	µg/L	5	250	<11.2	104	10 - 169	19	20
Hexachlorobutadiene		1,2,3,4	258	µg/L	5	250	<3.80	103	47.4 - 146	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	248	252	µg/L	5	250	99	101	70 - 130
Toluene-d8	247	247	µg/L	5	250	99	99	70 - 130
4-Bromofluorobenzene (4-BFB)	258	250	µg/L	5	250	103	100	70 - 130

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

Page Number: 26 of 32

Matrix Spike (xMS-1) Spiked Sample: 425420

QC Batch: 131836
Prep Batch: 111720

Date Analyzed: 2016-08-02
QC Preparation: 2016-08-01

Analyzed By: HJ
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	37.8	mg/L	1	50.0	<0.890	76	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	40.2	mg/L	1	50.0	<0.890	80	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	2.28	2.38	mg/L	1	2.5	91	95	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 131805

Date Analyzed: 2016-08-01

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/L	500	417	83	80 - 120	2016-08-01

Standard (CCV-2)

QC Batch: 131805

Date Analyzed: 2016-08-01

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/L	500	454	91	80 - 120	2016-08-01

Standard (CCV-1)

QC Batch: 131807

Date Analyzed: 2016-07-29

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3	mg/L	1.00	1.08	108	80 - 120	2016-07-29

Standard (CCV-2)

QC Batch: 131807

Date Analyzed: 2016-07-29

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3	mg/L	1.00	1.00	100	80 - 120	2016-07-29

Standard (CCV-1)

QC Batch: 131815

Date Analyzed: 2016-07-29

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4	mg/L	25.0	24.8	99	90 - 110	2016-07-29

Standard (CCV-2)

QC Batch: 131815

Date Analyzed: 2016-07-29

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4	mg/L	25.0	24.7	99	90 - 110	2016-07-29

Standard (CCV-1)

QC Batch: 131820

Date Analyzed: 2016-07-29

Analyzed By: KB

Param	Flag	Cert	Units	CCVs	CCVs	CCVs	Percent	Date	
				True Conc.	Found Conc.	Percent Recovery	Recovery Limits		
Bromochloromethane		1,2,3,4	µg/L	50.0	49.6	99	80 - 120	2016-07-29	
Dichlorodifluoromethane		1,2,3,4	µg/L	50.0	48.2	96	80 - 120	2016-07-29	
Chloromethane (methyl chloride)		1,2,3,4	µg/L	50.0	44.5	89	80 - 120	2016-07-29	
Vinyl Chloride		1,2,3,4	µg/L	50.0	48.2	96	80 - 120	2016-07-29	
Bromomethane (methyl bromide)		1,2,3,4	µg/L	50.0	43.8	88	80 - 120	2016-07-29	
Chloroethane		1,2,3,4	µg/L	50.0	47.4	95	80 - 120	2016-07-29	
Trichlorofluoromethane		1,2,3,4	µg/L	50.0	52.7	105	80 - 120	2016-07-29	
Acetone	Qc	Qc	1,2,3,4	µg/L	50.0	39.7	79	80 - 120	2016-07-29
Iodomethane (methyl iodide)		1,2,3,4	µg/L	50.0	48.9	98	80 - 120	2016-07-29	
Carbon Disulfide		1,2,3,4	µg/L	50.0	51.7	103	80 - 120	2016-07-29	
Acrylonitrile		1,2,3,4	µg/L	50.0	46.9	94	80 - 120	2016-07-29	
2-Butanone (MEK)		1,2,3,4	µg/L	50.0	43.7	87	80 - 120	2016-07-29	
4-Methyl-2-pentanone (MIBK)		1,2,3,4	µg/L	50.0	45.2	90	80 - 120	2016-07-29	
2-Hexanone		1,2,3,4	µg/L	50.0	41.0	82	80 - 120	2016-07-29	
trans 1,4-Dichloro-2-butene	Qc	Qc	1,2,3,4	µg/L	50.0	68.4	137	80 - 120	2016-07-29
1,1-Dichloroethene		1,2,3,4	µg/L	50.0	50.2	100	80 - 120	2016-07-29	
Methylene chloride		1,2,3,4	µg/L	50.0	48.1	96	80 - 120	2016-07-29	
MTBE		1,2,3,4	µg/L	50.0	51.2	102	80 - 120	2016-07-29	

continued . . .

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
trans-1,2-Dichloroethene		1,2,3,4	µg/L	50.0	51.1	102	80 - 120	2016-07-29
1,1-Dichloroethane		1,2,3,4	µg/L	50.0	50.6	101	80 - 120	2016-07-29
cis-1,2-Dichloroethene		1,2,3,4	µg/L	50.0	49.0	98	80 - 120	2016-07-29
2,2-Dichloropropane	Qc	Qc	µg/L	50.0	60.2	120	80 - 120	2016-07-29
1,2-Dichloroethane (EDC)		1,2,3,4	µg/L	50.0	49.8	100	80 - 120	2016-07-29
Chloroform		1,2,3,4	µg/L	50.0	52.5	105	80 - 120	2016-07-29
1,1,1-Trichloroethane		1,2,3,4	µg/L	50.0	53.1	106	80 - 120	2016-07-29
1,1-Dichloropropene		1,2,3,4	µg/L	50.0	51.7	103	80 - 120	2016-07-29
Benzene		1,2,3,4	µg/L	50.0	50.0	100	80 - 120	2016-07-29
Carbon Tetrachloride		1,2,3,4	µg/L	50.0	53.9	108	80 - 120	2016-07-29
1,2-Dichloropropane		1,2,3,4	µg/L	50.0	51.7	103	80 - 120	2016-07-29
Trichloroethene (TCE)		1,2,3,4	µg/L	50.0	50.6	101	80 - 120	2016-07-29
Dibromomethane (methylene bromide)		1,2,3,4	µg/L	50.0	47.3	95	80 - 120	2016-07-29
Bromodichloromethane		1,2,3,4	µg/L	50.0	50.6	101	80 - 120	2016-07-29
2-Chloroethyl vinyl ether		1,2,3,4	µg/L	50.0	55.7	111	80 - 120	2016-07-29
cis-1,3-Dichloropropene		1,2,3,4	µg/L	50.0	49.1	98	80 - 120	2016-07-29
trans-1,3-Dichloropropene		1,2,3,4	µg/L	50.0	46.8	94	80 - 120	2016-07-29
Toluene		1,2,3,4	µg/L	50.0	50.3	101	80 - 120	2016-07-29
1,1,2-Trichloroethane		1,2,3,4	µg/L	50.0	46.3	93	80 - 120	2016-07-29
1,3-Dichloropropane		1,2,3,4	µg/L	50.0	47.3	95	80 - 120	2016-07-29
Dibromochloromethane		1,3,4	µg/L	50.0	50.6	101	80 - 120	2016-07-29
1,2-Dibromoethane (EDB)		1,2,3,4	µg/L	50.0	47.4	95	80 - 120	2016-07-29
Tetrachloroethene (PCE)		1,2,3,4	µg/L	50.0	46.0	92	80 - 120	2016-07-29
Chlorobenzene		1,2,3,4	µg/L	50.0	51.8	104	80 - 120	2016-07-29
1,1,1,2-Tetrachloroethane		1,2,3,4	µg/L	50.0	51.9	104	80 - 120	2016-07-29
Ethylbenzene		1,2,3,4	µg/L	50.0	50.1	100	80 - 120	2016-07-29
m,p-Xylene		1,2,3,4	µg/L	100	103	103	80 - 120	2016-07-29
Bromoform		1,2,3,4	µg/L	50.0	54.0	108	80 - 120	2016-07-29
Styrene		1,2,3,4	µg/L	50.0	49.5	99	80 - 120	2016-07-29
o-Xylene		1,2,3,4	µg/L	50.0	52.0	104	80 - 120	2016-07-29
1,1,2,2-Tetrachloroethane		1,2,3,4	µg/L	50.0	45.2	90	80 - 120	2016-07-29
2-Chlorotoluene		1,2,3,4	µg/L	50.0	51.2	102	80 - 120	2016-07-29
1,2,3-Trichloropropane		1,2,3,4	µg/L	50.0	48.2	96	80 - 120	2016-07-29
Isopropylbenzene		1,2,3,4	µg/L	50.0	50.2	100	80 - 120	2016-07-29
Bromobenzene		1,2,3,4	µg/L	50.0	50.4	101	80 - 120	2016-07-29
n-Propylbenzene		1,2,3,4	µg/L	50.0	51.4	103	80 - 120	2016-07-29
1,3,5-Trimethylbenzene		1,2,3,4	µg/L	50.0	51.7	103	80 - 120	2016-07-29
tert-Butylbenzene		1,2,3,4	µg/L	50.0	51.8	104	80 - 120	2016-07-29
1,2,4-Trimethylbenzene		1,2,3,4	µg/L	50.0	53.0	106	80 - 120	2016-07-29
1,4-Dichlorobenzene (para)		1,2,3,4	µg/L	50.0	52.7	105	80 - 120	2016-07-29
sec-Butylbenzene		1,2,3,4	µg/L	50.0	52.6	105	80 - 120	2016-07-29
1,3-Dichlorobenzene (meta)		1,2,3,4	µg/L	50.0	52.2	104	80 - 120	2016-07-29
p-Isopropyltoluene		1,2,3	µg/L	50.0	52.7	105	80 - 120	2016-07-29

continued ...

Report Date: August 2, 2016
Lovington Leak

Work Order: 16072912
Lovington Leak

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standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
4-Chlorotoluene		1,2,3,4	µg/L	50.0	50.6	101	80 - 120	2016-07-29
1,2-Dichlorobenzene (ortho)		1,2,3,4	µg/L	50.0	51.5	103	80 - 120	2016-07-29
n-Butylbenzene		1,2,3,4	µg/L	50.0	54.4	109	80 - 120	2016-07-29
1,2-Dibromo-3-chloropropane		1,3	µg/L	50.0	46.2	92	80 - 120	2016-07-29
1,2,3-Trichlorobenzene		1,2,3,4	µg/L	50.0	47.5	95	80 - 120	2016-07-29
1,2,4-Trichlorobenzene		1,2,3,4	µg/L	50.0	53.7	107	80 - 120	2016-07-29
Naphthalene		1,2,3,4	µg/L	50.0	46.4	93	80 - 120	2016-07-29
Hexachlorobutadiene		1,2,3,4	µg/L	50.0	53.9	108	80 - 120	2016-07-29

Standard (CCV-1)

QC Batch: 131836

Date Analyzed: 2016-08-02

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/L	500	430	86	80 - 120	2016-08-02

Standard (CCV-2)

QC Batch: 131836

Date Analyzed: 2016-08-02

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/L	500	414	83	80 - 120	2016-08-02

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	NELAP	T104704219-16-12	Lubbock
4		2015-066	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

- 1 Dilution due to turbidity.
- 2 Dilution due to turbidity.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

From: Keyes, Jamie, EMNRD [mailto:Jamie.Keyes@state.nm.us]
Sent: Monday, August 22, 2016 8:37 AM
To: Castellano, Sheila Fennell (Contractor)
Cc: Martino, Mary K; Oberding, Tomas, EMNRD; Lynch, Kristen, EMNRD
Subject: RE: EPNG Line 3031_Request to Backfill Rupture Sites 1 - 4

Good morning,

Permission to backfill is granted for 1, 3, and 4 as those soil samples look good. However, 2 has elevated chlorides and will need further delineation.

Thank you,

Jamie R. Keyes
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
(575) 393-6161 ext. 113
575-370-3188 (emergency-cell)

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Castellano, Sheila Fennell (Contractor) [mailto:Sheila_Castellano@KinderMorgan.com]
Sent: Wednesday, August 17, 2016 4:19 PM
To: Lynch, Kristen, EMNRD; Keyes, Jamie, EMNRD
Cc: Martino, Mary K; Oberding, Tomas, EMNRD
Subject: EPNG Line 3031_Request to Backfill Rupture Sites 1 - 4

Mr. Keyes,

EPNG has become concerned about cattle roaming in the vicinity of our L3031 Project, located in Lea County, NM.
We would like to request approval to backfill the open trench at the following rupture site locations:

Rupture #1 - 33.057840N, -103.164042W
Rupture #2 - 33.108137N, -103.128895W.
Rupture #3 - 33.132511N, -103.111687W
Rupture #4 - 33.097587N, -103.136577W

Thank you,
Sheila Castellano



Sheila Castellano - Contractor Consultant
2 North Nevada Ave
Colorado Springs, CO 80903
o: 719 520-3719
c: 719 352-1367

From: Lynch, Kristen, EMNRD [mailto:Kristen.Lynch@state.nm.us]
Sent: Wednesday, August 17, 2016 7:55 AM
To: Castellano, Sheila Fennell (Contractor)
Cc: Keyes, Jamie, EMNRD
Subject: 1RP 4397 EPNG Line 3031 Rupture #3 Initial C141

4397	8/15/2016	A	El Paso Natural Gas	El Paso Natural Gas Co Line 3031 (Rupture #3)	14S 38E 5 SE/4	7/28/2016
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Good Morning,

The Initial C141 has been reviewed, the RP # for this event is RP 4397.

Thank You,

*Kristen D. Lynch
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
(575) 393-6161 ext. 111
575-370-3180 (emergency-cell)*

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.