

May 12, 2010

Mr. Mike Bratcher Environmental Engineer Specialist Oil Conservation Division, District 2 1301 West Grand Avenue Artesia, NM 88210

Re: Assessment and Closure Report – for the COG Operating, LLC, Polaris Federal 1-3 Tank Battery, Located in Unit Letter F, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. was contacted by COG Operating, LLC to investigate a spill that occurred at the Polaris Federal 1-3 Tank Battery. The tank battery is located in Unit Letter F, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico. The site coordinates are N 32.83503°, W 103.99581°. The Site is shown on Figures 1 and 2.

Background

On February 15, 2010, the header connection from the flow line to the heater was defective and failed releasing 25 barrels of produced water. COG recovered 15 barrels using a vacuum truck. The release occurred was outside the facility firewall and majority of the release was overspray, west of the facility. The spill location is shown on Figure 3. The C-141 (initial) is included in Appendix A.

Groundwater and Regulatory

No water wells were found within Township 17 South and Range 37 East. However, according to the NMOCD *Eddy County Depth to Groundwater Water Well Facility Map*, the approximate depth to groundwater in the region is approximately 350 feet below ground surface (bgs). Copies of the groundwater depth information for this site are included in Appendix B.



As requested by the BLM, a Class III Culture Resources Inventory Report (Archeological Study) was performed by Southern New Mexico Archaeological Services, Inc. The location was cleared and found no archaeological sites. The NMCRIS Investigation Abstract Form is shown in Appendix B.

A risk-based evaluation was performed for the Site in accordance with the 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 on the regional groundwater data, the proposed RRAL for TPH is 5,000 mg/kg.

Assessment and Corrective Action

On March 9, 2010, Tetra Tech personnel inspected the facility. A total of six (6) auger holes were installed using a stainless steel hand auger. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chlorides by EPA method 300.0. The laboratory reports are shown in Appendix C. The results are summarized in Table 1.

Referring to Table 1, none of the samples in AH-1 through AH-6 exceed the RRAL for TPH and BTEX. In addition, a chloride concentrations of 2,680 mg/kg was detected in the area of AH-2 at 0-1' and decline to <200 at 1.0' below surface. The remaining auger holes did not show a chloride impact to the soils.

On May, 6, 2010, Tetra Tech supervised the removal of 1.0' of the impacted soil surrounding AH-2. The excavated material was hauled to CRI to disposal. The excavated area is shown in Figure 4. Once completed, the area was backfilled with clean soil.

Closure Request

Based upon the results of the investigation and remediation performed at this site, COG Operating LLC requests closure of this site. The C-141 (Final) is included in Appendix A. If you have any question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,

Tetra Techins.

Ike Tavarez P.G. Senior Project Manager

cc: Pat Ellis - COG

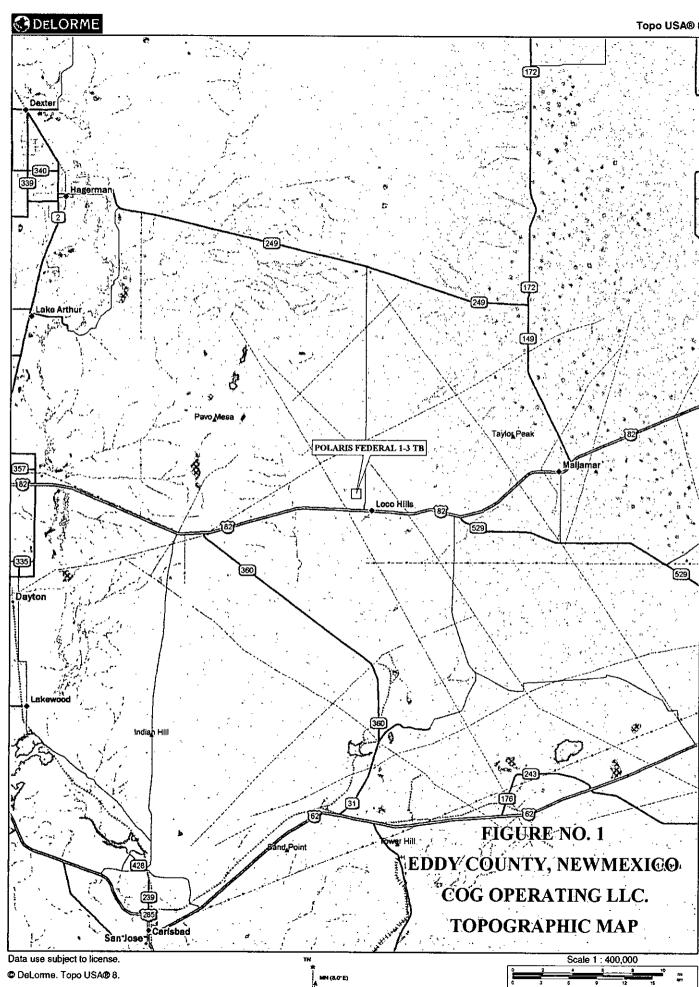
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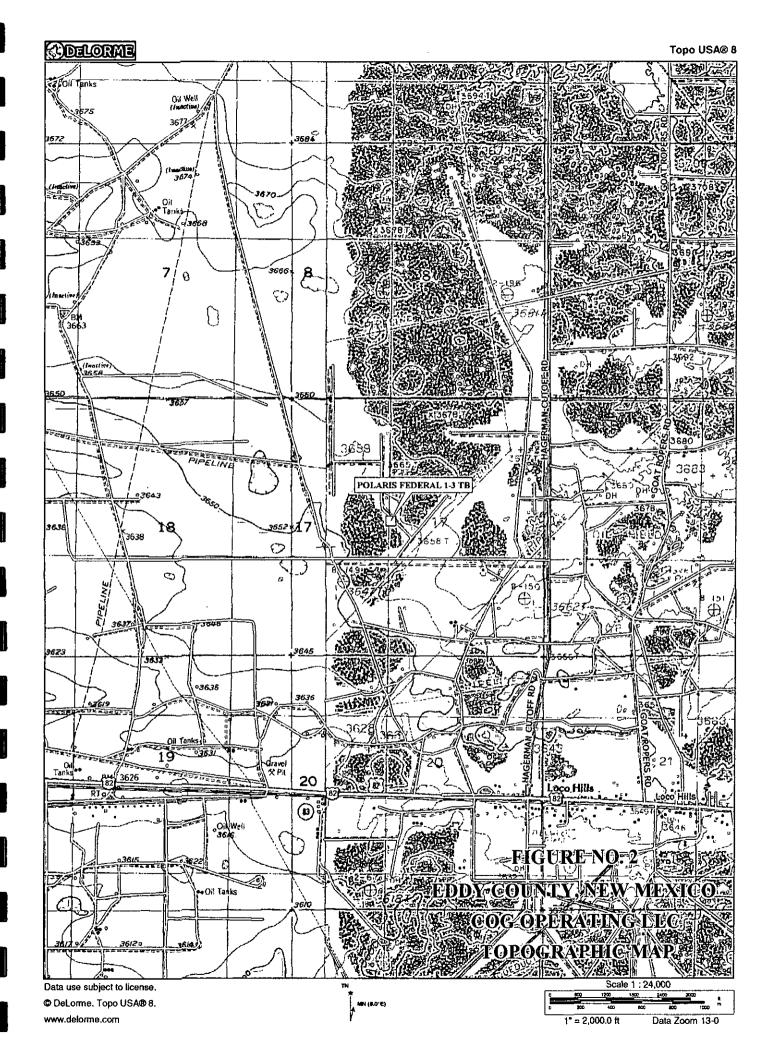
FIGURES

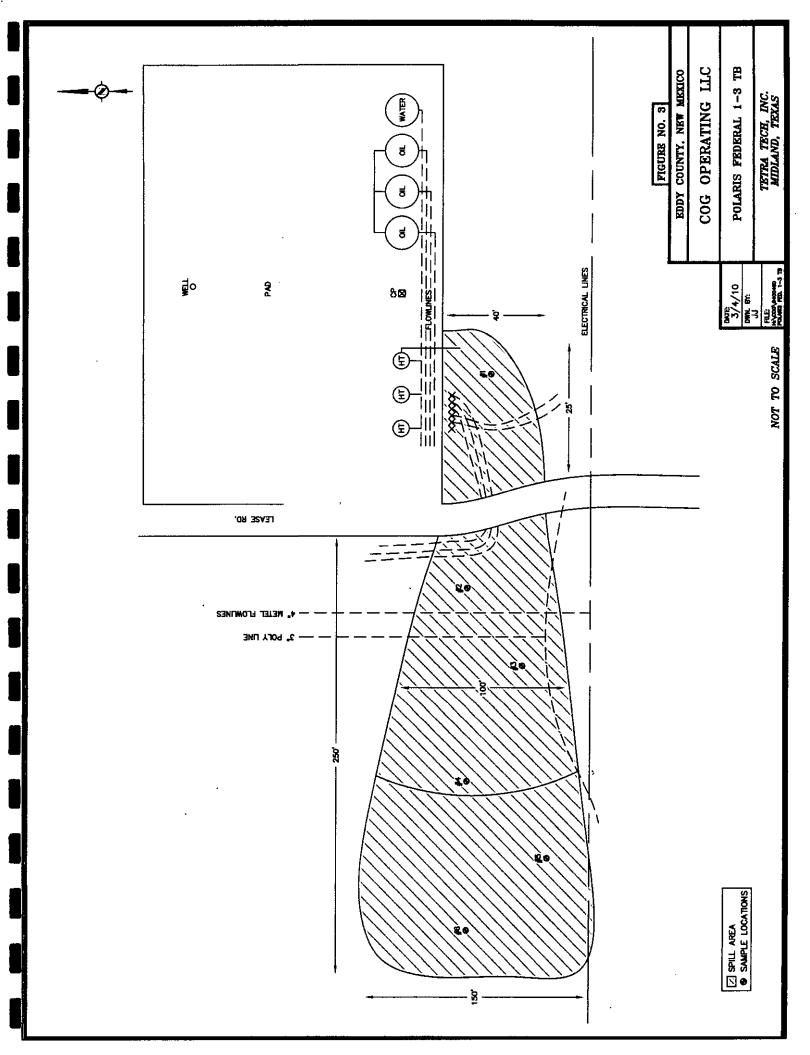


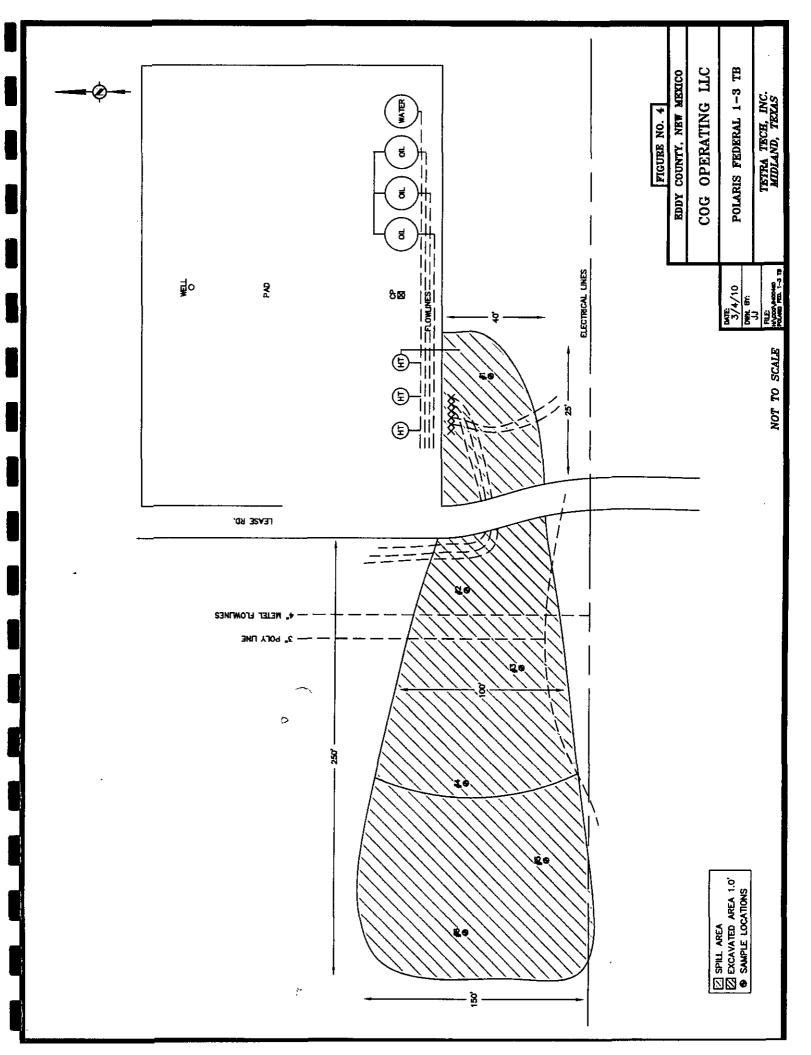
www.delorme.com

1" = 6.31 mi Data Zoom 9-0

Topo USA® 8







TABLE

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Table 1 COG Operating LLC. Polaris Federal 1-3TB Eddy County, New Mexico

Chloride (mg/kg) <200 2,680 <200 <200 <200 <200 <200 <200 <200 <200 <200 <200 <200 351 Xylene (mg/kg) <0.0100 <0.0100 <0.0100 <0.0100 <0.0100 3,45 5 ī Ethlybenzene <0.0100 <0.0100 <0.0100 <0.0100 <0.0100 (mg/kg) 1.47 ı . , , ī . (mg/kg) Toluene <0.0100 <0.0100 <0.0100 <0.0100 <0.0100 <0.0100 <0.0100 0.236 ı 1 Benzene (mg/kg) <0.0100 <0.0500 <0.0100 <0.0100 ı <50.0 <50.0 <50.0 <50.0 Total 162 537 . 1 ÷ . ī . TPH (mg/kg) <50.0 <50.0 <50.0 <50.0 DRO 162 286 ł ŧ . ÷ ı ъ <1.00 <1.00 <1.00 <1.00 GRO <1.00 251 . 1 . ı ī ı Removed Soil Status × In-Situ \times × × × \times × × × × × × × \times (BEB) Depth Depth (ft) Sample 3-3.5 1'-1.5 2'-2.5 3'-3.5' 1-1.5 2'-2.5' 1-1.5 1-1.5 0-.5 -1-0 ---3/9/2010 3/9/2010 3/9/2010 3/9/2010 3/9/2010 3/9/2010 Sample Date Sample ID AH-3 AH-5 AH-6 AH-2 AH-4 AH-1

(-) Not Analyzed

Excavated material

APPENDIX A

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										<u> </u>		<i>y</i>
District 1 1625 N. French District II 1301 W. Grand			State of New Mexico Energy Minerals and Natural Resources			Form C-141 Revised October 10, 2003						
District III 1000 Rio Brazos Road, Aztec, NM 87410 Dispict IV 1220 S. St. Francis Dr., Santa Fe, NM 87505				Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505			Submit 2 Copies to appropriat District Office in accordanc with Rule 116 on bac side of form		o appropriate n accordance 116 on back side of form			
· · · · ·			Rele	ease Notific	ation	and Co	orrective A	ction				
						OPERA			🛛 Initia	al Report		Final Report
Name of Co	mpany	COG OP	ERATIN	G, LLC		Contact	Pat E	Ellis				
Address	550 W.	Texas, Suite	100, Mi	dland, TX 7970	1 7	elephone l	No. 432-23	0-0077				
Facility Nar	ne P	olaris Feder	al 1-3 Tai	nk Battery	F	acility Typ	e Tank E	Battery				
Surface Ow	ner Fed	aral		Mineral C	Jumor				L anca N	lo. (API #	0.30.01	5 31565
1 Surface Ow									Leaser	<u>(0. (711 n</u>	750-01	5-01000
				LOCA	ATION	OF RE	LEASE					
Unit Letter F	Section 17	Township 17S	Range 30E	Feet from the 2310		South Line ORTH	Feet from the 2210		Vest Line /EST	County	EDD	Y
L		•	.	Latitude 3	2 50.105	5 Longitud	e 103 59.751	<u> </u>				######################################
				NAT	URE	OF REL	EASE					
Type of Rele		aced fluids					Release 25 bbls			Recovered		
Source of Re	lease He	ader				Date and F 02/15/2010	lour of Occurrenc)	c	Date and 02/15/201	Hour of Dis 0	scovery	
Was lmmedi	ate Notice (Yes 🗌] No 🔲 Not R	equired	If YES, To		ry Greg	ston - BLN	i		
By Whom?	Ronnic	Tice				Date and H	lour 02/15/2010				-	
	Was a Watercourse Reached?					If YES, Volume Impacting the Watercourse.				<u>.</u>		
			Yes 🛛] No								
If a Watercou	irse was Im	nacted Descr	ibe Fully *	*								

0460

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If a Watercourse was impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The connection from the flowline to the header was defective. The failed header/flowline connection was repaired.

Describe Area Affected and Cleanup Action Taken.*

25 bbls of produced fluid was released at the faulty header connection in the form of free fluid on location or overspray into the pasture. 15 bbls of free fluid was picked up by a vacuum truck. One-call protocol will be made by dirt contractor who will then wait for archeological/ wildlife sensitivity clearance from BLM before removing any saturated soils prior to sampling by Tetra Tech.

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.

Signature: 775	<u>OIL CON</u>	SERVATION DIVISION
Printed Name: Josh Russo	Approved by District Supervi	sor:
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached
Date: 02/17/2010 Phone: 43	2-212-2399	

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 side of form

Release Notification and Corrective Action

	OPERATOR	Initial Report	\boxtimes	Final Report
Name of Company COG Operating LLC	Contact Pat Ellis			
Address 550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No. (432) 685-4332			
Facility Name Polais Federal 1-3 Tank Battery	Facility Type Tank Battery			

Surface Owner Federal			4	Mineral Owner			Lease No. 30-015-31565		
•					LOCA	ATION OF REI	LEASE		
	Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	F	17	17S	30E	2310	North	2210	West	Eddy

Latitude N 32°50.105 Longitude W 103°59.751

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 25 bbls	Volume Re	ecovered 15 bbls
Source of Release	Date and Hour of Occurrence	Date and J	lour of Discovery
Heater	Unknown 2/15/10	2/15/10	-
Was Immediate Notice Given?	If YES, To Whom?		· · · · ·
Yes 🗌 No 🗌 Not Required			•
By Whom? Rick Wright	Date and Hour 2/15/10		· · · · · · · · · · · · · · · · · · ·
Was a Watercourse Reached?	If YES, Volume Impacting the W	atercourse	
Yes X No	N/A	attreourse.	
If a Watercourse was Impacted, Describe Fully.*	· · · · · · · · · · · · · · · · · · ·		
N/A			
Describe Cause of Problem and Remedial Action Taken.*			· · · · · · · · · · · · ·
The connection from the flow line to the heater treater was defective. The	e failed heater/flow line connection y	vas repaired	
	te failed fielden flow fine connection (tus repuneo.	
Describe Area Affected and Cleanup Action Taken.*	<u></u>		
The spill occurred outside the facility firewalls. Majority of the spill was	overenrow west of the tank bettery	The area was a	ecassed to evaluate the spill
All samples were below the RRAL for TPH and BTEX. Elevated chlorid			
was backfilled with clean soil. A closure report has been prepared and si			tor disposal. The excavation
was backfilled with clean soll. A closure report has been prepared and si	ionalized to the NMOCD for fevrew a	no approvai.	
1 hereby certify that the information given above is true and complete to			
regulations all operators are required to report and/or file certain release			
public health or the environment. The acceptance of a C-141 report by the			
should their operations have failed to adequately investigate and remedia			
or the environment. In addition, NMOCD acceptance of a C-141 report of	loes not relieve the operator of respon	nsibility for co	mpliance with any other
federal, state, or local laws and/or regulations.	<u> </u>		
	OIL CONSER	VATION I	DIVISION
1/1/14	<u>- · · · · · · · · · · · · · · · · · · ·</u>		
Signature // //			
	Approved by District Supervisor:		
Printed Name: Ike Tavarez	reproved by District Supervisor.	-	
Title: Project Manager	Approval Date:	Expiration D	Date:
	- Physical Period		
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval:]
	conditions of Approval.		Attached
Dame (7 110 Dears (120) 692 1550			
Date: 6.710 Phone: (432) 682-4559			

<u> 4 -</u> 1-10 * Attach Additional Sheets If Necessary

APPENDIX B

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Water Well Data COG - Polaris Federal 1-3 Tank Battery Average Depth to Groundwater (ft)

30 East

16 South

	16 Sc	outh	29	East				
6	5	4	3	2	1			
7	8	9	10	11	12			
18	17	16	15	14	13			
19 110	20	21	22	23	24			
30	29	28	27	26	25			
31	32	33	34	35	36			
17 South 29 East								
6	5	4	3	2	1			
7	8	9	10	11	12			
			_					

	18	17	16	15	14	13
	19	20	21	22 80	23	24
	30	29 210 208'	28	27	26	25
	31	32	33	34	35	36
		18 Sc			East	
_	6	5	4	3	2	1

-			_	_	
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	2 9	28	27	26	25
31	32	33	34	35	36

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	17 S	outh	:	30 East	<u> </u>
6	5	4	3	2	1
7	8	9	10	11	12
18	17 SITE	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	18	South	;	t	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	16	South	:	31 East	
6	5	4	3	2	1
7	8	9	10	11	12 288
18	17	16	15	14	13 113
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

	17 S	outh	3	1 East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 271	35	36

	18	South	;	31 East	
6	5	4	3	2.	1
7	8	9	10	11	12 400
18	17	16	15	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

88 New Mexico State Engineers Well Reports

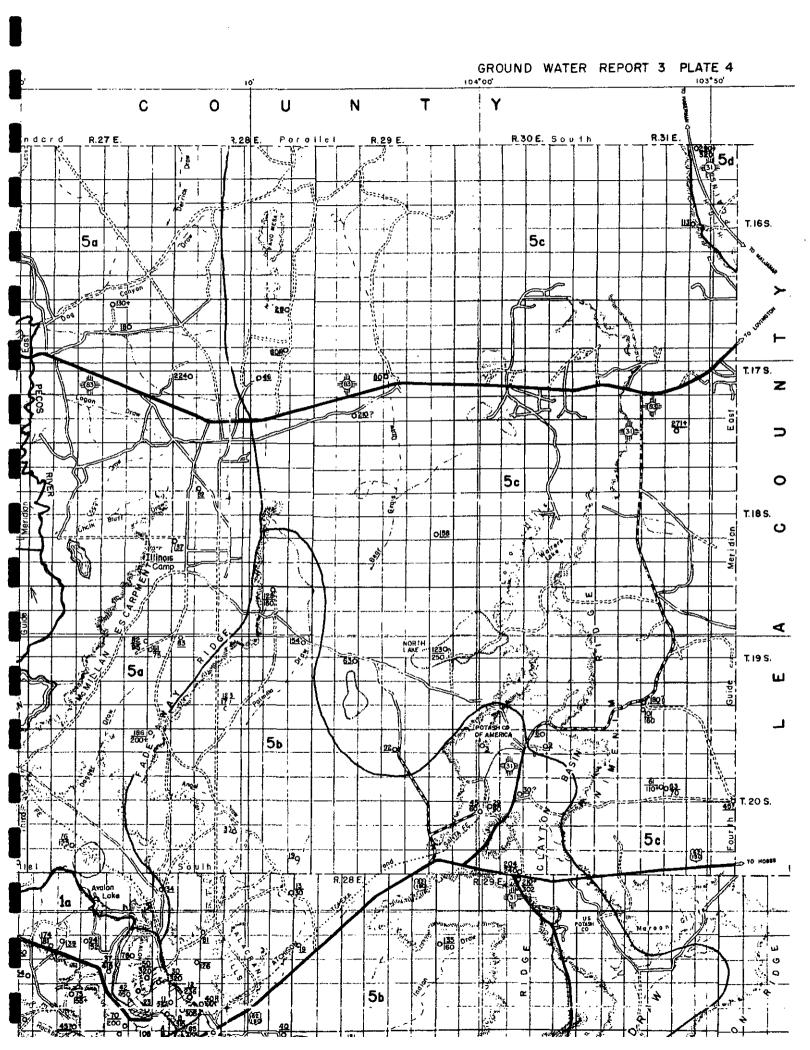
105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Field water level





New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

PLSS Search:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

PLSS Search:

Township: 17S

.tange: 29E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

	NMCRIS INVES	TIGATION A	BSTRACT	FORM	(NIAF)		
1. NMCRIS Activity	2a. Lead (Sponsoring)	2b. Oth	er Permitting				
No.:	Agency:	Agency	(ies):		3. Lead Agency Report No.:		
116904	BLM-CFO						
Number 1-3 Tank Batter	lass III Cultural Resourc y Oil Spill, Section 17, T.1				5. Type of Report		
	x and Doralene Sanders						
6. Investigation Type	Survey/Inventory	Test Excavation	Excavation		ections/Non-Field Study		
Overview/Lit Review		Ethnographic stud]Other		
	aking (what does the project		<u> </u>		s of Investigation:		
COG Operating, request resulting from a pipelin County, New Mexico. An area. The impact area is operations. The spill are	ed a class III cultural reso ne/header leak, located ir n area 700 ft by 500 ft wa s unknown, as it is depen- ea consisted of an area 30 ried outside of the oil spil	urce inventory for Section 17, T.17 Is inventoried for dent upon the nec 00 ft wide by 500 f	an oil spill area, /S, R.30E, Eddy the reclamation cessary cleanup	March 6			
	Consultant: SNMAS, Inc.			11. Per	forming Agency/Consultant		
Principal Investigator: J	loe Ben Sanders			Report	No.:		
Field Supervisor: Allen				SNMAS	-10NM-3620		
Field Personnel Names: Allen Rorex 12. Applicat Permit No(s)					licable Cultural Resource No(s):		
				145-292	0-10-R		
Midland, Texas 797 Phone: (432) 682-49 15. Land Ownership Sta		roject map):		-			
Land Owner	·····		Acres Surveyed	Acres			
BLM-CFO			8.03				
		TOTALS	8.03				
project area. There are 145,097, LA 67525, LA 1 numbers 01-NM-080-420	16 Records Search(es): The records search revealed no previously recorded sites located within a quarter mile radius of the project area. There are eleven sites (LA 135,271, LA 126,762, LA 43305, LA 126,766, LA 133,426, LA 68995, LA 139,972, LA 145,097, LA 67525, LA 126,748, and LA 137,438) within a mile. There are five previous inventories, listed under BLM report numbers 01-NM-080-420, 01-NM-080-483, 01-NM-080-288, 96-NM-067-43 and 96-NM-067-43.1.						
Date(s) of ARMS File R Date(s) of NR/SR File F		Name of Review Name of Review	er(s) Doralene Sai er(s) N/A	nders			
Date(s) of Other Agend			er(s) Allen Rorex		Agency BLM-CFO		
17. Survey Data:					<u>.</u>		
	⊠ NAD 27 □ NAD 83 ⊠ USGS 7.5' (1:24,000) to ⊠ GPS Unit Accura	•	Other topo map,] 1-10m]>100m		
b. USGS 7.5' Topographi Loco Hills, NM (Prov		GS Quad Code 03-G8					
c. County(ies): Eddy							

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17. Survey Data (continued):											
d. Nearest City or Town: Loco Hills, NM											
e. Legal Description:											
Township (N/S)	Range (E/W)	Section	1/4		1/4	1/4		••••			_1
17S 30E 17 SW, SE, SE, of the NW; NW, NE, NE of the SW											
Projected legal descriptio f. Other Description (e.g. v approximately 300 ft x 500	vell pad footages, mi	Unplatted 🤅 le markers, plats,		nan	ne, e	etc.): An	oil s	spill ar	ea meas	uring	
18. Survey Field Methods Intensity: X 100% covera Configuration: X block su	nge [] <100% cover	0 ft 📋 linear surv		,				<u>.</u>			
Scope: X non-selective (al	l sites recorded)	selective/thematic	(selected sit	tes r	reco	rded)					
Coverage Method: 🛛 sys			•	crib	e)						
Survey Interval (m): 15											
Survey Person Hours: 2	Recording Person H	ours: 0 Total Ho	urs: 2								
19. Environmental Setting slopes covered with low c Soils are tan/red loamy silt yucca and sage. The eleva	oppice dunes field fo y sands, mixed with o tion is 3,644 ft above	rmations, up to 1 aliche nodules. A msl.	.5 meters h rea vegetat	eigh tion	nt. E is de	xposure ominatec	is o I by	pen al grass	nd draina es, shin c	ige is inte bak, mese	ernal. quite,
20.a. Percent Ground Visit	pility: 76-99 b. Condition, pray contamination, l										is
21. CULTURAL RESOURC	E FINDINGS 🔲 Yes	, See Page 3							sity in the		low.
22. Required Attachments USGS 7.5 Topographic Copy of NMCRIS Maps LA Site Forms - new sit LA Site Forms (update) Historic Cultural Prope List and Description of	The area is unfavorable for exploiting resources. 22. Required Attachments (check all appropriate boxes): USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn Copy of NMCRIS Mapserver Map Check LA Site Forms - new sites (with sketch map & topographic map) LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum) Historic Cultural Property Inventory Forms List and Description of isolates, if applicable										
24. I certify the information provided above is correct and accurate and meets all applicable agency standards.											
Principal Investigator/Responsible Archaeologist: Allen Rorex Title (if not PI): Field Supervisor Signature for Allen Rorex: Date <u>March 29, 2010</u>											
25. Reviewing Agency: Reviewer's Name/Date											
Accepted () Reje	cted ()	HPD Log #									
Tribal Consultation (if app	icable): 🗌 Yes 📋	No SHPO File Date sent t									
		<u>l</u>						<u></u>	i.		

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CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

1. NMCRIS / 116904	Activity No.:	2. Lead (Spor BLM-CFC		ncy:	3. Lead Agency Report No.:
SURVEY RE	SULTS:				··· 1
Sites discov Previously r Previously r TOTAL SITE Total isolate Total struct MANAGEM	ecorded sites ecorded sites S VISITED: 0 es recorded: 0 ures recorded IENT SUMM	T registered: 0 s revisited (site a not relocated) Non-sele 1 (new and previou ARY: During th	(site update fo ective isolate usly recorded, in the current in	rm required): 0 recording? 🔀 acluding acequias): 0	s were encountered. Therefore, it is I spill reclamation.
SURVEY LA			PORT IS NEGA	TIVE YOU ARE DONE AT THIS POI	<u>NT.</u>
Sites Discov	vered:				
ι -	_A No	Field/Age	ncy No. Eliç	gible? (Y/N, applicable criteria)	· · · · · ·
Previously r	ecorded revis	ited sites:			
•	LA No		ncy No. Elig	ible? (Y/N, applicable criteria)	
L			L		
	G LA NUMBE	R LOG (site form		recorded sites (Site update form	required):
LA No.	Field	Agency No.	LA No.	Field/Agency No.	
		-		ed? Yes 🖾, No 🛄 If no explai	n why:
TESTING &	EXCAVATION	LA NUMBER L	OG (site form r	equired)	
Tested LA r	number(s)	Exc	avated LA nu	umber(s)	

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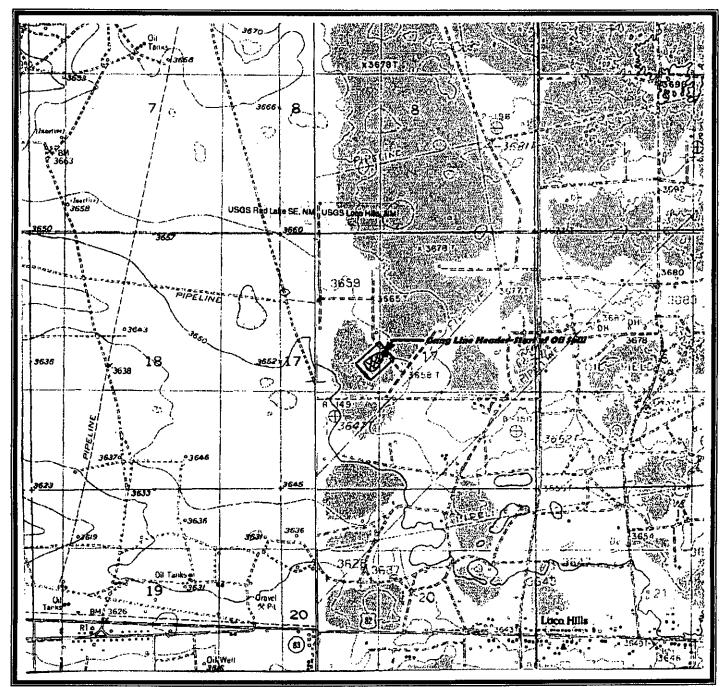


Figure 1: Survey Area COG Operating, LLC The Polaris Federal Number 1-3 Tank Battery Oil Spill Section 17, T.17S, R.30E USGS Loco Hills, NM (Prov. Ed. 1985) 7.5' topo map Eddy County, New Mexico Scale 1:24,000

Southern New Mexico Archaeological Services, Inc.

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APPENDIX C

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Summary Report

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Report Date: March 22, 2010

Work Order: 10031513

Project Location:Lea County, NMProject Name:COG/Polaris Federal 1-3 TBProject Number:114-6400460

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
225658	AH-1 0-1'	soil	2010-03-09	00:00	2010-03-12
225659	AH-1 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225660	AH-2 0-1'	soil	2010-03-09	00:00	2010-03-12
225661	AH-2 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225662	AH-2 2-2.5'	soil	2010-03-09	00:00	2010-03-12
225663	AH-2 3-3.5'	soil	2010-03-09	00:00	2010-03-12
225664	AH-3 0-1'	soil	2010-03-09	00:00	2010-03-12
225665	AH-3 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225666	AH-3 2-2.5'	soil	2010-03-09	00:00	2010-03-12
225667	AH-3 3-3.5'	soil	2010-03-09	00:00	2010-03-12
225668	AH-4 0-1'	soil	2010-03-09	00:00	2010-03-12
225669	AH-4 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225670	AH-5 0-1'	soil	2010-03-09	00:00	2010-03-12
225671	AH-6 05'	soil	2010-03-09	00:00	2010-03-12

			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)
225658 - AH-1 0-1'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	162	<1.00
225660 - AH-2 0-1'	< 0.0500	0.236	1.47	3.45	286	251
225664 - AH-3 0-1'	< 0.0100	< 0.0100	< 0.0100	<0.0100	<50.0	<1.00
225668 - AH-4 0-1'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	<50.0	<1.00
225670 - AH-5 0-1'					<50.0	<1.00
225671 - AH-6 05'					<50.0	<1.00

Sample: 225658 - AH-1 0-1'

continued ...

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sample 225658 continued

Param	Flag	Result	Units	RL
Param	\mathbf{Flag}	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 225659	- AH-1 1-1.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		351	mg/Kg	4.00
Sample: 225660	- AH-2 0-1'			
Param	Flag	Result	Units	RL
Chloride		2680	mg/Kg	4.00
	T 1		TT 1.	DI
Param Chloride	Flag	Result <200	Units mg/Kg	RL 4.00
Chloride Sample: 225662	- AH-2 2-2.5'	<200	mg/Kg	4.00
Chloride Sample: 225662 Param			mg/KgUnits	4.00 RL
Chloride Sample: 225662 Param Chloride	- AH-2 2-2.5' Flag	<200 Result	mg/Kg	4.00 RL
Chloride Sample: 225662 Param Chloride Sample: 225663	- AH-2 2-2.5' Flag - AH-2 3-3.5'	<200 Result <200	mg/Kg Units mg/Kg	4.00 RL 4.00
Chloride Sample: 225662 Param Chloride	- AH-2 2-2.5' Flag	<200 Result	mg/KgUnits	4.00 RL 4.00
Chloride Sample: 225662 Param Chloride Sample: 225663	- AH-2 2-2.5' Flag - AH-2 3-3.5' Flag	<200 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL
Chloride Sample: 225662 Param Chloride Sample: 225663 Param Chloride	- AH-2 2-2.5' Flag - AH-2 3-3.5' Flag	<200 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00

Sample: 225665 - AH-3 1-1.5'

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Report Date: Marc	ch 22, 2010	Work Order: 10031513	Page	Page Number: 3 of 3		
Param	Flag	Result	Units	RL		
Chloride		<200	mg/Kg	4.00		
Sample: 225666	- AH-3 2-2.5'					
Param	\mathbf{F} lag	Result	Units	\mathbf{RL}		
Chloride		<200	mg/Kg	4.00		
Sample: 225667	- AH-3 3-3.5'					
Param	Flag	Result	Units	\mathbf{RL}		
Chloride		<200	mg/Kg	4.00		
Sample: 225668						
Param Chloride	Flag	Result	Units mg/Kg	RL 4.00		
Sample: 225669	- AH-4 1-1 5'					
Param	Flag	Result	Units	RL		
Chloride	1 iag	<200	mg/Kg	4.00		
Sample: 225670	- AH-5 0-1'					
Param	Flag	Result	Units	\mathbf{RL}		
Chloride		<200	mg/Kg	4.00		
Sample: 225671	- AH-6 05'					
Param	Flag	Result	Units	\mathbf{RL}		

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WBENC: 237019

HUB:1752439743100-86536NCTRCAWFWB38444Y0909

Certifications

DBE: VN 20657

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

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX, 79705

Report Date: March 22, 2010

Work Order: 10031513

Project Location:Lea County, NMProject Name:COG/Polaris Federal 1-3 TBProject Number:114-6400460

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
225658	AH-1 0-1'	soil	2010-03-09	00:00	2010-03-12
225659	AH-1 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225660	AH-2 0-1'	soil	2010-03-09	00:00	2010-03-12
225661	AH-2 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225662	AH-2 2-2.5'	soil	2010-03-09	00:00	2010-03-12
225663	AH-2 3-3.5'	soil	2010-03-09	00:00	2010-03-12
225664	AH-3 0-1'	soil	2010-03-09	00:00	2010-03-12
225665	AH-3 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225666	AH-3 2-2.5'	soil	2010-03-09	00:00	2010-03-12
225667	AH-3 3-3.5'	soil	2010-03-09	00:00	2010-03-12

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
225668	AH-4 0-1'	soil	2010-03-09	00:00	2010-03-12
225669	AH-4 1-1.5'	soil	2010-03-09	00:00	2010-03-12
225670	AH-5 0-1'	soil	2010-03-09	00:00	2010-03-12
225671	AH-6 05'	soil	2010-03-09	00:00	2010-03-12

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

Michael about

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

Standard Flags

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

Case Narrative

Samples for project COG/Polaris Federal 1-3 TB were received by TraceAnalysis, Inc. on 2010-03-12 and assigned to work order 10031513. Samples for work order 10031513 were received intact at a temperature of 6.0 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	58507	2010-03-17 at 11:00	68370	2010-03-17 at 13:22
Chloride (Titration)	SM 4500-Cl B	58451	2010-03-16 at 12:46	68375	2010-03-18 at 15:19
Chloride (Titration)	SM 4500-Cl B	58452	2010-03-16 at 12:46	68376	2010-03-18 at 15:20
Chloride (Titration)	SM 4500-Cl B	58453	2010-03-16 at 12:47	68450	2010-03-22 at 11:08
TPH DRO - NEW	Mod. 8015B	58487	2010-03-17 at 14:37	68350	2010-03-17 at 14:37
TPH GRO	S 8015B	58507	2010-03-17 at 11:00	68371	2010-03-17 at 13:51

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 10031513 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.

Analytical Report

Sample: 225658 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 68370 58507		Analytical Method: Date Analyzed: Sample Preparation:	S 8021B 2010-03-17 2010-03-17	Prep Method: Analyzed By: Prepared By:	AG
Parameter		Flag	RL Result	Units	Dilution	\mathbf{RL}
rarameter		riag	nesun	Units	DITUTION	ռե

I UI UIIICUCI	TINE	rocsuru	Omus	1	2111101011	LUD
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
		1		abike	rercent	necoverv

Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Triffuorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.10	mg/Kg	1	2.00	105	43.1 - 158.4

Sample: 225658 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Chloride (Titration) 68375	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-03-18 2010-03-16	Prep Method: Analyzed By: Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		<200	mg/Kg	50	4.00

Sample: 225658 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Met	hod: Mod. 8015B	Prep Method:	N/A
QC Batch:	68350	Date Analyzed:	2010-03-17	Analyzed By:	kg
Prep Batch:	58487	Sample Prepara	ation: 2010-03-17	Prepared By:	kg
		RL			
Parameter	Flag	Result	Units	Dilution -	\mathbf{RL}
DRO	· ·	162	mg/Kg	1	50.0

Report Date 114-6400460	:: March 22, 201	10	Work Order: 10031513 COG/Polaris Federal 1-3 TB				Page Number: 5 of 22 Lea County, NM		
Surrogate	Flag	Result	Units	Dilu	tion	Spike Amount	Percent Recovery	I	Recovery Limits
n-Tricosane	·····	122	mg/Kg	1		100	122		70 - 130
Sample: 22	5658 - AH-1 (0-1'							
Laboratory:	Midland								
Analysis:	TPH GRO		Analytical Me	ethod:	S 8015B		Prep Me	ethod:	S 5035
QC Batch:	68371		Date Analyze	ed:	2010-03-17		Analyze	d By:	AG
Prep Batch:	58507		Sample Prepa	tration:	2010-03-17	,	Prepare	d By:	AG
			\mathbf{RL}						
Parameter	F	lag	Result		Units		Dilution		RI
GRO			<1.00		mg/Kg		1		1.00
Surrogate		Flag	Result U	Units	Dilution	Spike Amount	Percent Recovery		ecovery Limits
Triffuorotolue	ene (TFT)		2.89 m	ng/Kg	1	2.00	144	65	3 - 155
					1	2.00	132	61 '	7 - 131.3
Sample: 22	obenzene (4-BE 5659 - AH-1		<u>2.65</u> m	ng/Kg	1	2.00	132	01.4	101.1
Sample: 22 Laboratory: Analysis: QC Batch:		L-1.5'	2.65 m Analytica Date Ana Sample P	l Method	d: SM 45 2010-0	00-Cl B 3-18	Prep I Analy	Method zed By red By	l: N/A : AR
	5659 - AH-1 Midland Chloride (Titr 68375	L-1.5'	Analytica Date Ana	l Method	d: SM 45 2010-0	00-Cl B 3-18	Prep I Analy	Methoc zed By	l: N/A : AR
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	5659 - AH-1 : Midland Chloride (Titr 68375 58451	L-1.5'	Analytica Date Ana Sample P	l Method	d: SM 45 2010-0	00-Cl B 3-18	Prep I Analy	Methoc zed By	I: N/A : AR
Sample: 22 Laboratory: Analysis: QC Batch:	5659 - AH-1 : Midland Chloride (Titr 68375 58451	L-1.5' ation)	Analytica Date Ana Sample P RL	l Method	d: SM 450 2010-0 on: 2010-0	00-Cl B 3-18	Prep I Analy Prepa	Methoc zed By	l: N/A : AR : AR
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride	5659 - AH-1 : Midland Chloride (Titr 68375 58451	L-1.5' ation)	Analytica Date Ana Sample P RL Result	l Method lyzed: reparatio	d: SM 450 2010-0 on: 2010-0 Units	00-Cl B 3-18	Prep I Analy Prepa Dilution	Methoc zed By red By ethod: d By:	l: N/A : AR : AR RI
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	5659 - AH-1 : Midland Chloride (Titr 68375 58451 F 5660 - AH-2 (Midland BTEX 68370 58507	L-1.5' ation) lag	Analytica Date Ana Sample P RL Result 351 Analytical Met Date Analyzed	l Method lyzed: reparatio	d: SM 450 2010-0. on: 2010-0. Units mg/Kg S 8021B 2010-03-17 2010-03-17	00-Cl B 3-18	Prep I Analy Prepa Dilution 50 Prep Me Analyze Prepared	Methoc zed By red By ethod: d By:	I: N/A : AR : AR RI 4.00 S 5035 AG AG
Sample: 22: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22: Laboratory: Analysis: QC Batch: Prep Batch:	5659 - AH-1 : Midland Chloride (Titr 68375 58451 F 5660 - AH-2 (Midland BTEX 68370 58507	L-1.5' ation)	Analytica Date Ana Sample P RL Result 351 Analytical Met Date Analyzed Sample Prepar RL Result	l Method lyzed: reparatio	d: SM 450 2010-0 on: 2010-0 <u>Units</u> mg/Kg S 8021B 2010-03-17 2010-03-17 Units	00-Cl B 3-18	Prep I Analy Prepa Dilution 50 Prep Me Analyze Prepared Dilution	Methoc zed By red By ethod: d By:	I: N/A : AR : AR : AR RI 4.00 4.00 4.00 AG AG AG RI
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Benzene	5659 - AH-1 : Midland Chloride (Titr 68375 58451 F 5660 - AH-2 (Midland BTEX 68370 58507	L-1.5' ation) lag	Analytica Date Ana Sample P RL Result 351 Analytical Met Date Analyzed Sample Prepar RL Result <0.0500	l Method lyzed: reparatio	d: SM 450 2010-0 on: 2010-0 Units mg/Kg S 8021B 2010-03-17 2010-03-17 Units mg/Kg	00-Cl B 3-18	Prep I Analy Prepa Dilution 50 Prep Me Analyze Prepared Dilution 5	Methoc zed By red By ethod: d By:	I: N/A : AR : AR : RI 4.00 4.00 4.00 4.00 4.00 4.00 8.00 8.00
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	5659 - AH-1 : Midland Chloride (Titr 68375 58451 F 5660 - AH-2 (Midland BTEX 68370 58507	L-1.5' ation) lag	Analytica Date Ana Sample P RL Result 351 Analytical Met Date Analyzed Sample Prepar RL Result	l Method lyzed: reparatio	d: SM 450 2010-0 on: 2010-0 <u>Units</u> mg/Kg S 8021B 2010-03-17 2010-03-17 Units	00-Cl B 3-18	Prep I Analy Prepa Dilution 50 Prep Me Analyze Prepared Dilution 5 5	Methoc zed By red By ethod: d By:	I: N/A : AR : AR : AR RI 4.00 4.00 4.00 6.0100 0.0100 0.0100
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Benzene	5659 - AH-1 : Midland Chloride (Titr 68375 58451 F 5660 - AH-2 (Midland BTEX 68370 58507	L-1.5' ation) lag	Analytica Date Ana Sample P RL Result 351 Analytical Met Date Analyzed Sample Prepar RL Result <0.0500	l Method lyzed: reparatio	d: SM 450 2010-0 on: 2010-0 Units mg/Kg S 8021B 2010-03-17 2010-03-17 Units mg/Kg	00-Cl B 3-18	Prep I Analy Prepa Dilution 50 Prep Me Analyze Prepared Dilution 5	Methoc zed By red By ethod: d By:	I: N/A : AR : AR : AR RI 4.00 4.00 4.00 AG AG AG RI

¹High surrogate recovery. Sample non-detect, result bias high.

114-6400460	e: March 22, 201	.0	Work Order: 10031513 COG/Polaris Federal 1-3 TB				Page Number: 6 of 22 Lea County, NM			
Surrogate		Flag	Flag Result Uni		Dilution	Spike Amount	Percent Recovery	Lin	Recovery Limits	
Trifluorotolu	ene (TFT)		4.56	mg/Kg	5	5.00	91	60.4 -	141.2	
4-Bromofluo	robenzene (4-BF	<u>`B)</u>	6.14	mg/Kg	5	5.00	123	43.1 -	158.4	
Sample: 22	5660 - AH-2 0)-1'								
Laboratory:	Midland									
Analysis:	Chloride (Titra	ation)	Analy	tical Method:	SM 4500)-Cl B	Prep I	Method:	N/A	
QC Batch:	68375		Date	Analyzed:	2010-03-	18	Analy	zed By:	\mathbf{AR}	
Prep Batch:	58451		Samp	le Preparation	n: 2010-03-	16	Prepa	red By:	AR	
			\mathbf{RL}							
Parameter	FI	ag	\mathbf{Result}		Units		Dilution		\mathbf{RI}	
Chloride			2680		mg/Kg	•	100	•	4.00	
- Laboratory: Analysis:	5660 - AH-2 0 Midland TPH DRO - N 68250			rtical Method:			-	Method:		
Laboratory: Analysis: QC Batch:	Midland		Date	rtical Method: Analyzed: le Preparatior	2010-03-	17	Analy	Method: zed By: red By:	N/A kg kg	
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 68350 58487	IEW	Date Samp RL	Analyzed:	2010-03- n: 2010-03-	17	Analy: Prepa	zed By:	kg kg	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland TPH DRO - N 68350 58487		Date Samp RL Result	Analyzed:	2010-03- n: 2010-03- Units	17	Analy: Prepar Dilution	zed By:	kg kg RI	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland TPH DRO - N 68350 58487	IEW	Date Samp RL	Analyzed:	2010-03- n: 2010-03-	17	Analy: Prepa	zed By:	kg kg RI	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland TPH DRO - N 68350 58487	IEW	Date Samp RL Result	Analyzed:	2010-03- n: 2010-03- Units mg/Kg	17	Analy: Prepar Dilution	zed By: red By:	kg kg RI 50.0	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate	Midland TPH DRO - N 68350 58487	IEW	Date Samp RL Result	Analyzed:	2010-03- n: 2010-03- Units mg/Kg	17 17	Analy: Prepar Dilution 1 Percent Recovery	zed By: red By: Rec	kg kg RI 50.0 covery mits	
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate n-Tricosane	Midland TPH DRO - N 68350 58487 Fl	IEW ag	Date Samp RL Result 286	Analyzed: le Preparatior	2010-03- n: 2010-03- Units mg/Kg	17 17 Spike	Analy: Prepar Dilution 1 Percent	zed By: red By: Rec	kg kg RI 50.0	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate n-Tricosane	Midland TPH DRO - N 68350 58487 Fl	IEW ag Result 129	Date Samp RL Result 286 Units	Analyzed: le Preparatior Dilutic	2010-03- n: 2010-03- Units mg/Kg	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery	zed By: red By: Rec	kg kg RI 50.0 covery mits	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate n-Tricosane	Midland TPH DRO - N 68350 58487 Flag	IEW ag Result 129	Date Samp RL Result 286 Units	Analyzed: le Preparatior Dilutic	2010-03- n: 2010-03- Units mg/Kg	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery	zed By: red By: Rec	kg kg RI 50.0 covery mits	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate n-Tricosane Sample: 22	Midland TPH DRO - N 68350 58487 Flag 5660 - AH-2 0	IEW ag Result 129	Date Samp RL Result 286 Units mg/Kg	Analyzed: le Preparation Dilutio	2010-03- n: 2010-03- Units mg/Kg	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery	zed By: red By: Rec Lin 70	kg kg RI 50.0 covery mits	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate n-Tricosane Sample: 22 Laboratory: Analysis:	Midland TPH DRO - N 68350 58487 Flag 5660 - AH-2 0 Midland TPH GRO 68371	IEW ag Result 129	Date Samp RL Result 286 Units mg/Kg	Analyzed: le Preparation Dilutio	2010-03- 2010-03- Units mg/Kg on A 8 8015B 2010-03-17	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery 129 Prep Me Analyzed	zed By: red By: Rec Li: 70 ethod: S d By: A	kg RI 50.1 50.1 50.3 5033	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate n-Tricosane Sample: 22 Laboratory: Analysis: QC Batch:	Midland TPH DRO - N 68350 58487 Fl Flag 5660 - AH-2 0 Midland TPH GRO	IEW ag Result 129	Date Samp RL Result 286 Units mg/Kg Analytica Date Ana	Analyzed: le Preparation Dilutio	2010-03- 1: 2010-03- Units mg/Kg on A 5 8015B	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery 129 Prep Me	zed By: red By: Rec Li: 70 ethod: S d By: A	kg RJ 50. over 130 503	
Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: <u>Parameter</u> DRO Surrogate n-Tricosane Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 68350 58487 Flag 5660 - AH-2 0 Midland TPH GRO 68371 58507	ag Result 129	Date Samp RL Result 286 Units mg/Kg Analytica Date Ana Sample P RL	Analyzed: le Preparation Dilutio	2010-03- 2010-03- Units mg/Kg on A 8 8015B 2010-03-17 2010-03-17	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery 129 Prep Me Analyzee Prepared	zed By: red By: Rec Li: 70 ethod: S d By: A	kg kg RI 50.0 sovery mits - 130 5033 G G	
Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate 1-Tricosane Sample: 22 Laboratory: Analysis: QC Batch:	Midland TPH DRO - N 68350 58487 Flag 5660 - AH-2 0 Midland TPH GRO 68371 58507	IEW ag Result 129	Date Samp RL Result 286 Units mg/Kg Analytica Date Ana Sample Pi	Analyzed: le Preparation Dilutio	2010-03- 2010-03- Units mg/Kg on A 8 8015B 2010-03-17	17 17 Spike mount	Analy: Prepar Dilution 1 Percent Recovery 129 Prep Me Analyzed	zed By: red By: Rec Li: 70 ethod: S d By: A	kg R] 50. - 130 - 130	

Report Date 114-6400460	e: March 22, 2010		Work Order: 10031513 COG/Polaris Federal 1-3 TB				Page Number: 7 of 22 Lea County, NM		
Surrogate		Flag	Result	Units I	Dilution	Spike Amount	,	Lin	overy nits
Trifluorotolu		2	6.74	mg/Kg	5	5.00	135		- 155
4-Bromofluoi	robenzene (4-BFB)	2	8.54	mg/Kg	5	5.00	171	61.7 -	131.1
Sample: 22	5661 - AH-2 1-1.5'								
Laboratory:	Midland								
Analysis:	Chloride (Titration)		Analy	tical Method:	SM 4500)-Cl B	Prep l	Method:	N/A
QC Batch:	68376		Date	Analyzed:	2010-03-	-18	Analy	zed By:	AR
Prep Batch:	58452		Samp	le Preparation	: 2010-03-	-16	Prepa	red By:	AR
			\mathbf{RL}		·				
Parameter	Flag		Result		Units		Dilution		RL
Chloride			<200 r		mg/Kg		50		4.00
Sample: 22	5662 - AH-2 2-2.5'								
Sample: 22 Laboratory: Analysis: QC Batch:	5662 - AH-2 2-2.5' Midland Chloride (Titration) 68376 58452		Analy Date	tical Method: Analyzed: le Preparation	SM 4500 2010-03-	-18	Analy	Method: zed By: red By:	N/A AR AR
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 68376 58452		Analy Date Samp RL	Analyzed:	SM 4500 2010-03- : 2010-03-	-18	Analy Prepa	zed By:	AR AR
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland Chloride (Titration) 68376		Analy Date Samp RL Result	Analyzed:	SM 4500 2010-03- : 2010-03- Units	-18	Analy Prepa Dilution	zed By:	AR AR RL
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland Chloride (Titration) 68376 58452		Analy Date Samp RL	Analyzed:	SM 4500 2010-03- : 2010-03-	-18	Analy Prepa	zed By:	AR AR RL
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride	Midland Chloride (Titration) 68376 58452		Analy Date Samp RL Result	Analyzed:	SM 4500 2010-03- : 2010-03- Units	-18	Analy Prepa Dilution	zed By:	AR AR RL
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22	Midland Chloride (Titration) 68376 58452 Flag 5663 - AH-2 3-3.5'		Analy Date Samp RL Result	Analyzed:	SM 4500 2010-03- : 2010-03- Units	-18	Analy Prepa Dilution	zed By:	AR AR RL
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride	Midland Chloride (Titration) 68376 58452 Flag 5663 - AH-2 3-3.5'		Analy Date Samp RL Result <200	Analyzed:	SM 4500 2010-03- : 2010-03- Units mg/Kg SM 4500	-18 -16 	Analy Prepa Dilution 50 Prep I	zed By: red By:	AR AR RL 4.00
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 68376 58452 Flag 5663 - AH-2 3-3.5' Midland Chloride (Titration) 68376		Analy Date Samp RL Result <200 Analy Date	Analyzed: le Preparation vical Method: Analyzed:	SM 4500 2010-03- : 2010-03- Units mg/Kg SM 4500 2010-03-	-18 -16 	Analy Prepa Dilution 50 Prep I Analy	zed By: red By: 	AR AR RL 4.00
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 68376 58452 Flag 5663 - AH-2 3-3.5' Midland Chloride (Titration)		Analy Date Samp RL Result <200 Analy Date	Analyzed: le Preparation	SM 4500 2010-03- : 2010-03- Units mg/Kg SM 4500 2010-03-	-18 -16 	Analy Prepa Dilution 50 Prep I Analy	zed By: red By:	AR AR RL 4.00
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Chloride Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 68376 58452 Flag 5663 - AH-2 3-3.5' Midland Chloride (Titration) 68376 58452		Analy Date Samp RL Result <200 Analy Date Samp RL	Analyzed: le Preparation vical Method: Analyzed:	SM 4500 2010-03- 2010-03- Units mg/Kg SM 4500 2010-03- 2010-03-	-18 -16 	Analy Prepa 50 Prep I Analy Prepa	zed By: red By: 	AR AR RL 4.00 N/A AR AR
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 68376 58452 Flag 5663 - AH-2 3-3.5' Midland Chloride (Titration) 68376		Analy Date Samp RL Result <200 Analy Date Samp	Analyzed: le Preparation vical Method: Analyzed:	SM 4500 2010-03- : 2010-03- Units mg/Kg SM 4500 2010-03-	-18 -16 	Analy Prepa Dilution 50 Prep I Analy	zed By: red By: 	AR AR RL 4.00

²High surrogate recovery due to peak interference.

Report Date: March 22, 2010	Work Order: 10031513	Page Number: 8 of 22
114-6400460	COG/Polaris Federal 1-3 TB	Lea County, NM

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Sample: 225664 - AH-3 0-1'

Analysis: B' QC Batch: 68	idland FEX 370 507		Analytical Date Analy Sample Pr	yzed:	S 8021B 2010-03-17 2010-03-17		Prep Me Analyzee Preparec	By: AG
			RI					
Parameter	Flag		Resul	t	\mathbf{Units}		Dilution	R
Benzene	····· 7····		< 0.010	D	mg/Kg		1	0.010
Toluene			< 0.010	0	mg/Kg		1	0.010
Ethylbenzene			< 0.010	0	mg/Kg		1	0.010
Xylene			< 0.010)	mg/Kg		1	0.010
						Spike	Percent	Recovery
Surrogate		Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene	(TFT)	<u> </u>	1.80	mg/Kg	1	2.00	90	60.4 - 141
4-Bromofluorobe	enzene (4-BFB)		1.96	mg/Kg	1	2.00	98	43.1 - 158

Sample: 225664 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 68376 58452	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-03-18 2010-03-16	Prep Method: Analyzed By: Prepared By:	AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride	· · · · · · · · · · · · · · · · · · ·	<200 1	ng/Kg	50 .	4.00

Sample: 225664 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 68350 58487	NEW	Date An	alyzed: 2	4od. 8015B 010-03-17 010-03-17	Prep M Analyz Prepare	
Parameter DRO	F	lag	RL Result <50.0		nits /Kg	Dilution 1	RL 50.0
Surrogate n-Tricosane	Flag	Result 94.0	Units mg/Kg	Dilution 1	Spike Amount 100	Percent Recovery 94	Recovery Limits 70 - 130

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Report Date: March 22, 2010 114-6400460			Work Order: 10031513 COG/Polaris Federal 1-3 TB				Page Number: 9 of 22 Lea County, NM		
Sample: 22	25664 - AH-3 0-1'								
Laboratory:	Midland								
Analysis:	TPH GRO		Analytica	l Method:	S 8015B		Prep M	ethod: S	5 5035
QC Batch: 68371			Date Analyzed: 2		2010-03-17		Analyze	ed By: A	AG
Prep Batch:	58507		Sample Preparation: 2		2010-03-17		Prepared By:		AG
			RL						
Parameter	Flag		Result		Units		Dilution		\mathbf{RI}
GRO	······································		<1.00		mg/Kg		1		1.0
						Spike	Percent	Reco	overy
Surrogate		Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery		nits
Trifluorotolu	ene (TFT)		2.67	mg/Kg	1	2.00	134		- 155
	robenzene (4-BFB)		2.48	mg/Kg	1	2.00	124	61.7 -	
•	Midland		·						
Analysis: QC Batch:	Midland Chloride (Titration) 68376 58452	•	Date	tical Metho Analyzed: le Preparati	2010-03-3	18	Analy	Method: zed By: red By:	N/A AR AR
Laboratory: Analysis: QC Batch: Prep Batch:	Chloride (Titration) 68376 58452		Date Samp RL	Analyzed:	2010-03- on: 2010-03-	18	Analy Prepa	zed By:	AR AR
Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 68376	•	Date Samp RL Result	Analyzed:	2010-03- on: 2010-03- Units	18	Analy Prepa Dilution	zed By:	AR AR RI
Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 68376 58452		Date Samp RL	Analyzed:	2010-03- on: 2010-03-	18	Analy Prepa	zed By:	AR AR RI
Analysis: QC Batch: Prep Batch: Parameter Chloride	Chloride (Titration) 68376 58452		Date Samp RL Result	Analyzed:	2010-03- on: 2010-03- Units	18	Analy Prepa Dilution	zed By:	AR AR RI
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory:	Chloride (Titration) 68376 58452 Flag 5666 - AH-3 2-2.5' Midland		Date Samp RL Result <200	Analyzed: le Preparati	2010-03- on: 2010-03- Units mg/Kg	18 16	Analy Prepa Dilution 50	zed By: red By:	AR AR RI 4.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis:	Chloride (Titration) 68376 58452 Flag 5666 - AH-3 2-2.5' Midland Chloride (Titration)		Date Samp RL Result <200	Analyzed: le Preparati	2010-03- on: 2010-03- Units mg/Kg d: SM 4500	18 16 -CI B	Analy Prepa Dilution 50 Prep I	zed By: red By:	AR AR RI 4.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	Chloride (Titration) 68376 58452 Flag 5666 - AH-3 2-2.5' Midland Chloride (Titration) 68376		Date Samp RL Result <200 Analy Date	Analyzed: le Preparati	2010-03- on: 2010-03- Units mg/Kg d: SM 4500 2010-03-	18 16 -CI B 18	Analy Prepa Dilution 50 Prep I Analy	zed By: red By: Method: zed By:	AR AR RI 4.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	Chloride (Titration) 68376 58452 Flag 5666 - AH-3 2-2.5' Midland Chloride (Titration)		Date Samp RL Result <200 Analy Date	Analyzed: le Preparati	2010-03- on: 2010-03- Units mg/Kg d: SM 4500 2010-03-	18 16 -CI B 18	Analy Prepa Dilution 50 Prep I Analy	zed By: red By:	AR AR RI 4.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	Chloride (Titration) 68376 58452 Flag 5666 - AH-3 2-2.5' Midland Chloride (Titration) 68376 58452		Date Samp RL Result <200 Analy Date Samp RL	Analyzed: le Preparati	2010-03- on: 2010-03- Units mg/Kg d: SM 4500 2010-03- on: 2010-03-	18 16 -CI B 18	Analy Prepa <u>50</u> Prep I Analy Prepa	zed By: red By: Method: zed By:	AR RI 4.00 N/A AR AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	Chloride (Titration) 68376 58452 Flag 5666 - AH-3 2-2.5' Midland Chloride (Titration) 68376		Date Samp RL Result <200 Analy Date Samp	Analyzed: le Preparati	2010-03- on: 2010-03- Units mg/Kg d: SM 4500 2010-03-	18 16 -CI B 18	Analy Prepa Dilution 50 Prep I Analy	zed By: red By: Method: zed By:	AR AR RI 4.00

Sample: 225667 - AH-3 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68376	Date Analyzed:	2010-03-18	Analyzed By:	AR
Prep Batch:	58452	Sample Preparation:	2010-03-16	Prepared By:	AR

Report Date 114-6400460	e: March 22, 2010		Work Order: 10031513 COG/Polaris Federal 1-3 TB				Page Number: 10 of Lea County, 1		
Parameter	Flag		RL Result		Units		Dilution		RL
Chloride			<200		mg/Kg		50		4.00
Sample: 22	5668 - AH-4 0-1'								
Laboratory:	Midland								
Analysis:	BTEX		Analytical		S 8021B		Prep Me		S 5035
QC Batch:	68370		Date Analy		2010-03-17		Analyze	-	AG
Prep Batch:	58507		Sample Pre	eparation:	2010-03-17		Prepare	d By:	AG
Parameter	Flor		RL Result		Units		Dilution		RI
Benzene	Flag		<0.0100		mg/Kg		1		0.010
Toluene			<0.0100		mg/Kg		1		0.010
Ethylbenzene	2		< 0.0100		mg/Kg		1		0.0100
Xylene	,		<0.0100		mg/Kg		1		0.0100
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery		covery imits
Trifluorotolu	<u>መስ (ጥዮጥ)</u>	r lag	2.06	mg/Kg	1	2.00	103		- 141.2
	obenzene (4-BFB)		2.00 2.24	mg/Kg	1	2.00 2.00	112		-141.2
- Laboratory: Analysis:	5668 - AH-4 0-1' Midland Chloride (Titration) 68376			tical Meth Analyzed:	od: SM 4500 2010-03-		Analy	Method zed By:	
-				-		16	Prepa		AR
-	58452		Samp	le Prepara		16	Prepa	red By:	AR
Prep Batch:	58452		Samp. RL	-		16	Prepa Dilution		AR
QC Batch: Prep Batch: Parameter Chloride			Samp	-	tion: 2010-03-	16			
Prep Batch: Parameter Chloride	58452		Samp RL Result <200 Analy Date	-	tion: 2010-03- Units mg/Kg nod: Mod. 80 2010-03-	15B 17	Dilution 50 Prep M Analy:		RL 4.00 : N/A : kg
Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	58452 Flag 5668 - AH-4 0-1' Midland TPH DRO - NEW 68350 58487		Samp RL Result <200 Analy Date Samp RL	tical Meth	tion: 2010-03- Units mg/Kg dod: Mod. 80 2010-03- tion: 2010-03-	15B 17	Dilution 50 Prep M Analy: Prepa	red By: 	RL 4.00 : N/A : kg : kg
Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	58452 Flag 5668 - AH-4 0-1' Midland TPH DRO - NEW 68350		Samp RL Result <200 Analy Date Samp	tical Meth	tion: 2010-03- Units mg/Kg nod: Mod. 80 2010-03-	15B 17	Dilution 50 Prep M Analy:	red By: 	RL 4.00 : N/A : kg

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114-6400460	e: March 22, 201)	Work Order: 10031513 COG/Polaris Federal 1-3 TB				Page Number: 11 of 22 Lea County, NM			
Surrogate	Flag	Result	Units	Diluti	on	Spike Amount	Percent Recovery		ecovery Limits
n-Tricosane		85.0	mg/Kg	1	· · · · · · · · · · · · · · · · · · ·	100	85	7() - 130
Some 10, 90	1660 AT 40	. 1)							
-	25668 - AH-4 0	-1							
Laboratory: Analysis:	Midland TPH GRO		Analistica	l Method:	S 8015B		Prep Me	that	S 503
QC Batch:	68371		Date Ana		2010-03-17				3 303 AG
-				-	2010-03-17 2010-03-17		-	•	
Prep Batch:	58507		Sample P	reparation:	2010-03-17		Prepare	а Бу:	AG
D			RL		TT 1 .		D .1		-
Parameter	F1	ag	Result		Units		Dilution		RI
GRO			<1.00		mg/Kg		1		1.0
						Spike	Percent	Rec	overy
Surrogate		Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery		mits
Trifluorotolu	ene (TFT)		3.06	mg/Kg	1	2.00	153	65.3	- 155
4-Bromofluo	robenzene (4-BF	B) ³	2.83	malka	1	2.00	142	61 7	- 131.3
	<u></u>		2.00	mg/Kg		2.00	142	01.1	- 101.
Sample: 22 Laboratory: Analysis: QC Batch:	5 669 - AH-4 1 Midland Chloride (Titra 68376	-1.5'	Analy Date Samp	tical Method: Analyzed: le Preparation	SM 450 2010-03	00-Cl B 3-18	Prep M Analyz	Method: zed By: red By:	N/A
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	25669 - AH-4 1 Midland Chloride (Titra 68376 58452	-1.5' ation)	Analy Date Samp RL	tical Method: Analyzed:	SM 456 2010-0 n: 2010-0	00-Cl B 3-18	Prep M Analyz Prepar	Method: zed By:	N/A AR AR
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	25669 - AH-4 1 Midland Chloride (Titra 68376 58452	-1.5'	Analy Date Samp	tical Method: Analyzed:	SM 450 2010-03	00-Cl B 3-18	Prep M Analyz	Method: zed By:	N/A AR AR RI
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	25669 - AH-4 1 Midland Chloride (Titra 68376 58452	-1.5' ation) ag	Analy Date Samp RL Result <200 Analy Date	tical Method: Analyzed:	SM 450 2010-0 1: 2010-0 Units mg/Kg SM 450 2010-0	00-Cl B 3-18 3-16 	Prep M Analyz Prepar Dilution 50 Prep M Analyz	Method: zed By:	N/A AR AR RI 4.0
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Chloride Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch:	25669 - AH-4 1 Midland Chloride (Titra 68376 58452 Fl 25670 - AH-5 0 Midland Chloride (Titra 68376 58452	-1.5' ation) ag -1' ation)	Analy Date Samp RL Result <200 Analy Date Samp RL	tical Method: Analyzed: le Preparation 	SM 456 2010-0 1: 2010-0 Units mg/Kg SM 456 2010-0 1: 2010-0	00-Cl B 3-18 3-16 	Prep M Analyz Prepar Dilution 50 Prep M Analyz Prepar	Method: zed By: red By: 	N/A AR AR AR 4.00
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 22 Laboratory: Analysis: QC Batch:	25669 - AH-4 1 Midland Chloride (Titra 68376 58452 Fl 25670 - AH-5 0 Midland Chloride (Titra 68376	-1.5' ation) ag -1' ation)	Analy Date Samp RL Result <200 Analy Date Samp	tical Method: Analyzed: le Preparation 	SM 450 2010-0 1: 2010-0 Units mg/Kg SM 450 2010-0	00-Cl B 3-18 3-16 	Prep M Analyz Prepar Dilution 50 Prep M Analyz	Method: zed By: red By: 	N/A AR AR RI 4.00

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³High surrogate recovery. Sample non-detect, result bias high.

Report Date: March 22, 2010	Work Order: 10031513	Page Number: 12 of 22
114-6400460	COG/Polaris Federal 1-3 TB	Lea County, NM

Sample: 225670 - AH-5 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 68350 58487	NEW	Date	tical Metho Analyzed: le Preparati	2010-0	3-17	Analy	Method: N/A zed By: kg red By: kg
D			RL		TT 1 ,		D 11	DI
Parameter	F	lag	Result		Units		Dilution	
DRO			< 50.0		mg/Kg		1	50.0
Surrogate	Flag	Result	Units	Dilu	tion	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		88.0	mg/Kg]	l	100	88	70 - 130
Laboratory: Analysis:	5670 - AH-5 (Midland TPH GRO	0-1'	Analytical		S 8015B		Prep Me	
Laboratory: Analysis: QC Batch:	Midland	0-1'	Date Ana		S 8015B 2010-03-17 2010-03-17		Prep Me Analyzed Prepared	d By: AG
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 68371 58507	0-1' lag	Date Anai Sample Pr	lyzed:	2010-03-17		Analyzed	d By: AG
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland TPH GRO 68371 58507		Date Anai Sample Pr RL	lyzed:	2010-03-17 2010-03-17		Analyzed Prepared	d By: AG d By: AG
Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO	Midland TPH GRO 68371 58507	lag	Date Ana Sample Pr RL Result	lyzed:	2010-03-17 2010-03-17 Units		Analyzed Prepared Dilution 1 Percent	d By: AG d By: AG RI
Sample: 22 Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO Surrogate Trifluorotolu	Midland TPH GRO 68371 58507 F		Date Anal Sample Pr RL Result <1.00	lyzed: reparation:	2010-03-17 2010-03-17 Units mg/Kg	, Spike	Analyzed Prepared Dilution 1	d By: AG d By: AG RI 1.00 Recovery

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 68450 58453	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-03-22 2010-03-17	Prep Method: Analyzed By: Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Report Date: March 22, 2010	Work Order: 10031513	Page Number: 13 of 22
114-6400460	COG/Polaris Federal 1-3 TB	Lea County, NM

Sample: 225671 - AH-6 0-.5'

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO 68350 58487	- NEW	Date	tical Metho Analyzed: le Preparat	2010-0	3-17	Analy	Method: zed By: red By:	N/A kg kg
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D (TT • (T 1 1		DI
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			Flag							RL
SurrogateFlagResultUnitsDilutionAmountRecoveryLimitn-Tricosane93.9mg/Kg11009470 - 13Sample: 225671 - AH-6 05'Laboratory:MidlandAnalysis:TPH GROAnalytical Method:S 8015BPrep Method:S 50QC Batch:68371Date Analyzed:2010-03-17Analyzed By:AGPrep Batch:58507Sample Preparation:2010-03-17Prepared By:AGParameterFlagResultUnitsDilutionFGRO<1.00	DRO			< 50.0		mg/Kg		<u>I</u>		50.0
n-Tricosane 93.9 mg/Kg 1 100 94 70 - 1; Sample: 225671 - AH-6 05' Laboratory: Midland Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 50 QC Batch: 68371 Date Analyzed: 2010-03-17 Analyzed By: AG Prep Batch: 58007 Sample Preparation: 2010-03-17 Prepared By: AG Parameter Flag Result Units Dilution F GRO <1.00							Spike	Percent	Rec	covery
Sample: 225671 - AH-6 05' Laboratory: Midland Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 50 QC Batch: 68371 Date Analyzed: 2010-03-17 Analyzed By: AG Prep Batch: 58507 Sample Preparation: 2010-03-17 Prepared By: AG Parameter Flag Result Units Dilution F GRO <1.00	Surrogate	Flag	\mathbf{Result}	Units	Dilu	ition	Amount	Recovery	Li	imits
Laboratory:Midland Analysis:TPH GRO Date Analyzed:Analytical Method:S 8015B 2010-03-17Prep Method:S 50 QCQC Batch:68371 58507Date Analyzed:2010-03-17 2010-03-17Analyzed By:AGPrep Batch:58507Sample Preparation:2010-03-17 2010-03-17Prepared By:AGParameterFlagResultUnitsDilutionFGRO<1.00	n-Tricosane		93.9	mg/Kg		1	100	94	70	- 130
ParameterFlagResultUnitsDilutionFGRO<1.00mg/Kg11.1SurrogateFlagResultUnitsDilutionAmountRecoveryLimitsTrifluorotoluene (TFT)2.50mg/Kg12.0012565.3 - 154-Bromofluorobenzene (4-BFB)2.30mg/Kg12.0011561.7 - 131Method Blank (1)QC Batch:68350Date Analyzed:2010-03-17Analyzed By:kPrep Batch:58487QC Preparation:2010-03-17Prepared By:kMDLMDLSpikePercentRecoverySpikePercentQCSpikeFlagResultUnitsRDRO<5.86mg/Kg5SurrogateFlagResultUnitsDilutionKurogateFlagResultUnitsDilutionAmount	Laboratory: Analysis: QC Batch:	Midland TPH GRO 68371	6 05'	Date Ana	lyzed:	2010-03-17		Analyze	d By: A	
SurrogateFlagResultUnitsDilutionAmountRecoveryLimitsTrifluorotoluene (TFT)2.50mg/Kg12.0012565.3 - 154-Bromofluorobenzene (4-BFB)2.30mg/Kg12.0011561.7 - 131Method Blank (1)QC Batch:683500125683500QC Batch:683500Date Analyzed:2010-03-17Analyzed By:kPrep Batch:58487QC Preparation:2010-03-17Prepared By:kMDL000565QC DrogateFlagResultUnitsRecovery5SurrogateFlagResultUnitsDilutionAmountRecoveryLimits			Flag	Result						RL 1.00
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Surrogate		Flag	Result	Units	Dilution	-			-
Method Blank (1) QC Batch: 68350 QC Batch: 68350 Date Analyzed: 2010-03-17 Analyzed By: k Prep Batch: 58487 QC Preparation: 2010-03-17 Prepared By: k MDL Parameter Flag Result Units R DRO <5.86	Trifluorotolue	ene (TFT)	/	2.50	mg/Kg	1	2.00	125	65.3 -	- 155
QC Batch:68350 Prep Batch:Date Analyzed:2010-03-17 2010-03-17Analyzed By:kParameterFlagResultUnitsRDRO<5.86	4-Bromofluor	obenzene (4-	BFB)	2.30	mg/Kg	1	2.00	115	61.7 -	131.1
ParameterFlagResultUnitsRDRO<5.86	QC Batch:	68350	QC Batch: 68350		aration: 2					~
DRO <5.86 mg/Kg 5 Spike Percent Recover Surrogate Flag Result Units Dilution Amount Recovery Limits	Parameter		Flag				11.	nits		RL
Spike Percent Recover Surrogate Flag Result Units Dilution Amount Recovery Limits			L IG							50
		Flag	Result	Units			Spike	Percent		overy
n-Tricosane 77.7 mg/Kg 1 100 78 70 - 13	n-Tricosane	<u>_</u>	77.7	mg/Kg			100	78	_	- 130

Report Date: March 22 114-6400460	2, 2010		/ork Order: 1 /Polaris Fed				mber: 14 of 22 ea County, NM
Method Blank (1)	QC Batch: 68370						
QC Batch: 68370 Prep Batch: 58507		Date An QC Prep	Ŷ	10-03-17 10-03-17		-	rzed By: AG ared By: AG
_			MD				
Parameter	Flag		Resu		Uni		RL
Benzene			< 0.0041		mg/		0.01
Toluene			< 0.0031		mg/		0.01
Ethylbenzene			< 0.0024		mg/	-	0.01
Xylene			< 0.0065	0	mg/	Kg	0.01
rrogate Flag			TT •.	D 11 / 1	Spike	Percent	Recovery
	Flag	Result	Units	Dilution	Amount	Recovery	Limits
1rifluorotoluene (1171) 4-Bromofluorobenzene ((A RED)	1.79 1.74	mg/Kg	1 1	2.00 2.00	90 87	64.9 - 142.7 43.9 - 141.9
4-Dromonuorobenzene ((4-D['B]		mg/Kg		2.00	0/	40.9 - 141.3
QC Batch: 68371		Date An	alyzed: 20	10-03-17		Analy	zed By: AG
•		Date Ana QC Prep	aration: 20	10-03-17 10-03-17			zed By: AG red By: AG
Prep Batch: 58507	Flag		•		Unit	Prepa	red By: AG
Prep Batch: 58507 Parameter	Flag		aration: 20 MDL		Unit mg/I	Prepa	red By: AG
Prep Batch: 58507 Parameter GRO		QC Prep	aration: 20 MDL Result <0.396	10-03-17	mg/I Spike	Prepa s Kg Percent	red By: AG RL Recovery
Prep Batch: 58507 Parameter GRO Surrogate	Flag	QC Prep	aration: 20 MDL Result <0.396 Units	10-03-17 Dilution	mg/I Spike Amount	Prepa s Kg Percent Recovery	red By: AG RL 1 Recovery Limits
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT)	Flag	QC Prep Result 2.67	aration: 20 MDL Result <0.396 Units mg/Kg	10-03-17 Dilution 1	mg/I Spike Amount 2.00	Prepa s <u>Kg</u> Percent Recovery 134	red By: AG RL 1 Recovery Limits 66.2 - 145
Prep Batch: 58507 Parameter GRO	Flag	QC Prep	aration: 20 MDL Result <0.396 Units	10-03-17 Dilution	mg/I Spike Amount	Prepa s Kg Percent Recovery	red By: AG RL 1 Recovery Limits 66.2 - 145
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT)	Flag	QC Prep Result 2.67	aration: 20 MDL Result <0.396 Units mg/Kg	10-03-17 Dilution 1	mg/I Spike Amount 2.00	Prepa s <u>Kg</u> Percent Recovery 134	red By: AG RL 1 Recovery Limits 66.2 - 145
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Flag (4-BFB)	QC Prep Result 2.67	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg	10-03-17 Dilution 1	mg/I Spike Amount 2.00	Prepa s <u>Kg</u> Percent <u>Recovery</u> 134 111	red By: AG RL 1 Recovery Limits 66.2 - 145
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Method Blank (1) QC Batch: 68375	Flag (4-BFB)	QC Prep Result 2.67 2.22	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg	10-03-17 Dilution 1 1	mg/I Spike Amount 2.00	Prepa SS Kg Percent Recovery 134 111 Analy	red By: AG <u>RL</u> 1 Recovery <u>Limits</u> 66.2 - 145 62 - 120.5
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Method Blank (1) QC Batch: 68375 Prep Batch: 58451	Flag (4-BFB) QC Batch: 68375	QC Prep Result 2.67 2.22 Date Ana	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg mg/Kg alyzed: 20 aration: 20 MDL	10-03-17 Dilution 1 1 10-03-18	mg/I Spike Amount 2.00 2.00	Prepa ss <u>Kg</u> Percent Recovery 134 111 Analy Prepa	red By: AG RL 1 Recovery Limits 66.2 - 145 62 - 120.5 c2 - 120.5
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Method Blank (1) QC Batch: 68375 Prep Batch: 58451 Parameter	Flag (4-BFB)	QC Prep Result 2.67 2.22 Date Ana	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg alyzed: 20 aration: 20 MDL Result	10-03-17 Dilution 1 1 10-03-18	mg/I Spike Amount 2.00 2.00 Unit	Prepa s (g Percent Recovery 134 111 Analy Prepa s	red By: AG RL 1 Recovery Limits 66.2 - 145 62 - 120.5 zed By: AR red By: AR RL
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Method Blank (1) QC Batch: 68375	Flag (4-BFB) QC Batch: 68375	QC Prep Result 2.67 2.22 Date Ana	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg mg/Kg alyzed: 20 aration: 20 MDL	10-03-17 Dilution 1 1 10-03-18	mg/I Spike Amount 2.00 2.00	Prepa s (g Percent Recovery 134 111 Analy Prepa s	red By: AG RL 1 Recovery Limits 66.2 - 145 62 - 120.5 zed By: AR red By: AR
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Method Blank (1) QC Batch: 68375 Prep Batch: 58451 Parameter Chloride	Flag (4-BFB) QC Batch: 68375	QC Prep Result 2.67 2.22 Date Ana	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg alyzed: 20 aration: 20 MDL Result	10-03-17 Dilution 1 1 10-03-18	mg/I Spike Amount 2.00 2.00 Unit	Prepa s (g Percent Recovery 134 111 Analy Prepa s	red By: AG RL 1 Recovery Limits 66.2 - 142 62 - 120.3 zed By: AR red By: AR RL
Prep Batch: 58507 Parameter GRO Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (Method Blank (1) QC Batch: 68375 Prep Batch: 58451 Parameter	Flag (4-BFB) QC Batch: 68375 Flag	QC Prep Result 2.67 2.22 Date Ana	aration: 20 MDL Result <0.396 Units mg/Kg mg/Kg Mg/Kg alyzed: 20 aration: 20 MDL Result <2.18	10-03-17 Dilution 1 1 10-03-18	mg/I Spike Amount 2.00 2.00 Unit	Prepa S S Percent Recovery 134 111 Analy Prepa S S	red By: AG RI 1 Recovery Limits 66.2 - 142 62 - 120.3 zed By: AR red By: AR RI

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Report Date: March 2 114-6400460	22, 2010		Work Ord COG/Polaris				•	imber: 1; ea Count	
Parameter	F	lag		IDL sult		Units			RL
Chloride				2.18		mg/K			4
Method Blank (1) QC Batch: 68450	QC Bat	ch: 68450	Date Analyzed:	2010-03	3-22		Analy	zed By:	AR
Prep Batch: 58453			QC Preparation:				-	ared By:	AR
Parameter	F	`lag	Re	IDL sult		Units			RL
Chloride			<2	2.18		mg/K	3		4
QC Batch: 68350 Prep Batch: 58487		LCS	Date Analyzed: QC Preparation	2010-03 : 2010-03		Matrix		lyzed By: pared By: Re	kg
Param		. Resul		Dil.	Amount	Result	Rec.	Lir	
DRO		186	mg/Kg	1	250	<5.86	74	57.4 -	133.4
Percent recovery is bas	ed on the s		RPD is based on	the spike	and spike d	uplicate res	ult.		
Param		LCSD Result	Units Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit		RPD Limit
DRO Percent recovery is bas	ad on the e		mg/Kg 1	250	<5.86		.4 - 133.4	11	20
refcent recovery is bas	-		RPD is based on	the spike		-			
Surrogate	$\begin{array}{c} { m LCS} \\ { m Result} \end{array}$	$egin{array}{c} { m LCSD} \\ { m Result} \end{array}$	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	-	Rec. .imit
n-Tricosane	81.7	91.6	mg/Kg	1	100	82	92		- 130
Laboratory Control	Spike (LC	2S-1)							
QC Batch: 68370 Prep Batch: 58507			Date Analyzed: QC Preparation:	2010-03 2010-03				zed By: ared By;	AG AG
Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Re Lir	
Benzene		1.87	mg/Kg	1	2.00	< 0.00410	94	75.4 -	115.7
Toluene Ethulbonsono		1.88	mg/Kg	1	2.00	<0.00310		78.4 -	
Ethylbenzene continued		1.89	mg/Kg	1	2.00	<0.00240	94	76 - 1	114.Z

114-6400460				rder: 1003 ris Federal		Ъ			Page Nu L	umber: .ea Cour	
control spikes continued											
-	LCS	3		•	\mathbf{Sp}	ike	Ma	trix		I	lec.
Param	Resu	lt (Jnits	Dil.	Amo	ount		sult	Rec.	\mathbf{L}	imit
Xylene	5.67	7 m	ig/Kg	1	6.	00	< 0.0	0650	94	76.9	- 113.
Percent recovery is based on the s	spike result.	RPD is	based o	on the spik	e and	spike d	uplicat	e result	t.		
	LCSD			Spike		atrix		F	Rec.		RPL
Param	Result	Units	Dil.	Amount		esult	Rec.		imit	RPD	Limi
Benzene	1.88	mg/Kg	1	2.00		.00410	94		- 115.7	0	20
Toluene	1.88	mg/Kg	1	2.00		.00310	94		- 113.6	0	20
Ethylbenzene	1.87	mg/Kg	1	2.00		.00240	94		-114.2	1	20
Xylene	5.66	mg/Kg	1	6.00	<0.	.00650	94	76.9	- 113.6	0	20
Percent recovery is based on the s	spike result.	RPD is	based c	on the spik	e and	spike d	uplicat	e result	J.		
	LCS	S LC	SD			Spi	ke	LCS	LCSD		lec.
Surrogate	Resu	lt Re	sult	Units	Dil.	Amo	unt	Rec.	Rec.		imit
Trifluorotoluene (TFT)	1.73	3 1.	77	mg/Kg	1	2.0		86	88		142.9
4-Bromofluorobenzene (4-BFB)	2.00) 2.	05	mg/Kg	1	2.0	0	100	102	43.8	- 144.
P			TT •/	D'I		pike		trix	р.		lec.
Param GRO	Rest.		Units	Dil1		nount 20.0		sult .396	Rec. 90		imit - 114.3
Percent recovery is based on the s			ng/Kg based o					-			- 114
	LCSD			Spike		atrix	1		.ec.		RPD
Param	Result	Units	Dil.	Amount		esult	Rec.		mit	RPD	Limi
GRO	17.6	mg/Kg		20.0		0.396	88		- 114.3	2	20
Percent recovery is based on the s											
concernences in property the property of the p	T OK	s lo	SD			Spil	ke	LCS	LCSD	F	lec.
Contraction in the stand of the s	LCS			IInita	Dil.	Amo		Rec.	Rec.		imit
	LCS Resu	lt Re:	ՏԱՌ	Units	1,711.	AIIIO	ante	LICC.	ILCU.	L.	
Surrogate					1	2.0		122	118		
Surrogate Triffuorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	Resu	5 2.	36	mg/Kg mg/Kg			0			66.2	- 148.7 - 127.4

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Report Date: March 22, 2010 114-6400460				er: 1003151 Federal 1-3			Page		: 17 of 2: unty, NM
	LO	zs			Spike	Ma	trix		Rec.
Param	Res		Units	Dil.	Amount			.ec.	Limit
Chloride	98	.8	mg/Kg	1	100	<2	.18	99	85 - 115
Percent recovery is based on the s	spike result.	RPD is l	based on	the spike an	nd spike duj	olicate r	esult.		
	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	100	mg/Kg		100	<2.18	100	85 - 115	1	20
Percent recovery is based on the s	spike result.	RPD is l	based on t	the spike an	ıd spike duş	olicate r	esult.		
Laboratory Control Spike (Le QC Batch: 68376	CS-1)	Date An	alwode	2010-03-18	Q		4 n	alyzed E	v: AR
Prep Batch: 58452			paration:	2010-03-10				epared B	•
		4 0	Jui autori.	2010 00 1	•			paroa 2	J
	LC	10			Spike	Ma	trix		Rec.
Param	Res		Units	Dil.	Amount			ec.	Limit
Chloride			ng/Kg	1	100			<u>,</u> 99	85 - 11
Percent recovery is based on the s					· · · · · · · · · · · · · · · · · · ·				
5	LCSD			Spike	 Matrix		Rec.		RPD
aram	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limi
Chloride	99.7	mg/Kg		100	<2.18	100	85 - 115	1	20
Percent recovery is based on the s									
Laboratory Control Spike (Le QC Batch: 68450 Prep Batch: 58453	CS-1)	Date An QC Prep	alyzed: paration:	2010-03-22 2010-03-16				alyzed E epared B	+
Param	LC Res		Units	Dil.	Spike Amount	Ma		.ec.	Rec. Limit
Chloride	98		$\frac{\text{ORIS}}{\text{ng/Kg}}$	<u> </u>	100			99	85 - 11
Percent recovery is based on the s		······		·····					
creent recovery is nused on tills s	•	101 10 18 1	ascu Uli l	-		meate fi			
	LCSD			Spike	Matrix	-	Rec.		RPE
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limi
		malla	1	100	<2.18	$102^{$	85 - 115	Ś.	20
Chloride	102	mg/Kg	1	100	~2.10	101	00 110		

QC Batch:	68350	Date Analyzed:	2010-03-17	Analyzed By:	kg
Prep Batch:	58487	QC Preparation:	2010-03-17	Prepared By:	kg

Report Date: March 22, 114-6400460	2010				order: 1003 aris Federal				Page Nu L		18 of 2: nty, NM
	•	M	5			Spike	Ma	trix]	Rec.
Param		Res		Units	Dil.	Amount		sult	Rec.		imit
DRO		16		ng/Kg	- 1	250	<5	.86	65	35.2	- 167.1
Percent recovery is based	on the s	pike result.			on the spike	e and spike d	uplicat	e result			
		MSD			Spike	Matrix		R	ec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Li	mit	RPD	Limit
DRO		167	mg/Kg	1	250	< 5.86	67	35.2 -	167.1	2	20
Percent recovery is based	on the s	pike result.	RPD is	based o	on the spike	e and spike d	uplicat	e result	 '•		
	MS	MSD				Spike		MS	MSD		Rec.
Surrogate	Result	Result		Jnits	Dil.	Amount		Rec.	Rec.		Limit
n-Tricosane	87.1	88.6	m	g/Kg_	1	100		87	89		70 - 130
QC Batch: 68370 Prep Batch: 58507			Date Ar QC Pre	-		3-17				yzed By ared By	
D		MS		• •.	D.1	Spike	Mat		D .		Rec.
Param		Resu		Inits	Dil.	Amount	Res		Rec. 92		imit
Benzene Toluene		1.84		g/Kg	1	2.00 2.00	<0.00 <0.00		92 94		- 140.7 - 146.6
Ethylbenzene		1.87 1.89		g/Kg g/Kg	1	2.00	< 0.00		94 94		- 140.0
Xylene		5.65		g/Kg	1 1	2.00 6.00	<0.00		94 94		- 141.0
Percent recovery is based	on the s				_					01.2	- 142.1
		MSD			Spike	Matrix		R	lec.		RPD
Param		Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	\mathbf{Li}	mit	RPD	Limit
Benzene		1.86	mg/Kg	1	2.00	< 0.00410	93	57.7	- 140.7	1	20
Toluene		1.90	mg/Kg	1	2.00	<0.00310	95		- 146.6	2	20
Ethylbenzene		1.92	mg/Kg	1	2.00	<0.00240	96 06		- 141.6	2	20
Xylene			mg/Kg	1	6.00	<0.00650	96		- 142.7	2	20
Percent recovery is based	on the s	-			on the spike		-			-	_
Surrogate		MS Resu		SD sult	Units	-	ike ount	MS Rec.	MSD Rec.		Rec. Jimit
Trifluorotoluene (TFT)				$\frac{40}{40}$	mg/Kg		<u>2</u>	74	70		- 139.6
4-Bromofluorobenzene (4-	BFB)	1.4		40 56	mg/Kg		2	81	78		- 146.7
Matrix Spike (MS-1) QC Batch: 68371 Prep Batch: 58507		Sample: 2	25701 Date Ar	nalyzed	: 2010-0	3-17	<u> </u>		Analy	zed By	r: AG
FIED BALCH: 58507			QC Pre	naratio	m - 2000-0	3-17			Frens	агеа ву	: AG

Report Date: March 22, 2010 114-6400460				der: 10031 is Federal 1				F	-		: 19 of 2 unty, NM
	MS	5			Sr	oike	Ма	trix			Rec.
Param	Resi	ılt	Units	Dil.	Am	ount	Re	sult	Rec.		Limit
GRO	19.	1 n	ng/Kg	1	20	0.0	<0	.396	96	1	0 - 198.3
Percent recovery is based on the s	pike result.	RPD is	based or	n the spike	and sp	oike duj	olicate	result.	_		
	MSD			Spike	Ma	atrix		Ree			RPE
Param	Result	Units	Dil.	Amount		sult	Rec.	Lim		RPD	Limi
GRO	19.4	mg/Kg	1	20.0	<0	.396	97	10 - 1	98.3	2	20
Percent recovery is based on the s	pike result.	RPD is l	based or	n the spike	and sp	oike dup	olicate	result.			
	MS		SD			Spi		\mathbf{MS}	MSE		Rec.
Surrogate	Resu		sult	Units	Dil.	Amo		Rec.	Rec.		Limit
Trifluorotoluene (TFT)	2.00			mg/Kg	1	2		100	102		5.5 - 14
4-Bromofluorobenzene (4-BFB)	2.0	7 2.	15	mg/Kg	1	2		104	108	5	8.6 - 14
Matrix Spike (MS-1) Spiked QC Batch: 68375 Prep Batch: 58451	l Sample: 2:	25660 Date An QC Prej		2010-03- : 2010-03-					-	zed B ared B	•
	M	S			S	pike	М	atrix			Rec.
	The second se		TT 14	D.1	*	nount	D.	1+	15		- • • •
Param	Res	un	Units	Dil.	An	Joung		esult	Rec	•	Limit
Chloride	127		Units ng/Kg	100		0000		680	100		
	127	00 n	ng/Kg	100	1	0000	2	680			
Chloride	127 pike result.	00 n	ng/Kg	100 1 the spike a	10 and sp	0000 oike dur	2	680 result.	100		85 - 113
Chloride Percent recovery is based on the s	127 pike result. MSD	00 r RPD is t	mg/Kg pased or	100 1 the spike : Spike	10 and sp M	0000 oike dup atrix	2 olicate	680 result. Re	100 c.		85 - 113 RPD
Chloride Percent recovery is based on the s Param	127 pike result.	00 n	mg/Kg based or Dil.	100 1 the spike a	10 and sp M t R	0000 oike dur	2	680 result.	100 c. nit		85 - 113 RPD
Chloride Percent recovery is based on the sp Param Chloride Percent recovery is based on the sp Matrix Spike (MS-1) Spiked QC Batch: 68376	127 pike result. MSD Result 12800	00 r RPD is h Units mg/Kg RPD is h 25670 Date An	mg/Kg pased or Dil. 100 pased or nalyzed:	100 n the spike Amount 10000 n the spike 2010-03-	10 and sp M 2 and sp -18	0000 vike dup atrix esult 2680	2 olicate <u>Rec.</u> 101	680 result. Re Lim 85 -	100 c. hit 115 Analy	RPD 1	85 - 113 RPD Limit 20 y: AR
Chloride Percent recovery is based on the sp Param Chloride Percent recovery is based on the sp Matrix Spike (MS-1) Spiked QC Batch: 68376 Prep Batch: 58452 Param	127 pike result. MSD Result 12800 pike result. I Sample: 22 MS Result	00 r RPD is h Units mg/Kg RPD is h 25670 Date An QC Prep S ult	mg/Kg pased or Dil. 100 pased or pased or paration Units	100 n the spike a Amount 10000 n the spike a 2010-03- : 2010-03- Dil.	10 and sp M 2 and sp 18 16 S An	0000 ike dur atrix esult 2680 ike dur ike dur	2 olicate Rec. 101 olicate M Ra	680 result. Re Lim 85 - result. result.	100 c. hit 115 Analy Prepa Rec.	RPD 1 vzed B ured B	85 - 11: RPE Limi 20 y: AR y: AR y: AR Rec. Limit
Chloride Percent recovery is based on the sp Param Chloride Percent recovery is based on the sp Matrix Spike (MS-1) Spiked QC Batch: 68376 Prep Batch: 58452 Param	127 pike result. MSD Result 12800 pike result. Sample: 22	00 r RPD is h Units mg/Kg RPD is h 25670 Date An QC Prep S ult	mg/Kg pased or Dil. 100 pased or pased or pased:	100 a the spike = Spike Amount 10000 a the spike = 2010-03- = 2010-03-	10 and sp M 2 and sp 18 16 S An	0000 pike dup atrix esult 680 pike dup	2 olicate Rec. 101 olicate M Ra	680 result. Re Lim 85 - result.	100 c. hit 115 Analy Prepa	RPD 1 vzed B ured B	85 - 11: RPD Limi 20 y: AR y: AR y: AR Rec.
Chloride Percent recovery is based on the sp Param Chloride Percent recovery is based on the sp Matrix Spike (MS-1) Spiked QC Batch: 68376 Prep Batch: 58452	127 pike result. MSD Result 12800 pike result. I Sample: 22 MS Rest 999	00 r RPD is h Units mg/Kg RPD is h 25670 Date An QC Prep S ult 00 r	mg/Kg pased or Dil. 100 pased or nalyzed: paration Units ng/Kg	100 1 the spike = Spike Amount 10000 1 the spike = 2010-03- : 2010-03- Dil. 100	10 and sp M 2 and sp -18 -18 -16 -18 -16 -10 -10	0000 ike dur atrix esult 680 ike dur ike dur pike nount	2 olicate Rec. 101 olicate M Ra	680 result. Re Lim 85 - result. result. 218	100 c. hit 115 Analy Prepa Rec.	RPD 1 vzed B ured B	85 - 11: RPE Limi 20 y: AR y: AR y: AR Rec. Limit
Chloride Percent recovery is based on the sp Param Chloride Percent recovery is based on the sp Matrix Spike (MS-1) Spiked QC Batch: 68376 Prep Batch: 58452 Param Chloride	127 pike result. MSD Result 12800 pike result. I Sample: 22 MS Rest 999	00 r RPD is h Units mg/Kg RPD is h 25670 Date An QC Prep S ult 00 r	mg/Kg pased or Dil. 100 pased or nalyzed: paration Units ng/Kg	100 1 the spike = Spike Amount 10000 1 the spike = 2010-03- : 2010-03- Dil. 100	10 and sp M 2 and sp -18 -18 -16 -18 -16 -10 and sp	0000 ike dur atrix esult 680 ike dur ike dur pike nount	2 olicate Rec. 101 olicate M Ra	680 result. Re Lim 85 - result. result. 218	100 c. hit 115 Analy Prepa Rec. 100	RPD 1 vzed B ured B	85 - 11: RPD Limit 20 y: AR y: AR Rec. Limit
Chloride Percent recovery is based on the sp Param Chloride Percent recovery is based on the sp Matrix Spike (MS-1) Spiked QC Batch: 68376 Prep Batch: 58452 Param Chloride	127 pike result. MSD Result 12800 pike result. I Sample: 22 MS Result 999 pike result.	00 r RPD is h Units mg/Kg RPD is h 25670 Date An QC Prep S ult 00 r	mg/Kg pased or Dil. 100 pased or nalyzed: paration Units ng/Kg	100 1 the spike = Spike Amount 10000 1 the spike = 2010-03- : 2010-03- Dil. 100 100 100 100	10 and sp M 2 and sp -18 -16 -18 -16 -16 -10 and sp M	0000 ike dur atrix esult 680 ike dur pike nount 0000 ike dur	2 olicate Rec. 101 olicate M Ra	680 result. Re Lim 85 - result. result. 218 result.	100 c. hit 115 Analy Prepa Rec. 100 c.	RPD 1 vzed B ured B	85 - 11: RPE Limi 20 y: AR y: AR Rec. Limit 85 - 11:

Report Date: March 22, 20 114-6400460)10			er: 100315 Federal 1-	Page Number: 20 of 22 Lea County, NM									
Matrix Spike (MS-1)	Spiked Sample:	225694												
QC Batch: 68450		Date A	nalyzed:	2010-03-2	22		An	alyzed By	·: AR					
Prep Batch: 58453			eparation:	2010-03-1				epared By						
	I	MS			Spike	Ma	trix		Rec.					
Param		esult	Units	Dil.	Amount			lec.	Limit					
Chloride	5000	mg/Kg	100	61	50	98 E	35 - 11							
Percent recovery is based or	n the spike resul	t. RPD is	based on t	the spike a	nd spike dup	licate r	esult.							
	MSD			Spike	Matrix		Rec.		RPD					
Param	Result	Units		Amount	Result	Rec.	Limit	RPD	Limit					
Chloride	16200	mg/Kg	<u></u>	10000	6150	100	85 - 115		20					
Percent recovery is based of	in one spike resur	5. IG D IS	Dased Off	ne spike a	na spike dup	nicaue r	court.							
Standard (CCV-2)				•					<u>.</u>					
QC Batch: 68350		Date A	.nalyzed:	2010-03-1	7		A	nalyzed B	y: kg					
		CCVs	CC	Vs	CCVs		Percent							
		True			nd Percent		Recovery		Date					
Param Flag	Units	Conc.	Cor		Recovery	· <u> </u>	Limits	Analyzed						
DRO	mg/Kg	250	21	9	88		80 - 120	201	0-03-1					
Standard (CCV 2)														
Standard (CCV-3)		_							_					
		Doto A	nalyzed:	2010-03-1	7		A	nalyzed B	Analyzed By: kg					
QC Batch: 68350		Date A	-					5						
QC Batch: 68350		CCVs	CC	Vs	CCVs		Percent	2						
		CCVs True			CCVs Percent		Recovery]	Date					
ParamFlag	Units	CCVs True Conc.	CC' Fou Cor	nd 1c.	Percent Recovery	I	Recovery Limits] An	alyzed					
ParamFlag	Units mg/Kg	CCVs True	CC' Fou	nd 1c.	Percent	I	Recovery] An	Date alyzed 0-03-1'					
Param Flag DRO		CCVs True Conc.	CC' Fou Cor	nd 1c.	Percent Recovery	I	Recovery Limits] An	alyzed					
Param Flag DRO Standard (CCV-1)		CCVs True Conc. 250	CC' Fou Con 20	nd 1c.	Percent Recovery 82	I	Recovery Limits 80 - 120] An	alyzed 0-03-1					
Param Flag DRO Standard (CCV-1)		CCVs True Conc. 250 Date Ar	CC Fou Con 20 nalyzed:	nd ac. 4 2010-03-17 CCVs	Percent Recovery 82 7 7 CCVs	I 	Limits 80 - 120 An Percent	An 201 alyzed By	alyzed 0-03-1 					
Param Flag DRO Standard (CCV-1) QC Batch: 68370	mg/Kg	CCVs True Conc. 250 Date Aa CCV True	CC Fou Con 20 nalyzed: (s C e F	nd 1c. 4 2010-03-17 CCVs Found	Percent Recovery 82 7 7 7 7 7 7 7 7 7	I 	Limits 80 - 120 An Percent Recovery	An 201 alyzed By	alyzed 0-03-1 AG Date					
Param Flag DRO Standard (CCV-1) QC Batch: 68370 Param Flag	mg/Kg Units	CCVs True Conc. 250 Date An CCV True Conc	CC Fou 20 nalyzed: (s C e F c. ()	nd ac. 4 2010-03-17 CCVs Found Conc.	Percent Recovery 82 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	I 	Limits 80 - 120 An Percent Recovery Limits	An 201 alyzed By	alyzed 0-03-1 : AG Date alyzed					
Param Flag DRO Standard (CCV-1) QC Batch: 68370 Param Flag Benzene	mg/Kg Units mg/Kg	CCVs True Conc. 250 Date An CCV True Conc 0.100	CC' Fou 20 nalyzed: (s C e F c. C 0 0	nd 1c. 4 2010-03-17 CCVs Found Conc. 1.0911	Percent Recovery 82 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	I 	Limits 80 - 120 An Percent Recovery Limits 80 - 120	An 201 alyzed By An 201	alyzed 0-03-1 2 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2					
DRO Standard (CCV-1) QC Batch: 68370	mg/Kg Units	CCVs True Conc. 250 Date An CCV True Conc	CC Fou 20 nalyzed: (s C 2 F 2. (0 0 0 0	nd ac. 4 2010-03-17 CCVs Found Conc.	Percent Recovery 82 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	I 	Limits 80 - 120 An Percent Recovery Limits	An 201 alyzed By An 201 201	alyzed 0-03-1' ': AG					

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Report Date 114-6400460	e: March 22, 2	010		rk Order: 1003 Polaris Federal	Page Number: 21 of 22 Lea County, NM				
Standard (CCV-2)								
QC Batch:	68370		Date Anal	yzed: 2010-03-	Analyzed By: AG				
			CCVs	CCVs	CCVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Benzene		mg/Kg	0.100	0.0925	92	80 - 120	2010-03-1		
Toluene		mg/Kg	0.100	0.0919	92	80 - 120	2010-03-17		
Ethylbenzen	6	mg/Kg	0.100	0.0902	90	80 - 120	2010-03-17		
Xylene		mg/Kg	0.300	0.272	91	80 - 120	2010-03-17		
Standard (CCV-1)								
QC Batch:	68371		Date Anal	yzed: 2010-03-	· Analyzed By: AG				
			CCVs	CCVs	CCVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag Units		Conc.	Conc.	Recovery	Limits	Analyzed		
GRO		mg/Kg	1.00	1.12	112	80 - 120	2010-03-17		
Standard (CCV-2)								
QC Batch:	68371		Date Analy	yzed: 2010-03-	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	1.10	110	80 - 120	2010-03-17		
Standard (I	(CV-1)								
QC Batch:	68375		Date Analy	yzed: 2010-03-	Analyzed By: AR				
			ICVs	ICVs	ICVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag_	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-03-18		

QC Batch: 68375

Date Analyzed: 2010-03-18

Analyzed By: AR

CCVs True Conc. 100	CCVs Found Conc. 101	CCVs Percent Recovery 101	Percent Recovery Limits 85 - 115	Date Analyzed 2010-03-18
100				
_				
Date Anal	yzed: 2010-03	-18	Anal	yzed By: AR
ICVs	ICVs Faure d	ICVs	Percent	Dete
			•	Date Analyzed
				2010-03-18
Date Anal	yzed: 2010-03	-18	Anal	yzed By: AR
CCVs	CCVs	CCVs	Percent	_
				Date
				Analyzed 2010-03-18
Date Anal	yzed: 2010-03	-22	Anal	yzed By: AR
ICVs True	ICVs Found	ICVs Porcont	Percent	Date
			•	Analyzed
100	103	103	85 - 115	2010-03-22
-	True Conc. 100 Date Anal CCVs True Conc. 100 Date Anal ICVs True Conc.	TrueFound Conc.10099.8Date Analyzed:2010-03CCVsCCVsTrueFound Conc.100100Date Analyzed:2010-03ICVsICVsTrueFound Conc.ICVsICVsTrueFound Conc.Conc.CONSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSCONSICVSIC	TrueFoundPercentConc.Conc.Recovery10099.8100Date Analyzed:2010-03-18CCVsCCVsCCVsTrueFoundPercentConc.Conc.Recovery100100100Date Analyzed:2010-03-22ICVsICVsICVsTrueFoundPercentConc.Conc.Recovery100100100	TrueFoundPercentRecoveryConc.Conc.RecoveryLimits10099.810085 - 115Date Analyzed:2010-03-18AnalCCVsCCVsCCVsTrueFoundPercentTrueFoundPercentRecoveryLimits10010010085 - 115AnalCCVsCCVsPercentTrueFoundPercentRecoveryLimits10010010085 - 115AnalICVsICVsICVsTrueFoundPercentTrueFoundPercentRecoveryLimitsConc.Conc.RecoveryLimitsConc.Conc.Recovery

		CCCCC ANALYSIS REQUEST (Circle or Specify Method No.)	на съ вр на зе съ вр на зе	8 B4 Cc 80/626 9	8 8 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	PAH 8270							Å	21212	Terre: 3//3/0 SAMPLE SHEPED BY: (Circle) AIRBILL #.	TETRA TECH CONTACT PERSON:	T.K. T. Marker 2 And	4 Norende 5,000 pa//a
~ Orden # 10031513	ain of Custody		TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	SITE MANAGER: T.K. TAULTY T	004/00 COSA TOLARE		22568 2 / X X A4-1 0.1'	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<i>AH-2</i>		3	<i>au-3</i>	· - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Date: 3-7-40		ure) Datte:	RECEIVED BY: (Sugnature)	CONTACT: JANAGE PHONE REMARKS SWARE CONDITION WHEN RECEIVED: PHONE REMARKS (0, 0° C) 19 AC + (UN Allege Revelo 1 704