# SITE INFORMATION

		Rep	ort Type: W	ork Plai	<u>n</u>		
General Site In	formation.			AND BE	A. M. Sallace C.		
Site:		State I #16					
Company:		COG Opera	ting LLC				
Section, Towns	ship and Range	Sec 29	T17S	R29E			
Lease Number:	· · · · · · · · · · · · · · · · · · ·	API-30-015-	03187				
County:		Eddy Count	У				
GPS:			32.80083° N		1	04.08898° W	
Surface Owner	*	State					
Mineral Owner:							
Directions:		From Hwy 82 onto lease roa	and Hagerman Cuto ad and travel 0.9 mile	off Rd. in Loc es, turn left a	o Hills travel 6.5 mi nd travel 100 feet t	iles west on Hwy 82, turn le o site.	əft
Rélease Data:	and a start of the	and the second		n an	م مربع الم		
Date Released:	· · · · · ·	4/6/2011					
Type Release:		Produced W	ater				
Source of Conta	mination:	Flowline failu	Ire			· · · · · · · · · · · · · · · · · · ·	
Fluid Released:		60 bbls					
Fluids Recovere	ed:	0 bbls					
Official Commu	inication:						
Name:	Pat Ellis				lke Tavarez		
Company:	COG Operating 1				Tetra Tech		
Addroso:		01- 1000	+		1010 N. Die Caria		
Address.	550 W. Texas Ave	. Ste. 1300			1910 N. Big Spring	y	
P.O. Box							
City:	Midland Texas, 79	701			Midland, Texas		
Phone number:	(432) 686-3023	·····			(432) 682-4559		
Fax:	(432) 684-7137						
Email:	pellis@conchores	ources.com		•	ike.tavarez@tetr	atech.com	
Ranking Criteri	a			ອ້າງອີ້ ແລະ ອີງຊີ ການ ເຊິ່ງຊີງຊີງ ການ ເຊິ່ງຊີງ ການ ອີງຊີງ	1		، ۱۰ ۲
Depth to Ground	water:		Ranking Score		Site	Data	
<50 ft			20				
50-99 ft			10			^	
>100 it.			U	l		U	
WellHead Protec	tion:		Banking Score		Site	Data	
Water Source <1	,000 ft., Private <200	ft.	20		0.10		
Water Source >1,	.000 ft., Private >200	ft.	0			0	
Surface Body of	Water:	<del>.</del> .	Ranking Score		Site	Data	[
<200 ft.			20		······	······	
200  ft - 1,000  ft	······	······································	10	1		0	
- 1,000 10							
ter en	otal Ranking Score					RECEIVED	
		Accort	abla Sail DDAL /-	ń <u>â/ka) ( - 5-</u>	<b>1</b>	AUG <b>11</b> 2011	
		Bonzono	Total BTEV	пулу): : :::   той	4		
		10	50	5.000	I IN	MOCD AHTESIA	•



July 6, 2011

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

### Re: Work Plan for the COG Operating LLC., State I #16 Flow Line, Unit P, Section 29, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the State I #16 Flow Line located in Unit P, Section 29, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.80083°, W 104.08898°. The site location is shown on Figures 1 and 2.

### Background

On April 6, 2011, COG discovered the flow line leak and released approximately sixty (60) barrels of produced fluids into the pasture. To alleviate the problem, COG personnel repaired the flow line. Zero (0) barrels of standing fluids were recovered. The spill initiated east of the pad affecting an area in the pasture 105' x 70' (tapering to 40'). The initial C-141 form is enclosed in Appendix A.

#### Groundwater

The Geology and Groundwater Resources of Eddy County, New Mexico (Report 3) did show one well in Section 29 with a depth to groundwater of 210' below surface. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be around 150' below surface. The well data are shown in Appendix B.



### Regulatory

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

### **Soil Assessment and Analytical Results**

On February 19, 2011, Tetra Tech personnel inspected and sampled the spill area. A total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all auger hole samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in majority of the auger holes. Auger holes (AH-1 and AH-5) showed the deepest chloride impact at the site, with chloride declining at 7.0' to 9.0' below surface. The areas of auger holes (AH-3 and AH-4) showed a shallow impact (0-1') to the soils, with chloride concentration of 20,500 mg/kg and 4,830 mg/kg, respectively. Auger hole (AH-2) did not show a significant chloride impact the soils.

### Work Plan

COG proposes the removal of impacted material to the depth as highlighted in Table 1 and shown on Figure 4. As shown in Table 1, the proposed excavation depths will range from 1.0' to 9.0' below surface in majority of the impacted areas. Based on the results, the area of AH-1 will be excavated to the appropriate depth and trenched using a backhoe to define the vertical extent of the chloride impact.



Based on site formation, 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. If the depths are not reached or if deeper impact is encountered, a 40 mil liner will be installed at depth of 4.0 below surface to cap the impacted area.

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

Ike Tavarez. PG

Project Manager

cc: Pat Ellis – COG

# Figures



Down By: Isobel Marmolej









# Photos

## COG Operating LLC State I #16 Eddy County, New Mexico



View East – AH-1



View South – AH-2 and AH-3

## COG Operating LLC State I #16 Eddy County, New Mexico



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View North East - AH-4 and AH-5

# Tables

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## Table 1 COG Operating LLC. STATE 1 # 16

## Eddy County, New Mexico

Sample	Sample	Sample	Depth	Soil	Status	Т	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	4\19\11	0-1'		·X		<2.00	<50.0	· · · · · · · · · · · · · · · · · · ·	<.0200	<.0200	< 0200	<.0200	2,550
	11	1-1.5'		Χ.	ີ		82 7 <b>-</b>		· · · · ·		5 4 4 5 2 5 7 2 5 <b>1</b> 7 4 5 7 4 5 7 4 5 7 4	19.22 19.22	10,400
	H	2-2.5		X			19 36			· · · · · · · · · · · · · · · · · · ·			.6,910
	n	3-3.5'		X	Я-ыл 		يد، پېرغ - د -		ж.	1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 -			5,300
	Ð	4-4.5'		<b>X</b>	भ । दिन्द्र	·						-	12,000
		5-5.5'		X	- بر الم ( الم	-		1 - 2 - 4 				-	5,550
	n	6-6.5'	1997 - 1997 1997 - 1997 - 1997 - 1997 1997 - 1997	. X 🚔			-			-			6,480
	n	7-7.5'	- 275 - 1	X		2 <b>-</b>	-	-	· · · ·	-	-	,	3,340
	8	8-8.5		X	م م م م م م م م م م م م م م م م م م م	-							2,040
	tt	9-9.5'		Х		-	-	-	-	-	-	-	1,550
	4\10\11	0.1	[			-2.00	-50.0	[	- 0200	- 0200	< 0200	< 0200	451
Ап-2	4\19\11					<2.00	<50.0		<.0200	<.0200	<.0200	<.0200	401
·	<i>n</i>	1-1.5		X					-	-	-		<200
	н	2-2.5						-	-			-	<200
		3-3.5				-		-	-	<u> </u>	-	l	<200
AH-3	4\19\11	0-1'		X		17.0 %	77.8	4	<.0200	0.11	0.126	0.395	20,500
	11	1-1.5'		X		-	-	-	-	-	-	-	451
	11	2-2.5'		X		-	-	-	-	-	-	-	313
	U	3-3.5'		X		-	-	-	-	-	-	-	<200
	H	4-4.5'		X		-	-	-	-	-		-	<200
	1	5-5.5'		X		-	-	-	-	-		-	<200
	1	6-6.5'		X		-	-	-	-	-	-	-	<200
	11	7-7.5'		X		-	-	-	-	-	-	-	<200
	"	8-8.5'		X		-	-	-	-	-	-	-	<200
	411	9-9.5'		X		-	-	-	-	-	-	-	<200

## Table 1 COG Operating LLC. STATE 1 # 16

### Eddy County, New Mexico

Sample	Sample	Sample	Depth	Soi	Status	T	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-4	4\19\11	<b>0-1'</b>	19. 19. 19. 19. 19. 19. 19. 19. 19. 19.	X .		<2.00	<50.0	p p	<.0200	<.0200	<.0200	<.0200	4,830
	11	1-1.5'		X		-	-	-	-	-	-	-	592
	"	2-2.5'		Х		-	-	-	-	-	-	-	864
	u	3-3.5'		X		-	-	-	-	-	-	-	540
	II	4-4.5'		X		-	-	-	-	-	-	-	512
	11	5-5.5'		X		-	-	-	-	-	-	-	615
	11	6-6.5'		X		-	-	-	-	-	-	-	606
	IJ	7-7.5'		X		-	-	-	-	-	-	-	451
	IJ	8-8.5'		X		-	-	-	-	-	-	-	310
	13	9-9.5'		Х		-	-	-	-	-	-	-	414
	4140144	12-16-1-1-2-	1280 6 2 3 4	11.3.484		14 a ba							
AH-5	4\19\11	0-1	n patro 30 m April 1. 1	× , 5		~2.00	<50:0		<.0200	<.0200	.0200	/ <.0200	6,830
	"	ָ <b>ָי</b> ָן 1,-1.5' ַ		X		-		1 <b>1</b>	• 4(	2			5,850
	ű	2-2.5		X								2	7,580
	"	3-3.5'		X		- 12 m							7,500
	n	4-4.5'		× ×		-	·			-	9 9		7,590
		5-5.5'		X	Charles and the second		0			_ • • • •	-	-	12,600
	"	6-6.5		X	and the second		1						3,130
	11	7-7.5'		Х		-	-	-	-	-	-	-	684

BEB Below Excavation Bottom

(--) Not Analyzed

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Proposed excavation depth

# Appendix A

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State of New Mexico Energy Minerals and Natural Resources

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

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

			Rela	ease Notific	atio	n and Co	orrective A	ction			*******
						<b>OPERA</b> '	ГOR		nitial Report		Final Report
Name of Co	mpany	COG OP	ERATIN	G LLC		Contact	Pa	at Ellis			·
Address	550 W.	Texas, Suite	: 100, Mi	dland, TX 7970	1	Telephone 1	No: 432-2	230-0077			
Facility Nat	ne	Sta	te I #16			Facility Typ	e Fl	owline			
Surface Ow	ner Stat	e		Mineral C	)wner		··· ··································	Lea	se No. API#(	30-015	-03187)
				LOCA	TIO	N OF RE	LEASE				
Unit Letter P	Section 29	Township 17S	Range 29E	Feet from the	North	th/South Line Feet from the East/West Line County Ec			Eddy		
				Latitude 32 4	18.055	Longit	ide 104 05.356				
	<u></u>			NAT	URE	OF REL	EASE			01.1.1.	
Type of Rele	ase Produ	uced water				Date and I	Release 60001s	Volui Dote	ne Recovered	UDDIS	
Source of Re	icase 1104	WINIC				04/06/201		04/06	/2011 11:00	a.m.	
Was Immedi	ate Notice (	Given?	Yes [	No 🗌 Not Re	equired	If YES, To	Whom?	Mike Bratche	r-OCD	_	
By Whom?	Josh Rus	so				Date and H	Iour 04/08/2011	1:04 p.m.	······		
Was a Water	course Read	ched?	6			If YES, V	olume Impacting t	he Watercours	2.		
		L	Yes 🗵	No							
If a Watercon	irse was Im	pacted, Descr	ibe Fully.*	k				<b>RE</b>	CEIVE	D	
Describe Cau	ise of Probl	em and Reme	dial Actio	n Taken.*				Δ	16 11 201	1	
The State I #	16 poly flow	vline ruptured	. The line	has been fused a	nd retu	rned to service.					
Describe Are	a Affected	and Cleanup A	Action Tal	ten.*		NMOCD ARTESIA					
Initially 60bb	ls of produ	ced water was	released	from the poly flow	vline V	Ve were unabl	e to recover any fl	uid The snill :	rea measured	100' x 1	50' in the
pasture to the	e east of the	location. Tetr	a Tech wi	ll sample the spill	site ar	ea to delineate	any possible cont	tamination from	n the release an	id we w	ill present a
remediation	work plan to	o the OCD for	approval	prior to any signif	ficant r	emediation we	ork.				-
I hereby certi	fy that the	information gi	ven above	is true and comp	lete to	the best of my	knowledge and u	nderstand that	pursuant to NM	10CD r	ules and
regulations a	ll operators	are required t	o report a	nd/or file certain r	elease	notifications a	nd perform correc	tive actions for	releases which	n may e	ndanger
public health	or the environment	ronment. The	acceptant	ce of a C-141 repo	ort by ti emedia	he NMOCD m	arked as "Final Ri	eport" does not eat to ground u	relieve the operator water surface w	erator of	f liability man health
or the environ	nment. In a	ddition, NMC	CD accep	tance of a C-141	report	does not reliev	e the operator of r	esponsibility f	or compliance	with any	other
federal, state,	or local lay	ws and/or regu	lations.	<u>.</u>							
		~ `		>			OIL CONS	<u>SERVATIO</u>	<u>ON DIVISI</u>	<u>ON</u>	
Signature:		<u> </u>		$\sum$							
Printed Name		Josh	Russo			Approved by	District Supervise	or:			
Title:	Title: HSE Coordinator						te:	Expirat	ion Date:		
E-mail Addre	ess:	jrusso@conc	horesourc	es.com		Conditions o	f Approval:		Attached	4 🗖	
Data: 6	4/15/2011	nL	43	1 212 2200					Anacher	ليا د	
Luaic. U	4/15/2011	PHOF	43.	2-212-2377					<b>l</b>		

\* Attach Additional Sheets If Necessary

.

# Appendix B

#### Water Well Data Average Depth to Groundwater (ft) COG - State I #16 **Eddy County, New Mexico**

	16 :	South	:	t	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 61	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	17 9	South	:	28 East	t	
6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	22 79	23	24	
30	29	28	27	26	25	
31	32	33	34 53	35	36	

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

	17 Sc	outh	:	29 East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 80	23	24
30	29SITE 210	28	27	26	25
31	32	33	34	35 153	36

	16 Sc	outh	30	East
6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

	17 Sc	outh	30 East				
6	5	4	3	2			
7	8	9	10	11			
18	17	16	15	14			
19	20	21	22	23			
30	29	28	27	26			
31	32	33	34	35			

30 East

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

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

		18 Sc	outh	
	6	5	4	3
2	7	8	9	10
3	18	17	16	15
4	19	20	21	22
5	30	29	28	27
6	31	32	33	34



New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

ALTITUDE DEPTH PRINCIPAL WATER-BEARING BED OWNER DATE DIAMETER LOCATION TOPOGRAPHIC ABOVE SEA OF OR сом-OF WELL NUMBER SITUATION LEVEL WELL CHARACTER GEOLOGIC NAME PLETED (inches) (feet) (feet) OF MATERIAL UNIT 17.28.2.240 Hal Bogle Flat between 6 (?) Redbeds (?) Dockum (?) \_ -\_ mesas Rolling do. 14.220 do. 7 do. Redbeds, do. Chalk Bluff or 19.200 do. 8 \_ gypsum (?) Redbeds (?) Rustler 22.230 Flat between 6 Rustler or mesas Dockum (?) 17.29.22.110 Bear Grass 3,550 6 do. Dockum (?) draw 29.400 Bishop (?) Flat 7 do. do. 17.31.34.000 Rolling 6 (?) Redbeds Dockum \_ Andy Teel 18.21.13.310 1915 4,100 520 8 Limestone San Andres Broad valley 27.440 do. 1947 4,200 667 10 do. do. Rolling S. of Rio 32.430 George Teel 1946 4,300 815 6 do. do. 18.23.6.140 Couhape Bros. 1941 4,060 500 10 do. do. Penasco 18.25.23.111 G. M. Phelps Blackdom \_ Alluvium (?) Quaternary (?) -\_ Terrace

TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

See explanation at beginning of table.

	WAT	ER LEVEL				
LOCATION NUMBER	BELOW LAND SURFACE	DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
	(feet)					

NEW MEXICO BUREAU OF

MINES &

MINERAL RESOURCES

	WATER LEVEL					
LOCATION NUMBER	BELOW LAND SURFACE (feet)	DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS .
17.28.2.240	27.6	Dec. 1, 1948	3	w	s	Depth to water measured while pump- ing.
14.220	80	~	61	w	S & D	Driller: Cy Hinshaw. See analysis, Table 3.
19.200	224.3	Dec. 2, 1948	1.2	w	\$	Depth to water measured while pump- ing.
22.230	45.5	Dec. 1, 1948	-	N	N	Abandoned stock well.
17.29.22.110	79.7	Nov. 29, 1948	3 E.	w	S	Depth to water measured while pump- ing.
29.400	210	Dec. 3, 1948	1.1	W	S	do.
17.31.34.000	271+	Dec. 6, 1948	3.5	w	S	do. See analysis, Table 3.
18.21.13.310	505 <sup>°</sup>		10 R.	w	S & D	Formerly C.C.C. well. Cased to 30 ft.
27.440	530	-		w	S	Cased to 120 ft.
32.430	800 (?)	-	12 R.	W	\$ & D	Lowered cylinder 5 ft. in 1948 because water level declined. Cased to 380 ft.
18.23.6.140	440	Jan. 12, 1950	-	w	S & D	
18.25.23.111	117.8	Tan. 1950		w	S	

See explanation at beginning of table. 1 Measured Dec. 3, 1948.

1.5.5

Sec. 21.

68

RESOURCES

GROUND WATER

EDDY COUNTY

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Appendix C

## **Summary Report**

Kim Dorey Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Project Location:	Eddy Co., NM
Project Name:	COG/State I #16
Project Number:	114-6400887

Date Time Date Sample Description Matrix Taken Taken Received 264445 AH-1 0-1' 2011-04-19 00:00 2011-04-21 soil 264446 AH-1 1-1.5' 2011-04-19 00:00 soil 2011-04-21 264447 AH-1 2-2.5' soil 2011-04-19 00:00 2011-04-21 264448AH-1 3-3.5' 2011-04-19 00:00 2011-04-21 soil 264449AH-1 4-4.5' soil 2011-04-19 00:00 2011-04-21 264450 AH-1 5-5.5' soil 2011-04-19 00:00 2011-04-21 264451 00:00 AH-1 6-6.5' soil 2011-04-19 2011-04-21 264452 AH-1 7-7.5' soil 2011-04-19 00:00 2011-04-21 264453AH-1 8-8.5' soil 2011-04-19 00:00 2011-04-21 264454AH-1 9-9.5' 2011-04-19 00:00 2011-04-21 soil 264455 AH-2 0-1' 2011-04-19 soil 00:00 2011-04-21 264456 2011-04-21 AH-2 1-1.5' 2011-04-19 00:00 soil 264457 AH-2 2-2.5' 2011-04-19 00:00 soil 2011-04-21 264458 AH-2 3-3.5' 2011-04-19 00:00 soil 2011-04-21 264459 AH-3 0-1' 2011-04-19 00:00 2011-04-21 soil 264460 AH-3 1-1.5' 2011-04-19 00:00 soil 2011-04-21 264461AH-3 2-2.5' soil 2011-04-19 00:00 2011-04-21 264462AH-3 3-3.5' soil 2011-04-19 00:00 2011-04-21 264463AH-3 4-4.5 2011-04-19 00:00 2011-04-21 soil 264464 AH-3 5-5.5' 2011-04-19 soil 00:00 2011-04-21 264465 AH-3 6-6.5' 2011-04-19 00:00 2011-04-21 soil AH-3 7-7.5' 264466 2011-04-19 2011-04-21 soil 00:00 264467 AH-3 8-8.5' 2011-04-19 2011-04-21 soil 00:00 264468 AH-3 9-9.5' soil 2011-04-19 00:00 2011-04-21 264469 AH-4 0-1' 2011-04-19 00:00 2011-04-21 soil 264470 AH-4 1-1.5 2011-04-19 soil 00:00 2011-04-21 264471 AH-4 2-2.5 2011-04-19 00:00 soil 2011-04-21 264472 AH-4 3-3.5' 2011-04-19 00:00soil 2011-04-21 264473 AH-4 4-4.5' 2011-04-19 00:00 soil 2011-04-21 264474 AH-4 5-5.5' soil 2011-04-19 00:00 2011-04-21

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Report Date: May 3, 2011

Work Order: 11042214

Report	Date:	May	3,	2011

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
264475	AH-4 6-6.5'	soil	2011-04-19	00:00	2011-04-21
264476	AH-4 7-7.5'	soil	2011-04-19	00:00	2011-04-21
264477	AH-4 8-8.5'	soil	2011-04-19	00:00	2011-04-21
264478	AH-4 9-9.5'	soil	2011-04-19	00:00	2011-04-21
264479	AH-5 0-1'	soil	2011-04-19	00:00	2011-04-21
264480	AH-5 1-1.5'	soil	2011-04-19	00:00	2011-04-21
264481	AH-5 2-2.5'	soil	2011-04-19	00:00	2011-04-21
264482	AH-5 3-3.5'	soil	2011-04-19	00:00	2011-04-21
264483	AH-5 4-4.5'	soil	2011-04-19	00:00	2011-04-21
264484	AH-5 5-5.5'	soil	2011-04-19	00:00	2011-04-21
264485	AH-5 6-6.5'	soil	2011-04-19	00:00	2011-04-21
264486	AH-5 7-7.5'	soil	2011-04-19	00:00	2011-04-21

		BTEX				TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
264445 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
264455 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
264459 - AH-3 0-1'	< 0.0200	0.110	0.126	0.395	77.8	17.0
264469 - AH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	$<\!2.00$
264479 - AH-5 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00

#### Sample: 264445 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		2550	mg/Kg	4

#### Sample: 264446 - AH-1 1-1.5'

Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		10400	mg/Kg	4

#### Sample: 264447 - AH-1 2-2.5'

Param	Flag	Result	Units	$\operatorname{RL}$
Chloride	·····	6910	mg/Kg	4

#### Sample: 264448 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		5300	mg/Kg	4

Report Date: May 3, 2011		Work Order: 11042214	Page Number: 3 of 7		
Sample: 264449	- AH-1 4-4.5'				
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$	
Chloride		12000	mg/Kg	4	
Sample: 264450	- AH-1 5-5.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		5550	mg/Kg	4	
Sample: 264451	- AH-1 6-6.5'		`		
Param	Flag	Result	Units	RL	
Chloride		6480	mg/Kg	4	
Sample: 264452	- AH-1 7-7.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		3340	mg/Kg	4	
Sample: 264453	- AH-1 8-8.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		2040	mg/Kg	4	
Sample: 264454	- AH-1 9-9.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		1550	mg/Kg	4	
Sample: 264455	- AH-2 0-1'				
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$	
Chloride		451	mg/Kg	4	
Sample: 264456 ·	- AH-2 1-1.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride	<u> </u>	<200	mg/Kg	4	

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Sample: 264457 - AH-2 2-2.5'					
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$	
Chloride	<u></u>	<200	mg/Kg	•4	
Sample: 264458 -	AH-2 3-3.5'				
Param	Flag	$\operatorname{Result}$	Units	RL	
Chloride	······································	<200	mg/Kg	4	
Sample: 264459 -	AH-3 0-1'	· ·			
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		20500	mg/Kg	4	
Sample: 264460 -	AH-3 1-1.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		451	mg/Kg	4	
Sample: 264461 -	AH-3 2-2.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		313	mg/Kg	4	
Sample: 264462 -	AH-3 3-3.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		<200	mg/Kg	4	
Sample: 264463 -	AH-3 4-4.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		<200	mg/Kg	4	
Sample: 264464 -	AH-3 5-5.5'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride	<u> </u>	<200	mg/Kg	4	

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Sample: 264465 - AH-3 6-6.5'					
Param	Flag	$\mathbf{Result}$	Units	$\operatorname{RL}$	
Chloride		<200	mg/Kg	4	
Sample: 264466 -	AH-3 7-7.5 <sup>,*</sup>				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4	
Sample: 264467 -	AH-3 8-8.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		<200	mg/Kg	4	
Sample: 264468 -	AH-3 9-9.5'				
Param	Flag	$\mathbf{Result}$	Units	$\mathbf{RL}$	
Chloride		<200	mg/Kg	4	
Sample: 264469 -	AH-4 0-1'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride	· · · · · · · · · · · · · · · · · · ·	4830	mg/Kg	4	
Sample: 264470 -	AH-4 1-1.5'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		592	mg/Kg	4	
Sample: 264471 -	AH-4 2-2.5'				
Param	Flag	Result	Units	RL	
Chloride	<u>y</u>	864	mg/Kg	4	
Sample: 264472 -	AH-4 3-3.5'				
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$	
Chloride	· · · · · · · · · · · · · · · · · · ·	540	nıg/Kg	4	

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Sample: 264473 - AH-4 4-4.5'					
Param	Flag ·	Result	Units	RL	
Chloride		512	mg/Kg	4	
Sample: 264474 -	AH-4 5-5.5'				
Param	Flag	Result	Units	RL	
Chloride		615	mg/Kg	4	
Sample: 264475 -	AH-4 6-6.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		606	mg/Kg	4	
Sample: 264476 -	AH-4 7-7.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride	······································	451	nıg/Kg	4	
Sample: 264477 -	AH-4 8-8.5'				
Param	Flag	Résult	Units	RL	
Chloride		310	mg/Kg	4	
Sample: 264478 -	AH-4 9-9.5'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		414	mg/Kg	4	
Sample: 264479 -	AH-5 0-1'				
Param	Flag	Result	Units	RL	
Chloride		6830	mg/Kg	4	
Sample: 264480 -	AH-5 1-1.5'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		5850	mg/Kg	4	

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Sample: 264481 - AH-5 2-2.5'					
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		7580	mg/Kg	4	
Sample: 264482	- AH-5 3-3.5'				
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$	
Chloride		7500	mg/Kg	4	
Sample: 264483	- AH-5 4-4.5'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		. 7590	mg/Kg	4	
Sample: 264484	- AH-5 5-5.5'				
Param	Flag	Result	Units	RL	
Chloride		12600	mg/Kg	4	
Sample: 264485	- AH-5 6-6.5'				
Param	Flag	$\mathbf{Result}$	Units	$\operatorname{RL}$	
Chloride	· · · · · · · · · · · · · · · · · · ·	3130	mg/Kg	4	
Sample: 264486	- AH-5 7-7.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride	<u></u>	684	mg/Kg	4	

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