



March 21, 2007

VIA: HAND DELIVERY

Mr. Larry Johnson
Environmental Engineer
New Mexico Oil Conservation Division – District I
1625 North French Drive
Hobbs, New Mexico 88240

Re: 1RP-747 - Final Report
Chesapeake Operating, Inc., Ollie J. Boyd Tank Battery, Unit C (NE/4, NW/4), Section 23, Township 22 South, Range 37 East, Lea County, New Mexico

Dear Mr. Johnson:

This letter is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Chesapeake Operating, Inc. (Chesapeake) by Larson and Associates Inc. (LAI), its consultant, and presents the final results for remediation of a crude oil spill that occurred at the Ollie J. Boyd Tank Battery (Site) in unit C (NE/4, NW/4), Section 23, Township 22 South, Range 37 East, Lea County, New Mexico. The Site is located at latitude north 32° 22' 51.1" and longitude west 103° 08' 16.9". Figure 1 presents a location and topographic map. Figure 2 presents a Site drawing. Contact information for Chesapeake is as follows:

Name: Harlan Brown
Title: Safety & Environmental Representative
Address: 6100 N. Western Avenue
Oklahoma City, Oklahoma 73118
Telephone: (405) 767-4446
Email: hbrown@chkenergy.com

Chronology

On May 2, 2006, Chesapeake discovered a leak in a transfer between the separator and oil tanks. The leak caused 5 to 10 barrels (bbl) of crude oil to flow north and east of the tank battery. Verbal notification was provided to the OCD on May 3, 2006, and form C-141 was submitted to the OCD on May 10, 2006. A document titled, "*Crude Oil Leak Investigation Report and Remediation Work Plan, Chesapeake Operating, Inc., Ollie J. Boyd Tank Battery, Unit Letter C (NE/4, NW/4), Section 23, Township 22 South, Range 37 East, Lea County, New Mexico*" was submitted to the OCD on July 20, 2006, and contained delineation sample results and a work plan to remediate the spill. Chesapeake proposed to remediate the spill concurrent with remediation of an old battery located north of the spill. The remediation plan for the old tank battery was approved by the OCD in Santa Fe, New Mexico on October 27, 2006.

Remediation

No wells or surface water is present within 1,000 horizontal feet of the Site. Shale is present at approximately 40 feet beneath the Site and no ground water was observed above the shale. Ground water was not in the shale in borings advanced to approximately 55 feet below ground surface (bgs). Recommended remediation action levels (RRAL) for benzene, BTEX (sum of benzene, toluene, ethyl benzene and xylene) and total petroleum hydrocarbons (TPH) are as follows:

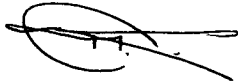
- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 1,000 mg/Kg

Mr. Larry Johnson
March 20, 2007
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The spill was excavated to a maximum depth of about 8 feet bgs and contaminated soil was hauled to Sundance Services, Inc., located east of Eunice, New Mexico. Initial samples were collected from the bottom and sides of the excavation (GS-1 through GS-16) on March 8, 2007. The samples were submitted under chain-of-custody control to Trace Analysis, Inc., and analyzed for TPH by method SW-846-8015B, including gasoline range organics (GRO) and diesel range organics (DRO). All samples, except GS-7 and GS-10, reported TPH below the RRAL. The TPH in samples GS-7 and GS-10 was 2,692 milligrams per kilogram (mg/Kg) and 5,720 mg/Kg, respectively. On March 16, 2007, additional soil was excavated from locations GS-7 and GS-10. The final TPH concentrations were below the RRAL. Chloride was less than 250 mg/Kg in all samples, except GS-11 (562 mg/Kg) and GS-16 (1,570 mg/Kg). Additional soil was removed from location GS-16. The excavation will be filled with clean soil. Chesapeake requests OCD permission to fill the excavation and approve the closure of 1RP-747. Table 1 presents a summary of the laboratory results. Appendix A presents the initial C-141. Appendix B presents the laboratory reports. Appendix C presents photographs. Appendix D presents the final C-141. Please call Mr. Harlan Brown at (405) 767-4446 or email hbrown@chkenergy.com. I may be reached with questions at (432) 687-0901 or email mark@laenvironmental.com.

Sincerely,

Larson and Associates, Inc.



Mark J. Larson, P.G., C.P.G., C.G.W.P.
Sr. Project Manager / President

Encl.

cc: Harlan Brown/Chesapeake
Brad Blevins/Chesapeake

Tables

Table 1
1RP-747

Summary of Laboratory Analysis of Remediation Soil Samples
Chesapeake Operating, Inc., Ollie J. Boyd Tank Battery
Unit C (NW/4,NW/4), Section 23, Township 22 South, Range 37 East
Lea County, New Mexico

Page 1 of 2

Sample	Date	Depth (Feet BGS)	Location	Status	PID (ppm)	GRO C6 - C10 (mg/kg)	DRO C10 - C28 (mg/kg)	TPH C6 - C28 (mg/kg)	Chloride (mg/kg)
RRAL: 1,000									
GS-1	03/08/2007	3	Southwest / Side	In-Situ	2.0	1.66	645	646.66	175
GS-2	03/08/2007	3	West / Side	In-Situ	0.1	1.02	<50	1.02	193
GS-3	03/08/2007	3	West / Side	In-Situ	15.9	1.95	<50	1.95	203
GS-4	03/08/2007	3	West / Side	In-Situ	31.2	2.16	<50	2.16	136
GS-5	03/08/2007	3	West / Side	In-Situ	0.2	<1.00	<50	<51	105
GS-6	03/08/2007	3	South / Side	In-Situ	0.1	<1.00	<50	<51	178
GS-7	03/08/2007	3	South / Side	Excavated	52.3	882	1,810	2,692	80.6
GS-7A	03/16/2007	3	South / Side	In-Situ	60.4	11.7	<50	11.7	--
GS-8	03/08/2007	3	South / Side	In-situ	1.5	12.6	<50	12.6	186
GS-9	03/08/2007	5	Southwest / Bottom	In-situ	20.5	6.06	<50	6.06	199
GS-10	03/08/2007	3	West / Bottom	Excavated	70.3	2,150	3,570	5,720	227
GS-10A	03/16/2007	5	West / Bottom	In-Situ	95.1	132	209	341	--
GS-11	03/08/2007	6	West / Bottom	In-Situ	28.2	251	167	418	562
GS-12	03/08/2007	8	Center / Bottom	In-Situ	2.3	12.5	<50	12.5	88.1

Table 1

1RP-747

Summary of Laboratory Analysis of Remediation Soil Samples

Chesapeake Operating, Inc., Ollie J. Boyd Tank Battery

Unit C (NW/4,NW/4), Section 23, Township 22 South, Range 37 East

Lea County, New Mexico

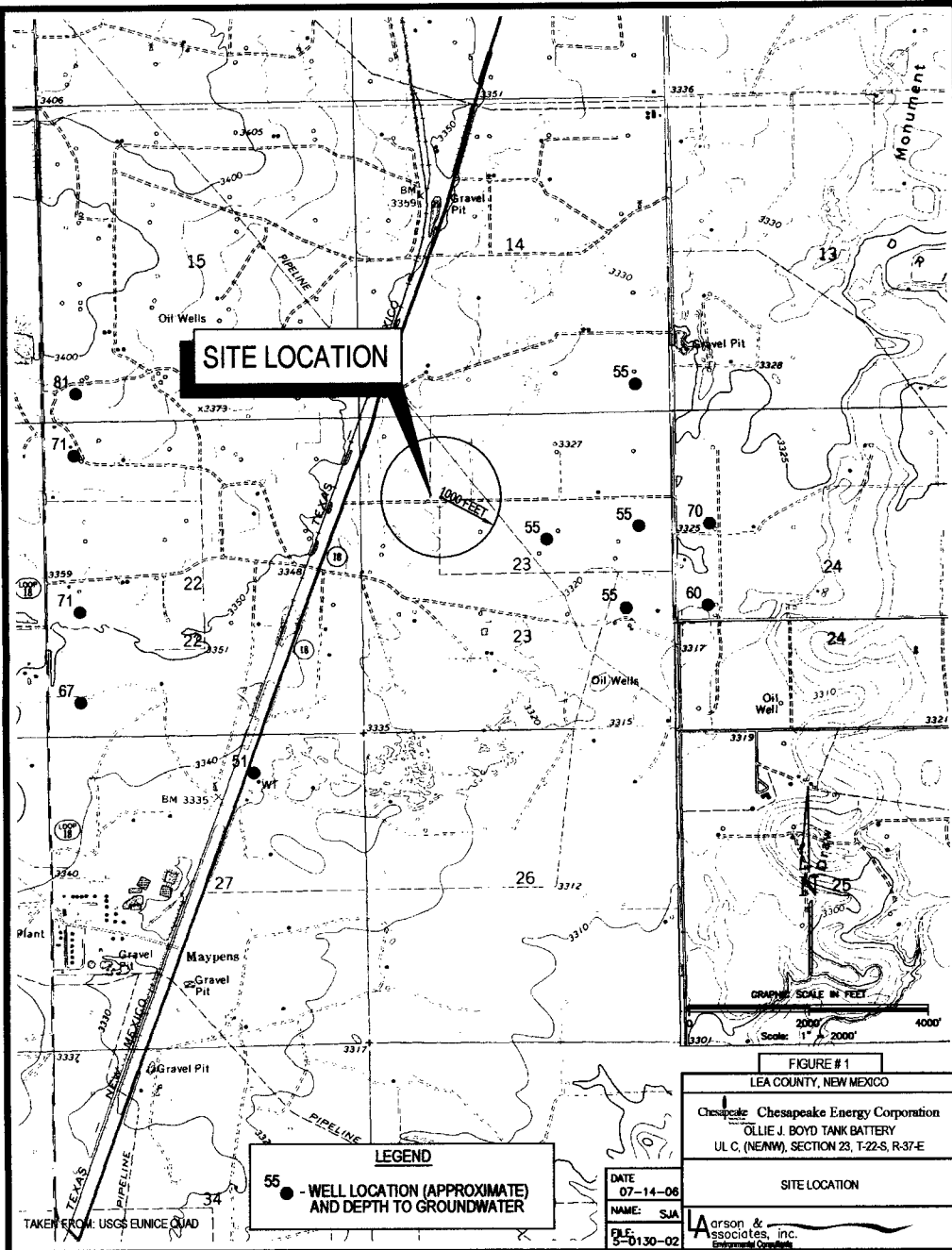
Page 2 of 2

Sample	Date	Depth (Feet BGS)	Location	Status	PID (ppm)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
RRAL:									
GS-13	03/08/2007	8	Center / Bottom	In-Situ	77.2	17.7	<50	17.7	126
GS-14	03/08/2007	8	Center / Bottom	In-situ	62.9	112	665	777	130
GS-15	03/08/2007	6	East / Bottom	In-Situ	15.3	10.2	325	335.2	126
GS-16	03/08/2007	3	East / Bottom	In-Situ	13.8	20.1	156	176.1	1570

Notes: Analysis performed by Trace Analysis, Inc., Midland, Texas

1. BGS: Depth in feet below ground surface
2. mg/Kg: Milligrams per kilogram
3. GRO: Gasoline - range organics
4. DRO: Diesel - range organics
5. TPH: Total Petroleum Hydrocarbons (Sum of GRO + DRO)
6. <: Less than method detection limit
7. --: No analysis performed

Figures



ANADARKO
PETROL LMPSU
WELL #2

IRVIN BOY
PROPERTY

VISUAL
IDENTIFIED
RELEASE
AREA

GAS ME

VISUAL
IDENTIFIED
RELEASE
AREA

3' x 10' SEPARATOR BATTERY

4' x 20' HEATER TREATER

LEGEND

- - AUGER BORING LOCATION
- - ROTARY BORING LOCATION

IRVIN BOY
PROPERTY

GRAPHIC SCALE IN FEET

0 80' 120'
Scale: 1" = 80'

FIGURE #2

LEA COUNTY, NEW MEXICO

Chesapeake Energy Corporation
OLLIE J. BOYD TANK BATTERY
UL C, (NENW), SECTION 28, T-22-S, R-37-E

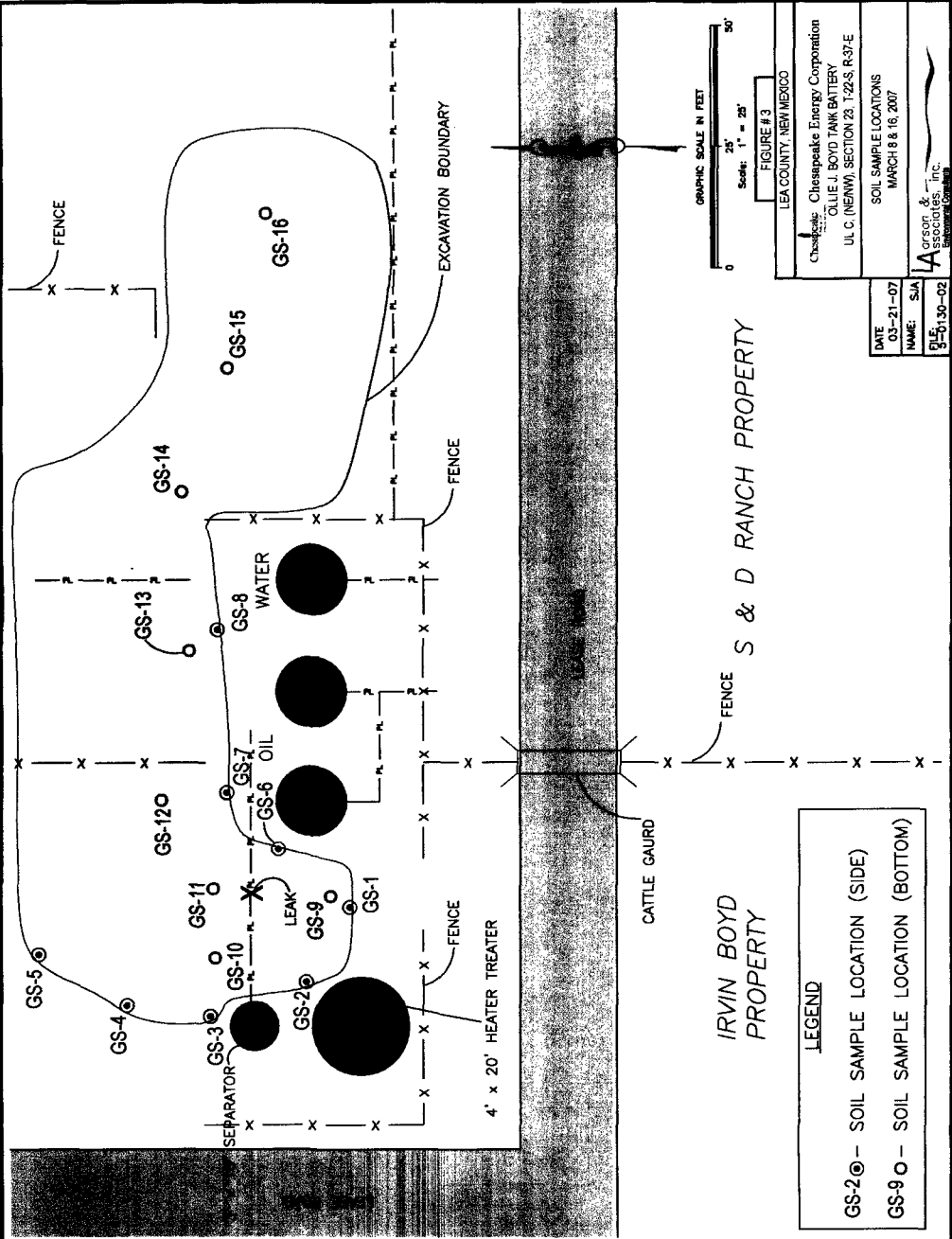
DETAILED DRAWING

DATE
07-14-06

NAME: SJA

FILE:
9-0130-02

Larson &
Associates, Inc.
Reservoir Containment



Appendix A

Initial C-141

HWY-19-06 10:21 From:

T-234 P.02/02 Job-437

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88218
District III
1000 Elm Street 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 October 18, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Champeco Operating, Inc.	Contact: Brad Blowing, E&A Representative
Address: 5014 W. Carlisle Highway, Hobbs, NM	Telephone No.: (505) 391-1462
Facility Name: Office J. Boyd Tank Battery	Facility Type: 2" crude oil line
Surface Owner: Irvin Boyd	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Foot from the	North/South Line	Foot from the	East/West Line	County: Lea
C	23	22S	37E					

Latitude: North 32° 22' 51.1" Longitude: West 103° 08' 16.9"

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: 3 - 10 ML	Volume Recovered: 9 ML
Source of Release: Hole in 2" line from separator to tank	Date and Hour of Occurrence: 05/02/2006, 13:00 hrs	Date and Hour of Discovery: 05/02/2006, 13:00
Was immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Leak reported to operator by Mark Larson and to OGD by operator representative (Brad Blowing)	
By Whom? Brad Blowing	Date and Hour (GUTS) (hour unknown)	
Was a Wellstream Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Wellstream.	
If a Wellstream was impacted, Describe Fully.		

Describe Cause of Problem and Remedial Action Taken: Hole developed in 2" line from separator to tank. Leak was isolated and line was replaced on 05/02/06. Spill will be investigated consistent with a work plan that was submitted to OGD for the site on February 25, 2006 and approved on March 24, 2006 (see attached pages). A remediation plan will be submitted following leak assessment.

Describe Area Affected and Cleanup Action Taken: Release affected area approximately 10' x 125' on the north side of road. Leak was isolated and line was replaced.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that providing this information to the OGD is required and constitutes an essential part of the operator's obligation to protect public health or the environment. The acceptance of a C-141 report by the OGD as a "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, MMOCD 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: 		OIL CONSERVATION DIVISION	
Printed Name: Mark L. Larson, Larson and Associates, Inc.		Approved by District Supervisor:	
Title: Agent/Consultant	Approval Date:	Expiration Date:	
E-mail Address: mark@larsonassociates.com	Conditions of Approval:	Attached ☐	
Date: May 10, 2006	Phone: (505) 667-6901		

* Attach Additional Sheets If Necessary

Appendix B

Laboratory Reports

6701 Anderson Avenue, Suite 9	El Paso, Texas 79924	806/398-2295	806/398-2296	FAX: 806/398-1289
200 East Sunset Road, Suite E	El Paso, Texas 79912	806/389-0344	806/389-0343	FAX: 806/389-0342
5102 Basin Street, Suite A	Midland, Texas 79703	432/686-6301	432/686-6302	FAX: 432/686-6313
6615 Harms Parkway, Suite 110	Fort Worth, Texas 76112	817/791-5270	817/791-5271	

E-Mail: info@hcsa.org

Analytical and Quality Control Report

Michelle Green
Larson and Associates, Inc.
P. O. Box 50685
Midland, Tx, 79710

Report Date: March 14, 2007

Work Order: 7030917



Project Name: Ollie Boyd
Project Number: 5-0130-01

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
118458	GS-1	soil	2007-03-08	13:43	2007-03-09
118459	GS-2	soil	2007-03-08	13:50	2007-03-09
118460	GS-3	soil	2007-03-08	14:00	2007-03-09
118461	GS-4	soil	2007-03-08	14:05	2007-03-09
118462	GS-5	soil	2007-03-08	14:10	2007-03-09
118463	GS-6	soil	2007-03-08	14:15	2007-03-09
118464	GS-7	soil	2007-03-08	14:20	2007-03-09
118465	GS-8	soil	2007-03-08	14:26	2007-03-09
118466	GS-9	soil	2007-03-08	14:34	2007-03-09
118467	GS-10	soil	2007-03-08	14:40	2007-03-09
118468	GS-11	soil	2007-03-08	14:45	2007-03-09
118469	GS-12	soil	2007-03-08	14:52	2007-03-09
118470	GS-13	soil	2007-03-08	14:58	2007-03-09
118471	GS-14	soil	2007-03-08	15:03	2007-03-09
118472	GS-15	soil	2007-03-08	15:10	2007-03-09
118473	GS-16	soil	2007-03-08	15:15	2007-03-09

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.

This report consists of a total of 18 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blair Leftwich

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Analytical Report

Sample: 118458 - GS-1

Analysis: TPH DRO	Analytical Method: Mod. 8015B	Prep Method: N/A
QC Batch: 35457	Date Analyzed: 2007-03-12	Analyzed By: WR
Prep Batch: 30770	Sample Preparation: 2007-03-09	Prepared By: WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		645	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	1	427	mg/Kg	1	150	285	32.9 - 167

Sample: 118458 - GS-1

Analysis: TPH GRO	Analytical Method: S 8015B	Prep Method: S 5035
QC Batch: 35412	Date Analyzed: 2007-03-09	Analyzed By: ss
Prep Batch: 30727	Sample Preparation: 2007-03-09	Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	1.66	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.821	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	67.5 - 140.3

Sample: 118459 - GS-2

Analysis: TPH DRO	Analytical Method: Mod. 8015B	Prep Method: N/A
QC Batch: 35457	Date Analyzed: 2007-03-12	Analyzed By: WR
Prep Batch: 30770	Sample Preparation: 2007-03-09	Prepared By: WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		209	mg/Kg	1	150	139	32.9 - 167

Sample: 118459 - GS-2

Analysis: TPH GRO	Analytical Method: S 8015B	Prep Method: S 5035
QC Batch: 35412	Date Analyzed: 2007-03-09	Analyzed By: ss
Prep Batch: 30727	Sample Preparation: 2007-03-09	Prepared By: ss

¹High surrogate recovery due to peak interference.

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	1.02	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.800	mg/Kg	1	1.00	80	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	1	1.00	104	67.5 - 140.3

Sample: 118460 - GS-3

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 35457 Date Analyzed: 2007-03-12 Analyzed By: WR
Prep Batch: 30770 Sample Preparation: 2007-03-09 Prepared By: WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		215	mg/Kg	1	150	143	32.9 - 167

Sample: 118460 - GS-3

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss
Prep Batch: 30727 Sample Preparation: 2007-03-09 Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	1.95	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.818	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.06	mg/Kg	1	1.00	106	67.5 - 140.3

Sample: 118461 - GS-4

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 35457 Date Analyzed: 2007-03-12 Analyzed By: WR
Prep Batch: 30770 Sample Preparation: 2007-03-09 Prepared By: WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		203	mg/Kg	1	150	135	32.9 - 167

Sample: 118461 - GS-4

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss
Prep Batch: 30727 Sample Preparation: 2007-03-09 Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	2.16	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.825	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	67.5 - 140.3

Sample: 118462 - GS-5

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 35457 Date Analyzed: 2007-03-12 Analyzed By: WR
Prep Batch: 30770 Sample Preparation: 2007-03-09 Prepared By: WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		245	mg/Kg	1	150	163	32.9 - 167

Sample: 118462 - GS-5

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss
Prep Batch: 30727 Sample Preparation: 2007-03-09 Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.809	mg/Kg	1	1.00	81	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.05	mg/Kg	1	1.00	105	67.5 - 140.3

Sample: 118463 - GS-6

Analysis: TPH DRO
QC Batch: 35457
Prep Batch: 30770

Analytical Method: Mod. 8015B
Date Analyzed: 2007-03-12
Sample Preparation: 2007-03-09

Prep Method: N/A
Analyzed By: WR
Prepared By: WR

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		208	mg/Kg	1	150	139	32.9 - 167

Sample: 118463 - GS-6

Analysis: TPH GRO
QC Batch: 35412
Prep Batch: 30727

Analytical Method: S 8015B
Date Analyzed: 2007-03-09
Sample Preparation: 2007-03-09

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.812	mg/Kg	1	1.00	81	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	1	1.00	104	67.5 - 140.3

Sample: 118464 - GS-7

Analysis: TPH DRO
QC Batch: 35545
Prep Batch: 30841

Analytical Method: Mod. 8015B
Date Analyzed: 2007-03-14
Sample Preparation: 2007-03-13

Prep Method: N/A
Analyzed By: SE
Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		1810	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		199	mg/Kg	1	150	133	62.5 - 164

Sample: 118464 - GS-7

Analysis: TPH GRO
QC Batch: 35466
Prep Batch: 30774

Analytical Method: S 8015B
Date Analyzed: 2007-03-11
Sample Preparation: 2007-03-11

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		882	mg/Kg	20	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		21.4	mg/Kg	20	20.0	107	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)	2	46.2	mg/Kg	20	20.0	231	67.5 - 140.3

Sample: 118465 - GS-8

Analysis: TPH DRO	Analytical Method: Mod. 8015B	Prep Method: N/A
QC Batch: 35545	Date Analyzed: 2007-03-14	Analyzed By: SE
Prep Batch: 30841	Sample Preparation: 2007-03-13	Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		188	mg/Kg	1	150	125	62.5 - 164

Sample: 118465 - GS-8

Analysis: TPH GRO	Analytical Method: S 8015B	Prep Method: S 5035
QC Batch: 35412	Date Analyzed: 2007-03-09	Analyzed By: ss
Prep Batch: 30727	Sample Preparation: 2007-03-09	Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		12.6	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.821	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.15	mg/Kg	1	1.00	115	67.5 - 140.3

Sample: 118466 - GS-9

Analysis: TPH DRO	Analytical Method: Mod. 8015B	Prep Method: N/A
QC Batch: 35545	Date Analyzed: 2007-03-14	Analyzed By: SE
Prep Batch: 30841	Sample Preparation: 2007-03-13	Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

²High surrogate recovery due to peak interference.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		189	mg/Kg	1	150	126	62.5 - 164

Sample: 118466 - GS-9

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss
Prep Batch: 30727 Sample Preparation: 2007-03-09 Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	6.06	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.803	mg/Kg	1	1.00	80	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	1	1.00	104	67.5 - 140.3

Sample: 118467 - GS-10

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 35545 Date Analyzed: 2007-03-14 Analyzed By: SE
Prep Batch: 30841 Sample Preparation: 2007-03-13 Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		3570	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		213	mg/Kg	1	150	142	62.5 - 164

Sample: 118467 - GS-10

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35466 Date Analyzed: 2007-03-11 Analyzed By: AG
Prep Batch: 30774 Sample Preparation: 2007-03-11 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		2150	mg/Kg	100	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		110	mg/Kg	100	100	110	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		137	mg/Kg	100	100	137	67.5 - 140.3

Sample: 118468 - GS-11

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	35545	Date Analyzed:	2007-03-14	Analyzed By:	SE
Prep Batch:	30841	Sample Preparation:	2007-03-13	Prepared By:	SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		167	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		192	mg/Kg	1	150	128	62.5 - 164

Sample: 118468 - GS-11

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	35466	Date Analyzed:	2007-03-11	Analyzed By:	AG
Prep Batch:	30774	Sample Preparation:	2007-03-11	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		251	mg/Kg	10	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.11	mg/Kg	10	10.0	91	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		14.0	mg/Kg	10	10.0	140	67.5 - 140.3

Sample: 118469 - GS-12

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	35545	Date Analyzed:	2007-03-14	Analyzed By:	SE
Prep Batch:	30841	Sample Preparation:	2007-03-13	Prepared By:	SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		172	mg/Kg	1	150	115	62.5 - 164

Sample: 118469 - GS-12

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	35412	Date Analyzed:	2007-03-09	Analyzed By:	ss
Prep Batch:	30727	Sample Preparation:	2007-03-09	Prepared By:	ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		12.5	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.816	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	67.5 - 140.3

Sample: 118470 - GS-13

Analysis: TPH DRO	Analytical Method: Mod. 8015B	Prep Method: N/A
QC Batch: 35545	Date Analyzed: 2007-03-14	Analyzed By: SE
Prep Batch: 30841	Sample Preparation: 2007-03-13	Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		192	mg/Kg	1	150	128	62.5 - 164

Sample: 118470 - GS-13

Analysis: TPH GRO	Analytical Method: S 8015B	Prep Method: S 5035
QC Batch: 35412	Date Analyzed: 2007-03-09	Analyzed By: ss
Prep Batch: 30727	Sample Preparation: 2007-03-09	Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		17.7	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.826	mg/Kg	1	1.00	83	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.21	mg/Kg	1	1.00	121	67.5 - 140.3

Sample: 118471 - GS-14

Analysis: TPH DRO	Analytical Method: Mod. 8015B	Prep Method: N/A
QC Batch: 35545	Date Analyzed: 2007-03-14	Analyzed By: SE
Prep Batch: 30841	Sample Preparation: 2007-03-13	Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		665	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		212	mg/Kg	1	150	141	62.5 - 164

Sample: 118471 - GS-14

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35466 Date Analyzed: 2007-03-11 Analyzed By: AG
Prep Batch: 30774 Sample Preparation: 2007-03-11 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		112	mg/Kg	5	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.05	mg/Kg	5	5.00	81	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		6.29	mg/Kg	5	5.00	126	67.5 - 140.3

Sample: 118472 - GS-15

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 35345 Date Analyzed: 2007-03-14 Analyzed By: SE
Prep Batch: 30841 Sample Preparation: 2007-03-13 Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		325	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		190	mg/Kg	1	150	127	62.5 - 164

Sample: 118472 - GS-15

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss
Prep Batch: 30727 Sample Preparation: 2007-03-09 Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		10.2	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.799	mg/Kg	1	1.00	80	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.01	mg/Kg	1	1.00	101	67.5 - 140.3

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Sample: 118473 - GS-16

Analysis: TPH DRO
QC Batch: 35545
Prep Batch: 30841

Analytical Method: Mod. 8015B
Date Analyzed: 2007-03-14
Sample Preparation: 2007-03-13

Prep Method: N/A
Analyzed By: SE
Prepared By: SE

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		156	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		199	mg/Kg	1	150	133	62.5 - 164

Sample: 118473 - GS-16

Analysis: TPH GRO
QC Batch: 35412
Prep Batch: 30727

Analytical Method: S 8015B
Date Analyzed: 2007-03-09
Sample Preparation: 2007-03-09

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		20.1	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.836	mg/Kg	1	1.00	84	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	67.5 - 140.3

Method Blank (1) QC Batch: 35412

QC Batch: 35412
Prep Batch: 30727

Date Analyzed: 2007-03-09
QC Preparation: 2007-03-09

Analyzed By: ss
Prepared By: ss

Parameter	Flag	MDL Result	Units	RL
GRO		0.835	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.00	mg/Kg	1	1.00	100	67.5 - 140.3

Method Blank (1) QC Batch: 35457

QC Batch: 35457
Prep Batch: 30770

Date Analyzed: 2007-03-12
QC Preparation: 2007-03-09

Analyzed By: WR
Prepared By: WR

Parameter	Flag	MDL Result	Units	RL
DRO		<9.07	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		153	mg/Kg	1	150	102	44.7 - 133.6

Method Blank (1) QC Batch: 35466

QC Batch: 35466
Prep Batch: 30774

Date Analyzed: 2007-03-11
QC Preparation: 2007-03-11

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO	3	0.971	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.920	mg/Kg	1	1.00	92	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.00	mg/Kg	1	1.00	100	67.5 - 140.3

Method Blank (1) QC Batch: 35545

QC Batch: 35545
Prep Batch: 30841

Date Analyzed: 2007-03-14
QC Preparation: 2007-03-14

Analyzed By: SE
Prepared By: SE

Parameter	Flag	MDL Result	Units	RL
DRO		<10.7	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		180	mg/Kg	1	150	120	62.5 - 164

Laboratory Control Spike (LCS-1)

QC Batch: 35412
Prep Batch: 30727

Date Analyzed: 2007-03-09
QC Preparation: 2007-03-09

Analyzed By: ss
Prepared By: ss

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	9.86	mg/Kg	1	10.0	<0.739	99	57.7 - 102.5

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

³MS/MSD were not run with these samples due to the high amount of hydrocarbons in the sample. Use LCS/LCSD to demonstrate that method is within control. •

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	9.57	mg/Kg	1	10.0	<0.739	96	57.7 - 102.5	3	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)	1.14	1.14	mg/Kg	1	1.00	114	114	36.8 - 152.5
4-Bromofluorobenzene (4-BFB)	1.02	1.02	mg/Kg	1	1.00	102	102	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 35457
Prep Batch: 30770

Date Analyzed: 2007-03-12
QC Preparation: 2007-03-09

Analyzed By: WR
Prepared By: WR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	261	mg/Kg	1	250	<9.07	104	47.5 - 144.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	255	mg/Kg	1	250	<9.07	102	47.5 - 144.1	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-Triacontane ⁴	191	210	mg/Kg	1	150	127	140	57.3 - 131.6

Laboratory Control Spike (LCS-1)

QC Batch: 35466
Prep Batch: 30774

Date Analyzed: 2007-03-11
QC Preparation: 2007-03-11

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	9.48	mg/Kg	1	10.0	<0.739	95	57.7 - 102.5

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	9.41	mg/Kg	1	10.0	<0.739	94	57.7 - 102.5	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
Trifluorotoluene (TFT)	1.17	1.09	mg/Kg	1	1.00	117	109	36.8 - 152.5
4-Bromofluorobenzene (4-BFB)	1.12	1.17	mg/Kg	1	1.00	112	117	70 - 130

⁴Surrogate out of control limits. LCS and RPD shows extraction process done correctly. Therefore method is shown to be in control.

Laboratory Control Spike (LCS-1)

QC Batch: 35545
Prep Batch: 30841

Date Analyzed: 2007-03-14
QC Preparation: 2007-03-14

Analyzed By: SE
Prepared By: SE

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	234	mg/Kg	1	250	<10.7	94	64.1 - 124

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	263	mg/Kg	1	250	<10.7	105	64.1 - 124	12	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Triacontane	177	180	mg/Kg	1	150	118	120	62.5 - 164

Matrix Spike (MS-1) Spiked Sample: 118458

QC Batch: 35412
Prep Batch: 30727

Date Analyzed: 2007-03-09
QC Preparation: 2007-03-09

Analyzed By: ss
Prepared By: ss

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	8.12	mg/Kg	1	10.0	1.66	65	10 - 141.5

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	8.04	mg/Kg	1	10.0	1.66	80	10 - 141.5	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
Trifluorotoluene (TFT)	0.705	0.711	mg/Kg	1	1	70	71	40 - 125.3
4-Bromofluorobenzene (4-BFB)	1.15	1.14	mg/Kg	1	1	115	114	86.7 - 144.5

Matrix Spike (MS-1) Spiked Sample: 118458

QC Batch: 35457
Prep Batch: 30770

Date Analyzed: 2007-03-12
QC Preparation: 2007-03-09

Analyzed By: WR
Prepared By: WR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	⁵ 224	mg/Kg	1	250	224.52	0	11.7 - 152.3

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

⁵Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	⁶ 273	mg/Kg	1	250	224.52	0	11.7 - 152.3	20	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-Triacontane	189	224	mg/Kg	1	150	126	149	17 - 163.1

Matrix Spike (MS-1) Spiked Sample: 118465

QC Batch: 35545 Date Analyzed: 2007-03-14 Analyzed By: SE
Prep Batch: 30841 QC Preparation: 2007-03-14 Prepared By: SE

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	225	mg/Kg	1	250	<10.7	90	47.5 - 127

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	214	mg/Kg	1	250	<10.7	86	47.5 - 127	5	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-Triacontane	181	180	mg/Kg	1	150	121	120	62.5 - 164

Standard (ICV-1)

QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.03	103	85 - 115	2007-03-09

Standard (CCV-1)

QC Batch: 35412 Date Analyzed: 2007-03-09 Analyzed By: ss

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.988	99	85 - 115	2007-03-09

Standard (ICV-1)

QC Batch: 35457 Date Analyzed: 2007-03-12 Analyzed By: WR

⁶Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	255	102	85 - 115	2007-03-12

Standard (CCV-1)

QC Batch: 35457

Date Analyzed: 2007-03-12

Analyzed By: WR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	247	99	85 - 115	2007-03-12

Standard (ICV-1)

QC Batch: 35466

Date Analyzed: 2007-03-11

Analyzed By: AG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.12	112	85 - 115	2007-03-11

Standard (CCV-1)

QC Batch: 35466

Date Analyzed: 2007-03-11

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.14	114	85 - 115	2007-03-11

Standard (CCV-2)

QC Batch: 35466

Date Analyzed: 2007-03-11

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.02	102	85 - 115	2007-03-11

Standard (ICV-1)

QC Batch: 35545

Date Analyzed: 2007-03-14

Analyzed By: SE

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	287	115	85 - 115	2007-03-14

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Standard (CCV-1)

QC Batch: 35545

Date Analyzed: 2007-03-14

Analyzed By: SE

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	234	94	85 - 115	2007-03-14

Standard (CCV-2)

QC Batch: 35545

Date Analyzed: 2007-03-14

Analyzed By: SE

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	270	108	85 - 115	2007-03-14

TraceAnalysis, Inc.

email: lab@traceanalysis.com

Company Name: **Larson + Associates**

Address: (Street, City, Zip)

Contact Person: **Michelle Green**

Invoice to:

(If different from above)

Project #:

5-0130-01

Project Location (including state):

New Mexico

Project Name:

Oliver Boyd Historic

Sampler Signature:

M. Larson

Phone #:

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LAB Order ID # 7030917

Page

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ANALYSIS REQUEST (Circle or Specify Method No.)

LAB #	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX				PRESERVATIVE METHOD				DATE	TIME	SAMPLING	Turn Around Time if different from standard
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE			
4158	G-S-1	1		X				X				X	3-8	13:45	X
457	G-S-2	1		X				X				X	13:50		X
460	G-S-3	1		X				X				X	14:00		X
461	G-S-4	1		X				X				X	14:05		X
462	G-S-5	1		X				X				X	14:10		X
463	G-S-6	1		X				X				X	14:15		X
464	G-S-7	1		X				X				X	14:20		X
465	G-S-8	1		X				X				X	14:25		X
466	G-S-9	1		X				X				X	14:30		X
467	G-S-10	1		X				X				X	14:40		X
468	G-S-11	1		X				X				X	14:45		X

RECEIVED BY: *Michelle Green* Date: 7/9/07 8:45
 RECEIVED BY: *Michelle Green* Date: 7/9/07 8:45
 RECEIVED BY: *Michelle Green* Date: 7/9/07 9:50

LAB USE ONLY
 Instruct: *0.7*
 Temp: *0.7*
 Log: *Review*

REMARKS: Report to included 10/10/07
 of J-Flags 48hr
 TAT

☐ Dry Weight Basis Required
☐ TRSP Report Required
☐ Check if Special Reporting
☐ Limits Are Needed

Center # *comg-in*

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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Summary Report

Michelle Green
Larson and Associates, Inc.
P. O. Box 50685
Midland, Tx, 79710

Report Date: March 19, 2007

Work Order: 7031618



Project Name: Ollie Boyd
Project Number: 5-0130-01

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
118997	GS-10A	soil	2007-03-16	10:45	2007-03-16
118998	GS-7A	soil	2007-03-16	11:00	2007-03-16

Sample - Field Code	TPH DRO	TPH GRO
	DRO (mg/kg)	GRO (mg/kg)
118997 - GS-10A	209	132
118998 - GS-7A	<50.0	11.7

Summary Report

Michelle Green
Larson and Associates, Inc.
P. O. Box 50685
Midland, Tx, 79710

Report Date: March 14, 2007

Work Order: 7030917



Project Name: Ollie Boyd
Project Number: 5-0130-01

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
118458	GS-1	soil	2007-03-08	13:43	2007-03-09
118459	GS-2	soil	2007-03-08	13:50	2007-03-09
118460	GS-3	soil	2007-03-08	14:00	2007-03-09
118461	GS-4	soil	2007-03-08	14:05	2007-03-09
118462	GS-5	soil	2007-03-08	14:10	2007-03-09
118463	GS-6	soil	2007-03-08	14:15	2007-03-09
118464	GS-7	soil	2007-03-08	14:20	2007-03-09
118465	GS-8	soil	2007-03-08	14:26	2007-03-09
118466	GS-9	soil	2007-03-08	14:34	2007-03-09
118467	GS-10	soil	2007-03-08	14:40	2007-03-09
118468	GS-11	soil	2007-03-08	14:45	2007-03-09
118469	GS-12	soil	2007-03-08	14:52	2007-03-09
118470	GS-13	soil	2007-03-08	14:58	2007-03-09
118471	GS-14	soil	2007-03-08	15:03	2007-03-09
118472	GS-15	soil	2007-03-08	15:10	2007-03-09
118473	GS-16	soil	2007-03-08	15:15	2007-03-09

Sample: 118458 - GS-1

Param	Flag	Result	Units	RL
Chloride		175	mg/Kg	1.00

Sample: 118459 - GS-2

Param	Flag	Result	Units	RL
Chloride		193	mg/Kg	1.00

Sample: 118460 - GS-3

continued ...

Param	Flag	Result	Units	RL
Chloride		562	mg/Kg	1.00

Sample: 118469 - GS-12

Param	Flag	Result	Units	RL
Chloride		88.1	mg/Kg	1.00

Sample: 118470 - GS-13

Param	Flag	Result	Units	RL
Chloride		126	mg/Kg	1.00

Sample: 118471 - GS-14

Param	Flag	Result	Units	RL
Chloride		130	mg/Kg	1.00

Sample: 118472 - GS-15

Param	Flag	Result	Units	RL
Chloride		126	mg/Kg	1.00

Sample: 118473 - GS-16

Param	Flag	Result	Units	RL
Chloride		1570	mg/Kg	1.00

UL F, (SE/NW), SECTION 23, T-22-S, R-37-E
LEA COUNTY, NEW MEXICO



1. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd
Tank Battery - Location Sign

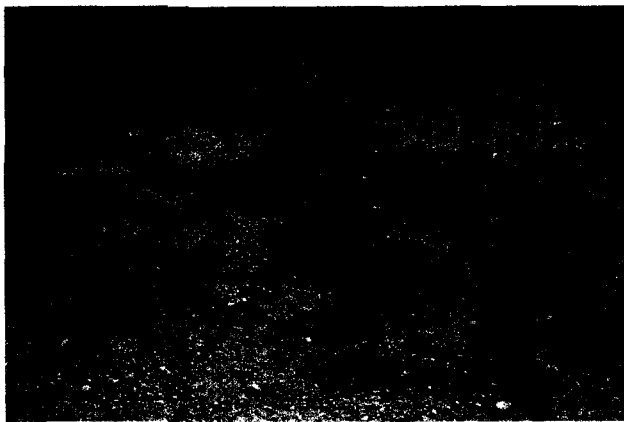


2. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery - Leak Site, Looking North



3. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery - Leak Site, Looking East

UL F, (SE/NW), SECTION 23, T-22-S, R-37-E
LEA COUNTY, NEW MEXICO



4. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery - Leak Site, Looking East



5. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery - Leak Site, Looking West



6. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery Spill - Soil Remediation
Area Near Source Looking South

UL F, (SE/NW), SECTION 23, T-22-S, R-37-E
LEA COUNTY, NEW MEXICO



7. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery Spill - Soil Remediation
Area Near Source Looking West

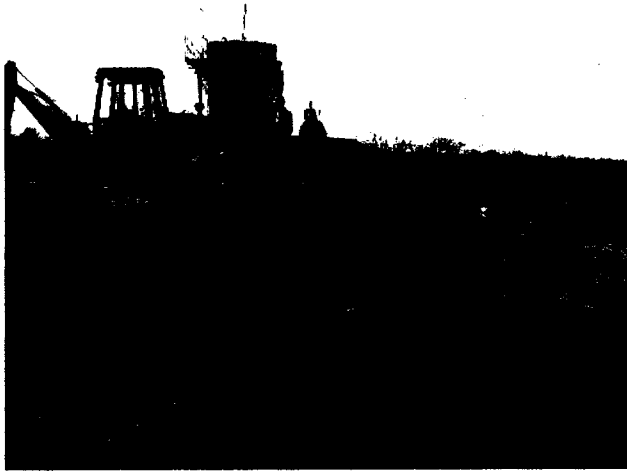


8. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd Tank
Battery Spill - Soil Remediation
Area Near Source Looking
Southeast



9. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd
Tank Battery Spill - Soil
Remediation Area Near East
End Looking West

UL F, (SE/NW), SECTION 23, T-22-S, R-37-E
LEA COUNTY, NEW MEXICO



10. 1RP-747, Chesapeake
Operating, Inc., Ollie J. Boyd
Tank Battery Spill - Soil
Remediation Area Near East End
Looking West

Appendix D

Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

1RP-747

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Chesapeake Operating, Inc.	Contact: Brad Blevins, EH & S Representative	
Address: 5014 W. Carlsbad Hwy., Hobbs, New Mexico 88240	Telephone No.: (505) 391-1462	
Facility Name: Ollie J. Boyd	Facility Type: Production Tank Battery	
Surface Owner: Irvin Boyd	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter C	Section 23	Township 22S	Range 37E	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude: N 32° 22' 51.1" Longitude: W 103° 08' 16.9"

NATURE OF RELEASE

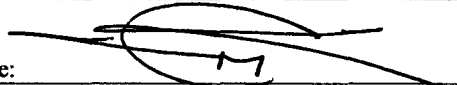
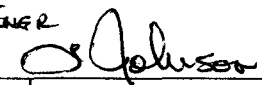
Type of Release: Crude Oil	Volume of Release: 5 - 10 bbl	Volume Recovered: None
Source of Release: Transfer line between separator and tanks	Date and Hour of Occurrence: 05/02/2006 / 13:00 hrs.	Date and Hour of Discovery: 05/02/2006 / 13:00 hrs.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Patricia Caperton	
By Whom? Brad Blevins	Date and Hour: 05/03/2006	
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.* Hole developed in 2" transfer line and approximately 5 to 10 barrels of oil flowed north and east of battery. Leak was stopped and line segment was replaced.

Describe Area Affected and Cleanup Action Taken.* Affected area was estimated to cover approximately 10 x 125 feet adjacent to the north side of the battery. Soil was excavated to a maximum depth of about 8 feet and hauled to Sundance Services near Eunice, New Mexico. Confirmation samples from bottom and sides show TPH below the OCD level of 1,000 mg/Kg. Excavation was filled with clean soil.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Mark J. Larson (Agent to Chesapeake Operating, Inc.)	Approved by District Supervisor: 	
Title: Sr. Project Manager / President, Larson and Associates, Inc.	Approval Date: 3.21.07	Expiration Date: —
E-mail Address: mark@laenvironmental.com	Conditions of Approval: —	Attached ☐
Date: 03/21/2007	Phone: (432) 687-0901	

* Attach Additional Sheets If Necessary