District I 1625 N French Dr , Hobbs, NM 88240 District II 1301 W Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S St Francis Dr., Santa Fe, NM 87505

Energy Minerals and Natural Resources RECEIVED

Oil Conservation Division 1220 South St. Francis Dr.

Revised October 10, 2003

Form C-141

NMOCD ARTESIA Santa Fe, NM 87505

MAR 29 2010 Supmit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back side of form

0-015-6	20665		Rele	ease Notifica	tio	on and Co	rrective A	ction	l		
NUB 10090						OPERA	ГOR		☐ Initia	l Report 🛛 Final Rep	
Name of Co	ompany B	P America 1	Producti	on Company 776	5	Contact Steve Pacheco					
		Artesia, N				Telephone No. 575-677-3642					
Facility Na	me Empir	e Abo Unit	N-13			Facility Typ	e Flow line				
Surface Ow	ner BLM			Mineral Ow	ner	er BLM Lease No.					
				LOCAT	CIC	ON OF REI	LEASE				
Unit Letter	Section	Township	Range			th/South Line	Feet from the	East/	West Line	County	
E	11	18S	27E	1618			330			Eddy	
		Lat	itude	32.7645		Longitude	104.256181				
				NATI	RI	E OF RELI	EASE				
Type of Rele	ase Produ	ced Water		11/11/0	111		Release Unkno	wn	Volume R	ecovered Unknown	
Source of Re						Date and H	lour of Occurrence	ce		Hour of Discovery	
Was Immedi	ate Notice (If YES, To	Whom?			•	
			Yes 🗵	🛮 No 🔲 Not Requ	uire	d					
By Whom?						Date and H	lour				
Was a Water	course Read			_		If YES, Vo	lume Impacting	the Wate	ercourse		
			Yes 🛭	☑ No							
Describe Cai Historical R		em and Reme	dial Actio	n Taken.*							
See attached I hereby certifications a public health	Ify that the ill operators or the envir	information gi are required to ronment. The	ven above o report a acceptane	e is true and complet nd/or file certain rele ce of a C-141 report	ease by t	notifications ar	nd perform correct arked as "Final R	ctive act leport" d	ions for rele loes not relie	uant to NMOCD rules and ases which may endanger eve the operator of liability	
or the enviro	nment. In a	ave failed to a ddition, NMC ws and/or regu	CD accep	v investigate and remotance of a C-141 rep	port	ate contaminati does not reliev	e the operator of	respons	ibility for co	, surface water, human healt ompliance with any other	
Signature:	Stun	My	Pari	ledd		Annroyad lett	OIL CON	11.	ATION :	<u>DIVISION</u>	
Printed Name	e: Steve M	Pacheco							KARULE	<u>z</u>	
Title: SENM	1 Team Lead	<u>d</u>	1. T V 147-30			Approval Dat	APR 0 6 20	10	Expiration I	Date: NA	
E-mail Addre	ess: steve.p	acheco@bp co	om			Conditions of	• •			Attached	
Date: March	12, 2010		Phon	ne: 575-677-3642		Closure A	Report Ath	ched			



AMARILLO 921 North Bivins Amarillo. Texas 79107 Phone 806 467 0607 Fax 806 467 0622

SITE CLOSURE REPORT

AUSTIN

911 W Anderson Lane, Suite 202 Austin, TX 78757 Phone 512 989 3428 Fax 512 989 3487 EMPIRE ABO UNIT N-13
SECTION 11, TOWNSHIP 18 S, RANGE 27 E
EDDY COUNTY, NEW MEXICO

HOBBS

318 East Taylor Street Hobbs, New Mexico 88241 Phone 505 393 4261 Fax 505 393.4658

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> SAN ANTONIO 17170 Jordan Road Suite 102 Selma, Texas 78154 Phone 210 579 0235 Fax 210 568 2191

> > TULSA

9906 East 43rd Street Suite G Tulsa, Oklahoma 74146 Phone 918 742 0871 Fax 918.742 0876

PREPARED FOR:

BP AMERICA PRODUCTION COMPANY P.O. BOX 129 ARTESIA, NEW MEXICO 88211

TYLER
719 West Front Street
Suite 255
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Fax 903 531 9979

PREPARED BY:

ENVIRONMENTAL CONSULTING
ENGINEERING
DRILLING
CONSTRUCTION
EMERGENCY RESPONSE

TALON/LPE 408 WEST TEXAS ARTESIA, NEW MEXICO 88211

Toll Free 866 742 0742 www talonipe com

March 15, 2010

SITE CLOSURE REPORT

EMPIRE ABO UNIT N-13 SECTION 11, TOWNSHIP 18 S, RANGE 27 E EDDY COUNTY, NEW MEXICO

PREPARED BY:

TALON/LPE 408 WEST TEXAS ARTESIA, NEW MEXICO 88211

> Kyle Summers District Manager

March 15, 2010

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ATTACHMENTS

Attachment A Figures

Figure 1 – Preliminary Sample Locations

Figure 2 – Final Confirmation Sample Locations

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Table 1 – Summary of Soil Analytical Data

Attachment C Sample Analytical Data Reports and Chain of Custody Documentation

Attachment D Temporary Monitor Well Boring Log

Attachment E Disposal Documentation

Attachment F New Mexico Oil Conservation Division Release Notification and Corrective Action Form C-141

Attachment G Photographs

1.0 INTRODUCTION

1.1 OBJECTIVES AND SITE BACKGROUND

This Report has been prepared on behalf of BP America Production Company (BP), to provide details of site closure activities for the remediation of a historical release of an unknown quantity of produced water at the Empire ABO Unit (EAU) N-13 (site) in Eddy County, New Mexico. The site is located at 32.7645° N and 104.2561° W, Section 11, Township 18 S, Range 27 E. The impacted soils at this location were removed by excavation, and transported to a New Mexico Oil Conservation Division (NMOCD) approved disposal facility. Talon/LPE (Talon) was retained by BP to perform these activities which are documented herein.

2.0 INITIAL SITE ACTIVITIES

Talon performed soil sampling activities to delineate the extent of impact at the site. These activities are discussed in further detail in the following sections.

2.1 SOIL INVESTIGATION ACTIVITIES

On October 29, 2008, soil samples were obtained from 14 different locations (SP-1 through SP-9, and SP-11 through SP-15) at the EAU N-13. Sample number SP-10 was inadvertently omitted from the sample sequence.

Four of these locations were sampled at two different depth intervals resulting in a total of 18 preliminary investigative samples. Additionally, one background sample (BG-1) was collected northeast of the site. These samples were collected from investigative "test holes" that were advanced by a backhoe. Sample depths ranged from 1 to 7 feet below ground surface (bgs). These preliminary sample locations are depicted on Figure 1.

2.2 INITIAL SOIL SAMPLING RESULTS

Personnel wearing new disposable gloves collected the soil samples and placed the samples in laboratory-supplied containers, which were sealed with Teflon lined caps, labeled, and subsequently placed on ice in a covered, insulated cooler. The soil samples were transported to Trace Analysis Inc. in Midland, Texas for analysis. The investigative soil samples were analyzed for total chlorides using EPA Method 4500-Cl B, and the background sample was analyzed for total chlorides as well as benzene, toluene, ethylbenzene, xylenes (BTEX) by SW-846 Method 8021B, and total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) by SW-846 Method 8015B. Based on the estimated NMOCD site ranking of "0", the following NMOCD limits were used to determine the initial limits of excavation:

Constituent	Regulatory Limits (mg/Kg)
Total TPH	5000
Benzene	10
BTEX	50.0

The NMOCD currently determines the allowable levels of chlorides in soils on a case-by-case basis, taking into account the existing site ranking system with particular emphasis on surface vegetation, surface water proximity and groundwater depth and quality. The allowable level of chloride impact at a site typically starts at 250 mg/kg (derived from the 250mg/l limit for water), and may vary from site to site based on the specific conditions of the location. Analytical results for the preliminary soil samples indicate chloride concentrations ranged from 248 mg/kg to 9,420 mg/kg. The background sample did not exhibit chloride above the laboratory reporting limit of 100 mg/kg.

The background sample collected at the site exhibited BTEX constituent concentrations and TPH levels above the laboratory reporting limits, but below regulatory guidance concentrations.

Preliminary soil sampling results are presented on Table 1 of this document. Certified copies of the

laboratory analytical results and proper chain of custody documentation are presented in Attachment C.

3.0 SOIL EXCAVATION AND CONFIRMATION SAMPLING

Preliminary soil sampling and analyses identified impacted soil/material on and adjacent to the N-13 location. As a result of these findings, excavation activities were performed to remove adversely affected material. These and subsequent activities are described in the following sections.

3.1 SOIL EXCAVATION ACTIVITIES AND MONITOR WELL INSTALLATION

During the first half of February 2009 a road grader and water truck were used to prepare the lease road for heavy traffic. During the week of February 16th, 2009, excavation activities commenced at the site. Talon utilized a dozer, an excavator, and a loader to remove impacted material and load it into dump trucks for transportation to Lea Land landfill for proper disposal. Talon utilized field analyses for chlorides to verify the extent of initial excavation activities. Excavation activities continued into late April 2009, with the final area of excavation measuring over 650 feet in length, up to 120 feet wide, and ranging from three to eight feet in depth. As a result of these activities, over 17,150 tons of affected soil and gypsum were interned at the NMOCD approved landfill.

On March 30, 2009, a temporary monitor well was installed east of the location to a total depth of 73 feet below grade. The drilling activities encountered predominantly massive gypsum beds to a depth of 68 feet bgs, after which drilling speed and drill cuttings identified an apparently competent calcium carbonate containing bed (thought to be dolomite) that persisted to the total depth of the boring. Groundwater was never identified in the well, and as a result groundwater samples could not be obtained. The depth to groundwater could not be verified, but is known to be greater than 73 feet bgs at this location. The temporary monitor well boring log is presented as Attachment D.

3.2 SOIL CONFIRMATION SAMPLING

On Aril 29, 2009 Talon collected a total of 18 composite soil samples (Composite A and B, and SP-1 through SP-16). Figure 2 depicts these confirmation sample locations on the excavation floor. The confirmation soil samples were analyzed for total chlorides using EPA Method 4500-Cl B, BTEX using SW-846 Method 8021B, and TPH GRO/DRO using SW-846 Method 8015B.

3.3 SOIL CONFIRMATION RESULTS

The NMOCD regulatory limits described in Section 2.2 of this document were utilized to evaluate the analytical results from the confirmation sampling activities. None of the 18 confirmation samples exhibited BTEX or TPH concentrations above the allowable regulatory guidance. Chloride levels for these samples were reported at ranges varying from <200 mg/kg to 2,190 mg/kg (at sample location SP-3). As a result of conversations with Mike Bratcher (NMOCD, Artesia), Talon placed a 20-mil liner over the east end of the excavation to prevent rainwater drainage through the underlying soils, effectively prohibiting the leaching of material from these soils. As depicted in Figure 2, this liner covers former confirmation sample locations SP-1, SP-2, SP-3, and SP-4.

With the exception of the confirmation sample locations which are now protected under the installed liner (SP-1, SP-2, SP-3, and SP-4), five locations (SP-6, SP-8, SP-11, SP-16, and A) exhibited chloride concentrations above the laboratory reporting limit of 200 mg/kg, and one of

these locations (sample location A) exhibited a chloride concentration above 1,000 mg/kg. Analytical results for the confirmation samples are tabulated on the second page of Table 1. Disposal documentation is presented as Attachment E.

3.4 RECLAMATION ACTIVITIES

During May and June 2009, Talon backfilled the location with material obtained from a nearby Bureau of Land Management (BLM) borrow pit. The site was backfilled and contoured back to its approximate original grade. The site was reseeded with the BLM-approved seed mixture and Randy Rust (BLM representative) inspected and verbally approved the reclamation activities.

4.0 CONCLUSIONS AND RECOMMENDATIONS

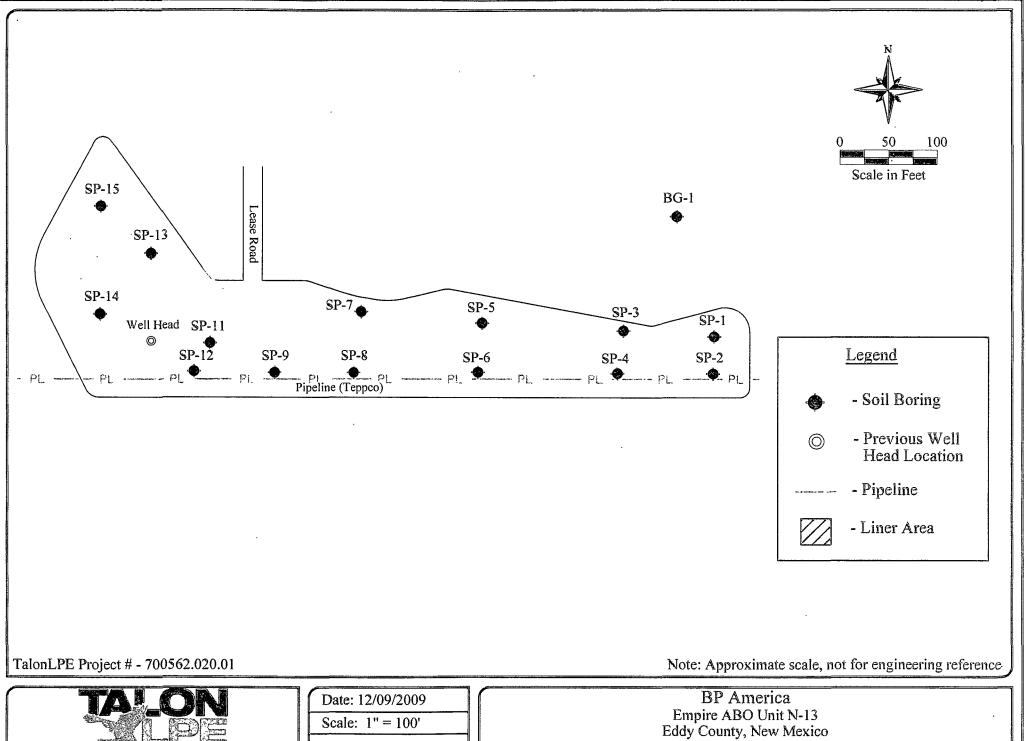
4.1 CONCLUSIONS

The site was subjected to soil assessment and remediation activities from October 2008 through June 2009. Analytical results did not indicate hydrocarbon impact at the site. Chloride impacted soils at the site were removed and delivered to Lea Land landfill in Lea County New Mexico. Confirmation soil samples indicated that a minimal amount of chloride impacted soil has been left in place with verbal NMOCD approval, while the majority of the chloride impacted soils have been removed. The site has been reclaimed and reseeded, and approval has been given by the BLM.

4.2 **RECOMMENDATIONS**

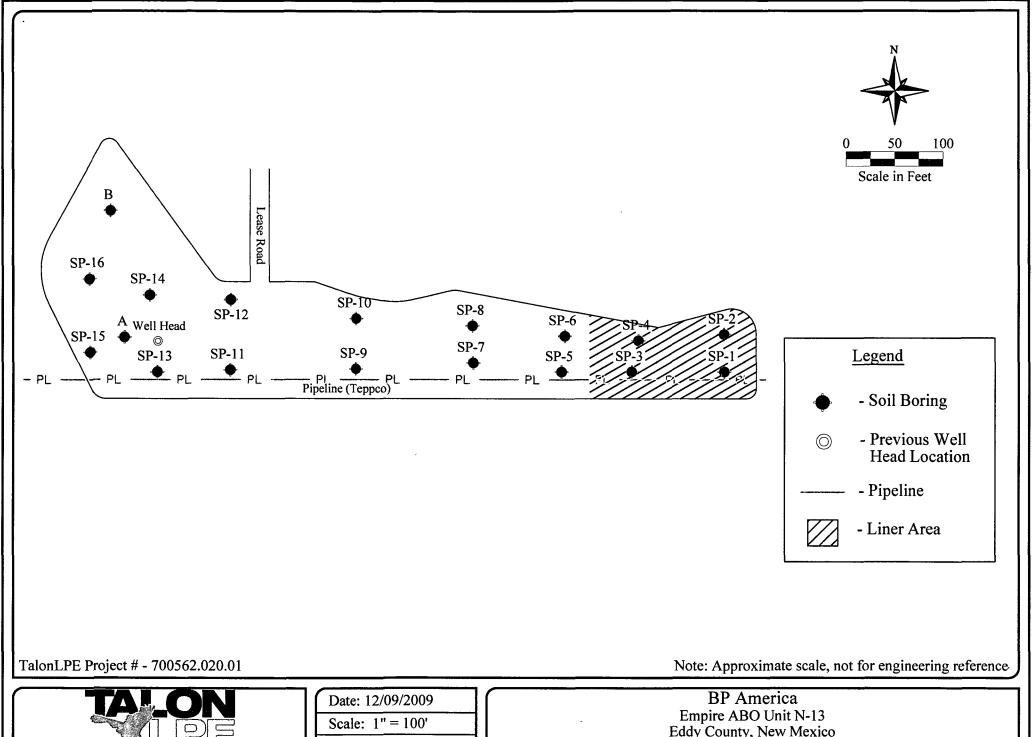
Based on the information included herein, no further assessment or remediation is planned for this site and final closure for this site should be requested from the NMOCD. A Final Report C-141 has been updated and attached for NMOCD approval (Attachment F).

ATTACHMENT A FIGURES



Drawn By: TJS

Figure 1 - Preliminary Sample Locations



Drawn By: TJS

Empire ABO Unit N-13 Eddy County, New Mexico Figure 2 - Final Confirmation Sample Locations

ATTACHMENT B ANALYTICAL SUMMARY TABLES



TABLE 1 SUMMARY OF SOIL ANALYTICAL DATA BP AMERICA EMPIRE ABO UNIT N-13 EDDY COUNTY, NEW MEXICO

SAMPLE LOCATION	DATE SAMPLED	BENZENE	TOLUENE	ETHLYBENZENE	XYLENES	BTEX	TPH DRO	TPH GRO	CHLORIDES
		(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
				Prêliminary San	ıpling	25 27	e a tra	مريوا الآياد	
BG-1	10/29/08	<0.0100	<0.0100	0.0326	0.135	0.1676	75.1	4 26	<100
SP-1 4'	10/29/08	NA	NA	NA	NA	NA	NA	NA	5710
SP-2 2.5'	10/29/08	NA	NA	NA	NA	NA	NA	NA	3020
SP-3 2.5'	10/29/08	NA	NA	NA	NA	NA	NA	NA	5000
SP-4 2'	10/29/08	NA	NA	NA	NA	NA	NA	NA	3470
SP-5 1'	10/29/08	NA	NA	NA	NA	NA	NA	NA	1070
SP-5 4'	10/29/08	NA	NA	NA	NA	NA	NA	NA	1230
SP-6 1'	10/29/08	NA	NA	NA	NA	NA	NA	NA	1270
SP-6 3'	10/29/08	NA	NA	NA	NA	NA	NA	NA	1090
SP-7 5'	10/29/08	NA	NA	NA	NA	NA	NA	NA	6050
SP-7 7'	10/29/08	NA	NA	NA	NA	NA	NA	NA	1850
SP-8 1'	10/29/08	NA	NA	NA	NA	NA	NA	NA	385
SP-8 4'	10/29/08	NA	NA	NA	NA	NA	NA	NA	248
SP-9 2'	10/29/08	NA	NA	NA	NA	NA	NA	NA	2320
SP-11 2'	10/29/08	NA	NA	NA	NA	NA	NA	NA	3290
SP-12 1'	10/29/08	NA	NA	NA	NA	NA	NA	NA	9420
SP-13 1'	10/29/08	NA	NA	NA	NA	NA	NA	NA	2440
SP-14 2'	10/29/08	NA	NA	NA	NA	NA	NA	NA	1890
SP-15 2'	10/29/08	NA	NA	NA	NA	NA	NA	NA	2480



TABLE 1 SUMMARY OF SOIL ANALYTICAL DATA **BP AMERICA EMPIRE ABO UNIT N-13 EDDY COUNTY, NEW MEXICO**

SAMPLE LOCATION	DATE SAMPLED	BENZENE	TOLUENE	ETHLYBENZENE	XYLENES	BTEX	TPH DRO	TPH GRO	CHLORIDES
		(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
		Section 1	j (j. 1- 1)	🎨 Confirmation Sar	npling	, . ,			
Composite A	04/29/09	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0 0100	<0 0100	1050
Composite B	04/29/09	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<200
SP-1	04/29/09	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	661
SP-2	04/29/09	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	1500
SP-3	04/29/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	2190
SP-4	04/29/09	<0 0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<0 0100	269
SP-5	04/29/09	<0.0100	<0 0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<200
SP-6	04/29/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0 0100	413
SP-7	04/29/09	<0.0100	<0 0100	<0.0100	<0 0100	<0.0100	<0.0100	<0 0100	<200
SP-8	04/29/09	<0 0100	<0.0100	<0 0100	<0 0100	<0.0100	<0 0100	<0.0100	234
SP-9	04/29/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0 0100	<0 0100	<200
SP-10	04/29/09	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<200
SP-11	04/29/09	< 0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<0 0100	463
SP-12	04/29/09	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<200
SP-13	04/29/09	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<200
SP-14	04/29/09	<0.0100	<0 0100	<0.0100	<0 0100	<0.0100	<0.0100	<0 0100	<200
SP-15	04/29/09	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	<0.0100	<200
SP-16	04/29/09	<0.0100	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	<0 0100	259

¹ BTEX = Benzene, toluene, ethylbenzene and xylenes analyzed by EPA SW-846 Method 8021B.

NA = Not Avaliable

Shaded = Liner Installed

<sup>TPH DRO = Total Petroluem Hydrocarbons Diesel Range Organics by EPA Method 8015M
TPH GRO = Total Petroluem Hydrocarbons Gasoline Range Organics by EPA Method 8015
Chlorides by EPA Method 4500-Cl B</sup>

ATTACHMENT C

SOIL SAMPLE ANALYTICAL DATA REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

Work Order: 8103005 Empire ABD Unit N-13 Page Number: 1 of 3 Eddy County, NM

Summary Report

Eb Taylor Talon LPE-Hobbs 318 E Taylor Hobbs, NM 88240

Report Date: November 7, 2008

Work Order: 8103005

Project Name:

Project Location: Eddy County, NM

Empire ABD Unit N-13

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
177579	BG-1	soil	2008-10-29	12:30	2008-10-30
177580	SP-1 4'	soil	2008-10-29	10:28	2008-10-30
177581	SP-2 2.5'	soil	2008-10-29	10:35	2008-10-30
177582	SP-3 2.5'	soil	2008-10-29	10:47	2008-10-30
177583	SP-4 2'	soil	2008-10-29	10:55	2008-10-30
177584	SP-5 1'	soil	2008-10-29	11:01	2008-10-30
177585	SP-5 4'	soil	2008-10-29	11:09	2008-10-30
177586	SP-6 1'	soil	2008-10-29	11:12	2008-10-30
177587	SP-6 3'	soil .	2008-10-29	11:16	2008-10-30
177588	SP-7 5'	soil	2008-10-29	11:49	2008-10-30
177589	SP-7 7'	soil	2008-10-29	13:05	2008-10-30

			TPH DRO	TPH GRO		
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
177580 - SP-1 4'	< 0.0100	< 0.0100	0.0326	0.135	75.1	4.26

Sample: 177579 - BG-1

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 177580 - SP-1 4'

Param	Flag	Result	Units	RL
Chloride		5710	mg/Kg	2.00

Report Date: November 7, 2008		Work Order: 8103005 Empire ABD Unit N-13		Page Number: 2 of 3 Eddy County, NM	
Sample: 177581 -	SP-2 2.5'				
Param	Flag	Result	Units	RL	
Chloride		3020	mg/Kg	2.00	
Sample: 177582 -	SP-3 2.5'	,			
Param	Flag	Result	Units	RL	
Chloride		5000	mg/Kg	2.00	
Sample: 177583 -	SP-4 2'				
Param	Flag	Result	Units	RL	
Chloride		3470	mg/Kg	2.00	
		i i			
Sample: 177584 -	SP-5 1'				
Param	Flag	Result	Units	RL	
Chloride		1070	mg/Kg	2.00	
Sample: 177585 -	SP-5 4'				
Param	Flag	Result	Units	RL	
Chloride		. 1230	mg/Kg	2.00	
Sample: 177586 -	SP-6 1'				
Param	Flag	Result	Units	RL	
Chloride		1270	mg/Kg	2.00	
Sample: 177587 -	SP-6 3'				
Param	Flag	Result	Units	RL	
Chloride	0	1090	mg/Kg	2.00	
Sample: 177588 -	SP-7 5'				
Param	Flag	Result	Units	RL	
Chloride		6050	mg/Kg	2.00	

Report Date: November 7, 2008

Work Order: 8103005 Empire ABD Unit N-13 Page Number: 3 of 3 Eddy County, NM

Sample: 177589 - SP-7 7'

Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	2.00



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432 • 089 • 6301 817 • 201 • 5260 LAX 432 +689 +6313

F-Mart, lab@traccanalys s com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003

Kansas E-10317

El Paso:

T104704221-08-TX

LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Eb Taylor Talon LPE-Hobbs 318 E Taylor Hobbs, NM, 88240

Report Date: November 7, 2008

Work Order: 8103005

Project Location: Eddy County, NM

Project Name: Project Number:

Empire ABD Unit N-13 Empire ABD Unit N-13

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
177579	BG-1	soil	2008-10-29	12:30	2008-10-30
177580	SP-1 4'	soil	2008-10-29	10:28	2008-10-30
177581	SP-2 2.5'	soil	2008-10-29	10:35	2008-10-30
177582	SP-3 2.5'	soil	2008-10-29	10:47	2008-10-30
177583	SP-4 2'	soil	2008-10-29	10:55	2008-10-30
177584	SP-5 1'	soil	2008-10-29	11:01	2008-10-30
177585	SP-5 4'	soil	2008-10-29	11:09	2008-10-30
177586	SP-6 1'	soil	2008-10-29	11:12	2008-10-30
177587	SP-6 3'	soil	2008-10-29	11:16	2008-10-30
177588	SP-7 5'	soil	2008-10-29	11:49	2008-10-30
177589	SP-7 7'	soil	2008-10-29	13:05	2008-10-30

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael April

Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project Empire ABD Unit N-13 were received by TraceAnalysis, Inc. on 2008-10-30 and assigned to work order 8103005. Samples for work order 8103005 were received intact at a temperature of 3.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
BTEX	S 8021B
Chloride (Titration)	SM 4500-Cl B
TPH DRO	Mod. 8015B
TPH GRO	S 8015B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 8103005 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: November 7, 2008 Empire ABD Unit N-13

Work Order: 8103005 Empire ABD Unit N-13

Analytical Report

Sample: 177579 - BG-1

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

53964 Prep Batch: 46162 Analytical Method: Date Analyzed:

SM 4500-Cl B 2008-11-05

Prep Method: N/A Analyzed By:

AR AR

Sample Preparation:

2008-11-05

Prepared By:

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Eddy County, NM

RI

		1(1)			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 177580 - SP-1 4'

Laboratory:

Midland

Analysis: QC Batch: Prep Batch:

BTEX 53834 46075

Analytical Method: Date Analyzed:

S 8021B 2008-10-31 Sample Preparation: 2008-10-31 Prep Method: S 5035

Analyzed By: AGPrepared By: AG

RL

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		0.0326	mg/Kg	1	0.0100
Xylene		0.135	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	\mathbf{Units}	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.735	mg/Kg	1	1.00	74	70.9 - 125.1
4-Bromofluorobenzene (4-BFB)		0.763	mg/Kg	1	1.00	76	48.9 - 160.4

Sample: 177580 - SP-1 4'

Laboratory:

Prep Batch:

Midland

46162

Analysis: Chloride (Titration) QC Batch: 53964

Analytical Method: Date Analyzed:

SM 4500-Cl B 2008-11-05

2008-11-05

Prep Method: N/A Analyzed By:

Prepared By:

ARAR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		5710	mg/Kg	50	2.00

Sample Preparation:

Report Date: November 7, 2008 Empire ABD Unit N-13 Work Order: 8103005 Empire ABD Unit N-13 Page Number: 5 of 16 Eddy County, NM

Sample:	177580	- SP-1	4'
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Laboratory: Midland

Analysis: TPH DRO QC Batch: 53798 Prep Batch: 46048 Analytical Method: Mod. 8015B Date Analyzed: 2008-10-31 Sample Preparation: 2008-10-31

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

RL

Parameter	Flag	Result	Units	Dilution	RL
DRO		75.1	mg/Kg	1	50.0

					Spike	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		123	mg/Kg	1	100	123	10 - 250.4

Sample: 177580 - SP-1 4'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 53835 Prep Batch: 46075 Analytical Method: S 8015B
Date Analyzed: 2008-10-31
Sample Preparation: 2008-10-31

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

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		4.26	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.906	mg/Kg	1	1.00	91	75 - 117.2
4-Bromofluorobenzene (4-BFB)		0.914	mg/Kg	1	1.00	91	66 - 142.8

Sample: 177581 - SP-2 2.5'

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 53964
Prep Batch: 46162

Analytical Method: SM 4500-Cl B
Date Analyzed: 2008-11-05
Sample Preparation: 2008-11-05

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		3020	mg/Kg	50	2.00

	oort Date: November 7, 2008 Work Order: 8103005 pire ABD Unit N-13 Empire ABD Unit N-13		Page Number: 6 Eddy Count		
Sample: 17	7582 - SP-3 2.5'				
Laboratory:					
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53964	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46162	Sample Preparation:	2008-11-05	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		5000 r	ng/Kg	50	2.00
Sample: 17	'7583 - SP-4 2'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53964	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46162	Sample Preparation:	2008-11-05	Prepared By:	AR
_		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3470 r	ng/Kg	50	2.00
-	7584 - SP-5 1'				
Laboratory:	Midland Chlorida (Titration)	Analytical Mathad	SM 4500-Cl B	Prep Method:	NI / A
Analysis: QC Batch:	Chloride (Titration) 53964	Analytical Method: Date Analyzed:	2008-11-05	Analyzed By:	N/A AR
Prep Batch:	46162	Sample Preparation:	2008-11-05	Prepared By:	AR
rep bacen.	10102		2000 11 00	r repared by.	7110
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride			ng/Kg	50	2.00
WHATE The second second	OF CD F 41				
-	7585 - SP-5 4'				
Laboratory:	Midland		G3.5.4806.500.50		27/:
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53964	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46162	Sample Preparation:	2008-11-05	Prepared By:	AR
	~ ;	RL	**		- -
n		Rogult	Units	Dilution	\mathbf{RL}
Parameter Chloride	Flag	Result 1230 r	ng/Kg	50	2.00

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Report Date Empire ABI	e: November 7, 2008 O Unit N-13	Work Order: 8 Empire ABD U		Page Number: Eddy Count	
Sample: 17	7586 - SP-6 1'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 53964 46162	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2008-11-05 2008-11-05	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1270	mg/Kg	50	2.00
Sample: 17	7587 - SP-6 3'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 53964 46162	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2008-11-05 2008-11-05	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		D.T.			
Darameter	Flag	RL Result	Unite	Dilution	RI.
Parameter Chloride	Flag	Result	Units mg/Kg	Dilution 50	RL 2.00
Chloride	Flag 7588 - SP-7 5' Midland Chloride (Titration) 53965 46164	Result			
Chloride Sample: 17 Laboratory: Analysis: QC Batch:	7588 - SP-7 5' Midland Chloride (Titration) 53965	Result 1090 Analytical Method: Date Analyzed: Sample Preparation: RL Result	Mg/Kg SM 4500-Cl B 2008-11-05 2008-11-05	50 Prep Method: Analyzed By:	2.00 N/A AR AR RL
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch:	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164	Result 1090 Analytical Method: Date Analyzed: Sample Preparation: RL Result	SM 4500-Cl B 2008-11-05 2008-11-05	50 Prep Method: Analyzed By: Prepared By:	N/A AR AR
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch:	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164	Result 1090 Analytical Method: Date Analyzed: Sample Preparation: RL Result	Mg/Kg SM 4500-Cl B 2008-11-05 2008-11-05	50 Prep Method: Analyzed By: Prepared By: Dilution	2.00 N/A AR AR
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 17	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164 Flag	Result 1090 Analytical Method: Date Analyzed: Sample Preparation: RL Result	Mg/Kg SM 4500-Cl B 2008-11-05 2008-11-05	50 Prep Method: Analyzed By: Prepared By: Dilution	2.00 N/A AR AR
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 17 Laboratory: Analysis:	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164 Flag 7589 - SP-7 7' Midland Chloride (Titration)	Result 1090 Analytical Method: Date Analyzed: Sample Preparation: RL Result 6050 Analytical Method:	SM 4500-Cl B 2008-11-05 2008-11-05 Units mg/Kg	Frep Method: Analyzed By: Prepared By: Dilution 50 Prep Method:	2.00 N/A AR AR RL 2.00
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 17 Laboratory: Analysis: QC Batch:	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164 Flag 7589 - SP-7 7' Midland Chloride (Titration) 53965	Analytical Method: Date Analyzed: Sample Preparation: RL Result 6050 Analytical Method: Date Analyzed:	SM 4500-Cl B 2008-11-05 2008-11-05 Units mg/Kg	Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By:	N/A AR AR RL 2.00
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch:	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164 Flag 7589 - SP-7 7' Midland Chloride (Titration)	Analytical Method: Date Analyzed: Sample Preparation: RL Result 6050 Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2008-11-05 2008-11-05 Units mg/Kg	Frep Method: Analyzed By: Prepared By: Dilution 50 Prep Method:	2.00 N/A AR AR RL 2.00
Chloride Sample: 17 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 17 Laboratory: Analysis: QC Batch:	7588 - SP-7 5' Midland Chloride (Titration) 53965 46164 Flag 7589 - SP-7 7' Midland Chloride (Titration) 53965	Analytical Method: Date Analyzed: Sample Preparation: RL Result 6050 Analytical Method: Date Analyzed:	SM 4500-Cl B 2008-11-05 2008-11-05 Units mg/Kg	Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By:	N/A AR AR RL 2.00

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Report Date: November 7, 2008 Work Order: 8103005 Page Number: 8 of 16 Empire ABD Unit N-13 Empire ABD Unit N-13 Eddy County, NM QC Batch: 53798 Method Blank (1) QC Batch: 53798 Date Analyzed: 2008-10-31 Analyzed By: LD Prep Batch: 46048 QC Preparation: 2008-10-31 Prepared By: LDMDL Parameter Flag Result Units RLDRO <15.8 mg/Kg 50 Spike Percent Recovery Flag Surrogate Result Units Dilution Amount Limits Recovery n-Triacontane 93.6 mg/Kg 1 100 94 30.9 - 146.4 Method Blank (1) QC Batch: 53834 QC Batch: 53834 Date Analyzed: 2008-10-31 Analyzed By: AGPrep Batch: 46075 QC Preparation: 2008-10-31 Prepared By: \mathbf{AG} MDL Parameter Flag Result RLUnits Benzene < 0.00800 mg/Kg 0.01 Toluene < 0.00800 0.01 mg/Kg Ethylbenzene < 0.00820 mg/Kg 0.01 **Xylene** < 0.00960 mg/Kg 0.01 Spike Percent Recovery Surrogate Flag Units Dilution Result Amount Recovery Limits Trifluorotoluene (TFT) 0.762mg/Kg 1 1.00 76 62.3 - 121.6 4-Bromofluorobenzene (4-BFB) 0.777 mg/Kg 1 1.00 78 62 - 123 Method Blank (1) QC Batch: 53835 QC Batch: 53835 Date Analyzed: 2008-10-31 Analyzed By: AG Prep Batch: 46075 QC Preparation: 2008-10-31 Prepared By: AG MDL Parameter Flag Result

Surrogate	Flag	Result	${f Units}$	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.878	mg/Kg	1	1.00	- 88	70 - 130
4-Bromofluorobenzene (4-BFB)		0.884	mg/Kg	1	1.00	88	70 - 130

GRO

0.832

Units

mg/Kg

RL

Report Date: Novembe Empire ABD Unit N-1			rder: 8103005 ABD Unit N-13		Page Nu Edd	ımber: 9 y County	
Method Blank (1)	QC Batch: 53964						
QC Batch: 53964		Date Analyzed:	2008-11-05			zed By:	AR
Prep Batch: 46162		QC Preparation:		Prepar	red By:	AR	
		M	DL				
Parameter	Flag	Res		Units	Prepared By: AR Units R		
Chloride		<0.5	500	mg/Kg			2
Method Blank (1)	QC Batch: 53965						
QC Batch: 53965		Date Analyzed: 2008-11-05			Analyz	zed By:	AR
Prep Batch: 46164			QC Preparation: 2008-11-05			ed By:	AR
,		M	DL				
Parameter	Flag	Res	ult	Units			RL
Chloride		<.0>	500	mg/Kg			2
	Spike (LCS-1)						
Laboratory Control							
QC Batch: 53798		Date Analyzed:	2008-10-31		Analy		LD
QC Batch: 53798		Date Analyzed: QC Preparation:	2008-10-31 2008-10-31			zed By: red By:	LD LD
QC Batch: 53798	LC	QC Preparation:		Matrix			LD
QC Batch: 53798	LC Resi 23	QC Preparation: S ult Units	2008-10-31			red By:	LD c. nit

	LCSD			Spike	Matrix		Rec.		KPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	254	mg/Kg	1	250	<15.8	102	27.8 - 152.1	9	20

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

	LCS	LCSD			$_{ m Spike}$	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	95.3	93.5	mg/Kg	1	100	95	94	38 - 130.4

Laboratory Control Spike (LCS-1)

QC Batch: 53834 Date Analyzed: 2008-10-31 Analyzed By: AG
Prep Batch: 46075 QC Preparation: 2008-10-31 Prepared By: AG

Report Date: November 7, 2008 Empire ABD Unit N-13 Work Order: 8103005 Empire ABD Unit N-13

Param	LCS Result	Units	Dil.	$\begin{array}{c} \text{Spike} \\ \textbf{Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit
Benzene	0.811	mg/Kg	1	1.00	< 0.00800	81	72.7 - 129.8
Toluene	0.834	mg/Kg	1	1.00	< 0.00800	83	71.6 - 129.6
Ethylbenzene	0.831	mg/Kg	1	1.00	< 0.00820	83	70.8 - 129.7
Xylene	2.36	mg/Kg	1	3.00	< 0.00960	79	70.9 - 129.4

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	0.786	mg/Kg	1	1.00	< 0.00800	79	72.7 - 129.8	3	20
Toluene	0.806	mg/Kg	1	1.00	< 0.00800	81	71.6 - 129.6	3	20
Ethylbenzene	0.809	mg/Kg	1	1.00	< 0.00820	81	70.8 - 129.7	3	20
Xylene	2.30	mg/Kg	1	3.00	< 0.00960	77	70.9 - 129.4	3	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.763	0.762	mg/Kg	1	1.00	76	76	62.9 - 122.8
4-Bromofluorobenzene (4-BFB)	0.797	0.791	mg/Kg	1	1.00	80	79	63.8 - 122.4

Laboratory Control Spike (LCS-1)

QC Batch: 53835 Prep Batch: 46075 Date Analyzed: 2008-10-31 QC Preparation: 2008-10-31

Analyzed By: AG Prepared By: AG

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Eddy County, NM

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	8.67	mg/Kg	1	10.0	< 0.171	87	70 - 130

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

		LCSD			Spike	Matrix		Rec.		RPD
Param	•	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		8.80	mg/Kg	1	10.0	< 0.171	88	70 - 130	2	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.960	0.908	mg/Kg	1	1.00	96	91	70 - 130
4-Bromofluorobenzene (4-BFB)	0.916	0.913	mg/Kg	1	1.00	92	91	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 53964 Prep Batch: 46162 Date Analyzed: 2008-11-05 QC Preparation: 2008-11-05 Analyzed By: AR Prepared By: AR Report Date: November 7, 2008 Empire ABD Unit N-13 Work Order: 8103005 Empire ABD Unit N-13 Page Number: 11 of 16
Eddy County, NM

Param	$egin{array}{c} ext{LCS} \ ext{Result} \end{array}$	Units	Dil.	$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit
Chloride	99.5	mg/Kg	1	100	< 0.500	100	85 - 115

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	101	mg/Kg	1	100	< 0.500	101	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 53965 Prep Batch: 46164 Date Analyzed: 2008-11-05 QC Preparation: 2008-11-05 Analyzed By: AR Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	99.2	mg/Kg	1	100	< 0.500	99	85 - 115

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	99.8	mg/Kg	1	100	< 0.500	100	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 177580

QC Batch: 53798 Prep Batch: 46048 Date Analyzed: 2008-10-31 QC Preparation: 2008-10-31

Analyzed By: LD Prepared By: LD

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	215	mg/Kg	1	250	75.1	56	18 - 179.5

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	248	mg/Kg	1	250	75.1	69	18 - 179.5	14	20

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

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane"	108	106	mg/Kg	1	100	108	106	34.1 - 158

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Matrix Spike (MS-1)

Spiked Sample: 177747

QC Batch: 53834 Prep Batch: 46075 Date Analyzed: 2008-10-31 QC Preparation: 2008-10-31

Analyzed By: AG Prepared By: AG

•	MS			Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Benzene	0.846	mg/Kg	1	1.00	< 0.00800	85	58.6 - 165.2
Toluene	0.874	mg/Kg	1	1.00	< 0.00800	87	64.2 - 153.8
Ethylbenzene	0.888	mg/Kg	1	1.00	< 0.00820	89	61.6 - 159.4
Xylene	2.52	mg/Kg	1	3.00	< 0.00960	84	64.4 - 155.3

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	0.819	mg/Kg	1	1.00	< 0.00800	82	58.6 - 165.2	3	20
Toluene	0.842	mg/Kg	1	1.00	< 0.00800	84	64.2 - 153.8	4	20
Ethylbenzene	0.854	mg/Kg	1	1.00	< 0.00820	85	61.6 - 159.4	4	20
Xylene	2.42	mg/Kg	1	3.00	< 0.00960	81	64.4 - 155.3	4	20

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

	MS	MSD			\mathbf{Spike}	MS	MSD	Rec .
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT) $^{1/2}$	0.716	0.712	mg/Kg	1	1	72	71	76.5 - 127.9
4-Bromofluorobenzene (4-BFB)	0.753	0.749	mg/Kg	1	1	75	75	72 - 127.8

Matrix Spike (MS-1) Spiked Sa

Spiked Sample: 177747

QC Batch: 53835 Prep Batch: 46075 Date Analyzed: 2008-10-31 QC Preparation: 2008-10-31

Analyzed By: AG Prepared By: AG

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	11.4	mg/Kg	1	10.0	1.59	98	22.3 - 134.6

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	12.0	mg/Kg	1	10.0	1.59	104	22.3 - 134.6	5	20

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

¹Surrogate out due to peak interference.

²Surrogate out due to peak interference.

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Surrogate	MS Result	MSD Result	Units	Dil.	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT) 3	1.22	1.07	mg/Kg	1	1	122	107	68.4 - 113.1
4-Bromofluorobenzene (4-BFB)	0.920	0.907	mg/Kg	1	1	92	91	66.7 - 134.3

Matrix Spike (MS-1) Spiked Sample: 177587

QC Batch: 53964 Prep Batch: 46162 Date Analyzed: 2008-11-05 QC Preparation: 2008-11-05 Analyzed By: AR Prepared By: AR

	MS			Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit
Chloride	5900	mg/Kg	50	5000	1090	96	85 - 115

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	5980	mg/Kg	50	5000	1090	98	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 177612

QC Batch: 53965 Prep Batch: 46164

Date Analyzed: 2008-11-05 QC Preparation: 2008-11-05 Analyzed By: AR Prepared By: AR

	MS			, Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Chloride	7310	mg/Kg	50	5000	2480	97	85 - 115

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

-	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$	RPD	Limit
Chloride	7490	mg/Kg	50	5000	2480	100	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 53798

Date Analyzed: 2008-10-31

Analyzed By: LD

³High surrogate recovery due to peak interference.

Report Date: November 7, 2008

Empire ABD Unit N-13

Work Order: 8103005 Empire ABD Unit N-13 Page Number: 14 of 16 Eddy County, NM

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
. DRO		mg/Kg	250	250	100	85 - 115	2008-10-31

Standard (CCV-1)

QC Batch: 53798

Date Analyzed: 2008-10-31

Analyzed By: LD

			CCVs	CCVs	CCVs	Percent	
			True	Found	$\mathbf{Percent}$	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	262	105	85 - 115	2008-10-31

Standard (ICV-1)

QC Batch: 53834

Date Analyzed: 2008-10-31

Analyzed By: AG

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene	4	$_{ m mg/Kg}$	0.100	0.0845	84	85 - 115	2008-10-31
Toluene		$_{ m mg/Kg}$	0.100	0.0857	86	85 - 115	2008-10-31
Ethylbenzene		mg/Kg	0.100	0.0880	88	85 - 115	2008-10-31
Xylene		mg/Kg	0.300	0.260	87	85 - 115	2008-10-31

Standard (CCV-1)

QC Batch: 53834

Date Analyzed: 2008-10-31

Analyzed By: AG

			CCVs	\mathbf{CCVs}	\mathbf{CCVs}	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0862	86	85 - 115	2008-10-31
Toluene		$_{ m mg/Kg}$	0.100	0.0874	87	85 - 115	2008-10-31
Ethylbenzene		mg/Kg	0.100	0.0870	87	85 - 115	2008-10-31
Xylene	5	mg/Kg	0.300	0.246	82	85 - 115	2008-10-31

Standard (ICV-1)

QC Batch: 53835

Date Analyzed: 2008-10-31

Analyzed By: AG

⁴Benzene outside of control limits on ICV. ICV component average is 0.0868 which is within acceptable range. This is acceptable by Method

⁵Xylene outside of control limits on CCV. CCV component average is 0.0852 which is within acceptable range. This is acceptable by Method

Report Date: November 7, 2008 Empire ABD Unit N-13 Work Order: 8103005 Empire ABD Unit N-13 Page Number: 15 of 16 Eddy County, NM

			ICVs	ICVs	ICVs	Percent	
_			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.05	105	85 - 115	2008-10-31
Standard	(CCV-1)						
QC Batch:	53835		Date Ana	lyzed: 2008-1	0-31	Anal	yzed By: AG
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.04	104	85 - 115	2008-10-31
		0/0					
Standard	(ICV-1)						
QC Batch:	53964		Date Ana	lyzed: 2008-1	1-05	Anal	yzed By: AR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.6	100	85 - 115	2008-11-05
Standard	(CCV-1)						
QC Batch:	53964		Date Ana	lyzed: 2008-1	1-05	Anal	yzed By: AR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2008-11-05
Standard	(ICV-1)						
QC Batch:	53965		Date Ana	lyzed: 2008-1	1-05	Anal	yzed By: AR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.6	100	85 - 115	2008-11-05

Standard (CCV-1)

QC Batch: 53965 Date Analyzed: 2008-11-05 Analyzed By: AR

Report Date: November 7, 2008 Empire ABD Unit N-13

Work Order: 8103005 Empire ABD Unit N-13 Page Number: 16 of 16 Eddy County, NM

			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2008-11-05

LAB Order ID #_	81	0300	5
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Page____ of ____

TraceAnalysis, Inc.

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Work Order: 8103007 Empire ABD Unit N-13 Page Number: 1 of 2 Eddy County, NM

# **Summary Report**

Eb Taylor Talon LPE-Hobbs 318 E Taylor Hobbs, NM 88240

Report Date: November 7, 2008

Work Order: 8103007 

Project Name:

Project Location: Eddy County, NM Empire ABD Unit N-13

			Date	Time	Date
Sample	Description	Matrix	$\hat{ ext{Taken}}$	${f Taken}$	Received
177605	SP-8 1'	soil	2008-10-29	11:36	2008-10-30
177606	SP-8 4'	soil	2008-10-29	11:44	2008-10-30
177607	SP-9 2'	soil	2008-10-29	11:57	2008-10-30
177608	SP-11 2'	soil	2008-10-29	12:28	2008-10-30
177609	SP-12 1'	soil	2008-10-29	12:31	2008-10-30
177610	SP-13 1'	soil	2008-10-29	12:38	2008-10-30
177611	SP-14 2'	soil	2008-10-29	12:45	2008-10-30
177612	SP-15 2'	soil	2008-10-29	12:51	2008-10-30

Sample: 177605 - SP-8 1'

Param	$\mathbf{Flag}$	Result	Units	RL
Chloride		385	mg/Kg	2.00

Sample: 177606 - SP-8 4'

Param	Flag	Result	${f Units}$	RL
Chloride		248	mg/Kg	2.00

Sample: 177607 - SP-9 2'

Param	Flag	Result	Units	$_{ m RL}$
Chloride		2320	mg/Kg	2.00

Report Date: Novem	ber 7, 2008	Work Order: 8103007 Empire ABD Unit N-13	Page Number: 2 of 2 Eddy County, NM	
Sample: 177608 - 3	SP-11 2'			
Param	Flag	Result	Units	RL
Chloride		3290	mg/Kg	2.00
Sample: 177609 - 5	SP-12 1'			
Param	Flag	Result	Units	RL
Chloride		9420	mg/Kg	2.00
Sample: 177610 - 5	SP-13 1'			
Param	Flag	Result	Units	RL
Chloride		2440	mg/Kg	2.00
Sample: 177611 - 5	SP-14 2'		,	
Param	Flag	Result	Units	RL
Chloride		1890	mg/Kg	2.00
Sample: 177612 - 5	SP-15 2'			
Param	Flag	Result	Units	m RL
Chloride		2480	mg/Kg	2.00



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LAX 432 • 689 • 6313

817 • 201 • 5260

F-Man, lan@traceanalys s.com

### Certifications

WBENC: 237019

HUB:

1752439743100-86536

**DBE:** VN 20657

NCTRCA WFWB38444Y0909

### **NELAP Certifications**

Lubbock: T104704219-08-TX

LELAP-02003

Kansas E-10317

El Paso: T104704221-08-TX LELAP-02002

Midland: T104704392-08-TX

# Analytical and Quality Control Report

Eb Taylor Talon LPE-Hobbs 318 E Taylor Hobbs, NM, 88240

Report Date: November 7, 2008

Work Order: 8103007 

Project Location:

Eddy County, NM

Project Name: **Project Number:**  Empire ABD Unit N-13 Empire ABD Unit N-13

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
177605	SP-8 1'	soil	2008-10-29	11:36	2008-10-30
177606	SP-8 4'	soil	2008-10-29	11:44	2008-10-30
177607	SP-9 2'	soil	2008-10-29	11:57	2008-10-30
177608	SP-11 2'	soil	2008-10-29	12:28	2008-10-30
177609	SP-12 1'	soil	2008-10-29	12:31	2008-10-30
177610	SP-13 1'	soil	2008-10-29	12:38	2008-10-30
177611	SP-14 2'	soil	2008-10-29	12:45	2008-10-30
177612	SP-15 2'	soil	2008-10-29	12:51	2008-10-30

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch

basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael April

Dr. Blair Leftwich, Director

#### Standard Flags

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

### Case Narrative

Samples for project Empire ABD Unit N-13 were received by TraceAnalysis, Inc. on 2008-10-30 and assigned to work order 8103007. Samples for work order 8103007 were received intact at a temperature of 3.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 8103007 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: November 7, 2008 Empire ABD Unit N-13

Work Order: 8103007 Empire ABD Unit N-13 Page Number: 4 of 7 Eddy County, NM

### **Analytical Report**

Sample:	177605 -	SP-8	1'
---------	----------	------	----

Laboratory:

Midland

Analysis:

Chloride (Titration)

53965

Analytical Method:

SM 4500-Cl B

Prep Method: N/A Analyzed By:

 $\mathbf{AR}$ 

QC Batch: Prep Batch:

46164

Date Analyzed: Sample Preparation:

2008-11-05 2008-11-05

Prepared By:

AR

2.00

RL

Parameter Chloride

Flag

Result Units 385 mg/Kg

Dilution 50 RL

Sample: 177606 - SP-8 4'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method:

N/A

QC Batch: Prep Batch: 53965 46164

Date Analyzed: Sample Preparation:

2008-11-05 2008-11-05 Analyzed By: Prepared By:

ARAR

RL

Parameter Chloride

Flag Result 248

Units mg/Kg Dilution

50

RL

2.00

Sample: 177607 - SP-9 2'

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2008-11-05

Prep Method: N/A Analyzed By: AR

Prep Batch:

53965 46164

Sample Preparation:

2008-11-05

AR

RL

mg/Kg

Prepared By:

Parameter Chloride

Flag

Result  $2\overline{320}$  Units

Dilution

50

RL

2.00

AR.

Sample: 177608 - SP-11 2'

Laboratory: Analysis:

Midland

46164

QC Batch: 53965 Prep Batch:

Chloride (Titration)

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2008-11-05 2008-11-05

Prep Method: N/A Analyzed By: AR

Prepared By:

continued ...

Report Date Empire ABI	e: November 7, 2008 O Unit N-13	Work Order: Empire ABD		Page Number: Eddy Coun	
sample 1776	08 continued				
		RL			
Parameter	Flag	Result	Units	Dilution	RL
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Company of the control of the contro	RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3290	mg/Kg	50	2.00
Sample: 17	7609 - SP-12 1'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53965	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:		Sample Preparation		Prepared By:	AR
-	•				
_		RL			
Parameter Chloride	Flag	Result 9420	Units mg/Kg	Dilution 50	$\frac{\mathrm{RL}}{2.00}$
			6/ 118	. 00	2.00
Sample: 17	7610 - SP-13 1'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53965	Date Analyzed:	2008-11-05	Analyzed By:	$\overline{AR}$
Prep Batch:	46164	Sample Preparation	2008-11-05	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		2440	mg/Kg	50	2.00
Sample: 17	7611 - SP-14 2'				
Laboratory:	Midland	*			
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53965	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46164	Sample Preparation:	2008-11-05	Prepared By:	AR
	***	RL	**	70.0	
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1890	mg/Kg	50	2.00

Report Date: November 7, 2008

Empire ABD Unit N-13

Work Order: 8103007 Empire ABD Unit N-13 Page Number: 6 of 7 Eddy County, NM

Sample: 177612 - SP-15 2'

Laboratory: Analysis:

Midland

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch: 46164

53965

Date Analyzed: Sample Preparation:

2008-11-05 2008-11-05

Prepared By: AR

RL

Parameter Chloride

Flag

Result 2480

Units mg/Kg Dilution 50 RL

2.00

Method Blank (1)

QC Batch: 53965

QC Batch: Prep Batch:

53965 46164 Date Analyzed:

2008-11-05 QC Preparation: 2008-11-05 Analyzed By:

AR

RL

 $\overline{2}$ 

Parameter

Flag

MDL Result

< 0.500

Units

mg/Kg

Prepared By: AR

Laboratory Control Spike (LCS-1)

QC Batch:

Chloride

53965

Date Analyzed:

2008-11-05

Analyzed By: AR

85 - 115

Prep Batch:

46164

QC Preparation: 2008-11-05

Prepared By: AR

Param Chloride

LCS Units Result 99.2 mg/Kg

Spike Dil. Amount 100

Matrix Result < 0.500

Rec. Rec. Limit 99

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\mathbf{Units}$	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	99.8	mg/Kg	1	100	< 0.500	100	85 - 115	1	20

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

Matrix Spike (MS-1)

Spiked Sample: 177612

QC Batch:

53965

Date Analyzed:

2008-11-05

Analyzed By: AR

Prep Batch:

46164

QC Preparation: 2008-11-05

Prepared By: AR

Report Date: November 7, 2008 Empire ABD Unit N-13 Work Order: 8103007 Empire ABD Unit N-13 Page Number: 7 of 7 Eddy County, NM

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	7310	mg/Kg	50	5000	2480	97	85 - 115

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

,	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	7490	mg/Kg	50	5000	2480	100	85 - 115	2	20

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

#### Standard (ICV-1)

QC Batch: 53965

Date Analyzed: 2008-11-05

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	$\mathbf{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	. 100	99.6	100	85 - 115	2008-11-05

#### Standard (CCV-1)

QC Batch: 53965

Date Analyzed: 2008-11-05

Analyzed By: AR

			$\mathbf{CCVs}$	$\mathbf{CCVs}$	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2008-11-05

# LAB Order ID# 8+9807

6103007

Page | of _____

# TraceAnalysis, Inc.

email: lab@traceanalysis.com

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				ERS	onut	<u> </u>	MATE	RIX	<u> </u>		ЕТНО			SAMI	PLING	8021B / 602	3/60	DIXI/	625	As B	Ag /	S	des		3260	88	8081A/	I S	Z G				Time	
LAB# AB USE ONLY	1	FIELD CODE	-	# CONTAINERS	Volume / Amount	WATER	AIR	SLUDGE	고 달	H,SO ₂	NaOH	드	NONE	DATE	TIME	1 1	BTEX 8021B /	TPH 418.1 / TX1005 / TX1005 Ext(C35)	270	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As	TCLP Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/WS Semi. vol. PCB's 8082 / 608	Pesticides 80	BOD, TSS, pH	Moisture Content	4716			Turn Around Time if different from standard	Hold
14 ₀₀₅	5P-8	(1)		1			X				++	χ		10/29	11:36														X	-				
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**ORIGINAL COPY** 

Work Order: 9050432 EAV-N-13

Page Number: 1 of 4 Eddy Co., NM

# **Summary Report**

Eb Taylor Talon LPE-Hobbs 318 E. Taylor Hobbs, NM 88240

Report Date: May 8, 2009

Work Order: 9050432 

Project Location: Eddy Co., NM Project Name:

**EAV-N-13** 

Project Number:

BPETRO029REC

			Date	$\mathbf{Time}$	Date
Sample	Description	Matrix	Taken	$\mathbf{Taken}$	Received
194753	Composite A	soil	2009-04-29	11:10	2009-05-04
194754	Composite B	soil	2009-04-29	11:15	2009-05-04
194755	SP-1	soil	2009-04-29	07:49	2009-05-04
194756	SP-2	soil	2009-04-29	07:57	2009-05-04
194757	SP-3	soil	2009-04-29	08:06	2009-05-04
194758	SP-4	soil	2009-04-29	08:15	2009-05-04
194759	SP-5	soil	2009-04-29	08:25	2009-05-04
194760	SP-6	soil	2009-04-29	08:39	2009-05-04
194761	SP-7	soil	2009-04-29	08:45	2009-05-04
194762	SP-8	soil	2009-04-29	08:56	2009-05-04
194763	SP-9	soil	2009-04-29	09:11	2009-05-04
194764	SP-10	soil	2009-04-29	09:20	2009-05-04
194765	SP-11	soil	2009-04-29	09:35	2009-05-04
194766	SP-12	soil	2009-04-29	09:48	2009-05-04
194767	SP-13	soil	2009-04-29	10:10	2009-05-04
194768	SP-14	soil	2009-04-29	10:20	2009-05-04
194769	SP-15	soil	2009-04-29	10:35	2009-05-04
194770	SP-16	soil	2009-04-29	10:50	2009-05-04

		]		TPH DRO	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
194753 - Composite A	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	2.23
194754 - Composite B	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	5.05
194755 - SP-1	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.77
194756 - SP-2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.20
194757 - SP-3	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.29
194758 - SP-4	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.26
194759 - SP-5	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.70

continued ...

Report Date: May 8, 2009 Work Order: 9050432 Page Number: 2 of 4
BPETRO029REC EAV-N-13 Eddy Co., NM

#### $\dots continued$

	1	]	BTEX		TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	$_{ m GRO}$
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
194760 - SP-6	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.23
194761 - SP-7	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	3.67
194762 - SP-8	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.43
194763 - SP-9	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	3.36
194764 - SP-10	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.69
194765 - SP-11	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	26.8
194766 - SP-12	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.98
194767 - SP-13	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	3.24
194768 - SP-14	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	3.75
194769 - SP-15	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	3.75
194770 - SP-16	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	4.43

#### Sample: 194753 - Composite A

Param	Flag	Result	Units	$\mathrm{RL}$
Chloride		1050	mg/Kg	4.00

#### Sample: 194754 - Composite B

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

#### Sample: 194755 - SP-1

Param	Flag	Result	Units	RL
Chloride		661	mg/Kg	4.00

#### Sample: 194756 - SP-2

Param	Flag	Result	Units	RL
Chloride		1500	mg/Kg	4.00

#### Sample: 194757 - SP-3

Param	Flag	Result	Units	RL
Chloride	,	2190	mg/Kg	4.00

#### Sample: 194758 - SP-4

Report Date: May 8, 2009 BPETRO029REC		Work Order: 9050432 EAV-N-13		Number: 3 of 4 Eddy Co., NM
Param	Flag	Result	Units	RL
Chloride		269	mg/Kg	4.00
Sample: 194759 - SP-5				
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194760 - SP-6				
Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4.00
Sample: 194761 - SP-7				
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194762 - SP-8				
Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00
Sample: 194763 - SP-9				
Param	Flag	Result	Units	RL
Chloride .		<200	mg/Kg	4.00
Sample: 194764 - SP-10				
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194765 - SP-11				
Param	Flag	Result	Units	RL
Chloride		463	mg/Kg	4.00

Report Date: May 8, 2009 BPETRO029REC		Work Order: 9050432 EAV-N-13		Page Number: 4 of 4 Eddy Co., NM
Sample: 194766 - SP-12	2			
Param	$\operatorname{Flag}$	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194767 - SP-13	<b>i</b>			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194768 - SP-14	Į.			
Param	Flag	$\operatorname{Result}$	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194769 - SP-15	j	•		
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 194770 - SP-16	<b>i</b>			
Param	Flag	Result	Units	RL
Chloride	<u>-</u>	259	mg/Kg	4.00



6701 Aberdeen Avenue, Suite 9 200 Last Suncot Road, Suite E. 5002 Basin Street, Seite A1

El Paso, Tokas 79922 Midland, lexas 79703 6015 Harris Parkway, State 110 Ft. Worth, Texas 76132 868 • 588 • 3443

915 • 585 • 3443 FAX 915 • 585 • 4944 402 • 589 • 6301 FAX 432 • 689 • 6313

817 • 201 • 5260

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### Certifications

237019 WBENC:

HUB:

1752439743100-86536

**DBE:** VN 20657

NCTRCA WFWB38444Y0909

### **NELAP Certifications**

T104704219-08-TX Lubbock:

El Paso:

T104704221-08-TX

Midland: T104704392-08-TX

LELAP-02003 Kansas E-10317 LELAP-02002

# Analytical and Quality Control Report

Eb Taylor Talon LPE-Hobbs 318 E. Taylor Hobbs, NM, 88240

Report Date: May 8, 2009

Work Order: 9050432

Project Location: Eddy Co., NM Project Name:

**EAV-N-13** 

Project Number:

BPETRO029REC

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
194753	Composite A	soil	2009-04-29	11:10	2009-05-04
194754	Composite B	soil	2009-04-29	11:15	2009-05-04
194755	SP-1	soil	2009-04-29	07:49	2009-05-04
194756	SP-2	soil	2009-04-29	07:57	2009-05-04
194757	SP-3	soil	2009-04-29	08:06	2009-05-04
194758	SP-4	soil	2009-04-29	08:15	2009-05-04
194759	SP-5	soil	2009-04-29	08:25	2009-05-04
194760	SP-6	soil	2009-04-29	08:39	2009-05-04
194761	SP-7	soil	2009-04-29	08:45	2009-05-04
194762	SP-8	soil	2009-04-29	08:56	2009-05-04

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
194763	SP-9	soil	2009-04-29	09:11	2009-05-04
194764	SP-10	soil	2009-04-29	09:20	2009-05-04
194765	SP-11	soil	2009-04-29	09:35	2009-05-04
194766	SP-12	soil	2009-04-29	09:48	2009-05-04
194767	SP-13	soil	2009-04-29	10:10	2009-05-04
194768	SP-14	soil	2009-04-29	10:20	2009-05-04
194769	SP-15	soil	2009-04-29	10:35	2009-05-04
194770	SP-16	soil	2009-04-29	10:50	2009-05-04

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 38 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

Dr. Blair Leftwich, Director

#### Standard Flags

 $\boldsymbol{B}\,$  - The sample contains less than ten times the concentration found in the method blank.

### Case Narrative

Samples for project EAV-N-13 were received by TraceAnalysis, Inc. on 2009-05-04 and assigned to work order 9050432. Samples for work order 9050432 were received intact at a temperature of 18.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

		$\mathbf{Prep}$	Prep	$\mathbf{QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	50515	2009-05-05 at 09:35	59187	2009-05-05 at 09:35
Chloride (Titration)	SM 4500-Cl B	50550	2009-05-05 at 11:32	59263	2009-05-07 at 16:01
Chloride (Titration)	SM 4500-Cl B	50551	2009-05-05 at 11:32	59264	2009-05-07 at 16:01
TPH DRO	Mod. 8015B	50499	2009-05-05 at 09:00	59189	2009-05-05 at 13:00
TPH GRO	S 8015B	50515	2009-05-05 at 09:35	59188	2009-05-05 at 09:35

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9050432 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Work Order: 9050432 EAV-N-13 Page Number: 4 of 38 Eddy Co., NM

### **Analytical Report**

#### Sample: 194753 - Composite A

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene	**	< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	. 1	0.0100

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.97	mg/Kg	1	2.00	98	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.61	mg/Kg	1	2.00	80	45.2 - 144.3

#### Sample: 194753 - Composite A

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 59263
Prep Batch: 50550

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-05-07
Sample Preparation: 2009-05-07

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

		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1050	mg/Kg	50	4.00

#### Sample: 194753 - Composite A

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

		m RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
DRO		< 50.0	mg/Kg	1	50.0

Work Order: 9050432 EAV-N-13 Page Number: 5 of 38 Eddy Co., NM

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		86.1	mg/Kg	1	100	86	13.2 - 219.3

#### Sample: 194753 - Composite A

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		2.23	mg/Kg	1	1.00

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.51	mg/Kg	11	2.00	76	52 - 117

#### Sample: 194754 - Composite B

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

_		RL		<b>-</b>	
Parameter	Flag	Result	Units	Dilution	$_{ m L}$
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					$\operatorname{Spike}$	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.90	mg/Kg	1	2.00	95	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.60	mg/Kg	1	2.00	80	45.2 - 144.3

Work Order: 9050432 EAV-N-13

Page Number: 6 of 38 Eddy Co., NM

#### Sample: 194754 - Composite B

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 59263 Prep Batch: 50550 Analytical Method: Date Analyzed:

SM 4500-Cl B 2009-05-07 Sample Preparation: 2009-05-07

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

#### Sample: 194754 - Composite B

Laboratory: Midland

Analysis:

DRO

TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Date Analyzed:

RL

Mod. 8015B 2009-05-05

Units

Prep Method: N/A Analyzed By: LD

Sample Preparation: 2009-05-05 Prepared By: LD

Parameter Flag

Result <50.0 mg/Kg Dilution RL50.0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		100	mg/Kg	1	100	100	13.2 - 219.3

#### Sample: 194754 - Composite B

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515

Analytical Method: Date Analyzed:

S 8015B 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RLParameter Units Dilution Flag Result RLGRO 5.05 mg/Kg 1.00

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.49	mg/Kg	1	2.00	74	52 - 117

Work Order: 9050432 EAV-N-13 Page Number: 7 of 38 Eddy Co., NM

#### Sample: 194755 - SP-1

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	$\mathbf{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.88	mg/Kg	1	2.00	94	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	45.2 - 144.3

#### Sample: 194755 - SP-1

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 59263
Prep Batch: 50550

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-05-07
Sample Preparation: 2009-05-07

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

#### Sample: 194755 - SP-1

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		104	mg/Kg	1	100	104	13.2 - 219.3

Work Order: 9050432 EAV-N-13

Page Number: 8 of 38 Eddy Co., NM

#### Sample: 194755 - SP-1

Laboratory: Midland

Analysis: **TPH GRO** QC Batch: 59188 Prep Batch: 50515

Analytical Method: Date Analyzed: Sample Preparation:

S 8015B 2009-05-05 2009-05-05 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		4.77	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.03	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.51	mg/Kg	1	2.00	76	52 - 117

#### Sample: 194756 - SP-2

Laboratory:

Midland

**BTEX** Analysis: QC Batch: 59187 Prep Batch: 50515

Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

RLParameter Flag Result Units Dilution RLBenzene < 0.0100 mg/Kg 1 0.0100 Toluene < 0.0100 mg/Kg 1 0.0100 Ethylbenzene < 0.0100 mg/Kg 1 0.0100mg/Kg Xylene < 0.0100 1 0.0100

				•	Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.64	mg/Kg	1	2.00	82	45.2 - 144.3

#### Sample: 194756 - SP-2

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 59263 Prep Batch: 50550

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2009-05-07 2009-05-07

Prep Method: N/A Analyzed By: ARPrepared By: AR

		m RL			
Parameter	${f Flag}$	Result	Units	Dilution	RL
Chloride		1500	mg/Kg	50	4.00

Work Order: 9050432 **EAV-N-13** 

Page Number: 9 of 38 Eddy Co., NM

Sample: 194756 - SP-2

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Date Analyzed:

Mod. 8015B 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: N/A Analyzed By: LD

Prepared By: LD

RL

Parameter	Flag	Result	Units	Dilution	RL
DRO		< 50.0	${ m mg/Kg}$	1	50.0

					$\mathbf{S}\mathbf{pike}$	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		95.6	mg/Kg	1	100	96	13.2 - 219.3

Sample: 194756 - SP-2

Laboratory: Midland

TPH GRO

Analysis: QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B Date Analyzed:

2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By:

MEPrepared By: ME

RL

. Parameter	Flag	Result	Units	Dilution	RL
GRO		4.20	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.51	mg/Kg	1	2.00	76	52 - 117

Sample: 194757 - SP-3

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515

S 8021B Analytical Method: Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

RL

Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Benzene	· · · · · · · · · · · · · · · · · · ·	< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

Work Order: 9050432 EAV-N-13 Page Number: 10 of 38 Eddy Co., NM

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.00	mg/Kg	1	2.00	100	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	45.2 - 144.3

#### Sample: 194757 - SP-3

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 59263
Prep Batch: 50550

Analytical Method: SM 4500-Cl B Date Analyzed: 2009-05-07 Sample Preparation: 2009-05-07

 SM 4500-Cl B
 Prep Method:
 N/A

 2009-05-07
 Analyzed By:
 AR

 2009-05-07
 Prepared By:
 AR

#### Sample: 194757 - SP-3

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

RL

# Surrogate Flag Result Units Dilution Amount Recovery Limits n-Triacontane 114 mg/Kg 1 100 114 13.2 - 219.3

#### Sample: 194757 - SP-3

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

 Report Date: May 8, 2009

BPETRO029REC

Work Order: 9050432

**EAV-N-13** 

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Eddy Co., NM

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.51	mg/Kg	1	2.00	76	52 - 117

Sample: 194758 - SP-4

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

		$\mathbf{RL}$			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	$\mathbf{Units}$	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.92	mg/Kg	1	2.00	96	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.68	mg/Kg	1	2.00	84	45.2 - 144.3

Sample: 194758 - SP-4

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 59263
Prep Batch: 50550

Analytical Method: SM 4500-Cl B Date Analyzed: 2009-05-07 Sample Preparation: 2009-05-07

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

Sample: 194758 - SP-4

Laboratory:

Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

Surrogate

Trifluorotoluene (TFT)

4-Bromofluorobenzene (4-BFB)

Flag

 ${\bf Result}$ 

1.87

1.61

Work Order: 9050432 EAV-N-13 Page Number: 12 of 38

Eddy Co., NM

ъ.	F1		RL		<b>T</b> T		Dil .		DI
Parameter	Flag		Result		Units		Dilution		RL
DRO			< 50.0	<del></del>	mg/Kg		1		50.0
						Spike	Percent		covery
Surrogate	$\operatorname{Flag}$	Result	Units	Dil	ution	Amount	Recovery		imits
n-Triacontane		112	mg/Kg		1	100	112	13.2	2 - 219.3
G 1 10.455	a an i								
Sample: 194758	8 - SP-4								
•	dland								
•	H GRO			l Method:	S 8015B		Prep Me		S 5035
QC Batch: 591			Date Ana		2009-05-0		Analyze		ME
Prep Batch: 505	515		Sample P	reparation	: 2009-05-0	5	Prepare	d By:	ME
			RL						
Parameter	Flag		Result		Units		Dilution		RL
GRO			4.26	*****	mg/Kg		1		1.00
						0 :1	D		
Surrogate		Elo.	Result	Units	Dilution	$egin{array}{c}  ext{Spike} \  ext{Amount} \end{array}$	Percent		covery imits
Trifluorotoluene (	TETI	Flag	2.04	mg/Kg	1	2.00	Recovery 102		- 119.4
4-Bromofluorober			1.56	mg/Kg	1	$\frac{2.00}{2.00}$	78		- 119.4 - 117
1 Digition dolober	izene (4-bi b)	de for a	1.00	1116/116		2.00	10	- 02	- 111
Sample: 194759	9 - SP-5								
Laboratory: Mic	dland								
•	EX		Analytical	Method:	S 8021B		Prep Me	ethod:	S 5035
QC Batch: 591			Date Analy		2009-05-05		Analyze		ME
Prep Batch: 505			Sample Pre		2009-05-05		Prepare	•	ME
			RL						
Parameter	Fla	g	Result		Units		Dilution		RL
Benzene			< 0.0100	)	mg/Kg		1		0.0100
Toluene			< 0.0100		mg/Kg		1		0.0100
Ethylbenzene			< 0.0100		mg/Kg		1		0.0100
Xylene			< 0.0100	)	mg/Kg		1		0.0100
						Spike	Percent	Re	covery
C		T21	D 14	TT 14	D:1	A P.1.10	D	- T	•

Units

mg/Kg mg/Kg Dilution

1

1

Amount

2.00

2.00

Recovery

94

80

Limits

49 - 129.7

45.2 - 144.3

Work Order: 9050432 EAV-N-13 Page Number: 13 of 38 Eddy Co., NM

#### Sample: 194759 - SP-5

Laboratory: Analysis:

Midland

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch: 59263 50550 Date Analyzed: Sample Preparation:

2009-05-07 2009-05-07 Analyzed By: AR Prepared By: AR

RL

Parameter	
Chloride	

Flag Result <200

Units mg/Kg Dilution 50

RL 4.00

#### Sample: 194759 - SP-5

Laboratory:

Prep Batch:

Midland

Analysis: QC Batch:

TPH DRO 59189

59189 50499 Analytical Method:

Mod. 8015B 2009-05-05 Prep Method: N/A Analyzed By: LD

Date Analyzed: Sample Preparation:

2009-05-05

Prepared By: LD

RL

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

			•		Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane	·	96.6	mg/Kg	1	100	97	13.2 - 219.3

#### Sample: 194759 - SP-5

Laboratory:

Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: Date Analyzed:

Sample Preparation:

S 8015B 2009-05-05 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		4.70	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	<u>~</u>	2.07	mg/Kg	1	2.00	104	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.50	mg/Kg	1	2.00	75	52 - 117

Work Order: 9050432 Page Number: 14 of 38 Report Date: May 8, 2009 BPETRO029REC Eddy Co., NM EAV-N-13

#### Sample: 194760 - SP-6

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 59187 Date Analyzed: 2009-05-05 Analyzed By: Prep Batch: 50515 Sample Preparation: 2009-05-05 Prepared By:

		RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

ME

ME

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene $(\overline{T}\overline{F}T)$		1.85	mg/Kg	1	2.00	92	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	45.2 - 144.3

#### Sample: 194760 - SP-6

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 59263 Date Analyzed:  $\mathbf{AR}$ 2009-05-07 Analyzed By: Prep Batch: 50550 Sample Preparation: 2009-05-07 Prepared By: AR

		m RL			
Parameter	${f Flag}$	Result	Units	Dilution	RL
Chloride		413	mg/Kg	50	4.00

#### Sample: 194760 - SP-6

Laboratory: Midland

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A QC Batch: 59189 Date Analyzed: 2009-05-05 Analyzed By: LDPrep Batch: 50499 Sample Preparation: 2009-05-05 Prepared By: LD

		${ m RL}$			
Parameter	Flag	Result	$\mathbf{Units}$	Dilution	RL
DRO		< 50.0	mg/Kg	1	50.0

					$\mathbf{Spike}$	Percent	$\operatorname{Recovery}$
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		101	mg/Kg	1	100	101	13.2 - 219.3

Work Order: 9050432 EAV-N-13 Page Number: 15 of 38 Eddy Co., NM

#### Sample: 194760 - SP-6

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO	,	4.23	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.01	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.50	mg/Kg	1	2.00	75	52 - 117

#### Sample: 194761 - SP-7

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

		$\mathbf{RL}$			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Xylene		< 0.0100	${ m mg/Kg}$	1	0.0100

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.89	mg/Kg	1	2.00	94	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.64	mg/Kg	1	2.00	82	45.2 - 144.3

#### Sample: 194761 - SP-7

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 59263
Prep Batch: 50550

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-05-07
Sample Preparation: 2009-05-07

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

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Work Order: 9050432 EAV-N-13 Page Number: 16 of 38 Eddy Co., NM

#### Sample: 194761 - SP-7

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: N/A
Analyzed By: LD
Prepared By: LD

RL

Parameter	$\mathbf{Flag}$	Result	Units	Dilution	RL
DRO		< 50.0	mg/Kg	1	50.0

					' Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		98.1	mg/Kg	1	100	98	13.2 - 219.3

#### Sample: 194761 - SP-7

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

RL

Parameter	•	Flag	Result	Units	Dilution	RL
GRO			3.67	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	52 - 117

#### Sample: 194762 - SP-8

Laboratory: Midland

Analysis: **BTEX** Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 59187 Date Analyzed: 2009-05-05 Analyzed By: MEPrep Batch: 50515 Sample Preparation: 2009-05-05 Prepared By: ME

RLFlag Parameter Dilution Result Units RLBenzene < 0.0100 mg/Kg 1 0.0100 Toluene < 0.0100 mg/Kg 1 0.0100 Ethylbenzene < 0.0100 mg/Kg 1 0.0100 Xylene < 0.0100 mg/Kg 1 0.0100

Work Order: 9050432 EAV-N-13

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Surrogate	$\operatorname{Flag}$	Result	${ m Units}$	Dilution	$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.90	mg/Kg	1	2.00	95	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	45.2 - 144.3

#### Sample: 194762 - SP-8

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 59263 Prep Batch: 50550

Analytical Method: Date Analyzed:

SM 4500-Cl B 2009-05-07 Sample Preparation: 2009-05-07

Prep Method: N/A Analyzed By: ARPrepared By: AR

RLParameter Result Units Dilution RLFlag 234 Chloride mg/Kg 50 4.00

#### Sample: 194762 - SP-8

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Date Analyzed:

Sample Preparation:

Mod. 8015B 2009-05-05 2009-05-05

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

RLParameter Flag Result Units Dilution RLDRO < 50.0 mg/Kg 50.0 1

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		98.4	mg/Kg	1	100	98	13.2 - 219.3

#### Sample: 194762 - SP-8

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515

Analytical Method: S 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RLParameter Flag Result Units Dilution RLGRO 4.43 mg/Kg 1 1.00

Work Order: 9050432 EAV-N-13 Page Number: 18 of 38 Eddy Co., NM

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.59	mg/Kg	1	2.00	80	52 - 117

Sample: 194763 - SP-9

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

		RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					$_{ m Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.90	mg/Kg	1	2.00	95	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.60	mg/Kg	1	2.00	80	45.2 - 144.3

Sample: 194763 - SP-9

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 59264
Prep Batch: 50551

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-05-07
Sample Preparation: 2009-05-07

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

Sample: 194763 - SP-9

Laboratory:

Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

Work Order: 9050432 EAV-N-13 Page Number: 19 of 38 Eddy Co., NM

Parameter			$ m RL \ Result$	Uı	nits	Dilution	m RL
DRO			< 50.0	mg/	'Kg	1	50.0
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		82.9	mg/Kg	1	100	83	13.2 - 219.3

#### Sample: 194763 - SP-9

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

Parameter	Flag		$rac{ ext{RL}}{ ext{Result}}$		Units		Dilution	m RL
GRO			3.36		mg/Kg		1	1.00
Surrogate		Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits

Surrogate	1 lag	rtesur	Omis	Ditation	Amount	recovery	Lillius
Trifluorotoluene (TFT)	_	1.94	mg/Kg	1	2.00	97	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.52	mg/Kg	1	2.00	76	52 - 117
		_					

#### Sample: 194764 - SP-10

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

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

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.91	mg/Kg	1	2.00	96	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.63	mg/Kg	1	2.00	82	45.2 - 144.3

Work Order: 9050432 EAV-N-13

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#### Sample: 194764 - SP-10

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch:

59264 Prep Batch: 50551

Analytical Method: SM 4500-Cl B Date Analyzed: 2009-05-07 Sample Preparation: 2009-05-07

Prep Method: N/A Analyzed By: ARPrepared By: AR

RI.

		102			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

#### Sample: 194764 - SP-10

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Mod. 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: N/A Analyzed By: LDPrepared By: LD

RL

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

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		86.8	mg/Kg	1	100	87	13.2 - 219.3

#### Sample: 194764 - SP-10

Laboratory: Midland

TPH GRO Analysis: QC Batch: 59188 Prep Batch: 50515

Analytical Method: Date Analyzed:

S 8015B 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RL

Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
GRO		4.69	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.56	mg/Kg	1	2.00	78	52 - 117

Work Order: 9050432 EAV-N-13

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#### Sample: 194765 - SP-11

Laboratory: Midland

BTEX Analysis: QC Batch: 59187 Prep Batch: 50515

Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

		RL
rameter	${f Flag}$	Result

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	· 1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	$\mathbf{Units}$	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.87	mg/Kg	1 .	2.00	94	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.65	mg/Kg	1	2.00	82	45.2 - 144.3

#### Sample: 194765 - SP-11

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 59264 Prep Batch: 50551

Analytical Method: SM 4500-Cl B Date Analyzed: 2009-05-07 Sample Preparation: 2009-05-07

Prep Method: N/A Analyzed By: ARPrepared By: AR

		RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Chloride		463	mg/Kg	50	4.00

#### Sample: 194765 - SP-11

Laboratory: Midland

TPH DRO Analysis: QC Batch: 59189 Prep Batch: 50499

Analytical Method: Mod. 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: N/A Analyzed By: LDPrepared By: LD

RLParameter Flag Result Units Dilution RLDRO < 50.0 mg/Kg 50.0 1

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		112	mg/Kg	1	100	112	13.2 - 219.3

Work Order: 9050432 **EAV-N-13** 

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#### Sample: 194765 - SP-11

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515

Analytical Method: S 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		26.8	mg/Kg	1	1.00

					Spike	Percent	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.55	${ m mg/Kg}$	1	2.00	78	52 - 117

#### Sample: 194766 - SP-12

Laboratory: Midland

Analysis: **BTEX** QC Batch: 59187 Prep Batch: 50515

Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	$\operatorname{RL}$
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.84	mg/Kg	1	2.00	92	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.61	mg/Kg	1	2.00	80	45.2 - 144.3

#### Sample: 194766 - SP-12

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 59264 Prep Batch: 50551

Analytical Method: SM 4500-Cl B Date Analyzed: 2009-05-07 Sample Preparation: 2009-05-07

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

		$\mathrm{RL}$			
Parameter	${f Flag}$	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Work Order: 9050432 EAV-N-13 Page Number: 23 of 38 Eddy Co., NM

Sample: 19	4766 -	SP-12
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Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499 Analytical Method: Mod. 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: N/A
Analyzed By: LD
Prepared By: LD

RL

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

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		118	mg/Kg	1	100	118	13.2 - 219.3

#### Sample: 194766 - SP-12

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		4.98	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.00	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	52 - 117

#### Sample: 194767 - SP-13

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

Work Order: 9050432 **EAV-N-13** 

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Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.88	mg/Kg	1	2.00	94	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.69	mg/Kg	1	2.00	84	45.2 - 144.3

#### Sample: 194767 - SP-13

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 59264 Prep Batch: 50551

Analytical Method: Date Analyzed:

SM 4500-Cl B 2009-05-07 Sample Preparation: 2009-05-07

Prep Method: N/A Analyzed By: AR Prepared By:  $\mathbf{AR}$ 

RLParameter Result Units Dilution RLFlag <200 mg/Kg 50 4.00 Chloride

#### Sample: 194767 - SP-13

Laboratory: Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Date Analyzed:

Sample Preparation:

Mod. 8015B 2009-05-05 2009-05-05

Prep Method: N/A Analyzed By: LDPrepared By: LD

RLFlag Parameter Result Units Dilution RLDRO < 50.0 mg/Kg 50.0 1

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		80.9	mg/Kg	1	100	81	13.2 - 219.3

#### Sample: 194767 - SP-13

Laboratory: Midland Analysis:

TPH GRO QC Batch: 59188 Prep Batch: 50515

Analytical Method: S 8015B 2009-05-05 Date Analyzed: Sample Preparation: 2009-05-05

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RLParameter Flag Result Units Dilution RL**GRO** 3.24 mg/Kg 1 1.00 Report Date: May 8, 2009

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Work Order: 9050432

**EAV-N-13** 

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Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.60	mg/Kg	1	2.00	80	52 - 117

Sample: 194768 - SP-14

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515

Analytical Method: Date Analyzed:

S 8021B 2009-05-05 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

RL

Sample Preparation:

		1(1)			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Ethylbenzene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.82	mg/Kg	1	2.00	91	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.63	mg/Kg	1	2.00	82	45.2 - 144.3

Sample: 194768 - SP-14

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 59264 Prep Batch: 50551

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2009-05-07 2009-05-07

Prep Method: N/A Analyzed By: AR

Prepared By: AR

Parameter Flag Result Units Dilution RLChloride <200 mg/Kg 50 4.00

Sample: 194768 - SP-14

Laboratory:

Midland

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Date Analyzed: Sample Preparation:

RL

Mod. 8015B 2009-05-05 2009-05-05

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

Work Order: 9050432 EAV-N-13 Page Number: 26 of 38 Eddy Co., NM

Parameter	Fla	ag	$rac{ ext{RL}}{ ext{Result}}$	Uı	nits	Dilution	RL
DRO			< 50.0	mg/Kg 1		50.0	
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		99.3	mg/Kg	1	100	99	13.2 - 219.3

#### Sample: 194768 - SP-14

Laboratory: Midland

Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515 Analytical Method: S 8015B
Date Analyzed: 2009-05-05
Sample Preparation: 2009-05-05

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

Parameter	Flag	RE Result	Units		Dilution	RL
GRO		3.75	mg/Kg		1	1.00
				Spike	Percent	Recovery

Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.56	mg/Kg	1	2.00	78	52 - 117

#### Sample: 194769 - SP-15

Laboratory: Midland

Analysis: BTEX QC Batch: 59187 Prep Batch: 50515 Analytical Method: S 8021B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: ME Prepared By: ME

		RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	.,	1.83	mg/Kg	1	2.00	92	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	45.2 - 144.3

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#### Sample: 194769 - SP-15

Laboratory: Midland

Prep Batch: 50551

Analysis:

QC Batch:

Chloride (Titration)

59264

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B

Prep Method: N/A 2009-05-07 Analyzed By: ARPrepared By: 2009-05-07 AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

#### Sample: 194769 - SP-15

Laboratory: Midland

DRO

Analysis: TPH DRO QC Batch: 59189 Prep Batch: 50499

Analytical Method: Date Analyzed:

Sample Preparation:

Mod. 8015B 2009-05-05 2009-05-05

Prep Method: N/A Analyzed By: LDPrepared By: LD

RL

50.0

Parameter Flag

RLResult < 50.0

Units Dilution mg/Kg 1

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		91.1	mg/Kg	1	100	91	13.2 - 219.3

#### Sample: 194769 - SP-15

Laboratory:

Midland

TPH GRO Analysis: QC Batch: 59188 Prep Batch: 50515

Analytical Method: Date Analyzed:

S 8015B 2009-05-05 2009-05-05 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

Sample Preparation:

RLParameter Result Units Dilution RLFlag  $\overline{GRO}$ 3.75 mg/Kg 1.00 1

					Spike	Percent ·	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	•	2.03	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.58	mg/Kg	1	2.00	79	52 - 117

Report Date: May 8, 2009 Work Order: 9050432 Page Number: 28 of 38 BPETRO029REC EAV-N-13 Eddy Co., NM

#### Sample: 194770 - SP-16

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 59187 Date Analyzed: 2009-05-05 Analyzed By: ME Prep Batch: 50515 Sample Preparation: 2009-05-05 Prepared By: ME

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.88	mg/Kg	., 1	2.00	94	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.66	${ m mg/Kg}$	1	2.00	83	45.2 - 144.3

#### Sample: 194770 - SP-16

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 59264 Date Analyzed: 2009-05-07 Analyzed By: ARPrep Batch: 50551 Sample Preparation: 2009-05-07 Prepared By: AR

#### Sample: 194770 - SP-16

Laboratory: Midland

Analytical Method: Mod. 8015B Prep Method: Analysis: TPH DRO N/A QC Batch: 59189 2009-05-05 Analyzed By: LDDate Analyzed: Prep Batch: 50499 Sample Preparation: 2009-05-05 Prepared By: LD

i.ż		$\mathrm{RL}$			
Parameter	Flag	Result	Units	Dilution	RL
DRO		< 50.0	mg/Kg	1	50.0

		,			Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		115	mg/Kg	1	100	115	13.2 - 219.3

Work Order: 9050432 EAV-N-13

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Laboratory:	Midland
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Analysis: TPH GRO QC Batch: 59188 Prep Batch: 50515

Analytical Method: S 8015B Date Analyzed: 2009-05-05 Sample Preparation: 2009-05-05 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

#### RL

Parameter	$\mathbf{Flag}$	Result	Units	Dilution	RL
GRO		4.43	mg/Kg	1	1.00

					Spike	Percent	Recovery
Surrogate	$\mathbf{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.01	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	52 - 117

#### Method Blank (1)

QC Batch: 59187

QC Batch: 59187 Date Analyzed: 2009-05-05 Analyzed By: ME

Prep Batch: 50515

QC Preparation: 2009-05-05

Prepared By: ME

Parameter	Flag	Result	Units	RL
Benzene		< 0.00100	mg/Kg	0.01
Toluene		< 0.00100	$\mathrm{mg}/\mathrm{Kg}$	0.01
Ethylbenzene		< 0.00110	m mg/Kg	0.01
Xylene		< 0.00360	$\mathrm{mg}/\mathrm{Kg}$	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.95	mg/Kg	1	2.00	98	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	51.9 - 128.1

#### Method Blank (1)

QC Batch: 59188

QC Batch:

59188

Date Analyzed:

2009-05-05

Analyzed By: ME

Prep Batch: 50515

QC Preparation: 2009-05-05

Prepared By: ME

MDL

Parameter	Flag	Result	Units	$\operatorname{RL}$
GRO		< 0.482	mg/Kg	1

					Spike	Percent	Recovery
Surrogate	Flag	Result	$\mathbf{Units}$	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.93	mg/Kg	1	2.00	96	71.9 - 115

continued ...

Work Order: 9050432 **EAV-N-13** 

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method blank continued					···		
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	45.7 - 118.9

Method Blank (1)

QC Batch: 59189

QC Batch: Prep Batch: 50499

59189

Date Analyzed:

2009-05-05

Analyzed By: LD

QC Preparation: 2009-05-05 Prepared By: LD

MDL

Parameter Result Units RLFlag  $\overline{\text{DRO}}$ < 5.86 mg/Kg 50

					Spike	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	${f Units}$	Dilution	Amount	Recovery	Limits
n-Triacontane		63.9	mg/Kg	1	100	64	13 - 178.5

Method Blank (1)

QC Batch: 59263

QC Batch: Prep Batch:

59263 50550 Date Analyzed: QC Preparation:

2009-05-07 2009-05-05 Analyzed By: AR

Prepared By: AR

MDL

MDL

Parameter Flag Result Units RLChloride <2.18 mg/Kg 4

Method Blank (1)

QC Batch: 59264

QC Batch:

59264

Date Analyzed:

2009-05-07

Analyzed By: AR

Prep Batch: 50551

QC Preparation:

2009-05-05

Prepared By: AR

RL

4

Parameter Flag Result Units Chloride < 2.18 mg/Kg

Laboratory Control Spike (LCS-1)

QC Batch:

59187

Date Analyzed: QC Preparation: 2009-05-05

2009-05-05

Analyzed By: ME

Prepared By: ME

Prep Batch: 50515

Work Order: 9050432 EAV-N-13 Page Number: 31 of 38 Eddy Co., NM

Param	$rac{ ext{LCS}}{ ext{Result}}$	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.92	mg/Kg	1	2.00	< 0.00100	96	72.7 - 129.8
Toluene	1.93	mg/Kg	1	2.00	< 0.00100	96	71.6 - 129.6
Ethylbenzene	1.90	mg/Kg	1	2.00	< 0.00110	95	70.8 - 129.7
Xylene	5.69	mg/Kg	1	6.00	< 0.00360	95	70.9 - 129.4

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\mathbf{Units}$	Dil.	Amount	$\mathbf{Result}$	Rec.	Limit	RPD	Limit
Benzene	2.01	mg/Kg	1	2.00	< 0.00100	100	72.7 - 129.8	5	20
Toluene	1.96	mg/Kg	1	2.00	< 0.00100	98	71.6 - 129.6	<b>2</b>	20
Ethylbenzene	2.01	mg/Kg	1	2.00	< 0.00110	100	70.8 - 129.7	6	20
Xylene	6.00	mg/Kg	1	6.00	< 0.00360	100	70.9 - 129.4	5	20

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

	LCS	LCSD			Spike	LCS	LCSD	$\operatorname{Rec}$ .
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.90	1.86	mg/Kg	1	2.00	95	93	65.9 - 132
4-Bromofluorobenzene (4-BFB)	1.83	1.84	mg/Kg	1	2.00	92	92	55.2 - 128.9

#### Laboratory Control Spike (LCS-1)

QC Batch: 59188 Prep Batch: 50515 Date Analyzed: 2009-05-05 QC Preparation: 2009-05-05 Analyzed By: ME Prepared By: ME

	LCS			Spike	Matrix		Rec.
Param	Result	${f Units}$	Dil.	Amount	Result	Rec.	Limit
GRO	15.4	mg/Kg	1	20.0	< 0.482	77	60.5 - 100.1

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	15.2	mg/Kg	1	20.0	< 0.482	76	60.5 - 100.1	1	20

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

	LCS	LCSD			$\mathbf{Spike}$	LCS	LCSD	$\operatorname{Rec}$ .
Surrogate	Result	Result	${f Units}$	Dil.	Amount	Rec.	Rec.	${f Limit}$
Trifluorotoluene (TFT)	2.00	2.00	mg/Kg	1	2.00	100	100	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.81	1.85	mg/Kg	1	2.00	90	92	66.1 - 107.3

#### Laboratory Control Spike (LCS-1)

QC Batch: 59189 Prep Batch: 50499 Date Analyzed: 2009-05-05 QC Preparation: 2009-05-05 Analyzed By: LD Prepared By: LD

Work Order: 9050432 EAV-N-13

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	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
DRO	232	mg/Kg	1	<b>2</b> 50	< 5.86	93	57.4 - 133.4

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\mathbf{Units}$	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	201	mg/Kg	1	250	< 5.86	80	57.4 - 133.4	14	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	83.2	99.7	mg/Kg	1	100	83	100	48.5 - 146.7

#### Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 50550

59263

Date Analyzed: 2009-05-07

QC Preparation: 2009-05-05 Analyzed By: AR Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	$\mathbf{Result}$	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	${f Units}$	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	99.7	mg/Kg	1	100	<2.18	100	85 - 115	1	20

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

#### Laboratory Control Spike (LCS-1)

QC Batch:

59264

Date Analyzed:

2009-05-07

Analyzed By: AR Prepared By: AR

Prep Batch: 50551

QC Preparation: 2009-05-05

		LCS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	v	98.8	mg/Kg	1	100	<2.18	99	85 - 115

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\mathbf{Units}$	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$	RPD	$\mathbf{Limit}$
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115	1	20

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

Work Order: 9050432 EAV-N-13 Page Number: 33 of 38 Eddy Co., NM

Matrix Spike (MS-1)

Spiked Sample: 194770

QC Batch: 59187 Prep Batch: 50515 Date Analyzed: 2009-05-05 QC Preparation: 2009-05-05 Analyzed By: ME Prepared By: ME

Param	$rac{ ext{MS}}{ ext{Result}}$	Units	Dil.	$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit
Benzene	1.98	mg/Kg	1	2.00	< 0.00100	99	58.6 - 165.2
Toluene	2.04	mg/Kg	1	2.00	< 0.00100	102	64.2 - 153.8
Ethylbenzene	2.09	mg/Kg	1	2.00	< 0.00110	104	61.6 - 159.4
Xylene	6.17	mg/Kg	1	6.00	< 0.00360	103	64.4 - 155.3

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	$\mathbf{U}\mathbf{nits}$	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	1.99	mg/Kg	1	2.00	< 0.00100	100	58.6 - 165.2	0	20
Toluene	1.91	mg/Kg	1	2.00	< 0.00100	96	64.2 - 153.8	7	20
Ethylbenzene	1.99	mg/Kg	1	2.00	< 0.00110	100	61.6 - 159.4	5	20
Xylene	5.93	mg/Kg	1	6.00	< 0.00360	99	64.4 - 155.3	4	20

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

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	$\mathbf{Units}$	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.93	1.93	mg/Kg	1	2	96	96	76 - 127.9
4-Bromofluorobenzene (4-BFB)	1.74	1.68	mg/Kg	1	2	87	84	72 - 127.8

Matrix Spike (MS-1)

Spiked Sample: 194769

QC Batch: 59188 Prep Batch: 50515 Date Analyzed: 2009-05-05 QC Preparation: 2009-05-05

Analyzed By: ME Prepared By: ME

		MS			$\mathbf{Spike}$	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	1	39.0	mg/Kg	1	20.0	3.7506	176	12.8 - 175.2

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

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	2	40.2	mg/Kg	1	20.0	3.7506	182	12.8 - 175.2	3	20

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

¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

Work Order: 9050432 **EAV-N-13** 

Page Number: 34 of 38 Eddy Co., NM

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.07	2.15	mg/Kg	1	2	104	108	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.61	1.67	mg/Kg	11	2	80	84	31.3 - 161.7

Matrix Spike (MS-1)

Spiked Sample: 194753

QC Batch:

59189

Date Analyzed:

2009-05-05

Analyzed By: LD

Prep Batch: 50499

QC Preparation: 2009-05-05

Prepared By: LD

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$
DRO	197	mg/Kg	1	250	< 5.86	79	35.2 - 167.1

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

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	3	261	mg/Kg	1	250	< 5.86	104	35.2 - 167.1	28	20

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

	MS	MSD .			Spike	MS	MSD	$\mathrm{Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	98.0	101	mg/Kg	1	100	98	101	34.5 - 178.4

Matrix Spike (MS-1)

Spiked Sample: 194762

QC Batch:

59263

Date Analyzed:

2009-05-07

Analyzed By: AR

Prep Batch:

50550

QC Preparation:

2009-05-05

Prepared By: AR

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
Chloride	5300	mg/Kg	50	5000	234	101	85 - 115

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

	MSD			$\mathbf{Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	5340	mg/Kg	50	5000	234	102	85 - 115	1	20

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

Matrix Spike (MS-1)

Spiked Sample: 194770

QC Batch:

59264

Date Analyzed:

2009-05-07

Analyzed By: AR

Prep Batch: 50551

QC Preparation: 2009-05-05

Prepared By: AR

³MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Work Order: 9050432 EAV-N-13 Page Number: 35 of 38 Eddy Co., NM

Param	M Res	-	Units	Dil.	$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$		trix sult F	Rec.	$egin{array}{c} { m Rec.} \\ { m Limit} \end{array}$
Chloride	522	20	mg/Kg	50	5000	2.	59	99	85 - 115
Percent recovery is based	d on the spike result.	RPD is	based on	the spike an	ıd spike du	plicate r	esult.		
	MSD			Spike	Matrix		Rec.		RPD
<b>D</b>	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Param	1000010								

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

#### Standard (CCV-1)

QC Batch:	59187	Date Analyzed:	2009-05-05	Analyzed By:	ME
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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene	1 lag	mg/Kg	0.100	0.0928	93	80 - 120	2009-05-05
Toluene		mg/Kg	0.100	0.0915	92	80 - 120	2009-05-05
Ethylbenzene		mg/Kg	0.100	0.0937	94	80 - 120	2009-05-05
Xylene		mg/Kg	0.300	0.278	93	80 - 120	2009-05-05

#### Standard (CCV-2)

QC Batch:	59187	Date Analyzed:	2009-05-05	Analyzed By:	ME
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			CCVs	$\mathbf{CCVs}$	CCVs	Percent	
			${f True}$	Found	Percent	$\operatorname{Recovery}$	$\mathbf{Date}$
Param	$\mathbf{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.104	104	80 - 120	2009-05-05
Toluene		mg/Kg	0.100	0.103	103	80 - 120	2009-05-05
Ethylbenzene		${ m mg/Kg}$	0.100	0.102	102	80 - 120	2009-05-05
Xylene		mg/Kg	0.300	0.308	103	80 - 120	2009-05-05

#### Standard (CCV-3)

QC Batch: 59187 Date Analy	yzed: 2009-05-05	Analyzed By:	$\mathbf{ME}$
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			$\mathbf{CCVs}$	$\mathbf{CCVs}$	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.106	106	80 - 120	2009-05-05
Toluene		$_{ m mg/Kg}$	0.100	0.106	106	80 - 120	2009-05-05
Ethylbenzene		mg/Kg	0.100	0.108	108	80 - 120	2009-05-05
Xylene		mg/Kg	0.300	0.324	108	80 - 120	2009-05-05

Report Date:	May	8,	2009
BPETRO029	REC		

Work Order: 9050432 EAV-N-13

Page Number: 36 of 38 Eddy Co., NM

Standard (	(CCV-1)	
Standard (		

QC Batch: 59188

Date Analyzed: 2009-05-05

Analyzed By: ME

			CCVs	$\mathbf{CCVs}$	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
$\overline{\text{GRO}}$		mg/Kg	1.00	0.846	85	80 - 120	2009-05-05

#### Standard (CCV-2)

QC Batch: 59188

Date Analyzed: 2009-05-05

Analyzed By: ME

			CCVs True	${ m CCVs} \ { m Found}$	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2009-05-05

#### Standard (CCV-3)

QC Batch: 59188

Date Analyzed: 2009-05-05

Analyzed By: ME

		,	CCVs	CCVs	$\operatorname{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2009-05-05

#### Standard (CCV-1)

QC Batch: 59189

Date Analyzed: 2009-05-05

Analyzed By: LD

			$\mathbf{CCVs}$	CCVs	$\operatorname{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	227	91	80 - 120	2009-05-05

#### Standard (CCV-2)

QC Batch: 59189

Date Analyzed: 2009-05-05

Analyzed By: LD

			CCVs	$\mathbf{CCVs}$	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	229	92	80 - 120	2009-05-05

Report Date: May 8, 2009 BPETRO029REC		Work Order: 9050432 EAV-N-13			Page Number: 37 of 38 Eddy Co., NM		
Standard (C	CV-3)						
QC Batch: 59	9189		Date Ana	lyzed: 2009-0	5-05	Ana	lyzed By: LD
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	$\mathbf{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	234	94	80 - 120	2009-05-05
Standard (C	CV-4)						
QC Batch: 5	9189		Date Ana	lyzed: 2009-0	5-05	Ana	lyzed By: LD
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	244	98	80 - 120	2009-05-05
Standard (IC	CV-1)						
Standard (IC	,		Date Ana	lyzed: 2009-05	5-07	Anal	yzed By: AR
`	,			lyzed: 2009-05 ICVs	5-07 ICVs		yzed By: AR
`	,		Date Ana ICVs True			Percent	yzed By: AR Date
`	9263	Units	ICVs	ICVs	ICVs Percent		Date
QC Batch: 59	,	Units mg/Kg	ICVs True	ICVs Found	ICVs	Percent Recovery	
QC Batch: 59	9263 Flag		ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
QC Batch: 59 Param Chloride	9263 Flag CV-1)		ICVs True Conc. 100	ICVs Found Conc.	ICVs Percent Recovery 101	Percent Recovery Limits 85 - 115	Date Analyzed
QC Batch: 59 Param Chloride Standard (C	9263 Flag CV-1)		ICVs True Conc. 100	ICVs Found Conc. 101	ICVs Percent Recovery 101	Percent Recovery Limits 85 - 115	Date Analyzed 2009-05-07
QC Batch: 59 Param Chloride Standard (C	9263 Flag CV-1)		ICVs True Conc. 100  Date Ana	ICVs Found Conc. 101  lyzed: 2009-05	ICVs Percent Recovery 101  5-07 CCVs	Percent Recovery Limits 85 - 115  Anal	Date Analyzed 2009-05-07
QC Batch: 59 Param Chloride Standard (C	9263 Flag CV-1)		ICVs True Conc. 100	ICVs Found Conc. 101	ICVs Percent Recovery 101	Percent Recovery Limits 85 - 115	Date Analyzed 2009-05-07

Date Analyzed: 2009-05-07

**ICVs** 

Found

Conc.

99.5

**ICVs** 

Percent

Recovery

100

**ICVs** 

True

Conc.

100

Analyzed By: AR

Date

Analyzed

2009-05-07

Percent

Recovery

Limits

85 - 115

QC Batch: 59264

Param

Chloride

Flag

Units

mg/Kg

Work Order: 9050432 EAV-N-13

Page Number: 38 of 38 Eddy Co., NM

Standard (CCV-1)

QC Batch: 59264

Date Analyzed: 2009-05-07

Analyzed By: AR

			CCVs	$\mathbf{CCVs}$	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-05-07

LAB Order ID# 9050432

Page of 2

## TraceAnalysis, Inc.

email: lab@traceanalysis.com

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LAB Order ID #

## TraceAnalysis, Inc.

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email: lab@tracea	nalysis.coi			378-1296	1 (888) 588-3443
Company Name:		Pho	ne #: 		ANALYSIS REQUEST
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		MATRIX	PRESERVATIVE METHOD	SAMPLING	
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AB# FIELD CODE	TA /	8 8		1	27013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.70013.
TEONEX N	# CONTAINERS Volume / Amount	WATER SOIL AIR SLUDGE	HCI HNO ₃ H ₂ SO ₄ NaOH ICE NONE	DATE	MTBE 8021B / BTEX 8021B / BTEX 8021B / TPH 418.1 / TX1 TPH 418.1 / TX1 TPH 8015GRO / 622 FOLD Wetals Ag TCLP Wetals Ag TCLP Pesticides TCLP Pesticides RCI GC/MS Vol. 826 GC/MS Vol. 826 GC/MS Vol. 826 GC/MS Semi. Vc PCB's 8082 / 609 Pesticides 8081/PM Moisture Content Moisture Content Moisture Content Hold
(\$101a) (1) (\$100 to 1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	* >	SOVO	T I I Z U Z	o F	THE THE SCIENCE OF SCI
94 16 sp. 10	1	<del>                                     </del>		4/29 9:20	
762 Sr-11	1	1 1 1 1 1 1 1		4/29 9:35	
700 SP-12	1			4/59 9:48	
767 SP-13	;			4/29 10:10	
708 SP-14				4/29 10:20	
50-15				4/29 10:35	
17058-14	1			4/29 10:50	
	<del> </del>			1,01 10 30	<del>╿╒┩╒┩╒┩╒┩╒┩╒┩╒┩╒</del>
		<del>                                     </del>			
				<del>                                     </del>	
Relinguished by: Date: Time:	Received	by:	Date: Tim	e:	LABUSE REMARKS: All tests Midland.
Do 15 1 8 2:30	RA	-V-l	5-4-09 14	136	ONLY
Relinquished by Date: Time:	Reseived	by:	Date: Tim		Intact: A No.
		-			Diy Weight Basis Required
Relinquished by: Date: Time:	Received	at Laboratory by	Date	<b>e</b> 2	I IRRP Report Required
					智能技術系統(の発展機能を表於:発展性は常常には、   L Check it Special Kedoning
					og Review Limits Are Needed
Submittal of samples constitutes agreement to Te	rms and Cor				Carrier # Crify - in
		OBIGINAL	COPV		

## ATTACHMENT D

## **Temporary Monitor Well Boring Log**

#### **SOIL BORING / MONITORING WELL LOG**

PROJECT	Γ: <u>N-13</u>						DRILLING COMPANY: TALON LPE	DRILLING COMPANY: TALON LPE						
PROJECT	T NUMB	ER: <u>BPPETROC</u>	29REC				DRILLER: Alejandro	DRILLER: Alejandro						
CLIENT:	B P Petr	rot					DRILLING METHOD: Air Rotary							
BORING	/WELL I	NUMBER: MW-	1 Temp				BORE HOLE DIAMETER: 6"							
TOTAL D	EPTH: <u>7</u>	73'					SCREEN: Diam. 2" Length 30' Slot Size 0.01	0"	[					
SURFACI	E ELEVA	ATION: <u>N/A</u>					CASING: Diam. 2" Length 42.5' Type PVC Sch	40						
GEOLOG	IST: K.	SUMMERS					DATE DRILLED: 03/30/2009							
							PAC	3E 1	of 1					
Depth (FT.)		Well Construction	dings		!	ion	Description of Stratum							
Dept	Soil Symbol	Well Co	PID Readings	Samples	Sample Interval	Description Interval		:	Depth (FT.)					
0	121212121212								0					
						4'	Silty Sand, Light Brown, 5YR, 6/4, Very Fine To Fine Sand, Some Gypsum. HCL indicates Calcium Carbonate Present							
l H	^ ^ _ #######			Н			Gypsum, Moderate Reddish Brown, 10 YR, 4/6 to Grayish Pink, 5	Н						
	V V V						YR, 8/2, Massive Gypsum.							
	>							-						
	<b>y</b>				i			١.	15					
15	$\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}$							П						
	YYY							Ш						
				Н		22'	Gypsum/Silty Sandy Clays, Moderate Reddish Brown, 10 YR, 4/6,							
	XXX						Sand is Very Fine to Fine. Clay is Moderately Plastic and Moderatly							
	YYY						Moist. Fines are Interbedded with the Gypsum		30					
30	V V V				:			Н	30					
	YYY			H	;									
	y V Y													
				Ш		40'								
	× × 4						Gypsum, Pale Reddish Brown, 10 YR, 5/4, to Grayish Orange Pink, 10 R, 3/2.							
45	`	:	,					Н	45					
	<u> </u>	:雪:												
	`													
	y y y	:量:												
	VVV	:畫:												
60	`			Н				L	60					
	<u> </u>													
+-	· • •	::目:1				68'		$\vdash$						
	类类			$\forall$		00	Lithified Calcium Carbonate, Yellowish Gray, 5 YR, 7/2, To Light							
						73'	Olive Gray, 5 YR, 5/2. Appears to be Limestone, but Cuttings are							
75							Too Fine for a Positive Field ID. Effervesces in Dilute HCL, Fairly Hard Drilling. No Water Observed.	$\bigsqcup$	75					
		]					Bottom of Hole	1						
	1													
	- 1	]												
1-1		į						$\vdash$						
90									90					
30	- 1													
REMAR	RKS:						TALC	1(	J					
		THIS WELL	. DIAGRA	M A	ND BOF		G SHOULD NOT BE USED SEPERATE FROM THE INAL REPORT.	意识	reer Filtr					
								• ;	61 Ep					

#### KEY TO SYMBOLS

Symbol Description

Strata symbols

Silty sand

EXTRA:
regularly
spaced "V"'s

XXX

Description not given for:

"0<"

Limestone

Monitor Well Details

**T** 

Capped riser with locking

cover

Bentonite pellets

Silica sand, blank PVC

Slotted pipe w/ sand

Endcap on pipe Packed in sand

# ATTACHMENT E Disposal Documentation

Disposal documentation/manifest copies available in NMOCD hard copy file.

### **ATTACHMENT F**

### New Mexico Oil Conservation Division Release Notification and Corrective Action Form C-141

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 1301 W. Grand Avenue, Artesia, NM 88210 District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

## Energy Minerals and Natural Resource FCEIVED

MAR 2 9 2010 Oil Conservation Division 1220 South St. Francis Dr.

NMOCD ARTESIA

Form C-141 Revised October 10, 2003

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

#### Santa Fe, NM 87505 **Release Notification and Corrective Action**

)					•	<b>OPERA</b>	<b>FOR</b>	⊠ i						
Name of Co	mpany B	P America l	on Company		Contact Steve Pacheco									
Address PC	Box 129	Artesia, N		Telephone No. 575-677-3642										
Facility Nan	ne Empir	e Abo Unit	N-13		I	Facility Type Flow line								
Surface Own	ner BLM		wner E	BLM	·	).								
			l	LOCA	TION	OF REI	LEASE							
Unit Letter	Section	Township	Range	Feet from the	North/South Line   Feet from the   East/West Line   County									
E	11	18S	27E	1618		330 Eddy								
	Latitude 32.7645 Longitude 104.256181													
NATURE OF RELEASE														
Type of Relea	se Produc	ed Water					Release Unknow	vn Volu	me Re	covered U	nknov	Yn		
Source of Rel			7			Date and H	our of Occurrence	e Date	and H	our of Disc	covery			
Was Immedia	te Notice C		v	N. D.N.		If YES, To	Whom?							
By Whom?		LJ	162 🔽	No Not Re	quired	Date and H								
Was a Watero	ource Dece	hod?					lume Impacting th	he Wetersours						
was a water	ourse Reac		Yes 🛭	No		11 1 E.S., V U	imite impacting u	ic watercours	<b>C</b> .					
If a Watercou	1	and Descri	ba Eulla, f											
Historical Re	Describe Cause of Problem and Remedial Action Taken.*  Historical Release  Describe Area Affected and Cleanup Action Taken.*													
Approximate	ly 360 x 12	O foot area o	f impacte	d soil. Soil will b	e excavi	ated and tra	nsported to a NM	1OCD appro	ved di	sposał faci	ility.			
regulations all public health of should their of	I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other											danger liability nan health		
		<u> </u>	7//	/			OIL CONS	SERVATIO	)N [	OIVISIO	N			
Signature:	Mi	on Ca	lika	ra										
Printed Name:	Alton G.	Callihan			Α	pproved by	District Superviso	r:						
Title: Permiar	Operating	Center Mana	ger		A	pproval Date	Z:	Expirat	ion Da	ate:				
E-mail Address: steve.pacheco@bp.com  Conditions of Approval:  Attached														
Date: 1/1				132.688-5	200									

<u>District 1</u> 1625 N French Dr., Hobbs, NM 88240 District II
1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St Francis Dr , Santa Fe, NM 87505

## Energy Minerals and Natural Resources RECEIVED

MAR 2 9 2010

Form C-141 Revised October 10, 2003

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

#### Oil Conservation Division 1220 South St. Francis Dr. Santa Fe NM 87505

Delege Netification and Commention Action															
Release Notification and Corrective Action															
						<b>OPERA</b>	ΓOR	Initia	☐ Initial Report ⊠ Final Repor						
Name of Co	mpany B	P America	Producti	on Company		Contact Steve Pacheco									
Address PC	Box 129	Artesia, N	M 8821	0		Telephone No. 575-677-3642									
Facility Name Empire Abo Unit N-13						Facility Type Flow line									
Surface Ow	ner BLM			Mineral C	)wner	BLM		Lease N	lo						
				LOCA	TIO	ON OF RELEASE									
Unit Letter	Section	Township	Range	Feet from the		/ <del>South</del> Line	Feet from the	East/West Line	East/West Line County						
E	11	18S	27E	1618			330		Eddy						
		Lat	itude	32.7645		Longitude	104.256181								
Latitude32.7645Longitude104.256181  NATURE OF RELEASE															
Type of Relea	ase Produc	red Water		NAI	UKE		Release Unknow	wn Volume R	ecovered U	nknov					
Source of Rel						<del></del>	our of Occurrence		Hour of Disc						
Was Immedia				•		If YES, To									
			Yes 🗵	No 🗌 Not Re	equired										
By Whom?						Date and H	our	A							
Was a Watero	ourse Reac	hed?				If YES, Vo	lume Impacting t	the Watercourse.							
			Yes 🛚	No											
If a Watercou	rse was Im	nacted Descr	he Fully *	k											
n a maioresa		<b>pac</b> ,													
	CD 11		11.1.4.4												
Describe Cau		em and Remed	dial Action	n Taken.*											
Historical Re	eiease														
Describe Area	Affected a	and Cleanup A	Action Tak	en.*											
See attached	site closur	e report.													
I hereby certif	v that the u	nformation gr	ven above	is true and compl	ete to th	e best of my	knowledge and u	nderstand that pursi	ant to NMO	CDru	les and				
								tive actions for rele							
public health	or the envir	onment The	acceptanc	e of a C-141 repo	rt by the	NMOCD ma	rked as "Final Re	eport" does not relie	eve the opera	tor of	liability				
should their of	perations ha	ave failed to a	dequately	investigate and re	mediate	contamination	on that pose a thre	eat to ground water,	surface water	er, hun	nan health				
or the environ	ment. In ac	ddition, NMO	CD accept	tance of a C-141 r	eport do	es not relieve	the operator of r	esponsibility for co	mpliance wi	th any	other				
federal, state,	or local law	/s and/or regu	lations.												
	~1						OIL CONS	SERVATION 1	DIVISIO	N					
Signature:	5	111 +	ach	(ed)							Ì				
Signature.	my	- / /	acin	w			· · · ·								
Printed Name: Steve M Pacheco Approved by District Supervisor:															
	,														
Title: SENM	Team Lead		· · · · · · · · · · · · · · · · · · ·		<i>P</i>	Approval Date		Expiration D	Expiration Date.						
E-mail Addres	c. steve na	checo@hn co	m			Conditions of	A nproval								
= man Addres	E-mail Address: steve.pacheco@bp.com						Approvar.		Attached						

Phone: 575-677-3642

Date: March 12, 2010 * Attach Additional Sheets If Necessary

# ATTACHMENT G Photographs



1.00

