SITE INFORMATION

Report Type: Work Plan

General Site Information:						
Site:	Lusk Deep Unit #22H					
Company:	COG Operating, LLC					
Section, Township and Range	Unit C	Sec 17	T 19S	R 32E		
Lease Number:	API No. 30-025-40705					
County:	Lea					
GPS:	32.66682° N			103.79121° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	In Rural Lea County at the intersection of Hwy 243 and CR 126A for 6.75 miles, the spill is on the EAST side of 126A in the pasture.					

1RP-3498

RECEIVED
By OCD; Dr. Oberding at 11:27 am, Apr 09, 2015

Release Data:	
Date Released:	12/12/2014
Type Release:	Produced Water
Source of Contamination:	Flowline
Fluid Released:	150 bbls
Fluids Recovered:	70 bbls

Official Communication:			
Name:	Candy Jimenez	Amanda Trujillo	Ike Tavarez
Company:	Sweatt Construction	COG Operating, LLC	Tetra Tech
Address:	2401 Pecos Ave.	2407 Pecos Ave.	4000 N. Big Spring
			Ste 401
City:	Artesia, NM	Artesia, NM	Midland, Texas
Phone number:	575-365-8805	575-748-6930	(432) 687-8110
Fax:	575-748-1230		
Email:	c.jimenez@sweattconstruction.com	atrujillo@concho.com	Ike.Tavarez@tetratech.com

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

APPROVED Conditionally
By OCD; Dr. Oberding at 11:59 am, Apr 09, 2015

Stipulations:-
Obtain concurrence from BLM

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

TETRA TECH

April 7, 2015

Dr. Tomas Oberding
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating, LLC location Lusk Deep Unit #22H, Unit C, Section 17, Township 19 South, Range 32 East, Lea County, New Mexico.

Dr. Oberding:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG), Inc to assess a spill from the COG Lusk Deep Unit #22H, Unit C, Section 17, Township 19 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.66682°, W 103.79121°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on December 12, 2014, and released approximately 150 barrels produced fluid from a flowline that was punctured by a Sweatt Construction dozer while it was being moved. Approximately 70 bbls of produced water were recovered. The spill initiated in the pasture impacting an area of approximately 200' X 20' and 240' x 20'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area is between 400' and 500' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
4000 North Big Spring, Ste 401 Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

TETRA TECH

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 Analytical Results

On February 2, 2014, Tetra Tech personnel installed of eight (8) auger holes (AH-1 through AH-8) using an stainless steel hand auger to assess the soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of the laboratory analysis chain-of-custody documentation are included in Appendix C. The auger hole results are summarized in Table 1 and shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL's for TPH or BTEX. The areas of auger holes (AH-1, AH-2, AH-3, AH-4, AH-5, AH-6, and AH-8) showed chloride concentrations increasing with depth. Auger holes (AH-1, AH-4 and AH-8) showed chloride highs at a bottom hole depth at 2.0'-2.5' below surface of 14,400 mg/kg, 10,600 mg/kg, and 12,900 mg/kg, respectively. Auger holes (AH-2, AH-3, AH-5 and AH-6) showed chloride highs at a bottom hole depth at 3.0'-3.5' below surface of 15,200 mg/kg, 12,700 mg/kg, 11,700 mg/kg, 10,800 mg/kg, respectively. The area of auger hole (AH-7) showed chloride concentrations increasing with depth to 4,310 mg/kg at 3.0'-3.5' below surface before slightly declining to 2,710 mg/kg at 3.5'-4.0' below surface. None of the areas were vertically defined.

On March 3, 2015, Tetra Tech personnel supervised the installation of eight (8) boreholes using an air rotary rig in order to define the vertical extent of the chloride impact. Selected samples were analyzed for chloride by EPA method 300.0. Copies of the laboratory analysis chain-of-custody documentation are included in Appendix C. The borehole results are summarized in Table 1 and shown on Figure 3.

Referring to Table 1, the area of boreholes (BH-3, BH-4, BH-5, BH-6 and BH-8) showed chloride concentrations increasing with depths to 4.0'-5.0' below surface of 10,900 mg/kg, 8,290 mg/kg, 4,980 mg/kg, 7,230 mg/kg, and 12,600 mg/kg, respectively. These areas then declined with depth to bottom hole concentrations of 195 mg/kg at 9.0'-10', 585 mg/kg at 9.0'-10', 99.0 mg/kg at 14'-15', 99.0 mg/kg at 9.0'-10', and 490 mg/kg at 9.0'-10', respectively.

TETRA TECH

The areas of boreholes (BH-11, BH-2, and BH-7) showed elevated chloride concentrations at 2.0'-3.0' below surface of 7,920 mg/kg, 10,400 mg/kg, and 7,520 mg/kg, respectively. The concentrations declined with depth to bottom hole concentrations of 97.0 mg/kg at 9.0'-10', 386 mg/kg at 19'-20', and <20.0 mg/kg at 14'-15' below surface, respectively. The chloride impact was vertically defined in all areas.

Work Plan

COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The areas of auger holes (AH-2, AH-7, and AH-8) will be excavated to a depth of approximately 6.0' to 7.0' below surface. The areas of auger holes (AH-1, AH-3, AH-4, AH-5, and AH-6) will be excavated to a depth of approximately 4.0' to 5.0' below surface. The excavated areas will then be backfilled with clean material and brought to surface grade. The excavated soil will be transported to a proper disposal facility.

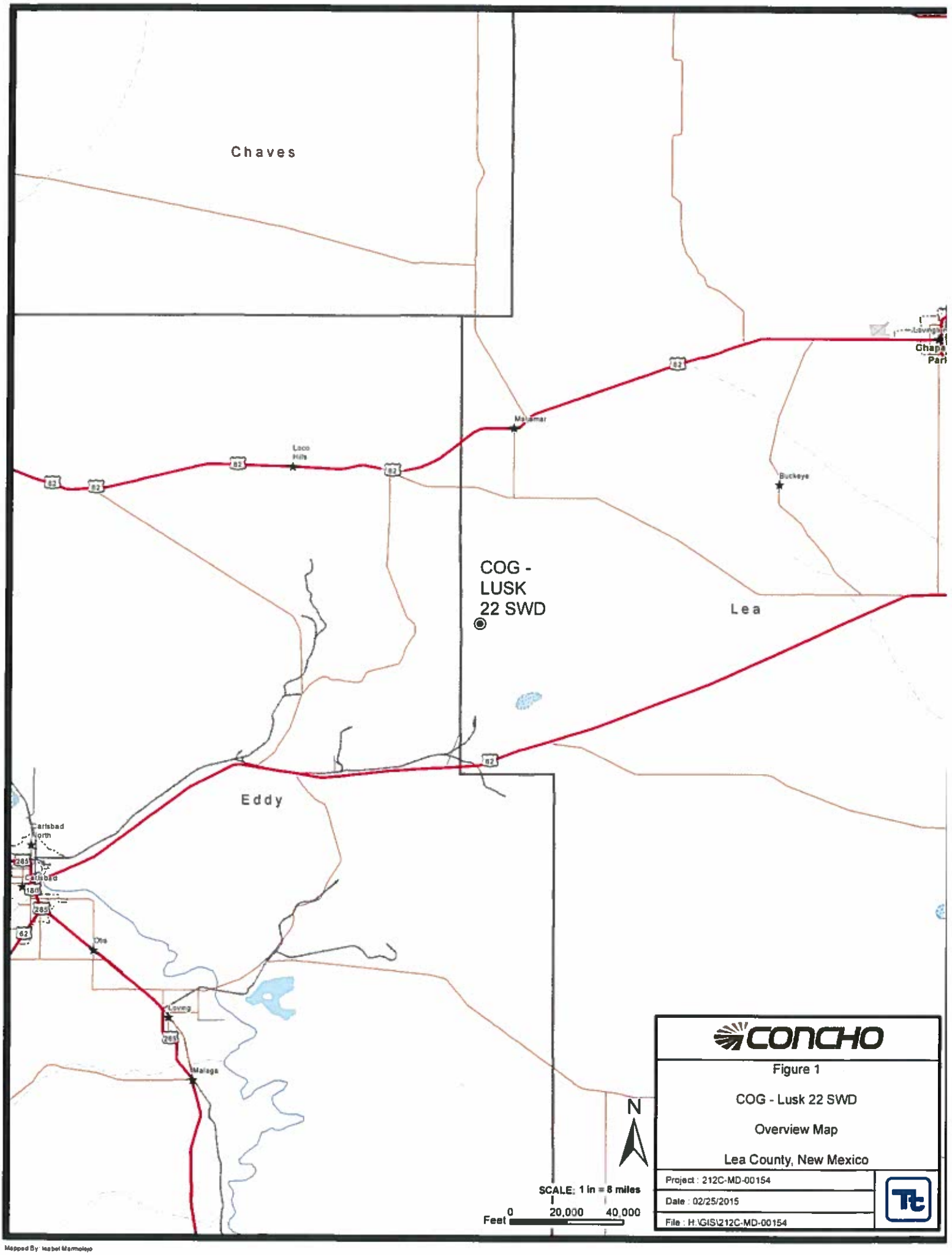
The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. Any remaining impact not accessible to be removed will be deferred until abandonment.

Upon completion, a final report will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist III

Figures



CONCHO

Figure 1

COG - Lusk 22 SWD

Overview Map

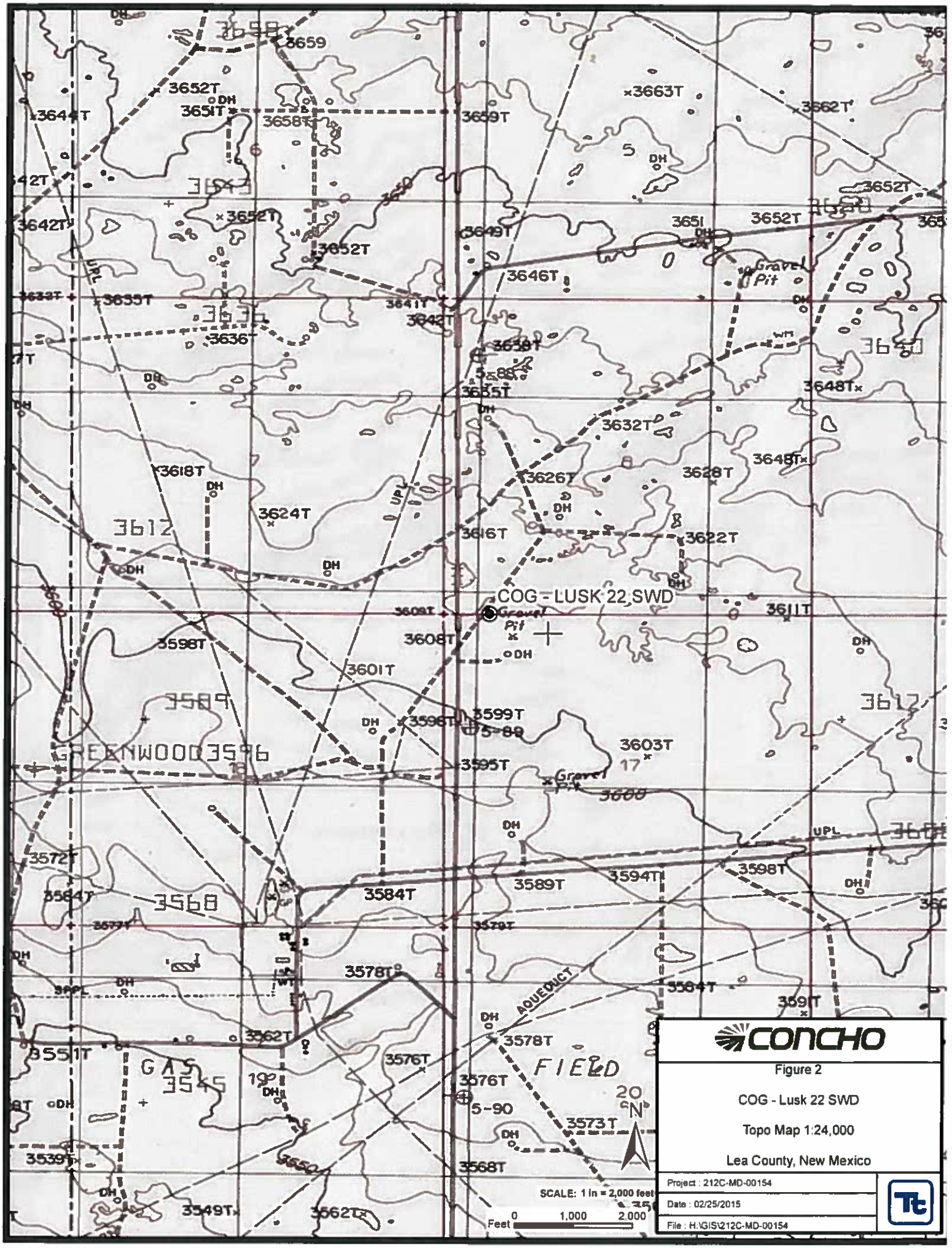
Lea County, New Mexico

Project : 212C-MD-00154

Date : 02/25/2015

File : H:\GIS\212C-MD-00154

Mapped By: Isabel Marmolejo



CONCHO

Figure 2

COG - Lusk 22 SWD

Topo Map 1:24,000

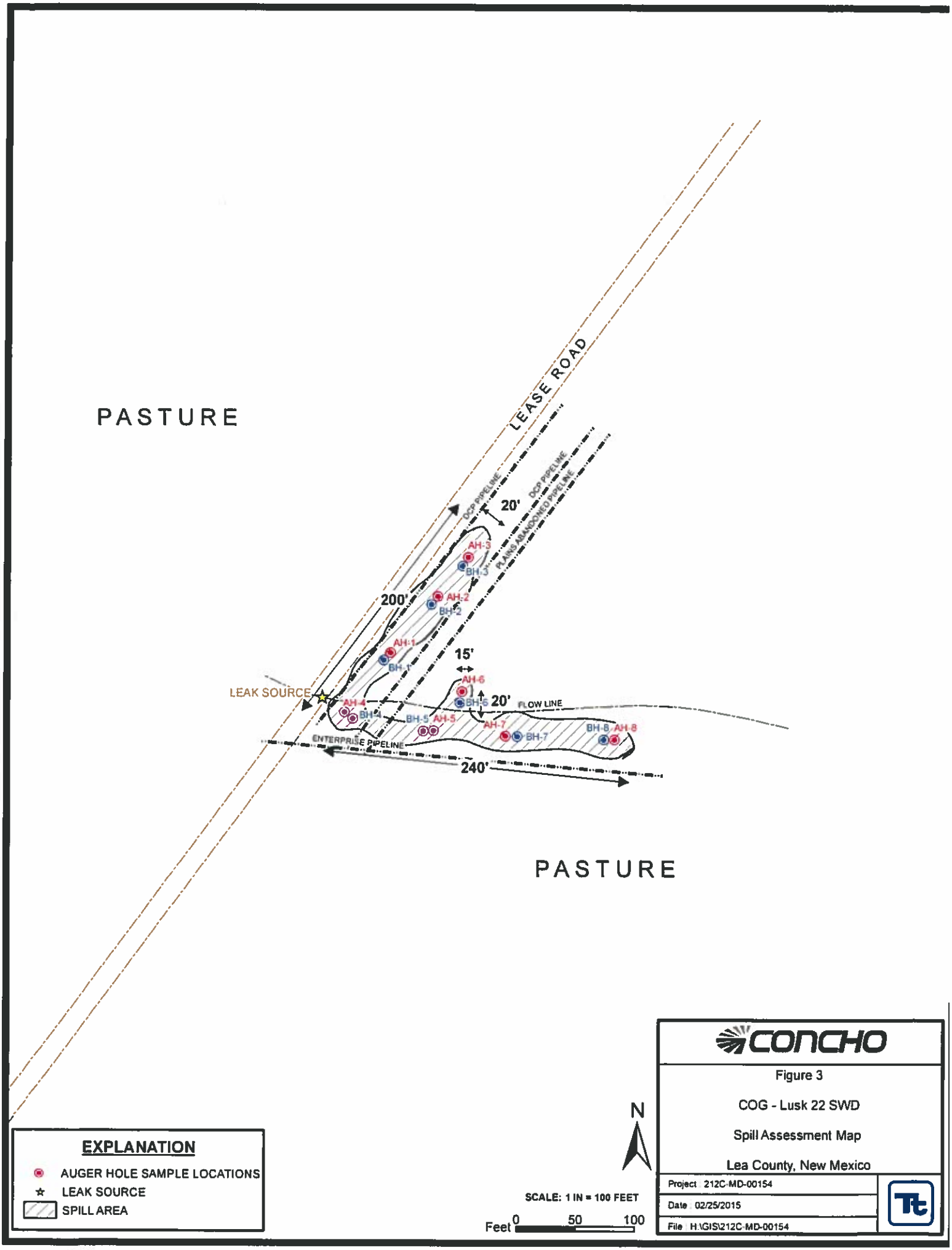
Lea County, New Mexico

Project : 212C-MD-00154

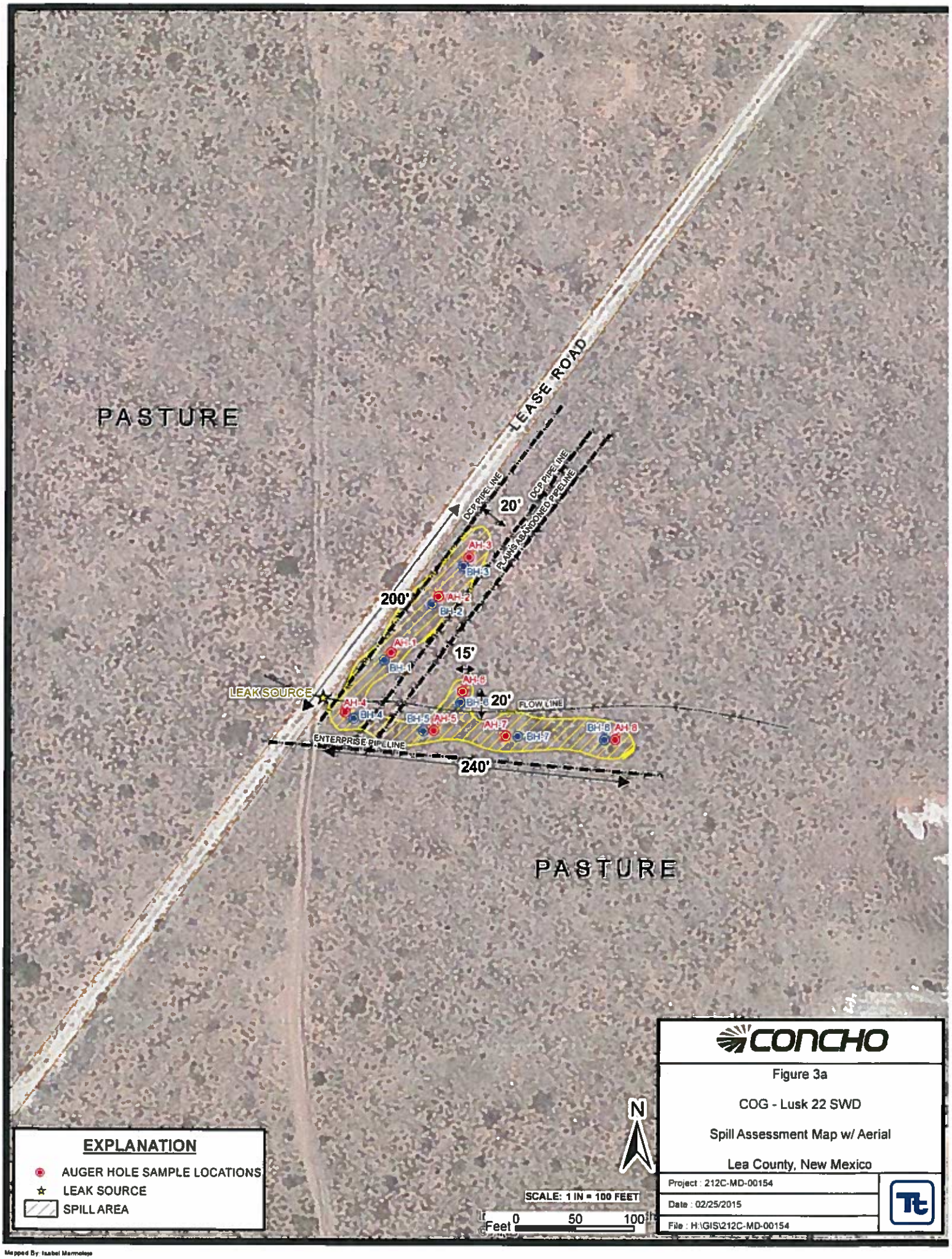
Date : 02/25/2015

File : H:\GIS\212C-MD-00154

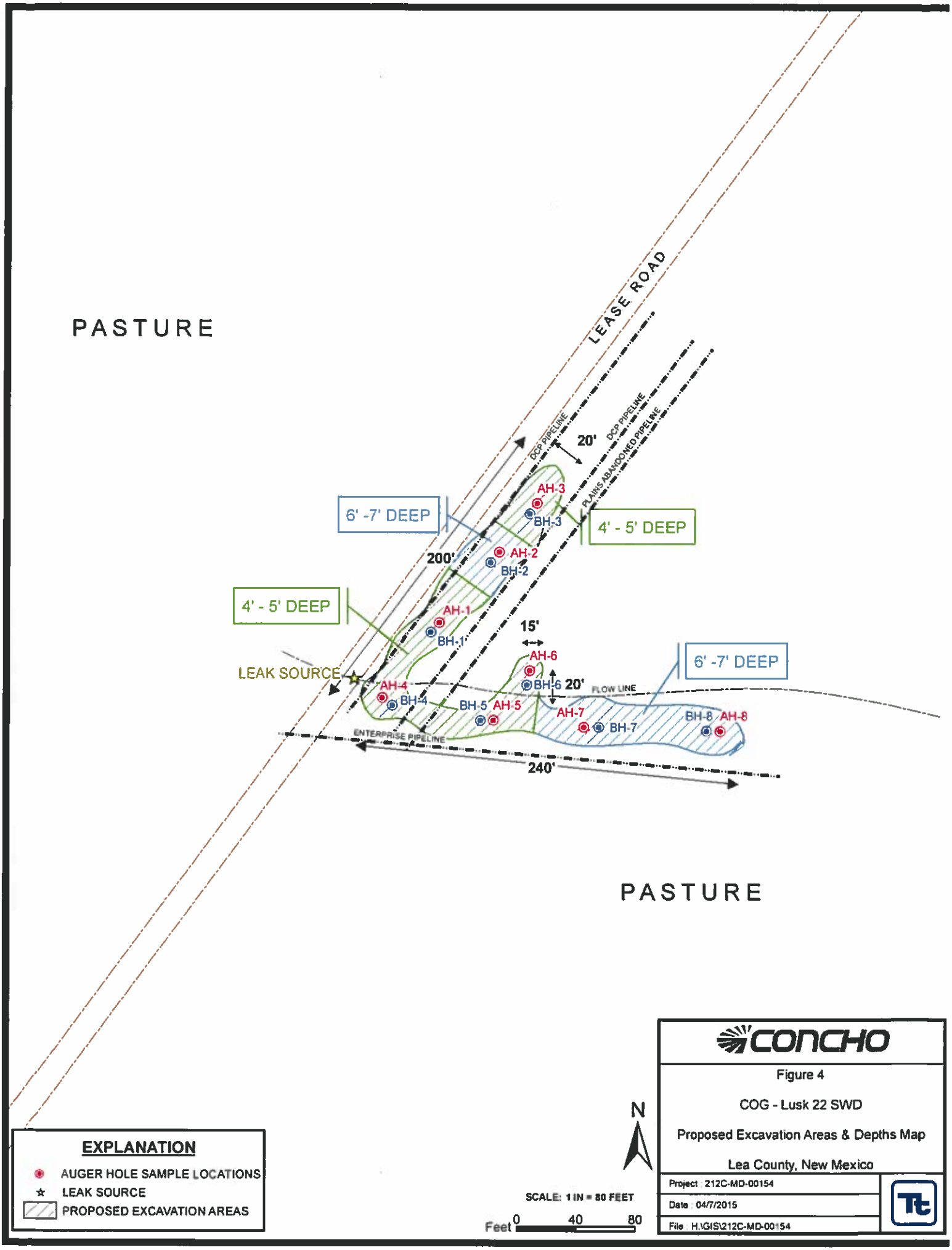
Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo


PASTURE
LEASE ROAD
DCP PIPELINE
20'
DCP PIPELINE
PLAINS ABANDONED PIPELINE
6' -7' DEEP
4' - 5' DEEP
AH-3
BH-3
AH-2
BH-2
200'
4' - 5' DEEP
AH-1
BH-1
15'
AH-6
BH-6
20'
FLOW LINE
6' -7' DEEP
LEAK SOURCE
AH-4
BH-4
BH-5
AH-5
AH-7
BH-7
BH-8
AH-8
ENTERPRISE PIPELINE
240'
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
PROPOSED EXCAVATION AREAS
N
SCALE: 1 IN = 80 FEET
Feet 0 40 80
CONCHO
Figure 4
COG - Lusk 22 SWD
Proposed Excavation Areas & Depths Map
Lea County, New Mexico
Project : 212C-MD-00154
Date : 04/7/2015
File : H:\GIS\212C-MD-00154
Mapped By Isabel Marmolejo

Tables

Table 1
COG Operating LLC
Lusk 22 Salt Water Disposal
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	97.0
	"	1-1.5	X		-	-	-	-	-	-	-	-	9,100
	"	2-2.5	X		-	-	-	-	-	-	-	-	14,400
BH-1	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	7,920
	"	4-5	X		-	-	-	-	-	-	-	-	1,740
	"	6-7	X		-	-	-	-	-	-	-	-	97.0
	"	9-10	X		-	-	-	-	-	-	-	-	97.0
AH-2	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,080
	"	1-1.5	X		-	-	-	-	-	-	-	-	3,290
	"	2-2.5	X		-	-	-	-	-	-	-	-	9,100
	"	3-3.5	X		-	-	-	-	-	-	-	-	15,200
BH-2	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	10,400
	"	4-5	X		-	-	-	-	-	-	-	-	9,950
	"	6-7	X		-	-	-	-	-	-	-	-	7,630
	"	9-10	X		-	-	-	-	-	-	-	-	870
	"	14-15	X		-	-	-	-	-	-	-	-	386
	"	19-20	X		-	-	-	-	-	-	-	-	386

Table 1
COG Operating LLC
Lusk 22 Salt Water Disposal
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-3	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	97.0
	"	1-1.5	X		-	-	-	-	-	-	-	-	7,700
	"	2-2.5	X		-	-	-	-	-	-	-	-	11,600
	"	3-3.5	X		-	-	-	-	-	-	-	-	12,700
BH-3	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	5,760
	"	4-5	X		-	-	-	-	-	-	-	-	10,900
	"	6-7	X		-	-	-	-	-	-	-	-	98.0
	"	9-10	X		-	-	-	-	-	-	-	-	195
AH-4	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,030
	"	1-1.5	X		-	-	-	-	-	-	-	-	6,590
	"	2-2.5	X		-	-	-	-	-	-	-	-	10,600
BH-4	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	7,120
	"	4-5	X		-	-	-	-	-	-	-	-	8,290
	"	6-7	X		-	-	-	-	-	-	-	-	390
	"	9-10	X		-	-	-	-	-	-	-	-	585

Table 1
COG Operating LLC
Lusk 22 Salt Water Disposal
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-5	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	948
	"	1-1.5	X		-	-	-	-	-	-	-	-	3,030
	"	2-2.5	X		-	-	-	-	-	-	-	-	7,770
	"	3-3.5	X		-	-	-	-	-	-	-	-	11,700
BH-5	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	1,660
	"	4-5	X		-	-	-	-	-	-	-	-	4,980
	"	6-7	X		-	-	-	-	-	-	-	-	594
	"	9-10	X		-	-	-	-	-	-	-	-	396
	"	14-15	X		-	-	-	-	-	-	-	-	99.0
AH-6	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	28.0
	"	1-1.5	X		-	-	-	-	-	-	-	-	28.0
	"	2-2.5	X		-	-	-	-	-	-	-	-	9,980
	"	2.5-3	X		-	-	-	-	-	-	-	-	10,800
BH-6	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	4,550
	"	4-5	X		-	-	-	-	-	-	-	-	7,230
	"	6-7	X		-	-	-	-	-	-	-	-	99.0
	"	9-10	X		-	-	-	-	-	-	-	-	99.0

Table 1
COG Operating LLC
Lusk 22 Salt Water Disposal
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-7	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,940
	"	1-1.5	X		-	-	-	-	-	-	-	-	3,390
	"	2-2.5	X		-	-	-	-	-	-	-	-	3,970
	"	3-3.5	X		-	-	-	-	-	-	-	-	4,310
	"	3.5-4	X		-	-	-	-	-	-	-	-	2,710
BH-7	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	7,520
	"	4-5	X		-	-	-	-	-	-	-	-	6,830
	"	6-7	X		-	-	-	-	-	-	-	-	2,080
	"	9-10	X		-	-	-	-	-	-	-	-	<20.0
	"	14-15	X		-	-	-	-	-	-	-	-	<20.0
AH-8	2/2/2015	0-1	X		<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,450
	"	1-1.5	X		-	-	-	-	-	-	-	-	6,200
	"	2-2.5	X		-	-	-	-	-	-	-	-	12,900
BH-8	3/3/2015	2-3	X		-	-	-	-	-	-	-	-	5,100
	"	4-5	X		-	-	-	-	-	-	-	-	12,600
	"	6-7	X		-	-	-	-	-	-	-	-	2,160
	"	9-10	X		-	-	-	-	-	-	-	-	490

Proposed Excavation Depths

(-) Not Analyzed

Photos

COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

TETRA TECH

View North – Area of AH-1

View North – Areas of AH-2 and AH-3

COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

TETRA TECH

View East – Area of AH-4

View East - Area of AH-5

COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

TETRA TECH

View North – Area of AH-6

View East – areas of AH-7 and AH-8

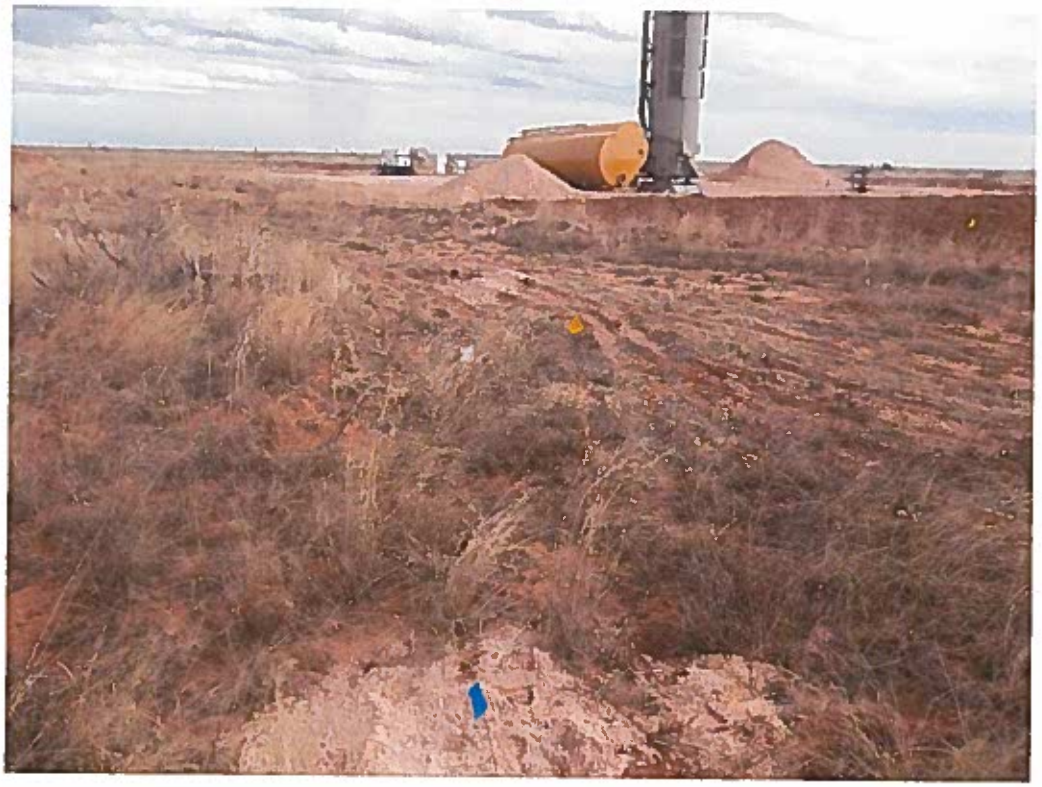
COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

View North – Area of BH-1

View North – Area of BH-2

COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

View South – Area of BH-3



View East – Area of BH-4 and BH-5

COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

TETRA TECH

View Northwest – Area of BH-6

View West – Area of BH-7

COG Operating, LLC
Lusk Deep Unit #22H
Lea County, New Mexico

View West – Area of BH-8

TETRA TECH

Appendix A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

HOBBS OCD
JAN 12 2015
RECEIVED

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 August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: Lusk Deep Unit a #22H	Facility Type: Well

Surface Owner: Federal	Mineral Owner:	API No. 30-025-40705

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	17	19S	32E	380	North	1770	West	Lea

Latitude 32.6668204887527 **Longitude** -103.791219305425

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 150 bbls	Volume Recovered: 70 bbls
Source of Release: Flowline	Date and Hour of Occurrence: 12/12/2014 8:00 pm	Date and Hour of Discovery: 12/12/2014 8:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Tomas Oberding – NMOCD / Jeff Robertson – BLM	
By Whom? Lupe Carrasco	Date and Hour: 12-13-2014	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

This release was caused by a third party contractor, Sweatt Construction, using a dozer. The driver punctured the poly line while moving it. Vacuum trucks were dispatched and all standing fluid was disposed of at NMOCD approved facility.

Describe Area Affected and Cleanup Action Taken.*

The impacted area is located in a pasture adjacent to the location. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Amanda Trujillo	OIL CONSERVATION DIVISION
Printed Name: Amanda Trujillo	Approved by Environmental Specialist:
Title: Senior Environmental Coordinator	Approval Date: 1-12-15 Expiration Date: 3-12-15
E-mail Address: atrujillo@concho.com	Conditions of Approval: Submit plan report. Attached ☐
Date: January 9, 2015 Phone: 575-748-6940	IRP-3498

* Attach Additional Sheets If Necessary

229137

JAN 13 2015

nTO 1501231968
pTO 1501232141

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Lusk Deep Unit #22H

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15 98	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

19 South 31 East

6	5 SITE	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28 180	27	26	25
31	32	33 101	34	35	36 130

20 South 31 East

6	5	4	3	2	1
7	8	9	10 130	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 80

18 South 32 East

6	5	4 65	3	2	1
7 460 82	8	9	10	11	12
18	17	16 84	15	14	13
19	20 164	21	22 429	23	24
30	29	28	27	26	25
31	32	33	34 117	35	36

19 South 32 East

6	5	4	3	2	1
7	8 365	9	10	11	12
18	17 SITE	16	15	14	13 135 dry
19 102	20 345	21	22	23	24
30	29	28	27	26	25
31	32	33	34 250	35	36

20 South 32 East

6	5	4	3	2	1 21.8
7	8	9	10	11	12
18 89	17	16	15	14	13
19	20	21	22	23	24
30 9.9	29	28	27 12.3	26	25
31	32	33	34	35	36 46

18 South 33 East

6	5	4	3 60	2	1
7	8 100	9	10 62	11 46	12 143 140
18	17 85	16	15	14 36	13 60
19 >140	20	21	22	23	24 195
30 35	29	28	27	26	25
31	32	33 177	34	35	36

19 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
18 340	17 116	16	15	14	13
19	20	21	22	23	24
30	29	28 130 dry	27	26 92 85	25
31	32 185	33	34	35	36

20 South 33 East

6	5 325 278	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 +300
30	29	28	27	26	25
31	32	33	34	35	36

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34 NMOCD - Groundwater Data

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Appendix C

Summary Report

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: February 10, 2015

Work Order: 15020316

Project Location: Lea County, NM
Project Name: Sweatt/ COG Lusk 22 SWD
Project Number: 212C-MD-00154

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
385753	AH-1 0-1'	soil	2015-02-02	00:00	2015-02-03
385754	AH-1 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385755	AH-1 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385756	AH-2 0-1'	soil	2015-02-02	00:00	2015-02-03
385757	AH-2 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385758	AH-2 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385759	AH-2 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385760	AH-3 0-1'	soil	2015-02-02	00:00	2015-02-03
385761	AH-3 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385762	AH-3 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385763	AH-3 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385764	AH-4 0-1'	soil	2015-02-02	00:00	2015-02-03
385765	AH-4 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385766	AH-4 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385767	AH-5 0-1'	soil	2015-02-02	00:00	2015-02-03
385768	AH-5 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385769	AH-5 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385770	AH-5 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385771	AH-6 0-1'	soil	2015-02-02	00:00	2015-02-03
385772	AH-6 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385773	AH-6 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385774	AH-6 2.5-3	soil	2015-02-02	00:00	2015-02-03
385775	AH-7 0-1'	soil	2015-02-02	00:00	2015-02-03
385776	AH-7 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385777	AH-7 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385778	AH-7 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385779	AH-7 3.5-4'	soil	2015-02-02	00:00	2015-02-03
385780	AH-8 0-1'	soil	2015-02-02	00:00	2015-02-03
385781	AH-8 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385782	AH-8 2-2.5'	soil	2015-02-02	00:00	2015-02-03

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
385753 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385756 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385760 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385764 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385767 - AH-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385771 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385775 - AH-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
385780 - AH-8 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 385753 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**97.0**	mg/Kg	5

Sample: 385754 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**9100**	mg/Kg	5

Sample: 385755 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**14400**	mg/Kg	5

Sample: 385756 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**2080**	mg/Kg	5

Sample: 385757 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**3290**	mg/Kg	5

Sample: 385758 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**9100**	mg/Kg	5

Sample: 385759 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**15200**	mg/Kg	5

Sample: 385760 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**97.0**	mg/Kg	5

Sample: 385761 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**7700**	mg/Kg	5

Sample: 385762 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**11600**	mg/Kg	5

Sample: 385763 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**12700**	mg/Kg	5

Sample: 385764 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**4030**	mg/Kg	5

Sample: 385765 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**6590**	mg/Kg	5

Sample: 385766 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**10600**	mg/Kg	5

Sample: 385767 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**948**	mg/Kg	5

Sample: 385768 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**3030**	mg/Kg	5

Sample: 385769 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**7770**	mg/Kg	5

Sample: 385770 - AH-5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**11700**	mg/Kg	5

Sample: 385771 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**28.0**	mg/Kg	5

Sample: 385772 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**28.0**	mg/Kg	5

Sample: 385773 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride	Q*	**9980**	mg/Kg	5

Sample: 385774 - AH-6 2.5-3

Param	Flag	Result	Units	RL
Chloride	Q*	**10800**	mg/Kg	5

Sample: 385775 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride	Q1	**1940**	mg/Kg	5

Sample: 385776 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride	Q1	**3390**	mg/Kg	5

Sample: 385777 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride	Q1	**3970**	mg/Kg	5

Sample: 385778 - AH-7 3-3.5'

Param	Flag	Result	Units	RL
Chloride	Q1	**4310**	mg/Kg	5

Sample: 385779 - AH-7 3.5-4'

Param	Flag	Result	Units	RL
Chloride	Q1	**2710**	mg/Kg	5

Sample: 385780 - AH-8 0-1'

Param	Flag	Result	Units	RL
Chloride	Q1	**1450**	mg/Kg	5

Sample: 385781 - AH-8 1-1.5'

Param	Flag	Result	Units	RL
Chloride	Q1	**6200**	mg/Kg	5

Sample: 385782 - AH-8 2-2.5'

Param	Flag	Result	Units	RL
Chloride	Q1	**12900**	mg/Kg	5

TRACEANALYSIS, INC.

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200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail lab@traceanalysis.com WEB www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX, 79705

Report Date: February 10, 2015

Work Order: 15020316

Project Location: Lea County, NM
Project Name: Sweatt/ COG Lusk 22 SWD
Project Number: 212C-MD-00154

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
385753	AH-1 0-1'	soil	2015-02-02	00:00	2015-02-03
385754	AH-1 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385755	AH-1 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385756	AH-2 0-1'	soil	2015-02-02	00:00	2015-02-03
385757	AH-2 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385758	AH-2 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385759	AH-2 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385760	AH-3 0-1'	soil	2015-02-02	00:00	2015-02-03
385761	AH-3 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385762	AH-3 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385763	AH-3 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385764	AH-4 0-1'	soil	2015-02-02	00:00	2015-02-03
385765	AH-4 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385766	AH-4 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385767	AH-5 0-1'	soil	2015-02-02	00:00	2015-02-03
385768	AH-5 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385769	AH-5 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385770	AH-5 3-3.5'	soil	2015-02-02	00:00	2015-02-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
385771	AH-6 0-1'	soil	2015-02-02	00:00	2015-02-03
385772	AH-6 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385773	AH-6 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385774	AH-6 2.5-3	soil	2015-02-02	00:00	2015-02-03
385775	AH-7 0-1'	soil	2015-02-02	00:00	2015-02-03
385776	AH-7 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385777	AH-7 2-2.5'	soil	2015-02-02	00:00	2015-02-03
385778	AH-7 3-3.5'	soil	2015-02-02	00:00	2015-02-03
385779	AH-7 3.5-4'	soil	2015-02-02	00:00	2015-02-03
385780	AH-8 0-1'	soil	2015-02-02	00:00	2015-02-03
385781	AH-8 1-1.5'	soil	2015-02-02	00:00	2015-02-03
385782	AH-8 2-2.5'	soil	2015-02-02	00:00	2015-02-03

Notes

- **Work Order 15020316:** Run deeper samples if TPH exceeds 5000ppm, benzene exceeds 10ppm, or Total BTEX exceeds 50ppm

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.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project Sweatt/ COG Lusk 22 SWD were received by TraceAnalysis, Inc. on 2015-02-03 and assigned to work order 15020316. Samples for work order 15020316 were received intact at a temperature of 5.8 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	100741	2015-02-05 at 15:34	119167	2015-02-09 at 07:13
Chloride (Titration)	SM 4500-Cl B	100744	2015-02-05 at 14:00	119124	2015-02-05 at 14:00
Chloride (Titration)	SM 4500-Cl B	100812	2015-02-09 at 14:00	119210	2015-02-09 at 14:00
Chloride (Titration)	SM 4500-Cl B	100817	2015-02-09 at 16:00	119214	2015-02-09 at 16:00
TPH DRO - NEW	S 8015 D	100781	2015-02-08 at 20:15	119182	2015-02-09 at 10:54
TPH GRO	S 8015 D	100741	2015-02-05 at 15:34	119168	2015-02-09 at 07:17

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 15020316 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: 385753 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 385753 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**97.0**	mg/Kg	5	5.00

Sample: 385753 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[2]	[2]		142	mg/Kg	1	100	142	70 - 130

Sample: 385753 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.68	mg/Kg	1	2.00	84	70 - 130

Sample: 385754 - AH-1 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**9100**	mg/Kg	5	5.00

Sample: 385755 - AH-1 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

continued ...

sample 385755 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**14400**	mg/Kg	5	5.00

Sample: 385756 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 385756 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**2080**	mg/Kg	5	5.00

Sample: 385756 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	141	mg/Kg	1	100	141	70 - 130

Sample: 385756 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Sample: 385757 - AH-2 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**3290**	mg/Kg	5	5.00

Sample: 385758 - AH-2 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**9100**	mg/Kg	5	5.00

Sample: 385759 - AH-2 3-3.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**15200**	mg/Kg	5	5.00

Sample: 385760 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	70 - 130

Sample: 385760 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**97.0**	mg/Kg	5	5.00

Sample: 385760 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate		Flag		Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qar	Qar			142	mg/Kg	1	100	142	70 - 130

Sample: 385760 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.81	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	70 - 130

Sample: 385761 - AH-3 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**7700**	mg/Kg	5	5.00

Sample: 385762 - AH-3 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119124	Date Analyzed:	2015-02-05	Analyzed By:	HJ
Prep Batch:	100744	Sample Preparation:	2015-02-05	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**11600**	mg/Kg	5	5.00

Sample: 385763 - AH-3 3-3.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**12700**	mg/Kg	5	5.00

Sample: 385764 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 385764 - AH-4 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**4030**	mg/Kg	5	5.00

Sample: 385764 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q-sr	Q-sr	141	mg/Kg	1	100	141	70 - 130

Sample: 385764 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.71	mg/Kg	1	2.00	86	70 - 130

Sample: 385765 - AH-4 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**6590**	mg/Kg	5	5.00

Sample: 385766 - AH-4 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**10600**	mg/Kg	5	5.00

Sample: 385767 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 385767 - AH-5 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**948**	mg/Kg	5	5.00

Sample: 385767 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q-01	Q-01		152	mg/Kg	1	100	152	70 - 130

Sample: 385767 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	70 - 130

Sample: 385768 - AH-5 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**3030**	mg/Kg	5	5.00

Sample: 385769 - AH-5 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**7770**	mg/Kg	5	5.00

Sample: 385770 - AH-5 3-3.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**11700**	mg/Kg	5	5.00

Sample: 385771 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 385771 - AH-6 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**28.0**	mg/Kg	1	5.00

Sample: 385771 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		146	mg/Kg	1	100	146	70 - 130

Sample: 385771 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	70 - 130

Sample: 385772 - AH-6 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119210	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100812	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**28.0**	mg/Kg	1	5.00

Sample: 385773 - AH-6 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Q*	1	**9980**	mg/Kg	5	5.00

Sample: 385774 - AH-6 2.5-3

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Q*	1	**10800**	mg/Kg	5	5.00

Sample: 385775 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70 - 130

Sample: 385775 - AH-7 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**1940**	mg/Kg	5	5.00

Sample: 385775 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q#1	Q#1	144	mg/Kg	1	100	144	70 - 130

Sample: 385775 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Sample: 385776 - AH-7 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q=	1	**3390**	mg/Kg	5	5.00

Sample: 385777 - AH-7 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q=	1	**3970**	mg/Kg	5	5.00

Sample: 385778 - AH-7 3-3.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q=	1	**4310**	mg/Kg	5	5.00

Sample: 385779 - AH-7 3.5-4'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q=	1	**2710**	mg/Kg	5	5.00

Sample: 385780 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119167	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 385780 - AH-8 0-1'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**1450**	mg/Kg	5	5.00

Sample: 385780 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119182	Date Analyzed:	2015-02-09	Analyzed By:	SC
Prep Batch:	100781	Sample Preparation:	2015-02-08	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q*r	Q*r		139	mg/Kg	1	100	139	70 - 130

Sample: 385780 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119168	Date Analyzed:	2015-02-09	Analyzed By:	AK
Prep Batch:	100741	Sample Preparation:	2015-02-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	70 - 130

Sample: 385781 - AH-8 1-1.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**6200**	mg/Kg	5	5.00

Sample: 385782 - AH-8 2-2.5'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119214	Date Analyzed:	2015-02-09	Analyzed By:	HJ
Prep Batch:	100817	Sample Preparation:	2015-02-09	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**12900**	mg/Kg	5	5.00

Method Blanks

Method Blank (1) QC Batch: 119124

QC Batch: 119124 | Date Analyzed: 2015-02-05 | Analyzed By: HJ
Prep Batch: 100744 | QC Preparation: 2015-02-05 | Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<3.05	mg/Kg	5

Method Blank (1) QC Batch: 119167

QC Batch: 119167 | Date Analyzed: 2015-02-09 | Analyzed By: AK
Prep Batch: 100741 | QC Preparation: 2015-02-05 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.00533	mg/Kg	0.02
Toluene		2	<0.00645	mg/Kg	0.02
Ethylbenzene		2	<0.0116	mg/Kg	0.02
Xylene		2	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 119168

QC Batch: 119168 | Date Analyzed: 2015-02-09 | Analyzed By: AK
Prep Batch: 100741 | QC Preparation: 2015-02-05 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	70 - 130

Method Blank (1) QC Batch: 119182

QC Batch: 119182 Date Analyzed: 2015-02-09 Analyzed By: SC
Prep Batch: 100781 QC Preparation: 2015-02-08 Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qm Qm		135	mg/Kg	1	100	135	70 - 130

Method Blank (1) QC Batch: 119210

QC Batch: 119210 Date Analyzed: 2015-02-09 Analyzed By: HJ
Prep Batch: 100812 QC Preparation: 2015-02-09 Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<3.05	mg/Kg	5

Method Blank (1) QC Batch: 119214

QC Batch: 119214 Date Analyzed: 2015-02-09 Analyzed By: HJ
Prep Batch: 100817 QC Preparation: 2015-02-09 Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<3.05	mg/Kg	5

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 119124 | Date Analyzed: 2015-02-05 | Analyzed By: HJ
Prep Batch: 100744 | QC Preparation: 2015-02-05 | Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2370	mg/Kg	5	2500	<15.2	95	76.7 - 126

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2470	mg/Kg	5	2500	<15.2	99	76.7 - 126	4	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: 119167 | Date Analyzed: 2015-02-09 | Analyzed By: AK
Prep Batch: 100741 | QC Preparation: 2015-02-05 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.85	mg/Kg	1	2.00	<0.00533	92	70 - 130
Toluene		2	1.84	mg/Kg	1	2.00	<0.00645	92	70 - 130
Ethylbenzene		2	1.80	mg/Kg	1	2.00	<0.0116	90	70 - 130
Xylene		2	5.46	mg/Kg	1	6.00	<0.00874	91	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	1.84	mg/Kg	1	2.00	<0.00533	92	70 - 130	1	20
Toluene		2	1.81	mg/Kg	1	2.00	<0.00645	90	70 - 130	1	20
Ethylbenzene		2	1.81	mg/Kg	1	2.00	<0.0116	90	70 - 130	0	20
Xylene		2	5.46	mg/Kg	1	6.00	<0.00874	91	70 - 130	0	20

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

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.80	mg/Kg	1	2.00	93	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.88	1.85	mg/Kg	1	2.00	94	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119168 | Date Analyzed: 2015-02-09 | Analyzed By: AK
Prep Batch: 100741 | QC Preparation: 2015-02-05 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	18.1	mg/Kg	1	20.0	<2.32	90	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	21.0	mg/Kg	1	20.0	<2.32	105	70 - 130	15	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)	1.87	1.95	mg/Kg	1	2.00	94	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.67	1.74	mg/Kg	1	2.00	84	87	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119182 | Date Analyzed: 2015-02-09 | Analyzed By: SC
Prep Batch: 100781 | QC Preparation: 2015-02-08 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	224	mg/Kg	1	250	<7.41	90	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	269	mg/Kg	1	250	<7.41	108	70 - 130	18	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
n-Tricosane	Qsr	Qsr	137	150	mg/Kg	1	100	137	150	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119210 | Date Analyzed: 2015-02-09 | Analyzed By: HJ
Prep Batch: 100812 | QC Preparation: 2015-02-09 | Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2280	mg/Kg	5	2500	<15.2	91	76.7 - 126

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2280	mg/Kg	5	2500	<15.2	91	76.7 - 126	0	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: 119214 | Date Analyzed: 2015-02-09 | Analyzed By: HJ
Prep Batch: 100817 | QC Preparation: 2015-02-09 | Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2320	mg/Kg	5	2500	<15.2	93	76.7 - 126

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2370	mg/Kg	5	2500	<15.2	95	76.7 - 126	2	20

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

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 385762

QC Batch: 119124 | Date Analyzed: 2015-02-05 | Analyzed By: HJ
Prep Batch: 100744 | QC Preparation: 2015-02-05 | Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	13800	mg/Kg	5	2500	11600	88	58.7 - 137

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	13600	mg/Kg	5	2500	11600	80	58.7 - 137	1	20

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

Matrix Spike (MS-1) Spiked Sample: 385976

QC Batch: 119167 | Date Analyzed: 2015-02-09 | Analyzed By: AK
Prep Batch: 100741 | QC Preparation: 2015-02-05 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.55	mg/Kg	1	2.00	<0.00533	78	70 - 130
Toluene		2	1.61	mg/Kg	1	2.00	<0.00645	80	70 - 130
Ethylbenzene		2	1.69	mg/Kg	1	2.00	<0.0116	84	70 - 130
Xylene		2	5.16	mg/Kg	1	6.00	<0.00874	86	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	1.51	mg/Kg	1	2.00	<0.00533	76	70 - 130	3	20
Toluene		2	1.57	mg/Kg	1	2.00	<0.00645	78	70 - 130	2	20
Ethylbenzene		2	1.68	mg/Kg	1	2.00	<0.0116	84	70 - 130	1	20
Xylene		2	5.06	mg/Kg	1	6.00	<0.00874	84	70 - 130	2	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.81	mg/Kg	1	2	88	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.91	mg/Kg	1	2	96	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 385976

QC Batch: 119168 | Date Analyzed: 2015-02-09 | Analyzed By: AK
Prep Batch: 100741 | QC Preparation: 2015-02-05 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	16.4	mg/Kg	1	20.0	<2.32	82	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	15.9	mg/Kg	1	20.0	<2.32	80	70 - 130	3	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)	1.85	1.88	mg/Kg	1	2	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.75	1.92	mg/Kg	1	2	88	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 385753

QC Batch: 119182 | Date Analyzed: 2015-02-09 | Analyzed By: SC
Prep Batch: 100781 | QC Preparation: 2015-02-08 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	228	mg/Kg	1	250	<7.41	91	70 - 130

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

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	232	mg/Kg	1	250	<7.41	93	70 - 130	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
n-Tricosane	130	135	mg/Kg	1	100	130	135	70 - 130

Matrix Spike (MS-1) Spiked Sample: 385772

QC Batch: 119210 | Date Analyzed: 2015-02-09 | Analyzed By: HJ
Prep Batch: 100812 | QC Preparation: 2015-02-09 | Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2250	mg/Kg	1	2500	28	89	58.7 - 137

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2300	mg/Kg	1	2500	28	91	58.7 - 137	2	20

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

Matrix Spike (MS-1) Spiked Sample: 385782

QC Batch: 119214 | Date Analyzed: 2015-02-09 | Analyzed By: HJ
Prep Batch: 100817 | QC Preparation: 2015-02-09 | Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride Q-	Q-	1	13800	mg/Kg	5	2500	12900	36	58.7 - 137

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride Q-	Q-	1	14100	mg/Kg	5	2500	12900	48	58.7 - 137	2	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 119124 Date Analyzed: 2015-02-05 Analyzed By: HJ

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	100	100	85 - 115	2015-02-05

Standard (CCV-1)

QC Batch: 119124 Date Analyzed: 2015-02-05 Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	100	100	85 - 115	2015-02-05

Standard (CCV-2)

QC Batch: 119167 Date Analyzed: 2015-02-09 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.0929	93	80 - 120	2015-02-09
Toluene		2	mg/kg	0.100	0.0929	93	80 - 120	2015-02-09
Ethylbenzene		2	mg/kg	0.100	0.0915	92	80 - 120	2015-02-09
Xylene		2	mg/kg	0.300	0.275	92	80 - 120	2015-02-09

Standard (CCV-3)

QC Batch: 119167 Date Analyzed: 2015-02-09 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.0909	91	80 - 120	2015-02-09
Toluene		2	mg/kg	0.100	0.0906	91	80 - 120	2015-02-09
Ethylbenzene		2	mg/kg	0.100	0.0896	90	80 - 120	2015-02-09
Xylene		2	mg/kg	0.300	0.269	90	80 - 120	2015-02-09

Standard (CCV-2)

QC Batch: 119168 Date Analyzed: 2015-02-09 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	0.912	91	80 - 120	2015-02-09

Standard (CCV-3)

QC Batch: 119168 Date Analyzed: 2015-02-09 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	0.858	86	80 - 120	2015-02-09

Standard (CCV-1)

QC Batch: 119182 Date Analyzed: 2015-02-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	218	87	80 - 120	2015-02-09

Standard (CCV-2)

QC Batch: 119182 Date Analyzed: 2015-02-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	256	102	80 - 120	2015-02-09

Standard (CCV-3)

QC Batch: 119182 Date Analyzed: 2015-02-09 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	207	83	80 - 120	2015-02-09

Standard (ICV-1)

QC Batch: 119210 Date Analyzed: 2015-02-09 Analyzed By: HJ

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	101	101	85 - 115	2015-02-09

Standard (CCV-1)

QC Batch: 119210 Date Analyzed: 2015-02-09 Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	99.0	99	85 - 115	2015-02-09

Standard (ICV-1)

QC Batch: 119214 Date Analyzed: 2015-02-09 Analyzed By: HJ

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	100	100	85 - 115	2015-02-09

Standard (CCV-1)

QC Batch: 119214 | Date Analyzed: 2015-02-09 | Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	100	100	85 - 115	2015-02-09

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-93	Lubbock
2	NELAP	T104704392-14-8	Midland

Standard Flags

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

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

Analysis Request of Chain of Custody Record

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

CLIENT NAME: Sweatt

SITE MANAGER: Ike Tavarez

PROJECT NO.:

PROJECT NAME: Sweatt / COG Lusk 22 SWD (Lea County)

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD TX1005 (Ext. to C35)	PAH 8270	RCRA 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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
385753	2-2-15				X	AH 1 0-1'	1	N			X	X	Y	X											Y				
754	2-2-15				X	AH 1 1-1.5'	1	N			X	X													Y				
755	2-2-15				X	AH 1 2-2.5'	1	N			X	X													Y				
756	2-2-15				X	AH 2 0-1'	1	N			X	X	Y	X											Y				
757	2-2-15				X	AH 2 1-1.5'	1	N			X	X													Y				
758	2-2-15				X	AH 2 2-2.5'	1	N			X	X													Y				
759	2-2-15				X	AH 2 3-3.5'	1	N			X	X													Y				
760	2-2-15				X	AH 3 0-1'	1	N			X	X	Y	X											Y				
761	2-2-15				X	AH 3 1-1.5'	1	N			X	X													Y				
762	2-2-15				X	AH 3 2-2.5'	1	N			X	X													Y				

RELINQUISHED BY: (Signature) [illegible] Date: 2-3-15 Time:
RECEIVED BY: (Signature) [illegible] Date: 2-3-15 Time: 12:54

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

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) [illegible] 1R3 5.6 5.3 Date: 2-4-15 Time: 0930

RECEIVED BY: (Signature) 2S134768
DATE: TIME:

SAMPLED BY: (Print & Initial) Mathew MM. Adrian AG Date: 2-2-15 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

~~TETRA TECH~~ CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:

SAMPLE CONDITION WHEN RECEIVED: 5.8°C

REMARKS: Run deeper samples if TPH exceeds 5000ppm for deeper samples.

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

If benzene exceeds 10ppm or total BTEX 50ppm.

Analysis Request of Chain of Custody Record

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

CLIENT NAME: Swott
SITE MANAGER: Ike Tavarez
PROJECT NO.:
PROJECT NAME: Swott/COG Unit 22 SWD, Lea County, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD	PAH 8270	RCRA 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. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
763	2-2-15				X	AH 3 3-3.5	1	N			X	X														4				
764					X	AH 4 0-1'	1	N			X	X	X	X												4				
765					X	AH 4 1-1.5'	1	N			X	X														4				
766					X	AH 4 2-2.5'	1	N			X	X														4				
767					X	AH 5 0-1'	1	N			X	X	X	X												4				
768					X	AH 5 1-1.5'	1	N			X	X														4				
769					X	AH 5 2-2.5'	1	N			X	X														4				
770					X	AH 5. 3-3.5'	1	N			X	X														4				
771					X	AH 6 0-1'	1	N			X	X	X	X												4				
772					X	AH 6 1-1.5'	1	N			X	X														4				

RELINQUISHED BY: (Signature) — Date: 2-3-15 Time:
RECEIVED BY: (Signature) — Date: 2-3-15 Time: 12:54
RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) IR3 5.6 5.3 — Date: 2-4-15 Time: 0930

SAMPLED BY: (Print & Initial) Matthew Atkinson AG — Date: 2-2-15 Time:
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS — AIRBILL #: OTHER:

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) 525134768 DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.9
REMARKS:

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

Analysis Request of Chain of Custody Record

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

CLIENT NAME: Swott
SITE MANAGER: The Tavarez
PROJECT NO.:
PROJECT NAME: Swott / COG Lusk 22 SWD, Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 M(D)	TX1005 (Ext. to C35)	PAH 8270	RCRA 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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
385 773	2-2-15				X	AH 6 2-2.5'	1	N			X	X														X				
774	2-2-15				X	AH 6 2.5-3'	1	N			X	X														X				
775	2-2-15				X	AH 7 0-1'	1	N			X	X	X	X												X				
776	2-2-15				X	AH 7 1-1.5'	1	N			X	X														X				
777	2-2-15				X	AH 7 2-2.5'	1	N			X	X														X				
778	2-2-15				X	AH 7 3-3.5'	1	N			X	X														X				
779	2-2-15				X	AH 7 3.5-4'	1	N			X	X														X				
780	2-2-15				X	AH 8 0-1'	1	N			X	X	X	X												X				
781	2-2-15				X	AH 8 1-1.5'	1	N			X	X														X				
782	2-2-15				X	AH 8 2-2.5'	1	N			X	X														X				

RELINQUISHED BY: (Signature) — Date: 2-3-15 Time:
RECEIVED BY: (Signature) — Date: 2-3-15 Time: 12:54

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

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: 2-4-15 Time: 09:30

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLED BY: (Print & Initial) Cortez Mm. Adrian AG — Date: 2-2-15 Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

TETRA TECH CONTACT PERSON: The Tavarez

Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: IR3 5.6/5.3 LS 25134768

ANALYSIS REQUEST (Circle or Specify Method No.)

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

Summary Report

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: March 16, 2015

Work Order: 15030419

Project Location: Lea County, NM
Project Name: COG-Lusk 22 SWD
Project Number: 212C-MD-00154

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
387990	BH-1 2-3	soil	2015-03-03	00:00	2015-03-04
387991	BH-1 4-5	soil	2015-03-03	00:00	2015-03-04
387992	BH-1 6-7	soil	2015-03-03	00:00	2015-03-04
387993	BH-1 9-10	soil	2015-03-03	00:00	2015-03-04
387994	BH-2 2-3	soil	2015-03-03	00:00	2015-03-04
387995	BH-2 4-5	soil	2015-03-03	00:00	2015-03-04
387996	BH-2 6-7	soil	2015-03-03	00:00	2015-03-04
387997	BH-2 9-10	soil	2015-03-03	00:00	2015-03-04
387998	BH-2 14-15	soil	2015-03-03	00:00	2015-03-04
387999	BH-2 19-20	soil	2015-03-03	00:00	2015-03-04
388000	BH-3 2-3	soil	2015-03-03	00:00	2015-03-04
388001	BH-3 4-5	soil	2015-03-03	00:00	2015-03-04
388002	BH-3 6-7	soil	2015-03-03	00:00	2015-03-04
388003	BH-3 9-10	soil	2015-03-03	00:00	2015-03-04
388004	BH-4 2-3	soil	2015-03-03	00:00	2015-03-04
388005	BH-4 4-5	soil	2015-03-03	00:00	2015-03-04
388006	BH-4 6-7	soil	2015-03-03	00:00	2015-03-04
388007	BH-4 9-10	soil	2015-03-03	00:00	2015-03-04
388008	BH-5 2-3	soil	2015-03-03	00:00	2015-03-04
388009	BH-5 4-5	soil	2015-03-03	00:00	2015-03-04
388010	BH-5 6-7	soil	2015-03-03	00:00	2015-03-04
388011	BH-5 9-10	soil	2015-03-03	00:00	2015-03-04
388012	BH-5 14-15	soil	2015-03-03	00:00	2015-03-04
388013	BH-6 2-3	soil	2015-03-03	00:00	2015-03-04
388014	BH-6 4-5	soil	2015-03-03	00:00	2015-03-04
388015	BH-6 6-7	soil	2015-03-03	00:00	2015-03-04
388016	BH-6 9-10	soil	2015-03-03	00:00	2015-03-04
388017	BH-7 2-3	soil	2015-03-03	00:00	2015-03-04
388018	BH-7 4-5	soil	2015-03-03	00:00	2015-03-04
388019	BH-7 6-7	soil	2015-03-03	00:00	2015-03-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
388020	BH-7 9-10	soil	2015-03-03	00:00	2015-03-04
388021	BH-7 14-15	soil	2015-03-03	00:00	2015-03-04
388022	BH-8 2-3	soil	2015-03-03	00:00	2015-03-04
388023	BH-8 4-5	soil	2015-03-03	00:00	2015-03-04
388024	BH-8 6-7	soil	2015-03-03	00:00	2015-03-04
388025	BH-8 9-10	soil	2015-03-03	00:00	2015-03-04

Sample: 387990 - BH-1 2-3

Param	Flag	Result	Units	RL
Chloride		**7920**	mg/Kg	4

Sample: 387991 - BH-1 4-5

Param	Flag	Result	Units	RL
Chloride		**1740**	mg/Kg	4

Sample: 387992 - BH-1 6-7

Param	Flag	Result	Units	RL
Chloride		**97.0**	mg/Kg	4

Sample: 387993 - BH-1 9-10

Param	Flag	Result	Units	RL
Chloride		**97.0**	mg/Kg	4

Sample: 387994 - BH-2 2-3

Param	Flag	Result	Units	RL
Chloride		**10400**	mg/Kg	4

Sample: 387995 - BH-2 4-5

Param	Flag	Result	Units	RL
Chloride		**9950**	mg/Kg	4

Sample: 387996 - BH-2 6-7

Param	Flag	Result	Units	RL
Chloride		**7630**	mg/Kg	4

Sample: 387997 - BH-2 9-10

Param	Flag	Result	Units	RL
Chloride		**870**	mg/Kg	4

Sample: 387998 - BH-2 14-15

Param	Flag	Result	Units	RL
Chloride		**386**	mg/Kg	4

Sample: 387999 - BH-2 19-20

Param	Flag	Result	Units	RL
Chloride		**386**	mg/Kg	4

Sample: 388000 - BH-3 2-3

Param	Flag	Result	Units	RL
Chloride		**5760**	mg/Kg	4

Sample: 388001 - BH-3 4-5

Param	Flag	Result	Units	RL
Chloride		**10900**	mg/Kg	4

Sample: 388002 - BH-3 6-7

Param	Flag	Result	Units	RL
Chloride		**98.0**	mg/Kg	4

Sample: 388003 - BH-3 9-10

Param	Flag	Result	Units	RL
Chloride		**195**	mg/Kg	4

Sample: 388004 - BH-4 2-3

Param	Flag	Result	Units	RL
Chloride		**7120**	mg/Kg	4

Sample: 388005 - BH-4 4-5

Param	Flag	Result	Units	RL
Chloride		**8290**	mg/Kg	4

Sample: 388006 - BH-4 6-7

Param	Flag	Result	Units	RL
Chloride		**390**	mg/Kg	4

Sample: 388007 - BH-4 9-10

Param	Flag	Result	Units	RL
Chloride		**585**	mg/Kg	4

Sample: 388008 - BH-5 2-3

Param	Flag	Result	Units	RL
Chloride		**1660**	mg/Kg	4

Sample: 388009 - BH-5 4-5

Param	Flag	Result	Units	RL
Chloride		**4980**	mg/Kg	4

Sample: 388010 - BH-5 6-7

Param	Flag	Result	Units	RL
Chloride		**594**	mg/Kg	4

Sample: 388011 - BH-5 9-10

Param	Flag	Result	Units	RL
Chloride		**396**	mg/Kg	4

Sample: 388012 - BH-5 14-15

Param	Flag	Result	Units	RL
Chloride		**99.0**	mg/Kg	4

Sample: 388013 - BH-6 2-3

Param	Flag	Result	Units	RL
Chloride		**4550**	mg/Kg	4

Sample: 388014 - BH-6 4-5

Param	Flag	Result	Units	RL
Chloride		**7230**	mg/Kg	4

Sample: 388015 - BH-6 6-7

Param	Flag	Result	Units	RL
Chloride		**99.0**	mg/Kg	4

Sample: 388016 - BH-6 9-10

Param	Flag	Result	Units	RL
Chloride		**99.0**	mg/Kg	4

Sample: 388017 - BH-7 2-3

Param	Flag	Result	Units	RL
Chloride		**7520**	mg/Kg	4

Sample: 388018 - BH-7 4-5

Param	Flag	Result	Units	RL
Chloride		**6830**	mg/Kg	4

Sample: 388019 - BH-7 6-7

Param	Flag	Result	Units	RL
Chloride		**2080**	mg/Kg	4

Sample: 388020 - BH-7 9-10

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

Sample: 388021 - BH-7 14-15

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

Sample: 388022 - BH-8 2-3

Param	Flag	Result	Units	RL
Chloride		**5100**	mg/Kg	4

Sample: 388023 - BH-8 4-5

Param	Flag	Result	Units	RL
Chloride		**12600**	mg/Kg	4

Sample: 388024 - BH-8 6-7

Param	Flag	Result	Units	RL
Chloride		**2160**	mg/Kg	4

Sample: 388025 - BH-8 9-10

Param	Flag	Result	Units	RL
Chloride		**490**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail lab@traceanalysis.com WEB www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX, 79705

Report Date: March 16, 2015

Work Order: 15030419

Project Location: Lea County, NM
Project Name: COG-Lusk 22 SWD
Project Number: 212C-MD-00154

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
387990	BH-1 2-3	soil	2015-03-03	00:00	2015-03-04
387991	BH-1 4-5	soil	2015-03-03	00:00	2015-03-04
387992	BH-1 6-7	soil	2015-03-03	00:00	2015-03-04
387993	BH-1 9-10	soil	2015-03-03	00:00	2015-03-04
387994	BH-2 2-3	soil	2015-03-03	00:00	2015-03-04
387995	BH-2 4-5	soil	2015-03-03	00:00	2015-03-04
387996	BH-2 6-7	soil	2015-03-03	00:00	2015-03-04
387997	BH-2 9-10	soil	2015-03-03	00:00	2015-03-04
387998	BH-2 14-15	soil	2015-03-03	00:00	2015-03-04
387999	BH-2 19-20	soil	2015-03-03	00:00	2015-03-04
388000	BH-3 2-3	soil	2015-03-03	00:00	2015-03-04
388001	BH-3 4-5	soil	2015-03-03	00:00	2015-03-04
388002	BH-3 6-7	soil	2015-03-03	00:00	2015-03-04
388003	BH-3 9-10	soil	2015-03-03	00:00	2015-03-04
388004	BH-4 2-3	soil	2015-03-03	00:00	2015-03-04
388005	BH-4 4-5	soil	2015-03-03	00:00	2015-03-04
388006	BH-4 6-7	soil	2015-03-03	00:00	2015-03-04
388007	BH-4 9-10	soil	2015-03-03	00:00	2015-03-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
388008	BH-5 2-3	soil	2015-03-03	00:00	2015-03-04
388009	BH-5 4-5	soil	2015-03-03	00:00	2015-03-04
388010	BH-5 6-7	soil	2015-03-03	00:00	2015-03-04
388011	BH-5 9-10	soil	2015-03-03	00:00	2015-03-04
388012	BH-5 14-15	soil	2015-03-03	00:00	2015-03-04
388013	BH-6 2-3	soil	2015-03-03	00:00	2015-03-04
388014	BH-6 4-5	soil	2015-03-03	00:00	2015-03-04
388015	BH-6 6-7	soil	2015-03-03	00:00	2015-03-04
388016	BH-6 9-10	soil	2015-03-03	00:00	2015-03-04
388017	BH-7 2-3	soil	2015-03-03	00:00	2015-03-04
388018	BH-7 4-5	soil	2015-03-03	00:00	2015-03-04
388019	BH-7 6-7	soil	2015-03-03	00:00	2015-03-04
388020	BH-7 9-10	soil	2015-03-03	00:00	2015-03-04
388021	BH-7 14-15	soil	2015-03-03	00:00	2015-03-04
388022	BH-8 2-3	soil	2015-03-03	00:00	2015-03-04
388023	BH-8 4-5	soil	2015-03-03	00:00	2015-03-04
388024	BH-8 6-7	soil	2015-03-03	00:00	2015-03-04
388025	BH-8 9-10	soil	2015-03-03	00:00	2015-03-04

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

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project COG-Lusk 22 SWD were received by TraceAnalysis, Inc. on 2015-03-04 and assigned to work order 15030419. Samples for work order 15030419 were received intact at a temperature of 6.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	101347	2015-03-05 at 13:54	119808	2015-03-05 at 13:56
Chloride (Titration)	SM 4500-Cl B	101349	2015-03-05 at 14:09	119809	2015-03-05 at 14:10
Chloride (Titration)	SM 4500-Cl B	101351	2015-03-05 at 14:23	119810	2015-03-05 at 14:24
Chloride (Titration)	SM 4500-Cl B	101353	2015-03-05 at 14:34	119811	2015-03-05 at 14:36

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 15030419 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: 387990 - BH-1 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7920**	mg/Kg	5	4.00

Sample: 387991 - BH-1 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1740**	mg/Kg	5	4.00

Sample: 387992 - BH-1 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**97.0**	mg/Kg	5	4.00

Sample: 387993 - BH-1 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**97.0**	mg/Kg	5	4.00

Sample: 387994 - BH-2 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**10400**	mg/Kg	5	4.00

Sample: 387995 - BH-2 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**9950**	mg/Kg	5	4.00

Sample: 387996 - BH-2 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7630**	mg/Kg	5	4.00

Sample: 387997 - BH-2 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**870**	mg/Kg	5	4.00

Sample: 387998 - BH-2 14-15

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**386**	mg/Kg	5	4.00

Sample: 387999 - BH-2 19-20

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**386**	mg/Kg	5	4.00

Sample: 388000 - BH-3 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5760**	mg/Kg	5	4.00

Sample: 388001 - BH-3 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**10900**	mg/Kg	5	4.00

Sample: 388002 - BH-3 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**98.0**	mg/Kg	5	4.00

Sample: 388003 - BH-3 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**195**	mg/Kg	5	4.00

Sample: 388004 - BH-4 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7120**	mg/Kg	5	4.00

Sample: 388005 - BH-4 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**8290**	mg/Kg	5	4.00

Sample: 388006 - BH-4 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**390**	mg/Kg	5	4.00

Sample: 388007 - BH-4 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**585**	mg/Kg	5	4.00

Sample: 388008 - BH-5 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1660**	mg/Kg	5	4.00

Sample: 388009 - BH-5 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4980**	mg/Kg	5	4.00

Sample: 388010 - BH-5 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**594**	mg/Kg	5	4.00

Sample: 388011 - BH-5 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**396**	mg/Kg	5	4.00

Sample: 388012 - BH-5 14-15

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**99.0**	mg/Kg	5	4.00

Sample: 388013 - BH-6 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4550**	mg/Kg	5	4.00

Sample: 388014 - BH-6 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**7230**	mg/Kg	5	4.00

Sample: 388015 - BH-6 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**99.0**	mg/Kg	5	4.00

Sample: 388016 - BH-6 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**99.0**	mg/Kg	5	4.00

Sample: 388017 - BH-7 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7520**	mg/Kg	5	4.00

Sample: 388018 - BH-7 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6830**	mg/Kg	5	4.00

Sample: 388019 - BH-7 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2080**	mg/Kg	5	4.00

Sample: 388020 - BH-7 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	Sample Preparation:	2015-03-05	Prepared By:	EM

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

Sample: 388021 - BH-7 14-15

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	Sample Preparation:	2015-03-05	Prepared By:	EM

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

Sample: 388022 - BH-8 2-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5100**	mg/Kg	5	4.00

Sample: 388023 - BH-8 4-5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**12600**	mg/Kg	5	4.00

Sample: 388024 - BH-8 6-7

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2160**	mg/Kg	5	4.00

Sample: 388025 - BH-8 9-10

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	Sample Preparation:	2015-03-05	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**490**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 119808

QC Batch:	119808	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101347	QC Preparation:	2015-03-05	Prepared By:	EM

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

Method Blank (1) QC Batch: 119809

QC Batch:	119809	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101349	QC Preparation:	2015-03-05	Prepared By:	EM

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

Method Blank (1) QC Batch: 119810

QC Batch:	119810	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101351	QC Preparation:	2015-03-05	Prepared By:	EM

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

Method Blank (1) QC Batch: 119811

QC Batch:	119811	Date Analyzed:	2015-03-05	Analyzed By:	EM
Prep Batch:	101353	QC Preparation:	2015-03-05	Prepared By:	EM

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 119808 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101347 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2510	mg/Kg	5	2500	<19.2	100	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2510	mg/Kg	5	2500	<19.2	100	85 - 115	0	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: 119809 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101349 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2540	mg/Kg	5	2500	<19.2	101	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2730	mg/Kg	5	2500	<19.2	109	85 - 115	7	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: 119810 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101351 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2380	mg/Kg	5	2500	<19.2	95	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2670	mg/Kg	5	2500	<19.2	107	85 - 115	12	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: 119811 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101353 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2350	mg/Kg	5	2500	<19.2	94	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2350	mg/Kg	5	2500	<19.2	94	85 - 115	0	20

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

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 387999

QC Batch: 119808 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101347 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2510	mg/Kg	5	2500	<19.2	100	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2610	mg/Kg	5	2500	<19.2	104	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 388009

QC Batch: 119809 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101349 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			7320	mg/Kg	5	2500	4976	94	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			7320	mg/Kg	5	2500	4976	94	78.9 - 121	0	20

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

Matrix Spike (MS-1) Spiked Sample: 388019

QC Batch: 119810 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101351 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4160	mg/Kg	5	2500	2079	83	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4260	mg/Kg	5	2500	2079	87	78.9 - 121	2	20

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

Matrix Spike (MS-1) Spiked Sample: 388025

QC Batch: 119811 | Date Analyzed: 2015-03-05 | Analyzed By: EM
Prep Batch: 101353 | QC Preparation: 2015-03-05 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2940	mg/Kg	5	2500	<19.2	118	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3040	mg/Kg	5	2500	<19.2	102	78.9 - 121	3	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 119808 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-05

Standard (CCV-1)

QC Batch: 119808 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-05

Standard (ICV-1)

QC Batch: 119809 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-05

Standard (CCV-1)

QC Batch: 119809 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-05

Standard (ICV-1)

QC Batch: 119810 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2015-03-05

Standard (CCV-1)

QC Batch: 119810 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2015-03-05

Standard (ICV-1)

QC Batch: 119811 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-05

Standard (CCV-1)

QC Batch: 119811 Date Analyzed: 2015-03-05 Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-05

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

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

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 4

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: Swoott
SITE MANAGER: Ike Tavarez
PROJECT NO.: 212C-MD-02154
PROJECT NAME: COG - Lusk 22 SWD

LAB I.D. NUMBER	DATE 205	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION Lea Co NM	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA 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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	(Chloride)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
387990	3/3		S		X	BH-1 2-3	1																	X				
991						4-5	1																	X				
992						6-7	1																	X				
993						9-10	1																	X				
994						BH-2 2-3	1																	X				
995						4-5	1																	X				
996						6-7	1																	X				
997						9-10	1																	X				
998						14-15	1																	X				
999	↓		↓		↓	19-20	1																	X				

RELINQUISHED BY: (Signature) Maria Gonzales — Date: 3-3-15 Time: 1052
RECEIVED BY: (Signature) — Date: 3-4-15 Time: 10:52
SAMPLED BY: (Print & Initial) CL — Date: 3-3-15 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: — Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 6.0
REMARKS:

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

Analysis Request of Chain of Custody Record

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

CLIENT NAME: Sweatt

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00154

PROJECT NAME: COG - Lusk 22 SWD

LAB I.D. NUMBER	DATE 2015	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA 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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
388000	3/3		S		X	BH-3 2-3 Lea Co. N.M																		X					
001						4-5																		X					
002						6-7																		X					
003						9-10																		X					
004						BH-4 2-3																		X					
005						4-5																		X					
006						6-7																		X					
007						9-10																		X					
008						BH-5 2-3																		X					
009						4-5																		X					

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 3-4-15 Time: 1052	RECEIVED BY: (Signature)	Date: 3-4-15 Time: 10:52	SAMPLED BY: (Print & Initial)	Date: 3/3/15 Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:	SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:	TETRA TECH CONTACT PERSON:	Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

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Analysis Request of Chain of Custody Record

PAGE: 3 OF: 4

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: Sweatt
SITE MANAGER: Ike Tavarez
PROJECT NO.: 205-MD-00154
PROJECT NAME: COG Lusk 22 SWD

LAB I.D. NUMBER	DATE 205	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA 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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
388010	3/3		S		X	BH-5	6-7																		X				
011							9-10																		X				
012							14-15																		X				
013						BH-6	2-3																		X				
014							4-5																		X				
015							6-7																		X				
016							9-10																		X				
017						BH-7	2-3																		X				
018							4-5																		X				
019							6-7																		X				

RELINQUISHED BY: (Signature) Date: 3-4-15 Time: 1052
RECEIVED BY: (Signature) Date: 3-4-15 Time: 10:52
SAMPLED BY: (Print & Initial) Date: 3/3/15 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON:
Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

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Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

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: Swaff

SITE MANAGER: ~~COG Lusk 2~~ Ike Tavarez

PROJECT NO.: 212C-MD-00154

PROJECT NAME: COG - Lusk 2R SWD

LAB I.D. NUMBER	DATE 2015	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA 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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
388 020	3/3		S		X	BH-7 9-10																		X				
021						14-15																		X				
022						BH-8 2-3																		X				
023						4-5																		X				
024						6-7																		X				
025	↓		↓		↓	9-10																		X				

RELINQUISHED BY: (Signature)	Date: 3-4-15 Time: 1052	RECEIVED BY: (Signature)	Date: 3.4.15 Time: 10:52
SAMPLED BY: (Print & Initial)	Date: 3/3/15 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON:	Results by:		
RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED:	REMARKS:		

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