Report Type: Closure General Site Information: Site: Pinto 29 Federal #1 Tank Battery **COG Operating LLC** Company: Section, Township and Range Unit B Sec 29 T17S R30E Lease Number: API-30-015-31956 County: **Eddy County** GPS: 32.81165° N 103.99159° W Surface Owner: Federal Mineral Owner: In Loco Hills, from the intersection of Haggerman Cutoff (CR 217) and Hwy 82, travel south on CR Directions: 217 for 0.2 mile, turn right (west) and travel 0.2 mile, turn left (south) and travel 0.1 mile to the Release Data: Date Released: 4/3/2013 Type Release: Oil Source of Contamination: Steel line from circulating pump. 15 bbls Fluid Released: Fluids Recovered: 14 bbls Official Communication: Name: Robert McNeill Ike Tavarez Company: COG Operating, LLC Tetra Tech Address: One Concho Center 1910 N. Big Spring 600 W. Illinois Ave. City: Midland Texas, 79701 Midland, Texas Phone number: (432) 686-3023 (432) 682-4559 Fax: (432) 684-7137 Email: ike.tavarez@tetratech.com pellis@conchoresources.com Ranking Criteria Depth to Groundwater: Ranking Score Site Data <50 ft 20 50-99 ft 10 >100 ft. 0 ō WellHead Protection: Ranking Score Site Data Water Source <1,000 ft., Private <200 ft. 20 Water Source >1,000 ft., Private >200 ft. 0 0 Surface Body of Water: Ranking Score Site Data <200 ft. 20 200 ft - 1,000 ft. 10 >1,000 ft. 0 RECEIVED Total Ranking Score: JAN 24 2014 Acceptable Soil RRAL (mg/kg) Benzene Total BTEX **TPH** NMOCD ARTESIA 10 50 5,000

SITE INFORMATION



November 19, 2013

Mr. Mike Bratcher Environmental Engineer Specialist Oil Conservation Division, District 2 811S. First Street Artesia, New Mexico 88210

Re: Closure Report for the COG Operating LLC., Pinto 29 Federal #1 Tank Battery, Unit B, Section 29, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Pinto 29 Federal #1 Tank Battery located in Unit B, Section 29, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81165°, W 103.99159°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on April 3, 2013, and released approximately fifteen (15) barrels of oil from a steel line from the circulating pump. Fourteen (14) barrels of oil were recovered. COG has replaced the steel line and returned it back to service. The spill affected an area inside the firewalls measuring approximately 20' x 20' on the pad. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 29. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 250' below surface. The groundwater data is shown in Appendix B.



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Spill Assessment and Analytical Results

On May 29, 2013, Tetra Tech personnel inspected and sampled the spill area. One (1) auger hole (AH-1) was installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, AH-1 exceeded the RRAL for TPH, Benzene and Total BTEX, but declined below regulatory levels at a depth of 3.0' below surface. Auger hole (AH-1) did not show a chloride impact to the area.

Remedial Activities

On October 10, 2013, Tetra Tech supervised the excavation of AH-1 area to approximately 3.0' below surface. Once excavated, a confirmation sample was collected and taken to a lab for analysis. Referring to Table 1, the confirmation sample showed a TPH concentration of 6,804 mg/kg. Due to lab results, a trench was installed using a backhoe to vertically define the impact of the excavation bottom. Per the trench data, the excavation bottom was further excavated to 4.5' below surface where the concentrations of Total BTEX and TPH were below the RRAL at 6.12 mg/kg and 1,957 mg/kg, respectively. The excavated area was then backfilled with clean material to surface grade, and approximately 48 cubic yards of excavated soil was transported offsite to proper disposal.



Conclusion

Due to remedial activities performed, COG requests closure of the site. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,

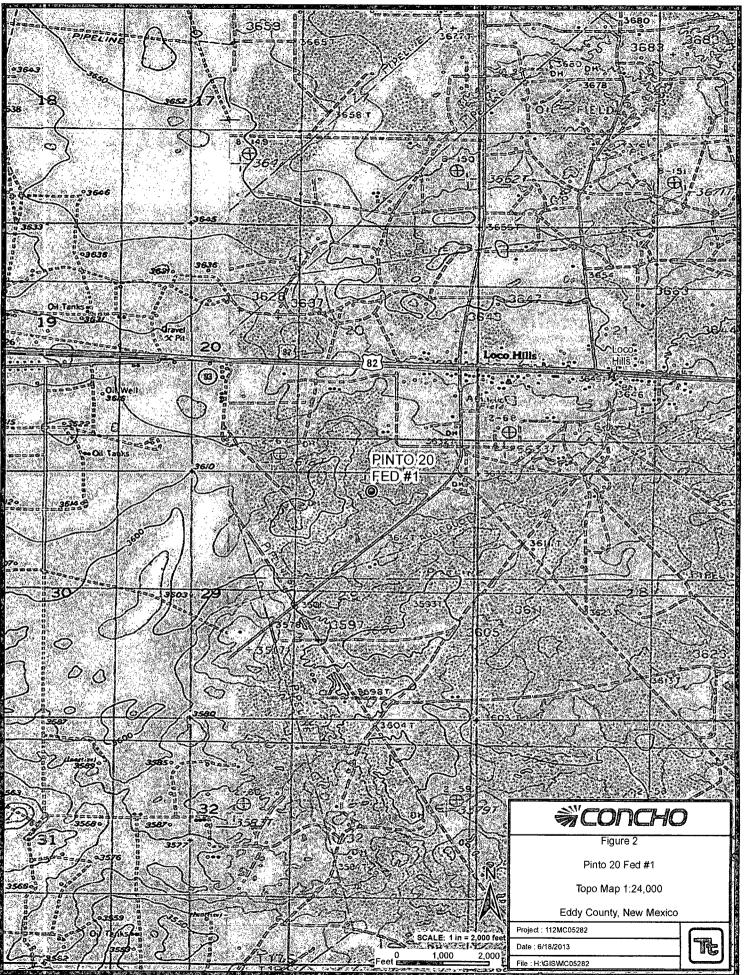
TETRA TECH

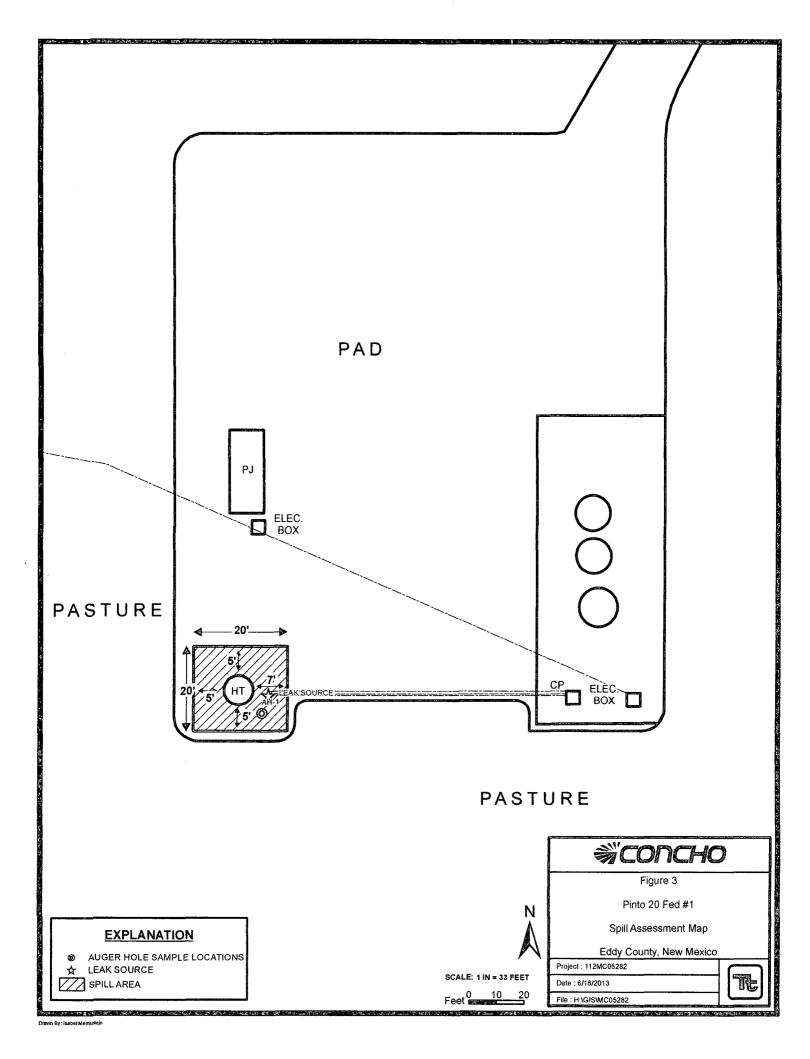
Ike Tavarez, G

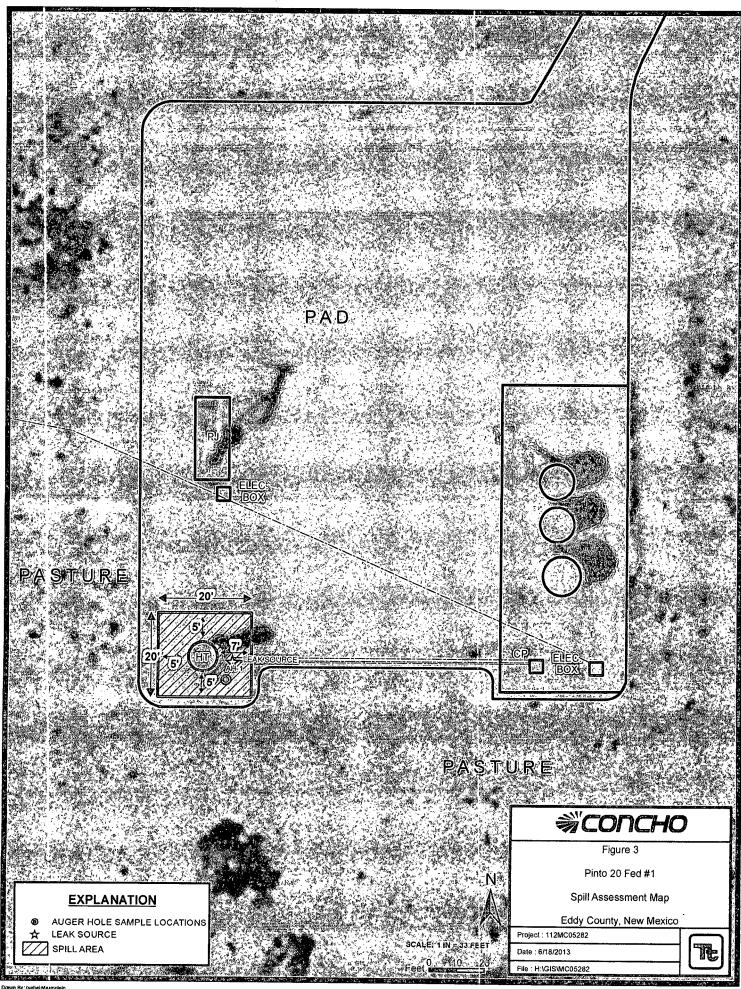
Senior Project Manager

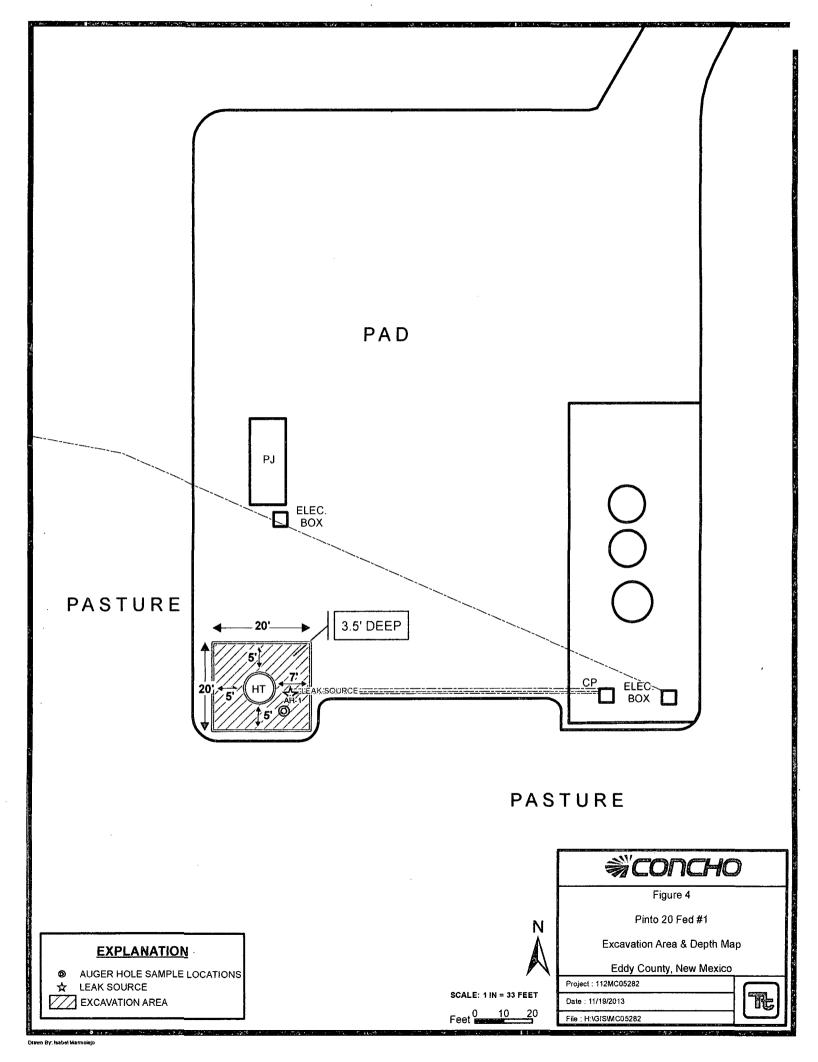
CC:

Robert McNeill – COG Mike Burton - BLM









Tables

Table 1
COG Operating LLC.
Pinto 29 Federal #1
Eddy County, New Mexico

0110	C	BEB	Excavation Bottom	Soil Status		-	TPH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Sample Date	Sample Depth (ft)	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
AH-1	5/29/2013	0-1	0 😭		X	2,530	5,820	8,350	≠ 2.62 ¸	45.5	517943	61:9	162	<20.0°
		1-1.5		AL REAL	X	3,920	3,330	7,250	14.9	144	102	67.5	328	87:3
		2-2.5			X	8,560	3,190	11,750	45.5	401	238	252	937	123
		3-3.5			Χ-	428	372	800	<0.200	5.00	COLUMN TARREST STATE BOOKS 1 4 A	<i>≯</i> 7.99 √	20.3	
CS-1	10/22/2013		3.0		X	. 474	∌6,330 ∮	6,804	0.252	6.19	5.47	7.35	19.3	
T-1	10/23/2013	0.5	3.5 🐍		X	99.7	1,120	1,219.7	ै;<0.100 °	0.291	· 0.458	0.798	1.55	
	11	1.0	4.5	Х		<10.0	40.9	40.9	<0.050	<0.050	<0.050	<0.150	<0.300	-
		1.5	5.0	X		247	1,710	1,957	<0.200	0.739	2.00	3.38	6.12	-

(-) Not Analyzed

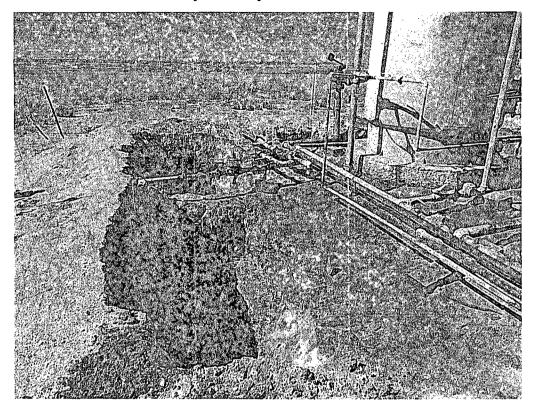
(BEB) Below Excavation Bottom

Excavate Depths

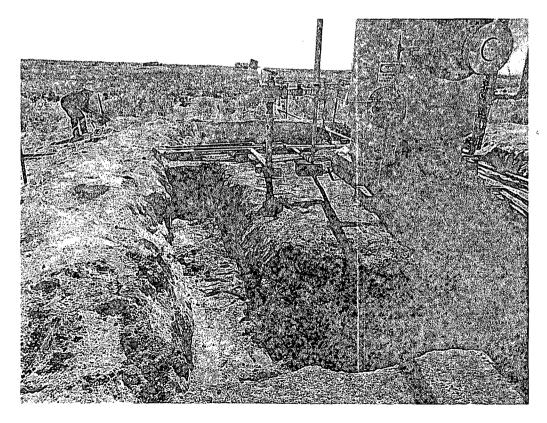
Photos

COG Operating LLC Pinto 29 Fed #1 Tank Battery Eddy County, New Mexico





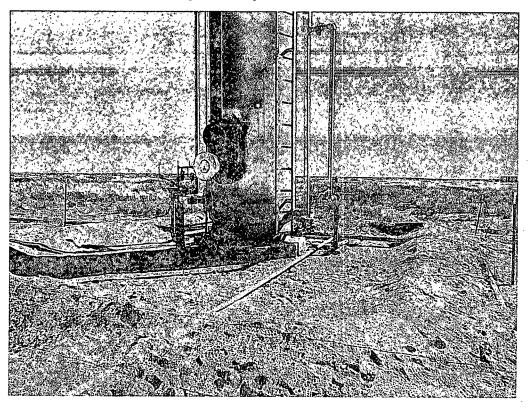
View South - AH-1 area



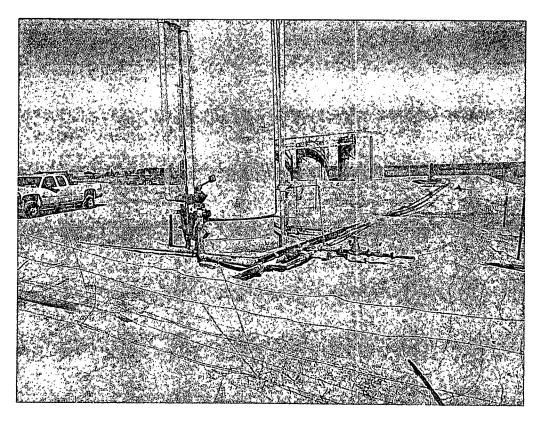
View East - AH-1 area

COG Operating LLC Pinto 29 Fed #1 Tank Battery Eddy County, New Mexico





View East - AH-1 backfilled



View North - AH-1 Backfilled

Appendix A

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

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Revised October 10, 2003

Submit 2 Copies to appropriate

Form C-141

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

Release Notification and Corrective Action **OPERATOR** ☐ Initial Report Final Report COG OPERATING LLC Pat Ellis Name of Company Contact^{*} 432-230-0077 Address 600 West Illinois Avenue, Midland, TX 79701 Telephone No. PINTO 29 FEDERAL #001 Facility Type TANK BATTERY Facility Name Surface Owner FEDERAL Mineral Owner Lease No. (API#) 30-015-31956 LOCATION OF RELEASE Feet from the Unit Letter Section Township Range North/South Line Feet from the East/West Line County 30E **EDDY** В 20 17S Latitude 32.81194 Longitude 103.99204 NATURE OF RELEASE Volume of Release 15bbls Volume Recovered 14bbls Type of Release Oil Date and Hour of Discovery Source of Release Steel line from circulating pump. Date and Hour of Occurrence 04-03-2013 3:30pm 04-03-2013 If YES, To Whom? Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required By Whom? Date and Hour Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. ☐ Yes 🛛 No If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken.* A hole had developed in a steel line going from the circulating pump to the heater treater. The steel line has been replaced. Describe Area Affected and Cleanup Action Taken.* Initially 15bbls of oil were released from a steel line that had developed a hole going from the circulating pump to the heater treater. We were able to recover 14bbls with a vacuum truck. The release was contained within the inside of the facility walls. All free fluids have been recovered. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for approval prior to any significant remediation work. 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 federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature:

Approved by District Supervisor:

Expiration Date:

Attached

Approval Date:

Conditions of Approval:

Josh Russo

jrusso@concho.com

Senior Environmental Coordinator

Phone:

432-212-2399

Printed Name:

E-mail Address:

Title:

^{*} Attach Additional Sheets If Necessary

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 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

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

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

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

Form C-141

Revised October 10, 2003

side of form

Release Notification and Corrective Action

						OPERA	ΓOR		☐ Initi	al Report	\boxtimes	Final Repor			
Name of Co	mpany C	OG Operat	ing LLC			Contact Rol	pert McNeill								
Address 60	0 W. Illin	ois Ave, Mic	lland, To	exas 79701		Telephone N	lo. (432) 685-43	332							
Facility Nan	ne Pinto 2	9 Federal #1				Facility Typ	e Tank Batter	у							
Surface Own	ner: Feder	al	· · · · · · · · · · · · · · · · · · ·	Mineral Ov	wner				Lease No. (API#) 30-015-31956						
				LOCA	TIA	N OF REI	FASE								
Unit Letter	Section	Township	Range			/South Line	Feet from the	Fast/W	sst/West Line County						
B	29	178	30E	r cet from the	740141	roodin Eme	rect from the	Dast 11	CSt Line	County					
				Latitude 32.811	94° N	Longitud	e 103.99204° W	7		J					
				NATU	JRE	OF RELI	EASE								
Type of Relea							Release 15 bbls			Recovered 1					
Source of Rel	lease: Steal	line from circ	ulation pu	ımp		•	our of Occurrence	e		Hour of Dis	covery				
Was Immedia	te Notice (liven?				4/3/13 If YES, To	Whom?		4/3/2013	3:30 pm					
Was Illinous	ile Hollee C		Yes 🛭	No 🛛 Not Req	juired	11 125, 10	Wilom.								
By Whom? Jo	osh Russo	·				Date and H	our								
Was a Watero		hed?	··				lume Impacting th	ne Water	rcourse.						
			Yes 🛚	No		N/A									
If a Watercou	irse was Im	pacted, Descri	ibe Fully.*	ķ											
N/A															
Describe Cau	se of Proble	em and Remed	dial Action	n Taken.*								····			
A hala had da	walanad in	a stool line se	ing from	the circulating num	n to th	a haatan tuaat	u The steel line b		لدمماسمير						
A noie nau uc	evelopeu iii	a steer title go	nng nom	the circulating pum	ւթ ւԾ ա	ie neater treate	a. The steer line ii	ias been	repraced.						
Describe Area	a Affected a	and Cleanup A	Action Tak	en.*											
Initially 15 bl	als of oil we	ere released fr	om a steel	line that had devel	oned a	hole going fr	om the circulating	r numn t	n the heat	er treater 1/	bble u	vere			
recovered wit	h a vacuum	truck. The re	lease was	contained within th	ne insid	de of the facili	ty walls. Tetra Te	ch inspe	ected site	and collected	l sampl	es to define			
spills extent.	Soil that ex	ceeded RRAL	was remo	ved and hauled aw	ay for	proper dispos	al. Site was then b	brought	up to surf	ace grade wi	th clear	n backfill			
material. Tetr	a Tech prep	pared closure	report and	submitted to NMO	CD fo	r review.									
I hereby certit	fy that the i	nformation of	ven ahove	is true and comple	te to ti	he hest of my	knowledge and un	deretan	d that pure	nuant to NIM	OCD #	iles and			
				d/or file certain rel											
public health	or the envir	onment. The	acceptanc	e of a C-141 report	by the	e NMOCD ma	rked as "Final Re	port" do	es not rel	eve the oper	ator of	liability			
should their o	perations h	ave failed to a	dequately	investigate and ren	nediate	e contamination	on that pose a thre	at to gro	ound water	, surface wa	ter, hur	man health			
or the environ federal, state,				tance of a C-141 re	port d	oes not relieve	the operator of re	esponsib	oility for c	ompliance v	ith any	other			
reuerar, state,	Of local lav	ys and or egg	Tauons.				OIL CONS	EDV	ATION	DIVICIO	NI.				
Signature:							OIL CONS	DEK V Z	ATION	DIVISIC	<u>/1 \</u>				
orgnature.	e fil			<u> </u>		Approved beet	District Comments								
Printed Name	: Ike Tavar	ez 185.	er of	r ale		Approved by	District Superviso	or:							
Title: Decient	Managar	/				Approved Des			vnivoti o	Datas					
Title: Project	ivianager					Approval Date	5	E	xpiration	Date:					
E-mail Addre			ch.com		'	Conditions of	Approval:			Attached					
Date:	1-19-	13	Phone:	(432) 682-4559							_				

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG-Pinto 29 Federal #1 Tank Battery Eddy County, New Mexico

16 21 28 33 33 7 South 4	34	2 11 14 220 dry 23 26 35 29 East	1 12 13 24 25 36	6 7 18 19 30 31	5 8 17 20 29 32	9 16 21 28 33	3 10 15 22 27 34	2 11 14 23 26 35	1 12 13 24 25 36	18 19 30 31 290	5 8 17 20 29 32	9 16 21 28 33	3 10 15 22 27 34	2 290 111 14 314 23 26	12 288
16 21 28 33 33 47 South	15 22 27 34 h	14 220 dry 23 26 35 29 East	24 25 36	30 31	17 20 29 32 17 Se	16 21 28 33	15 22 27 34	14 23 26 35	24 25 36	18 19 30	17 20 29	16 21 28	15 22 27	14 314 23 26	288 13 29 113 24 25
21 28 33 7 South	22 27 34 h	23 26 35 29 East	24 25 36	30 31	29 32 17 Se	21 28 33	22 27 34	23 26 35	24 25 36	19 30 31	20	21	22 27	23	13 29 113 24
28 33 7 South	27 34 h	23 26 35 29 East	25	30 31	29 32 17 Se	28	27	26 35	25	30 31	29	28	27	26	24 25
33 7 South	34 h	35 29 East	36	31	32 17 Se	33	34	35	36	31					<u> </u>
7 South	h 3	29 East		L	17 S		<u> </u>	<u> </u>			32	33	34	35	36
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21		23	24	19	20 80	21	22	23	24	19	20	21	22	23	24
210 28		26	25	30	29	28	27	26	25	30	29	28	27	26	25
33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
		153				<u> </u>							271		
South	h	29 East			18 Sc	outh	3	30 East	ŧ		18 5	South	3	1 East	
4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
9	10	95 11	12	7	8	9	10	11	12	7	8	9	10	11	12
) 16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	400
21	22	23	24	19	20	21	22	23	24	19	20	21	22		24
28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
3	210 28 33 South 4 9 9 16 21 28	21 22 80 27 33 34 South 9 10 15 21 22 28 27	21 22 23 80 210 28 27 26 33 34 35 153 South 29 East 4 3 2 9 10 95 11 16 15 14 21 22 23 28 27 26	210 28 27 26 25 33 34 35 36 153 South 29 East 4 3 2 1 9 10 95 11 12 16 15 14 13 21 22 23 24 158 28 27 26 25	210 28 27 26 25 30 31 33 34 35 36 31 31 South 29 East 4 3 2 1 6 7 7 16 15 14 13 18 21 22 23 24 158 28 27 26 25 30	21	21	21 22 23 24 19 20 80 21 22	21	21	21	21	21	21	21

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

Appendix C

Page Number: 1 of 2

Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: June 13, 2013

Work Order: 13060304

Project Location: Eddy Co., NM

Project Name:

COG/Pinto 29 Fed. #1

Project Number:

112MC05282

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
330710	AH-1 0-1'	soil	2013-05-29	00:00	2013-05-31
330711	AH-1 1-1.5'	soil	2013-05-29	00:00	2013-05-31
330712	AH-1 2-2.5'	soil	2013-05-29	00:00	2013-05-31
330713	AH-1 3-3.5'	soil	2013-05-29	00:00	2013-05-31

]	BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
330710 - AH-1 0-1'	2.62	45.5	51.9	61.9	5820	2530
330711 - AH-1 1-1.5'	14.9	144	102	67.5	3330	3920
330712 - AH-1 2-2.5'	45.5	401	238	252	3190	8560
330713 - AH-1 3-3.5'	< 0.200	5.00	7.27	7.99	372	428

Sample: 330710 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 330711 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		87.3	nig/Kg	4

Sample: 330712 - AH-1 2-2.5'

 Param
 Flag
 Result
 Units
 RL

 Chloride
 123
 mg/Kg
 4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E

5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100 El Paso Texas 79922 Midland. Texas 79703 Carrolizon. Texas 75006 800-378-1296 806 - 794 - 1298 915-585-3443 432-689-6301

FAX 915-585-4944 FAX 432 • 689 • 6313

972-242-7750 E-Mail: lab@traceanalysis.com WEB; www.traceanalysis.com

Certifications

NCTRCA DBENELAP DoD LELAP Oklahoma ISO 17025 WBEKansas

Analytical and Quality Control Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date: June 13, 2013

Work Order:

Project Location: Eddy Co., NM

Project Name:

COG/Pinto 29 Fed. #1

Project Number:

112MC05282

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
330710	AH-1 0-1'	soil	2013-05-29	00:00	2013-05-31
330711	AH-1 1-1.5'	soil	2013-05-29	00:00	2013-05-31
330712	AH-1 2-2.5'	soil	2013-05-29	00:00	2013-05-31
330713	AH-1 3-3.5'	soil	2013-05-29	00:00	2013-05-31

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 35 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

> Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

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Case Narrative	4
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Sample 330710 (AH-1 0-1')	5
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Sample 330712 (AH-1 2-2.5')	
Sample 330713 (AH-1 3-3.5')	9
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QC Batch 102061 - Method Blank (1)	
QC Batch 102079 - Method Blank (1)	
QC Batch 102081 - Method Blank (1)	
QC Batch 102101 - Method Blank (1)	
QC Batch 102127 - Method Blank (1)	
QC Batch 102163 - Method Blank (1)	
QC Batch 102164 - Method Blank (1)	
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QC Batch 102061 - LCS (1)	
QC Batch 102079 - LCS (1)	
QC Batch 102081 - LCS (1)	
QC Batch 102101 - LCS (1)	
QC Batch 102127 - LCS (1)	
QC Batch 102163 - LCS (1)	
QC Batch 102164 - LCS (1)	
QC Batch 102267 - LCS (1)	
QC Batch 102281 - LCS (1)	
QC Batch 102009 - MS (1)	
QC Batch 102061 - MS (1)	
QC Batch 102079 - MS (1)	
QC Batch 102081 - xMS (1)	
QC Batch 102101 - MS (1)	
QC Batch 102127 - MS (1)	
OC Batch 102163 - MS (1)	
QC Batch 102164 - MS (1)	
QC Batch 102267 - MS (1)	
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	QC Batch 102061 - CCV (1	.)	 	 											 		 			27
	QC Batch 102061 - CCV (2	2)	 	 									 		 					28
	QC Batch 102079 - CCV (1	.)	 	 									 		 		 			28
	QC Batch 102079 - CCV (2	2)	 	 									 		 		 			28
	QC Batch 102079 - CCV (3	3)	 	 									 		 		 			29
	QC Batch 102081 - CCV (1	.)	 	 							:		 		 		 			29
	QC Batch 102081 - CCV (2	2)	 	 									 		 					29
	QC Batch 102081 - CCV (3	3)	 	 											 		 			29
	QC Batch 102101 - CCV (1	.)	 	 											 					29
	QC Batch 102101 - CCV (2	2)	 	 											 		 			30
	QC Batch 102101 - CCV (3	3)	 	 											 		 			30
	QC Batch 102127 - CCV (1	.)	 	 			 						 		 		 			30
	QC Batch 102127 - CCV (2	2)	 	 									 		 		 			30
	QC Batch 102127 - CCV (3	3)	 				 						 		 		 			31
	QC Batch 102163 - CCV (1	,	 				 						 		 		 			31
	QC Batch 102163 - CCV (2	2)	 				 						 		 		 			31
	QC Batch 102164 - CCV (1	.)	 				 	 					 . ,		 		 			32
	QC Batch 102164 - CCV (2	2)	 				 						 		 		 			32
	QC Batch 102267 - CCV (1	.)	 	 											 					32
	QC Batch 102267 - CCV (2	2)	 	 			 								 					32
	QC Batch 102281 - CCV (1	/	 			 	 						 		 		 	•		33
	QC Batch 102281 - CCV (2	,	 		 •	 	 	 					 		 		 			33
	QC Batch 102281 - CCV (3	3)	 			 	 						 		 		 	•		33
λp	pendix																			34
-	Report Definitions		 			 	 	 					 		 		 			34
	Laboratory Certifications		 			 	 	 		 			 		 					34
	Standard Flags																			34
	Attachments																			34

Case Narrative

Samples for project COG/Pinto 29 Fed. #1 were received by TraceAnalysis, Inc. on 2013-05-31 and assigned to work order 13060304. Samples for work order 13060304 were received intact at a temperature of 5.1 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	86470	2013-06-05 at 11:30	102079	2013-06-07 at 08:53
BTEX	S 8021B	86528	2013-06-07 at 10:00	102127	2013-06-10 at 10:24
BTEX	S 8021B	86555	2013-06-09 at 21:00	102164	2013-06-11 at 10:59
BTEX	S 8021B	86655	2013-06-12 at 15:00	102281	2013-06-12 at 15:00
Chloride (Titration)	SM 4500-Cl B	86384	· 2013-06-04 at 08:55	102061	2013-06-06 at 15:01
TPH DRO - NEW	S 8015 D	86425	2013-06-04 at 13:00	102009	2013-06-05 at 11:27
TPH DRO - NEW	S 8015 D	86484	2013-06-06 at 08:00	102081	2013-06-07 at 09:16
TPH GRO	S 8015 D	86503	2013-06-06 at 10:30	102101	2013-06-07 at 14:40
TPH GRO	S 8015 D	86551	2013-06-09 at 21:00	102163	2013-06-11 at 09:45
TPH GRO	S 8015 D	86645	2013-06-12 at 15:00	102267	2013-06-12 at 15:00

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 13060304 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.

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 5 of 35 Eddy Co., NM

Analytical Report

Sample: 330710 - AH-1 0-1'

Laboratory: Midland

Analysis: QC Batch:

Prep Batch: 86470

BTEX 102079 Analytical Method: Date Analyzed:

S 8021B

2013-06-07 Sample Preparation: 2013-06-05 Prep Method: S 5035

Analyzed By:

KC Prepared By:

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene		1	2.62	mg/Kg	10	0.0200
Toluene		1	45.5	mg/Kg	10	0.0200
Ethylbenzene		1	51.9	mg/Kg	10	0.0200
Xylene		1	61.9	mg/Kg	10	0.0200

						$_{ m Spike}$	Percent	Recovery
Surrogate	\mathbf{Flag}	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			16.2	mg/Kg	10	20.0	81	70 - 130
4-Bromofluorobenzene (4-BFB)			17.0	mg/Kg	10	20.0	85	70 - 130

Sample: 330710 - AH-1 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 102061 Prep Batch: 86384

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2013-06-06 2013-06-04

Prep Method: N/A Analyzed By: AR

Prepared By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	υ		< 20.0	mg/Kg	5	4.00

Sample: 330710 - AH-1 0-1'

Laboratory: Midland

Analysis: QC Batch:

TPH DRO - NEW

102009 Prep Batch: 86425

Analytical Method: Date Analyzed:

S 8015 D 2013-06-05 Sample Preparation: 2013-06-04 Prep Method: N/A Analyzed By: CW Prepared By:

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO		1	5820	mg/Kg	5	50.0

112MC05282

Work Order: 13060304

COG/Pinto 29 Fed. #1

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		502	mg/Kg	5	100	502	55.1 - 135.7

Sample: 330710 - AH-1 0-1'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 102101 Prep Batch: 86503

Analytical Method:

S 8015 D 2013-06-07 Prep Method: S 5035 Analyzed By: KC

KC

Page Number: 6 of 35

Eddy Co., NM

Date Analyzed: Sample Preparation: 2013-06-06 Prepared By:

RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO		1	2530	mg/Kg	20	4.00

							Spike	Percent	Recovery
Surrogate		\mathbf{Flag}	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		,		34.8	mg/Kg	20	40.0	87	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		83.3	mg/Kg	20	40.0	208	70 - 130

Sample: 330711 - AH-1 1-1.5'

Laboratory: Midland

Analysis: BTEX QC Batch: 102127 Prep Batch: 86528

Analytical Method: Date Analyzed:

S 8021B 2013-06-10 Sample Preparation: 2013-06-07

Prep Method: S 5035 Analyzed By: KCPrepared By: KC

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene		1	14.9	mg/Kg	100	0.0200
Toluene,		1	144	mg/Kg	100	0.0200
Ethylbenzene		1	102	mg/Kg	100	0.0200
Xylene		1	67.5	mg/Kg	100	0.0200

						Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Cert	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)			170	mg/Kg	100	200	85	70 - 130
4-Bromofluorobenzene (4-BFB)			193	mg/Kg	100	200	96	70 - 130

Report Date 112MC05282		2013	· · · · · · · · · · · · · · · · · · ·		Work Order: 13060304 COG/Pinto 29 Fed. #1					Page Number: 7 of 35 Eddy Co., NM		
Sample: 33	0711 - AH	H-1 1-1	.5'									
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride 102061 86384	(Titrati	on)	Date	ytical Meth Analyzed: ple Prepara		SM 450 2013-06 2013-06	5-06		Prep M Analyze Prepare	ed By:	N/A AR AR
Parameter			Flag	Cert	R	RL esult		Units		Dilution		RL
Chloride			1 100	COLU		87.3		mg/Kg		5	~~~~	4.00
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch:	0711 - AH Midland TPH DR0 102081 86484	•		Dat	dytical Met e Analyzed: 1ple Prepara		S 8015 2013-0 2013-0	6-07		Prep M Analyzo Prepare	ed By:	N/A CW CW
Parameter			Flag	Cert	R	RL esult		Units		Dilution		RL
DRO			1105	1		330		nig/Kg		5		50.0
Surrogate n-Tricosane	Q×r	Flag	Cert	Result 326	Units mg/Kg	Di	lution	Spik Amou	ınt	Percent Recovery	Lir	overy nits · 135.7
			F1		6/ ***8			1.00		020	00.1	100.1
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GR0 102101 86503		.ə ⁻	Date An	al Method: alyzed: Preparation:	201	015 D 3-06-07 3-06-06			Prep Met Analyzed Prepared	By:	S 5035 KC KC
Parameter			Flag	Cert		RL sult		Units	27-77-74-74	Dilution		RL
GRO	· · · · · · · · · · · · · · · · · · ·			1	3	920		mg/Kg		100		4.00
Surrogate	(TPT)]	Flag Cert	Result	Units		ution	Spike Amour			covery imits

mg/Kg

mg/Kg

100

100

200

200

88

117

70 - 130

70 - 130

176

234

Triffuorotoluene (TFT)

4-Bromofluorobenzene (4-BFB)

Report Date: June 13, 2013 Work Order: 13060304 Page Number: 8 of 35 Eddy Co., NM 112MC05282 COG/Pinto 29 Fed. #1

Sample: 330712 - AH-1 2-2.5'

Laboratory:	Midland
Analysis:	BTEX

QC Batch: 102164 Prep Batch: 86555

Analytical Method: S 8021B Date Analyzed: 2013-06-11 Sample Preparation: 2013-06-09

Prep Method: S 5035 Analyzed By: KCPrepared By: KC

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene		1	45.5	mg/Kg	100	0.0200 -
Toluene		ı	401	mg/Kg	100	0.0200
Ethylbenzene		1	238	mg/Kg	100	0.0200
Xylene		1	$\bf 252$	mg/Kg	100	0.0200

						$_{ m Spike}$	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			170	mg/Kg	100	200	85	70 - 130
4-Bromofluorobenzene (4-BFB)			218	mg/Kg	100	200	109	70 - 130

Sample: 330712 - AH-1 2-2.5'

Laboratory:

Prep Batch:

Midland

Chloride (Titration) Analysis: QC Batch: 102061 86384

Analytical Method: SM 4500-Cl B Date Analyzed: 2013-06-06 Sample Preparation: 2013-06-04

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

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			123	mg/Kg	5	4.00

Sample: 330712 - AH-1 2-2.5'

Laboratory: Midland

TPH DRO - NEW Analysis: QC Batch: 102081 Prep Batch: 86484

Analytical Method: S 8015 D Date Analyzed: 2013-06-07 Sample Preparation: 2013-06-06

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

			KL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO		1	3190	nıg/Kg	5	50.0

							Spike	Percent	Recovery
Surrogate	_	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		205	mg/Kg	5	100	205	55.1 - 135.7

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 9 of 35

Eddy Co., NM

Sample: 330712 - AH-1 2-2.5'

Laboratory: Midland Analysis:

QC Batch: Prep Batch: 86551

TPH GRO

102163

Analytical Method:

S 8015 D

Date Analyzed: Sample Preparation:

2013-06-11 2013-06-09 Prep Method: S 5035 Analyzed By: KC

Prepared By: KC

RL

Flag Parameter Cert Result Units Dilution RL8560 \overline{GRO} mg/Kg 100 4.00

•							$_{ m Spike}$	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)				179	mg/Kg	100	200	90	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	(fre		291	mg/Kg	100	200	146	70 - 130

Sample: 330713 - AH-1 3-3.5'

Laboratory: Midland

Analysis: QC Batch:

Prep Batch: 86655

BTEX

102281

Analytical Method: Date Analyzed:

S 8021B

2013-06-12 Sample Preparation: 2013-06-12 Prep Method: S 5035

Analyzed By: KC Prepared By: KC

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	1	< 0.200	mg/Kg	10	0.0200
Toluene		1	5.00	mg/Kg	10	0.0200
Ethylbenzene		1	7.27	mg/Kg	10	0.0200
Xylene			7.99	mø/Kø	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	${ m Spike} \ { m Amount}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			16.5	mg/Kg	10	20.0	82	70 - 130
4-Bromofluorobenzene (4-BFB)			19.5	mg/Kg	10	20.0	98	70 - 130

Sample: 330713 - AH-1 3-3.5'

Laboratory:

Midland

86484

Analysis: QC Batch:

Prep Batch:

TPH DRO - NEW 102081

Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D 2013-06-07 2013-06-06 Prep Method: N/A Analyzed By: CW

CW

Prepared By:

 $continued \dots$

Work Order: 13060304 Page Number: 10 of 35 Report Date: June 13, 2013 112MC05282 COG/Pinto 29 Fed. #1 Eddy Co., NM sample 330713 continued ... RLFlag Cert Result Units Dilution RLParameter RLFlag Cert Result Units RLParameter Dilution DRO 372 mg/Kg 50.0 Spike Percent Recovery Flag Surrogate Cert Result Units Dilution Amount Recovery Limits n-Tricosane 118 mg/Kg 100 118 55.1 - 135.7 Sample: 330713 - AH-1 3-3.5' Laboratory: Midland TPH GRO Analysis: Analytical Method: S 8015 D Prep Method: S 5035 QC Batch: 102267 Date Analyzed: 2013-06-12 Analyzed By: KC Prep Batch: 86645 Sample Preparation: 2013-06-12 Prepared By: KCRLFlag Cert Units Dilution Parameter Result RL $\overline{\text{GRO}}$ 4.00 428 · mg/Kg 10 1

Flag

Surrogate

Trifluorotoluene (TFT)

4-Bromofluorobenzene (4-BFB)

Cert

Result

17.9

23.6

Units

mg/Kg

mg/Kg

Dilution

10

10

Spike

Amount

20.0

20.0

Percent

Recovery

90

118

Recovery

Limits

70 - 130 70 - 130

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 11 of 35 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 102009

QC Batch:

102009

Date Analyzed:

2013-06-05

Analyzed By: CW

Prep Batch:

86425

QC Preparation:

2013-06-04

Prepared By: CW

MDL

Units RLFlag Cert Result Parameter <10.2 mg/Kg $\overline{\mathrm{D}}\mathrm{RO}$ 50

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			128	mg/Kg	1	100	128	55.1 - 135.7

Method Blank (1)

QC Batch: 102061

QC Batch:

102061

Date Analyzed:

2013-06-06

Analyzed By: AR

Prep Batch:

86384

QC Preparation:

2013-06-04

Prepared By: AR

MDL Units Parameter Flag Cert Result RLChloride < 3.85 mg/Kg 4

Method Blank (1)

QC Batch: 102079

QC Batch: Prep Batch:

102079 86470

Date Analyzed: QC Preparation: 2013-06-05

2013-06-07

Analyzed By: KC

Prepared By: KC

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Benzene		1	< 0.00810	mg/Kg	0.02
Toluene		1	< 0.00750	mg/Kg	0.02
Ethylbenzene		1	< 0.00730	mg/Kg	0.02
Xylene		1	< 0.00700	m mg/Kg	0.02

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130

 $continued \dots$

112MC05282

Work Order: 13060304

COG/Pinto 29 Fed. #1

Page Number: 12 of 35

Eddy Co., NM

method	blank	continuea	•

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
4-Bromofluorobenzene (4-BFB)			1.64	mg/Kg	1	2.00	82	70 - 130

Method Blank (1)

QC Batch: 102081

QC Batch: Prep Batch:

102081 86484

Date Analyzed: QC Preparation:

2013-06-07 2013-06-06 Analyzed By: CW

Prepared By: CW

MDL

Parameter Flag Cert Result Units RLDRO <10.2 mg/Kg 50

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	${f Amount}$	Recovery	Limits
n-Tricosane			85.0	mg/Kg	1	100	85	55.1 - 135.7

Method Blank (1)

QC Batch: 102101

QC Batch:

102101

Date Analyzed:

2013-06-07

Analyzed By: KC

RL

Prep Batch: 86503

QC Preparation:

2013-06-06

Prepared By: KC

MDL Parameter Flag Cert Units Result GRO 6.99 mg/Kg

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	1	2.00	86	70 - 130

Method Blank (1)

QC Batch: 102127

QC Batch: Prep Batch: 86528

102127

Date Analyzed:

2013-06-10

QC Preparation: 2013-06-07

Analyzed By: KC

Prepared By: KC

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 13 of 35

Eddy Co., NM

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Benzene		1	< 0.00810	mg/Kg	0.02
Toluene		1	< 0.00750	mg/Kg	0.02
Ethylbenzene		1	< 0.00730	mg/Kg	0.02
Xylene	•	1	< 0.00700	mg/Kg	0.02

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.68	mg/Kg	1	2.00	84	70 - 130

Method Blank (1)

QC Batch: 102163

QC Batch: Prep Batch:

 $\overline{\text{GRO}}$

102163 86551

Date Analyzed:

2013-06-11 QC Preparation: 2013-06-09 Analyzed By: KC

Prepared By: KC

MDL Parameter Flag Cert

Result Units RL3.56 mg/Kg

	171	G.	D 1:	T Y ••	Date of	Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Method Blank (1)

QC Batch: 102164

QC Batch: Prep Batch: 86555

102164

Date Analyzed:

2013-06-11 QC Preparation: 2013-06-09 Analyzed By: KC

Prepared By: KC

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Benzene		1	< 0.00810	mg/Kg	0.02
Toluene		1	< 0.00750	mg/Kg	0.02
Ethylbenzene		1	< 0.00730	mg/Kg	0.02
Xylene		1	< 0.00700	mg/Kg	0.02

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130

 $continued \dots$

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 14 of 35

Eddy Co., NM

method blank continued					····			
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromoffuorobenzene (4-BFB)	9		1.72	mg/Kg	1	2.00	86	70 - 130

Method Blank (1)

QC Batch: 102267

QC Batch:

102267

Date Analyzed:

2013-06-12

Analyzed By: KC

Prep Batch: 86645

QC Preparation: 2013-06-12

Prepared By: KC

Parameter	Flag		Cert		MDL Result		Units	RL	
GRO			1		3.43	mg/Kg		4	
						Spike	Percent	Recovery	
Surrogate	Flag	Cert	Result	Units	Dilution	${f Amount}$	Recovery	Limits	
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130	
4-Bromofluorobenzene (4-BFR)			1.66	mg/Kg	· 1	2.00	83	70 - 130	

Method Blank (1)

QC Batch: 102281

QC Batch: Prep Batch: 86655

102281

Date Analyzed:

2013-06-12

Analyzed By: KC

Prepared By: KC

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Benzene		1	< 0.00810	mg/Kg	0.02
Toluene		J	< 0.00750	mg/Kg	0.02
Ethylbenzene		J	< 0.00730	mg/Kg	0.02
Xylene			< 0.00700	mg/Kg	0.02

QC Preparation: 2013-06-12

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Triffuorotoluene (TFT)			1.60	mg/Kg	1	2.00	80	70 - 130
4-Bromofluorobenzene (4-BFB)			1.60	mg/Kg	1	2.00	80	70 - 130

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 15 of 35 Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

102009

Date Analyzed:

2013-06-05

Analyzed By: CW

Prep Batch: 86425

QC Preparation:

2013-06-04

Prepared By: CW

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	214	mg/Kg	1	250	<10.2	86	66.9 - 119.9

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

			LCSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}	RPD	Limit
DRO		1	194	mg/Kg	1	250	<10.2	78	66.9 - 119.9	10	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-Tricosane	138	123	mg/Kg	1	100	138	123	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch:

102061

Date Analyzed:

2013-06-06

Analyzed By: AR

Prep Batch: 86384

QC Preparation: 2013-06-04

Prepared By: AR.

LCS Spike Matrix Rec. Param F \mathbf{C} Result Units Dil. Amount Result Rec. Limit Chloride 2550 mg/Kg 2500 < 3.85 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	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2660	mg/Kg	1	2500	< 3.85	106	85 - 115	4	20

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

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 16 of 35

Eddy Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 86470

102079

Date Analyzed: QC Preparation: 2013-06-05

2013-06-07

Analyzed By: KC

Prepared By: KC

Param	${f F}$	С	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		i	1.81	mg/Kg	1	2.00	< 0.00810	90	70 - 130
Toluene		1	1.93	mg/Kg	1	2.00	< 0.00750	96	70 - 130
Ethylbenzene		ı	2.03	mg/Kg	1	2.00	< 0.00730	102	70 - 130
Xylene		1	5.92	mg/Kg	1	6.00	< 0.00700	99	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	\mathbf{F}	$^{\mathrm{C}}$	Result	Units	Dil.	${f A}{f m}{f o}{f u}{f n}{f t}$	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.77	mg/Kg	1	2.00	< 0.00810	88	70 - 130	2	20
Toluene		1	1.89	${ m mg/Kg}$	1	2.00	< 0.00750	94	70 - 130	2	20
Ethylbenzene		1	1.97	mg/Kg	1	2.00	< 0.00730	98	70 - 130	3	20
Xylene		1	5.77	mg/Kg	1	6.00	< 0.00700	96	70 - 130	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.	${f Amount}$	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.73	1.69	mg/Kg	1	2.00	86	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.91	1.76	mg/Kg	1	2.00	96	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

102081

Date Analyzed:

2013-06-07

Analyzed By: CW

Prep Batch: 86484

QC Preparation: 2013-06-06

Prepared By: CW

			LCS			$_{ m Spike}$	Matrix		Rec.
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	247	mg/Kg	1	250	<10.2	99	66.9 - 119.9

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	258	mg/Kg	1	250	<10.2	103	66.9 - 119.9	4	20

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

 $\overline{continued}$. . .

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 17 of 35 Eddy Co., NM

control	spikes	continued		

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	Rec.	$_{ m Limit}$
n-Tricosane	99.9	104	m mg/Kg	1	100	100	104	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch:

102101

Date Analyzed:

2013-06-07

Analyzed By: KC Prepared By: KC

Prep Batch: 86503

QC Preparation: 2013-06-06

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit
GRO		1	20.3	mg/Kg	1	20.0	< 2.32	102	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	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		ı	20.3	mg/Kg	1	20.0	< 2.32	102	70 - 130	0	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
Trifluorotoluene (TFT)	1.83	1.83	mg/Kg	1	2.00	92	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.89	mg/Kg	1	2.00	97	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

102127

Date Analyzed:

2013-06-10

Analyzed By: KC

Prep Batch: 86528

QC Preparation: 2013-06-07

Prepared By: KC

Param	F	С	LCS Result	Units	Dil.	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.72	mg/Kg	1	2.00	< 0.00810	86	70 - 130
Toluene		1	1.84	mg/Kg	1	2.00	< 0.00750	92	70 - 130
Ethylbenzene		1	1.91	mg/Kg	1	2.00	< 0.00730	96	70 - 130
Xylene		.1	5.59	mg/Kg	1	6.00	< 0.00700	93	70 - 130

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

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 18 of 35 Eddy Co., NM

Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.70	mg/Kg	1	2.00	< 0.00810	85	70 - 130	1	20
Toluene		1	1.81	mg/Kg	1	2.00	< 0.00750	90	70 - 130	2	20
Ethylbenzene		1	1.87	mg/Kg	1	2.00	< 0.00730	94	70 - 130	2	20
Xylene		.1	5.47	mg/Kg	1	6.00	< 0.00700	91	70 - 130	2	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
Trifluorotoluene (TFT)	1.59	1.68	mg/Kg	1	2.00	80	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.70	1.67	mg/Kg	1	2.00	85	84	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 86551

102163

Date Analyzed:

2013-06-11 QC Preparation: 2013-06-09 Analyzed By: KC Prepared By: KC

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
GRO	-		10.0	mg/Kg	1	20.0	<2.32	100	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	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO		1	19.4	mg/Kg	1	20.0	< 2.32	97	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)	1.88	1.75	mg/Kg	1	2.00	94	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.76	mg/Kg	1	2.00	95	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

102164

Date Analyzed:

2013-06-11

Analyzed By: KC

Prep Batch: 86555

QC Preparation: 2013-06-09

Prepared By: KC

			$\Gamma \cap \Omega$			Spike	MINISTIX		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.72	mg/Kg	1	2.00	< 0.00810	86	70 - 130

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112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 19 of 35 Eddy Co., NM

control spikes continued . . .

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Toluene		1	1.84	mg/Kg	1	2.00	< 0.00750	92	70 - 130
Ethylbenzene		.1	1.88	mg/Kg	1	2.00	< 0.00730	94	70 - 130
Xylene		1	5.47	mg/Kg	1	6.00	< 0.00700	91	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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		}	1.76	mg/Kg	1	2.00	< 0.00810	88	70 - 130	2	20
Toluene		1	1.86	mg/Kg	1	2.00	< 0.00750	93	70 - 130	1	20
Ethylbenzene		1	1.90	mg/Kg	1	2.00	< 0.00730	95	70 - 130	1	20
Xylene		1	5.56	mg/Kg	1	6.00	< 0.00700	93	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.	${f Limit}$
Triffuorotoluene (TFT)	1.77	1.69	mg/Kg	1	2.00	88	84	70 - 130
4-Bromoffuorobenzene (4-BFB)	1.83	1.72	mg/Kg	1	2.00	92	86	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

102267

Date Analyzed:

2013-06-12

Analyzed By: KC

Prep Batch: 86645

QC Preparation: 2013-06-12

Prepared By: KC

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	20.5	mg/Kg	1	20.0	< 2.32	102	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	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	20.8	mg/Kg	1	20.0	< 2.32	104	70 - 130	1	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.	$\mathbf{A}\mathbf{m}\mathbf{o}\mathbf{m}\mathbf{t}$	Rec.	Rec.	$_{ m Limit}$
Trifluorotoluene (TFT)	1.83	1.78	mg/Kg	1	2.00	92	89	70 - 130
4-Bromofluorobenzene (4-BFB)	1.85	1.79	mg/Kg	1	2.00	92	90	70 - 130

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 20 of 35 Eddy Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 86655

102281

Date Analyzed:

2013-06-12

Analyzed By: KC

QC Preparation:

2013-06-12

Prepared By: KC

			LCS			Spike	Matrix		Rec.
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.69	mg/Kg	1	2.00	< 0.00810	84	70 - 130
Toluene		1	1.79	mg/Kg	1	2.00	< 0.00750	90	70 - 130
Ethylbenzene		1	1.86	mg/Kg	1	2.00	< 0.00730	93	70 - 130
Xylene		1	5.46	mg/Kg	1	6.00	< 0.00700	91	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	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.70	mg/Kg	1	2.00	< 0.00810	85	70 - 130	1	20
Toluene		1	1.80	mg/Kg	1	2.00	< 0.00750	90	70 - 130	1	20
Ethylbenzene		1	1.85	mg/Kg	1	2.00	< 0.00730	92	70 - 130	0	20
Xylene		1	5.44	mg/Kg	1	6.00	< 0.00700	91	70 - 130	0	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.	$\mathbf{A}\mathbf{mount}$	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.73	1.72	mg/Kg	1	2.00	86	86	70 - 130
4-Bromofluorobenzene (4-BFB)	1.85	1.75	mg/Kg	1	2.00	92	88	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 330697

QC Batch:

102009

Date Analyzed:

2013-06-05

Analyzed By: CW

Prep Batch: 86425

QC Preparation: 2013-06-04

Prepared By: CW

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
DRO		1	232	mg/Kg	1	250	57.9	70	36.1 - 147.2

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

			MSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	$_{ m Limit}$
DRO		1	223	mg/Kg	1	250	57.9	66	36.1 - 147.2	4	20

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

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112MC05282

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Eddy Co., NM

matrix spikes continued								
Trouble and a frequency of the contraction of the c	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
	MS	MSD			Spike	$_{ m MS}$	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	$_{ m Limit}$
n-Tricosane	129	126	mg/Kg	1	100	129	126	78.3 - 131.6

Matrix Spike (MS-1)

Spiked Sample: 330835

QC Batch:

102061

Date Analyzed:

2013-06-06

Analyzed By: AR

Prep Batch: 86384

QC Preparation: 2013-06-04 Prepared By: AR.

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			6060	m mg/Kg	10	2500	3600	98	78.9 - 121

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$	RPD	Limit
Chloride			6400	mg/Kg	10	2500	3600	112	78.9 - 121	5	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: 330825

QC Batch:

102079

Date Analyzed:

2013-06-07

Analyzed By: KC

Prep Batch: 86470

QC Preparation:

2013-06-05

Prepared By: KC

MS Spike Matrix Rec. F \mathbf{C} Param Result Units Dil. Amount Result Rec. Limit Benzene 2.20 70 - 130 mg/Kg 1 2.00 < 0.00810 110 Toluene 2.36 mg/Kg 70 - 130 1 2.00 < 0.00750 118 Ethylbenzene 2.46 mg/Kg 70 - 130 1 2.00< 0.00730 123 7.20 Xylene mg/Kg 1 6.00< 0.00700 120 70 - 130

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

Param	E.	C	MSD Result	Units	Dil.	Spike	Matrix Result	Dag	Rec. Limit	RPD	RPD Limit
Faram	F	C	nesun	Omes	חום.	Amount	Resuit	Rec.	Limit	RPD	Limit
Benzene		1	2.21	mg/Kg	1	2.00	< 0.00810	110	70 - 130	()	20
Toluene		1	2.37	mg/Kg	1	2.00	< 0.00750	118	70 - 130	0	20
Ethylbenzene		1	2.47	mg/Kg	1	2.00	< 0.00730	124	70 - 130	0	20

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112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 22 of 35

Eddy Co., NM

$matrix\ s$	spikes	continued		
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•			MSD			Spike	Matrix		Rec.		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Xylene		1	7.25	mg/Kg	1	6.00	< 0.00700	121	70 - 130	1	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
Trifluorotoluene (TFT)	1.60	1.68	mg/Kg	1	2	80	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.69	1.72	${ m mg/Kg}$	1	2	84	86	70 - 130

Matrix Spike (xMS-1)

Spiked Sample: 330714

QC Batch: Prep Batch: 86484

102081

Date Analyzed:

2013-06-07

Analyzed By: CW

QC Preparation: 2013-06-06

Prepared By: CW

			MS			Spike	Matrix		Rec.
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	222	mg/Kg	1	250	88.8	53	36.1 - 147.2

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	249	mg/Kg	1	250	88.8	64	36.1 - 147.2	12	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-Tricosane	91.3	104	mg/Kg	1	100	91	104	78.3 - 131.6

Matrix Spike (MS-1)

Spiked Sample: 330830

QC Batch:

102101

Date Analyzed:

2013-06-07

Analyzed By: KC

Prep Batch: 86503

QC Preparation:

2013-06-06

Prepared By: KC

MSSpike MatrixRec. F C Limit Param Result Units Dil. Amount Result Rec. GRO 18.2 mg/Kg 20.0 < 2.3291 70 - 130

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

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Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 23 of 35 Eddy Co., NM

			MSD			Spike	Matrix		Rec.		RPD
Param	F	$^{\rm C}$	Result	Units	Dil.	$\mathbf{A}\mathbf{m}\mathbf{o}\mathbf{m}\mathbf{t}$	Result	Rec.	Limit	RPD	Limit
GRO		i	17.4	mg/Kg	1	20.0	< 2.32	87	70 - 130	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	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.80	1.83	mg/Kg	1	2	90	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.95	m mg/Kg	1	2	96	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 330830

QC Batch: Prep Batch: 86528

102127

Date Analyzed: QC Preparation: 2013-06-07

2013-06-10

Analyzed By: KC

Prepared By: KC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.57	mg/Kg	1	2.00	< 0.00810	78	70 - 130
Toluene		1	1.69	mg/Kg	1	2.00	< 0.00750	84	70 - 130
Ethylbenzene		1	1.75	mg/Kg	1	2.00	< 0.00730	88	70 - 130
Xylene		i	5.13	mg/Kg	1	6.00	< 0.00700	86	70 - 130

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.65	mg/Kg	1	2.00	< 0.00810	82	70 - 130	5	20
Toluene		1	1.76	mg/Kg	1	2.00	< 0.00750	88	70 - 130	4	20
Ethylbenzene		1	1.84	mg/Kg	1	2.00	< 0.00730	92	70 - 130	5	20
Xylene		1	5.38	mg/Kg	1	6.00	< 0.00700	90	70 - 130	5	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)	1.72	1.62	mg/Kg	1	2	86	81	70 - 130
4-Bromofluorobenzene (4-BFB)	1.81	1.70	mg/Kg	1	2	90	85	70 - 130

Matrix Spike (MS-1) Spiked Sample: 330883

QC Batch: 102163 Prep Batch: 86551

Date Analyzed:

2013-06-11 QC Preparation: 2013-06-09 Analyzed By: KC Prepared By: KC

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 24 of 35 Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		ı	22.0	mg/Kg	1	20.0	< 2.32	110	70 - 130

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

			MSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	22.6	mg/Kg	1	20.0	< 2.32	113	70 - 130	3	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.	${f Amount}$	Rec.	Rec.	$_{ m Limit}$
Trifluorotoluene (TFT)	1.91	1.77	mg/Kg	1	2	96	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.82	mg/Kg	1	2	99	91	70 - 130

Matrix Spike (MS-1) Spiked Sample: 330883

QC Batch: Prep Batch: 86555

102164

Date Analyzed: 2013-06-11 QC Preparation: 2013-06-09

Analyzed By: KC Prepared By: KC

Param	\mathbf{F}	С	MS Result	Units	Dil.	$rac{ ext{Spike}}{ ext{Amount}}$	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.85	mg/Kg	1	2.00	< 0.00810	92	70 - 130
Toluene		1	1.97	mg/Kg	1	2.00	< 0.00750	98	70 - 130
Ethylbenzene		i	2.00	$_{ m mg/Kg}$	1	2.00	< 0.00730	100	70 - 130
Xylene		1	5.84	mg/Kg	1	6.00	< 0.00700	97	70 - 130

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		ı	1.70	mg/Kg	1	2.00	< 0.00810	85	70 - 130	8	20
Toluene		1	1.80	mg/Kg	1	2.00	< 0.00750	90	70 - 130	9	20
Ethylbenzene		1	1.84	mg/Kg	1	2.00	< 0.00730	92	70 - 130	8	20
Xylene		1	5.37	mg/Kg	1	6.00	< 0.00700	90	70 - 130	8	20

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

	MS	MSD			$_{ m Spike}$	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.65	1.75	mg/Kg	1	2	82	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.91	1.80	mg/Kg	1	2	96	90	70 - 130

112MC05282

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 25 of 35 Eddy Co., NM

Matrix Spike (MS-1)

Spiked Sample: 331415

QC Batch:

102267

Date Analyzed:

2013-06-12

Analyzed By: KC

Prep Batch: 86645

QC Preparation: 2013-06-12

Prepared By: KC

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\mathrm{C}}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	17.2	mg/Kg	1	20.0	< 2.32	86	70 - 130

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	16.7	mg/Kg	1	20.0	< 2.32	84	70 - 130	3	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
Trifluorotoluene (TFT)	1.85	1.87	mg/Kg	1	2	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	1.86	mg/Kg	1	2	93	93	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 331415

QC Batch:

102281

Date Analyzed:

2013-06-12

Analyzed By: KC

Prep Batch: 86655

QC Preparation: 2013-06-12

Prepared By: KC

			MS			Spike	Matrix		Rec.
Param	F	$^{\rm C}$	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit
Benzene		1	1.66	mg/Kg	1	2.00	< 0.00810	83	70 - 130
Toluene		1	1.77	$_{ m mg/Kg}$	1	2.00	< 0.00750	88	70 - 130
Ethylbenzene		1	1.81	mg/Kg	1	2.00	< 0.00730	90	70 - 130
Xylene		1	5.30	mg/Kg	1	6.00	< 0.00700	88	70 - 130

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	C	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$	RPD	$_{ m Limit}$
Benzene		1	1.70	mg/Kg	1	2.00	< 0.00810	85	70 - 130	2	20
Toluene		1	1.81	mg/Kg	1	2.00	< 0.00750	90	70 - 130	2	20
Ethylbenzene		1	1.87	mg/Kg	1	2.00	< 0.00730	94	70 - 130	3	20
Xylene		1	5.46	mg/Kg	1	6.00	< 0.00700	91	70 - 130	3	20

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

 $continued \dots$

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 26 of 35 Eddy Co., NM

matrix spikes continued	•							
The second secon	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Triffuorotoluene (TFT)	1.66	1.67	mg/Kg	1	2	83	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.68	1.67	nig/Kg	- 1	2	84	84	70 - 130

Work Order: 13060304 COG/Pinto 29 Fed. #1

Calibration Standards

Standard (CCV-1)

QC Batch: 102009

Date Analyzed: 2013-06-05

Analyzed By: CW

Page Number: 27 of 35

Eddy Co., NM

				$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	257	103	80 - 120	2013-06-05

Standard (CCV-2)

QC Batch: 102009

Date Analyzed: 2013-06-05

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	213	85	80 - 120	2013-06-05

Standard (CCV-3)

QC Batch: 102009

Date Analyzed: 2013-06-05

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	214	86	80 - 120	2013-06-05

Standard (CCV-4)

QC Batch: 102009

Date Analyzed: 2013-06-05

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	207	83	80 - 120	2013-06-05

Report Date: June 13, 2013 Work Order: 13060304 112MC05282 COG/Pinto 29 Fed. #1

Standard (CCV-1)

QC Batch: 102061

Date Analyzed: 2013-06-06

Analyzed By: AR

Page Number: 28 of 35

Eddy Co., NM

CCVs CCVs CCVs Percent True Found Percent Recovery Date FlagUnits Conc. Cert Conc. Analyzed Param Recovery Limits Chloride mg/Kg 100 97.8 98 85 - 115 2013-06-06

Standard (CCV-2)

QC Batch: 102061 Date Analyzed: 2013-06-06 Analyzed By: AR

CCVs CCVs CCVs Percent True Found Percent Recovery Date Param Flag Cert Units Conc. Conc. Recovery Limits Analyzed Chloride mg/Kg 100 102 102 85 - 115 2013-06-06

Standard (CCV-1)

QC Batch: 102079 Date Analyzed: 2013-06-07 Analyzed By: KC

CCVsCCVs**CCVs** Percent True Found Percent Recovery Date Flag Units Param Cert Conc. Conc. Recovery Limits Analyzed Benzene mg/kg 0.100 0.0830 80 - 120 2013-06-07 83 Toluene mg/kg 0.1000.086687 80 - 120 2013-06-07 mg/kg 80 - 120 Ethylbenzene 0.1000.086286 2013-06-07 mg/kg 0.3000.25480 - 120 Xylene 85 2013-06-07

Standard (CCV-2)

QC Batch: 102079 Date Analyzed: 2013-06-07 Analyzed By: KC

CCVs **CCVs CCVs** Percent True Found Percent Recovery Date Param Flag Cert Units Conc. Conc. Recovery Limits Analyzed 0.100Benzene mg/kg 0.095295 2013-06-07 80 - 120 Toluene nig/kg 0.1000.096797 80 - 120 2013-06-07 Ethylbenzene mg/kg 0.1000.096296 80 - 120 2013-06-07 Xylene mg/kg 0.3000.28194 80 - 120 2013-06-07

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 29 of 35 Eddy Co., NM

Standard (CCV-3)

QC Batch: 102079

Date Analyzed: 2013-06-07

Analyzed By: KC

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0928	93	80 - 120	2013-06-07
Toluene		1	mg/kg	0.100	0.0959	96	80 - 120	2013-06-07
Ethylbenzene		1	mg/kg	0.100	0.0954	95	80 - 120	2013-06-07
Xylene		1	mg/kg	0.300	0.276	92	80 - 120	2013-06-07

Standard (CCV-1)

QC Batch: 102081

Date Analyzed: 2013-06-07

Analyzed By: CW

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	$_{ m Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	${f Limits}$	Analyzed
DRO		1	mg/Kg	250	256	102	80 - 120	2013-06-07

Standard (CCV-2)

QC Batch: 102081

Date Analyzed: 2013-06-07

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	229	92	80 - 120	2013-06-07

Standard (CCV-3)

QC Batch: 102081

Date Analyzed: 2013-06-07

Analyzed By: CW

				$\rm CCVs$	CCVs	CCVs	Percent	
•				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	284	114	80 - 120	2013-06-07

Report Date: June 13, 2013 112MC05282				Work Order COG/Pinto		Page Number: 30 of 35 Eddy Co., NM			
Standard (C	CV-1)								
QC Batch: 102101		Date	Date Analyzed: 2013-06-07				Analyzed By: KC		
				CCVs	CCVs	CCVs	Percent	_	
				True	Found	Percent	Recovery	$_{ m Date}$	
Param	Flag	Cert	$_{ m Units}$	$\operatorname{Conc.}$	Conc.	Recovery	Limits	Analyzed	
GRO		1	mg/Kg	1.00	1.15	115	80 - 120	2013-06-07	

QC Batch:	102101		Date	Analyzed:	Analyzed By: KC			
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2013-06-07

Standard (CCV-2)

Standard (CCV-1)

Standard (C	CCV-3)							
QC Batch:	102101		Date	Analyzed:	2013-06-07		Analy	zed By: KC
				CCVs	CCVs	CCVs	Percent	T
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed

Param	Flag	Cert	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.11	111	80 - 120	2013-06-07

QC Batch: 102127 Analyzed By: KC CCVs**CCVs** CCVsPercent True Found Percent Recovery Date Param Flag Cert Units Conc. Conc. Recovery Limits Analyzed Benzene mg/kg 0.100 0.0937 94 80 - 120 2013-06-10 mg/kg Toluene 0.10097 0.097180 - 120 2013-06-10 mg/kg Ethylbenzene 0.1000.096596 80 - 120 2013-06-10 mg/kg 0.300Xylene 0.27993 80 - 120 2013-06-10

Date Analyzed: 2013-06-10

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 31 of 35 Eddy Co., NM

Standard (CCV-2)

112MC05282

QC Batch: 102127

Date Analyzed: 2013-06-10

Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		ı	mg/kg	0.100	0.0858	86	80 - 120	2013-06-10
Toluene		ı	mg/kg	0.100	0.0894	89	80 - 120	2013-06-10
Ethylbenzene		J	mg/kg	0.100	0.0880	88	80 - 120	2013-06-10
Xylene	_	1	mg/kg	0.300	0.257	86	80 - 120	2013-06-10

Standard (CCV-3)

QC Batch: 102127

Date Analyzed: 2013-06-10

Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		ı	mg/kg	0.100	0.0866	87	80 - 120	2013-06-10
Toluene		1	mg/kg	0.100	0.0901	90	80 - 120	2013-06-10
Ethylbenzene		1	mg/kg	0.100	0.0870	87	80 - 120	2013-06-10
Xylene		1	mg/kg	0.300	0.250	83	80 - 120	2013-06-10

Standard (CCV-1)

QC Batch: 102163

Date Analyzed: 2013-06-11

Analyzed By: KC

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.950	95	80 - 120	2013-06-11

Standard (CCV-2)

QC Batch: 102163

Date Analyzed: 2013-06-11

Analyzed By: KC

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		t	mg/Kg	1.00	1.10	110	80 - 120	2013-06-11

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 32 of 35 Eddy Co., NM

Standard (CCV-1)

QC Batch: 102164

Date Analyzed: 2013-06-11

Analyzed By: KC

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0858	86	80 - 120	2013-06-11
Toluene		1	mg/kg	0.100	0.0890	89	80 - 120	2013-06-11
Ethylbenzene		1	mg/kg	0.100	0.0879	88	80 - 120	2013-06-11
Xylene		1	mg/kg	0.300	0.256	85	80 - 120	2013-06-11

Standard (CCV-2)

QC Batch: 102164

Date Analyzed: 2013-06-11

Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0930	93	80 - 120	2013-06-11
Toluene		1	mg/kg	0.100	0.0960	96	80 - 120	2013-06-11
Ethylbenzene		1	${ m mg/kg}$	0.100	0.0930	93	80 - 120	2013-06-11
Xylene		1	mg/kg	0.300	0.269	90	80 - 120	2013-06-11

Standard (CCV-1)

QC Batch: 102267

Date Analyzed: 2013-06-12

Analyzed By: KC

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	$\mathbf{U}\mathbf{nits}$	·Conc.	Conc.	Recovery	Limits	Analyzed
$\overline{\text{GRO}}$		1	mg/Kg	1.00	0.994	99	80 - 120	2013-06-12

Standard (CCV-2)

QC Batch: 102267

Date Analyzed: 2013-06-12

Analyzed By: KC

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	\mathbf{Date}
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	me/Ke	1.00	1.06	106	80 - 120	2013-06-12

112MC05282

Work Order: 13060304

COG/Pinto 29 Fed. #1

Page Number: 33 of 35 Eddy Co., NM

Standard (CCV-1)

QC Batch: 102281

Date Analyzed: 2013-06-12

Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0821	82	80 - 120	2013-06-12
Toluene		ı	mg/kg	0.100	0.0851	85	80 - 120	2013-06-12
Ethylbenzene		1	mg/kg	0.100	0.0836	84	80 - 120	2013-06-12
Xylene		1	mg/kg	0.300	0.244	81	80 - 120	2013-06-12

Standard (CCV-2)

QC Batch: 102281

Date Analyzed: 2013-06-12

Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0872	87	80 - 120	2013-06-12
Toluene		1	mg/kg	0.100	0.0903	90	80 - 120	2013-06-12
Ethylbenzene		1	mg/kg	0.100	0.0886	89	80 - 120	2013-06-12
Xylene		1	mg/kg	0.300	0.258	86	80 - 120	2013-06-12

Standard (CCV-3)

QC Batch: 102281

Date Analyzed: 2013-06-12

Analyzed By: KC

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		ı	mg/kg	0.100	0.0905	90	80 - 120	2013-06-12
Toluene		1	mg/kg	0.100	0.0933	93	80 - 120	2013-06-12
Ethylbenzene		ı	mg/kg	0.100	0.0912	91	80 - 120	2013-06-12
Xylene		ı	mg/kg	0.300	0.266	89	80 - 120	2013-06-12

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 34 of 35

Eddy Co., NM

Appendix

Report Definitions

Name	Definition
$\overline{\mathrm{MDL}}$	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	Location
_	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit.
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
 - U The analyte is not detected above the SDL

Attachments

Work Order: 13060304 COG/Pinto 29 Fed. #1 Page Number: 35 of 35 Eddy Co., NM

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

Analysis Request of Cha	ain of Custody	R	e	CO	rc	1	T								PAGI		(0	F:)	
							-					(Cir			SIS I pecif				.)			
1910 N. Big Midland, Tex (432) 682-4559	Spring St.							5 (Ext. to C35)		a ö	Vr Pd Hg									DS		
CLIENT NAME: SITE MANAGE	R: The Toward	EHS	Ţ		ERV	ATIVE		TX1005		B G	S Ra			30/624	70/625					S, pH, TDS		
PROJECT NO.: PROJECT NAME: 12MC 5282 CG/P:AL 29 F	The Talkez	CONTAIN					k	8015 MOD.		9 Ag As	s Ag As	/olatiles		8240/82	r. Vol. 82 608	8		ا د	tos)	s/Cation		
LARID X	Eddy (0, NA) E IDENTIFICATION	NUMBER OF CONTAINERS	FILIERED (T/N)	HN03	ICE	NONE	BTEX 8021B	TPH 8015	PAH 8270	RCRA Metals Ag	TCLP Volatil	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vo PCB's 8080/608	Pest. 808/608	Chloride	Alpha Beta	PLM (Asbestos)	Major Anions/Cations,		
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			_			1	\downarrow	\coprod	4	4	1			4	1	\bigsqcup		1			_	
RELINQUISHED BY: (Signature) Date: _5/3//3	DECEIVED BY: (Signature)	,_		Date:		31:13		$oxed{oxed}$	SAN	API F	n BV	/Print	& Ini	fiall					Date:	5)∉	17/7	
RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) Date: Time:	RECEIVED BY: (Signature)			Time: Date: Time:	<u>45</u>	35	_	_	SAN	APLE DEX	SHIP	PED E	3Y: (C	ircle) BUS				7	ime: BILL	15	35	
RELINQUISHED BY: (Signature) Date: Time:	RECEIVED BY: (Signature)			Date: Time:					H/	AND I	DELIN	CONT	>	UPS	ON:			ОТІ	HER:	ults by	·:	
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SAMPLE CONDITION WHEN RECEIVED: REMARKS:	when if TPA educads.	5,0	ా	mq	/K	ب/ ا	~~	<u>d</u>	por		SAN	pk	<u> </u>	i F		en 2	Zen Co C	e Pold	e,	Yes << <q< td=""><td><u> </u></td><td>No D mg</td></q<>	<u> </u>	No D mg

or total 67 ox exceeds 50 ms/kg. Mederal ory



October 23, 2013

IKE TAVAREZ
TETRA TECH
1910 N. BIG SPRING STREET
MIDLAND, TX 79705

RE: COG / PINTO 29 FED TB #1

Enclosed are the results of analyses for samples received by the laboratory on 10/22/13 14:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



TETRA TECH IKE TAVAREZ 1910 N. BIG SPRING STREET MIDLAND TX, 79705 Fax To: (432) 682-3946

Received:

10/22/2013

Sampling Date:

10/22/2013

Reported:

Soil

10/23/2013

Sampling Type:

Project Name:

COG / PINTO 29 FED TB #1

Sampling Condition:

Cool & Intact

Project Number:

112MCO5282

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY, NM

Sample ID: CS (AH 3) 3' (H302551-01)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.252	0.250	10/22/2013	ND	2.14	107	2.00	0.577	
Toluene*	6.19	0.500	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	5.47	0.500	10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	7.35	1.50	10/22/2013	ND	6.37	106	6.00	0.365	
Total BTEX	19.3	2.75	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	127	% 89.4-12	6						
TPH 8015M	mg	'kg	Anaiyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	474	100	10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	6330	100	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	217	% 65.2-14	0			THE PERSON NAMED IN THE PE			
Surrogate: 1-Chlorooctadecane	362	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine



Notes and Definitions

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keena

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			The second second		Midland, Tex	Spring St.							·	(Ext. to C35)	Cr Pb Hg Se	Pd Hg Se										Pag
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CLIENT NAM	(06				SITE MANAGE	R. IKe Tow	grez	NERS			ETH	ATIVE OD		TX1005	Ba	As Ba C	s	260/624	8270/625					ns, pH,		
PROJECT N	0.: .e <u>o 5,2</u> 8	32	PRO. C06	•	NAME: Pinh 29 F	J TR #	, ·	CONTA						S MOD.	9	နှာ	Volatile	8240/8	i. Vol. 8	809/	3	င္က	(Aur.)	s/Catio		
LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	GRAB	SAMPL	Eddy Co, Am E IDENTIFICATION		NUMBER OF CONTAINERS	돤	HNO3	ICE	NONE	ВТЕХ 8021В	TPH 801	RCRA Metals /	TCLP Metals / TCLP Volatiles	TCLP Semi Volatiles	GC.MS Vol.	GC.MS Semi. Vol. 8270/628	PCB's 8080/608	Chloride	Gamma Spec.	Aipha Beta (Air) PLM (Asbestos)	Major Anions/Cations, pH, TDS		
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RELINQUISHED		,			Time:	RECEIVED BY: (Signature)				Time: Date:					FEDE)	DELIV	_	BU	s s				THER:	sults by	v:	<u></u>
RECEIVING LABORESS: CITY: HOLL CONTACT:	<u> </u>	Cardi	NN	~ PHONE	ZIP: I	RECEIVED BY: (Signature) DATE:		_ TIME		Time:				= ;; - ;; - ;;	[ke	3~	Tau						- 1	ISH Ch the hill Yes	arges d:	No .
SAMPLE CONDI	TION WHEN F				REMARKS: ** 5 / raigh	nt from	fold 8	R	ري:	<i>.</i> \	4												3			

Fyan. reich@tetra tech. com

the , takerez @ tetra tech. com



October 24, 2013

IKE TAVAREZ

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: PINTO FED #20

Enclosed are the results of analyses for samples received by the laboratory on 10/23/13 14:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab-accred-certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



TETRA TECH
IKE TAVAREZ
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:

10/23/2013

10/24/2013

Reported: Project Name:

PINTO FED #20

Project Number: Project Location: NONE GIVEN

EDDY COUNTY, NM

Sampling Date:

Sampling Type:

10/23/2013 Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: BEB 1' (H302570-01)

BTEX 8021B	mg,	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/24/2013	ND	2.05	103	2.00	0.398	
Toluene*	<0.050	0.050	10/24/2013	ND	2.14	107	2.00	0.0304	
Ethylbenzene*	<0.050	0.050	10/24/2013	ND	2.17	108	2.00	0.263	
Total Xylenes*	< 0.150	0.150	10/24/2013	ND	6.55	109	6.00	1.57	
Total BTEX	<0.300	0.300	10/24/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105	% 89.4-12	6				The state of the s		
TPH 8015M	mg,	kg	Anaiyze	d By: MS		·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/24/2013	ND	192	95.8	200	2.53	
DRO >C10-C28	40.9	10.0	10/24/2013	ND	189	94.6	200	3.08	
Surrogate: 1-Chlorooctane	77.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	86.0	% 63.6-15	4						

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Celeg & Kuna



TETRA TECH **IKE TAVAREZ** 1910 N. BIG SPRING STREET MIDLAND TX, 79705 (432) 682-3946 Fax To:

Received:

10/23/2013

Reported:

10/23/2013

10/24/2013

Sampling Type:

Soil

Project Name:

PINTO FED #20

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Sampling Date:

Jodi Henson

Project Location:

EDDY COUNTY, NM

Sample ID: BEB 1.5' (H302570-02)

BTEX 8021B	mg/kg		Analyzed By: MS					5-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/24/2013	ND	2.05	103	2.00	0.398	
Toluene*	0.739	0.200	10/24/2013	ND	2.14	107	2.00	0.0304	
Ethylbenzene*	2.00	0.200	10/24/2013	ND	2.17	108	2.00	0.263	
Total Xylenes*	3.38	0.600	10/24/2013	ND	6.55	109	6.00	1.57	
Total BTEX	6.12	1.20	10/24/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	190 % 89.4-12		6						
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	247	50.0	10/24/2013	ND	192	95.8	200	2.53	
DRO >C10-C28	1710	50.0	10/24/2013	ND	189	94.6	200	3.08	
Surrogate: 1-Chlorooctane	110 9	% 65.2-14	0		-				
Surrogate: 1-Chlorooctadecane	139 9	% 63.6-15	4						

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Celey D. Keene



TETRA TECH IKE TAVAREZ 1910 N. BIG SPRING STREET MIDLAND TX, 79705

Fax To:

(432) 682-3946

Received:

10/23/2013

Reported:

10/24/2013 PINTO FED #20

Project Name: Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

e: 10/23/2013

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: 3.5' (H302570-03)

BTEX 8021B	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.100	0.100	10/24/2013	ND	2.05	103	2.00	0.398	
Toluene*	0.291	0.100	10/24/2013	ND	2.14	107	2.00	0.0304	
Ethylbenzene*	0.458	0.100	10/24/2013	ND	2.17	108	2.00	0.263	
Total Xylenes*	0.798	0.300	10/24/2013	ND	6.55	109	6.00	1.57	
Total BTEX	1.55	0.600	10/24/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	116	% 89.4-12	6			The state of the s	- 1880 - 1884 - 1884 i series - en		AND ALL A. LEVE ANY CONT. CONT. ANY APPROXIMENT ANY
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	99.7	50.0	10/24/2013	ND	192	95.8	200	2.53	
DRO >C10-C28	1120	50.0	10/24/2013	ND	189	94.6	200	3.08	
Surrogate: 1-Chlorooctane	88.6	% 65.2-14	0	VIII WARREN W.		**************************************		***************************************	
Surrogate: 1-Chlorooctadecane	118 9	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

5-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keine



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name: Tetra Tech	BILLTO	ANALYSIS REQUEST
Project Manager: ILP Tavarez	P.O. #:	
Address:	Company:	
City: State: Zip:	Attn:	
Phone #: Fax #:	Address:	
Project #: Project Owner:	City:	
Project Name: Vinto ted #20	State: Zip:	
Project Location: Eddy Co. NM	Phone #:	
sampler Name: Henry Verez	Fax #:	
Tab I.D. Sample I.D. (c) SAB OR (c) OMP. (d) SABOR (c) OMP. (d) SABOR (c) OMP. (e) SABOR	Fax #: PRESERV. SAMPLING VOID/BASE: DATE TIME TO/23/18 1:30	
	10/13/15 1-30	
3 3.5'		
	 	
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in containally seed. All claims including those for neighgence and any other cause whatsoever shall be deemed waived unlass made in writing service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruption affiliates or successors arising out of or reference the performance of services hereunder by Cardinal, regardless of whether such clients.	ind received by Cardinal Wahln 30 days after completion of the applicable is, loss of use, or loss of profits incurred by client, its subsidiaries, in is based upon any of the above stated reasons or otherwise.	
Relinquished By: Date:	Henson Phone Result:	No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: † Cardinal cannot accept verbal changes. Please fax written changes	es ho henry, Der	eza-tetratech.com