<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 1220 S, St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Revised October 10, 2003 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Noulleaus	on and Corrective Act	uon				
	OPERATOR	Initial Report Final Report				
Name of Company COG OPERATING LLC	Contact Pat	Ellis				
Address 550 W. Texas, Suite 100, Midland, TX 79701		0-0077				
Facility Name BC FEDERAL #1 TANK BATTERY	Facility Type Tank I	Battery				
Surface Owner Federal Mineral Owner	PT	Lease No. LC-029405-A				
LOCATIO	ON OF RELEASE					
		East/West Line County				
C 20 17S 32E		LEA				
Latitude 32 49.57	72 Longitude 103 47.526					
	<u>G</u>					
Type of Release Produced Water	E OF RELEASE	[V.)				
Source of Release Transfer Pump	Volume of Release 45bbls Date and Hour of Occurrence	Volume Recovered 40bbls Date and Hour of Discovery				
	03/13/2010 Date and Flour of Discovery 03/13/2010					
Was Immediate Notice Given?	If YES. To Whom?	. L				
✓ Yes ☐ No ☐ Not Require		arry Johnson - OCD offrey Leking - OCD				
By Whom? Josh Russo	Date and Hour 03/15/2010					
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,*		· · · · · · · · · · · · · · · · · · ·				
The cause of the release was due to a power outage to the transfer pump	The nower issue has been correct	ed .				
The state of the roots with the roots of the	7 The porter issue that theer correct	ou.				
Describe Area Affected and Cleanup Action Taken.*	·					
·						
45bbls of produced water was initially released and the entire release w	as contained inside the dike walls of	f the tank battery. A vacuum truck was called				
and recovered 40bbls of produced water. The contaminated dirt and grapossible contamination from the release and we will present a remedian						
remediation.		approved provide any arguments				
Thereby certify that the information given above is true and complete to	the best of my knowledge and und	erstand that pursuant to NMOCD rules and				
regulations all operators are required to report and/or file certain release	notifications and perform corrective	e actions for releases which may endanger				
public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remed	the NMOCD marked as "Final Repliete contamination that nose a threat	ort" does not relieve the operator of liability				
or the environment. In addition, NMOCD acceptance of a C-141 report						
federal, state, or local laws and/or regulations.						
	OIL CONSE	ERVATION DIVISION				
Signature:						
Printed Name: Josh Russo	Approved by District Supervisor:					
Title: HSE Coordinator	Approval Date:	Expiration Date:				
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached				
Date: 03/18/2010 Phone: 432-212-2399		Attached L				
Attach Additional Sheets If Necessary						

District I 1625 N. French Dr., Hobbs. NM 88240 District II 1301 W. Grand Avenue. Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Form C-141 Revised October 10, 2003

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

			Rela	ease Notific	cation	and Co	orrective A	ction				
						OPERA?	ror		M Initi	al Report		Final Repor
Name of Co		COG OP				Contact		at Ellis				
Address				dland, TX 7970		Telephone N		230-001				
Facility Nat	ne BC	FEDERAL	#1 TANI	K BATTERY		Facility Typ	e Tanl	k Batter	у			
Surface Ow	ner F	ederal		Mineral (Owner				Lease N	lo. NM L	.C-029	405-A
				LOCA	ATIO	N OF REI	LEASE					
Unit Letter C	Section 20	Township 17S	Range 32E	Feet from the	North/	South Line	Feet from the	East/V	Vest Line	County	LEA	
	 	<u> </u>	<u> </u>	Latitude 32	49.572	Longitu	de 103 47.526	l <u></u>		<u> </u>		
						OF RELI						
Type of Rele	ase Pro	duced Water		, (//)	UICE	~~	Release 9bbls		Volume I	Recovered	6hhls	
Source of Re		/ater Tank				Date and H 03/26/2010	tour of Occurrence	e		Hour of Disc	covery 30 a.m.	
Was Immedi	ate Notice C					If YES. To			0.37.207.207	7,	<u>go a.m.</u>	
		<u></u>	Yes L	No 🛛 Not R	equired							
By Whom?						Date and I-						
Was a Water	course Reac		Yes 🗵] No		IT YES, Vo	lume Impacting t	ne Wate	rcourse.			
If a Watercou	irse was lin	pacted. Descr	ibe Fully.	ļ		.1.						
			-									
Describe Cau	ise of Proble	em and Reme	dial Action	Taken.*		··· -						
The cause of	the problem	was due to a	n alarm sy	stem failure. The	e alarm s	ystein has be	en repaired.					
ļ												
Describe Are	a Affected a	and Cleanup A	Action Tal	cen.*						***		
Ubbls of prod	nced water	was released:	and comp	etely contained in	side the	dike walls of	the tank battery.	A ozem	un truck v	as called an	d recovi	ered Abbls
of produced v	vater. The	contaminated	soil has b	een removed. Te	tra Tech	will sample th	he spill site area t	o delinea	ite any pos	sible contain	notion	from the
release and w	e will prese	int a remediat	ion work j	olan to the NMM(OCD for	approval pric	or to any significa	nt remec	liation wor	k.		
							knowledge and u					
regulations al	II operators or the envir	are required to connent. The	o report ai secentan	id/or file certain r re of a C-141 rena	elease no	otifications ar : NMOCD m:	nd perform correct arked as "Final Re	tive actu mort" de	ons for rela ses not reli	eases which i	nay end stor of l	danger liabilie
should their o	perations h	ave failed to a	idequately	investigate and r	emediate	contamination	on that pose a thre	at to gro	ound water	, surface wat	ter, hum	an health
				nance of a C-141	report de	oes not relieve	e the operator of r	responsil	sility for co	ompliance w	ith any	other
federal, state,	or tocal lay	vs and/or regu	Hattons.				OIL CONS	SERV	ATION	DIVISIO	NI	
		\	./				OIL COIN	JLI VI	AIION	טומוייוט	17	
Signature:	<u> </u>		_			A 11	D) which can be					
Printed Name	<u> </u>	Josh	Russe			Approved by	District Supervise)г':	·····			
Title:		HSE C	oordinator	·		Approval Dat	e:	E	xpiration l	Date:		
E-mail Addre	ess:	irusso(@conc	horesourc	es.com	(Conditions of	Approval:			Attached	П	
Date: (14/05/2010	Ph	юле:	432-212-2399]	
Attach Addi	tional Shee	Me If Neces	ars/							·		

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Read, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Porm C-141 Revised October 10, 2003

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

					-,	OPERAT	ΓOR	••••	Initia	l Report		Final	Repor
Name of Co	mpany	COG OP	ERATIN	G I.LC		Contact	Pa	at Ellis		· \		· · · · · · · · · · · · · · · · · · ·	
Address	550 W.	Texas. Suite	100, Mi	dland, TX 7970	1	Telephone N	No. 432-	230-00	77				
Facility Nar	ne	BC F	EDERAL	. #1		Facility Typ	e Tan	k Batte	ry				
Surface Ow	ner F	ederal		Mineral O	wner				Lease N	lo. NMLC	029	405-A	
				LOCA	TIO	N OF REI	LEASE						
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/\	West Line	County			
С	20	178	32E							-	Lea		
		J	***************************************	Latitude 32 4	9.572	Longita	ide 103 47.526	1				· · · · · · · · · · · · · · · · · · ·	
				NAT	URE	OF RELI	EASE						
Type of Rele		oduced Water				Volume of	Release 181bb	ls	Volume R	ecovered	180b	bls	
Source of Re	lease V	Vater Tank				Date and Hour of Occurrence Date and Hour of Discovery							
Was Immedia	nto Notion (Tirent's				04/20/2010 04/20/2010 4:00 a.m. If YES, To Whom?							
was innicua	are profice (Yes [No □ Not Re	anired	H YES, 10	whom? Larry Joh	nenn	OCD				
		<u> </u>		, , , , , , , , , , , , , , , , , , ,	quirea		Geoffrey						
			····				Trishia B	ad Bear					
By Whom?	Josh Rus						lour 04/20/2010		2 p.m.				
Was a Water	course Read	ched?	Yes 🗵	No		If YES, Vo	lume Impacting t	he Wate	ercourse.				
If a Watercou	ree was In	pacied Descri	he Fully *	<u> </u>		<u> </u>	U-12						
		patien, Densi	oc i dilj.										
			·										
Describe Cau	ise of Proble	em and Remed	tial Action	⊤Taken.*									
The cause of	the release	was due to an	alarm eve	tem failure. The a	lamı tız	aneducer has l	neen replaced						
i no oddase or	1710 101011.50	mas are to an	omin oja	tem mare. The a	1144 141 111	madaço nga s	seen repaired.						
Describe Are	a Affected a	and Cleanup A	ction Tak	en.*									
1911-61- 26		الممميرات بالأمنه	£		f	h 117		Lanti	1- 6 1.		e. a	, ,	
completely in	aici was iiii iside the fire	nany released	nom me ank batter	water tank inside t y and is located in	the exc	Datter. We w	ere able to recove	enill (*	DIS OF PRODUC The estimate	cea water. Ed chloride	rooter	uofthis	nea
release is 110	121.0 mg/l) Tetra Tech	will samp	ole the spill site are	a to de	lineate any po	ssible contamina	tion fro	m the releas	e and we w	ill pre	sent a	
remediation v	vork plan to	the NMOCD	/BLM fo	r approval prior to	any si	gnificant remo	ediation work.				•		
1 horaba gorti	Gerbartha i	ntomation di	van alsona	is true and somal		- h				NIA	000		1
regulations al	Ly mai the i	are remi re d te	ven audve i renait an	is true and comple d/or file certain re	ere to u Jeace n	ne nest of my	knowieage and u d perform correc	naerstai tive set	ions for rele	uant to Nive seec which	May r	ruies and malanger	
public health	or the envir	onment. The	acceptane	e of a C-141 repor	rt by the	NMOCD m	arked as "Final R	eport" d	oes not relic	eve the ope	rator c	of liability	V
should their o	perations h	ave failed to a	dequately	investigate and re	mediate	e contaminatio	on that pose a thre	cat to gi	ound water.	, surface wa	iter, hi	uman hea	aith
or the enviror	iment. lii a	ddition, NMO	CD accep	tance of a C-141 r	eport d	oes not relieve	the operator of i	responsi	bility for co	impliance w	vith an	y other	
federal, state,	or local lay	es and/or regu	lations.					S D D Y	(CDI CO) I	D17 (1016			
			,	>			OIL CONS	SERV	ATION_	DIVISIO	<u> </u>		
Signature:			_ 1		-								
						Annroyed by	District Supervise	est"					
Printed Name	:	Josh	Russo			dynores of	——————————————————————————————————————					 _	
Title:		HSE Co	ordinator			Approval Dat	e:		Expiration [Date:			
E-mail Addre	SS:	jrusso@concl	noresourc	es.com		Conditions of	litions of Approval:						
						- /	- gegresettere			Attached			
Date: 04/ Attach Addit	28/2010		Phone:	432-212-2399			·			<u></u>			
Augut Magit	ionai onec	12 11 14GCG288	ii y										

District 1
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fc. NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division 1988

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003

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

						OPERA	TOR		\boxtimes	Initial Rep	oort [Final Re	epoi
Name of Co		COG OP.				Contact		Pat Ellis	S				
Address				dland, TX 79701		Telephone 1	No. 43	32-230-0	077				
Facility Nar	ne	BC Federa	l#1 Tank	Battery		Facility Typ	e T	ank Batte	ery				
Surface Ow	ner Fede	erai		Mineral O	wner				Le	ase No.	NMLC-02	9405A	
				LOCA	TIO	N OF RE	LEASE						
Unit Letter	Section	Township	Range	Feet from the		/South Line	Feet from the	e East/	/West I.	ine Cou	ntv		
C	20	178	32E				<u> </u>	ĺ		Ì	Lea		
<u> </u>			·	Latitude 32 4	9.576	Longitu	ide 103 47.52	29					
			- 10 - 1 - 10 - 10 - 10 - 10 - 10 - 10	NAT	URE	OF REL	EASE						
Type of Rele			····				Release 80bb			ime Recove			
Source of Re	lease Oil	tanks				Date and Hour of Occurrence Date and Hour of Discovery 08/20/2010 8:30 a.m.							
Was Immedi	ate Notice (If YES, To							
		\boxtimes	Yes	No 🗌 Not Re	quired					n—OCD			
										ng—OCD ar—BLM			
										–BLM			
By Whom?	Josh Russ	50	· ·			Date and I-	four 08/20/20						
Was a Water	course Read					If YES, Vo	olume Impactio	ng the Wa	tercour	se.			
			Yes 🗵	l No		}		r					
a Watercot	irse was Im	pacted, Descri	be Fully.							· · · · · · · · · · · · · · · · · · ·			
Dispatch pro	blems by N		g Compan	n Taken.* y resulted in the o ancially responsibl				ch ultimat	tely led	to oil stock	tanks runi	ning over.	
Describe Are	a Affected	and Cleanup A	Action Tak	en.*		· · · · · · · · · · · · · · · · · · ·		7-10			0.0	"'	—
dimensions of location to the will sample t	f the spill a e release is he spill site	rea were 30' x the BC Federa	: 30° locat al #1, 330° ate any po	y contained inside ed behind the oil to FNL 1575' FWL ssible contaminati work.	anks. [i , Sec.2	The contamina 0-T17S-R32E	nted soil has be Lea Co., NM	en remov	ed and 029405	properly di: A. API#30-	sposed. (Tl -025-34733	ie closest w). Tetra Tec	ell ch
regulations a public health should their or or the enviro	Il operators or the envi operations h nment. In a	are required to ronment. The nave failed to a	o report an acceptant adequately OCD accep	is true and compliad/or file certain re the of a C-141 report investigate and re stance of a C-141 r	lease r nt by th mediat	otifications as e NMOCD m e contaminati	nd perform cor arked as "Fina on that pose a	rective ac I Report" - threat to g	tions fo does no ground	or releases vot relieve the water, surfa	vhich may e operator o ce water, h	endanger of liability uman healtl	h
						·· · · · · ·	OIL CO	NSERV	VATI	ON DIV	ISION		
Signature:			(-										
Printed Name	e:	Josh	Russo			Approved by	District Super	visor:					
Title:		HSE Co	oordinatoi			Approval Dai	te:		Expira	tion Date:	· · · · · · · · · · · · · · · · · · ·		
mail Addro	ess:	irusso@conc	horesourc	es.com		Conditions of					ubal 🗀		
D-1 - 00/20	12010	D)	422	212 2200						Alta	iched []		
Date: 08/30 Attach Addi *		Phone ets If Necess		-212-2399		 							

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Rond, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003

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

						OPERA	TOR	Þ	Initia	l Report		Final Report
Name of Co		COG OP				Contact	Pa	at Ellis				
Address				lland, TX 7970	1	Telephone 1	No. 432-	230-0077	·			
Facility Nar	ne l	BC Federal f	1 Tank E	Battery		Facility Typ	ne Tanl	k Battery				
Surface Ow	ner Feder	al		Mineral (Owner		~~~			lo. (API#) well locati		5-34733
				LOCA	ATIO	N OF RE	LEASE					
Unit Letter C	Section 20	Township 17S	Range 32E	Feet from the	North	South Line	Feet from the	East/Wes	st Line	County	Lea	
		32	.49.5	Latitude 32 5		Longite OF REL	ude 103 45.798 EASE	3.47.	525	-		
Type of Relea	ase Produc	ed water	*		-	Volume of	·····			tecovered	65 bbls	
Source of Re						1 .	lour of Occurrenc	e D	ate and	Hour of Dis	сочегу	
	* * * * * * * * * * * * * * * * * * *					06/05/2012		0	6/05/201	2 6:00 p.m	<u>. </u>	
Was Immedia	ate ivotice C		Yes 🗌	No Not R	eouired	If YES, To		Geoffrey I	.ekino-O	ICD		
}		اجا			-45			James A				
				·				Terry Gre		LM		_
By Whom?	Michelle						lour 06/06/2012					
Was a Water	course Reac		Yes 🛛	No		IFYES, VO	lume Impacting t	ne watere	ourse.			
If a Watercou	ırse was İm	pacted, Descri	be Fully.*			1		·				
Danaiba Cau	oo of Droble	and Remed	lial Action	Taken *								
Describe Cau	SC OI LIOUK	an and Kemet	naj Action	rakcii,								
					se. The	6" line has be	en rebuilt and ret	urned to se	ervice.			
Describe Area	a Affected a	nd Cleanup A	ction Take	en.*				_				
occurred insid	ie the BC F	ederal#1 tank	battery. \	We have recovere	ed all fre	e standing flu	were able to reco aid inside the facil or to any significa	ity and ha	ve scrape	ed the pad a	k. This rea fron	release n the
regulations at public health should their o or the environ	l operators a or the envir perations ha iment. In ac	the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and tors are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability as have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other I laws and/or regulations.							danger liability nan health			
			$\overline{}$				OIL CONS	SERVA	TION	DIVISIC	N	
Signature:	<u>/</u>	w_	<u>'</u>									
Printed Name	. /	Josh	Russo			Approved by	District Supervise)T.				
Title:		HSE Co	ordinator	·	/	Approval Date	e:	Exp	oiration [Date:		
E-mail Addre	ss:	jrusso@concl	oresource			Conditions of	Approval:			Attached		
Date: 06/1	4/2012		Phone	: 432-212-2	399							ļ

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II District III
1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico **Energy Minerals and Natural Resources**

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

Revised October 10, 2003

Form C-141

Final Report

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

☐ Initial Report

Release Notification and Corrective Action

OPERATOR

Name of Company COG Operating LLC						Contact		at Ellis		
Address		exas, Suite I			as 79701	Telephone l		230-0077		
Facility Nar	ne BC	Federal #1	Tank Ba	ttery		Facility Typ	e T	ank Batte	ery	
Surface Ow	ner: Feder	ral		Mine	eral Owner	•]	Lease N	No. LC-029405
				Le	OCATIO	ON OF RE	LEASE			
Unit Letter C	Section 20	Township 17S	Range 32E	Feet from	the Nor	th/South Line	Feet from the	East/Wes	st Line	County Lea
				Latitude	32.82620	02 Longitud	le 103.792133	3		
				3	NATURI	E OF REL	EASE			
Type of Relea	ase: Produc	ed Water	.	-			Release 45 bbls	oil V	olume R	Recovered 40 bbls
Source of Re	lease: Trans	fer Pump				Date and Hour of Occurrence O3/13/2010 Date and Hour of Discovery O3/13/2010				
Was Immedia	nte Notice C		Yes [No 🗆 1	Not Require		Whom? Larry . Geoffr	Johnson-OC ey Leking-C		
By Whom? J						Date and Hour 3/15/2010 4:59 p.m.				
Was a Water	course Reac		Yes 🏻	No		If YES, Vo	olume Impacting t	the Waterco	ourse.	
If a Watercou	rse was Im	pacted, Descr	ibe Fully."	•						
Describe Cau	se of Proble	em and Reme	dial Action	n Taken.*						
The cause of	the release	was due to a p	ower outa	ige to the tra	nsfer pump	. The power is	sue has been corr	ected.		
Describe Are	a Affected a	and Cleanup /	Action Tak	en.*						
	al. The site									oved and hauled away for port and submitted it to
regulations al public health should their o	l operators or the envir operations h nment. In a	are required to conment. The ave failed to a ddition, NMC	o report ar acceptanc adequately OCD accep	id/or file cer be of a C-14 investigate tance of a C	tain release I report by (and remedi	notifications and the NMOCD mate contamination	nd perform correct arked as "Final R on that pose a thr	ctive actions eport" does eat to grour	s for rele s not reli nd water	uant to NMOCD rules and cases which may endanger eve the operator of liability, surface water, human health ompliance with any other
C'	///	14	7				OIL CON	SERVA [*]	TION	<u>DIVISION</u>
Signature: / Printed Name	: Ike Tava	rez (agent foi	rt COG)			Approved by	District Supervis	or:		
Title: Project	Manager					Approval Dat	e:	Exp	piration I	Date:
E-mail Addre		arez@TetraTe		(432) 682-4	4559	Conditions of	f Approval:		Attached	
* Attach Additional Sheets If Necessary										

District I 1625 N. French Dr., Hohbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003 bmit 2 Copies to appropriate

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

;

						OPERA	ΓOR	☐ Initi	al Report	\boxtimes	Final Report
Name of Co	трапу	COG	Operatin	g LLC		Contact	Pa	nt Ellis	•		
Address				and, Texas 79	701	Telephone N	No. (432)	230-0077			
Facility Nar	ne BC	Federal #1	<u> Fank Bat</u>	tery		Facility Typ	e Ta	ank Battery			
Surface Ow	ner: Feder	al		Mineral C)wner			Lease	No. LC-029	405	
				LOCA	TIO	N OF REI	LEASE	·	2	_·	
Unit Letter C	Section 20	Township 17S	Range 32E	Feet from the	North	/South Line	Feet from the	East/West Line	County	Lea	
						· ·	e 103.792133				
Type of Relea	ase: Produce	ed Water		NAI	UKE	OF RELI Volume of	Release 9 bbls oi	il Volume	Recovered 6	bbls	
Source of Rel	ease: Water	· Tank				Date and H 03/26/2010	our of Occurrence		Hour of Disc		
Was Immedia	te Notice G		Yes 🗌	No 🛛 Not Re	equired	If YES, To Whom?					
By Whom?						Date and H	our			_	
Was a Watero	course Reac	hed?	Yes 🛚	No		If YES, Vo	lume Impacting th	he Watercourse.			
If a Watercou	rse was Imp	acted, Descril	e Fully.*					20/200-211	· · · ·		
Describe Cau	se of Proble	m and Remed	ial Action	Taken.*		····				<u>. </u>	
The cause of	the problem	was due to ar	ı alarm sys	tem failure. The	alarm :	system has be	en repaired.				
Describe Area	Affected a	nd Cleanup A	ction Take	n.*	•						
Tetra Tech pe proper dispos NMOCD for	al. The site	pected the site was then brou	and collec	ted samples to d urface grade wit	efine th h clean	e spills extent backfill mater	. Soil that exceede ial. Tetra Tech pro	ed RRAL was ren epared a closure r	oved and had eport and sub	ıled aw mitted	ay for it to
regulations al public health should their o	I operators a or the envir- perations ha ament. In ac	are required to onment. The a live failed to ad Idition, NMO	report and acceptance lequately i CD accepta	file certain re of a C-141 reponvestigate and re	elease no rt by the emediate	otifications and e NMOCD ma e contamination	knowledge and ur d perform correct arked as "Final Re on that pose a thre e the operator of re	ive actions for rel port" does not rel at to ground wate	eases which a ieve the opera r, surface wat	may end ator of er, hun	danger liability nan health
Signature:		1		<u> </u>			OIL CONS	SERVATION	DIVISIO	N	
Printed Name	: Ike Tavar	ez (agent fort	(COG)			Approved by	District Superviso	or:			
Title: Project	Manager			···		Approval Date	<u></u>	Expiration	Date:		
E-mail Addre	ss: Ike.Tava	urez@TetraTec		432) 682-4559		Conditions of	Approval:	Atta			
Attach Addit	ional Shee	ts If Necessa		, OOE-TJJJ.,					1		

<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Revised October 10, 2003 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back

Initial Report

side of form

Form C-141

Final Report

Release Notification and Corrective Action

OPERATOR

Name of Company COG Opera			Contact Pat Ellis					
Address 550 W. Texas, Suite 1300 M		9701	Telephone N	No. (432)	230-0077			
Facility Name BC Federal #1 Tank	Battery		Facility Typ	e T	ank Battery			
Surface Owner: Federal	Mineral	Owner			Lease N	No. LC-029405		
	LOC	ATIO	N OF REI	LEASE				
Unit Letter Section Township Rang C 20 17S 32E		Nort	h/South Line	Feet from the	East/West Line	County Lea		
	Latitude 32	.82620)2 Longitud	e 103.792133	}			
	NA'	TURE	E OF RELI					
Type of Release: Produced Water			Volume of	Release 181 bbls	s oil Volume F	Recovered 180 bbls		
Source of Release: Water Tank			04/20/2010			Hour of Discovery 0 4:00 a.m.		
Was Immediate Notice Given? ☐ Yes	□ No □ Not F	Required						
			Geoffrey Leking-OCD Trishia Bad Bear-BLM					
By Whom? Josh Russo				our 04/20/2010				
Was a Watercourse Reached?	⊠ No		If YES, Vo	lume Impacting t	he Watercourse.			
If a Watercourse was Impacted, Describe Full	y.*	-	1	·····				
Describe Cause of Problem and Remedial Act	ion Taken.*							
The cause of the problem was due to an alarm	system failure. Th	ne alarm	transducer has	been replaced.				
Describe Area Affected and Cleanup Action	`aken.*				, y			
Tetra Tech personnel inspected the site and coproper disposal. The site was then brought up NMOCD for review.								
I hereby certify that the information given aboregulations all operators are required to report public health or the environment. The accepts should their operations have failed to adequate or the environment. In addition, NMOCD accepted and the state, or local laws and/or regulations.	and/or file certain nce of a C-141 rep ly investigate and	release i ort by th remedia	notifications an he NMOCD ma ite contamination	d perform correct trked as "Final Re on that pose a thre	tive actions for rele eport" does not reli eat to ground water	eases which may endanger eve the operator of liability , surface water, human health		
1/1/20	7			OIL CONS	SERVATION	<u>DIVISION</u>		
Printed Name: Ike Tavarez (agent fort COG)		Approved by	District Superviso	or:				
Title: Project Manager			Approval Date	e:	Expiration [Date:		
E-mail Address: Ike.Tavarez@TetraTech.com			Conditions of Approval:			Attached		
* Attach Additional Sheets If Necessary	ie: (432) 682-4559							

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II
1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe. NM 87505

Name of Company

Address Facility Name

State of New Mexico Energy Minerals and Natural Resources

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

Revised October 10, 2003 Submit 2 Copies to appropriate District Office in accordance

Form C-141

with Rule 116 on back side of form

Release Notification and Corrective Action OPERATOR Initial Report Final Report COG Operating LLC Pat Ellis Contact 550 W. Texas, Suite 1300 Midland, Texas 79701 Telephone No. (432) 230-0077 BC Federal #1 Tank Battery Facility Type Tank Battery

Surface Owner: Federal Mineral Owner Lease No. LC-029405

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
) C	20	17S	32E					Lea
1	ļ			:	ļ			

Latitude 32.826202 Longitude 103.792133

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 70 bbls oil	Volume Recovered 65 bbls					
Source of Release: 6" water line	Date and Hour of Occurrence 06/05/2012	Date and Hour of Discovery 06/05/2012 6:00 p.m.					
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom? d Geoffrey Le Jim Amos-B Terry Gregs	LM					
By Whom? Michelle Mullins	Date and Hour 06/06/12 3:08 p.						
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.*							
A 6" produced water line at the facility ruptured causing the release. The	ne 6" line has been rebuilt and returne	d to service.					
Describe Area Affected and Cleanup Action Taken.*							
Tetra Tech personnel inspected the site and collected samples to define to proper disposal. The site was then brought up to surface grade with clear NMOCD for review.							
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by t should their operations have failed to adequately investigate and remedia or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	notifications and perform corrective a he NMOCD marked as "Final Report' ate contamination that pose a threat to	ctions for releases which may endanger does not relieve the operator of liability ground water, surface water, human health					
Signature:	OIL CONSER	VATION DIVISION					
Printed Name: Ike Tavarez (agent fort COG)	Approved by District Supervisor:						
Title: Project Manager	Approval Date:	Expiration Date:					
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached					
Date: 5-17-13 Phone: (432) 682-4559							
* Attach Additional Sheets If Necessary							

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Form C-141 Revised October 10, 2003

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

Release Notification and Corrective Action OPERATOR Initial Report Pat Ellis Contact Telephone No. (432) 230-0077

Final Report **COG Operating LLC** Name of Company 550 W. Texas, Suite 1300 Midland, Texas 79701 Address BC Federal #1 Tank Battery Facility Name Facility Type Tank Battery Surface Owner: Federal Lease No. LC-029405 Mineral Owner LOCATION OF RELEASE Feet from the North/South Line Feet from the Unit Letter Section Township Range East/West Line County 32E 20 178 С Lea Latitude 32.826202 Longitude 103.792133 NATURE OF RELEASE Type of Release: Oil Volume of Release 80 bbls oil Volume Recovered 75 bbls Source of Release: Oil Tank Date and Hour of Occurrence Date and Hour of Discovery 08/20/2010 08/20/2010 8:30 p.m.

If YES, To Whom? Was Immediate Notice Given? Larry Johnson-OCD Geoffrey Leking-OCD Trishia Bad Bear-BLM Jim Amos-BLM By Whom? Josh Russo Date and Hour 08/20/2010 7:50 p.m. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. ☐ Yes 🏻 No If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken.* Dispatch problems by Navajo Trucking Company resulted in the oil trucks not being able to haul, which ultimately led to oil stock tanks running over. Navajo has accepted fault for the release and financial responsibility for the environmental cleanup. Describe Area Affected and Cleanup Action Taken.* Tetra Tech personnel inspected the site and collected samples to define the spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it to NMOCD for review. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger

public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION Signature: Approved by District Supervisor: Printed Name: Ike Tavarez (agent fort COG) Expiration Date: Title: Project Manager Approval Date: E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval: Attached 5-17-15 Phone: (432) 682-4559

Attach Additional Sheets If Necessary

		SITE	INFORMATION				
		Report	Type: Work Plan				
General Site Inf	ormation:						
Site:		BC Federal #1 T	ank Battery				
Company:		COG Operating	LLC				
Section, Towns	hip and Range	Unit C Section	20 Township 17S Range 32E				
Lease Number:		LC-029405-A					
County:		Lea County					
GPS:		32.826202 103.792133					
Surface Owner:		Federal					
Mineral Owner:	·		of CR126 and Hwy 529, travel north on CR126 for 1.9 miles, turn left (west),				
Directions:		go 1.6 miles, turn i miles to tank batte	ight (north), go 0.5 miles, turn right and go 0.1 miles, turn left and go 0.1 ry				
Release Data: 3/13/2010	Produced water		rered 40 - Inside TB firewalls				
3/26/2010	Produced water		red 6 - Inside TB firewalls				
4/10/2010	Produced water		overed 180 - Inside TB firewalls				
8/20/2010	Oil		ered 75 - inside TB firewalls				
6/5/2012	Produced water	70 bbls lost - recov	ered 65 - inside TB firewalls and pasture				
Official Commu	nication: ខ្មែក វិទ្ធា	31 B 18 18 18 18	A CONTRACTOR OF THE PROPERTY O				
Name:	Pat Ellis		ike Tavarez				
Company:	COG Operating, Li	c	Tetra Tech				
Address:	One Concho Cente		1910 N. Big Spring				
P.O. Box	600 W. Illnois Ave.						
City:	Midland Texas, 797	701	Midland, Texas				
Phone number:	(432) 686-3023		432-682-4559				
Fax:	(432) 684-7137		100 404 1044				
Email: pellis@conchoresources.com							

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	>200'
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	

Accepta	ble Soil RRAL (r	πg/kg)
Benzene	Total BTEX	TPH
10	50	5,000



March 19, 2013

Mr. Geoffrey Leking **Environmental Engineer Specialist** Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC., BC Federal #1 Tank Battery, located in Unit C, Section 20, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the BC Federal #1 Tank Battery, located in Unit C. Section 20, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.826202°, W 103.792133°. The site location is shown on Figures 1 and 2.

Background

The BC Federal #1 Tank Battery had five (5) separate spills recorded with individual initial C-141 forms. The spills will be separated for clarification and referred to as Spill #1 through Spill #5. The spill inside the firewall did overlap each other as shown on Figure 3. The initial C-141 forms are enclosed in Appendix A. According to the State of New Mexico C-141, the spills detailed are shown below.

Spill #1

On March 13, 2010, the spill occurred and released approximately forty five (45) barrels of produced water due to a power outage to the transfer pump. To alleviate the problem, COG personnel repaired the power outage. Forty (40) barrels of standing fluids were recovered. The spill was contained within the facility berms.

Spill #2

On March 26, 2010, the spill occurred and released approximately nine (9) barrels of produced water due to an alarm failure. To alleviate the problem, COG personnel repaired the alarm system. Six (6) barrels of standing fluids were

Table 1 COG Operating LLC. BC FEDERAL #1 TANK BATTERY

Tank Battery Area LEA COUNTY, NEW MEXICO

Sample	(Sample	 : :	Soils	Soil Status	-	TPH (mg/kg)	î	9	Toluge	Collista	A		
.6	Sample Date	Depth (R), BEB	EB (II)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	(mg/kg)
Tank Bet	Tank Battery - Spill #3 Assessment (over	ssessment		Spfil #1	fep Spill #1 and Spill #2)				, -					
AH	6/10/10	<u>1</u> -0		×		1,020	383	1,403	2.41	22.2	18.6	26.8	70.07	9,270
		1-1.5		×		_	-	•	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	9,470
		2-2.5		×			-	-	1	. 1	1		1	4,620
		3-3.5		×			•	,	,		1	1	'	3,070
	Clay	4-4.5		×		-		'n.		1	án ,	1	1	3,140
		5-5.5		×			1	_		_			,	4,090
58-1	5/11/10	2.		×		41.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	805
		7		×		,	,		-]	-	1	-	200 700
		ĵ		×		ì	1	,	1	-	1)	1	<200
		12		×		-	ı	_	_	-	1	-	ı	<200
		15.		×		-	-	_	•	-	1	1	-	00Z>
		20.		×		-	ı	-	-	-	1	١	,	4200 4200
							.							
Tenk Batt	Tank Battery - Spill 1 and Spill 2 Assessmen	Spill 2 Assest	sment											
AH-1	4/8/10	0-1.		×		2250	524	2,774	15.3	71.8	50.2	69.4	206.5	10,500
		1-1.5	1	×		,	'	-	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	13,100
		2-2.5		×		į	-	1	<0.0100	<0.0100	<0.0100	0.08	80.0	3,960
		3-3.5	-	×		Ţ	-	-	1	-	_	J		4,090
		4-4.5	` }	×		'	,	,	-	÷		_		3,540
		5.5.5		×		-	<u></u>	1	-	_		_	_	6,770
		6.6.5		×		'	,	,		-	_	•		7,180
		7-7.5	1	×		, 1	'	' '	1	-				4,680
		îs; et et		×		-	1							200



recovered. The spill was contained within the facilities berm and impacted the same footprint of the previous spill (Spill #1).

Spill #3

On April 20, 2010, the spill occurred and released approximately hundred eighty one (181) barrels of produced water due to an alarm failure. To alleviate the problem, COG personnel replaced the alarm transducer. One hundred eighty (180) barrels of standing fluids were recovered. The spill was contained within the facilities berm and impacted the same footprint of the previous spills (Spill #1 and Spill #2).

Spill #4

On August 20, 2010, the released occurred and released approximately eighty (80) barrels of oil due to tank over flow. Approximately seventy-five (75) barrels of standing fluids were recovered. The spill was contained within the facility berms and impacted the same footprint of the previous spills only on the southwest corner of the facility.

Spill #5

The leak was discovered on June 5, 2012, and released approximately seventy (70) barrels of produced water due to a rupture 6" water line. To alleviate the problem, COG personnel repaired the line. Sixty-five (65) barrels of standing fluids were recovered. The spill was contained within the facility berms and impacted the same footprint of the previous spills only on the southwest corner of the facility. The fluids breached the southwest firewall and migrated approximately 340' southwest of the tank battery.

Spill Chronology and Tetra Tech Sampling

3/13/10	Spill #1 occurred
3/26/10	Spill #2 occurred
4/8/10	Initial assessment (spill #1 and spill #2) - installed 4 auger holes
4/20/10	Spill #3 occurred
5/11/10	Installed 3 borings to delineate impact
6/10/10	Follow up assessment to collected surface samples
8/20/10	Spill #4 occurred
9/7/10	Tetra Tech installed a single auger hole
11/20/10	Tetra Tech installed one boring
6/5/12	Spill #5 occurred
8/1/12	Tetra Tech installed auger holes
9/12/12	Tetra Tech installed borings



Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 20. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 175' below surface. The groundwater data is shown in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

Spill #1, #2, and #3 - Sampling Inside Tank Battery Firewalls

On April 8, 2010, Tetra Tech personnel inspected and sampled the spill area for Spill #1 and Spill #2, which overlapped each other. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils.

Selected samples were analyzed for TPH 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 B. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger hole locations either showed TPH, benzene or total BTEX exceeding the RRAL and vertically defined in the shallow soils. Elevated chloride concentrations were detected at AH-1, AH-2 and AH-3 from surface to a depth of approximately 8-8.5' below surface. Deeper samples were not collected due to the dense caliche formation. The chloride impact was not vertically defined. The chloride impact at AH-4 was vertically defined and significantly declined at 3.0' below surface.



On May 11, 2010, Tetra Tech personnel supervised the installation of soil borings (SB-1, SB-2 and SB-3) utilizing an air rotary drilling rig to collect deeper samples. Prior to the installation of the soil borings, Spill #3 had occurred on top of the two older spills (Spill #1 and #2). The soil borings were installed to a total depth of 20.0' for SB-1 and 30.0' for SB-2, and SB-3. Referring to Table 1, chloride concentrations decreased with depth to less than 400 mg/kg at the bottom hole samples.

On June 10, 2010, Tetra Tech personnel collected additional samples (surface samples 0-5') from all four auger holes (AH-1, AH-2, AH-3 and AH-4) in order to correlate the drilling results with previous spill assessment. The sampling results are summarized in Table 1.

Spill #4 Sampling

Inside Tank Battery (Northwest Corner)

On September 7, 2010, Tetra Tech personnel inspected and sampled the spill area (Spill #4) located southwest corner of the facility, which measured approximately 30' x 30'. A single auger hole (AH-1) was installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 4.

Referring to Table 2, the submitted samples from AH-1 were below the RRAL for BTEX and TPH. Elevated chloride concentrations were detected down to 9-9.5' below surface of 4,710 mg/kg. In order to delineate the impact of the spill, deeper samples would need to be collected utilizing an air rotary.

On November 10, 2010, Tetra Tech personnel supervised the installation of a single soil boring (SB-1) near AH-1. Soil samples were collected to a depth of 40' below surface. Referring to Table 1, elevated chloride concentrations decreased to less than 200 mg/kg at 25' below surface.

Spill #5 Sampling

(Tank Battery -Northwest Corner and Outside Tank Battery

On August 1 2012, Tetra Tech personnel inspected and sampled the spill area (Spill #5). A total of eight (8) auger holes were installed to assess the spill area. The spill was contained within the facility berms and impacted the same footprint of the previous spills only on the southwest corner of the facility. The fluids breached the southwest firewall and migrated approximately 340' southwest of the tank battery. One auger hoe was installed inside the southwest firewall and seven (7) outside the facility firewalls.

TETRA TECH

Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The sampling results are summarized in Table 2. The auger hole locations are shown on Figure 4.

Referring to Table1, the auger hole (AH-1) located on the southwest corner, inside the tank battery showed total BTEX concentrations exceeding the RRAL at 0-1' of 54.1 mg/kg and 1-1.5' of 165.3 mg/kg and decline below the RRAL at 2-2.5' below surface. The chloride impact was not vertically defined, with a chloride of 4,330 mg/kg at 10-10.5 below surface.

Referring to Table 2, majority of the auger holes, installed outside the tank battery firewalls, were below the RRAL for TPH and BTEX, except for the area of AH-2. Auger hole (AH-2) showed a TPH of 6,956 mg/kg exceeding the RRAL, but declined to 297 mg/kg at 1-1.5' below the RRAL. In the areas of auger holes (AH-2 and AH-3), the chloride impacted soils were not defined. However, the remaining areas (AH-4, AH-5, AH-6, AH-7 and AH-8) were vertically defined and showed a declining chloride with depth.

On September 12, 2012, Tetra Tech personnel supervised the installation of a three (3) soil borings (SB-1, SB-2 and SB-3) in the areas of AH-1, AH-2 and AH-3. Auger holes (AH-1 and AH-2) showed a deeper chloride impact to the soils, which significantly declined at 50.0' below surface. In the area of AH-1 (SB-1), the bottom hole sample showed a slight chloride spike of 1,240 mg/kg at 59-60', with appears to be cross-contaminated with the upper sandy soils. The area of AH-3 (SB-3) showed a shallow impact and significant declined at approximately 15.0' below surface.

Work Plan

COG proposes to supervise the removal of impacted material as are highlighted in Table 1 and Table 2. In addition, the proposed excavation areas and depths are shown on Figure 4. For safety concerns and tank stability issues, the impacted soil inside the tank battery firewalls will be excavated to a depth of 3.0' to 4.0' below surface, except for the area of AH-4. Auger hole (AH-4) will be excavated to a depth of approximately 2.0' below surface. Once the areas are excavated to the appropriate depths, the excavation bottom of AH-1, AH-2 and AH-3 will be capped with clay material (6" thick) and backfilled to grade with clean soils.

In addition, the impacted areas outside the tank battery will be excavated from depth of approximately 1.0' to 7.0' below surface to remove the elevated chlorides. The area of AH-2 will be excavated to a depth of 4.0' to 5.0' below surface, where deeper excavation will not performed due to the vicinity of the spill (near tank battery and flow lines). The area of AH-3 will be excavated to a depth of 7.0' to remove majority of the chloride impact in the area.



Due to the location of the spill, the proposed excavation areas or depths may not be achieved due to wall cave ins, limited access, oil and gas equipment, electrical, structures or lines which 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 impacted soils are not accessible, the soils will be deferred until the abandonment of the facility.

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,

TETRATECH-

fke Tavarez, PG

Senior Project Manager

cc: Pat Eilis - COG cc: Jim Amos - BLM

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

Sample				Soil	Soil Status		TPH (mg/kg)	g)	Deniens	Toll	Editor			211111111111111111111111111111111111111
ā	sample Date	BEB (n),	(3)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	(mg/kg)
Ferrik Bet	Tank Battery - Spill #3 Assessment	ssessment	(overtap	Spill #1	(overlap Spill #1 and Spill #2)	2)						į		
A <u>F</u> 1	6/10/10	0-1"		×		1,020	383	1,403	2.41	22.2	18.6	26.8	70.01	9,270
		1-1.5		×		-	_	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	9,470
		2-2.5		×				_	1	-	`-	,		4,620
		3-3.5		×		-	_	_	1	ļ	() ()	4	-	3,070
	Clay	4-4.5'		×		١	•	1	•	-	•C			3 140
		5-5.5		×			1	•		-	,		,	4 090
\$ B -1	5/11/10	2,		×		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	\$0.01	809
		7'		×		١	_	1	-	1	*	,	<u> </u>	ğ
L		10		×		١	-	ı	1	ı	1	,	1	200
		12		×		,		-	-	1	1.	•	1	^200
		15;		×		ı		-	•	1	1	1	1	200
		20°		×		ι.	1	1	-	_	ı	ı	1	^200
			_											ļ
BA Batt	Tenk Battery - Spill 1 and Spill 2 Assessment	Spill 2 Asses	sment											
Ž	4/8/10	0-1		×		2250	524	2,774	15.3	71.6	50.2	69.4	206.5	10,500
L		1-1.5'		×		,	1	,	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	13,100
		2-2.5		×	<u> </u>	١	1	-	<0.0100	<0.0100	<0.0100	0.08	0.08	3,960
		3-3.5		×		ł	1	ı	1	ı	1	1	-	4.090
		4-4.5		×	:	١	1	1	l.	1	-		1	3,540
		5-5.5		×		,	1	',	1	'	1	1	-	6,770
		6-6.5		×		1	ì	1	J	ı	1	-		7,180
		7-7.5'		×		,	,	L	1	-	_	1		4,680
		8-8.5		×		ļ	1	,		-	1	-		2,830

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

) elole -		Sample		lioS	Soil Status	1	TPH (mg/kg)	8)	0		1			
6	Sample Date	Depth (ft), BEB	(ft)	In-Situ	Removed	GRO	ORG	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	(mg/kg)
ank Batt	Tank Battery - Spill #3 Assessment (overlap Spill #1 and Spill #2)	sessment	(overtap	Spill #1	and Spill #2	(2)								
子2	6/10/10	0-1"		×		209	3,240	3,449	0.67	7,02	4.25	6.22	18.16	3,690
		1-1.5'		×		ı	-	₹.	1	_	_		dia.	4,960
!		2-2.5'		×		1	_	ı	1	Ŀ			1	7,570
		3-3.5		X		i	_	ι	1	t	ŀ	tk	1	12,500
	Clay	4-4.5		×		1		١	1	t .	i			13,000
		5-5.5'		×		1	-	ţ		_	_	_	_	5,880
\$8-2	5/11/10	ςį		×		^1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	12,000
		7		X		-	-	-		₹ [ı	-	1	12,400
		10°		X		•		ı	1	1	1	_		8,610
_		12'		×		-		t	1	_			<u>, </u>	2,790
		15		X		-	-	t	1	1	(-	1	7,130
		20'		×		<u> </u>	1	į.	•	1	•	1	-	88
_		25		×			-	ι	-	-	ı	1	. 1	996
		30′		×		-	-	t	1	ı	1	1	,	~200
ank Batta	Tank Battery - Spill 1 and Spill 2 Assessment	Spill 2 Asses	ament						į					
AH-2	4/8/10	0-1-		×		5,780	5,570	11,350	21.1	161	106	158	446.1	4,740
		1-1.5		×		2,550	3,980	6,530	25.4	100	46.8	84.6	256.8	5,160
-		2-2.5		×		2,010	1,020	3,030	14	70.60	32.50	69.6	187.1	11,400
		3-3.5	L	×		 - -	-	ı i	1		-	,	,	10,400
		4-4.5'		×		,	'	ι	<0.200	7.63	11.7	26.4	45.73	5,440
		5-5.5		×		,		,	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	4,290
_		6-6.5		×				ľ	1	1	_	•	-	3,410
		7-7.5		×		1	,	ı	1	1	ı	-		4.800

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

<u> </u>		Sample		Soi	Soil Status		TPH (maka)	(a)						
	Sample Date	_	EB (ft)			1	,		Benzene	Toluene	Ethlybenzene	Xylane	BTEX Total	Chloride
;		_		In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(6x/6w)	(mg/kg)	(mg/kg)		(mg/kg)
ank Bat	Tank Battery - Spill #3 Assessment (overtap Spill #1 and Spill #2)	usessment	(overtap	Spill #1	and Spill #2	.5								
Ē	6/10/10	0-1		×		741	960	1.701	1.2	=	888	15.1	37.28	8.570
		1-1.5		×		۱	1	ı	_;_	ľ,		-	1	6 930
 		2-2.5		×		1	-	. •	-	'		î	1:	2.400
		3-3.5		×		۱,	'	'	-	,	1	1	-	702
		4-4.5		×		'	1	ŀ	_	1	1		-	200
		5-5.5'		×		'	ı	1	_	'	_	'	<u>, </u>	639
		6-6.5		×			,	'	١	-	1	-	,	28
		7-7.5		×		'	-	•	_		f	,		2
		8-8-5		×		'	-	'	•	,	1	,	<u>'</u>	S S
		9-9.5		×		,	,	-		1		'	'	^200
				,										
Tank Battery	bery - Spill 1 and	- Spill 1 and Spill 2 Assessment	STEREOTS.											
AH4	4/B/10	0-1'		×		1,590	643	2,233	8.06	39.1	29.7	45.7	122.56	9,850
		1-1.5'		×			1		<0.0100	<0.0100	<0.0100	A0.0100	60.0	15,900
		2-2.5'		×		t	1	1	-	,	1	ı	1	3,620
		3-3.5'	L	×		,	' '	_	•	1	1	,	ı	^200
		44.5		×		t	ı	-	_	1	•	,	,	^200
		5-5.5'	_	×		t	ı	_	_	١	١	-	'	2,020
		6-6.5		×		-	1	_	1	•	1	'	_	<200
		7-7.5'		×		L	_	_	1	1	•		1	^200
		8-8.5		<										300

BEB Below Excavation Bottom

(-) Not Analyzed

Proposed Excavation Depths

Clay cap (excavation bottom)

Table 1 COG Operating LLC. BC FEDERAL #1 TANK BATTERY Tank Battery Area LEA COUNTY, NEW MEXICO

	-		_			Clay		 		AH-1 8/1/2012						·				Clay		BH-1 9/12/2012	Spill 5 Assessment - Overlap of Spills #1 through #12 19 19 19 19 19 19 19 19 19 19 19 19 19	Tank Battery (SOUTHWEST, CORNER)	ID Sample value	Sample
10.10.5	9-9.5	8-8.5	7-7.5	6-6.5	5-5.5	4-4.5	3-3.5	2-2.5	1-1.5	0-1	59-60	49-50	39-40	29-30	24-25	19-20	14-15	9-10	6-7	/ 4-5	2-3	012 0-1	- Overlap of Sp	HWEST, CORNE	BEB BEB	_ I
Ο Ι			-			_								-			-				, ,	2	lls #1 throu	35.), co (n)	
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	gh (4)		In-Situ	Soil
																									Removed	Soil Status
•				,					•	525	•	-	-		•	•		-	•		••	.,			GRO	
•		-		,		·		•	٠	3,630	-	-	-	-	-	•		-	·	•		•	4.2		DRO	TPH (mg/kg)
•	•		<u></u>			,				4,155	•	•	•	,	•			•	,	•	•	•		(1) (1)	Total	9)
٠	•	•					•	<0.0400	0.449	<0.100	•	•	•	•	•	•	•	•	-		•	•			(mg/kg)	Benzene
	•		•		•			2.37	41.5	11.0	•	•	•	•	•	-		•	•		,	,			(mg/kg)	Toluens
٠		•	 •		•	,		11.0	41.6	12.3	•	•		٠	•	•		•				• • • • •		STATE OF THE PARTY	(mg/kg)	Ethivbenzene
		•	•	•	•	,		26.7	81.8	21.1	•	-	•	•	,	-	٠	•	-			•		ができた。 はは、 は、 は、 は、 は、 は、 は、 は、 は、 は	(mg/kg)	Xviene
	•	•	-	-	•	•	•	40.1	165.3	54.4													.1 .	1 m	BIEX Total	
4,330	5,670	4.740	4,820	4,290	2,800	2,000	1,980_	2,360	1,890	7,100	1,240	79.6	1,430	6,780	7,990	4,480	3,640	3,780	4,190	9.750	13,500	14.200	大き ない	The second of the	(mg/kg)	

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

									AH3	Tank Battery									SB-3						ан-з	Spill #3 A	Continue	5	Sample
			, ;]		4/8/10	ary - Spill 1 and Spill 2 Assessment									5/11/10						6/10/10	Spill #3 Assessment (overlap Spill #1 and Spill #2)	Continue - Tank Battery (SOUTHWEST CORNER)	Sample Cate	
9-9.5	8-8.5'	7-7.5'	6-6.5	5-5.5	4-4.5	335	2-2.5	1-1.5'	9.7	Spill 2 Asse		30	25	20.	153	122	ą	7'	S ₂	5-5.5	4-4.5	3-3.5	2-2.5	1-1.5	0-1،	ertap Spill	MHLIGOS	BEB (rt).	Sample
										Sment																H and S	ST COF	EO (II)	i E
×	×	×	×	×	×	×	×	×	×			×	×	×	×	×	×	×	×	×	×	×	×	×	×	pill #2)	WER) -	In-Situ	Soi
																										į		Removed	Soil Status
-	1	-	ı	1	1		ŀ	ı	1,320			ı	ľ	,	ı			ı	686		=		71.9	39.3	5,880			GRO	
-		1	ı	,	ı		ı	1	1,340			-	1	Ļ	1	,	,	ı	558	-	ı	-	423	221	3,760			DRO	TPH (mg/kg)
1	-	-		-	1	,	j	-	2,660			-	1	-	-	t	١	1	1,244	_	_	-	495	260	9,640			Total	G)
_	_	_	J	•	1	1	ı	<0.0100	3.30				1	1	•	1	1	-	2.18	1		_	0.0795	0.26	45.2			(mg/kg)	Benzene
		٠	_	-	-	,	•	<0.0100	23.6		•	_		_	_	<u>ו</u>	-		14.3	-	_	-	1.36	1.00	202			(mg/kg)	Toluene
_	-	_	_	-	1	i	ł	<0,0100	23.5				1		_	1	-	_	10.5	-	1	1	1.46	0.72	111			(mg/kg)	Ethlybenzene
_		_		_	~		-	0.108	36.4			_	ı	_	i	-	_	_	15.7	ı			2.21	1.09	ī <u>\$</u>	į		(mg/kg)	Xylene
-	1	1	_	_	1	1	-	0.11	86.8			_	•	•	-	-	-	-	42.68	_		1	5:1	3.1	512.2			BIEX IOM	
2,380	2,520	3,550	3,750	3,630	2,710	4,380	6,280	12,300	16,600			360	874	1,470	9,820	9,040	10,100	8,950	8,350	9,650	1,100	11,700	12,000	10,000	7,360	.		(mg/kg)	Chloride

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

									AH-1						٠				SB-1	Spill 4 Ass	Continue	8	Sample
									9/7/10								 . .		11/10/10	Spill 4 Assessment - (Overlap of Spills #1 through #3)	Continue - Tank Battary (SOUTHWEST CORNER) - Spill 4 Assessment - (Overlap of Spills #1 through #3)	oginpar cells	Parado Data
9-9.5	8-8.5	7-7.5	6-6.5	5-5.5	4-4.5	3-3.5	2-2.5	1-1.5	Q-1"	å Ö	30'	25'	20'	55.	10'	7"	5'	<u>32</u>	<u> </u>	stap of Spills	SOUTHWEST	988 Debus (11),	Sample
		,																		#1 throu	CORNE	(11)	
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	g	R) - Spill	In-Situ	Sei
	, ,					,															4 Assessme	Removed	Soil Status
-	1	4	1 3	ł	,	ı	253	1,670	1080	,	,	,	ı	,			<50.0	6,970	4,110		ent - (Overt	GRO	
-	<u>-</u> ,		-	-	_	1	275	758	2200	1	ı	ı	1	-	1	_	2.0	5,630	3,820		ap of Spil	DHO	TPH (mg/kg)
ı.	•	ı	1	ı	1	j	528	2,428	3,280	ı	-	,	1	1	ſ		<50.0	12,600	7,930		s #1 throug	Total	9
ı		_	_		_	_	1.8	5.1	2.6	-	1		t	-			_		_		jh #3)	(mg/kg)	Benzene
-	-		-	ţ	-		10.4	44.0	42.7	,	1	,	\$,		,	-		-			(mg/kg)	Toluene
- 1				-		_	3.7	25.1	34.4	-	-		_	_	_	_	-	-				(mg/kg)	Ethlybenzena
	_	_	•	ı		-	14.5	73.9	88.9	ı	I	-	1	_	-	_	_	_	1			(mg/kg)	Xylene
	,	t	1	ı	,	l	30.4	148.1	168.6	ı	ţ	,	ι	٠	ı		_	ŧ	-			alex togi	1
4,710	6,430	4,560	4,730	4,340	1,460	4,090	585	212	<200	<200	<200	<200	2,270	1,520	825	1,610	1,020	1,000	1,290			(mg/kg)	Chloride

Table 2
COG Operating LLC.
BC Federal #1 Tank Battery
Samples Outside of Tank Battery
Lea County, New Mexico

Sample	Sample	Sample	Soil	Soil Status	ľ	TPH (mg/kg)	g)	Benzene Toluene	Toluene	Ethlybenzene	Xylene	Total	Chloride
ī,	Date	Depth (ft)	In-Situ	In-Situ Removed GRO	GRO	DRO Total	Total	(mg/kg) (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Spill 5 As	Spill 5 Assessment - Inside Tank Battery (Northwest corner)	sside Tank B	attery (N	orthwest c	omer)	, ,	,				1		
AH-1	AH-1 8/1/2012 Data shown in Table 1 (Tank Battery - SOUTHWEST CORNER)	Data shown i	in Table :	l (Tank Bat	tery - SOL	JTHWEST (CORNER)	-					
SB-1	SB-1 9/12/2012 Data shown in Table 1 (Tank Battery - SOUTHWEST CORNER	Data shown i	in Table 1	(Tank Bat	tery - SOL	JTHWEST (CORNER)			14 25 44 4			
						i							

Table 2 COG Operating LLC. BC Federal #1 Tank Battery Samples Outside of Tank Battery Lea County, New Mexico

			_								SB-2											AH-2	Outside	ē	Sample
	*	*	*	*		=					9/13/2012	•		=	•	•	=		#	-	=	8/1/2102	Outside Tank Battery · Spill 5 Assessment	Date	Sample
59-60	49-50	39-40	29-30	24-25	19-20	14-15	9-10	6-7	4-5	2-3	21	10-10.5	9-9.5	8-8.5	7-7.5	6-6.5	5-5.5	4-4.5	3-3.5	2-2.5	1-1.5	٥.	Spill 5 Asses	Depth (ft)	Sample
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	Smerit	In-Situ	Soil
																		•	·	V.			ÿ	Removed	Soil Status
Ŀ			•		-		•			•	,	٠	,	_	1			_	•		<4.00	146		GRO	
	,		•	ſ			•	•	,		_			-	•	•	1	-	•	•	297	6,810	• .	DRO	TPH (mg/kg)
			,				-	1	ï	-	, T	1		,	•	•	•		,	***************************************	297	6,956		Total	g)
,				,			-				-	•	,	'	•	•	•	-				<0.100	i .	(mg/kg)	Benzene
	•	1	-	•	•	•	-		¥ 10,4	¥.			-	•	•	-	-		, eq. 6	5 4 4 5 F		1.39		(mg/kg)	Toluene
	•	-	•	-	•	r	•	•	•	The second secon	•		,	•	_		**************************************		respective to the second se	A DOME TO A SECOND OF THE PARTY	en e	0.465		(mg/kg)	Ethlybenzene
-	•	•	-	•	•	•	•	•	-	an take an	•		•	-	•	•		ξ 		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,	0.840		(mg/kg)	Xylene
•	-	•		ı	•	-	•	•		A CONTRACTOR OF THE CONTRACTOR		'	-	•		٠		2 j	3.		í, í	2.70		(mg/kg)	Total
142	291	1,440	3,530	2,460	3,610	4,970	2,140	1,490	2 440	5,490	5,600	2,680	3,110	1,530	1,130	1,500	2.130	2,550	1,080	964	2,770	3.700	4.4.4.	(mg/kg)	Chloride

Table 2 COG Operating LLC. BC Federal #1 Tank Battery Samples Outside of Tank Battery Lea County, New Mexico

Samola	Cample	Cample	S	Soil Status		TPH (mo/ka)	2					Total	
₽.	Date	Depth (ft)	in Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
Outside '	Ourside Tank Battery - Spill 5 Assessment	Spill 5 Asses	sment									·	
S-HA	8/1/2102	0-1	×		<8.00	<50.0	<50.0	<0.0400	<0.0400	<0.0400	^0.0400	^0.0400	3,500
		1-1.5	×		•	-	•	•	•		,	**(**	414
	•	2-2.5	×		•		•			•	•	•	212
	e e	3-3.5	×		•	•	•	•	•	•			515
	2	4-4.5	×		•	•		•	,			3p.	708
	-	5-5.5	×		•	•	•	-	•	•	•		1,480
	2	6-6.5	×		•	. 4 *		-	e 1	•	•		2,580
		7-7.5	×		-	•		•	,	•	•	1	3,360
	•	8-8.5	×		•	-	1	•	·				2,270
SB-3	9/13/2012	Q-1	×		•		•	'	-	•	-		3,040
	` 	2-3	×		٠	•			•	- •	- 1		3,380
		4-5	×		-		1	-		•	•		1,170
		6-7	×		•	•	-	-	•	1	•	•	3,110
	•	9-10	×		٠	•	•		•	•		٠	1,710
	•	14-15	×	·	•	•.		•	.1 .		,	,	285
	•	19-20	×		•	4		•	•	1		•	270
	=	24-25	×		Ŀ	, ,		•	•		•) ;	191
AH4	8/1/2102	Q-1	×		^4.00	\$ 50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,590
		1-1.5	×				,	•	•	•	• .	•	457
		2-2.5	×		•		•	•	•		.•	'	605
		3-3.5	×	,	•	•	•	•		4		`•	1,080
		44.5	×							•	-	•	744
	•	5-5.5	×		,	•			1	1	•	•	675

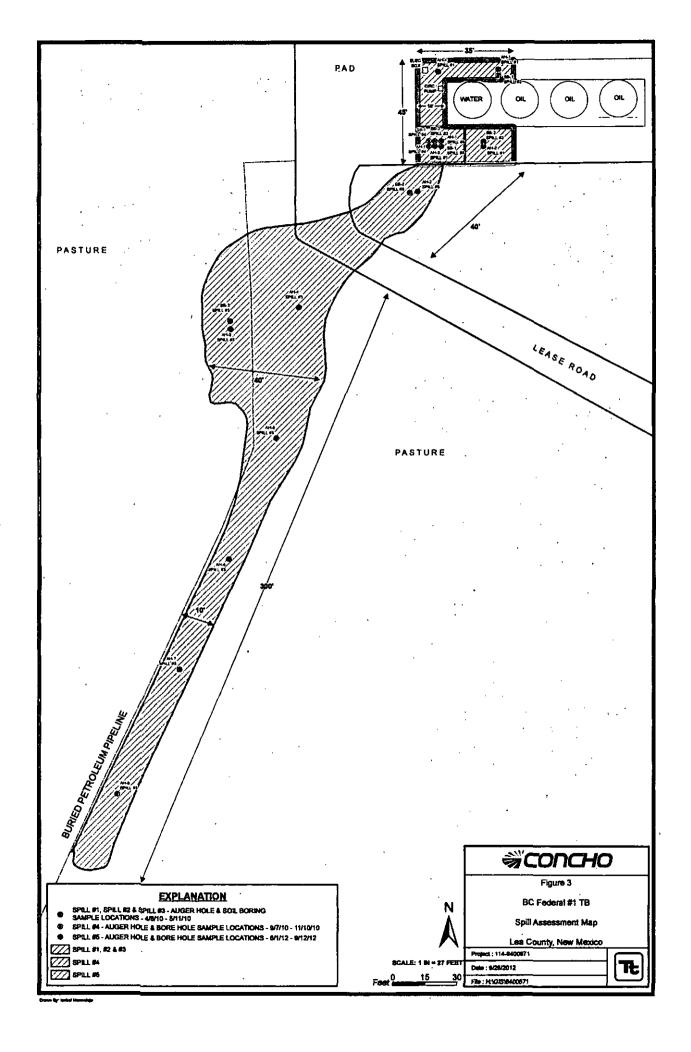
Table 2
COG Operating LLC.
BC Federal #1 Tank Battery
Samples Outside of Tank Battery
Lea County, New Mexico

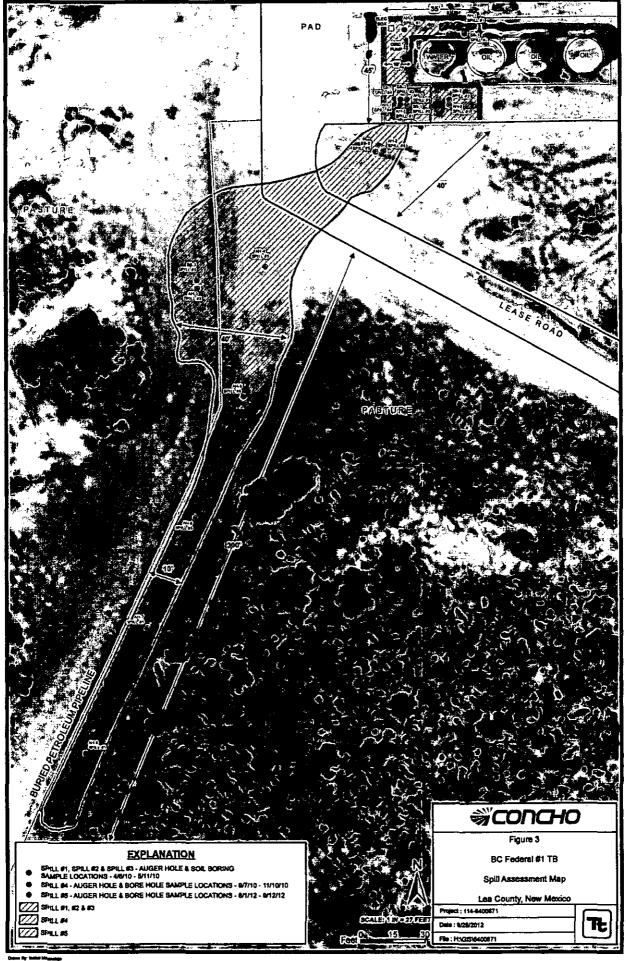
Sample	Sample	Sample	Soil	Soil Status		TPH (mg/kg)	(6	Benzene	Totuene	Ethlybenzene	Xylene	Total	Chloride
₽	Date	Depth (ft)	In-Situ	In-Situ Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Outside	Outside Tank Battery - Spill 5 Assessment	Spill 5 Asses	sment			,	ı.			,			
AH-5	8/1/2102	0-1	×		4.00	<50.0	<50.0	<0.0200	0.0203	<0.0200	0.0214	0.0417	4,950
	•	1-1.5	×		•	-	•	•	•			,	5,020
	3	2-2.5	×		-		-	-	•		-		5,510
	=	3-3.5	×		٠						,		7,850
	3	4-4.5	×		•			•	•	1	٠	•	8,020
	•	5-5.5	×		•	•	•	•	•	•	•	•	522
AH-6	8/1/2102	0-1	×		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,410
	•	1-1.5	×					•		ı		'	275
	3	2-2.5	×		,		•	-	·				74.6
	3	3-3.5	×		·	,	٠	•	,	•	•	•	42.0
AH-7	8/1/2102	0-1	×		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,140
	•	1-1.5	X.				ı	ţ	,	•		•	9,210
		2-2.5	×			-	•		•			•	7,680
	3	3-3.5	×		•	•	-		•	•	•		1,590
	E	4-4.5	×		-	-	•	•	•		٠	•	968
	•	5-5.5	×		•	,	1	•	•	•	•	,	439
AH-8	8/1/2102	0-1	×		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,850
	•	1-1.5	X		-	-	-			, ,	·		92.4
,	•	2-2.5	×		•	-		•	•	•	٠	•	125
	=	3-3.5	X		•		,	,			·		480

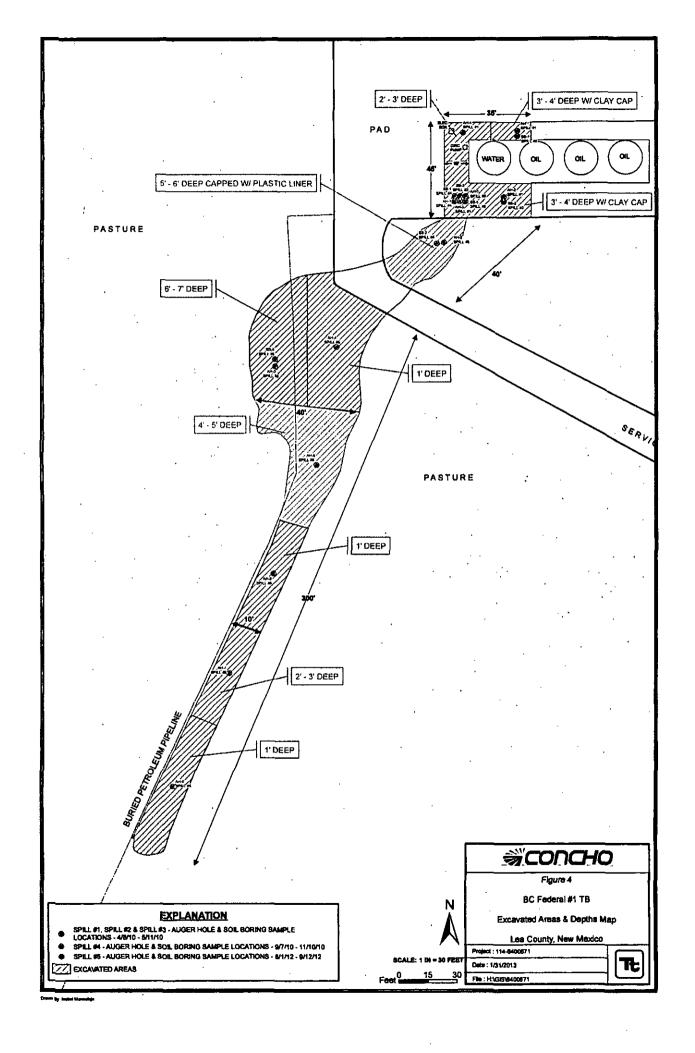
(-) Not Analyzed

Proposed Excavated Depths

Clay cap or liner







	ı.	SITE INFORM	ATION	HOBBS OCD
		Report Type: Clos	sure Report	
General Site Info	ormation:			AUG 2-3 2013
Site:	*	BC Federal #1 Tank Battery		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Company:		COG Operating LLC		RECEIVED
Section, Towns	hip and Range	Unit C Section 20 Townshi	p 17S Range 32E	
Lease Number:		LC-029405-A		
County:		Lea County		
<i>GPS:</i>		32.826202	103.792133	
Surface Owner:		Federal		
Mineral Owner:_ Directions:		Einter(OD:00	Hwy 529, travel north on CR126 f	
		go 1.6 miles, turn right (north), go miles to tank battery	o 0.5 miles, turn right and go 0.1 n	niles, turn left and go 0.1
	Produced water	45 bbls lost - recovered 40 - insic		
3/13/2010			le TB firewalls	
3/13/2010 3/26/2010	Produced water	45 bbls lost - recovered 40 - insid	de TB firewalls TB firewalls	
3/13/2010 3/26/2010 4/10/2010 8/20/2010	Produced water Produced water Produced water Oil	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - inside	de TB firewalls TB firewalls side TB firewalls de TB firewalls	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012	Produced water Produced water Produced water Oil Produced water	9 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - inside 70 bbls lost - recovered 65 - inside	de TB firewalls TB firewalls side TB firewalls te TB firewalls te TB firewalls and pasture	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012	Produced water Produced water Produced water Oil Produced water	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - inside	de TB firewalls TB firewalls side TB firewalls te TB firewalls te TB firewalls and pasture	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012	Produced water Produced water Produced water Oil Produced water	9 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - inside 70 bbls lost - recovered 65 - inside	de TB firewalls TB firewalls side TB firewalls te TB firewalls te TB firewalls and pasture	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012 Official Commun	Produced water Produced water Produced water Oil Produced water iication:	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - inside 70 bbls lost - recovered 65 - inside	de TB firewalls TB firewalls side TB firewalls de TB firewalls de TB firewalls de TB firewalls and pasture	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012 Official Commul Name: Company:	Produced water Produced water Produced water Oil Produced water nication: Pat Ellis	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - insid 70 bbls lost - recovered 65 - insid	de TB firewalls TB firewalls side TB firewalls de TB firewalls de TB firewalls and pasture Ike Tavarez	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012 Official Commu	Produced water Produced water Produced water Oil Produced water ication: Pat Ellis COG Operating, Lt	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - insid 70 bbls lost - recovered 65 - insid	de TB firewalls TB firewalls side TB firewalls de TB firewalls de TB firewalls and pasture Ike Tavarez Tetra Tech	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012 Official Commul Name: Company: Address:	Produced water Produced water Oil Produced water Cition: Pat Ellis COG Operating, Lt One Concho Center	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - insid 70 bbls lost - recovered 65 - insid	de TB firewalls TB firewalls side TB firewalls de TB firewalls de TB firewalls and pasture Ike Tavarez Tetra Tech 1910 N. Big Spring	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012 Official Communication Name: Company: Address: P.O. Box City:	Produced water Produced water Produced water Oil Produced water nication: Pat Ellis COG Operating, Lt One Concho Cente 600 W. Illnois Ave. Midland Texas, 797	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - insid 70 bbls lost - recovered 65 - insid	de TB firewalls TB firewalls side TB firewalls de TB firewalls de TB firewalls de TB firewalls and pasture Ike Tavarez Tetra Tech 1910 N. Big Spring Midland, Texas	
3/13/2010 3/26/2010 4/10/2010 8/20/2010 6/5/2012 Official Commul Name: Company: Address:	Produced water Produced water Produced water Oil Produced water Cition: Pat Ellis COG Operating, Lt One Concho Cente 600 W. Illnois Ave.	45 bbls lost - recovered 40 - inside 9 bbls lost - recovered 6 - inside 181 bbls lost - recovered 180 - in 80 bbls lost - recovered 75 - insid 70 bbls lost - recovered 65 - insid	de TB firewalls TB firewalls side TB firewalls de TB firewalls de TB firewalls and pasture Ike Tavarez Tetra Tech 1910 N. Big Spring	

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	>200'
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

Accepta	ble Soil RRAL (n	ng/kg)
Benzene	Total BTEX	TPH
10	50	5,000



May 17, 2013

Mr. Geoffrey Leking **Environmental Engineer Specialist** Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating LLC., BC Federal #1 Tank Battery, located in Unit C, Section 20, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Lekina:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the BC Federal #1 Tank Battery, located in Unit C, Section 20, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.826202°, W 103.792133°. The site location is shown on Figures 1 and 2.

Background

The BC Federal #1 Tank Battery had five (5) separate spills recorded with individual initial C-141 forms. The spills will be separated for clarification and referred to as Spill #1 through Spill #5. The spill inside the firewall did overlap each other as shown on Figure 3. The initial C-141 forms are enclosed in Appendix A. According to the State of New Mexico C-141, the spills detailed are shown below.

Spill #1

On March 13, 2010, the spill occurred and released approximately forty five (45) barrels of produced water due to a power outage to the transfer pump. To alleviate the problem, COG personnel repaired the power outage. Forty (40) barrels of standing fluids were recovered. The spill was contained within the facility berms.

Spill #2

On March 26, 2010, the spill occurred and released approximately nine (9) barrels of produced water due to an alarm failure. To alleviate the problem, COG personnel repaired the alarm system. Six (6) barrels of standing fluids were

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recovered. The spill was contained within the facilities berm and impacted the same footprint of the previous spill (Spill #1).

Spill #3

On April 20, 2010, the spill occurred and released approximately hundred eighty one (181) barrels of produced water due to an alarm failure. To alleviate the problem, COG personnel replaced the alarm transducer. One hundred eighty (180) barrels of standing fluids were recovered. The spill was contained within the facilities berm and impacted the same footprint of the previous spills (Spill #1 and Spill #2).

Spill #4

On August 20, 2010, the released occurred and released approximately eighty (80) barrels of oil due to tank over flow. Approximately seventy-five (75) barrels of standing fluids were recovered. The spill was contained within the facility berms and impacted the same footprint of the previous spills only on the southwest corner of the facility.

Spill #5

The leak was discovered on June 5, 2012, and released approximately seventy (70) barrels of produced water due to a rupture 6" water line. To alleviate the problem, COG personnel repaired the line. Sixty-five (65) barrels of standing fluids were recovered. The spill was contained within the facility berms and impacted the same footprint of the previous spills only on the southwest corner of the facility. The fluids breached the southwest firewall and migrated approximately 340' southwest of the tank battery.

Spill Chronology and Tetra Tech Sampling

3/13/10 3/26/10 4/8/10	Spill #1 occurred Spill #2 occurred Initial assessment (spill #1 and spill #2) - installed 4 auger holes
4/20/10 5/11/10 6/10/10	Spill #3 occurred Installed 3 borings to delineate impact Follow up assessment to collected surface samples
8/20/10 9/7/10 11/20/10	Spill #4 occurred Tetra Tech installed a single auger hole Tetra Tech installed one boring
6/5/12 8/1/12 9/12/12	Spill #5 occurred Tetra Tech installed auger holes Tetra Tech installed borings



Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 20. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 175' below surface. The groundwater data is shown in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

Spill #1, #2, and #3 - Sampling Inside Tank Battery

On April 8, 2010, Tetra Tech personnel inspected and sampled the spill area for Spill #1 and Spill #2, which overlapped each other. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils.

Selected samples were analyzed for TPH 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 B. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger hole locations either showed TPH, benzene or total BTEX exceeding the RRAL and vertically defined in the shallow soils. Elevated chloride concentrations were detected at AH-1, AH-2 and AH-3 from surface to a depth of approximately 8-8.5' below surface. Deeper samples were not collected due to the dense caliche formation. The chloride impact was not vertically defined. The chloride impact at AH-4 was vertically defined and significantly declined at 3.0' below surface.

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On May 11, 2010, Tetra Tech personnel supervised the installation of soil borings (SB-1, SB-2 and SB-3) utilizing an air rotary drilling rig to collect deeper samples. Prior to the installation of the soil borings, Spill #3 had occurred on top of the two older spills (Spill #1 and #2). The soil borings were installed to a total depth of 20.0' for SB-1 and 30.0' for SB-2, and SB-3. Referring to Table 1, chloride concentrations decreased with depth to less than 400 mg/kg at the bottom hole samples.

On June 10, 2010, Tetra Tech personnel collected additional samples (surface samples 0-5') from all four auger locations in order to correlate the drilling results with previous spill assessment. The sampling results are summarized in Table 1.

Spill #4 Sampling Inside Tank Battery (Northwest Corner)

On September 7, 2010, Tetra Tech personnel inspected and sampled the spill area (Spill #4) located southwest corner of the facility, which measured approximately 30' x 30'. A single auger hole (AH-1) was installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 4.

Referring to Table 2, the submitted samples from AH-1 were below the RRAL for BTEX and TPH. Elevated chloride concentrations were detected down to 9-9.5' below surface of 4,710 mg/kg. In order to delineate the impact of the spill, deeper samples would need to be collected utilizing an air rotary.

On November 10, 2010, Tetra Tech personnel supervised the installation of a single soil boring (SB-1) near AH-1. Soil samples were collected to a depth of 40' below surface. Referring to Table 1, elevated chloride concentrations decreased to less than 200 mg/kg at 25' below surface.

Spill #5 Sampling

(Tank Battery -Northwest Corner and Outside Tank Battery

On August 1 2012, Tetra Tech personnel inspected and sampled the spill area (Spill #5). A total of eight (8) auger holes were installed to assess the spill area. The spill was contained within the facility berms and impacted the same footprint of the previous spills only on the southwest corner of the facility. The fluids breached the southwest firewall and migrated approximately 340' southwest of the tank battery. One auger hoe was installed inside the southwest firewall and seven (7) outside the facility firewalls.

TE TETRA TECH

Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The sampling results are summarized in Table 2. The auger hole locations are shown on Figure 4.

Referring to Table1, the auger hole (AH-1) located on the southwest corner, inside the tank battery showed total BTEX concentrations exceeding the RRAL at 0-1' of 54.1 mg/kg and 1-1.5' of 165.3 mg/kg and decline below the RRAL at 2-2.5' below surface. The chloride impact was not vertically defined, with a chloride of 4,330 mg/kg at 10-10.5 below surface.

Referring to Table 2, majority of the auger holes, installed outside the tank battery firewalls, were below the RRAL for TPH and BTEX, except for the area of AH-2. Auger hole (AH-2) showed a TPH of 6,956 mg/kg exceeding the RRAL, but declined to 297 mg/kg at 1-1.5' below the RRAL. In the areas of auger holes (AH-2 and AH-3), the chloride impacted soils were not defined. However, the remaining areas (AH-4, AH-5, AH-6, AH-7 and AH-8) were vertically defined and showed a declining chloride with depth.

On September 12, 2012, Tetra Tech personnel supervised the installation of a three (3) boreholes in the areas of AH-1, AH-2 and AH-3. Auger holes (AH-1 and AH-2) showed a deeper impact to the soils, which significantly declined at 50.0' below surface. In the area of AH-1, the bottom auger hole samples showed a slight chloride spike to 1,240 mg/kg at 59'-60', with appears to be cross-contaminated with the upper soils. The area of AH-3 showed shallow impact and significant declined at approximately 15.0'.

Remediation and Conclusion

From April 18-29, 2013, Tetra Tech personnel supervised the remediation at the site. All of the excavation depths inside and outside the tank battery were achieved as stated in the approved work plan. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4.

Due to safety concerns and tank stability issues, the impacted soil inside the tank battery firewalls were excavated to a depth of 3.0' to 4.0' below surface, except for the area of AH-4 (spill 1). Auger hole (AH-4, spill #1) was excavated to a depth of approximately 2.0' to 3.0' below surface. Once excavated to the appropriate depths, the areas of AH-1, AH-2 and AH-3 were capped with clay material (6" thick) and backfilled to grade with clean soils.

The impacted areas outside the tank battery were excavated from depths ranging from 1.0' to 7.0' below surface to remove the elevated chlorides. The area of AH-2 (spill #5) was excavated to a depth of 4.0' below surface and lined with 40 mil plastic liner.

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Once approved for backfilling, all of the excavations were then brought to grade with additional clean soil. Approximately 820 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

Based on the remedial activities performed, COG request closure of the site. Copies of the C-141s (Final) are included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

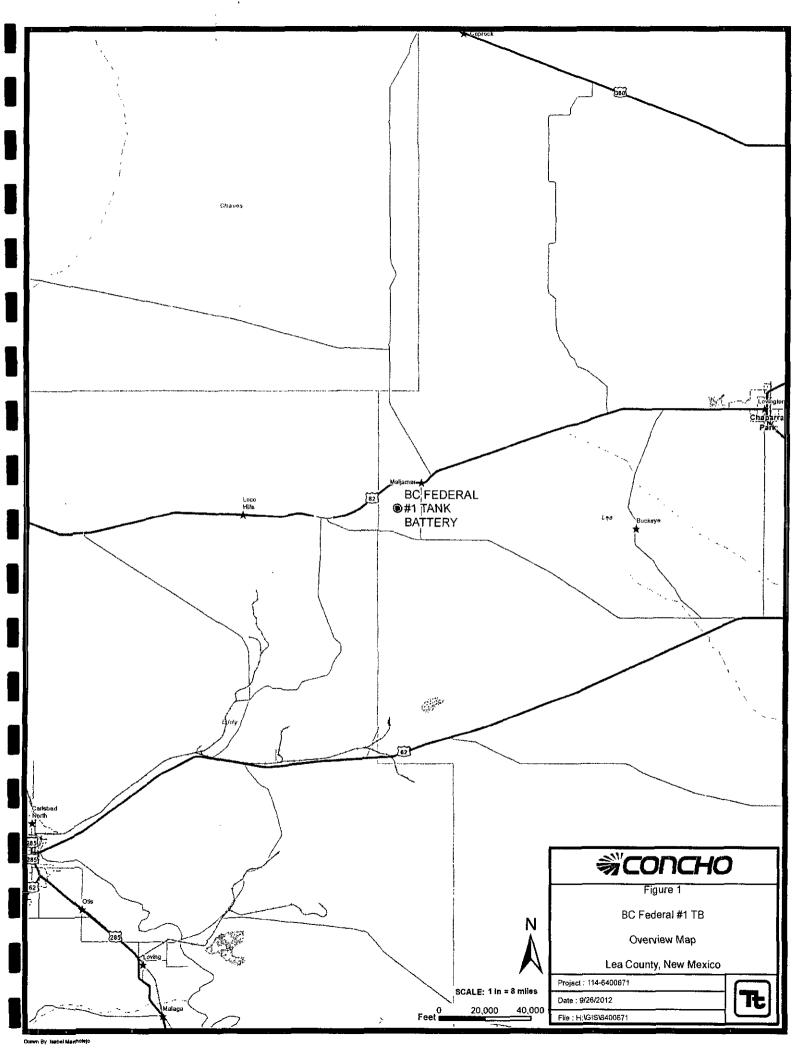
Respectfully submitted,

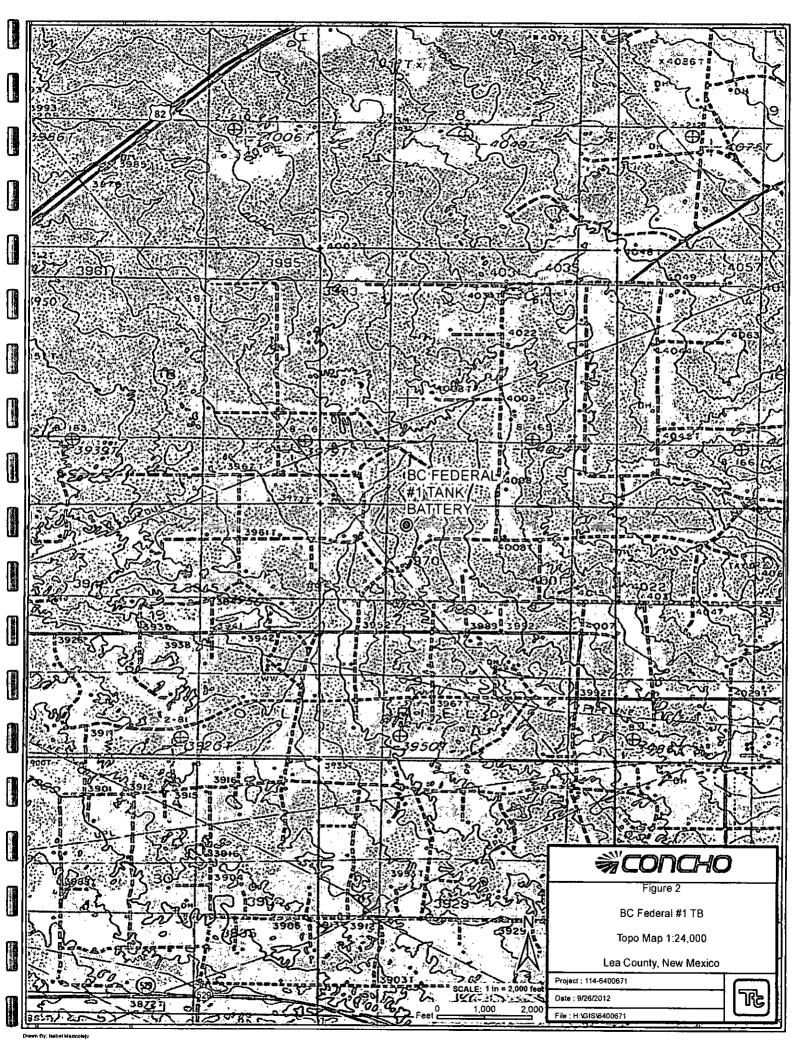
TETRA TECH

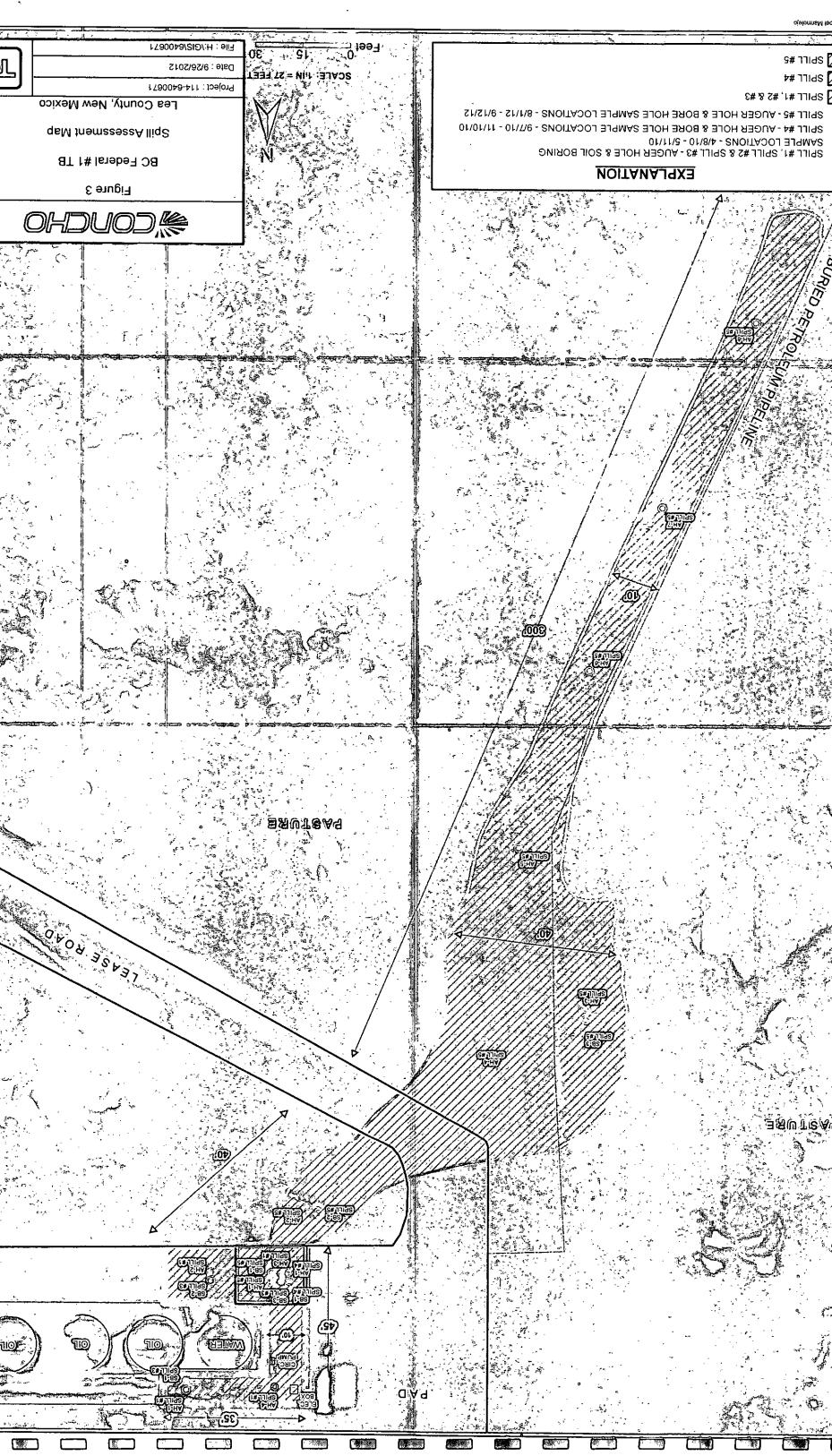
lke Tavarez PG

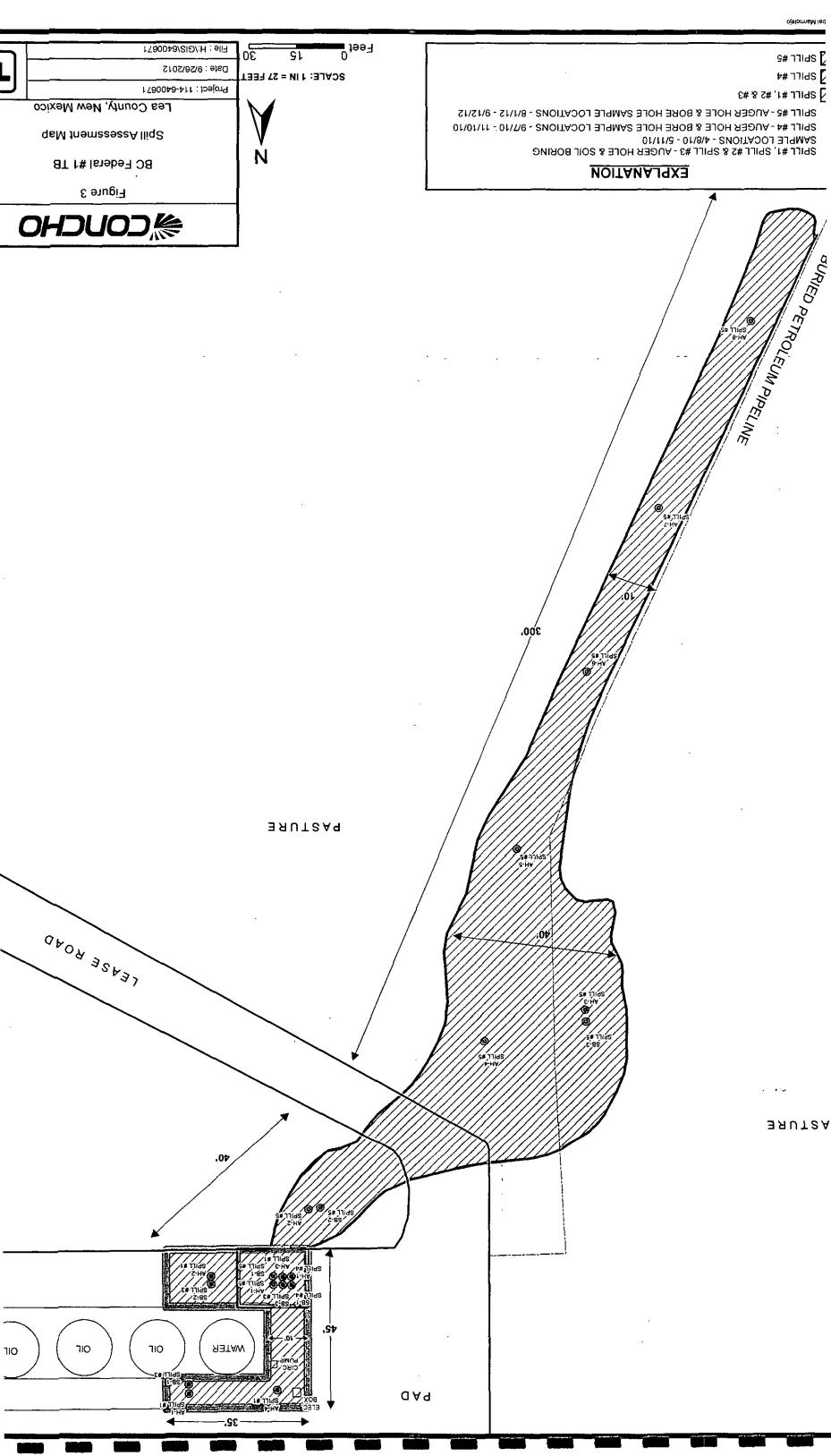
Senior Project Manager

cc: Pat Ellis – COG cc: Jim Amos – BLM









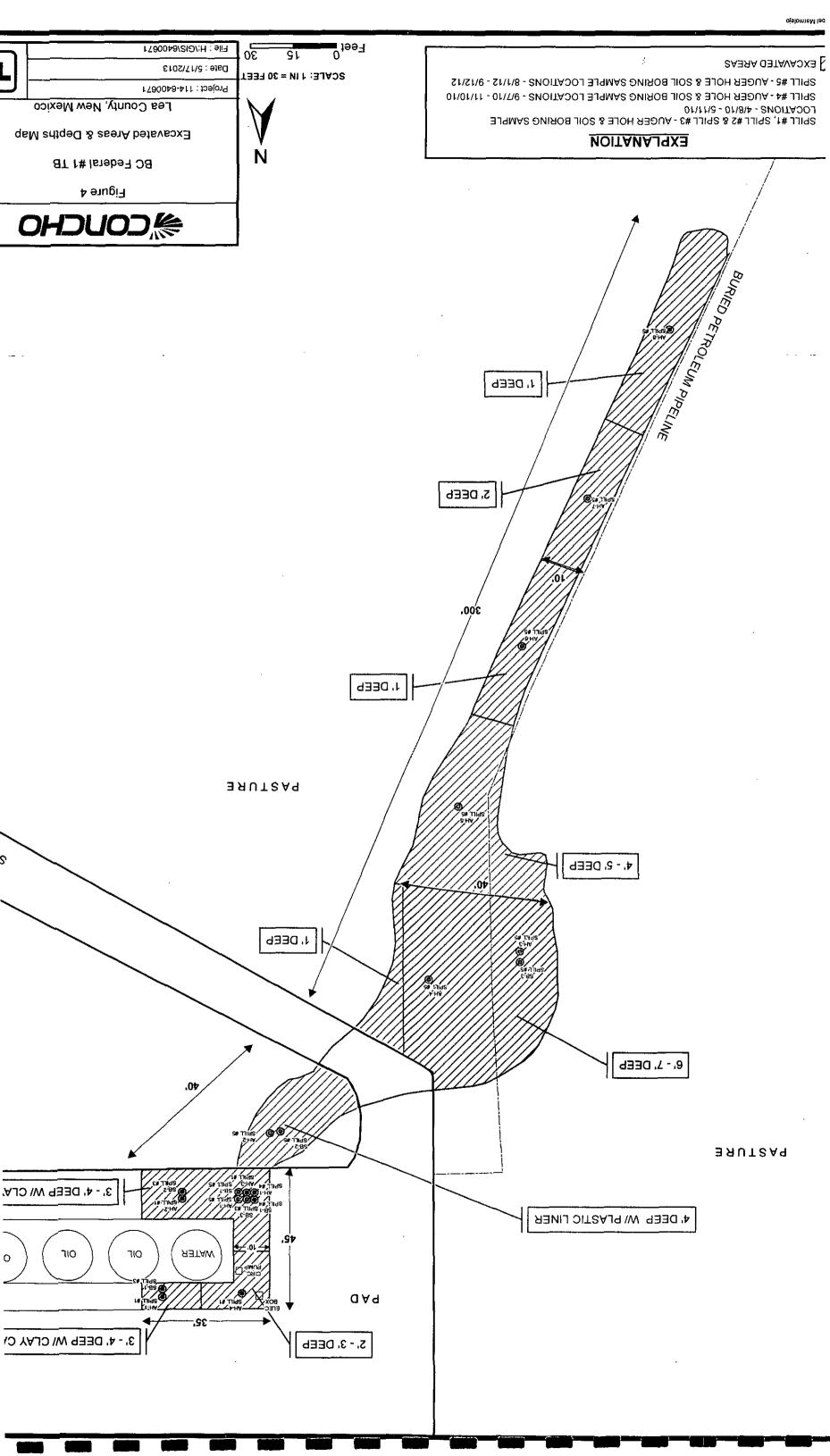


Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

Sample		Sample		Soil	Soil Status		TPH (mg/kg)	(B)	Benzene	Tolerene	Ethlyhonzone	Yvdono		Chloride
₽	Sample Date	Depm (π), BEB	(E)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Tota!	(mg/kg)
Tank Ba	Tank Battery - Spill #3 Assessment (overlap Spill	ssessment	(overlap		#1 and Spill #2)			in to			,,,,	30.		A. S
AH-1	6/10/10	0-1,			×	1,020	. 383	1,403	2.41	- 22.2	18.6	° 26.8	70.07	9,270
		, 1-1.5	٠		×			la la	<0.0200	,<0.0200	<0.0200,	<0.0200	0	9,470
		, 2-2.5			X	_	_	ili ji		1,	1	1	1	4,620
	Clay	3-3.5		1	×	, - .	3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1, 2, 2	1			3,070
		4-4.5		×			_	1	ı	1	 	1	-	3,140
		5-5.5'		×		1	ı	1	ı	-		ŀ	ı	4,090
SB-1	5/11/10	Ġ.		×		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	805
		7		×		I	_	1	1	1		,	1	<200
		10.		×		t			-	1	1	1	ı	<200
		12.		×		1	1	1	1	1	ı	ı	1	<200
		15'		×		1	_	1	Į	1	1	1	ı	<200
		50,		×		I	ļ	_	-	i	ļ		E	<200
rank Batt	ank Battery - Spill 1 and Spill 2 Assessment	Spill 2 Asses	sment											
AH-1	4/8/10	0-1.		×		2250	524	2,774	15,3	71.6	50.2	69.4	206.5	10,500
		1-1.5		×		t .	1	_	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	13,100
		2-2.5'		×		ł	ı	1	<0.0100	<0.0100	<0.0100	90.0	90.0	3,960
		3-3.5		×		!	ı	-	ı	,	1	1	,	4,090
		4-4.5		×		1	ţ	ĵ	ı	-	1	I	ŀ	3,540
		5-5.5		×		ı	1	J	1	-	1	ı	1	6,770
		6-6.5'		×		ı			ı	J	1		1	7,180
		7-7.5		×		_	ł	J	I	1	1	1	,	4,680
		8-8.5'		×		ı	ı	~	1	J	ı		1	2,830

Table 1

COG Operating LLC. BC FEDERAL #1 TANK BATTERY	Tank Battery Area LEA COUNTY, NEW MEXICO
---	--

Sample	Commete	Sample	14)	Soil	Soil Status		TPH (mg/kg)	(6	Benzene	Toluene	Ethlybenzene	Xvlene		Chloride
۵	Sample Date	Deptin (it),	(m)	In-Situ	Removed	GRO	OBO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	(mg/kg)
Fank Batt	ank Battery - Spill #3 Assessment (overlap Spi	ssessment	(overlap	Spill #1	ill #1 and Spill #2)		# } (礊			d a	5%		
AH-2	6/10/10	0-11		*	X	209	3,240	3,449	0.67	7.02	4.25	6.22	18.16	3,690
		1-1.5			X	-	î,	. : #		1	Ball of	1,	1	4,960
		2-2.5'	1.4.		X		2	ه، ' نار	1111	1	* Mag (4) 1 / Mag	и <u>ф</u>	1	1 .
	Clay	3-3.5		1 - The state of t	, X ., a		* * * * * * * * * * * * * * * * * * *	1 1	mag		1. ' '			12,500
		4-4.5'		×		_	-	ı	1	1		ı	١,	13,000
		5-5.5'		×		ı	_	_	-	į	1		1	5,880
SB-2	5/11/10	ີດ		×		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	12,000
		7,		×		_	1.	1		ı	1	ı	1	12,400
		<u>1</u> 0		×		ı	ŧ	ı	1	_	ı	ı	1	8,610
		12		×		į	ı	-	ı	-	ı	1	,	2,790
:		15'		×		1	-	-	1	í	ł		1	7,130
		20,	Ì	×		_	1	-	1	1		ı	1	881
		25		×	ï	-	1	-	t	-	1	1	ı	966
		30,		×			-	ı	-	,	1		-	<200
ank Batte	ank Battery - Spill 1 and Spill 2 Assessment	Spill 2 Asses	sment											
AH-2	4/8/10	0-1,		×		5,780	5,570	11,350	21.1	161	106	158	446.1	4,740
		1-1.5		×		2,550	3,980	6,530	25.4	100	46.8	84.6	256.8	5,160
		2-2.5'		×		2,010	1,020	3,030	14	70.60	32.50	9.69	187.1	11,400
		3-3.5'		×		1	_	1	-	ı		1	1	10,400
		4-4.5'		×			1	1	<0.200	2.63	11.7	26.4	45.73	5,440
		5-5.5		×		ı	1	_	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	4,290
		6-6.5'		×		1	i	_	_	_	1	!	1	3,410
		7-7.5'		×		1	ı	1	_	-	1	J	ı	4,800

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

Sample		Sample		Soil	Soil Status		TPH (mg/kg)	6)	Benzene	Toluene	Ethivbenzene	Xvlene		Chloride
. o	Sample Date	Depth (tt), BEB	(I) EB	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	
Tank Batt	Tank Battery (SOUTHWEST (CORNER)	T(COHNEH)	是主义的	1000	1000年1月1日		1.35	· 利耳斯特特	と の の の の の の の の の の の の の の の の の の の	では、おおから	建工业		14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	はないので
Spill 5'As	Spill 5 Assessment - Overlap of Spills #1 through #4	lap of Spills	#1 throug	P sales			33.7			97.4	343	举冷		
BH-1	9/12/2012	0-1,5	. 2.	-	***X	-,7		100			,	1	-	14,200
		`	Tr.		, X.			いなる		ts:	\$9.5 1.5 1.5 1.5 2.5 3.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4	Sec.		13,500
	Clay	4-5	******		X, 3	1.27	 	2 . E-41				0 .		6,750
		2-9		×		-	1)	•	-	•			4,190
		9-10		×		-	-	_	ı		J	,		3,780
		14-15		×		-	-	-				'		3,640
		19-20		×		-	•	•		-	r	,		4,480
		24-25		×		•	-	-	1		•	,		066'2
		29-30		×		-	-	-				-		6,780
		39-40		×		•		-	,		,	,		1,430
		49-50		×		•	_	_	,	•		-		79.6
		29-60		×		ı	•	•	•	-	,	•		1,240
AH-1	8/1/2012	0-1			, X.,	525	3,630.	4,155	<0.100	\$ 14.0	12.3	31.1	.54.4	7,100
		1-1.5	3- ' _q .	. N.	X. X.	1. 1.	a .		0.449	415	41.6	. 81.8	165.3	1,890
		2-2.5	100		X	1.0	, , 1 1 1		<0.0400	. 2337.	11.0 - 45%	*.26:7`.·	40.1	, '2,360.
	Clay	3-3.5	-		, X	э : В С ф	, , , , , , , , , , , , , , , , , , ,	中華のアン	\$.	A		李 新		1,980
		4-4.5		×		•	•	1	-	-	*		•	2,000
		5-5.5		×		•	•	٠	-	-	•	-	,	2,800
		6-6.5		×		•	•	•	1	-		,	•	4,290
		7-7.5		×		1	,	1	ŀ	-	•	•	1	4,820
		8-8.5		×		•	ı	•	1	•	•	-	•	4,740
		9-9.5		×		'	1	,	1	ı		ı	•	5,670
		10-10.5		×		'	•		•	_	•	-	•	4,330

COG Operating LLC. BC FEDERAL #1 TANK BATTERY Tank Battery Area Table 1

LEA COUNTY, NEW MEXICO

Sample		-		Soil Status	Τ.	TPH (mg/kg)	(Benzene	Toluene	Ethlybenzene	Xvlene		Chloride
Q	Sample Date	Depth (ff), EB (ft) BEB	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	(mg/kg)
Continue	- Tank Battery (S	Continue - Tank Battery (SOUTHWEST CORNER) -		Spill 4 Assessment - (Overlap of Spills #1 through #3)	ıt - (Overla	p of Spills	s #1 throug	h #3)					
Spill 4 As:	sessment - (Over	Spill 4 Assessment - (Overlap of Spills #1 through	ough #3)										
SB-1	11/10/10	0-1,	×		4,110	3,820	7,930	1	ı	1	-	ı	1,290
		ď	×		0/6'9	5,630	12,600	F	-		-	-	1,000
		5'	×		<50.0	<2.0	<50.0	1	1	1	ı	ŀ	1,020
		7.	×		-	-		1	1	1	ı	-	1,610
		10,	×		-	t	1] 	1	1	1	i	825
		15'	×		-	1	1	-	•	1	I		1,520
		20,	×		_	-	ı	1	-		1	ŀ	2,270
		25'	×		1	1	ı	-	1	1	ı	-	<200
		30,	×		_	-	1	1	Ī	1	ı	ł	<200
		40,	×		1	_	1	-	-	(ı	ı	<200
AH-1	9/7/10	0-1,	×		1080	2200	3,280	2.6	42.7	34.4	88.9	168.6	<200
		1-1.5'	×		1,670	758	2,428	5.1	44.0	25.1	73.9	148.1	212
		2-2.5'	×		253	275	528	1.8	10.4	3.7	14.5	30.4	585
		3-3.5'	×		Ι	_	Ι		_	-	ı	1	4,090
		4-4.5'	×		-	}		-	J	1	-	-	1,460
		5-5.5	×		ı	_	1		-	-	-	1	4,340
		6-6.5'	×		-		-	1	_	1	1	ı	4,730
		7-7.5	×		-	ı	ı	1	_	ļ	_	l	4,560
		8-8,5'	×		ŀ	_			_		-	-	6,430
		9-9.5'	×		_	ı	1	1	-	1	1	1	4,710

Table 1
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY
Tank Battery Area
LEA COUNTY, NEW MEXICO

Sample	Sample Date		(#)	Soil 5	Soil Status		TPH (mg/kg)	(B)	Benzene	Toluene	Ethlybenzene	Xvlene	, ,	Chloride
Ω	ì	8E8		In-Situ	Removed	GRO	DRO	Fotal	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BIEX Total	(mg/kg)
Continue	- Tank Battery (SOUTHWEST CORNER)	(SOUTHWE	ST COR	NER) .										
Spill #3 A	Spill #3 Assessment (overlap Spill #1 and Spill #2)	erlap Spill #	1 and Sp	vill #2)							!			
AH-3	6/10/10	0-1,		×		5,880	3,760	9,640	45.2	202	111	154	512.2	7,360
		1-1.5		×		39.3	221	260	0.26	1.00	0.72	1.09	3.1	10,000
		2-2.5'		×		71.9	423	495	0.0795	1.36	1.46	2.21	5.1	12,000
		3-3.5		×		_	j	1	I	1	ı	,	1	11,700
		4-4.5'		×		-	1	1	ŧ	!	1		ı	1,100
		5-5.5		×		1	ļ	ı	1	ı	ı	1	ł	9,650
SB-3	5/11/10	ζ.		×		989	558	1,244	2.18	14.3	10.5	15.7	42.68	8,350
		7.		×		1	1	ļ	-	1	1	1		8,950
		ţ0,		×		1		1	_	J	1	ı	1	10,100
		12'		×		_	-	ı	1	1	J	ſ		9,040
		15'		×		J	1	ı	t	I	1	J	ŀ	9,820
		20,		×		-	-	ļ	ř	1	ı		ı	1,470
		25'		×		ŀ	-	1	1	ı	ŀ	1	,	874
		30,		×		-	1	ı	1	ı	1		1	360
Tank Battery	ery - Spill 1 and Spill 2 Assessment	Spill 2 Asses	sment											
AH-3	4/8/10	0-1,		×		1,320	1,340	2,660	3.30	23.6	23.5	36.4	86.8	16,600
		1-1.5		×		1	-	-	<0.0100	<0.0100	<0.0100	0.108	0.11	12,300
		2-2.5'		×		1	1	1	1		ı	ı	i	6,280
		3-3.5'		×		1	_	_	_	ľ	1	ı	j	4,360
		4-4.5		×		-	1	-	-	-	ı	I	i	2,710
		5-5.5'		×		ı	1	_	-	_	1	ļ	ı	3,630
		6-6.5'		×		ı	-	1 :	1	ļ	1	1	-	3,750
		7-7.5		×		ı	ı	1	•	ı	1	_	-	3,550
		8-8.5'		×		ı		1		_	1	i	1	2,520
		9-9.5		×		ı	J	1	I	1	1	-		2,380

COG Operating LLC.
BC FEDERAL #1 TANK BATTERY Tank Battery Area LEA COUNTY, NEW MEXICO Table 1

		of common		1 2				<u> </u>						
Sample	Comple		()	<u>ğ</u>	soll Status		TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xvlene	1	Chloride
ID	ambie Date	BEB	(iii)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	B1EX Total	(mg/kg)
Tank Bat	Tank Battery - Spill #3 Assessment (overlap Spill	ssessment (overlap	#	and Spill #2)		, ,	-	· 人及		r., a	100	± ₹	10 M
AH-4	6/10/10	0-1,	* 6: **		X	741	960	1,701	1.2	11.1 %	886	15.1	37.28	\$ 8,570 ·
	•	1-1.5	10 th		*X'\		7 1 to			y 1	The state of the s	:		6,930
		2-2.5 🚡 🐔	, pr	*	X _w ,	1.	ine 例							. 2,400 .
		3-3.5'		×		,	ı	ı	ı	ı	ı	1	,	702
		4-4.5		×		1	ı	ı	ı	1	ı	1	'	<200
		5-5.5		×		-	-	1	-	ļ	1]	ı	629
		6-6.5		×		1	1	ı	1	ı	1	ı	,	281
		7-7.5'		×		_	-	1	ŧ			,	1	<200
		8-8.5'		×		-	_	1	1	1	ı		,	<200
		9-9.5		×		_	_	1	-	: 1	ł	-	,	<200
Tank Batt	Tank Battery - Spill 1 and Spill 2 Assessment	Spill 2 Assess	ment				. :							
AH-4	4/8/10	0-1,		×		1,590	643	2,233	8.06	39.1	29.7	45.7	122.56	9,850
		1-1.5		×		ı	ı	ŀ	<0.0100	<0.0100	<0.0100	<0.0100	<0.01	15,900
		2-2.5	1	×		1	i	I	_	_	l	-	I	3,620
		3-3.5		×		1	1	'	_	1	1	-	-	<200
		4-4.5		×		-	1	-		_	ı	1	i	<200
		5-5.5		×		ı	I	ı	_	-	ı	ţ	1	2,020
		6-6.5'	-	×		1	'	ı	_	_	_	-	i	<200
		7-7.5'	7	×		1	ı	ŀ	_	1	ı	1	1	<200
		8-8.5,		×		1	t	1	1	ł	-	ļ		<200
ű	Excavation Bottom	٤												

Excavation Bottom

Below Excavation Bottom

Not Analyzed

⊙ [•

Excavation Depths

Clay cap (excavation bottom)

Table 2
COG Operating LLC.
BC FEDERAL #1 TANK BATTERY

Spill #4 LEA COUNTY, NEW MEXICO

Date Depth (ft) (BEB) In-Situ Removed GRO DRO Total (Img/6) (Img/6	Sample	Sample	Sample	Depth	Soil	Soil Status		TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xvlene		Chloride
X 1080 2200 3.280 2.6 42.7 34.4 88.9 188.6 188.5	Q			(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX Total	(mg/kg)
9/1/10 1/1/2 <t< th=""><th>Spill 4 - 1</th><th>nside Tank E</th><th>3attery (north</th><th>west co</th><th>rner)</th><th></th><th>ut a</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>*</th></t<>	Spill 4 - 1	nside Tank E	3attery (north	west co	rner)		ut a								*
1-15 1-15	AH-1	9/7/10	0-1,		٠. ١	×	1080	2200	3,280	L	42.7	1	68.9	168.6	, <200
9.9.2.5 X 2.53. 275 \$2.63. 1.8 \$1.04 3.7% \$1.45 3.00%			₹.1-1.5		, J.	l :	1,670	758	2,428	5.1	44.0	:l"、'	× 73.9	148.1	212
3-3.5' X				*	, i	×	253	275	528	1.8	¥ 4.10.4°	3.7	14.5	30.4	585
5-5.5' X - <td></td> <td></td> <td>3-3.5</td> <td></td> <td>,</td> <td>×</td> <td>ı</td> <td>1</td> <td></td> <td></td> <td>31,</td> <td></td> <td>1'</td> <td>1 1</td> <td>4,090</td>			3-3.5		,	×	ı	1			31,		1'	1 1	4,090
5-5.5' X			4-4.5'		×		1	1	I	,		İ	1	1	
6-6.65 X			5-5.5		×		-	ı	ı	1	1			1	4,340
7-7.5' X - <td></td> <td></td> <td>6-6.5</td> <td></td> <td>×</td> <td></td> <td>1</td> <td> </td> <td>ı</td> <td>ŀ</td> <td>1</td> <td>1</td> <td> </td> <td> </td> <td>4,730</td>			6-6.5		×		1		ı	ŀ	1	1			4,730
9-9.5' X			7-7.5'		×		1	ı	-	ı	1	-		ı	4,560
11/10/10 0-1'			8-8.5		×		1	_	1	1	1	ì	ı	ı	6,430
11/10/10 : 0-1' x 4,110 3,820 7,930 -<			9-9.5		×		1	_	ŀ	I	1	-	ı		4,710
11/10/10															
51 X 6,970 5,630 12,600	SB-1	11/10/10	0-1		ę	×	4,110	3,820	7,930	1	-	1	1	1°	1,290
X \$\frac{50.0}{450.0}\$ \$\frac{50.0}{450.0}\$ \$\frac{1}{4}\$ \$\frac{1}{4}			ģ	,		×	6,970	5,630	12,600	1		١	1	1	1,000
			5.		×		<50.0	<2.0	<50.0	-	•	ļ	ı	ı	1,020
			1,		×		ı	1	ı	1	_	-	1	-	1,610
			,o_		×		1		1	ı	1		<u> </u>	_	825
			15,		×		ı	ı	1	ı	1	1	1	1	1,520
			20,		×		ı	1	-	-	1	•	1	١	2,270
			25'		×		ı	ı	1	ı	. 1	1	!	-	<200
1 1 1 X			30,		×		1	_	F	ı	1	1	1		<200
			40,		×		1	1	í	1	1	1	J	1	<200

BEB Below Excavation Bottom

Not Analyzed

Excavation depths **:** []

Clay Cap

Table 2
COG Operating LLC.
BC Federal #1 Tank Battery
Samples Outside of Tank Battery
Lea County, New Mexico

Sample	Sample	Sample	Soil S	Status	L	TPH (mg/kg)	(6	Benzene	Toluene	Benzene Toluene Ethiybenzene Xvlene	Xvlene	Total	Chloride
Q	Date	Depth (ft)	In-Situ	Removed GRO	GRO	DRO	Total	(mg/kg)	(mg/kg) (mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
Spill 5 As	Spill 5 Assessment - Inside Tank Battery (No	nside Tank B	attery (N	orthwest corner)	orner) 🐇	,	い。	* 24 * 24	The state of the s		•3		`.a
AH-1	AH-1 8/1/2012 Data shown in Table	Data shown	in Table	_	ery SOL	Tank Battery - SOUTHWEST CORNER)	SORNER)	3		(50) (10)			
SB-1	SB-1 9/12/2012 Data shown in Table	Data shown	in Table	(Tank Batt	ery - SOL	(Tank Battery - SOUTHWEST CORNER)	CORNER)	n	* .	- Lé		lu.	12

Table 2
COG Operating LLC.
BC Federal #1 Tank Battery
Samples Outside of Tank Battery
Lea County, New Mexico

Date De	Sample	Soil Status	tatus		TPH (mg/kg)	(1)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
1	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
*****	outside Tank Battery - Spill 5 Assessment	sment			1	*		*	デール ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・	, , , , , , , , , , , , , , , , , , ,		m f
	, o-1	× ,	, X, ·	146	6,810	6,956	<0.100	1.39			\$ 3.2:70	3,700
	1-1.5		×	<4.00	. 532	297	,	25° ,		· · · · · · · · · · · · · · · · · · ·		2,770.
7.7	2-2.5		×	7		•		•			*	964
77,	3-3.5		×		, m	, r 1 -		ly .			,	1,080
1.7	4-4,5	6	×		1 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	 		1	7 7 7	Table 1		2,550
	5-5.5	×		,		,	•	ı	•	•	,	2,130
_	6-6.5	×		,	-	ŧ		,				1,500
	7-7.5	×		,	,	,	•			,	1	1,130
	8-8.5	×		•	-	ı			,			1,530
	9-9.5	×		-	-	,	,	•	1	,	ı	3,110
Ŧ	10-10.5	×			1		ţ	•		,		2,680
	0-1	*	×	٠,			2 P 1	٠,	a a	* * * * * * * * * * * * * * * * * * *		5,600
	2-3		×	•			£ 5-		•	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	•	5,490
	4-5	×		-	•	•	,	•	,	•	•	2,440
	2-9	×		•	-		•	•		-	•	1,490
	9-10	×		-	,		,					2,140
	14-15	×		-	,		,		1	'		4,970
'	19-20	×		-	-	1	•	1		,	•	3,610
``	24-25	×		•	•	,	-	3	,	,	•	2,460
``	29-30	×		•	1		+	-	-	•	ŀ	3,530
	39-40	×		-	-	•	-	•	ŧ	-	-	1,440
	49-50	×		1	-	1	-	-	•	•		291
	29-60	×		,	-	-	-	-	•	-	ł	142

Table 2
COG Operating LLC.
BC Federal #1 Tank Battery
Samples Outside of Tank Battery
Lea County, New Mexico

lal Chloride		₩. ₽ -	400. 3,500.	414	212	515	708	1,480	2,580	3,360	2,270	3,040	3,380	1,170	3,110	1,710	285	270	191	200 2,590	457	605	1,080	744	r -
	(9) (mg/kg)	F 311	<0.0400 -<0.0400	A CONTRACTOR	19.0°	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200	,			,	1 25 ₁					-	•	•	00 <0.0200	*	1	1		
e Xylene	_		<0.04	4	; ·		-		. 1 .	_	<u>'</u>						'			<0.0200	,	,	,	,	
Ethlybenzene	(mg/kg)		<0.0400			1 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	***		# . # .	•	•		1) , , ,	er era era era	•	•	'	,	. <0.0200	•	•	•		
Toluene	(mg/kg)		<0.0400							1	1		i	1	,			•	1	<0.0200	•	,	,		
Benzene	(mg/kg)	* *	<0.0400		الاد ور الاد ور				· 5	,	•			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.1	1	,	,		~0.0200	7	•	1	•	
(<u>6</u>)	Total	美	<50.0		د ایا	E#1	1) (*) (*)	F	1	,	•	,	≓ıè	高速			*	1	<50.0	•	•	•	,	
TPH (mg/kg)	DRO		<50.0			A				•	•	, ?	• >			,	•	-	'	<50.0	,	•	,	٠	
	GRO	*	<8.00	,	lain a			, d		-	-			- *	4.00	•		•	•	<4.00	,	•	-	-	
Status	Rетоved	n .	×	×	×	×	×	×	×			×	×	×	×					×					
Soil	In-Situ	ssment	, , ,					à		×	×		*	.4.	3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	×	×	×	×		×	×	×	×	
Sample	Depth (ft)	Spill 5 Asse	9	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5	6-6.5	7-7.5	8-8.5	0-1	2-3	4-5	. 2-9	9-10	14-15	19-20	24-25	0-1	1-1.5	2-2.5	3-3.5	4-4.5	
Sample	Date	Outside Tank Battery - Spill 5 Assessment	8/1/2102	=	=	≂	д	=	=	=	=	9/13/2012	=	Ŧ	п	=	II	=	=	8/1/2102	=	=	=	z	
Sample	۵	Outside	AH-3									SB-3								AH-4					

Table 2
COG Operating LLC.
BC Federal #1 Tank Battery
Samples Outside of Tank Battery
Lea County, New Mexico

												1.1.1	
Sample	<i>S</i>	Sample	Soil	Soil Status		TPH (mg/kg)	(F)	Benzene	Toluene	Ethlybenzene	Xylene	lotal PTEY	Chloride
۵	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Outside	Outside Tank Battery - Spill 5 Assessment	Spill 5 Asses	sment	L.	, '•	•	9. 1981	•	, ref	, , , , , , , ,	•	eg part	
AH-5	8/1/2102	0.1		X. X	े<4.00	<50.0	<50.0	<0.0200	0.0203	<0.0200	0.0214	0.0417	4,950
	a	1-1.5		`. `X `.	**************************************		Part of the second	; · ;	***	or or or or or or or or or or or or or o	4.34	1. 10 10 10 10 10 10 10 10 10 10 10 10 10	5,020
	=	. 2-2.5	% '⊃ [©]	X	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		では悪い	F	e di	7 7 7 7			5,510
	#	3-3.5	,,,	X	3 - 1			S.	(を)を)		1 30 mm 1 30 mm 2 mm 130 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1 mm	· 阿勒斯	7,850
	=	4-4.5	۰۰	X		•	ų			ake je		が成立さ	8,020
		5-2.5	×		1	•	,	•	1	•	•	•	522
AH-6	8/1/2102	0-1		×	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,410
	2	1-1.5	×		,	•	á	•		t		•	275
	п	2-5.5	X		•	•	1			,	'	1	74.6
	=	3-3.5	×		1	•	•	,	,	•	1	1	42.0
AH-7	8/1/2102	0-1		×	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	-<0.0200°	.8,140
		1-1.5		×	•	•		•	•				9,210
	3	2-5.5		×	•	•	ŧ		•	1		•	7,680
	=	3-3.5	×		•	-	•	•	•	•	•	-	1,590
	=	4-4.5	×		•	ı	•	•	•	•	•	-	968
	=	5-5.5	×		•		*	•	•	•	•	•	439
AH-8	8/1/2102	-0	9 () ()	X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,850
	11	1-1.5	×		•	-	,	•	,	•	r	-	92.4
	=	2-2.5	×		-	-	+	t	•	1	1	ı	125
	11	3-3.5	×		•	•	,	•	•	•	,	ŧ	480

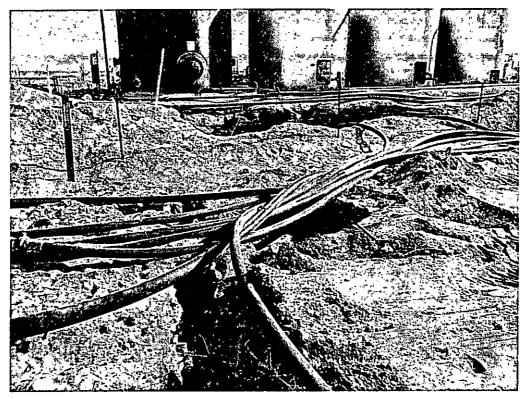
(-) Not Analyzed

Excavated Depths

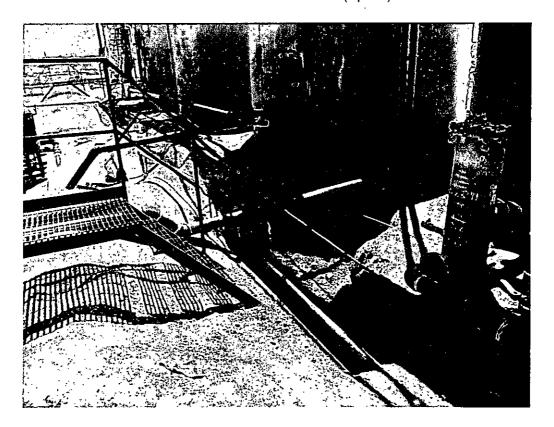
Clay cap or liner

COG Operating LLC BC Federal #1 Tank Battery Lea County, New Mexico





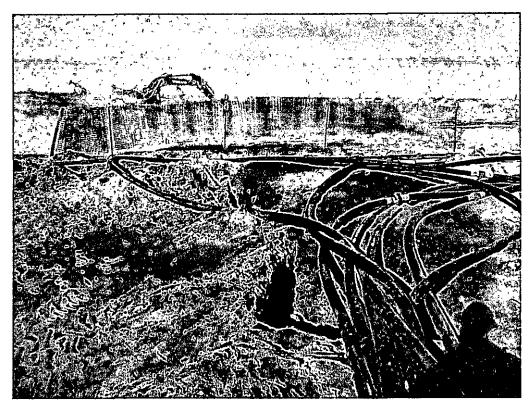
View North - Area of AH-3 (Spill 1).



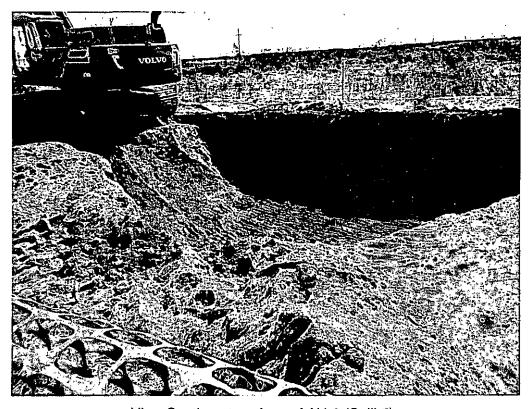
View East- Area of AH-4 (Spill 1).

COG Operating LLC BC Federal #1 Tank Battery Lea County, New Mexico





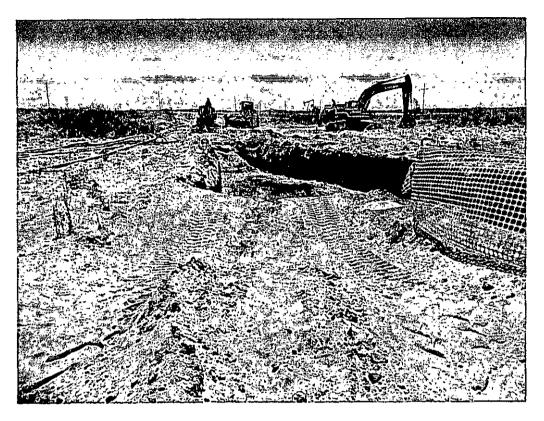
View South- Area of AH-2 (Spill 5).



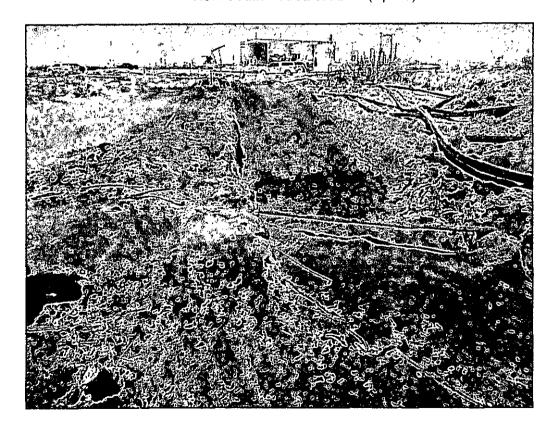
View Southeast - Area of AH-3 (Spill 5).

COG Operating LLC BC Federal #1 Tank Battery Lea County, New Mexico





View South - Area of AH-5 (Spill 5).



View South - Area of AH-8 (Spill 5).

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

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New Mexico State Engineers well Reports
USGS Well Reports
Geology and Groundwater Conditions in Southern Eddy, County, NM
NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

Tetra Tech Temporary well (TD 180' - Dry Well)

Report Date: April 21, 2010 Work Order: 10040928 Page Number: 1 of 6

Summary Report

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

Report Date: April 21, 2010

Work Order: 10040928

Project Location: Lea County, NM

Project Name: COG/BC Federal #1 TB

Project Number: 114-6400487

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
228012	AH-1 0-1' Scrape	soil	2010-04-08	00:00	2010-04-09
228013	AH-1 1-1.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228014	AH-1 2-2.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228015	AH-1 3-3.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228016	AH-1 4-4.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228017	AH-1 5-5.5' Scrape	soil ·	2010-04-08	00:00	2010-04-09
228018	AH-1 6-6.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228019	AH-1 7-7.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228020	AH-1 8-8.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228021	AH-2 0-1' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228022	AH-2 1-1.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228023	AH-2 2-2.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228024	AH-2 3-3.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228025	AH-2 4-4.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228026	AH-2 5-5.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228027	AH-2 6-6.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228028	AH-2 7-7.5' 2' BEB	soil	2010-04-08	00:00	2010-04-09
228029	AH-3 0-1' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228030	AH-3 1-1.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228031	AH-3 2-2.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228032	AH-3 3-3.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228033	AH-3 4-4.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228034	AH-3 5-5.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228035	AH-3 6-6.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228036	AH-3 7-7.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228037	AH-3 8-8.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228038	AH-3 9-9.5' 4' BEB	soil	2010-04-08	00:00	2010-04-09
228039	AH-4 0-1' Scrape	soil	2010-04-08	00:00	2010-04-09
228040	AH-4 1-1.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228041	AH-4 2-2.5' Scrape	soil	2010-04-08	00:00	2010-04-09

Report Date: April 21, 2010 Work Order: 10040928 Page Number: 2 of 6

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
228042	AH-4 3-3.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228043	AH-4 4-4.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228044	AH-4 5-5.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228045	AH-4 6-6.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228046	AH-4 7-7.5' Scrape	soil	2010-04-08	00:00	2010-04-09
228047	AH-4 8-8.5' Scrape	soil	2010-04-08	00:00	2010-04-09

]	BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	$_{ m GRO}$
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
228012 - AH-1 0-1' Scrape	15.3	71.6	50.2	69.4	524	2250
228013 - AH-1 1-1.5' Scrape	< 0.0100	< 0.0100	< 0.0100	< 0.0100		
228014 - AH-1 2-2.5' Scrape	< 0.0100	< 0.0100	< 0.0100	0.0800		
228021 - AH-2 0-1' 2' BEB	21.1	161	106	158	5570	4780
228022 - AH-2 1-1.5' 2' BEB	25.4	100	46.8	84.6	3980	2550
228023 - AH-2 2-2.5' 2' BEB	14.4	70.6	32.5	69.6	1020	2010
228025 - AH-2 4-4.5' 2' BEB	< 0.200	7.63	11.7	26.4		
228026 - AH-2 5-5.5' 2' BEB	< 0.0100	< 0.0100	< 0.0100	< 0.0100		
228029 - AH-3 0-1' 4' BEB	3.30	23.6	23.5	36.4	1340	1320
228030 - AH-3 1-1.5' 4' BEB	< 0.0100	< 0.0100	< 0.0100	0.108		
228039 - AH-4 0-1' Scrape	8.06	39.1	29.7	45.7	643	1590
228040 - AH-4 1-1.5' Scrape	< 0.0100	< 0.0100	< 0.0100	< 0.0100		

Sample: 228012 - AH-1 0-1' Scrape

Param	Flag	Result	Units	m RL
Chloride		10500	mg/Kg	4.00

Sample: 228013 - AH-1 1-1.5' Scrape

Param	Flag	Result	Units	RL
Chloride		13100	mg/Kg	4.00

Sample: 228014 - AH-1 2-2.5' Scrape

Param	Flag	Result	Units	RL_
Chloride		3960	mg/Kg	4.00

Sample: 228015 - AH-1 3-3.5' Scrape

Param	Flag	Result	Units	RL
Chloride		4090	mg/Kg	4.00

Report Date: April 21, 2010	Work Order: 10040928	Pa	ge Number: 3 of 6
Sample: 228016 - AH-1 4-4.5' Scrape	·		
Param Flag	Result	Units	RL
Chloride	3540	mg/Kg	4.00
Sample: 228017 - AH-1 5-5.5' Scrape			
Param Flag	Result	Units	RL
Chloride	6770	mg/Kg	4.00
Sample: 228018 - AH-1 6-6.5' Scrape			
Param Flag	Result	Units	RL
Chloride	7180	mg/Kg	4.00
Sample: 228019 - AH-1 7-7.5' Scrape			
Param Flag	Result	Units	RL
Chloride	4680	mg/Kg	4.00
Sample: 228020 - AH-1 8-8.5' Scrape			
Param Flag	Result	Units	RL
Chloride	2830	mg/Kg	4.00
Sample: 228021 - AH-2 0-1' 2' BEB			
Param Flag	Result	Units	RL
Chloride	4740	mg/Kg	4.00
Sample: 228022 - AH-2 1-1.5' 2' BEB			
Param Flag	Result	Units	RL
Chloride	5160	mg/Kg	4.00
Sample: 228023 - AH-2 2-2.5' 2' BEB			
Param Flag	Result	Units	RL
Chloride	11400	mg/Kg	4.00

Report Date: April	21, 2010	Work Order: 10040928	Page	Number: 4 of 6
Sample: 228024	- AH-2 3-3.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00
Sample: 228025	- AH-2 4-4.5' 2' BEB			
Param	Flag	Result	Units	m RL
Chloride		5440	mg/Kg	4.00
Sample: 228026	- AH-2 5-5.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		4290	mg/Kg	4.00
-	- AH-2 6-6.5' 2' BEB	Dozult	Their	D.r.
Param Chloride	Flag	Result 3410	Units mg/Kg	$\frac{RL}{4.00}$
Sample: 228028 -	- AH-2 7-7.5' 2' BEB Flag	Result	Units	RL
Chloride	1 mg	4800	mg/Kg	4.00
Sample: 228029 - Param Chloride	- AH-3 0-1' 4' BEB Flag	Result 1660 0	Units	RL 4.00
	- AH-3 1-1.5' 4' BEB Flag	Result	mg/Kg Units	4.00 RL
Chloride	1 lag	12300	mg/Kg	4.00
	AH-3 2-2.5' 4' BEB		<u> </u>	
Param	Flag	Result	Units	RL
Chloride		6280	mg/Kg	4.00
			<u> </u>	

Report Date: April 21	, 2010	Work Order: 10040928	Page	Number: 5 of
Sample: 228032 - A	.H-3 3-3.5' 4' BEB			
Param	Flag	Result	Units	RJ
Chloride		4360	mg/Kg	4.0
Sample: 228033 - A	.H-3 4-4.5' 4' BEB			
Param	Flag	Result	Units	RJ
Chloride		2710	rng/Kg	4.0
Sample: 228034 - A	.H-3 5-5.5' 4' BEB			
Param	Flag	Result	Units	RI
Chloride		3630	mg/Kg	4.0
Chloride Sample: 228036 - A Param	Flag .H-3 7-7.5' 4' BEB Flag	3750 Result	mg/Kg Units	4.0 RJ
			1	
Chloride		3550	mg/Kg	
Chloride Sample: 228037 - A	H-3 8-8.5' 4' BEB			
Sampie: 228037 - A Param	H-3 8-8.5' 4' BEB Flag	Result	Units	4.0
Sample: 228037 - A Param Chloride	Flag			RI 4.00
Sample: 228037 - A Param Chloride Sample: 228038 - A	Flag H-3 9-9.5' 4' BEB	Result 2520	Units mg/Kg	4.0 RI 4.00
Sample: 228037 - A Param Chloride Sample: 228038 - A Param	Flag	Result 2520 Result	Units mg/Kg Units	4
Sample: 228037 - A Param Chloride Sample: 228038 - A Param Chloride	Flag H-3 9-9.5' 4' BEB Flag	Result 2520	Units mg/Kg	4.0 R 4.0
Sample: 228037 - A Param Chloride Sample: 228038 - A Param Chloride Sample: 228039 - A	Flag H-3 9-9.5' 4' BEB Flag H-4 0-1' Scrape	Result 2520 Result 2380	Units mg/Kg Units mg/Kg	RI 4.0 4.0
Sample: 228037 - A Param Chloride Sample: 228038 - A Param Chloride	Flag H-3 9-9.5' 4' BEB Flag	Result 2520 Result	Units mg/Kg Units	4.0

Report Date: Apri	1 21, 2010	Work Order: 10040928	Page	Number: 6 of 6
Sample: 228040	- AH-4 1-1.5' Scrape			
Param	Flag	Result	Units	RL
Chloride	- 1.10b	15900	mg/Kg	4.00
Sample: 228041	- AH-4 2-2.5' Scrape			
Param	Flag	Result	Units	RL
Chloride		3620	mg/Kg	4.00
Sample: 228042	- AH-4 3-3.5' Scrape			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 228043	- AH-4 4-4.5' Scrape			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 228044 Param	- AH-4 5-5.5' S crape Flag	Result	Units	RL
Chloride Chloride	1 108	2020	mg/Kg	4.00
Sample: 228045 Param Chloride	- AH-4 6-6.5' S crape Flag	Result <200	Units mg/Kg	RL 4.00
	- AH-4 7-7.5' Scrape		<i>87 8</i>	
- Param	Flag	Result	Units	RL
Chloride	1 tug	<200	mg/Kg	4.00
Sample: 228047	- AH-4 8-8.5' Scrape			
Param	Flag	Result	Units	RL
	0			- 4

Report Date: May 21, 2010 Work Order: 10051408 Page Number: 1 of 4

Summary Report

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

Report Date: May 21, 2010

Work Order: 10051408

Project Location: Lea County, NM

Project Name: COG/BC Federal #1 TB

Project Number: 114-6400487

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
231620	SB-1 5'	soil	2010-05-11	00:00	2010-05-13
231621	SB-1 7'	soil	2010-05-11	00:00	2010-05-13
231622	SB-1 10'	soil	2010-05-11	00:00	2010-05-13
231623	SB-1 12'	soil	2010-05-11	00:00	2010-05-13
231624	SB-1 15'	soil	2010-05-11	00:00	2010-05-13
231625	SB-1 20'	soil	2010-05-11	00:00	2010-05-13
231626	SB-2 5' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231627	SB-2 7' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231628	SB-2 10' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231629	SB-2 12' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231630	SB-2 15' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231631	SB-2 20' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231632	SB-2 25' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231633	SB-2 30' (2' BEB)	soil	2010-05-11	00:00	2010-05-13
231634	SB-3 5' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231635	SB-3 7' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231636	SB-3 10' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231637	SB-3 12' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231638	SB-3 15' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231639	SB-3 20' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231640	SB-3 25' (4' BEB)	soil	2010-05-11	00:00	2010-05-13
231641	SB-3 30' (4' BEB)	soil	2010-05-11	00:00	2010-05-13

			BTEX	TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
231620 - SB-1 5'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	<1.00
231626 - SB-2 5' (2' BEB)	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	<1.00
231634 - SB-3 5' (4' BEB)	2.18	14.3	10.5	15.7	558	686

B-1 5' Flag B-1 7' Flag	Result 805 Result	Units mg/Kg	RI 4.00
3-1 7'	805		
3-1 7'		mg/Kg	4.00
	Result		
Flag	Result		
		Units	RI
	<200	mg/Kg	4.00
3-1 10'			
Flag	Result	Units	RI
	<200	mg/Kg	4.00
3-1 12' Flag	Result <200	Units mg/Kg	RJ 4.0
B-1 15' Flag	Result <200	Units mg/Kg	RI
			RI
Flag	<200 Result	mg/Kg Units	RI 4.00 RI
Flag B-1 20' Flag	<200	mg/Kg	RI 4.00
Flag B-1 20'	<200 Result	mg/Kg Units	RI 4.00 RI
	Flag	Flag Result <200 4-1 12' Flag Result	Flag Result Units <200

Report Date: May 21, 2010		Work Order: 10051408	Page	Number: 3 of 4
Sample: 231628	- SB-2 10' (2' BEB)		•	
Param	Flag	Result	Units	RL
Chloride		8610	mg/Kg	4.00
Sample: 231629	- SB-2 12' (2' BEB)			
Param	Flag	Result	Units	RL
Chloride	-	2790	mg/Kg	4.00
Sample: 231630	- SB-2 15' (2' BEB)			
Param	Flag	Result	Units	RL
Chloride	-	7130	mg/Kg	4.00
Chloride		881	mg/Kg	4.00
	- SB-2 25' (2' BEB)			
Sample: 231632 -	, ,	Result	Units	RT
	- SB-2 25' (2' BEB) Flag	Result 996	Units mg/Kg	
Sample: 231632 · Param Chloride	, ,			
Sample: 231632 · Param Chloride Sample: 231633 ·	Flag - SB-2 30' (2' BEB)	996	mg/Kg	4.00
Sample: 231632 · Param Chloride	Flag			4.00 RL
Sample: 231632 · Param Chloride Sample: 231633 · Param Chloride	Flag - SB-2 30' (2' BEB)	996 Result	mg/Kg Units	4.00 RL
Sample: 231632 · Param Chloride Sample: 231633 · Param Chloride Sample: 231634 ·	Flag - SB-2 30' (2' BEB) - Flag - SB-3 5' (4' BEB)	996 Result <200	mg/Kg Units mg/Kg	4.00 RL 4.00
Sample: 231632 · Param Chloride Sample: 231633 · Param Chloride	Flag - SB-2 30' (2' BEB) Flag	996 Result	mg/Kg Units	4.00 RL 4.00
Sample: 231632 - Param Chloride Sample: 231633 - Param Chloride Sample: 231634 - Param Chloride	Flag - SB-2 30' (2' BEB) - Flag - SB-3 5' (4' BEB)	996 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00
Sample: 231632 - Param Chloride Sample: 231633 - Param Chloride Sample: 231634 - Param Chloride	Flag - SB-2 30' (2' BEB) Flag - SB-3 5' (4' BEB) Flag	996 Result <200 Result	mg/Kg Units mg/Kg Units	RL 4.00 RL 4.00

Report Date: May 21, 2010		Work Order: 10051408	Page	Number: 4 of 4
Sample: 231636 -	- SB-3 10' (4' BEB)			
Param	Flag	Result	Units	RL
Chloride		10100_	mg/Kg	4.00
Sample: 231637 -	- SB-3 12' (4' BEB)			
Param	Flag	Result	Units	RL
Chloride		9040	mg/Kg	4.00
Sample: 231638 -	- SB-3 15' (4' BEB)			
Param	Flag	Result	Units	` RL
Chloride		9820	mg/Kg	4.00
Sample: 231639 -	- SB-3 20' (4' BEB)			
Param	Flag	Result	Units	RL
Chloride		1470	mg/Kg	4.00
Sample: 231640 -	· SB-3 25' (4' BEB)			
Param	Flag	Result	Units	RL
Chloride		874	mg/Kg	4.00
Sample: 231641 -	SB-3 30' (4' BEB)			
Param	Flag	Result	Units	m RL
Chloride		360	mg/Kg	4.00

Report Date: July 27, 2010 Work Order: 10061118 Page Number: 1 of 4

Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: July 27, 2010

Work Order: 10061118

Project Location: Lea County, NM

Project Name:

COG/BC Federal #1 TB

Project Number:

114-6400487

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
234361	AH-1 0-1'	soil	2010-06-10	00:00	2010-06-11
234362	AH-1 1-1.51	soil	2010-06-10	00:00	2010-06-11
234363	AH-1 2-2.5'	soil	2010-06-10	00:00	2010-06-11
234364	AH-1 3-3.5'	soil	2010-06-10	00:00	2010-06-11
234365	AH-1 4-4.5'	soil	2010-06-10	00:00	2010-06-11
234366	AH-1 5-5.5'	soil	2010-06-10	00:00	2010-06-11
234367	AH-2 0-1' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234368	AH-2 1-1.5' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234369	AH-2 2-2.5' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234370	AH-2 3-3.5' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234371	AH-2 4-4.5' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234372	AH-2 5-5.5' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234373	AH-3 0-1' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234374	AH-3 1-1.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234375	AH-3 2-2.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234376	AH-3 3-3.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234377	AH-3 4-4.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234378	AH-3 5-5.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11

Sample: 234361 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		9270	mg/Kg	4.00

Sample: 234362 - AH-1 1-1.5'

Report Date: July 27, 2010		Work Order: 10061118	Page Number: 2 of 4	
Param	Flag	Result	Units	RL
Chloride		9470	mg/Kg	4.00
Sample: 234363 - AF	I-1 2-2.5'			
Param	Flag	Result	Units	m RL
Chloride	riag	4620	mg/Kg	4.00
Sample: 234364 - AF	H-1 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		3070	mg/Kg	4.00
Sample: 234365 - AF	I-1 4-4.5'			
Param Chloride	Flag	Result 3140	Units mg/Kg	RL 4.00
Sample: 234366 - AF	I_1 5_5 5'			
Param	Flag	Result	Units	m RL
Chloride	Tiag	4090	mg/Kg	4.00
Sample: 234367 - AF	H-2 0-1' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		3690	mg/Kg	4.00
Sample: 234368 - AF	I-2 1-1.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride	L.47 20 VII.	4960	mg/Kg	4.00
Sample: 234369 - AH	I-2 2-2.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		7570	mg/Kg	4.00

Report Date: July 27, 2010		Work Order: 10061118	Page Number: 3 of 4	
Sample: 234370 -	- AH-2 3-3.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		12500	mg/Kg	4.00
Sample: 234371	- AH-2 4-4.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		13000	mg/Kg	4.00
Sample: 234372 -	- AH-2 5-5.5' 2' BEB			
Param	Flag	Result	Units	RL
Chloride		5880	mg/Kg	4.00
Chloride			mg/Kg	
_	- AH-3 1-1.5' 4' BEB		** (D.
_	- AH-3 1-1.5' 4' BEB Flag	Result 10000	Units mg/Kg	RL 2.50
Param Chloride				
Param Chloride Sample: 234375 - Param Chloride	Flag - AH-3 2-2.5' 4' BEB	10000 Result	mg/Kg Units	2.50 RL
Param Chloride Sample: 234375 - Param Chloride	Flag - AH-3 2-2.5' 4' BEB Flag	10000 Result	mg/Kg Units	2.50 RL
Param Chloride Sample: 234375 - Param Chloride Sample: 234376 -	Flag - AH-3 2-2.5' 4' BEB - Flag - AH-3 3-3.5' 4' BEB	10000 Result 12000	mg/Kg Units mg/Kg	2.50 RL 2.50
Param Chloride Sample: 234375 - Param Chloride Sample: 234376 - Param Chloride	Flag - AH-3 2-2.5' 4' BEB - Flag - AH-3 3-3.5' 4' BEB	Result 12000 Result	mg/Kg Units mg/Kg Units	2.50 RL 2.50
Param Chloride Sample: 234375 - Param Chloride Sample: 234376 - Param Chloride	Flag - AH-3 2-2.5' 4' BEB Flag - AH-3 3-3.5' 4' BEB Flag	Result 12000 Result	mg/Kg Units mg/Kg Units	2.50 RL 2.50

Report Date: July 27, 2010

B

Work Order: 10061118

Page Number: 4 of 4

Sample: 234378 - AH-3 5-5.5' 4' BEB

Param	\mathbf{Flag}	Result	Units	RL
Chloride		9650	mg/Kg	4.00

Work Order: 10061118 Report Date: June 23, 2010

Summary Report

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

Report Date: June 23, 2010

Page Number: 1 of 3

Work Order: 10061118

Project Location: Lea County, NM

Project Name: COG/BC Federal #1 TB

Project Number: 114-6400487

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
234361	AH-1 0-1'	soil	2010-06-10	00:00	2010-06-11
234362	AH-1 1-1.5'	soil	2010-06-10	00:00	2010-06-11
234367	AH-2 0-1' 2' BEB	soil	2010-06-10	00:00	2010-06-11
234373	AH-3 0-1' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234374	AH-3 1-1.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234375	AH-3 2-2.5' 4' BEB	soil	2010-06-10	00:00	2010-06-11
234379	AH-4 0-1'	soil	2010-06-10	00:00	2010-06-11
234380	AH-4 1-1.5'	soil	2010-06-10	00:00	2010-06-11
234381	AH-4 2-2.5'	soil	2010-06-10	00:00	2010-06-11
234382	AH-4 3-3.5'	soil	2010-06-10	00:00	2010-06-11
234383	AH-4 4-4.5'	soil	2010-06-10	00:00	2010-06-11
234384	AH-4 5-5.5'	soil	2010-06-10	00:00	2010-06-11
234385	AH-4 6-6.5'	soil	2010-06-10	00:00	2010-06-11
234386	AH-4 7-7.5'	soil	2010-06-10	00:00	2010-06-11
234387	AH-4 8-8.5'	soil	2010-06-10	00:00	2010-06-11
234388	AH-4 9-9.5'	soil	2010-06-10	00:00	2010-06-11

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	$_{ m GRO}$
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
234361 - AH-1 0-1'	2.41	22.2	18.6	26.8	383	1020
234362 - AH-1 1-1.5'	< 0.0200	< 0.0200	< 0.0200	< 0.0200		
234367 - AH-2 0-1' 2' BEB	0.668	7.02	4.25	6.44	3240	209
234373 - AH-3 0-1' 4' BEB	45.2	202	111	154	3760	5880
234374 - AH-3 1-1.5' 4' BEB	0.262	1.00	0.721	1.09	221	39.3
234375 - AH-3 2-2.5' 4' BEB	0.0795	1.36	1.46	2.21	423	71.9
234379 - AH-4 0-1'	1.20	11.1	9.88	15.1	960	741

Sample: 234379 - AH-4 0-1'

Report Date: June 23, 2010		Work Order: 10061118	Page Number: 2 of 3	
Param	Flag	Result	Units	RL
Chloride		8570	mg/Kg	4.00
Sample: 234380 -	AH-4 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		6930	mg/Kg	4.00
Sample: 234381 -	AH-4 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		2400	mg/Kg	4.00
Sample: 234382 -	AH-4 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		702	mg/Kg	4.00
Sample: 234383 -	AH-4 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234384 -	AH-4 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		639	mg/Kg	4.00
Sample: 234385 -	AH-4 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		281	mg/Kg	4.00
Sample: 234386 -	AH-4 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Report Date: June 23, 2010 Work Order: 10061118 Page Number: 3 of 3

Sample: 234387 - AH-4 8-8.5'

Sample: 234388 - AH-4 9-9.5'

 Report Date: September 27, 2010

Work Order: 10091331

Summary Report

Ike Tavarez

Tetra Tech

1910 N. Big Spring Street

Midland, TX 79705

Report Date: September 27, 2010

Page Number: 1 of 3

Work Order: 10091331

Project Location: Lea Co., NM

Project Name:

COG/BC Fed. #1 TB

Project Number: 114-6400671

			Date	${f Time}$	Date
Sample	Description	Matrix	Taken	Taken	Received
244441	AH-1 0-1	soil	2010-09-07	00:00	2010-09-10
244442	AH-1 1-1.5	soil	2010-09-07	00:00	2010-09-10
244443	AH-1 2-2.5	soil	2010-09-07	00:00	2010-09-10
244444	AH-1 3-3.5	soil	2010-09-07	00:00	2010-09-10
244445	AH-1 4-4.5	soil	2010-09-07	00:00	2010-09-10
244446	AH-1 5-5.5	soil	2010-09-07	00:00	2010-09-10
244447	AH-1 6-6.5	soil	2010-09-07	00:00	2010-09-10
244448	AH-1 7-7.5	soil	2010-09-07	00:00	2010-09-10
244449	AH-1 8-8.5	soil	2010-09-07	00:00	2010-09-10
244450	AH-1 9-9.5	soil	2010-09-07	00:00	2010-09-10

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(ing/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
244441 - AH-1 0-1	2.60	42.7	34.4	88.9	2200	1080
244442 - AH-1 1-1.5	5.14	44.0	25.1	73.9	758	1670
244443 - AH-1 2-2.5	1.80	10.4	3.74	14.5	275	253

Sample: 244441 - AH-1 0-1

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

Sample: 244442 - AH-1 1-1.5

continued ...

Report Date: Sept	ember 27, 2010	Work Order: 10091331	Pa	age Number: 2 of 3
sample 244442 con	tinued			
Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		212	mg/Kg	4.00
Sample: 244443	- AH-1 2-2.5			
Param	Flag	Result	Units	RL
Chloride		585	mg/Kg	4.00
Sample: 244444	- AH-1 3-3.5			
Param	Flag	Result	Units	RL
Chloride		4090	mg/Kg	4.00
Sample: 244445	- AH-1 4-4.5			
-		Result	Units	R.L
Sample: 244445 Param Chloride	- AH-1 4-4.5 Flag	Result 1460	Units mg/Kg	RL 4.00
Param	Flag			
Param Chloride	Flag			
Param Chloride Sample: 244446	Flag - AH-1 5-5.5	1460	mg/Kg	4.00
Param Chloride Sample: 244446	Flag - AH-1 5-5.5 Flag	1460 Result	mg/Kg Units	4.00 RL
Param Chloride Sample: 244446 Param Chloride	Flag - AH-1 5-5.5 Flag	1460 Result	mg/Kg Units	RL 4.00
Param Chloride Sample: 244446 Param Chloride Sample: 244447	Flag - AH-1 5-5.5 Flag - AH-1 6-6.5	1460 Result 4340	mg/Kg Units mg/Kg	4.00 RL 4.00
Param Chloride Sample: 244446 Param Chloride Sample: 244447	Flag - AH-1 5-5.5 Flag - AH-1 6-6.5 Flag	1460 Result 4340 Result	mg/Kg Units mg/Kg Units	RL 4.00
Param Chloride Sample: 244446 Param Chloride Sample: 244447 Param Chloride	Flag - AH-1 5-5.5 Flag - AH-1 6-6.5 Flag	1460 Result 4340 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00

Sample: 244449 - AH-1 8-8.5

Report Date: September 27, 2010

Work Order: 10091331

Page Number: 3 of 3

Param	Flag	Result	Units	RL
Chloride		6430	mg/Kg	4.00

Sample: 244450 - AH-1 9-9.5

Param	Flag	Result	$\mathbf{U}\mathbf{nits}$	RL
Chloride		4710	mg/Kg	4.00

Report Date: November 22, 2010 Work Order: 10111513

Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: November 22, 2010

Page Number: 1 of 3

Work Order: 10111513

Project Location: Lea Co., NM

Project Name:

COG-Navajo/BC Fed. #1 TB

114-6400671 Project Number:

			${f Date}$	${f Time}$	\mathbf{Date}
Sample	Description	Matrix	Taken	Taken	Received
250479	SB-1 0-1'	soil	2010-11-10	00:00	2010-11-15
250480	SB-1 3'	soil	2010-11-10	00:00	2010-11-15
250481	SB-1 5'	soil	2010-11-10	00:00	2010-11-15
250482	SB-1 7'	soil	2010-11-10	00:00	2010-11-15
250483	SB-1 10'	soil	2010-11-10	00:00	2010-11-15
250484	SB-1 15'	soil	2010-11-10	00:00	2010-11-15
250485	SB-1 20'	soil	2010-11-10	00:00	2010-11-15
250486	SB-1 25'	soil	2010-11-10	00:00	2010-11-15
250487	SB-1 30'	soil	2010-11-10	00:00	2010-11-15
250488	SB-1 40'	soil	2010-11-10	00:00	2010-11-15

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
250479 - SB-1 0-1'					3820	4110
250480 - SB-1 3'	20.3	147	72.6	129	5630	6970
250481 - SB-1 5'	0.0372	0.0257	< 0.0200	0.0905	< 50.0	< 2.00

Sample: 250479 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		1290	mg/Kg	4.00

Sample: 250480 - SB-1 3'

continued ...

Report Date: November 22, 2010		Work Order: 10111513	F	age Number: 2 of 3
sample 250480 con	tinued			
Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		1000	mg/Kg	4.00
Sample: 250481	- SB-1 5'			
Param	Flag	Result	Units	RL
Chloride		1020	mg/Kg	4.00
Sample: 250482	- SB-1 7'			
Param	Flag	Result	Units	RL
Chloride		1610	mg/Kg	4.00
Sample: 250483	- SB-1 10'			
Param	Flag	Result	Units	RL
Chloride		825	mg/Kg	4.00
Sample: 250484	- SB-1 15'.			
Param	Flag	Result	Units	RL
Chloride		1520	mg/Kg	4.00
Sample: 250485	- SB-1 20'			
_		Result	Units	m RL
Sample: 250485 Param Chloride	- SB-1 20' Flag	Result 2270	Units mg/Kg	RL 4.00
Param	Flag			
Param Chloride	Flag			

Sample: 250487 - SB-1 30'

Report Date: November 22, 2010

Work Order: 10111513

Page Number: 3 of 3

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

Sample: 250488 - SB-1 40'

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

Report Date: August 20, 2012 Work Order: 12080314 Page Number: 1 of 10

Summary Report

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

Report Date: August 20, 2012

Work Order: 12080314

Project Location: Lea Co., NM

Project Name: COG/BC Fed. #1 Tank Battery

Project Number: 114-6400671

			Date	Time	Date
Sample	Description	Matrix	Taken	\mathbf{T} aken	Received
305725	AH-1 0-1'	soil	2012-08-01	00:00	2012-08-02
305726	AH-1 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305727	AH-1 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305728	AH-1 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305729	AH-1 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305730	AH-1 5-5.5'	soil	2012-08-01	00:00	2012-08-02
305731	AH-1 6-6.5'	soil	2012-08-01	00:00	2012-08-02
305732	AH-1 7-7.5'	soil	2012-08-01	00:00	2012-08-02
305733	AH-1 8-8.5'	soil	2012-08-01	00:00	2012-08-02
305734	AH-1 9-9.5'	soil	2012-08-01	00:00	2012-08-02
305735	AH-1 10-10.5'	soil	2012-08-01	00:00	2012-08-02
305736	AH-2 0-1'	soil	2012-08-01	00:00	2012-08-02
305737	AH-2 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305738	AH-2 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305739	AH-2 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305740	AH-2 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305741	AH-2 5-5.5'	soil	2012-08-01	00:00	2012-08-02
305742	AH-2 6-6.5'	soil	2012-08-01	00:00	2012-08-02
305743	AH-2 7-7.5'	soil	2012-08-01	00:00	2012-08-02
305744	AH-2 8-8.5'	soil	2012-08-01	00:00	2012-08-02
305745	AH-2 9-9.5'	soil	2012-08-01	00:00	2012-08-02
305746	AH-2 10-10.5'	soil	2012-08-01	00:00	2012-08-02
305747	AH-3 0-1'	soil	2012-08-01	00:00	2012-08-02
305748	AH-3 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305749	AH-3 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305750	AH-3 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305751	AH-3 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305752	AH-3 5-5.5'	soil	2012-08-01	00:00	2012-08-02
305753	AH-3 6-6.5'	soil	2012-08-01	00:00	2012-08-02
305754	AH-3 7-7.5'	soil	2012-08-01	00:00	2012-08-02

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Work Order: 12080314 Page Number: 2 of 10 Report Date: August 20, 2012

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305755	AH-3 8-8.5'	soil	2012-08-01	00:00	2012-08-02
305756	AH-4 0-1'	soil	2012-08-01	00:00	2012-08-02
305757	AH-4 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305758	AH-4 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305759	AH-4 3-3.5°	soil	2012-08-01	00:00	2012-08-02
305760	AH-4 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305761	AH-4 5-5.5'	soil	2012-08-01	00:00	2012-08-02
305762	AH-5 0-1'	soil	2012-08-01	00:00	2012-08-02
305763	AH-5 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305764	AH-5 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305765	AH-5 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305766	AH-5 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305767	AH-5 5-5.5'	soil	2012-08-01	00:00	2012-08-02
305768	AH-6 0-1'	soil	2012-08-01	00:00	2012-08-02
305769	AH-6 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305770	AH-6 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305771	AH-6 3-3.5	soil	2012-08-01	00:00	2012-08-02
305772	AH-7 0-1'	soil	2012-08-01	00:00	2012-08-02
305773	AH-7 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305774	AH-7 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305775	AH-7 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305776	AH-7 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305777	AH-7 5-5.5'	soil	2012-08-01	00:00	2012-08-02
305778	AH-8 0-1'	soil	2012-08-01	00:00	2012-08-02
305779	AH-8 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305780	AH-8 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305781	AH-8 3-3.5'	soil	2012-08-01	00:00	2012-08-02

		BTEX				TPH GRO
1	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
305725 - AH-1 0-1'	< 0.100 1	11.0	12.3	31.1	3630	525 Je
305726 - AH-1 1-1.5'	0.449 q.	41.5 o	41.6 Qs	81.8 је, се		
305727 - AH-1 2-2.5'	<0.0400 qr,q=	2.37 Qr.Qs	$11.0 \mathrm{Qr}$	26.7 J. Qr		
305736 - AH-2 0-1'	<0.100 ²	1.39	0.465	0.840	6810	146
305737 - AH-2 1-1.5'				ļ	297	<4.00
305747 - AH-3 0-1'	< 0.0400 ³	< 0.0400	< 0.0400	< 0.0400	< 50.0	<8.00 ⁴
305756 - AH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 4.00
305762 - AH-5 0-1'	< 0.0200	0.0203	< 0.0200	0.0214	< 50.0	<4.00
305768 - AH-6 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	<4.00 Q∎
305772 - AH-7 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	<4.00 Q.
305778 - AH-8 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	<4.00 Q

Sample: 305725 - AH-1 0-1'

¹Dilution due to excessive hydrocarbons.
²Dilution due to excessive hydrocarbons.

³Dilution due to turbidity.

⁴Dilution due to turbidity.

Report Date: August 20, 2012		Work Order: 12080314	Page N	Page Number: 3 of 10	
Param	Flag	Result	Units	RL	
Chloride		7100	mg/Kg	4	
Sample: 305726	- AH-1 1 - 1.5'				
Param	Flag	Result	Units	RL	
Chloride		1890	mg/Kg	4	
Sample: 305727	- AH-1 2-2.5'				
Param	Flag	Result	Units	m RL	
Chloride		2360	mg/Kg	4	
Sample: 305728	- AH-1 3-3.5'				
Param	Flag	Result	Units	RL	
Chloride		1980	mg/Kg	4	
Sample: 305729 -	- AH-1 4-4.5'				
Param	Flag	Result	Units	RL	
Chloride		2000	mg/Kg	4	
Sample: 305730 -	- AH-1 5-5.5'				
Param	Flag	Result	Units	RL	
Chloride		2800	mg/Kg	4	
Sample: 305731 -	- AH-1 6-6.5'				
Param	Flag	Result	Units	RL	
Chloride	0	4290	mg/Kg	4	
Sample: 305732 -	· AH-1 7-7.5'		,		
Param	Flag	Result	Units	RL	
Chloride		4820	mg/Kg	4	

Report Date: August 20, 2012	Work Order: 12080314	Pa	age Number: 4 of 10
Sample: 305733 - AH-1 8-8.5'			
Param Flag	Result	Units	RL
Chloride	4740	mg/Kg	4
Sample: 305734 - AH-1 9-9.5'			
Param Flag	Result	Units	RL
Chloride	5670	mg/Kg	4
Sample: 305735 - AH-1 10-10.5'			
Param Flag	Result	Units	RL
Chloride	4330	mg/Kg	4
Sample: 305736 - AH-2 0-1'			
Param Flag	Result	Units	RL
Chloride	3700	mg/Kg	4
Sample: 305737 - AH-2 1-1.5'			
Param Flag	Result	Units	RL
Chloride	2770	mg/Kg	4
Sample: 305738 - AH-2 2-2.5'			
Param Flag	Result	Units	RL
Chloride	964	mg/Kg	4
Sample: 305739 - AH-2 3-3.5'			
Param Flag	Result	Units	RL
Chloride	1080	mg/Kg	4
Sample: 305740 - AH-2 4-4.5'			
Param Flag	Result	Units	RL
Chloride	2550	mg/Kg	4

Report Date: August 20, 2012		Work Order: 12080314	Page N	umber: 5 of 10
Sample: 305741 -	AH-2 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		2130	mg/Kg	4
Sample: 305742 -	AH-2 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		1500	mg/Kg	4
Sample: 305743 -	AH-2 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		1130	mg/Kg	4
Sample: 305744 - Param Chloride	AH-2 8-8.5' Flag	Result 1530	Units mg/Kg	RL 4
Sample: 305745 -	AH-2 9-9.5'			
Param	Flag	Result	Units	RL
Chloride		3110	mg/Kg	4
Sample: 305746 -	AH-2 10-10.5'			
Param	Flag	Result	Units	RL
Chloride		2680	mg/Kg	4
Sample: 305747 -	AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		3500	mg/Kg	4
Sample: 305748 -	AH-3 1-1.5'			
		D 1	TT 4.	73.7
Param	Flag	Result	Units	RL

Report Date: Augu	st 20, 2012	Work Order: 12080314	Page N	umber: 6 of 10
Sample: 305749 -	- AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		212	mg/Kg	4
Sample: 305750 -	- AH-3 3-3.5'			
Param	Flag	Result	Units	RL
Chloride	2.45	515	mg/Kg	4
Sample: 305751 -	- AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride	<u> </u>	708	mg/Kg	4
Sample: 305753 - Param Chloride	AH-3 6-6.5'	Result 2580	Units mg/Kg	RL 4
Sample: 305754 -				
Param Chloride	Flag	Result 3360	Units mg/Kg	RL 4
	AH-3 8-8.5			
		Result	Units	m RL
Param	Flag			
Param Chloride		2270	mg/Kg	4
Param			mg/Kg	
Param Chloride				

Report Date: Augu	st 20, 2012	Work Order: 12080314	Page N	Tumber: 7 of 10
Sample: 305757 -	AH-4 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		457	mg/Kg	4
Sample: 305758 -	- AH-4 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		605	mg/Kg	4
Sample: 305759 -	· AH-4 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4
Sample: 305760 - Param Chloride	AH-4 4-4.5'	Result 744	Units mg/Kg	RL 4
Sample: 305761 - Param Chloride	AH-4 5-5.5' Flag	Result 675	Units mg/Kg	RL 4
Omorac		010	mg/ Ng	3
Sample: 305762 -	AH-5 0-1'			
Param Chloride	Flag	Result 4950	Units mg/Kg	RL 4
Sample: 305763 -	AH-5 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		5020	mg/Kg	4
Sample: 305764 -	AH-5 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		5510	mg/Kg	4

Report Date: August 20, 2012		Work Order: 12080314	Pa	age Number: 8 of 10
Sample: 305765	- AH-5 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		7850	mg/Kg	4
Sample: 305766 -			**	
Param Chloride	Flag	Result 8020	Units mg/Kg	RL 4
Cmoride		6020	nig/ rcg	4
Sample: 305767 -	- AH-5 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		522	mg/Kg	4
Sample: 305768 -	- AH-6 0-1'			
Param	Flag	Result	Units	RL
Chloride		1410	mg/Kg	4
Sample: 305769 -	- AH-6 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		275	mg/Kg	4
Sample: 305770 -	- AH-6 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		74.6	mg/Kg	4
Sample: 305771 -	· AH-6 3-3.5			
Param	Flag	Result	Units	RL
Chloride		42.0	mg/Kg	4
Sample: 305772 -	- AH-7 0-1'			
Param	Flag	Result	Units	RL
Chloride		8140	mg/Kg	4

Report Date: Augus	st 20, 2012	Work Order: 12080314	Page N	Number: 9 of 10
Sample: 305773 -	AH-7 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		9210	mg/Kg	4
Sample: 305774 -	AH-7 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		7680	mg/Kg	4
Sample: 305775 -	AH-7 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		1590	mg/Kg	4
Sample: 305776 - Param Chloride	AH-7 4-4.5' Flag	Result 896	Units mg/Kg	RL 4
Sample: 305777 -				
Param	Flag	Result 439	Units	RL
Chloride		439	mg/Kg	4
Sample: 305778 -	AH-8 0-1'			
Param	Flag	Result	Units	RL
Chloride		3850	mg/Kg	4
Sample: 305779 -	AH-8 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		92.4	mg/Kg	4
Sample: 305780 -	AH-8 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		125	mg/Kg	4

Report Date: August 20, 2012

Work Order: 12080314

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Sample: 305781 - AH-8 3-3.5'

Param	Flag	Result	Units	\mathbf{RL}
Chloride		480	mg/Kg	4

Report Date: September 24, 2012 Work Order: 12091436 Page Number: 1 of 6

Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: September 24, 2012

Work Order: 12091436

Project Location: Lea Co., NM

Project Name: COG/BC Fed. #1 Tank Battery

Project Number: 114-6400671

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
309418	Bore Hole 1 0-1'	soil	2012-09-12	00:00	2012-09-14
309419	Bore Hole 1 2-3'	soil	2012-09-12	00:00	2012-09-14
309420	Bore Hole 1 4-5'	soil	2012-09-12	00:00	2012-09-14
309421	Bore Hole 1 6-7'	soil	2012-09-12	00:00	2012-09-14
309422	Bore Hole 1 9-10'	soil	2012-09-12	00:00	2012-09-14
309423	Bore Hole 1 14-15'	soil	2012-09-12	00:00	2012-09-14
309424	Bore Hole 1 19-20'	soil	2012-09-12	00:00	2012-09-14
309425	Bore Hole 1 24-25'	soil	2012-09-12	00:00	2012-09-14
309426	Bore Hole 1 29-30'	soil	2012-09-12	00:00	2012-09-14
309427	Bore Hole 1 39-40'	soil	2012-09-12	00:00	2012-09-14
309428	Bore Hole 1 49-50'	soil	2012-09-12	00:00	2012-09-14
309429	Bore Hole 1 59-60'	soil	2012-09-12	00:00	2012-09-14
309430	Bore Hole 2 0-1'	soil	2012-09-13	00:00	2012-09-14
309431	Bore Hole 2 2-3'	soil	2012-09-13	00:00	2012-09-14
309432	Bore Hole 2 4-5'	soil	2012-09-13	00:00	2012-09-14
309433	Bore Hole 2 6-7'	soil	2012-09-13	00:00	2012-09-14
309434	Bore Hole 2 9-10'	soil	2012-09-13	00:00	2012-09-14
309435	Bore Hole 2 14-15'	soil	2012-09-13	00:00	2012-09-14
309436	Bore Hole 2 19-20'	soil	2012-09-13	00:00	2012-09-14
309437	Bore Hole 2 24-25'	soil	2012-09-13	00:00	2012-09-14
309438	Bore Hole 2 29-30'	soil	2012-09-13	00:00	2012-09-14
309439	Bore Hole 2 39-40'	soil	2012-09-13	00:00	2012-09-14
309440	Bore Hole 2 49-50'	soil	2012-09-13	00:00	2012-09-14
309441	Bore Hole 2 59-60'	soil	2012-09-13	00:00	2012-09-14
309442	Bore Hole 3 0-1'	soil	2012-09-13	00:00	2012-09-14
309443	Bore Hole 3 2-3'	soil	2012-09-13	00:00	2012-09-14
309444	Bore Hole 3 4-5'	soil	2012-09-13	00:00	2012-09-14
309445	Bore Hole 3 6-7'	soil	2012-09-13	00:00	2012-09-14
309446	Bore Hole 3 9-10'	soil	2012-09-13	00:00	2012-09-14
309447	Bore Hole 3 14-15'	soil	2012-09-13	00:00	2012-09-14

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Report Date:	September 24, 2012	Work Orde	er: 12091436	Page	e Number: 2 of 6
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
309448	Bore Hole 3 19-20'	soil	2012-09-13	00:00	2012-09-14
309449	Bore Hole 3 24-25'	soil	2012-09-13	00:00	2012-09-14
Sample: 309	418 - Bore Hole 1 0-1'				
Param	Flag	Result		Units	RL
Chloride		14200		mg/Kg	4
Sample: 309	419 - Bore Hole 1 2-3'				
Param	Flag	Result		Units	RL
Chloride		13500		mg/Kg	4
Sample: 309 Param Chloride	420 - Bore Hole 1 4-5' Flag	Result 9750		Units mg/Kg	RL 4
Sample: 309	421 - Bore Hole 1 6-7'				
Param	Flag	Result		Units	RL
Chloride		4190		mg/Kg	4
Sample: 309	422 - Børe Hole 1 9-10'				
Param	Flag	Result		Units	RL
Chloride		3780		mg/Kg	4
Sample: 309	423 - Bore Hole 1 14-15'				
	Flag	Result		Units	RL
Param		3640		mg/Kg	4

continued ...

	ember 24, 2012	Work Order: 12091436		Page Number: 3 of 6
sample 309424 con	$tinued \dots$			
Param	Flag	Result	Units	· RI
Param	Flag	Result	Units	RI
Chloride		4480	mg/Kg	4
Sample: 309425	- Bore Hole 1 24-25'			
Param	Flag	Result	Units	RL
Chloride		7990	mg/Kg	4
Sample: 309426	- Bore Hole 1 29-30'			
Param	Flag	Result	Units	RL
Chloride		6780	mg/Kg	4
C 1 00040F	T) TI 1 1 00 401			
Sample: 309427 Param Chloride	- Bore Hole 1 39-40'	Result 1430	Units mg/Kg	$\frac{\text{RL}}{4}$
Param Chloride	Flag		Units mg/Kg	
Param Chloride Sample: 309428	- Bore Hole 1 49-50'	1430	mg/Kg	4
Param Chloride Sample: 309428	Flag	1430 Result	mg/Kg Units	4 RL
Param Chloride Sample: 309428	- Bore Hole 1 49-50'	1430	mg/Kg	4
Param Chloride Sample: 309428 Param Chloride	- Bore Hole 1 49-50'	1430 Result	mg/Kg Units	4 RL
Param Chloride Sample: 309428 Param Chloride Sample: 309429	Flag - Bore Hole 1 49-50' Flag	1430 Result	mg/Kg Units	4 RL
Param Chloride Sample: 309428 Param Chloride	Flag - Bore Hole 1 49-50' Flag - Bore Hole 1 59-60'	1430 Result 79.6	mg/Kg Units mg/Kg	RL 4
Param Chloride Sample: 309428 Param Chloride Sample: 309429 Param Chloride	Flag - Bore Hole 1 49-50' Flag - Bore Hole 1 59-60'	1430 Result 79.6 Result	mg/Kg Units mg/Kg Units	RL 4
Param Chloride Sample: 309428 Param Chloride Sample: 309429 Param Chloride	Flag - Bore Hole 1 49-50' Flag - Bore Hole 1 59-60' Flag	1430 Result 79.6 Result	mg/Kg Units mg/Kg Units	RL 4

Sample: 309431 - Bore Hole 2 2-3'

Report Date: September 24, 2012		Work Order: 12091436	Page Number: 4 of	
Param	Flag	Result	Units	RL
Chloride		5490	mg/Kg	4
Sample: 309432 - Bore Ho	le 2 4-5'			
Param	Flag	Result	Units	RL
Chloride		2440	mg/Kg	4
Sample: 309433 - Bore Ho	le 2 6-7'			
Param	Flag	Result	Units	RL
Chloride		1490	mg/Kg	4
Sample: 309434 - Bore Ho	le 2 9-10'			
Param	Flag	Result	Units	RL
Chloride	- 0	2140	mg/Kg	4
Sample: 309435 - Bore Ho Param Chloride	le 2 14-15'	Result 4970	Units mg/Kg	RL 4
Sample: 309436 - Bore Ho				
Param Chloride	Flag	Result	Units	RL 4
Cnioride		3610	mg/Kg	4
Sample: 309437 - Bore Ho	le 2 24-25'			
	Flag	Result	Units	RL
Chloride		2460	mg/Kg	4
Sample: 309438 - Bore Ho	le 2 29-30'			
	Flag	Result	Units	RL
Chloride	<u> </u>	3530	mg/Kg	4

Report Date: Septe	ember 24, 2012	Work Order: 12091436	Pa	ge Number: 5 of 6
Sample: 309439	- Bore Hole 2 39-40'			
Param	Flag	Result	Units	RL
Chloride		1440	mg/Kg	4
Sample: 309440 -	- Bore Hole 2 49-50'			
Param	Flag	Result	Units	RL
Chloride		291	mg/Kg	4
Sample: 309441 -	- Bore Hole 2 59-60'			
Param	Flag	Result	Units	RL
Chloride		142	mg/Kg	4
(
Sample: 309442 -	Bore Hole 3 0-1'			
Param	Flag	Result	Units	RL
Chloride		3040	mg/Kg	4
Sample: 309443 - Param Chloride	- Bore Hole 3 2-3' Flag	Result 3380	Units mg/Kg	RL 4
Sample: 309444 - Param	· Bore Hole 3 4-5'	Result	Units	m RL
Chloride		1170	mg/Kg	4
<u>-</u>	· Bore Hole 3 6-7'	D1	YY -1	DI
Param Chloride	Flag	Result 3110	Units mg/Kg	RL 4
Chiorac		0110	1116/116	-
Sample: 309446 -	Bore Hole 3 9-10'			
Param	Flag	Result	Units	RL
Chloride		1710	mg/Kg	4

Sample: 309447 - Bore Hole 3 14-15' Param Result Units RLFlag 285 mg/Kg Chloride Sample: 309448 - Bore Hole 3 19-20' Param Result Units RLFlag Chloride 270 mg/Kg Sample: 309449 - Bore Hole 3 24-25' Flag Units

Result

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RL

4

mg/Kg

Report Date: September 24, 2012

Param

Chloride