

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



FOR OGCC USE ONLY

RECEIVED
3/14/2012

SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by:

FACILITY ID:

OPERATOR INFORMATION

Name of Operator: <u>Petroleum Development Corporation</u>	OGCC Operator No: <u>69175</u>	Phone Numbers
Address: <u>1775 Sherman Street, Suite 3000</u>	No: <u>(303) 860-5800</u>	
City: <u>Denver</u>	State: <u>CO</u> Zip: <u>80203</u>	Fax: <u>(303) 860-5838</u>
Contact Person: <u>Brandon Bruns</u>		Email: <u>bbruns@petd.com</u>

DESCRIPTION OF SPILL OR RELEASE

Date of Incident: <u>9/20/2011</u>	Facility Name & No: <u>Heinricy 11, 12, 21, 22-7U</u>	County: <u>Weld</u>
Type of Facility (well, tank battery, flow line, pit): <u>Tank Battery</u>	QtrQtr: <u>NWNW</u>	Section: <u>7</u>
Well Name and Number: <u>Heinricy 11-7U</u>	Township: <u>5N</u>	Range: <u>67W</u>
API Number: <u>05-123-24957</u>	Meridian: <u>6th</u>	

Specify volume spilled and recovered (in bbls) for the following materials:

Oil spilled: Unknown Oil recov'd: 0 Water spilled: 0 Water recov'd: 0 Other spilled: 0 Other recov'd 0

Ground Water impacted? ☐ Yes ☒ No Surface Water impacted? ☐ Yes ☒ No

Contained within berm? ☐ Yes ☒ No Area and vertical extent of spill: 30' N-S x 20' E-W x 20' depth

Current land use: Oil and Gas Production Facility/Agriculture Weather conditions: Mid 80s

Soil/geology description: Weld loam, 1 to 3 percent slopes

IF LESS THAN A MILE, report distance IN FEET to nearest ... Surface water: 2,165' NE Wetlands: NA Buildings: 1,055' SW

Livestock: Unknown Water wells: 1,585' SW Depth to shallowest ground water: Unknown

Cause of spill (e.g. equipment failure, human error, etc.): Equipment failure Detailed description of the spill/release incident:

Release occurred at the tank battery related to the Heinricy 11-7U (API 05-123-24957), Heinricy 12-7U (API 05-123-24956), Heinricy 21-7U (API 05-123-24958), and Heinricy 22-7U (API 05-123-24959). The tank battery is located in the NWNW of Sec. 7 as depicted on Figure 1. During equipment upgrades at the facility, PDC discovered a leak in a dump line that released an unknown quantity of condensate to the subsurface.

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered):

PDC shut in the wells feeding the battery. Once the dump line was removed, approximately 295 cubic yards of impacted soil above COGCC Table 910-1 concentration levels were excavated and transported offsite for disposal. Soil samples were collected from the extent of the excavation and were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) EPA Method 8260B; and TPH - diesel range organics (DRO) by EPA Method 8015. Groundwater was not encountered during excavation activities. A topographic site location map and site map are provided as Figures 1 and 2.

Describe any emergency pits constructed: NA

How was the extent of contamination determined?

Laboratory analytical results for soil indicate BTEX, TPH-GRO, and TPH-DRO concentrations for the soil samples collected from the extent of the excavation are in compliance with COGCC Table 910-1 concentration levels (Figure 2). Soil analytical results are summarized in Table 1.

Further remediation activities proposed (attach separate sheet if needed):

Approximately 295 cubic yards of impacted soil exceeding COGCC Table 910-1 concentration levels have been transported to the Waste Management Landfill in Ault, Colorado, for disposal. Based on the analytical results, all impacted material has been removed from the site and PDC is requesting a No Further Action determination.

Describe measures taken to prevent problem from reoccurring:

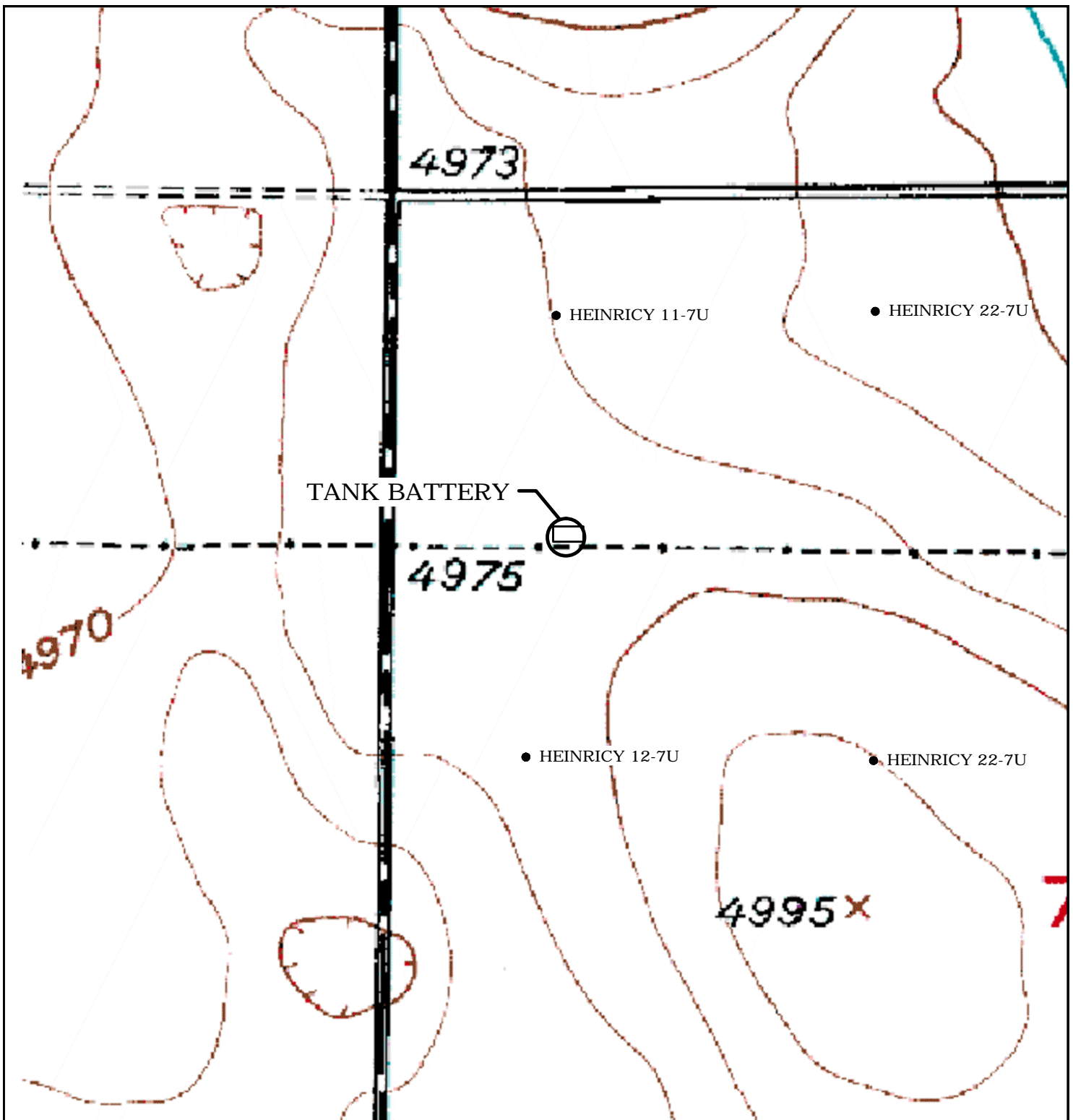
PDC replaced the leaking dump line.

OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

Date	Agency	Contact	Phone	Response

Spill/Release Tracking No: **200344219**



LEGEND

- SITE
- WELL LOCATION

SOURCE: TOPOZONE.COM
USGS 7.5' QUADRANGLE
(NAD27)

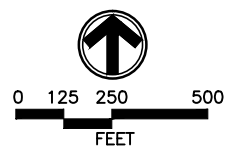
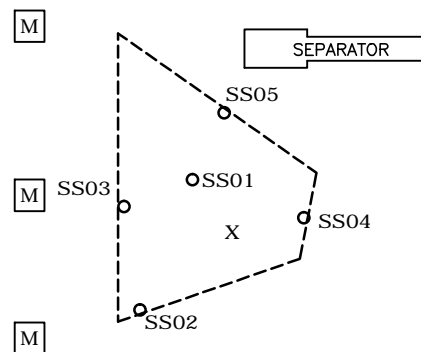
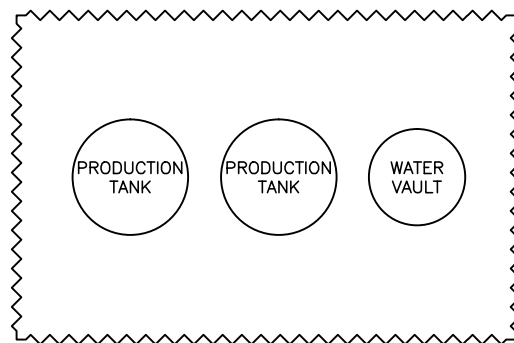


FIGURE 1
SITE LOCATION MAP
HEINRICY 11, 12, 21, 22-7U TANK BATTERY
NWNW 7-T5N-R67W
WELD COUNTY, CO
PETROLEUM DEVELOPMENT CORPORATION



WELD COUNTY ROAD 13



ACCESS ROAD

LEGEND

- SOIL SAMPLE
- [M] METER HOUSE
- X RELEASE
- ~~~~~ STEEL BERM
- EXTENT OF EXCAVATION
- ➡ ESTIMATED GROUNDWATER FLOW DIRECTION

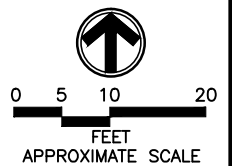


FIGURE 2
SITE MAP
HEINRICY 11, 12, 21, 22-7U TANK BATTERY
NWNW 7-T5N-R67W
WELD COUNTY, CO
PETROLEUM DEVELOPMENT CORPORATION



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
HEINRICY 11, 12, 21, 22 & 7U (API No. 05-123-24957)
WELD COUNTY, COLORADO
PETROLEUM DEVELOPMENT CORPORATION

Sample ID	Depth (ft bgs)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	TPH (mg/kg)
SS01	20	09/20/2011	<0.0050	<0.0050	<0.0050	<0.0050	<50.5
SS02	18	09/20/2011	<0.0050	<0.0050	<0.0050	<0.0050	<50.5
SS03	18	09/20/2011	<0.0050	<0.0050	<0.0050	<0.0050	<50.5
SS04	18	09/20/2011	<0.0050	<0.0050	<0.0050	<0.0050	<50.5
SS05	18	09/20/2011	<0.0050	<0.0050	<0.0050	<0.0050	<50.5
Basic Standards for Soil			0.17	85	100	175	500

Notes:

API - American Petroleum Institute

mg/kg - milligrams per kilogram

TPH - total petroleum hydrocarbons (C6-C28)

ft bgs - feet below ground surface

NA - not analyzed

< - less than stated laboratory reporting limit

Basic Standards for Soil are taken from 2 CCR 404-1, Table 910-1, effective April 1, 2009.

Bold indicates result equalled or exceeded standard.



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 21, 2011

Brian Dodek

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: PDC - Heinrich 11,12,21,22&7U

Enclosed are the results of analyses for samples received by Summit Scientific on 09/20/11 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U

Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	R109114-01	Soil	09/20/11 13:00	09/20/11 18:00
SS02	R109114-02	Soil	09/20/11 13:05	09/20/11 18:00
SS03	R109114-03	Soil	09/20/11 13:10	09/20/11 18:00
SS04	R109114-04	Soil	09/20/11 13:15	09/20/11 18:00
SS05	R109114-05	Soil	09/20/11 13:20	09/20/11 18:00

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinrichy 11,12,21,22&7U

Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

Summit Scientific 2109114

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-277-9531 Fax

Page 1 of 1

Client: LT Environmental, Inc.

Address: 4600 West 60th Avenue

City/State/Zip: Arvada, CO 80003

Phone: (303) 433-9788

Phone: (303) 433-9788

Sampler Name: 57

Sampler Name: Sh...

Sampler Name: Shelley Project Number: 100

Project Number: 3000

Project Number: 3000

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:						Special Instructions
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	DRO	GBTEX	BTEX	PH / EC	SAR	
3501	9/30	1300	1			X				X							
3502	10/1	1303	1			X				X							
3503	10/1	1310	1			X				X							
3504	10/1	1315	1			X				X							
3505	10/1	1320	1			X				X							
Relinquished by: <i>[Signature]</i>	Date/Time: 9/30/11	Received by: <i>[Signature]</i>				Date/Time: 9/30/11				Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours				Notes:			
Relinquished by: <i>[Signature]</i>	Date/Time: 9/30/11	Received by: <i>[Signature]</i>				Date/Time: 9/30/11				Sample Integrity: Temperature Upon Receipt: 5.1 Intact: <input checked="" type="checkbox"/> No							
Relinquished by: <i>[Signature]</i>	Date/Time: 9/30/11	Received by: <i>[Signature]</i>				Date/Time: 9/30/11											

www.s2scientific.com

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U
Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

SS01
R109114-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/20/11 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1092007	09/20/11	09/21/11	8015 DRO	

Date Sampled: **09/20/11 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.6 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/20/11 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1092008	09/20/11	09/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/20/11 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		97.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	78.4-125		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U

Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

SS02
R109114-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/20/11 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1092007	09/20/11	09/21/11	8015 DRO	

Date Sampled: **09/20/11 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		96.0 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/20/11 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1092008	09/20/11	09/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/20/11 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	78.4-125		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U
Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

SS03
R109114-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/20/11 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1092007	09/20/11	09/21/11	8015 DRO	

Date Sampled: **09/20/11 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.6 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/20/11 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1092008	09/20/11	09/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/20/11 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	78.4-125		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U

Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

SS04
R109114-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/20/11 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1092007	09/20/11	09/21/11	8015 DRO	

Date Sampled: **09/20/11 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		96.3 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/20/11 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1092008	09/20/11	09/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/20/11 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	78.4-125		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U

Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

SS05
R109114-05 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/20/11 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1092007	09/20/11	09/21/11	8015 DRO	

Date Sampled: **09/20/11 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		93.1 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/20/11 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1092008	09/20/11	09/21/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/20/11 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	78.4-125		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinrich 11,12,21,22&7U
Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

Total Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1092007 - EPA 3550A

Blank (1092007-BLK1)

Prepared: 09/20/11 Analyzed: 09/21/11

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.9 " 12.5 95.0 88.8-124

LCS (1092007-BS1)

Prepared: 09/20/11 Analyzed: 09/21/11

C10-C28 (DRO) 504 50 mg/kg 501 101 81.4-129 9.26

LCS Dup (1092007-BSD1)

Prepared: 09/20/11 Analyzed: 09/21/11

C10-C28 (DRO) 509 50 mg/kg 501 102 81.4-129 0.975 9.26

Matrix Spike (1092007-MS1)

Source: R109113-03

Prepared: 09/20/11 Analyzed: 09/21/11

C10-C28 (DRO) 514 50 mg/kg 501 30.4 96.5 77.8-133 8.48

Matrix Spike Dup (1092007-MSD1)

Source: R109113-03

Prepared: 09/20/11 Analyzed: 09/21/11

C10-C28 (DRO) 503 50 mg/kg 501 30.4 94.4 77.8-133 2.13 8.48

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U
Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1092008 - EPA 5030 Soil MS

Blank (1092008-BLK1)

Prepared: 09/20/11 Analyzed: 09/21/11

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	67.4-143			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	78.4-125			

LCS (1092008-BS1)

Prepared: 09/20/11 Analyzed: 09/21/11

Benzene	0.0907	0.0050	mg/kg	0.100		90.7	61-139		11.1	
Toluene	0.0950	0.0050	"	0.100		95.0	64-132		10.9	
Ethylbenzene	0.0991	0.0050	"	0.100		99.1	68.7-135		20	
m,p-Xylene	0.203	0.010	"	0.200		102	70.4-129		20	
o-Xylene	0.0928	0.0050	"	0.100		92.8	66.9-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	67.4-143			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	78.4-125			

LCS Dup (1092008-BSD1)

Prepared: 09/20/11 Analyzed: 09/21/11

Benzene	0.0891	0.0050	mg/kg	0.100		89.1	61-139	1.74	11.1	
Toluene	0.0933	0.0050	"	0.100		93.3	64-132	1.82	10.9	
Ethylbenzene	0.0961	0.0050	"	0.100		96.1	68.7-135	3.08	20	
m,p-Xylene	0.197	0.010	"	0.200		98.5	70.4-129	3.06	20	
o-Xylene	0.0909	0.0050	"	0.100		90.9	66.9-126	2.12	20	
Surrogate: 1,2-Dichloroethane-d4	0.0413		"	0.0400		103	67.4-143			
Surrogate: Toluene-d8	0.0388		"	0.0400		96.9	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	78.4-125			

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Heinricy 11,12,21,22&7U
Project Number: 0188
Project Manager: Brian Dodek

Reported:
09/21/11 08:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1092008 - EPA 5030 Soil MS

Matrix Spike (1092008-MS1)		Source: R109113-03			Prepared: 09/20/11		Analyzed: 09/21/11			
Benzene	0.0895	0.0050	mg/kg	0.100	ND	89.5	42.9-137		17.9	
Toluene	0.0940	0.0050	"	0.100	ND	94.0	42.6-130		11.9	
Ethylbenzene	0.0960	0.0050	"	0.100	ND	96.0	39-133		20	
m,p-Xylene	0.198	0.010	"	0.200	ND	98.8	34.7-134		20	
o-Xylene	0.0904	0.0050	"	0.100	ND	90.4	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	67.4-143			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.4	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	78.4-125			

Matrix Spike Dup (1092008-MSD1)		Source: R109113-03			Prepared: 09/20/11		Analyzed: 09/21/11			
Benzene	0.0893	0.0050	mg/kg	0.100	ND	89.3	42.9-137	0.201	17.9	
Toluene	0.0941	0.0050	"	0.100	ND	94.1	42.6-130	0.0638	11.9	
Ethylbenzene	0.0962	0.0050	"	0.100	ND	96.2	39-133	0.250	20	
m,p-Xylene	0.198	0.010	"	0.200	ND	99.2	34.7-134	0.439	20	
o-Xylene	0.0901	0.0050	"	0.100	ND	90.1	41.3-126	0.366	20	
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0400		104	67.4-143			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	78.4-125			

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Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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