

**REMEDIATION SUMMARY REPORT**  
**COLLINS 14-20 TANK BATTERY**  
**ADAMS COUNTY, COLORADO**

**DECEMBER 2008**

**Prepared for:**

**NOBLE ENERGY, INC.**  
**Platteville, Colorado**



# **REMEDIATION SUMMARY REPORT**

## **COLLINS 14-20 TANK BATTERY ADAMS COUNTY, COLORADO**

**DECEMBER 2008**

**Prepared for:**

**NOBLE ENERGY, INC.  
804 Grand Avenue  
Platteville, CO 80651**

**Prepared by:**

**LT ENVIRONMENTAL, INC.  
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## EXECUTIVE SUMMARY

This report was prepared by LT Environmental, Inc. (LTE), on behalf of Noble Energy, Inc. (Noble), to document remediation activities at the Collins 14-20 Tank Battery (Site).

The Site is located in the southwest quarter of the southwest quarter of Section 20, Township 1 South, Range 65 West of the 6<sup>th</sup> principal meridian (Figure 1). The Site is on a vacant lot, approximately 1,000 feet northeast of the intersection of Harvest Mile Road and East 136<sup>th</sup> Avenue in Adams County, Colorado (Figure 2). A preceding report was submitted to Noble on October 15, 2008, summarizing site assessment activities conducted by LTE personnel.

The scope of work for this project included the excavation/removal of hydrocarbon impacted soils and groundwater from a previously documented release, confirmation soil sampling and analysis, documentation, and health and safety monitoring. Current use of the Site includes oil and gas production surrounded by pasture land.

On October 14, 2008, Noble contractors began excavating impacted soil at the Site. Noble and LTE personnel were onsite for field observation, documentation, and oversight activities including collecting soil samples and directing soil and groundwater removal from the excavated area. Impacted soils were hauled off to the Noble Land Treatment Facility in Weld County, Colorado and to Allied Waste's Tower Road Landfill in Adams County, Colorado. The excavation was backfilled with clean fill from the Noble Land Treatment Facility. A total volume of 3,240 cubic yards of impacted soil were excavated and removed during this project. A total volume of 129 barrels (5,418 gallons) of impacted groundwater were removed from the excavation and transported to the Conquest Disposal Facility located in Weld County, Colorado. Following completion of source removal activities, an activated carbon remediation amendment was installed in the base of the excavation to mitigate any residual hydrocarbons remaining from source removal activities.

Based on field indicators and the analytical results of the confirmation soil wall samples collected following excavation activities, the remaining soil has been remediated to below the Colorado Oil and Gas Conservation Commission (COGCC) Sensitive Area Standard. Two soil samples collected from the northeast corner of the excavation, S-2 and S-3, exhibited concentrations above the COGCC standard. The excavation was extended in this area until confirmation samples indicated all soil was below the COGCC standard.

Initial site assessment activities during October 2008 did not fully delineate impacted groundwater. LTE personnel returned to the Site on October 27, 2008 and November 3, 2008 to install two additional site assessment wells (SB08 and SB09) in an attempt to fully delineate groundwater. Analytical results from groundwater samples collected from SB08 and SB09 indicate that groundwater impacts in these areas are below cleanup standards, and groundwater impact at the Site is now fully delineated. Borehole lithologic logs are included as Appendix B. Copies of the laboratory analytical reports are included in Appendix C.

The remediation activities described in this report are the first phase of site remediation. After the source removal has been completed, LTE personnel will begin additional groundwater remediation through injection of a hydrocarbon degrading remediation mixture to mitigate remaining groundwater impacts. Following injection activities, an additional remediation summary report will be submitted under separate cover.

## **SECTION 1.0**

### **INTRODUCTION**

#### **1.1 SITE DESCRIPTION**

The Collins 14-20 Tank Battery (Site) is located in the southwest quarter of the southwest quarter of Section 20, Township 1 South, Range 65 West of the 6<sup>th</sup> principal meridian (Figure 1). The Site is approximately 1,000 feet northeast of the intersection of Harvest Mile Road and East 136<sup>th</sup> Avenue in Adams County, Colorado (Figure 2).

The Site geology was predominantly observed as clayey, fine grained sand that extended from the ground surface to depths ranging from approximately 5 feet to 10 feet below ground surface (bgs). Beneath the clayey sand was weathered, fine-grained, clayey sandstone extending to a total depth of 25 feet bgs. Groundwater at the Site is approximately 20 feet to 22 feet bgs.

The Site is located at an elevation of approximately 5,170 feet above mean sea level in an area with flat topography. Surface topography in the area appears to be slightly modified for farming purposes.

#### **1.2 SURROUNDING LAND USE**

The Site is immediately surrounded by vacant pasture land. Land used for agricultural operations surrounds the vacant parcel.

#### **1.3 SCOPE OF WORK**

The scope of work for this remediation project included the removal of impacted soils and groundwater, as well as the installation of two additional site assessment wells to fully delineate impacted groundwater. Impacted soils were hauled off to the Noble Land Treatment Facility and to Allied Waste's Tower Road Landfill and replaced with clean fill from the Noble Land Treatment Facility. Impacted groundwater was transported to Conquest Disposal located in Weld County, Colorado. A groundwater amendment (activated carbon remediation mixture) was installed in the base of the excavation to reduce the potential for groundwater impact resulting from residual hydrocarbons.

During onsite activities, Noble Energy, Inc. (Noble) and LT Environmental, Inc. (LTE) personnel conducted field screening of soils, soil sampling, oversight of the excavation, health and safety monitoring, installation of the groundwater amendment, installation and sampling of temporary monitoring wells, and documentation activities.

A summary of field activities, analytical results from soil sampling activities, analytical results from groundwater sampling, and conclusions is presented in the subsequent sections.

## SECTION 2.0

### SUMMARY OF FIELD ACTIVITIES

#### 2.1 EXCAVATION ACTIVITIES

##### Impacted Soil Removal

Excavation activities were initiated on October 14, 2008. During the period of October 14, 2008 through October 22, 2008, Noble contractors removed impacted soils and groundwater, and installed the groundwater amendment.

Two separate non-contiguous excavations were conducted at the Site. The northern excavation removed soil and groundwater impacts discovered during site assessment activities. The southern excavation removed soil impact discovered during removal of the onsite water vault.

LTE personnel conducted field screening of organic vapor concentrations using a photoionization detector (PID) and collected confirmation soil samples to document excavation activities. Photographs of excavation activities are included as Appendix A.

The final dimensions of the northern excavation were approximately 50 feet long by 40 feet wide, and the total depth of the excavation was approximately 25 feet bgs. The final dimensions of the southern excavation were approximately 40 feet long by 30 feet wide, and the total depth of the excavation was approximately 16 feet bgs. A total volume of 3,240 cubic yards of impacted soil were excavated and transported offsite to the Noble Land Treatment Facility located in Weld County, Colorado and Allied Waste's Tower Road Landfill located in Adams County, Colorado.

Soil samples were collected from the smear zone along the walls of the excavation. Each sample was field-screened for organic vapor concentrations with a PID to determine if additional excavation was required. Once PID measurements indicated that impacted soil had been removed, a confirmation sample was collected for submittal to an analytical laboratory.

Excavation floor samples were not collected at the northern excavation because the final excavation depth extended below the static water level of the aquifer. An excavation floor sample was collected from the southern excavation because the final excavation depth did not extend below the static water level of the aquifer. Soil sample S-11 represents the confirmation soil floor sample from the southern excavation. The potential for residual hydrocarbon impact below the water table in the northern excavation will be characterized through collection and analysis of groundwater samples to be presented in future monitoring reports.

Figure 2 presents the excavation extent and the location of the soil samples collected in the excavations.

A total of 19 samples were collected from the excavation. The soil samples collected were sent to Origins Laboratory, Inc. (Origins) of Denver, Colorado for analysis of total volatile hydrocarbons - gasoline range organics (TVH-GRO) using Environmental Protection Agency (EPA) Modified Method 8015.

After confirmation sampling results indicated the impacted soils had been removed, the excavation was backfilled with clean fill provided by Noble.

Soil analytical results for samples S-3 and S-4 exceeded the Colorado Oil and Gas Conservation Commission (COGCC) Sensitive Area Standard of 1,000 milligrams per kilogram (mg/kg) TVH-GRO, with values of 2,481.3 mg/kg and 1,591.4 mg/kg at S-3 and S-4, respectively. Both samples were from the northeast corner of the excavation, and this area was excavated to a greater extent until additional sampling (S-8, S-9, and S-10) confirmed the remaining soil exhibited hydrocarbon concentrations below the COGCC standard.

### **Impacted Groundwater Removal**

During excavation activities, 129 barrels (5,418 gallons) of groundwater were removed from the excavation. Groundwater was removed by a Northern Plains Transport truck, with final disposal at Conquest Disposal in Weld County, Colorado.

## **2.2 GROUNDWATER AMENDMENT APPLICATION**

As an added mitigation measure, a groundwater amendment consisting of a petroleum hydrocarbon remediation mixture was used throughout the northern excavation. The remediation amendment is activated carbon inoculated with electron acceptors (nitrate and sulfate) and nutrients (phosphorus and nitrogen) designed to biodegrade petroleum hydrocarbons.

Groundwater was observed at the Site at approximately 20 feet to 22 feet bgs. To reduce the potential for any further groundwater impact resulting from residual hydrocarbons, the groundwater amendment was applied to the entire extent of the base and sidewalls of the northern excavation after field indicators and confirmation sample results demonstrated the impacted soils were removed. Approximately 500 pounds of the groundwater amendment were applied to the base and sidewalls of the excavation. The groundwater amendment was not applied to the southern excavation because the final depth of the excavation did not encounter the water table. Impacted groundwater, which was observed in this area during site assessment activities (September 2008), will be remediated during Phase II of the remediation program.

## **2.3 ADDITIONAL SITE ASSESSMENT ACTIVITIES**

After reviewing the analytical results from the initial site assessment activities, it was discovered that the groundwater impact was not fully defined. LTE personnel returned to the Site October 27, 2008 and November 3, 2008 to install additional site assessment monitoring wells in an attempt to fully delineate groundwater impact at the Site.

The additional monitoring wells (SB08 and SB09) were installed in the northeast and southwest corners of the Site (Figure 3). Monitoring well SB08 was logged by an LTE geologist. The geologist inspected the soil for the presence or absence of petroleum hydrocarbon odor and/or staining. The soils were characterized by visually inspecting the soil samples collected in clear, polyethylene, four-foot long sampling tubes and screened using a photo-ionization detector (PID) to monitor the soil headspace for the presence of total volatile organic vapors. Due to equipment limitations monitoring well SB09 could not be logged. Monitoring well total depths ranged between 23.5 feet bgs to 29 feet bgs. Soil boring logs are included in Appendix B.

Depth to groundwater ranged from 17 feet bgs to 20 feet bgs. Estimated groundwater flow direction is northwest.

Soils identified at the Site were predominantly clayey, fine-grained sand that extended from the ground surface to depths ranging from approximately 5 feet bgs to 10 feet bgs. Beneath the clayey sand was weathered, fine-grained, clayey sandstone extending to a total depth of 25 feet bgs.

On November 5, 2008, LTE purged approximately three casing volumes from each well and collected groundwater samples from monitoring wells SB08 and SB09, using a peristaltic pump.

Groundwater samples were collected in laboratory prepared 40-milliliter vials. The groundwater samples were placed on ice and delivered with a complete COC form to Origins of Denver, Colorado. The groundwater samples were submitted for analysis of BTEX by EPA Method 8260B.

## SECTION 3.0

### ANALYTICAL RESULTS

Soil samples were collected to define the extent of the excavation and confirm that impact above regulatory standards was removed. Confirmation soil samples were collected from the smear zone along the walls of both excavations, and three samples were collected from the base of the southern excavation. Soil sample locations are illustrated on Figure 2. Soil samples were sent to Origins for analysis of TVH-GRO using EPA Modified Method 8015.

In the northern excavation, analytical results indicate TVH-GRO was not detected above the COGCC Sensitive Area Standard of 1,000 mg/kg or the laboratory method detection limit of 50 mg/kg in all samples collected from the south and west excavation sidewalls. Soil sidewall samples collected near the northeast corner exhibited TVH-GRO concentrations above the COGCC Sensitive Area Standard. As described in Section 2.1, soil analytical results for samples S-3 and S-4 exceeded the COGCC Sensitive Area Standard of 1,000 mg/kg TVH-GRO. Soil sample S-2, from the north wall, exhibited a TVH-GRO concentration of 225.2 mg/kg, below the COGCC standard. Following receipt of the laboratory analytical data, the northeast corner of the excavation wall was excavated to a greater extent until additional sampling (S-8, S-9 and S-10) confirmed the remaining soil exhibited hydrocarbon concentrations below the COGCC standard. Soil samples were not collected from the base of the northern excavation as it was approximately 5 feet below the static water level elevation.

Analytical results from the southern excavation indicate TVH-GRO was not detected above the COGCC Sensitive Area Standard of 1,000 mg/kg or the laboratory method detection limit of 50 mg/kg in all samples collected from the excavation sidewalls and base.

Soil analytical results are summarized in Table 1. Copies of the laboratory analytical reports are included as Appendix C.

Groundwater analytical results indicate that benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations are below the laboratory method detection limit as well as the Colorado Groundwater Quality Standards (CGWQS). Following review of the analytical data from SB08 and SB09 the groundwater impact at the Site is now fully delineated. Groundwater analytical results from SB08 and SB09 are summarized in Table 2. Copies of the laboratory analytical reports are included as Appendix C.

## SECTION 4.0

### SUMMARY AND CONCLUSIONS

Remediation of this Site is being conducted in a two phased approach. Phase I includes remediation of the hydrocarbon impact via source removal technology. Phase II of the remediation program includes the use of injection technologies to remediate remaining groundwater impacts. The work described in this report includes completion of site assessment activities and completion of Phase I of the remediation program.

From October 14, 2008 through October 22, 2008, Noble excavated and removed 3,240 cubic yards of impacted soil and 129 barrels (5,400 gallons) of impacted groundwater from the excavations at the Site.

During remediation activities, evidence of impact to the subsurface was observed ranging in depth from 5 feet to 25 feet bgs. LTE conducted field-screening of organic vapor concentrations and collection of soil confirmation samples for laboratory analysis from the excavated areas.

Impacted soils were excavated and transported to the Noble Land Treatment Facility and to Allied Waste's Tower Road Landfill. Clean fill material was brought from the Noble Land Treatment Facility for use as backfill in the excavation. Impacted groundwater was transported by Northern Plains Transport for final disposal at Conquest Disposal.

LTE collected confirmation soil samples following completion of the soil excavation activities. Analytical results from soil samples collected along the south, west, and east walls of the northern excavation indicated that the petroleum impacted soils had been removed to below the COGCC Sensitive Area Standard and laboratory method detection limits. Soil sample S-2, collected along the north wall, exhibited a TVH-GRO concentration above laboratory method detection limit but below the COGCC Sensitive Area Standard, with a concentration of 225.2 mg/kg. Analytical results from soil samples collected at the southern excavation indicated that the petroleum impacted soils had been removed to below the COGCC Sensitive Area Standard and below laboratory method detection limits.

To prevent any future impact from residual hydrocarbons in the northern excavation, 500 pounds of a hydrocarbon degrading amendment were applied to the base and sidewalls of the excavation.

On October 27, 2008 and November 3, 2008 LTE personnel were onsite to install two additional site assessment monitoring wells (SB08 and SB09). Groundwater samples collected from the monitoring wells exhibit BTEX concentrations below laboratory detection limits as well as the CGWQS. The impacted groundwater at the Site is now fully delineated.

Injection activities will be initiated on December 15, 2008. A report summarizing the injection activities will be submitted under separate cover.



## **TABLES**



**TABLE 1**

**SOIL ANALYTICAL RESULTS  
COLLINS 14-20 TANK BATTERY SITE  
ADAMS COUNTY, COLORADO  
NOBLE ENERGY, INC.**

<b>Sample ID</b>	<b>Date</b>	<b>TVH-GRO (mg/kg)</b>
S-1 (19')	10/15/2008	<50
S-2 (19')	10/15/2008	225.2
S-3 (18')	10/15/2008	<b>2481.3</b>
S-4 (19')	10/15/2008	<b>1591.4</b>
S-5 (18')	10/16/2008	<50
S-6 (18')	10/17/2008	<50
S-7 (18')	10/17/2008	<50
S-8 (18')	10/17/2008	<50
S-9 (18')	10/17/2008	<50
S-10 (19')	10/17/2008	<50
S-11 (16')	10/20/2008	<50
S-12 (12')	10/20/2008	<50
S-13 (13')	10/21/2008	<50
S-14 (16')	10/21/2008	<50
S-15 (12')	10/21/2008	<50
S-16 (13')	10/21/2008	<50
S-17 (13')	10/22/2008	<50
S-18 (11')	10/22/2008	<50
S-19 (16')	10/22/2008	<50

COGCC Sensitive Area Standard\*

**1,000**

**Notes:**

mg/kg - milligrams per kilogram

< indicates result is less than the stated laboratory method detection limit

TVH-GRO - Total Volatile Hydrocarbons - Gasoline Range Organics

TVH-GRO by EPA Method 8015M

COGCC - Colorado Oil & Gas Conservation Commission

\*Applies to contaminated subsurface soil >2 feet below ground surface

(bgs) and where the distance to groundwater is less than 20 feet bgs



TABLE 2

**GROUNDWATER ANALYTICAL RESULTS  
COLLINS 14-20  
ADAMS COUNTY, COLORADO  
NOBLE ENERGY, INC.**

Well ID	Date	Depth to Water (feet btoc)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
SB01	9/26/2008	19.75	<1.0	<1.0	<1.0	<3.0
SB02	9/26/2008	19.03	<b>1,640</b>	47.4	652	<b>5,344</b>
SB03	9/26/2008	19.20	4.13	<1.0	3.34	67.33
SB04	9/26/2008	19.86	<b>272</b>	33.0	294	<b>2,747</b>
SB05	9/26/2008	21.83	<1.0	<1.0	<1.0	<3.0
SB06	9/26/2008	20.84	<1.0	<1.0	<1.0	<3.0
SB07	9/26/2008	20.93	1.21	<1.0	<1.0	21.60
SB08	10/27/2008	22.56	<1.0	<1.0	<1.0	<3.0
SB09	11/3/2008	19.65	<1.0	<1.0	<1.0	<3.0
<b>CGWQS</b>			<b>5.0</b>	<b>1,000</b>	<b>700</b>	<b>1,400</b>

NOTES:

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

btoc - below top of casing

ug/L - micrograms per liter

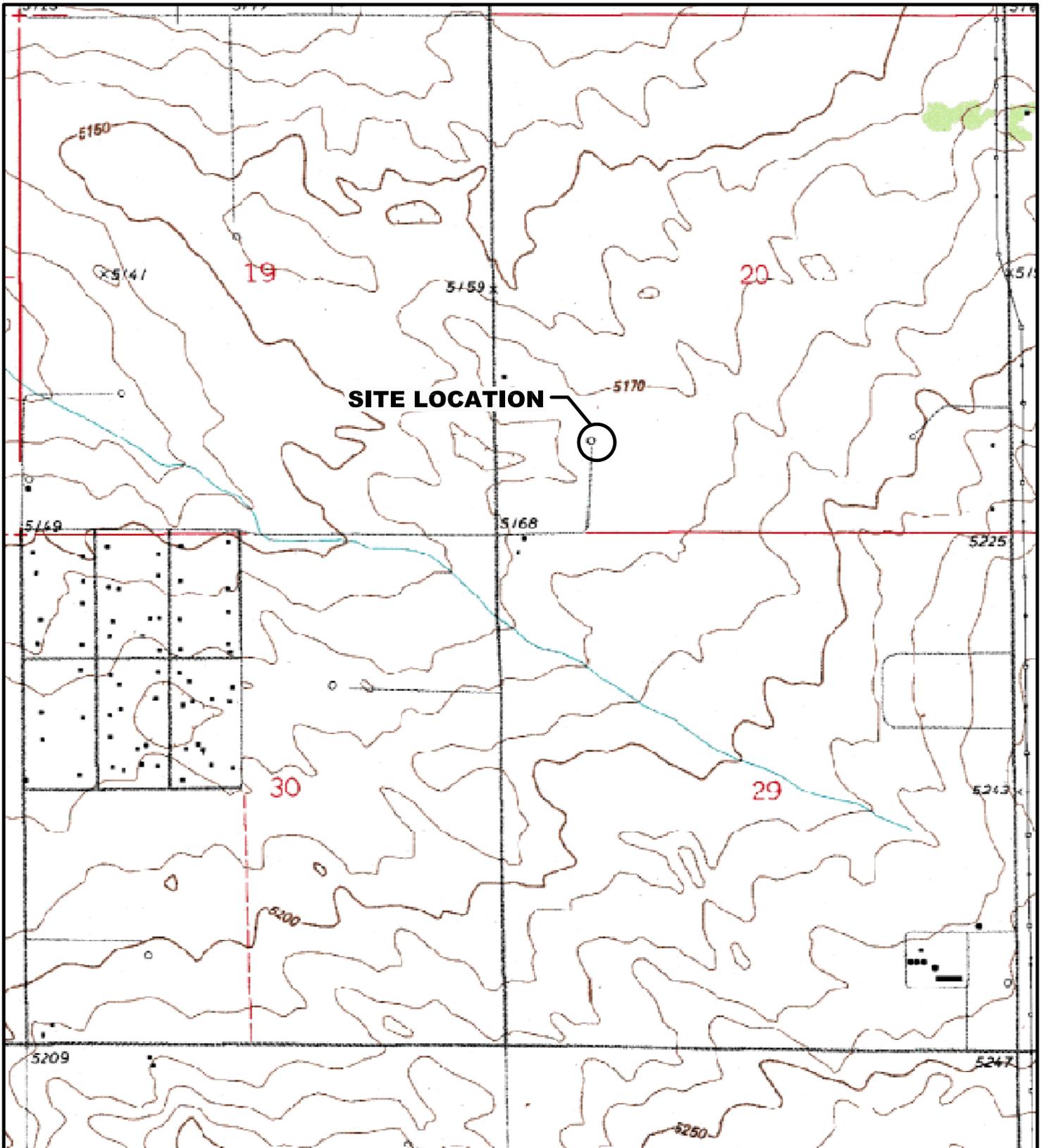
< indicates result is less than the stated laboratory method detection limit

CGWQS - Colorado Groundwater Quality Standards



## FIGURES





**LEGEND**

○ SITE LOCATION



0 375 750 1500  
FEET

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

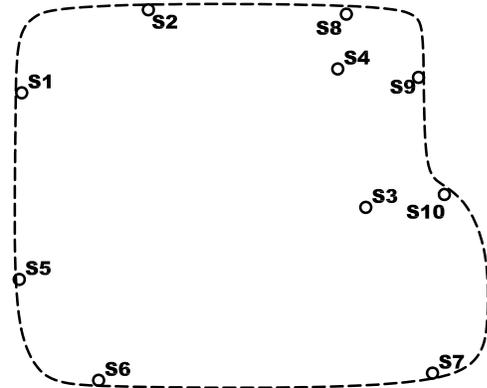
**FIGURE 1**  
**SITE LOCATION MAP**  
**COLLINS 14-20**  
**ADAMS COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**



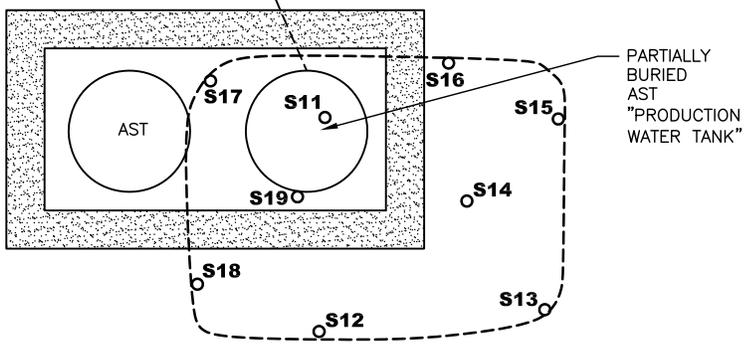
NEP083501\_SL 10/08

SEPARATOR

ABOVE GROUND PIPING  
ACCESS POINTS



ESTIMATED AREA OF UNDERGROUND PIPING

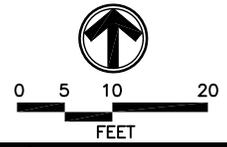


**LEGEND**

S1 ○ SOIL SAMPLE LOCATIONS

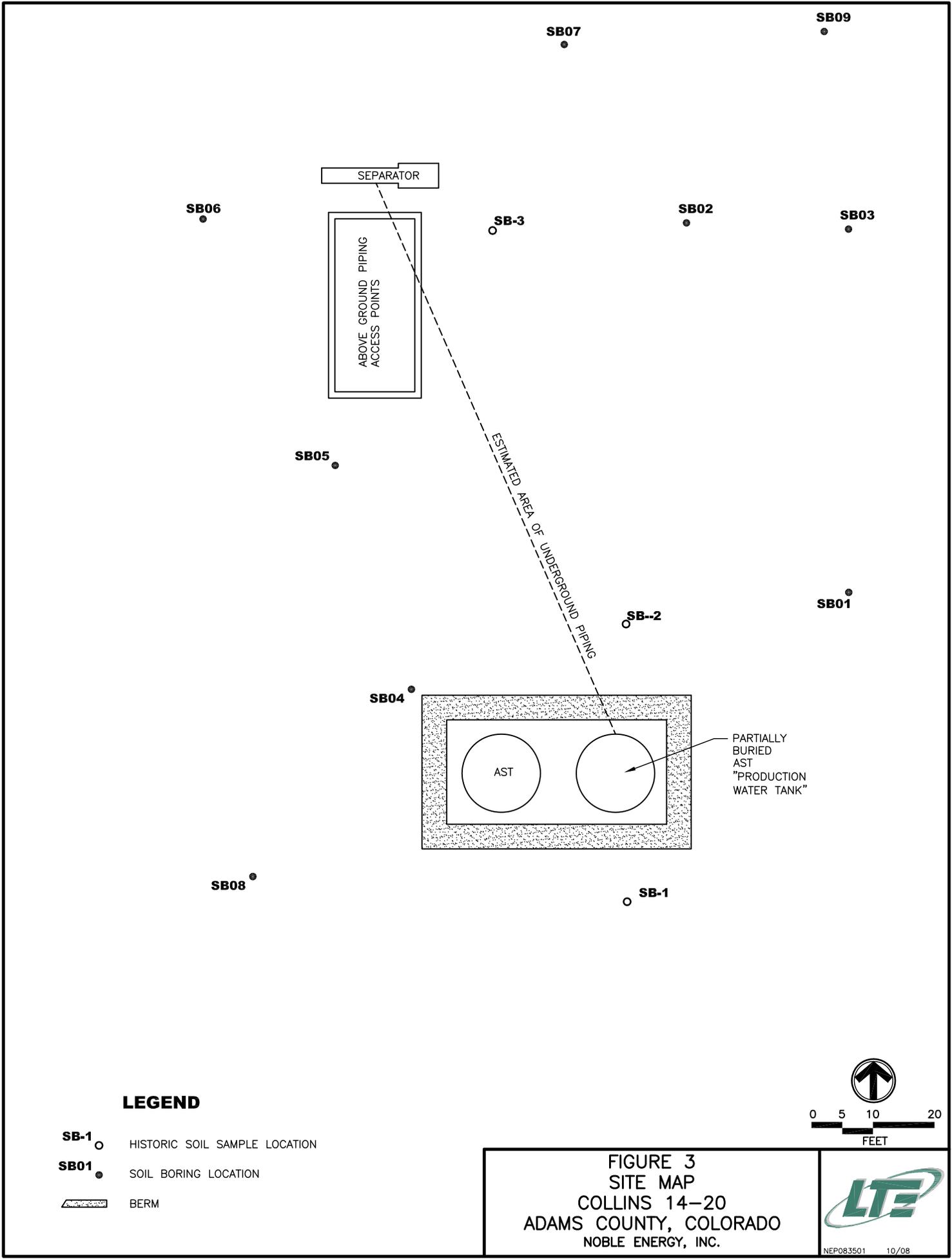
--- APPROXIMATE EXTENT OF EXCAVATION

▨ BERM



**FIGURE 2**  
SOIL SAMPLE LOCATIONS  
COLLINS 14-20  
ADAMS COUNTY, COLORADO  
NOBLE ENERGY, INC.





**LEGEND**

- SB-1 ○ HISTORIC SOIL SAMPLE LOCATION
- SB01 ● SOIL BORING LOCATION
-  BERM

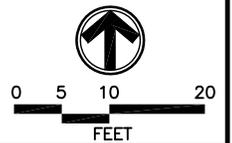


FIGURE 3  
 SITE MAP  
 COLLINS 14-20  
 ADAMS COUNTY, COLORADO  
 NOBLE ENERGY, INC.



**APPENDIX A**  
**SITE PHOTOGRAPHS**





Photograph 1: Excavation of impacted soils at the northern excavation.



Photograph 2: Excavation of impacted soils at the northern excavation. View is north.



Photograph 3: Installation of hydrocarbon degrading amendment in the northern excavation.

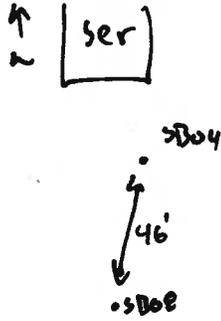


Photograph 4: Backfilling the northern excavation.

**APPENDIX B**  
**BOREHOLE LITHOLOGIC LOGS**



Location Map:



**Compliance • Engineering • Remediation**  
**LT Environmental, Inc.**  
 4600 W. 460h Avenue  
 Denver, Colorado 80003

**BORING LOG/MONITORING WELL COMPLETION DIAGRAM**

Boring/Well Number:	SB08	Project:	Collins
Date:	10/27/00	Project Number:	NES
Logged By:	CP	Drilled By:	Site Service
Elevation:	NA	Drilling Method:	Direct Push
Detector:	Mini Em <sub>3</sub>	Sampling Method:	Cuttings
Gravel Pack:	10/20 silica sand	Seal:	Bealcoit
Casing Type:	PVC	Grout:	Bealcoit
Screen Type:	PVC Slot 10	Diameter:	1"
		Length:	10'
		Hole Diameter:	6"
		Depth to Liquid:	
		Total Depth:	25'
		Depth to Water:	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry		no		0		SB	Sand (mg to fg); loose dark brown poorly graded	
		0			2				
					4				
	dry		no		6		SC	Sand (Fg); clay low plasticity poorly graded dark brown	
					8				
	moist	0	no		10		SC	SFA (same as above)	
					12				
					14		clst	claystone; sand less	
	moist	0	no		16		clst	SFA	
					18				
	wet	1.4	no		20		clst	clay; Sand (fg); low plasticity	
					22				
					24				
					26				
					28				
					30				

Location Map:

SB09



SB06



Compliance • Engineering • Remediation  
 LT Environmental, Inc.  
 4600 W. 460h Avenue  
 Denver, Colorado 80003

**BORING LOG/MONITORING WELL COMPLETION DIAGRAM**

Boring/Well Number: SB09	Project: Collin		
Date: 11/3/09	Project Number: NER		
Logged By: CG	Drilled By: Alpin		
Elevation: NA	Detector: MiniRae	Drilling Method: Direct Push	Sampling Method: NA
Gravel Pack: 10/20 Silica Sand	Seal: Bentonite Chip	Grout: NA	
Casing Type: PVC	Diameter: 1-inch	Length:	Hole Diameter: 2.5
Screen Type: PVC	Slot:	Diameter: 1-inch	Length:
			Total Depth: 23.5
			Depth to Liquid:
			Depth to Water:

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			not sampled	
					2				
					4				
					6				
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

**APPENDIX C**  
**LABORATORY ANALYTICAL REPORTS**





4640 Pecos Street | Unit C | Denver, Colorado 80211  
303.433.1322 Phone 303.265.9645 Fax

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October 23, 2008

---

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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

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Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/22/2008 2:22:00PM. Please let us know if you have any questions, or if we can help with anything at all.

Laboratory Manager  
Noelle E Doyle

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. This laboratory report is intended solely for the above addressee and it is only to be used and or reproduced in its entirety.

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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

### CROSS REFERENCE REPORT

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
S-17	X810067-01	Soil	10/22/2008 11:00:00AM	10/22/2008 14:22
S-18	X810067-02	Soil	10/22/2008 12:30:00PM	10/22/2008 14:22
S-19	X810067-03	Soil	10/22/2008 12:35:00PM	10/22/2008 14:22

Origins Laboratory, Inc.

*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.*

Noelle E Doyle, Laboratory Manager



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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-17  
X810067-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J22002	10/22/2008	10/22/2008
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Origins Laboratory, Inc.

*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.*

Noelle E Doyle, Laboratory Manager

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-18  
X810067-02 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J22002	10/22/2008	10/22/2008
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Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-19  
X810067-03 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J22002	10/22/2008	10/22/2008
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Origins Laboratory, Inc.

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 4600 West 60th Avenue  
 Arvada CO 80003

Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Extractable Petroleum Hydrocarbons by 8015M – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 8J22002 – Default Prep GC-Semi</b>										
<b>Blank (8J22002-BLK1)</b>					Prepared: 10/22/2008 Analyzed: 10/22/2008					
Gasoline (C6-C10)	ND	50.0	mg/kg							
<b>LCS (8J22002-BS1)</b>					Prepared: 10/22/2008 Analyzed: 10/22/2008					
Gasoline (C6-C10)	228	50.0	mg/kg	200		114	65-135			
<b>LCS Dup (8J22002-BSD1)</b>					Prepared: 10/22/2008 Analyzed: 10/22/2008					
Gasoline (C6-C10)	234	50.0	mg/kg	200		117	65-135	2.61	25	

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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---

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---

October 23, 2008

---

LT Environmental, Inc.  
4600 West 60th Avenue  
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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/21/2008 3:55:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. This laboratory report is intended solely for the above addressee and it is only to be used and or reproduced in its entirety.

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

### CROSS REFERENCE REPORT

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
S-13	X810063-01	Soil	10/21/2008 9:15:00AM	10/21/2008 15:55
S-14	X810063-02	Soil	10/21/2008 2:00:00PM	10/21/2008 15:55
S-15	X810063-03	Soil	10/21/2008 2:02:00PM	10/21/2008 15:55
S-16	X810063-04	Soil	10/21/2008 3:15:00PM	10/21/2008 15:55

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-13  
X810063-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J21005	10/21/2008	10/22/2008
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Origins Laboratory, Inc.

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-14  
X810063-02 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J21005	10/21/2008	10/22/2008
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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-15  
X810063-03 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J21005	10/21/2008	10/22/2008
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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-16  
X810063-04 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J21005	10/21/2008	10/22/2008
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Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Extractable Petroleum Hydrocarbons by 8015M – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 8J21005 – Default Prep GC-Semi</b>										
<b>Blank (8J21005-BLK1)</b>					Prepared: 10/21/2008 Analyzed: 10/22/2008					
Gasoline (C6-C10)	ND	50.0	mg/kg							
<b>LCS (8J21005-BS1)</b>					Prepared: 10/21/2008 Analyzed: 10/22/2008					
Gasoline (C6-C10)	224	50.0	mg/kg	200		112	65-135			
<b>LCS Dup (8J21005-BSD1)</b>					Prepared: 10/21/2008 Analyzed: 10/22/2008					
Gasoline (C6-C10)	237	50.0	mg/kg	200		118	65-135	5.62	25	

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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October 21, 2008

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LT Environmental, Inc.  
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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/20/2008 4:49:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

**CROSS REFERENCE REPORT**

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
S-11	X810059-01	Soil	10/20/2008 2:30:00PM	10/20/2008 16:49
S-12	X810059-02	Soil	10/20/2008 2:50:00PM	10/20/2008 16:49

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

X810009  
 page \_\_\_\_ of \_\_\_\_



originslaboratory.com

Client: LT ENV. INC.  
 Address: DN FILE  
 Telephone Number: \_\_\_\_\_  
 EMail Address: \_\_\_\_\_

Project Manager: BRIAN DODEK  
 Project Name: Collins 14-20 5A  
 Project Number: NEP0834  
 Samples Collected by: AJA

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analysis	Sample Instructions		
				Unpreserved	HCl	HNO <sub>3</sub>	Other - <u>None</u>	Groundwater	Soil	Air - Summa Canister #			Other -	
S-11	10-20	1430	1	X					X					
S-12	10-20	1450	1	X					X					
<i>(Large handwritten scribble)</i>														
Requested by: <u>MJD</u>	Date: <u>10/21/08</u>	Time: <u>1649</u>	Received by: <u>(Signature)</u>	Date: <u>10-20-08</u>	Time: <u>1649</u>	Temperature Upon Receipt:								
Requisitioned by:	Date:	Time:	Received by:	Date: <u>10-20-08</u>	Time: <u>1649</u>	Turbidity Time: <u>24-hr</u>								

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-11  
X810059-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J20003	10/20/2008	10/20/2008
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Origins Laboratory, Inc.

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-12  
X810059-02 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J20003	10/20/2008	10/20/2008
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Origins Laboratory, Inc.

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Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Extractable Petroleum Hydrocarbons by 8015M – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 8J20003 – Default Prep GC-Semi</b>										
<b>Blank (8J20003-BLK1)</b>					Prepared: 10/20/2008 Analyzed: 10/20/2008					
Gasoline (C6-C10)	ND	50.0	mg/kg							
<b>LCS (8J20003-BS1)</b>					Prepared: 10/20/2008 Analyzed: 10/20/2008					
Gasoline (C6-C10)	218	50.0	mg/kg	200		109	65-135			
<b>LCS Dup (8J20003-BSD1)</b>					Prepared: 10/20/2008 Analyzed: 10/20/2008					
Gasoline (C6-C10)	226	50.0	mg/kg	200		113	65-135	3.84	25	

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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October 20, 2008

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

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Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/17/2008 4:45:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

### CROSS REFERENCE REPORT

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
S-6	X810052-01	Soil	10/17/2008 8:30:00AM	10/17/2008 16:45
S-7	X810052-02	Soil	10/17/2008 10:15:00AM	10/17/2008 16:45
S-8	X810052-03	Soil	10/17/2008 2:20:00PM	10/17/2008 16:45
S-9	X810052-04	Soil	10/17/2008 2:25:00PM	10/17/2008 16:45
S-10	X810052-05	Soil	10/17/2008 3:55:00PM	10/17/2008 16:45

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-6  
X810052-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J17002	10/17/2008	10/17/2008
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Origins Laboratory, Inc.

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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-7  
X810052-02 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J17002	10/17/2008	10/17/2008
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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-8  
X810052-03 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J17002	10/17/2008	10/17/2008
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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-9  
X810052-04 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J17002	10/17/2008	10/17/2008
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Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-10  
X810052-05 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J17002	10/17/2008	10/17/2008
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Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Extractable Petroleum Hydrocarbons by 8015M – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 8J17002 – Default Prep GC-Semi</b>										
<b>Blank (8J17002-BLK1)</b>					Prepared: 10/17/2008 Analyzed: 10/17/2008					
Gasoline (C6-C10)	ND	50.0	mg/kg							
<b>LCS (8J17002-BS1)</b>					Prepared: 10/17/2008 Analyzed: 10/17/2008					
Gasoline (C6-C10)	236	50.0	mg/kg	200		118	65-135			
<b>LCS Dup (8J17002-BSD1)</b>					Prepared: 10/17/2008 Analyzed: 10/17/2008					
Gasoline (C6-C10)	242	50.0	mg/kg	200		121	65-135	2.72	25	

Origins Laboratory, Inc.

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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

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### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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---

Noelle E Doyle, Laboratory Manager



4640 Pecos Street | Unit C | Denver, Colorado 80211  
303.433.1322 Phone 303.265.9645 Fax

---

October 17, 2008

---

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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/16/2008 4:34:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. This laboratory report is intended solely for the above addressee and it is only to be used and or reproduced in its entirety.

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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

**CROSS REFERENCE REPORT**

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
S-5	X810047-01	Soil	10/16/2008 12:40:00PM	10/16/2008 16:34

Origins Laboratory, Inc.

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-5  
X810047-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J16004	10/16/2008	10/17/2008
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Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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

Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Extractable Petroleum Hydrocarbons by 8015M – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 8J16004 – Default Prep GC-Semi</b>										
<b>Blank (8J16004-BLK1)</b>					Prepared: 10/16/2008 Analyzed: 10/16/2008					
Gasoline (C6-C10)	ND	50.0	mg/kg							
<b>LCS (8J16004-BS1)</b>					Prepared: 10/16/2008 Analyzed: 10/16/2008					
Gasoline (C6-C10)	220	50.0	mg/kg	200		110	65-135			
<b>Matrix Spike (8J16004-MS1)</b>					Source: X810044-01 Prepared: 10/16/2008 Analyzed: 10/16/2008					
Gasoline (C6-C10)	241	50.0	mg/kg	200	ND	120	65-135			
<b>Matrix Spike Dup (8J16004-MSD1)</b>					Source: X810044-01 Prepared: 10/16/2008 Analyzed: 10/16/2008					
Gasoline (C6-C10)	252	50.0	mg/kg	200	ND	126	65-135	4.49	25	

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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---

Noelle E Doyle, Laboratory Manager



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---

October 17, 2008

---

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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/15/2008 4:25:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

CROSS REFERENCE REPORT

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
S-1	X810040-01	Soil	10/15/2008 8:40:00AM	10/15/2008 16:25
S-2	X810040-02	Soil	10/15/2008 9:20:00AM	10/15/2008 16:25
S-3	X810040-03	Soil	10/15/2008 11:40:00AM	10/15/2008 16:25
S-4	X810040-04	Soil	10/15/2008 3:45:00PM	10/15/2008 16:25

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



LT Environmental, Inc.  
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Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

X810040  
 page 1 of 1



originslaboratory.com

Client: LTENV.  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 E-Mail Address: \_\_\_\_\_

Project Manager: Brian Dodek  
 Project Name: Collins 14-20  
 Project Number: NEP0834  
 Samples Collected by: MJH

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air - Summa Canister #			Other
S-1	10-15	0840	1	X			X	X					Pres 5-3 + 5-4 first
S-2	10-15	0920	X	X			X						
S-3	10-15	1140	X	X			X						
S-4	10-15	1945	X	X			X						
<i>[Handwritten signature]</i>													
Relinquished by: <u>MD</u>	Date: <u>10/15/08</u>	Time: <u>1625</u>	Received by: _____	Date: _____	Time: _____	Temperature Upon Receipt: _____							
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: <u>10-15-08</u>	Time: <u>1625</u>	Turn Aged Time: <u>24-hr</u>							

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Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-1  
X810040-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	8J15003	10/15/2008	10/16/2008
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Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-2  
X810040-02 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	225.2	50.0	mg/kg	1	8J15003	10/15/2008	10/16/2008
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Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-3  
X810040-03 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	2481.3	50.0	mg/kg	1	8J15003	10/15/2008	10/16/2008
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Origins Laboratory, Inc.

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

S-4  
X810040-04 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Gasoline Range Organics (GRO) by EPA 8015M

Gasoline (C6-C10)	1591.4	50.0	mg/kg	1	8J15003	10/15/2008	10/16/2008
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 Arvada CO 80003

Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Extractable Petroleum Hydrocarbons by 8015M – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 8J15003 – Default Prep GC-Semi</b>										
<b>Blank (8J15003-BLK1)</b>					Prepared: 10/15/2008 Analyzed: 10/15/2008					
Gasoline (C6-C10)	ND	50.0	mg/kg							
<b>LCS (8J15003-BS1)</b>					Prepared: 10/15/2008 Analyzed: 10/15/2008					
Gasoline (C6-C10)	230.7	50.0	mg/kg	200		115	65-135			
<b>LCS Dup (8J15003-BSD1)</b>					Prepared: 10/15/2008 Analyzed: 10/15/2008					
Gasoline (C6-C10)	231.0	50.0	mg/kg	200		116	65-135	0.164	25	

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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November 11, 2008

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

Brian Dodek  
Project Number: NEP0835.01  
Project: Collins 14-20 5A

---

Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 11/5/2008 5:17:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0835.01  
Project: Collins 14-20 5A

**CROSS REFERENCE REPORT**

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
SD09	X811020-01	Water	11/5/2008 4:25:00PM	11/05/2008 17:17

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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LT Environmental, Inc.  
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 Arvada CO 80003

Brian Dodek  
 Project Number: NEP0835.01  
 Project: Collins 14-20 5A

**SD09**  
**X811020-01 (Water)**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**

**BTEX by EPA 8260B**

Benzene	ND	0.00100	mg/L	1	8K06002	11/06/2008	11/06/2008	
Toluene	ND	0.00100	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	
o-Xylene	ND	0.00100	"	"	"	"	"	
m,p-Xylene	ND	0.00200	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>81.1 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110 %</i>	<i>83-123</i>			"	"	"

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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

Brian Dodek  
 Project Number: NEP0835.01  
 Project: Collins 14-20 5A

**Volatile Organic Compounds by EPA Method 8260B – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8K06002 – EPA 5030B**

**Blank (8K06002-BLK1)**

Prepared: 11/06/2008 Analyzed: 11/06/2008

Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	"							
Ethylbenzene	ND	0.001	"							
o-Xylene	ND	0.001	"							
m,p-Xylene	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>61.5</i>		<i>ug/L</i>	<i>62.5</i>		<i>98.4</i>	<i>70.3-123</i>			
<i>Surrogate: Toluene-d8</i>	<i>68.1</i>		<i>"</i>	<i>62.5</i>		<i>109</i>	<i>75.9-123</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>68.0</i>		<i>"</i>	<i>62.5</i>		<i>109</i>	<i>83-123</i>			

**LCS (8K06002-BS1)**

Prepared: 11/06/2008 Analyzed: 11/11/2008

Benzene	0.05	0.001	mg/L	0.0500		98.5	64.2-124			S-GC
Toluene	0.06	0.001	"	0.0500		111	63.9-119			S-GC
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>61.2</i>		<i>ug/L</i>	<i>62.5</i>		<i>97.9</i>	<i>70.3-123</i>			
<i>Surrogate: Toluene-d8</i>	<i>68.0</i>		<i>"</i>	<i>62.5</i>		<i>109</i>	<i>75.9-123</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>69.6</i>		<i>"</i>	<i>62.5</i>		<i>111</i>	<i>83-123</i>			

**LCS Dup (8K06002-BSD1)**

Prepared: 11/06/2008 Analyzed: 11/11/2008

Benzene	0.05	0.001	mg/L	0.0500		98.5	64.2-124	0.0406	200	S-GC
Toluene	0.06	0.001	"	0.0500		111	63.9-119	0.252	200	S-GC
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>59.9</i>		<i>ug/L</i>	<i>62.5</i>		<i>95.8</i>	<i>70.3-123</i>			
<i>Surrogate: Toluene-d8</i>	<i>69.4</i>		<i>"</i>	<i>62.5</i>		<i>111</i>	<i>75.9-123</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>68.6</i>		<i>"</i>	<i>62.5</i>		<i>110</i>	<i>83-123</i>			

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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

Brian Dodek  
Project Number: NEP0835.01  
Project: Collins 14-20 5A

---

### Notes and Definitions

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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---

November 04, 2008

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

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

---

Attached are the analytical results for Collins 14-20 5A received by Origins Laboratory, Inc. 10/30/2008 3:00:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle", is written in a cursive style.

Laboratory Manager  
Noelle E Doyle

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4600 West 60th Avenue  
Arvada CO 80003

Brian Dodek  
Project Number: NEP0834  
Project: Collins 14-20 5A

**CROSS REFERENCE REPORT**

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
SB08	X810098-01	Water	10/29/2008 2:00:00PM	10/30/2008 15:00

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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LT Environmental, Inc.  
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Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**SB08**  
**X810098-01 (Water)**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**

**BTEX by EPA 8260B**

Benzene	ND	0.00100	mg/L	1	8J30004	10/30/2008	11/01/2008	
Toluene	ND	0.00100	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	
o-Xylene	ND	0.00100	"	"	"	"	"	
m,p-Xylene	ND	0.00200	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>70.3-123</i>			"	"	"	
<i>Surrogate: Toluene-d8</i>	<i>94.8 %</i>	<i>75.9-123</i>			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>108 %</i>	<i>83-123</i>			"	"	"	

Origins Laboratory, Inc.

*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.*

Noelle E Doyle, Laboratory Manager



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

Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Volatile Organic Compounds by EPA Method 8260B – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8J30004 – EPA 5030B**

**Blank (8J30004-BLK1)**

Prepared: 10/30/2008 Analyzed: 10/31/2008

Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	"							
Ethylbenzene	ND	0.001	"							
o-Xylene	ND	0.001	"							
m,p-Xylene	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>64.4</i>		<i>ug/L</i>	<i>62.5</i>		<i>103</i>	<i>70.3-123</i>			
<i>Surrogate: Toluene-d8</i>	<i>60.9</i>		<i>"</i>	<i>62.5</i>		<i>97.4</i>	<i>75.9-123</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>66.0</i>		<i>"</i>	<i>62.5</i>		<i>106</i>	<i>83-123</i>			

**Blank (8J30004-BLK2)**

Prepared: 10/30/2008 Analyzed: 10/31/2008

Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	"							
Ethylbenzene	ND	0.001	"							
o-Xylene	ND	0.001	"							
m,p-Xylene	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>64.6</i>		<i>ug/L</i>	<i>62.5</i>		<i>103</i>	<i>70.3-123</i>			
<i>Surrogate: Toluene-d8</i>	<i>59.8</i>		<i>"</i>	<i>62.5</i>		<i>95.7</i>	<i>75.9-123</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>66.2</i>		<i>"</i>	<i>62.5</i>		<i>106</i>	<i>83-123</i>			

**LCS (8J30004-BS1)**

Prepared: 10/30/2008 Analyzed: 10/31/2008

Benzene	0.05	0.001	mg/L	0.0500		90.5	64.2-124			
Toluene	0.05	0.001	"	0.0500		102	63.9-119			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>61.1</i>		<i>ug/L</i>	<i>62.5</i>		<i>97.8</i>	<i>70.3-123</i>			
<i>Surrogate: Toluene-d8</i>	<i>59.6</i>		<i>"</i>	<i>62.5</i>		<i>95.4</i>	<i>75.9-123</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>67.0</i>		<i>"</i>	<i>62.5</i>		<i>107</i>	<i>83-123</i>			

**LCS (8J30004-BS2)**

Prepared: 10/30/2008 Analyzed: 10/31/2008

Benzene	0.04	0.001	mg/L	0.0500		87.3	64.2-124			
Toluene	0.05	0.001	"	0.0500		98.5	63.9-119			

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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

Brian Dodek  
 Project Number: NEP0834  
 Project: Collins 14-20 5A

**Volatile Organic Compounds by EPA Method 8260B – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
<b>Batch 8J30004 – EPA 5030B</b>											
<b>LCS (8J30004-BS2)</b>					Prepared: 10/30/2008 Analyzed: 10/31/2008						
Surrogate: 1,2-Dichloroethane-d4	62.4		ug/L	62.5		99.8	70.3-123				
Surrogate: Toluene-d8	60.1		"	62.5		96.2	75.9-123				
Surrogate: 4-Bromofluorobenzene	66.0		"	62.5		106	83-123				
<b>Matrix Spike (8J30004-MS1)</b>					<b>Source: X810090-02</b>			Prepared: 10/30/2008 Analyzed: 10/31/2008			
Benzene	0.05	0.001	mg/L	0.0500	ND	94.2	64.2-124				
Toluene	0.05	0.001	"	0.0500	ND	105	63.9-119				
Surrogate: 1,2-Dichloroethane-d4	61.8		ug/L	62.5		98.8	70.3-123				
Surrogate: Toluene-d8	60.6		"	62.5		96.9	75.9-123				
Surrogate: 4-Bromofluorobenzene	67.8		"	62.5		108	83-123				
<b>Matrix Spike (8J30004-MS2)</b>					<b>Source: X810090-10</b>			Prepared: 10/30/2008 Analyzed: 10/31/2008			
Benzene	0.79	0.001	mg/L	0.0500	0.42	744	64.2-124			QM-4X	
Toluene	0.08	0.001	"	0.0500	0.03	103	63.9-119				
Surrogate: 1,2-Dichloroethane-d4	59.4		ug/L	62.5		95.0	70.3-123				
Surrogate: Toluene-d8	59.1		"	62.5		94.5	75.9-123				
Surrogate: 4-Bromofluorobenzene	64.6		"	62.5		103	83-123				
<b>Matrix Spike Dup (8J30004-MSD1)</b>					<b>Source: X810090-02</b>			Prepared: 10/30/2008 Analyzed: 10/31/2008			
Benzene	0.05	0.001	mg/L	0.0500	ND	91.3	64.2-124	3.13	25		
Toluene	0.05	0.001	"	0.0500	ND	100	63.9-119	5.13	25		
Surrogate: 1,2-Dichloroethane-d4	60.9		ug/L	62.5		97.4	70.3-123				
Surrogate: Toluene-d8	60.6		"	62.5		96.9	75.9-123				
Surrogate: 4-Bromofluorobenzene	69.9		"	62.5		112	83-123				
<b>Matrix Spike Dup (8J30004-MSD2)</b>					<b>Source: X810090-10</b>			Prepared: 10/30/2008 Analyzed: 10/31/2008			
Benzene	0.81	0.001	mg/L	0.0500	0.42	781	64.2-124	2.30	25	QM-4X	
Toluene	0.08	0.001	"	0.0500	0.03	103	63.9-119	0.159	25		
Surrogate: 1,2-Dichloroethane-d4	57.7		ug/L	62.5		92.3	70.3-123				

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Noelle E Doyle, Laboratory Manager

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Project: Collins 14-20 5A

**Volatile Organic Compounds by EPA Method 8260B – Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8J30004 – EPA 5030B**

**Matrix Spike Dup (8J30004-MSD2)**

Source: X810090-10

Prepared: 10/30/2008 Analyzed: 10/31/2008

Surrogate: Toluene-d8	58.0		ug/L	62.5		92.7	75.9-123			
Surrogate: 4-Bromofluorobenzene	65.5		"	62.5		105	83-123			

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### Notes and Definitions

- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

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Noelle E Doyle, Laboratory Manager