

SITE INFORMATION

Report Type: Assessment and Closure Report

General Site Information:

Site:	Skelly 606 Tank Battery	RECEIVED FEB 17 2010
Company:	COG Operating LLC	
Section, Township and Range	Sec. 21 T17S R31E Unit J	NMOCD ARTESIA
Lease Number:	API-30-015-36765	
County:	Eddy County	
GPS:	32.818480° N, 103.873063° W	
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of 529 and 82, travel east on 82 0.3 miles, turn left (north) 0.2 miles, turn left 0.1 miles to location.	

Release Data:

Date Released:	10/10/2009
Type Release:	Produced water
Source of Contamination:	Flowline leak
Fluid Released:	20 barrels
Fluids Recovered:	15 barrels

Official Communication:

Name:	Pat Ellis	Kim Dorey
Company:	COG Operating, LLC	Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 631-0348
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	kim.dorey@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	greater than 300'
WellHead Protection:		
Water Source	Ranking Score	Site Data
<1,000 ft., Private <200 ft.	20	
>1,000 ft., Private >200 ft.	0	0
Surface Body of Water:		
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		0

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000



TETRA TECH

February 4, 2010

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

Re: Closure Report for the COG Operating LLC., Skelly 606 Tank Battery, Unit J, Section 21, Township 17 South, Range 31 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 Skelly 606 Tank Battery located in Unit J, Section 21, Township 17 South, Range 31 East, Eddy County, New Mexico. The spill site coordinates are N 32.818480°, W 103.873063°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, on October 10, 2009, a flowline failed, releasing approximately twenty (20) barrels of produced water. Fifteen (15) barrels of standing fluids were recovered. The spill remained on the caliche pad and pooled southeast of the wellhead in an area approximately 85' x 50'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 21. According to the

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



Geology and Groundwater Resources of Eddy County, New Mexico (Report 3), one well is located in Section 34, with reported depth to water of 271' below surface. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' below surface. The *Geology and Groundwater Resources of Eddy County, New Mexico* (Report 3) well report 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.

Soil Assessment and Corrective Action

On November 3, 2009, Tetra Tech personnel inspected and sampled the spill area. Seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Select 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 results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, elevated chloride concentrations were detected at AH-1 (0-1') of 2,620 mg/kg, AH-3 (0-1') of 3,270 mg/kg, and AH-5 (0-1') of 6,100. The deeper samples (1-1.5') showed declining in chloride concentrations. All of the submitted samples were below the RRAL for BTEX and TPH.

On December 12, 2009, Tetra Tech personnel were onsite to supervise the excavation at AH-1, AH-3, and AH-5 to removed 1.0' of chloride impacted soil. Approximately eighty (80) cubic yards of material



TETRA TECH

was removed and hauled to Controlled Recovery, Inc., of Hobbs, New Mexico for disposal.

Conclusion

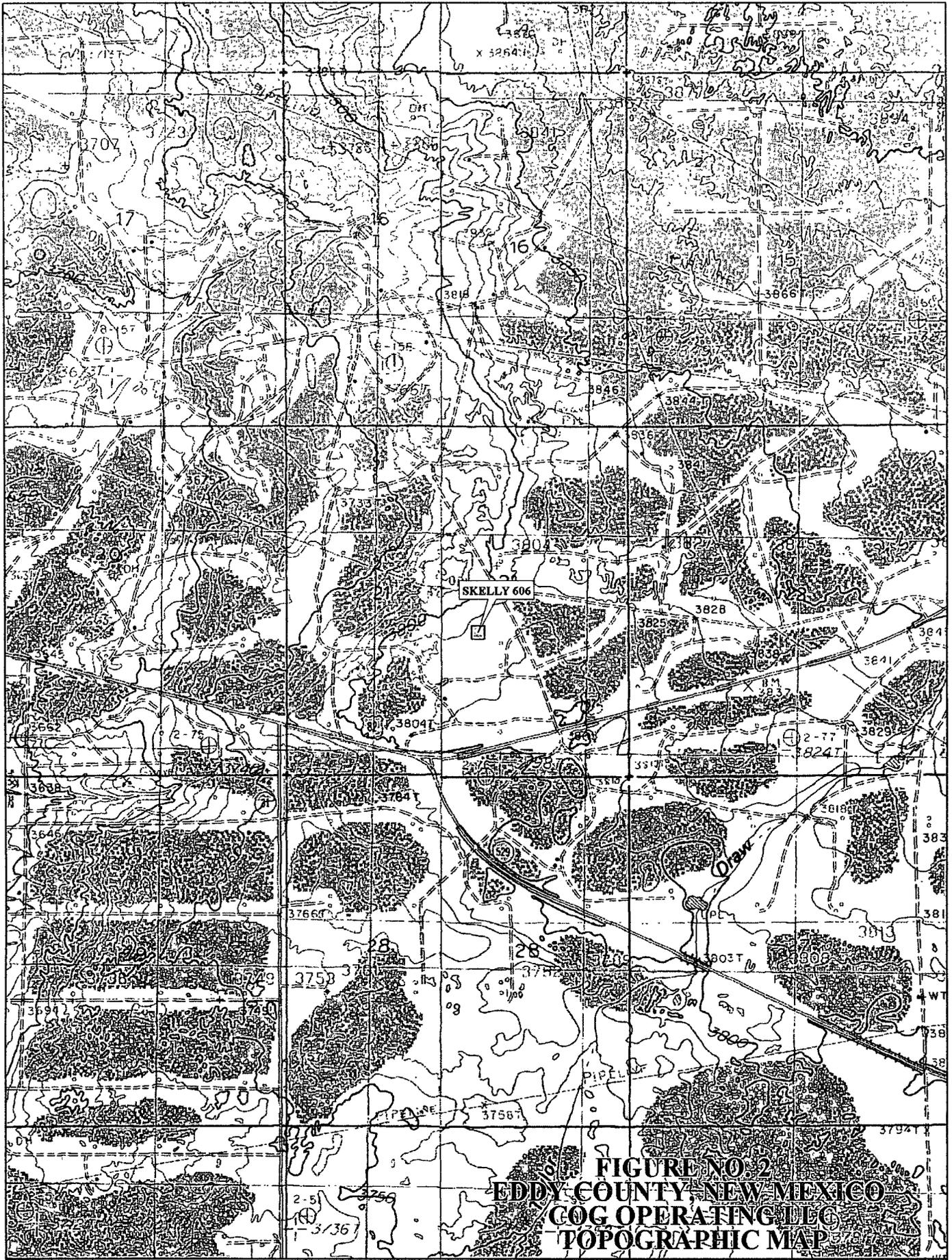
Based on the results and remedial activities, COG requests closure of the site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the activities performed at the site, please call (432) 682-4559.

Respectfully submitted,
Tetra Tech, Inc

Kim Dorey
Staff Geologist

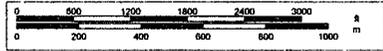
cc: Pat Ellis – COG
cc: Terry Gregston – BLM

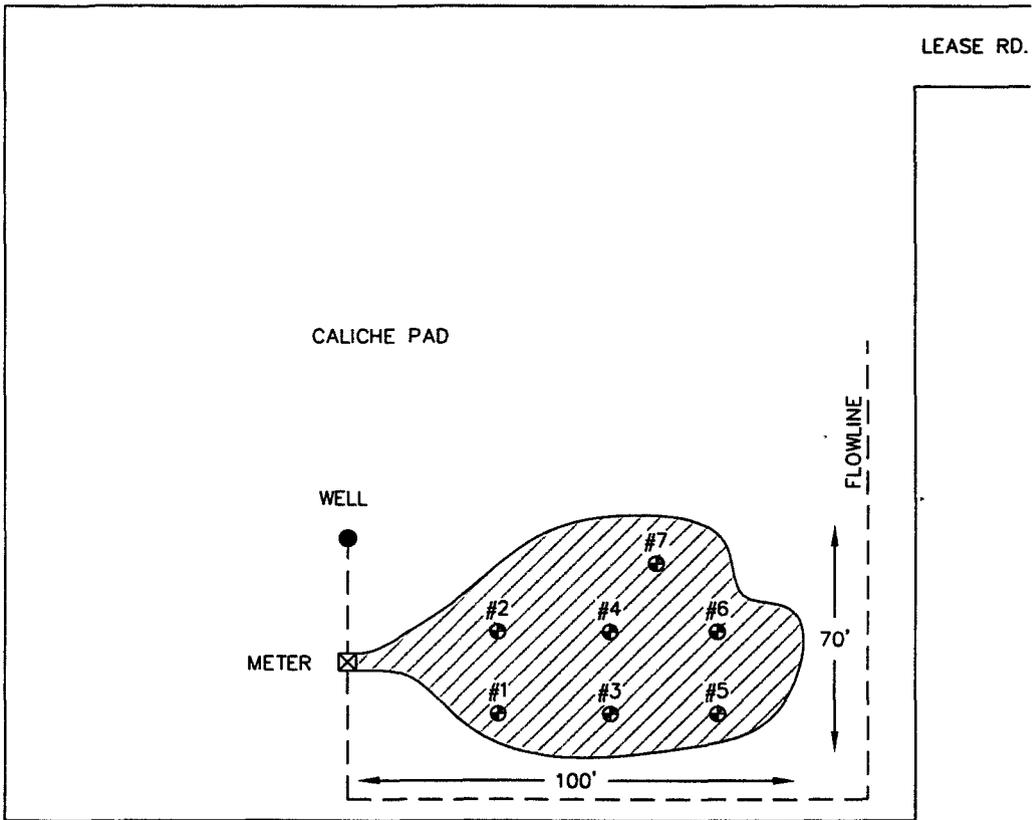
FIGURES



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 www.delorme.com

Scale 1 : 24,000
 1" = 2000 ft





☐ SPILL AREA
⊙ SAMPLE LOCATIONS

NOT TO SCALE

DATE:
12/1/09
DWN. BY:
JJ
FILE:
M:\COO\9400325
SKELLY 606

FIGURE NO. 3
EDDY COUNTY, NEW MEXICO
CONCHO RESOURCES INC.
SKELLY 606
TETRA TECH, INC. MIDLAND, TEXAS

TABLES

Table 1
 COG Operating LLC
 Skelly 606 Tank Battery
 Eddy County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total						
AH-1	11/3/2009	0-1'		X	<50.0	<1.00	<50.0		<0.0100	<0.0100	<0.0100	<0.0100	2620
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	<200
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200
AH-2	11/3/2009	0-1'	X		336	19.4	355.4		--	--	--	--	469
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	237
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200
AH-3	11/3/2009	0-1'		X	<50.0	<1.00	<50.0		<0.0100	<0.0100	<0.0100	<0.0100	3270
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	366
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200
AH-4	11/3/2009	0-1'	X		<50.0	1.41	1.41		<0.0100	<0.0100	<0.0100	<0.0100	850
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	<200
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200
AH-5	11/3/2009	0-1'		X	<50.0	<1.00	<50.0		<0.0100	<0.0100	<0.0100	<0.0100	6100
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	<200
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200
AH-6	11/3/2009	0-1'	X		<50.0	<1.00	<50.0		--	--	--	--	261
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	<200
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200
AH-7	11/3/2009	0-1'	X		<50.0	<1.00	<50.0		--	--	--	--	<200
	11/3/2009	1-1.5'	X		--	--	--		--	--	--	--	<200
	11/3/2009	2-2.5'	X		--	--	--		--	--	--	--	<200

(-) Not Analyzed

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

Form C-141
Revised October 10, 2003

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

*** Amended Report

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company	COG OPERATING LLC <i>229137</i>	Contact	Kanicia Carrillo
Address	550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No.	432-685-4332
Facility Name	Skelly Unit 606	Facility Type	Battery

Surface Owner State	Mineral Owner	Lease No.	30-015-36765
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30 015 36765

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	21	17S	31E	2110	South	2310	East	Eddy

Latitude 32.818480 Longitude 103.873063

NATURE OF RELEASE

Type of Release-Produced Water	Volume of Release-20bbbls	Volume Recovered- 15bbbls
Source of Release- Flowline leak	Date and Hour of Occurrence- 10/10/09 am	Date and Hour of Discovery 10/10/09 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Flowline leak. Repaired leak. Spill remained on pad and did not go into pasture.

Describe Area Affected and Cleanup Action Taken.*

Vacuumed up all fluid. 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 your 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.

Signature: <i>K.C.</i>	OIL CONSERVATION DIVISION	
Printed Name: Kanicia Carrillo	Approved by District Supervisor: <i>[Signature]</i>	
Title: Regulatory Analyst	Approval Date: <i>3/31/10</i>	Expiration Date:
E-mail Address: <i>kcarrillo@conchoresources.com</i>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/21/09	Phone: 432-685-4332	

* Attach Additional Sheets If Necessary

2RP-394

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
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with Rule 116 on back
side of form

NSEB1009047982

Release Notification and Corrective Action

iSEB1009048261

SEB1009048337

SEB1009048787

OPERATOR

Initial Report

Final Report

Name of Company	COG Operating LLC 229137	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 685-4332
Facility Name	Skelly Unit 606	Facility Type	Tank Battery

Surface Owner	Mineral Owner	Lease No.	30-015-36765
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30-01536765

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	21	17S	31E	2110	South	2310	East	Eddy

Latitude N 32.818480° Longitude W 103.873063°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 20 bbls	Volume Recovered 15 bbls
Source of Release Flowline leak	Date and Hour of Occurrence 10/10/09 AM	Date and Hour of Discovery 10/10/09 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

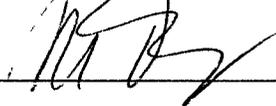
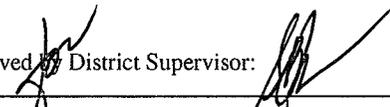
Describe Cause of Problem and Remedial Action Taken.*

Flowline leaked. COG repaired flowline. Spill remained on pad and did not go into pasture.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected samples to define spills extent. Soil with elevated chlorides concentration were removed and hauled away to Controlled Recovery, Inc., Hobbs, NM. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor: 	
Title: Project Manager	Approval Date: 3/31/10	Expiration Date: N/A
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval: N/A	Attached <input type="checkbox"/> N/A
Date:	Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

2 RP-394

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
St. Mary - ESDU Injection Station
Eddy County, New Mexico

16 South			30 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	35	36

16 South			31 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	35	36

16 South			32 East		
6	5	4	3	65	2
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 South			30 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	35	36

17 South			31 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	35	36

17 South			32 East		
6	5	4	82	3	2
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

18 South			30 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	35	36

18 South			31 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	35	36

18 South			32 East		
6	5	4	65	3	2
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

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM
- 34 NMOCD - Groundwater Data
- 123 Field water level
- 362 New Mexico Water and Infrastructure Data System

APPENDIX C

Summary Report

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

Report Date: November 13, 2009

Work Order: 9110619



Project Location: Eddy Co., NM
 Project Name: COG/Skelly 606 TB
 Project Number: 114-6400325

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
214235	AH-1 0-1'	soil	2009-11-03	00:00	2009-11-06
214236	AH-1 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214237	AH-1 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214238	AH-2 0-1'	soil	2009-11-03	00:00	2009-11-06
214239	AH-2 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214240	AH-2 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214241	AH-3 0-1'	soil	2009-11-03	00:00	2009-11-06
214242	AH-3 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214243	AH-3 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214244	AH-4 0-1'	soil	2009-11-03	00:00	2009-11-06
214245	AH-4 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214246	AH-4 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214247	AH-5 0-1'	soil	2009-11-03	00:00	2009-11-06
214248	AH-5 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214249	AH-5 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214250	AH-6 0-1'	soil	2009-11-03	00:00	2009-11-06
214251	AH-6 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214252	AH-6 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214253	AH-7 0-1'	soil	2009-11-03	00:00	2009-11-06
214254	AH-7 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214255	AH-7 2'-2.5'	soil	2009-11-03	00:00	2009-11-06

Sample - Field Code	BTEX				TPH GRO GRO (mg/Kg)
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	
214235 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<1.00
214238 - AH-2 0-1'					19.4
214241 - AH-3 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<1.00
214244 - AH-4 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	1.41

continued ...

... continued

Sample - Field Code	BTEX				TPH GRO GRO (mg/Kg)
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	
214247 - AH-5 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<1.00
214250 - AH-6 0-1'					<1.00
214253 - AH-7 0-1'					<1.00

Sample: 214235 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		2620	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 214236 - AH-1 1'-1.5'

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

Sample: 214237 - AH-1 2'-2.5'

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

Sample: 214238 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		469	mg/Kg	4.00
DRO		336	mg/Kg	50.0

Sample: 214239 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		237	mg/Kg	4.00

Sample: 214240 - AH-2 2'-2.5'

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

Sample: 214241 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		3270	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 214242 - AH-3 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		366	mg/Kg	4.00

Sample: 214243 - AH-3 2'-2.5'

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

Sample: 214244 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		850	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 214245 - AH-4 1'-1.5'

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

Sample: 214246 - AH-4 2'-2.5'

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

Sample: 214247 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		6100	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 214248 - AH-5 1'-1.5'

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

Sample: 214249 - AH-5 2'-2.5'

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

Sample: 214250 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		261	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 214251 - AH-6 1'-1.5'

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

Sample: 214252 - AH-6 2'-2.5'

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

Sample: 214253 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 214254 - AH-7 1'-1.5'

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

Sample: 214255 - AH-7 2'-2.5'

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



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 E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX **El Paso:** T104704221-08-TX **Midland:** T104704392-08-TX
 LELAP-02003 LELAP-02002
 Kansas E-10317

Analytical and Quality Control Report

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

Report Date: November 13, 2009

Work Order: 9110619



Project Location: Eddy Co., NM
 Project Name: COG/Skelly 606 TB
 Project Number: 114-6400325

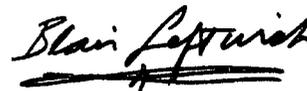
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
214235	AH-1 0-1'	soil	2009-11-03	00:00	2009-11-06
214236	AH-1 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214237	AH-1 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214238	AH-2 0-1'	soil	2009-11-03	00:00	2009-11-06
214239	AH-2 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214240	AH-2 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214241	AH-3 0-1'	soil	2009-11-03	00:00	2009-11-06
214242	AH-3 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214243	AH-3 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214244	AH-4 0-1'	soil	2009-11-03	00:00	2009-11-06

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
214245	AH-4 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214246	AH-4 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214247	AH-5 0-1'	soil	2009-11-03	00:00	2009-11-06
214248	AH-5 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214249	AH-5 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214250	AH-6 0-1'	soil	2009-11-03	00:00	2009-11-06
214251	AH-6 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214252	AH-6 2'-2.5'	soil	2009-11-03	00:00	2009-11-06
214253	AH-7 0-1'	soil	2009-11-03	00:00	2009-11-06
214254	AH-7 1'-1.5'	soil	2009-11-03	00:00	2009-11-06
214255	AH-7 2'-2.5'	soil	2009-11-03	00:00	2009-11-06

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 25 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

Standard Flags

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

Case Narrative

Samples for project COG/Skelly 606 TB were received by TraceAnalysis, Inc. on 2009-11-06 and assigned to work order 9110619. Samples for work order 9110619 were received intact at a temperature of 6.5 deg. C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	55750	2009-11-12 at 12:00	65272	2009-11-12 at 11:24
Chloride (Titration)	SM 4500-Cl B	55644	2009-11-09 at 08:35	65134	2009-11-09 at 14:42
Chloride (Titration)	SM 4500-Cl B	55645	2009-11-09 at 08:37	65135	2009-11-09 at 14:43
Chloride (Titration)	SM 4500-Cl B	55646	2009-11-09 at 08:38	65136	2009-11-09 at 14:44
TPH DRO - NEW	Mod. 8015B	55625	2009-11-06 at 15:23	65113	2009-11-06 at 15:23
TPH GRO	S 8015B	55750	2009-11-12 at 12:00	65270	2009-11-12 at 11:51

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 9110619 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: 214235 - AH-1 0-1'

Laboratory: Midland	Analytical Method: S 8021B	Prep Method: S 5035
Analysis: BTEX	Date Analyzed: 2009-11-12	Analyzed By: AG
QC Batch: 65272	Sample Preparation: 2009-11-12	Prepared By: AG
Prep Batch: 55750		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.18	mg/Kg	1	2.00	109	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	43.1 - 128.4

Sample: 214235 - AH-1 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-09	Analyzed By: AR
QC Batch: 65134	Sample Preparation: 2009-11-09	Prepared By: AR
Prep Batch: 55644		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2620	mg/Kg	100	4.00

Sample: 214235 - AH-1 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2009-11-06	Analyzed By: kg
QC Batch: 65113	Sample Preparation: 2009-11-06	Prepared By: kg
Prep Batch: 55625		

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	48.5 - 146

Sample: 214235 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 65270 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 Sample Preparation: 2009-11-12 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	61.7 - 119.9

Sample: 214236 - AH-1 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65134 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55644 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214237 - AH-1 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65134 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55644 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214238 - AH-2 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-09	Analyzed By: AR
QC Batch: 65134	Sample Preparation: 2009-11-09	Prepared By: AR
Prep Batch: 55644		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		469	mg/Kg	50	4.00

Sample: 214238 - AH-2 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2009-11-06	Analyzed By: kg
QC Batch: 65113	Sample Preparation: 2009-11-06	Prepared By: kg
Prep Batch: 55625		

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		336	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		136	mg/Kg	1	100	136	48.5 - 146

Sample: 214238 - AH-2 0-1'

Laboratory: Midland	Analytical Method: S 8015B	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2009-11-12	Analyzed By: AG
QC Batch: 65270	Sample Preparation: 2009-11-12	Prepared By: AG
Prep Batch: 55750		

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		19.4	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.58	mg/Kg	1	2.00	79	61.7 - 119.9

Sample: 214239 - AH-2 1'-1.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-09	Analyzed By: AR
QC Batch: 65134	Sample Preparation: 2009-11-09	Prepared By: AR
Prep Batch: 55644		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		237	mg/Kg	50	4.00

Sample: 214240 - AH-2 2'-2.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-09	Analyzed By: AR
QC Batch: 65134	Sample Preparation: 2009-11-09	Prepared By: AR
Prep Batch: 55644		

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

Sample: 214241 - AH-3 0-1'

Laboratory: Midland	Analytical Method: S 8021B	Prep Method: S 5035
Analysis: BTEX	Date Analyzed: 2009-11-12	Analyzed By: AG
QC Batch: 65272	Sample Preparation: 2009-11-12	Prepared By: AG
Prep Batch: 55750		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.42	mg/Kg	1	2.00	71	43.1 - 128.4

Sample: 214241 - AH-3 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-09	Analyzed By: AR
QC Batch: 65134	Sample Preparation: 2009-11-09	Prepared By: AR
Prep Batch: 55644		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3270	mg/Kg	100	4.00

Sample: 214241 - AH-3 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2009-11-06	Analyzed By: kg
QC Batch: 65113	Sample Preparation: 2009-11-06	Prepared By: kg
Prep Batch: 55625		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		124	mg/Kg	1	100	124	48.5 - 146

Sample: 214241 - AH-3 0-1'

Laboratory: Midland	Analytical Method: S 8015B	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2009-11-12	Analyzed By: AG
QC Batch: 65270	Sample Preparation: 2009-11-12	Prepared By: AG
Prep Batch: 55750		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	61.7 - 119.9

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Sample: 214242 - AH-3 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65134 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55644 Sample Preparation: 2009-11-09 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		366	mg/Kg	50	4.00

Sample: 214243 - AH-3 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65134 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55644 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214244 - AH-4 0-1'

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 65272 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 Sample Preparation: 2009-11-12 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.17	mg/Kg	1	2.00	108	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	43.1 - 128.4

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Eddy Co., NM

Sample: 214244 - AH-4 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65134 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55644 Sample Preparation: 2009-11-09 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		850	mg/Kg	50	4.00

Sample: 214244 - AH-4 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65113 Date Analyzed: 2009-11-06 Analyzed By: kg
Prep Batch: 55625 Sample Preparation: 2009-11-06 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	48.5 - 146

Sample: 214244 - AH-4 0-1'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 65270 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 Sample Preparation: 2009-11-12 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		1.41	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.35	mg/Kg	1	2.00	68	61.7 - 119.9

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Sample: 214245 - AH-4 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214246 - AH-4 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214247 - AH-5 0-1'

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 65272 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 Sample Preparation: 2009-11-12 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.16	mg/Kg	1	2.00	108	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	43.1 - 128.4

Sample: 214247 - AH-5 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-09	Analyzed By: AR
QC Batch: 65135	Sample Preparation: 2009-11-09	Prepared By: AR
Prep Batch: 55645		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6100	mg/Kg	100	4.00

Sample: 214247 - AH-5 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2009-11-06	Analyzed By: kg
QC Batch: 65113	Sample Preparation: 2009-11-06	Prepared By: kg
Prep Batch: 55625		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	48.5 - 146

Sample: 214247 - AH-5 0-1'

Laboratory: Midland	Analytical Method: S 8015B	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2009-11-12	Analyzed By: AG
QC Batch: 65270	Sample Preparation: 2009-11-12	Prepared By: AG
Prep Batch: 55750		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.37	mg/Kg	1	2.00	68	61.7 - 119.9

Sample: 214248 - AH-5 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214249 - AH-5 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214250 - AH-6 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		261	mg/Kg	50	4.00

Sample: 214250 - AH-6 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65113 Date Analyzed: 2009-11-06 Analyzed By: kg
Prep Batch: 55625 Sample Preparation: 2009-11-06 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	48.5 - 146

Sample: 214250 - AH-6 0-1'

Laboratory: Midland
 Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
 QC Batch: 65270 Date Analyzed: 2009-11-12 Analyzed By: AG
 Prep Batch: 55750 Sample Preparation: 2009-11-12 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.18	mg/Kg	1	2.00	109	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.38	mg/Kg	1	2.00	69	61.7 - 119.9

Sample: 214251 - AH-6 1'-1.5'

Laboratory: Midland
 Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
 QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
 Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214252 - AH-6 2'-2.5'

Laboratory: Midland
 Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
 QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
 Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

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Sample: 214253 - AH-7 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214253 - AH-7 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65113 Date Analyzed: 2009-11-06 Analyzed By: kg
Prep Batch: 55625 Sample Preparation: 2009-11-06 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		122	mg/Kg	1	100	122	48.5 - 146

Sample: 214253 - AH-7 0-1'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 65270 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 Sample Preparation: 2009-11-12 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	¹	2.19	mg/Kg	1	2.00	110	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	61.7 - 119.9

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

Sample: 214254 - AH-7 1'-1.5'

Laboratory: Midland
 Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
 QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
 Prep Batch: 55645 Sample Preparation: 2009-11-09 Prepared By: AR

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

Sample: 214255 - AH-7 2'-2.5'

Laboratory: Midland
 Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
 QC Batch: 65136 Date Analyzed: 2009-11-09 Analyzed By: AR
 Prep Batch: 55646 Sample Preparation: 2009-11-09 Prepared By: AR

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

Method Blank (1) QC Batch: 65113

QC Batch: 65113 Date Analyzed: 2009-11-06 Analyzed By: kg
 Prep Batch: 55625 QC Preparation: 2009-11-06 Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		117	mg/Kg	1	100	117	48.5 - 146

Method Blank (1) QC Batch: 65134

QC Batch: 65134 Date Analyzed: 2009-11-09 Analyzed By: AR
 Prep Batch: 55644 QC Preparation: 2009-11-09 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Report Date: November 13, 2009
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Method Blank (1) QC Batch: 65135

QC Batch: 65135 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55645 QC Preparation: 2009-11-09 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 65136

QC Batch: 65136 Date Analyzed: 2009-11-09 Analyzed By: AR
Prep Batch: 55646 QC Preparation: 2009-11-09 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 65270

QC Batch: 65270 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 QC Preparation: 2009-11-12 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.24	mg/Kg	1	2.00	112	66.2 - 125
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	62 - 120.5

Method Blank (1) QC Batch: 65272

QC Batch: 65272 Date Analyzed: 2009-11-12 Analyzed By: AG
Prep Batch: 55750 QC Preparation: 2009-11-12 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65136
Prep Batch: 55646

Date Analyzed: 2009-11-09
QC Preparation: 2009-11-09

Analyzed By: AR
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65270
Prep Batch: 55750

Date Analyzed: 2009-11-12
QC Preparation: 2009-11-12

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	17.0	mg/Kg	1	20.0	<0.396	85	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.2	mg/Kg	1	20.0	<0.396	86	52.5 - 114.3	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.23	2.23	mg/Kg	1	2.00	112	112	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.43	1.43	mg/Kg	1	2.00	72	72	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 65272
Prep Batch: 55750

Date Analyzed: 2009-11-12
QC Preparation: 2009-11-12

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.97	mg/Kg	1	2.00	<0.00410	98	75.4 - 115.7
Toluene	1.96	mg/Kg	1	2.00	<0.00310	98	78.4 - 113.6
Ethylbenzene	1.95	mg/Kg	1	2.00	<0.00240	98	76 - 114.2
Xylene	5.84	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.02	mg/Kg	1	2.00	<0.00410	101	75.4 - 115.7	2	20
Toluene	2.01	mg/Kg	1	2.00	<0.00310	100	78.4 - 113.6	2	20
Ethylbenzene	1.99	mg/Kg	1	2.00	<0.00240	100	76 - 114.2	2	20
Xylene	5.98	mg/Kg	1	6.00	<0.00650	100	76.9 - 113.6	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.18	2.18	mg/Kg	1	2.00	109	109	65 - 122.9
4-Bromofluorobenzene (4-BFB)	1.39	1.39	mg/Kg	1	2.00	70	70	43.8 - 124.9

Matrix Spike (MS-1) Spiked Sample: 214253

QC Batch: 65113
Prep Batch: 55625

Date Analyzed: 2009-11-06
QC Preparation: 2009-11-06

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	259	mg/Kg	1	250	<5.86	104	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	246	mg/Kg	1	250	<5.86	98	35.2 - 167.1	5	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	114	113	mg/Kg	1	100	114	113	48.5 - 146

Matrix Spike (MS-1) Spiked Sample: 214253

QC Batch: 65270
Prep Batch: 55750

Date Analyzed: 2009-11-12
QC Preparation: 2009-11-12

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.0	mg/Kg	1	20.0	<0.396	80	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.1	mg/Kg	1	20.0	<0.396	86	10 - 198.3	7	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.14	2.19	mg/Kg	1	2	107	110	65.5 - 123
4-Bromofluorobenzene (4-BFB)	1.42	1.45	mg/Kg	1	2	71	72	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 214354

QC Batch: 65272
Prep Batch: 55750

Date Analyzed: 2009-11-12
QC Preparation: 2009-11-12

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.01	mg/Kg	1	2.00	<0.00410	100	57.7 - 140.7
Toluene	2.03	mg/Kg	1	2.00	<0.00310	102	53.4 - 146.6
Ethylbenzene	2.07	mg/Kg	1	2.00	<0.00240	104	62.1 - 141.6
Xylene	6.20	mg/Kg	1	6.00	<0.00650	103	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.04	mg/Kg	1	2.00	<0.00410	102	57.7 - 140.7	1	20
Toluene	2.07	mg/Kg	1	2.00	<0.00310	103	53.4 - 146.6	2	20
Ethylbenzene	2.11	mg/Kg	1	2.00	<0.00240	105	62.1 - 141.6	2	20
Xylene	6.31	mg/Kg	1	6.00	<0.00650	105	61.2 - 142.7	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.17	2.16	mg/Kg	1	2	108	108	62.7 - 119.6
4-Bromofluorobenzene (4-BFB)	1.40	1.39	mg/Kg	1	2	70	69	49.6 - 136.7

Standard (CCV-2)

QC Batch: 65270

Date Analyzed: 2009-11-12

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.967	97	80 - 120	2009-11-12

Standard (CCV-1)

QC Batch: 65272

Date Analyzed: 2009-11-12

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.105	105	80 - 120	2009-11-12
Toluene		mg/Kg	0.100	0.106	106	80 - 120	2009-11-12
Ethylbenzene		mg/Kg	0.100	0.106	106	80 - 120	2009-11-12
Xylene		mg/Kg	0.300	0.317	106	80 - 120	2009-11-12

Standard (CCV-2)

QC Batch: 65272

Date Analyzed: 2009-11-12

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0972	97	80 - 120	2009-11-12
Toluene		mg/Kg	0.100	0.0964	96	80 - 120	2009-11-12
Ethylbenzene		mg/Kg	0.100	0.0941	94	80 - 120	2009-11-12
Xylene		mg/Kg	0.300	0.282	94	80 - 120	2009-11-12

Order #: 9110619

Analysis Request of Chain of Custody Record

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TETRA TECH

1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: J. K. Touvez

PROJECT NO.: 114-6400325

PROJECT NAME: COG / Skelly LADCO T13

LAB I.D. NUMBER

DATE

TIME

MATRIX
COMP
GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

PRESERVATIVE METHOD

HCL
HNO3
ICE
NONE

- BTEX 6021B
- TPH 8015 MOD. TX1005 (Ext. to C35)
- PAH 8270
- FCRA Metals Ag As Ba Cd Cr Pb Hg Se
- TCLP Metals Ag As Ba Cd Vr Pd Hg Se
- TCLP Volatiles
- TCLP Semi Volatiles
- RCI
- GC.MS Vol. 8240/8260/824
- GC.MS Semi. Vol. 8270/825
- PCB's 6080/608
- Pest. 609/608
- Gamma Spec.
- Alpha Beta (Air)
- PLM (Asbestos)
- Major Anions/Cations, pH, TDS

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 6021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	FCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/824	GC.MS Semi. Vol. 8270/825	PCB's 6080/608	Pest. 609/608	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
214235	11-3		S	X		AH-1 0-1'	1				X		X												X				
236						AH-1 1-1.5'																							
237						AH-1 2-2.5'																							
238						AH-2 0-1'																							
239						AH-2 1-1.5'																							
240						AH-2 2-2.5'																							
241						AH-3 0-1'																							
242						AH-3 1-1.5'																							
243						AH-3 2-2.5'																							
244						AH-4 0-1'																							

RELINQUISHED BY: (Signature) [Signature] Date: 11/2/05 RECEIVED BY: (Signature) [Signature] Date: 11/2/05
 Time: 0815 Time: 0815

RELINQUISHED BY: (Signature) _____ Date: _____ RECEIVED BY: (Signature) _____ Date: _____
 Time: _____ Time: _____

RELINQUISHED BY: (Signature) _____ Date: _____ RECEIVED BY: (Signature) _____ Date: _____
 Time: _____ Time: _____

RECEIVING LABORATORY: Tetra RECEIVED BY: (Signature) [Signature]
 ADDRESS: _____ CITY: Midland STATE: TX ZIP: _____
 CONTACT: Florida PHONE: _____ DATE: _____ TIME: _____

SAMPLE CONDITION WHEN RECEIVED: 0.5g intact REMARKS: Run deeper samples if TDH exceeds 5,000 mg/kg
Run(4) BTEX w/ highest TPH concentrations

TETRA TECH CONTACT PERSON: J. K. Touvez Results by: _____
 RUSH Charges Authorized: Yes No

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

