



**CONESTOGA-ROVERS
& ASSOCIATES**

6121 Indian School Road NE, Suite 200
Albuquerque, New Mexico 87110
Telephone: (505) 884-0672 Fax: (505) 884-4932
www.CRAworld.com

) , 2014

Reference No. 088210/10

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240

Dear Dr. Oberding:

Re: Summary of Soil Sampling
Lomas Rojas 26 #6 SWD
1RP-3364
Lea County, New Mexico

On behalf of EOG Resources, Inc. (EOG), Conestoga Rovers and Associates (CRA), performed subsurface assessments at the above referenced location (Site) on September 30 and October 15, 2014. The Site is located at coordinates 32.101446 N, -103.539973 W and is approximately 20 miles west of Jal, New Mexico, in Lea County (see Figure 1). The case number is 1RP-3364. This report is being submitted on behalf of EOG.

The Site is currently an active tank battery located on a large caliche pad. The surrounding topography is relatively flat, covered with windblown sand, sparse vegetation, and mesquite trees. Based on the C-141 form, a release of produced water occurred on September 27, 2014 when a load line was left open. According to the C-141 form, the release was estimated to be 50 barrels, with 36 barrels recovered. Contaminates of concern are chlorides, BTEX, and TPH.

The impacted soil has been excavated. The soil stockpile was placed on plastic sheeting. The excavation had yet to be backfilled with clean soil at the time of CRA's assessment. Presented below is a summary of the September through October 2014 sampling events.

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1.0 Site Risk Ranking

The New Mexico Oil Conservation Division (NMOCD) has a risk ranking system to establish the regulatory limits for petroleum hydrocarbons. The risk ranking system is based on the depth to groundwater, the presence of wellhead protection areas, and the distance from the Site to surface water bodies.

According to Tomáš 'Doc' Oberding, PhD, with NMOCD, the depth to groundwater in the vicinity of the site is estimated to be greater than 100' feet (ft) below ground surface (bgs). There are no well head protection areas in the vicinity of the Site. An intermittent drainage feature is located no less than 1000 feet from the facility. Based on this, the NMOCD Risk Ranking score for the site is 0. The Recommended Remediation Action Levels (RRALs) for the site are 5000 parts per million (ppm) for TPH, 10 ppm for benzene, 50 ppm for total BTEX. The recommended concentration for chlorides is 500 ppm (see table below).

New Mexico Oil Conservation Division Spill Guidelines	
Ranking Criteria	Score
Depth to Ground Water (greater than 100 ft)	0
Wellhead Protection Area	0
Distance to Surface Body Water	0
Ranking Criteria Total Score	0
*Because the ranking criteria total score is 0, NMOCD RRALs are 10 ppm for benzene, 50 ppm for BTEX, 5000 ppm for total TPH, and 500 ppm for chlorides.	

2.0 Sampling Activities

The sampling activities performed at the Site consisted of hand-shovel digging, hand auguring, and backhoe/ track-hoe excavation to depths of 11 ft bgs. Sampling tools were cleaned with an Alconox wash solution and clean water rinse prior to collecting each soil sample.



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Field screening was performed for chlorides using Hach Chloride Test strips and total petroleum hydrocarbons (TPH) using a Petroflag Hydrocarbon analysis kit.

Following field screening, soil samples were collected for laboratory analysis of chlorides by EPA Method 300.0, TPH by EPA Method 8015, and benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method 8021. Soil samples were submitted under chain of custody documentation via overnight delivery to Xenco Laboratories of Odessa, Texas.

Initial soil sampling, performed on September 30, 2014, indicated that soil concentrations of chlorides were above regulatory limits within the spill area. The initial chloride concentrations at S-1 and S-2 were 6832 ppm and 684 ppm, respectively at 3 ft BGS (see Figure 2). The analytical results were below laboratory detection limits for BTEX constituents and TPH.

The locations of S-1 and S-2 were excavated and additional sampling was performed on October 15, 2014 (see Figure 2). An additional soil sample was collected from the bottom of the excavation west of the Site pad (See Figure 2). The results of this sample were below the regulatory limit for chlorides at 69.1 ppm, and below laboratory detection limits for BTEX and TPH. Two samples were taken from 11 feet bgs in the excavation south of the Site pad (See Figure 2), one at the base of the north wall of the excavation and one at the base of the south wall. Laboratory analysis of the soil sample collected from the base of the north wall indicated concentrations of chlorides at 181 ppm, and below laboratory detection limits for BTEX and TPH. Chloride concentrations at the base of the south wall were 404 ppm, with BTEX below laboratory detection limits and a TPH concentration of 34 ppm.



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Soil with concentrations exceeding the RRALs has been excavated. Based on laboratory analytical results from the excavation, there does not appear to be a threat to groundwater from the release. Due to this, EOG requests that no further action status be granted to the site. If you have any questions or comments with regards to this request for closure, please do not hesitate to contact our Albuquerque office at (505) 884-0672.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Jason Ploss
Staff Scientist

Reviewed by:

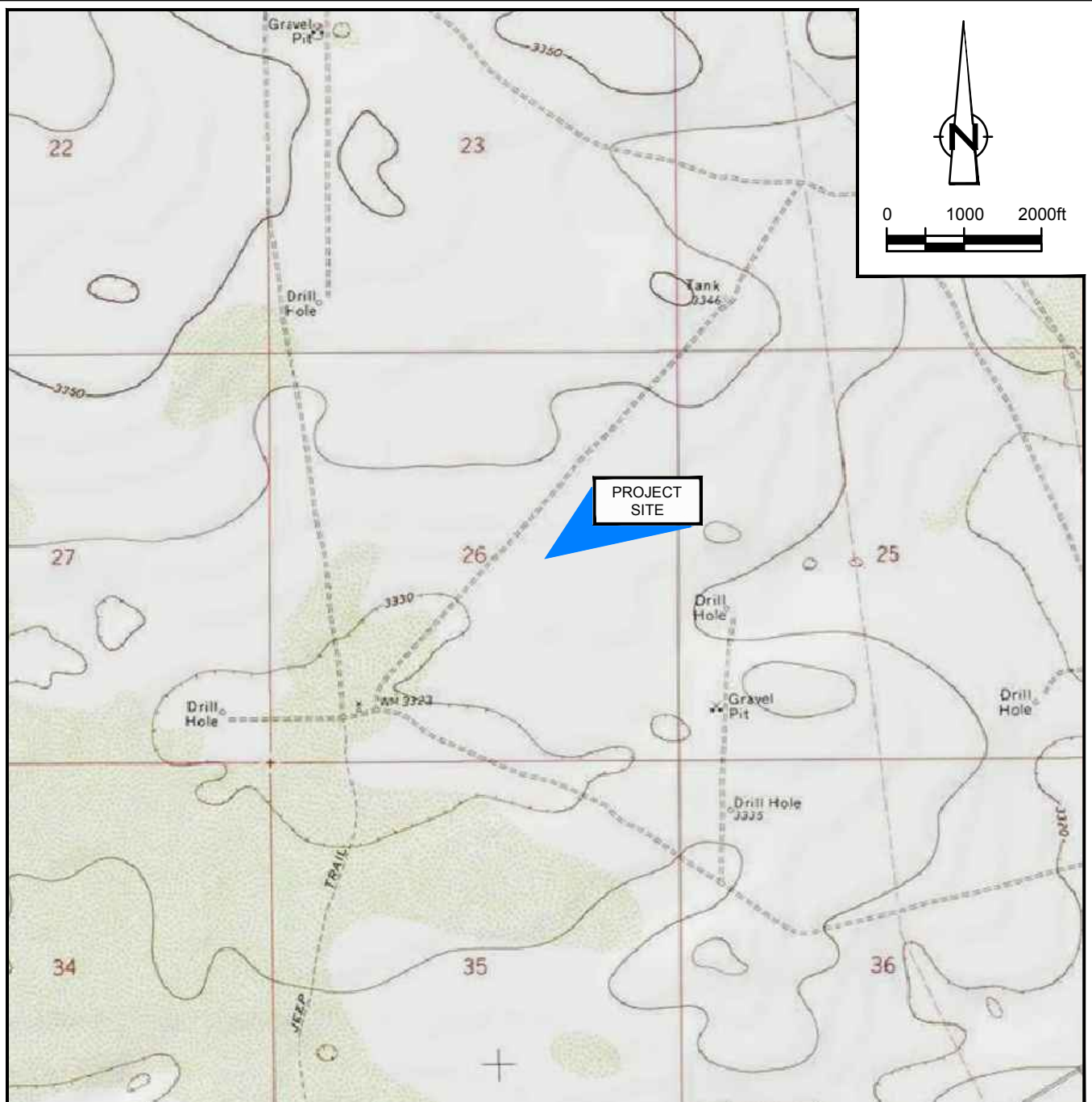
Bernard Bockisch, PMP
Senior Project Manager

BB/mc/1
Encl. (3)

Attachments:

Figure 1. Site Location Map
Figure 2. Site Detail Map
Appendix A. Laboratory Analytical Results

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"PADUCA BREAKS EAST, NEW MEXICO"

LAT/LONG: 32.1014° NORTH, 103.5399° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

SITE LOCATION MAP
LOMAS ROJAS 26 No. 6 SWD
near Jal, New Mexico



NOTE:

1. All results are in ppm.

S-2	
Depth	3'
Chloride	1040
TPH	34.0

SO-088210-10-101514-SP-01	
Depth	9'
Chloride	69.1

SO-088210-10-101514-SP-02	
Depth	11'
Chloride	181

S-1	
Depth	3'
Chloride	5530

SO-088210-10-101514-SP-03	
Depth	11'
Chloride	404

S-3	
Depth	2'10"
Chloride	122

LEGEND

- Sample Location
- Excavation Boundary
- BTEX Benzene, Toluene, Ethylbenzene and Xylenes Concentration (ppm)
- TPH Total Petroleum Hydrocarbons Concentration (ppm)

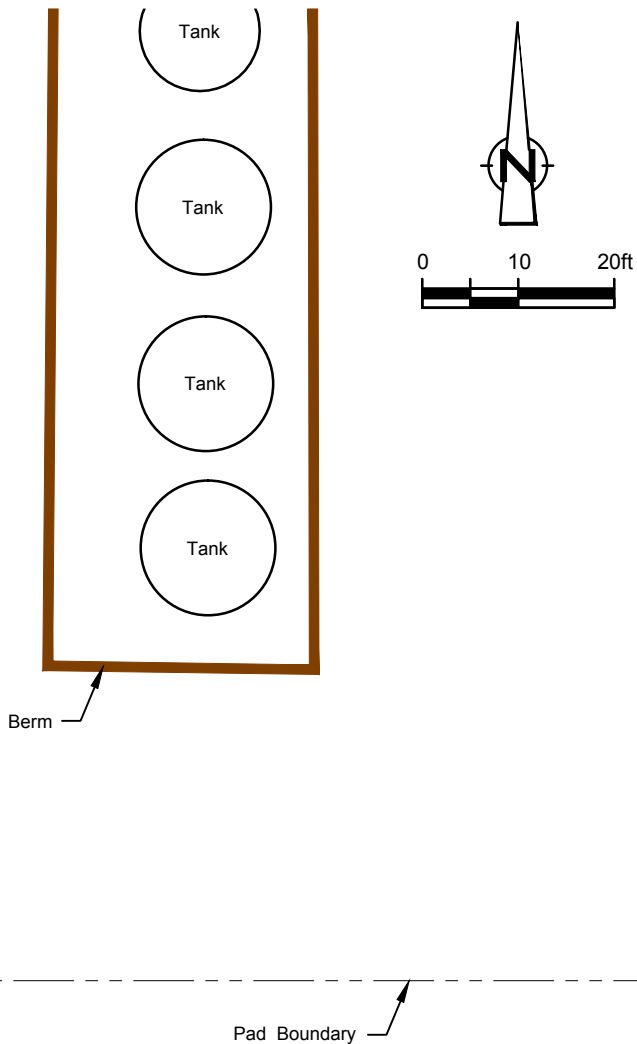


Figure 2

SITE DETAIL MAP
LOMAS ROJAS 26 No. 6 SWD
near Jal, New Mexico

Appendix A

Laboratory Analytical Results

Analytical Report 494461
for
Conestoga-Rovers & Associates-Albuquerque, NM

Project Manager: Bernie Bockisch

EOG- Lomas Rojas 26 #6 SWD

03-OCT-14

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)

New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)

Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



03-OCT-14

Project Manager: **Bernie Bockisch**
Conestoga-Rovers & Associates-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **494461**
EOG- Lomas Rojas 26 #6 SWD
Project Address: Jal,NM

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 494461. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 494461 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks

Project Manager

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Sample Cross Reference 494461



Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque

EOG- Lomas Rojas 26 #6 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SO-088210-10-093014-SP-01	S	09-30-14 17:15		494461-001
SO-088210-10-093014-SP-02	S	09-30-14 18:50		494461-002
SO-088210-10-093014-SP-03	S	09-30-14 18:55		494461-003



CASE NARRATIVE



Client Name: Conestoga-Rovers & Associates-Albuquerque, NM

Project Name: EOG- Lomas Rojas 26 #6 SWD

Project ID:

Work Order Number(s): 494461

Report Date: 03-OCT-14

Date Received: 10/02/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 494461

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM



Project Id:
Contact: Bernie Bockisch
Project Location: Jal,NM

Project Name: EOG- Lomas Rojas 26 #6 SWD

Date Received in Lab: Thu Oct-02-14 11:02 am

Report Date: 03-OCT-14

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	494461-001	494461-002	494461-003			
	<i>Field Id:</i>	SO-088210-10-093014-SP-05	SO-088210-10-093014-SP-05	SO-088210-10-093014-SP-05			
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Sep-30-14 17:15	Sep-30-14 18:50	Sep-30-14 18:55			
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-02-14 14:00	Oct-02-14 14:00	Oct-02-14 14:00			
	<i>Analyzed:</i>	Oct-02-14 23:46	Oct-03-14 00:02	Oct-03-14 00:19			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.00118	ND 0.00111	ND 0.00123			
Toluene		ND 0.00237	ND 0.00221	ND 0.00245			
Ethylbenzene		ND 0.00118	ND 0.00111	ND 0.00123			
m,p-Xylenes		ND 0.00237	ND 0.00221	ND 0.00245			
o-Xylene		ND 0.00118	ND 0.00111	ND 0.00123			
Total Xylenes		ND 0.00118	ND 0.00111	ND 0.00123			
Total BTEX		ND 0.00118	ND 0.00111	ND 0.00123			
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Oct-02-14 13:00	Oct-02-14 13:00	Oct-02-14 13:00			
	<i>Analyzed:</i>	Oct-02-14 17:02	Oct-02-14 17:25	Oct-02-14 17:47			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		5530 474	1040 111	122 24.6			
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Oct-02-14 17:30	Oct-02-14 17:30	Oct-02-14 17:30			
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		15.7 1.00	10.2 1.00	18.8 1.00			
TPH By SW8015 Mod	<i>Extracted:</i>	Oct-02-14 14:00	Oct-02-14 14:00	Oct-02-14 14:00			
	<i>Analyzed:</i>	Oct-02-14 15:21	Oct-02-14 16:38	Oct-02-14 17:03			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		ND 17.7	ND 16.7	ND 18.4			
C12-C28 Diesel Range Hydrocarbons		ND 17.7	34.0 16.7	ND 18.4			
C28-C35 Oil Range Hydrocarbons		ND 17.7	ND 16.7	ND 18.4			
Total TPH		ND 17.7	34.0 16.7	ND 18.4			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Orders : 494461,

Lab Batch #: 952054

Sample: 494461-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 15:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	58.5	49.9	117	70-135	

Lab Batch #: 952054

Sample: 494461-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 16:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.7	102	70-135	
o-Terphenyl	55.2	49.9	111	70-135	

Lab Batch #: 952054

Sample: 494461-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 17:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	56.1	49.9	112	70-135	

Lab Batch #: 952050

Sample: 494461-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 23:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 952050

Sample: 494461-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/14 00:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Orders : 494461,

Lab Batch #: 952050

Sample: 494461-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/14 00:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 952054

Sample: 662345-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/02/14 13:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	61.3	50.0	123	70-135	

Lab Batch #: 952050

Sample: 662396-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/02/14 22:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 952054

Sample: 662345-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/02/14 14:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	62.6	50.0	125	70-135	

Lab Batch #: 952050

Sample: 662396-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/02/14 22:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Orders : 494461,

Lab Batch #: 952054

Sample: 662345-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/02/14 14:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	64.2	50.0	128	70-135	

Lab Batch #: 952050

Sample: 662396-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/02/14 22:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 952054

Sample: 494461-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 15:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.8	125	70-135	
o-Terphenyl	63.9	49.9	128	70-135	

Lab Batch #: 952050

Sample: 494461-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 22:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 952054

Sample: 494461-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 16:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.9	120	70-135	
o-Terphenyl	62.3	50.0	125	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Orders : 494461,

Lab Batch #: 952050

Sample: 494461-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/02/14 23:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Order #: 494461

Project ID:

Analyst: ARM

Date Prepared: 10/02/2014

Date Analyzed: 10/02/2014

Lab Batch ID: 952050

Sample: 662396-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00100	0.100	0.0912	91	0.100	0.0894	89	2	70-130	35	
Toluene	<0.00200	0.100	0.0957	96	0.100	0.0932	93	3	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0973	97	0.100	0.0938	94	4	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.200	100	0.200	0.193	97	4	70-135	35	
o-Xylene	<0.00100	0.100	0.0964	96	0.100	0.0942	94	2	71-133	35	

Analyst: JUM

Date Prepared: 10/01/2014

Date Analyzed: 10/01/2014

Lab Batch ID: 951962

Sample: 662321-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<2.00	50.0	49.2	98	50.0	49.5	99	1	80-120	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Order #: 494461

Project ID:

Analyst: ARM

Date Prepared: 10/02/2014

Date Analyzed: 10/02/2014

Lab Batch ID: 952054

Sample: 662345-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	942	94	1000	965	97	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1160	116	1000	1160	116	0	70-135	35	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: EOG- Lomas Rojas 26 #6 SWD



Work Order #: 494461

Lab Batch #: 951962

Date Analyzed: 10/02/2014

QC- Sample ID: 494422-001 S

Reporting Units: mg/kg

Date Prepared: 10/01/2014

Batch #: 1

Project ID:

Analyst: JUM

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	16500	12000	27900	95	80-120	

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$
Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Order # : 494461

Project ID:

Lab Batch ID: 952050

QC- Sample ID: 494461-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/02/2014

Date Prepared: 10/02/2014

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00118	0.118	0.0924	78	0.118	0.0901	76	3	70-130	35	
Toluene	<0.00236	0.118	0.0967	82	0.118	0.0942	80	3	70-130	35	
Ethylbenzene	<0.00118	0.118	0.0983	83	0.118	0.0954	81	3	71-129	35	
m,p-Xylenes	<0.00236	0.236	0.203	86	0.237	0.197	83	3	70-135	35	
o-Xylene	<0.00118	0.118	0.0973	82	0.118	0.0954	81	2	71-133	35	

Lab Batch ID: 952054

QC- Sample ID: 494461-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/02/2014

Date Prepared: 10/02/2014

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.8	1180	1120	95	1180	1110	94	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.8	1180	1310	111	1180	1290	109	2	70-135	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Project Name: EOG- Lomas Rojas 26 #6 SWD

Work Order #: 494461

Lab Batch #: 952049

Project ID:

Date Analyzed: 10/02/2014 17:30

Date Prepared: 10/02/2014

Analyst: WRU

QC- Sample ID: 494439-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	19.8	17.8	11	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit



CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

COC NO.: **32766**

Address: **6121 Totten School Road Allentown, PA 18106**

PAGE **1** OF **1**

Phone: **610-280-0572**

Fax: _____

Website: **www.conestoga-rovers.com**

(See Reverse Side for Instructions)

Project No./Phase/Task Code: **088210/10**

Project Name: **ECG - Lomas Rojas 26# HCSW**

Project Location: **Near Jal, NM**

Chemistry Contact: **Bernie Beckisch (505) 280-0572**

Sampler(s): **Steven Perez STS-044-7670**

Laboratory Name: **XENCO Laboratories**

Lab Contact: _____

432-563-1800

Lab Location: **Allessee, TX**

Lab Quote No: _____

SSOW ID: _____

Cooler No: _____

Carrier: **Redox**

Airbill No: **297154834**

Date Shipped: **10/01/14**

MS/MSD Request
Special Instructions: **COMMENTS/**

SAMPLE IDENTIFICATION
(Containers for each sample may be combined on one line)

DATE
(mm/dd/yyyy)

TIME
(hh:mm)

Matrix Code
(see back of COC)
Grab (G) or Comp (C)

Unpreserved
Hydrochloric Acid (HCl)
Nitric Acid (HNO₃)
Sulfuric Acid (H₂SO₄)
Sodium Hydroxide (NaOH)
Methanol/Water (Soil VOC)
EnCores 3x5-g, 1x25-g
Other:
Total Containers/Sample

SAMPLE TYPE
CONTAINER QUANTITY & PRESERVATION

ANALYSIS REQUESTED
(See Back of COC for Definitions)

MS/MSD Request

Special Instructions: **COMMENTS/**

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yyyy)	TIME (hh:mm)	Matrix Code (see back of COC) Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request	Special Instructions:
1	50-088210-10-093014-SR-01	09/01/14	17:15	SO											
2	50-088210-10-093014-SR-02		18:50	SO											
3	50-088210-10-093014-SR-03		18:55	SO											
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

TAT Required in business days (use separate COCs for different TATs):

☒ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other: _____

Total Number of Containers: _____
All Samples in Cooler must be on COC

Notes/Special Requirements: **COC # 4944161**

REINQUISHED BY

COMPANY

DATE

TIME

RECEIVED BY

COMPANY

DATE

TIME

1. **Steven Perez**

CRA

10/01/14

3:25

MM/BB

10/01/14

11:00

3.

3.

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution:

WHITE - Fully Executed Copy (CRA)

YELLOW - Receiving Laboratory Copy

PINK - Shipper

GOLDENROD - Sampling Crew

CRA Form: COC-10B (20110804)



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Conestoga-Rovers & Associates-Albuqu

Date/ Time Received: 10/02/2014 11:02:00 AM

Work Order #: 494461

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO ₃ ,HCL, H ₂ SO ₄ ?	N/A
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Kelsey Brooks
Kelsey Brooks

Date: 10/02/2014

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 10/02/2014