



Encana Oil & Gas (USA) Inc.
370 17th Street, Suite 1700
Denver, CO 80202
Phone: (303) 623-2300
Fax: (303) 623-2400
www.encana.com

November 29, 2011

Mr. Bob Chesson
Department of Natural Resources
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203-2136

Remediation #5130

RE: **Site Investigation Report**
Ione #4 Tank Battery
API 05-123-07455
NENE 2-T2N-R66W 6PM
40.171844, -104.738473
Weld County, Colorado

Dear Mr. Chesson:

Attached is the Site Investigation Report for the Ione #4 Tank Battery. This report details the remediation activities conducted at the site. Please contact the Encana Oil & Gas Environmental Department at (303) 774-3962 if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Harrison". The signature is written in a cursive, flowing style.

Matthew Harrison
Environmental Coordinator
Encana Oil & Gas (USA) Inc.

Attachments:

Site Investigation Report – Ione #4 Tank Battery



November 29, 2011

Mr. Matthew Harrison
Environmental Coordinator
Encana Oil & Gas (USA) Inc.
3601 Stagecoach Road North
Longmont, Colorado 80504

**RE: Site Investigation Report
Ione #4 Tank Battery
API 05-123-07455
NENE 2-T2N-R66W 6PM
40.171844, -104.738473
Weld County, Colorado**

Dear Mr. Harrison:

LT Environmental, Inc. (LTE), under the direction of Encana Oil & Gas (USA) Inc. (Encana), conducted investigation activities at the Ione #4 Tank Battery (Site) on September 29, 2011, and October 6, 2011, to investigate a previously documented petroleum hydrocarbon release. The Site is located northeast 2.5 miles from the intersection of County Road (CR) 22 and CR 31 in Weld County, Colorado. A site location map is provided as Figure 1.

Soil Boring Advancement

LTE advanced three soil borings on September 29, 2011, using a direct-push rig operated by High Plains Drilling of Denver, Colorado. Soil borings SB01, SB02, and SB03 were completed as monitoring wells to allow for groundwater sampling. A site map with soil boring locations is presented as Figure 2.

The soil borings were logged by an LTE geologist and characterized by visual inspection. Soil boring total depths ranged from 12 feet to 15 feet below ground surface (bgs). Soil identified at the Site was predominantly brown sandy clay from ground surface to approximately 14 feet bgs where a brown claystone was encountered and the direct-push rig was refused. Groundwater was encountered at the Site at approximately 12 feet bgs. Estimated groundwater flow direction is to the northeast. Soil boring logs are included as Attachment 1.

Soil Sampling

Soil borings were advanced using the direct-push method and sampled using a continuous sampler on September 29, 2011. Field measurements and laboratory analysis were used to identify the vertical extent of soil impact. Composite soil samples were collected and then submitted for analysis. Samples were collected as a composite of the soil from the static water level to the soil at the ground surface.



Soil samples were submitted to Summit Scientific (Summit) of Golden, Colorado, and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) according to United States Environmental Protection Agency (EPA) Method 8260B and total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO) according to EPA Method 8015M.

Groundwater Monitoring Well Installation

Soil borings SB01, SB02, and SB03 were completed as temporary groundwater monitoring wells. The monitoring wells were constructed of 1-inch diameter polyvinyl chloride (PVC) casing extending from the surface stickups to depths ranging from 12 feet to 15 feet bgs. The lower section of each well consists of five feet of 0.010-inch factory slotted PVC well screen. Silica sand (size 10-20) was placed from the bottom of each well to one foot above the screen to act as filter pack for the monitoring well. Bentonite chips were placed from the top of the silica sand to the ground surface at each soil boring and hydrated to provide a seal against surface contamination and precipitation infiltration. Well completion diagrams are provided as Attachment 1.

Groundwater Sampling

Three groundwater samples were collected on October 6, 2011. Prior to sampling each monitoring well, depth to static groundwater was measured and recorded for calculating well-specific purge volumes. The depth to static groundwater level at the Site was approximately 12 feet below top of casing (btoc). Following well development and purging, samples were collected and then submitted to Summit for analysis of BTEX according to EPA Method 8260B.

Soil Analytical Results

The Colorado Oil and Gas Conservation Commission (COGCC) standards for soil are 0.17 milligrams per kilogram (mg/kg) for benzene, 85 mg/kg for toluene, 100 mg/kg for ethylbenzene, 175 mg/kg for total xylenes, and 500 mg/kg for TPH.

Soil analytical results indicate that soil sample SB02 exhibits a TPH concentration of 880 mg/kg, which exceeds the COGCC standard for TPH. All other samples and analytes are in compliance with COGCC standards. The soil analytical results are presented on Figure 3 and summarized in Table 1. Laboratory analytical reports are included as Attachment 2.

Groundwater Analytical Results

The Colorado Department of Public Health and Environment-Water Quality Control Commission has established Regulation 41 (Reg 41)-Basic Standards for Ground Water for BTEX at 5 micrograms per liter ($\mu\text{g/L}$), 560 $\mu\text{g/L}$, 700 $\mu\text{g/L}$, and 1,400 $\mu\text{g/L}$, respectively.

During the October 2011 monitoring event, groundwater analytical results indicate that one sample exceeds Reg 41 for benzene, and two samples exceed Reg 41 for total xylenes.



Groundwater sample SB02 exhibits a benzene concentration of 980 µg/L and a total xylene concentration of 16,000 µg/L. Groundwater sample SB03 exhibits a total xylene concentration of 7,700 µg/L. Groundwater sample SB01 exhibits BTEX concentrations in compliance with Reg 41. BTEX concentrations are illustrated on Figure 4 and summarized in Table 2. Laboratory analytical reports are included as Attachment 3.

Summary

A total of three soil borings were advanced at the Site. Soil analytical results indicate soil sample SB02 exceeds the COGCC standard for TPH. The vertical extent of impacted soil in SB02 ranged from approximately 12 feet to 15 feet bgs. The estimated area of impacted soil is unknown, as the impacted area has not been delineated horizontally.

Groundwater analytical results indicate that groundwater sample SB02 exceeds Reg 41 for benzene and total xylenes, and groundwater sample SB03 exceeds Reg 41 for total xylenes. The estimated extent of impacted groundwater is unknown, as the impacted groundwater plume has not been delineated.

LTE recommends additional site investigation and data collection at the Site. The data will be used to fully delineate, define the extents, and evaluate seasonal trends of impacted soil and groundwater at the Site before additional remediation activities take place.

Please call us at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.

Daniel Burns
Project Manager

Steve Kahn, P.E.
Senior Engineer

Attachments:

Figure 1 – Site Location Map

Figure 2 – Site Map

Figure 3 – Soil Analytical Results Map

Figure 4 – Groundwater Analytical Results Map

Table 1 – Soil Analytical Results

Table 2 – Groundwater Analytical Results

Attachment 1 – Soil Boring Logs

Attachment 2 – Soil Laboratory Analytical Report

Attachment 3 – Groundwater Laboratory Analytical Report

FIGURES

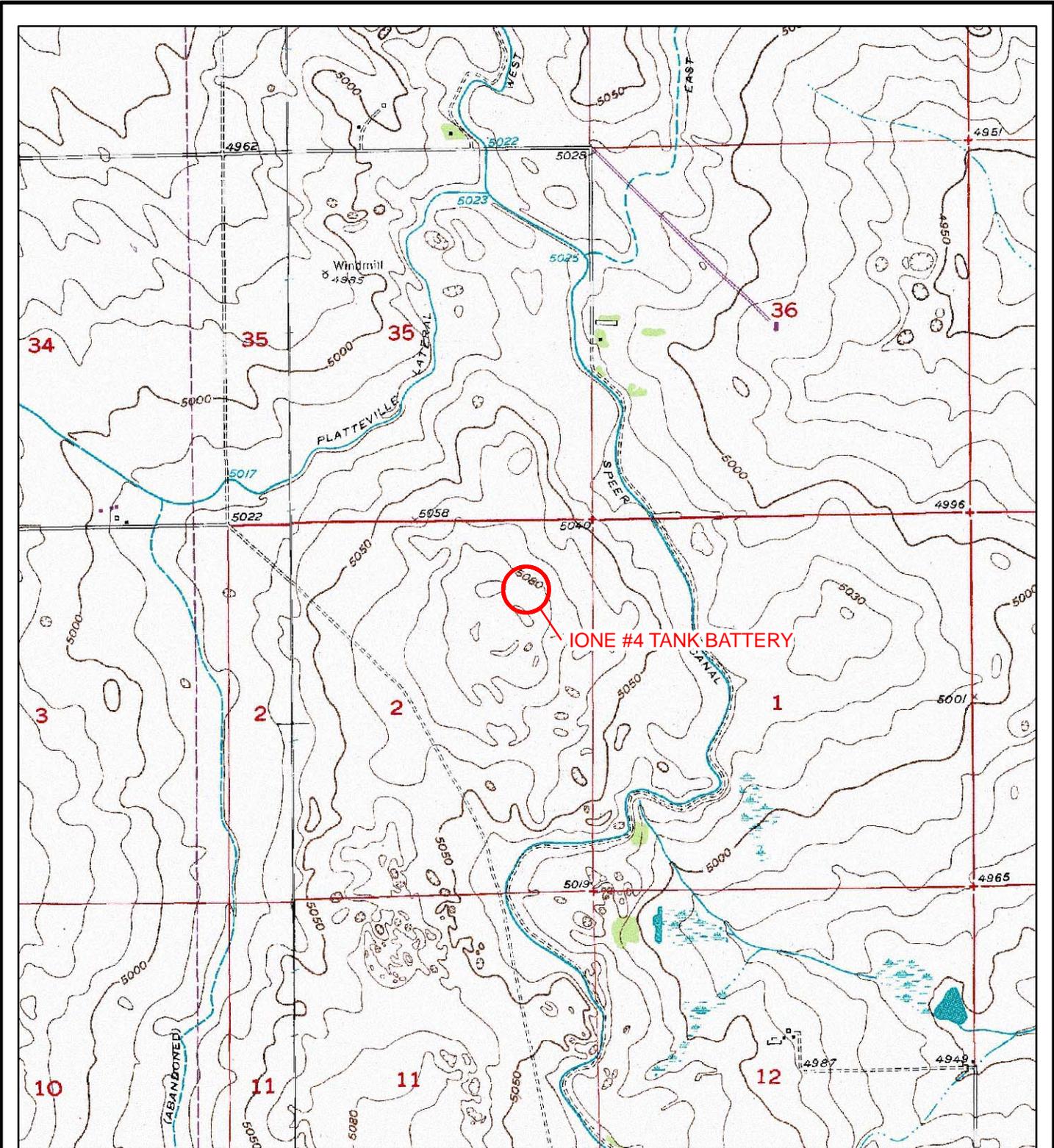


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

LEGEND

 SITE LOCATION

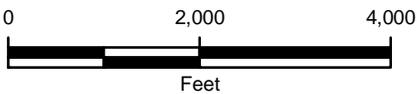


FIGURE 1
SITE LOCATION MAP
IONE #4 TANK BATTERY
WELD COUNTY, COLORADO



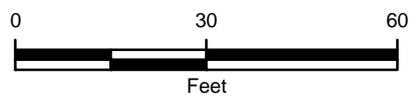
ENCANA OIL & GAS (USA) INC.



IMAGE COURTESY OF GOOGLE EARTH, 05/04/2011

LEGEND

- SOIL BORING
-  ESTIMATED GROUNDWATER FLOW DIRECTION
-  ABOVEGROUND STORAGE TANK (AST)
-  PRODUCED WATER TANK
-  SEPARATOR
-  BERM



**FIGURE 2
SITE MAP
IONE #4 TANK BATTERY
WELD COUNTY, COLORADO**

ENCANA OIL & GAS (USA) INC.





IMAGE COURTESY OF GOOGLE EARTH, 05/04/2011

LEGEND

- SOIL BORING
- ESTIMATED GROUNDWATER FLOW DIRECTION
- ABOVEGROUND STORAGE TANK (AST)
- PRODUCED WATER TANK
- SEPARATOR
- BERM

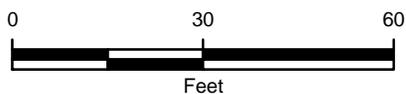


FIGURE 3
SOIL ANALYTICAL MAP
IONE #4 TANK BATTERY
WELD COUNTY, COLORADO

ENCANA OIL & GAS (USA) INC.



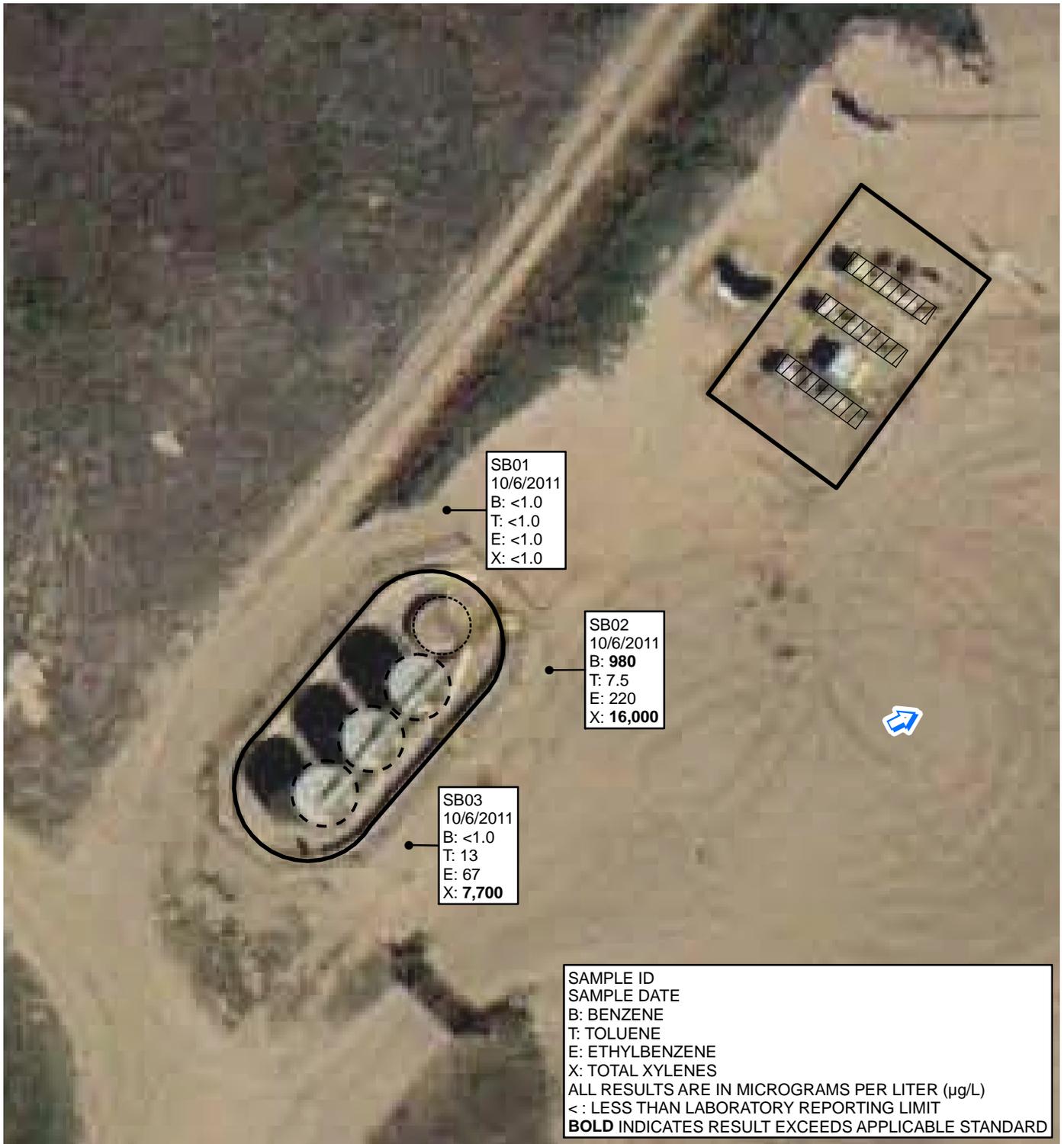


IMAGE COURTESY OF GOOGLE EARTH, 05/04/2011

LEGEND

- SOIL BORING
- ↑ ESTIMATED GROUNDWATER FLOW DIRECTION
- ABOVEGROUND STORAGE TANK (AST)
- PRODUCED WATER TANK
- ▨ SEPARATOR
- ▭ BERM

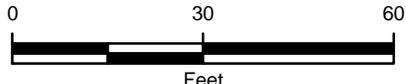


FIGURE 4
GROUNDWATER ANALYTICAL MAP
IONE #4 TANK BATTERY
WELD COUNTY, COLORADO

ENCANA OIL & GAS (USA) INC.



TABLES

TABLE 1

**SOIL ANALYTICAL RESULTS
IONE #4 TANK BATTERY
WELD COUNTY, COLORADO
ENCANA OIL & GAS (USA) INC.**

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
SB01	9/29/2011	<0.0050	<0.0050	<0.0050	<0.0050	<0.50	<50	<50.50
SB02	9/29/2011	0.014	<0.0050	0.62	11	310	570	880
SB03	9/29/2011	0.011	<0.0050	0.65	10	17	<50	17
COGCC Table 910-1		0.17	85	100	175	--	--	500

NOTES:

mg/kg - milligrams per kilogram

GRO - gasoline range organics analyzed by EPA Modified Method 8260B

DRO - diesel range organics analyzed by EPA Modified Method 8015M

TPH- total petroleum hydrocarbons

COGCC - Colorado Oil and Gas Conservation Commission

< - indicates result is less than the stated laboratory reporting limit

BOLD - indicates result exceeds the applicable standard

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

TPH is sum of GRO and DRO

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
 IONE #4 TANK BATTERY
 WELD COUNTY, COLORADO
 ENCANA OIL & GAS (USA) INC.

Sample ID	Date	Depth to Water	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB01	10/6/2011	12.60	<1.0	<1.0	<1.0	<1.0
SB02	10/6/2011	11.68	980	7.5	220	16,000
SB03	10/6/2011	11.69	<1.0	13	67	7,700
CDPHE WQCC Reg 41			5	560	700	1,400

NOTES:

µg/L - micrograms per liter

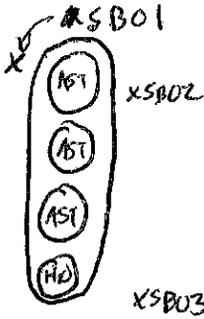
CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment - Water Quality
 Control Commission Regulation 41 covering Basic Standards for Ground Water

BOLD - indicates result exceeds the applicable standard

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

ATTACHMENT 1
SOIL BORING LOGS

Location Map:



Compliance « Engineering » Remediation
 LT Environmental, Inc.
 4600 W. 60th Avenue
 Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB01** Project: **Zone #4**

Date: **9/29/11** Project Number: **033411049**

Logged By: **D. Burns** Drilled By: **High Plains**

Elevation: _____ Detector: **PID** Drilling Method: **Direct Push** Sampling Method: **Continuous**

Gravel Pack: **10-20 Sand 12'-1'** Seal: **Bentonite Chips 1'-0'** Grout: _____

Casing Type: **Sch 40 PVC** Diameter: **1"** Length: **5'** Hole Diameter: **2.25"** Depth to Liquid: _____

Screen Type: **Sch 40 PVC** Slot: **0.010"** Diameter: **1"** Length: **10'** Total Depth: **12'** Depth to Water: **?**

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			Topsoil	
	dry	0.5	no		2			Brown clayey sand, medium, fine, no s/o	
					4				
	dry	0.8	no	SB01	6			Brown medium fine sand, no s/o	
	moist				8			light brown sandy clay, no s/o	
					10			gray/brown clay no s/o	
	moist	0.3	no		12			refusal	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

See SBO1
for map



Compliance « Engineering « Remediation
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBO2	Project:	Zone #4
Date:	9/29/11	Project Number:	0334 11049
Logged By:	D. Burns	Drilled By:	High Plains
Elevation:	Detector: PID	Drilling Method:	Sampling Method: Continuous
Gravel Pack:	10-20 Sand	Seal:	Bentonite Chips
Casing Type:	Sch 40 PVC	Diameter:	1"
Screen Type:	Sch 40 PVC	Length:	7.5'
	Slot: 0.010"	Hole Diameter:	2.25"
		Depth to Liquid:	
		Total Depth:	15'
		Depth to Water:	14'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			No recovery potholed	
					2				
					4				
	moist	0.0	NO		6		Brown sandy clay no s/s		
				SBO2	8				
	moist	236			10		light gray/tan clayey medium fine sand no s/s		
		1864			12		dark gray clayey sand med s/s		
	wet	1626			14		gray sandy clay, slight s/s		
					16		dark gray clayey sand, slight s/s		
					18		Refusal @ 15' - clay		
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

See SB01
for map.



Compliance « Engineering « Remediation
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB03** Project: **Zone #4**

Date: **9/29/11** Project Number: **033411049**

Logged By: **D. Burns** Drilled By: **High Plains**

Elevation: _____ Detector: **PID** Drilling Method: **Direct Push** Sampling Method: **Continuous**

Gravel Pack: **10-20 Sand** Seal: **Bentonite Chips** Grout: _____

Casing Type: **Sch 40 PVC** Diameter: **1"** Length: **5'** Hole Diameter: **2.25"** Depth to Liquid: _____

Screen Type: **Sch 40 PVC** Slot: **0.010"** Diameter: **1"** Length: **10'** Total Depth: **14** Depth to Water: _____

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			No recovery potholed	
					2				
					4				
					6				
	moist	7.5	no		8			Brown/light gray sandy clay no s/o alternating sandy clay and clay layers. no s/o light gray sandy clay, slight s/o - refusal @ 14 - clay no s/o	
	moist	12.9	no	SB03	10				
	moist		yes	PID=	12				
	wet	965	no	1630	14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

ATTACHMENT 2
SOIL LABORATORY ANALYTICAL REPORT

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 04, 2011

Daniel Burns
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: ENC - Ione #4

Enclosed are the results of analyses for samples received by Summit Scientific on 09/29/11 17:00. 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: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01	R109173-01	Soil	09/29/11 10:45	09/29/11 17:00
SB02	R109173-02	Soil	09/29/11 11:30	09/29/11 17:00
SB03	R109173-03	Soil	09/29/11 12:15	09/29/11 17:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

SB01
R109173-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/11 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1093012	09/30/11	10/01/11	8015 Full Carbon Chain	

Date Sampled: **09/29/11 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		113 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/11 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1093011	09/30/11	09/30/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/11 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		92.5 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

SB02
R109173-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/11 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	570	50	mg/kg	1	1093012	09/30/11	10/01/11	8015 Full Carbon Chain	

Date Sampled: **09/29/11 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		116 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/11 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.014	0.0050	mg/kg	1	1093011	09/30/11	10/01/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.62	0.0050	"	"	"	"	"	"	
Xylenes (total)	11	0.050	"	10	"	"	09/30/11	"	
Gasoline Range Hydrocarbons	310	5.0	"	"	"	"	10/01/11	"	

Date Sampled: **09/29/11 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.2 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.1 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.2 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

SB03
R109173-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/11 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1093012	09/30/11	10/01/11	8015 Full Carbon Chain	

Date Sampled: **09/29/11 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		118 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/11 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.011	0.0050	mg/kg	1	1093011	09/30/11	10/01/11	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.65	0.0050	"	"	"	"	"	"	
Xylenes (total)	10	0.050	"	10	"	"	09/30/11	"	
Gasoline Range Hydrocarbons	17	0.50	"	1	"	"	10/01/11	"	

Date Sampled: **09/29/11 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.2 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.6 %	78.4-125		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 10/04/11 09:16

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1093012 - EPA 3550A

Blank (1093012-BLK1)				Prepared & Analyzed: 09/30/11							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	10.9		"	11.2		97.8	88.8-124				
LCS (1093012-BS1)				Prepared & Analyzed: 09/30/11							
C10-C28 (DRO)	472	50	mg/kg	501		94.2	81.4-129			9.26	
LCS Dup (1093012-BSD1)				Prepared & Analyzed: 09/30/11							
C10-C28 (DRO)	479	50	mg/kg	501		95.5	81.4-129	1.35		9.26	
Matrix Spike (1093012-MS1)				Source: R109167-01		Prepared & Analyzed: 09/30/11					
C10-C28 (DRO)	494	50	mg/kg	501	33.8	91.9	77.8-133			8.48	
Matrix Spike Dup (1093012-MSD1)				Source: R109167-01		Prepared & Analyzed: 09/30/11					
C10-C28 (DRO)	507	50	mg/kg	501	33.8	94.5	77.8-133	2.59		8.48	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

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

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

Batch 1093011 - EPA 5030 Soil MS

Blank (1093011-BLK1)

Prepared & Analyzed: 09/30/11

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0366</i>		<i>"</i>	<i>0.0400</i>		<i>91.6</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.7</i>	<i>78.4-125</i>			

LCS (1093011-BS1)

Prepared & Analyzed: 09/30/11

Benzene	0.0838	0.0050	mg/kg	0.100		83.8	61-139		11.1	
Toluene	0.0902	0.0050	"	0.100		90.2	64-132		10.9	
Ethylbenzene	0.0971	0.0050	"	0.100		97.1	68.7-135		20	
m,p-Xylene	0.192	0.010	"	0.200		95.9	70.4-129		20	
o-Xylene	0.0885	0.0050	"	0.100		88.5	66.9-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0377</i>		<i>"</i>	<i>0.0400</i>		<i>94.4</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>		<i>92.1</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>	<i>78.4-125</i>			

LCS Dup (1093011-BSD1)

Prepared & Analyzed: 09/30/11

Benzene	0.0838	0.0050	mg/kg	0.100		83.8	61-139	0.107	11.1	
Toluene	0.0897	0.0050	"	0.100		89.7	64-132	0.467	10.9	
Ethylbenzene	0.0955	0.0050	"	0.100		95.5	68.7-135	1.62	20	
m,p-Xylene	0.190	0.010	"	0.200		95.2	70.4-129	0.706	20	
o-Xylene	0.0872	0.0050	"	0.100		87.2	66.9-126	1.47	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0371</i>		<i>"</i>	<i>0.0400</i>		<i>92.8</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0362</i>		<i>"</i>	<i>0.0400</i>		<i>90.5</i>	<i>78.4-125</i>			

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

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

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

Batch 1093011 - EPA 5030 Soil MS

Matrix Spike (1093011-MS1)	Source: R109173-01			Prepared & Analyzed: 09/30/11						
Benzene	0.0866	0.0050	mg/kg	0.100	ND	86.6	42.9-137			17.9
Toluene	0.0926	0.0050	"	0.100	ND	92.6	42.6-130			11.9
Ethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	39-133			20
m,p-Xylene	0.189	0.010	"	0.200	ND	94.6	34.7-134			20
o-Xylene	0.0865	0.0050	"	0.100	ND	86.5	41.3-126			20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0351</i>		"	<i>0.0400</i>		<i>87.8</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0380</i>		"	<i>0.0400</i>		<i>95.1</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0348</i>		"	<i>0.0400</i>		<i>87.0</i>	<i>78.4-125</i>			

Matrix Spike Dup (1093011-MSD1)	Source: R109173-01			Prepared & Analyzed: 09/30/11						
Benzene	0.0846	0.0050	mg/kg	0.100	ND	84.6	42.9-137	2.28		17.9
Toluene	0.0898	0.0050	"	0.100	ND	89.8	42.6-130	3.06		11.9
Ethylbenzene	0.0966	0.0050	"	0.100	ND	96.6	39-133	0.0621		20
m,p-Xylene	0.190	0.010	"	0.200	ND	95.1	34.7-134	0.553		20
o-Xylene	0.0866	0.0050	"	0.100	ND	86.6	41.3-126	0.173		20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0355</i>		"	<i>0.0400</i>		<i>88.8</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0378</i>		"	<i>0.0400</i>		<i>94.5</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0352</i>		"	<i>0.0400</i>		<i>88.1</i>	<i>78.4-125</i>			

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/04/11 09:16

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

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ATTACHMENT 3

GROUNDWATER LABORATORY ANALYTICAL REPORT

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 17, 2011

Daniel Burns
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: ENC - Ione #4

Enclosed are the results of analyses for samples received by Summit Scientific on 10/07/11 16:50. 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: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/17/11 08:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01	R110048-01	Water	10/06/11 13:15	10/07/11 16:50
SB02	R110048-02	Water	10/06/11 13:30	10/07/11 16:50
SB03	R110048-03	Water	10/06/11 13:45	10/07/11 16:50

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 10/17/11 08:55

SB01
R110048-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/06/11 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1101308	10/13/11	10/15/11	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 10/06/11 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		94.8 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	80.8-120		"	"	"	"	

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 10/17/11 08:55

SB02
R110048-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/11 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	980	100	ug/l	100	1101308	10/13/11	10/15/11	EPA 8260B	
Toluene	7.5	1.0	"	1	"	"	10/15/11	"	
Ethylbenzene	220	1.0	"	"	"	"	"	"	
Xylenes (total)	16000	100	"	100	"	"	10/15/11	"	

Date Sampled: **10/06/11 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		117 %	57.9-139		"	"	10/15/11	"	
<i>Surrogate: Toluene-d8</i>		102 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	80.8-120		"	"	"	"	

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 10/17/11 08:55

SB03
R110048-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/11 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1101308	10/13/11	10/15/11	EPA 8260B	
Toluene	13	1.0	"	"	"	"	"	"	
Ethylbenzene	67	1.0	"	"	"	"	"	"	
Xylenes (total)	7700	100	"	100	"	"	10/15/11	"	

Date Sampled: **10/06/11 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		107 %	57.9-139		"	"	10/15/11	"	
<i>Surrogate: Toluene-d8</i>		92.2 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		118 %	80.8-120		"	"	"	"	

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/17/11 08:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1101308 - EPA 5030 Water MS

Blank (1101308-BLK1)

Prepared: 10/13/11 Analyzed: 10/14/11

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	1.0	"								
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		114	57.9-139				
Surrogate: Toluene-d8	12.8		"	13.3		96.0	83.1-115				
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	80.8-120				

LCS (1101308-BS1)

Prepared: 10/13/11 Analyzed: 10/14/11

Benzene	34.8	1.0	ug/l	33.3		105	60.1-131		10.9		
Toluene	34.7	1.0	"	33.3		104	65.9-127		11.3		
Ethylbenzene	35.9	1.0	"	33.3		108	65.1-129		20		
m,p-Xylene	72.5	2.0	"	66.7		109	66.8-127		20		
o-Xylene	37.2	1.0	"	33.3		112	61.2-120		20		
Surrogate: 1,2-Dichloroethane-d4	15.7		"	13.3		118	57.9-139				
Surrogate: Toluene-d8	13.0		"	13.3		97.1	83.1-115				
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.7	80.8-120				

LCS Dup (1101308-BSD1)

Prepared: 10/13/11 Analyzed: 10/14/11

Benzene	31.0	1.0	ug/l	33.3		92.9	60.1-131	11.8	10.9		
Toluene	29.9	1.0	"	33.3		89.6	65.9-127	15.0	11.3		
Ethylbenzene	38.6	1.0	"	33.3		116	65.1-129	7.28	20		
m,p-Xylene	70.4	2.0	"	66.7		106	66.8-127	2.97	20		
o-Xylene	38.6	1.0	"	33.3		116	61.2-120	3.51	20		
Surrogate: 1,2-Dichloroethane-d4	15.4		"	13.3		115	57.9-139				
Surrogate: Toluene-d8	12.5		"	13.3		93.8	83.1-115				
Surrogate: 4-Bromofluorobenzene	12.1		"	13.3		91.1	80.8-120				

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/17/11 08:55

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

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

Batch 1101308 - EPA 5030 Water MS

Matrix Spike (1101308-MS1)

Source: R110050-02 Prepared: 10/13/11 Analyzed: 10/14/11

Benzene	32.7	1.0	ug/l	33.3	ND	98.1	52.7-130		19.3	
Toluene	32.7	1.0	"	33.3	ND	98.1	57-127		18.7	
Ethylbenzene	36.6	1.0	"	33.3	ND	110	59.2-127		20	
m,p-Xylene	68.0	2.0	"	66.7	ND	102	53.2-132		20	
o-Xylene	35.6	1.0	"	33.3	ND	107	56.3-117		20	
Surrogate: 1,2-Dichloroethane-d4	15.3		"	13.3		115	57.9-139			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.3	80.8-120			

Matrix Spike Dup (1101308-MSD1)

Source: R110050-02 Prepared: 10/13/11 Analyzed: 10/14/11

Benzene	31.8	1.0	ug/l	33.3	ND	95.3	52.7-130	2.92	19.3	
Toluene	31.9	1.0	"	33.3	ND	95.7	57-127	2.41	18.7	
Ethylbenzene	38.7	1.0	"	33.3	ND	116	59.2-127	5.79	20	
m,p-Xylene	65.5	2.0	"	66.7	ND	98.2	53.2-132	3.77	20	
o-Xylene	35.9	1.0	"	33.3	ND	108	56.3-117	0.812	20	
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.3		113	57.9-139			
Surrogate: Toluene-d8	12.4		"	13.3		93.2	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.0		"	13.3		90.2	80.8-120			

Summit Scientific

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

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
10/17/11 08:55

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

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