

February 26, 2007

RCVD MAR5'07

OIL CONS. DIV.

Mr. Charlie Perrin District Supervisor New Mexico Oil Conservation Division 1000 Rio Brazos Road Aztec, New Mexico 87410

DIST. 3

30-045-33948

RE: Reserve Pit Closure at Hampton D #1E

Dear Mr. Perrin:

XTO Energy Inc. (XTO) has prepared this report, per your request, to describe the activities associated with reclamation of the reserve pit at the Hampton D #1E natural gas well location. This well location is located in letter Unit I of Section 10, Township 30N, Range 11W, within the Aztec city limits in San Juan County, New Mexico.

This letter is intended to document conversations between XTO and the New Mexico Oil Conservation Division (NMOCD) District 3 personnel provide a description of our activities associated with closing the reserve pit, and address specific questions raised by NMOCD on what XTO will do in the future to prevent similar incidents. The conversations and pit closure activities are presented in a timeline that begins when the well was completed and continues to our current reclamation activities.

XTO recently drilled and completed the Hampton D #1E natural gas well. The reserve pit for this well was used to hold drill cuttings and fluids, which consist of water, small pieces of crushed rock and gravel, clay, and sediments. The drilling fluids and additives are water-based and contain no hydrocarbons or constituents of concern. The products used in our drilling muds are typically bentonite, glycol, starch, cedar fiber, polymers, lime and pH modifiers such as sodium hydroxide.

Whenever we close a reserve pit, there are steps that are typically required in the Conditions of Approval (COA) included in the approved Applications for Permit to Drill (APD), NMOCD Rule 50 and environmental guidelines, and BLM Onshore Order No. 7. XTO has used these requirements to develop an unwritten standard operating procedure that we use when closing any pit, regardless of the surface owner. These practices include:

- Removal of water from the pit surface, to promote drying of the pit contents. This may
  need to be done several times during the period the pit is allowed to "dry" prior to
  closure. During months with low evaporation, we rely more on water trucks to haul
  water than is necessary during the warmer months.
- Cut and remove the pit liner at the mud level. Haul the excess pit liner off site to an approved solid waste disposal facility.
- Blend clean soil into the pit to stabilize the material for burial.

 Reclaim the pit by backfilling and contouring the surface of the pit to prevent ponding of rain water.

From November 2006 when drilling operations were completed until we began closing the pit, XTO hauled approximately 480 barrels (bbl) of water from the reserve pit. Another 420 bbl of water were removed during the week of February 5, 2007. The tickets recording the dates and volumes of water hauled by Robert's Trucking are included as Attachment 1. The following timeline, which begins at the end of our drilling operations, describes activities and conversations documented by XTO personnel, as requested by NMOCD.

#### November 17, 2006 –

• XTO completes drilling Hampton D #1E natural gas well.

#### November 29, 2006 –

 Robert's Trucking hauls 160 bbl of water to Basin Disposal's Salt Water Disposal (SWD) well.

#### January 15, 2007 -

• Robert's Trucking hauls 80 bbl of water to Basin Disposal's SWD.

#### January 19, 2007

• Robert's Trucking hauls 240 bbl of water to Basin Disposal's SWD.

#### Thursday, February 1, 2007

• Robert's Trucking hauls 80 bbl of water to Basin Disposal's SWD.

#### Friday, February 2, 2007

• XTO contractor, Rosenbaum Construction begins preparations for closing the pit, which involved cutting the liner at the mud level. (We know now that one corner of the liner had stuck to the ground and that the cut in this corner did not completely sever the liner.)

#### Monday, February 5, 2007

- Contractor continues pit closure activities.
- XTO is notified by the NMOCD that a nearby resident had complained about several things: oil on the pit, trash in the pit, contractor ripping and shredding the liner, and an "oily effluent".
- XTO Construction Coordinator, Scott Baxstrom, goes to the location to investigate the complaint. Meanwhile, NMOCD Environmental Specialist, Brandon Powell, contacts me regarding the status of the reserve pit. We found no oil in the pit, but only (1) dark colored solids resulting from the formations that were drilled through and (2) the mud that was used. There was no oil observed in the pit by the NMOCD or XTO. Our contractor had left a piece of the pit liner in the pit and he was reprimanded that is unacceptable and we do not allow trash or debris to be placed in the pit. The pit liner was not shredded, one corner of the pit where the liner was not completely separated at the mud line was torn. As the equipment drove over this corner, it appears that the liner developed a small vertical tear which probably could have been avoided if the cut was

- completed properly. The tear was not below the mud level and neither XTO, nor our contractor, intentionally tore or shredded this corner of the liner.
- Speaking with both Scott Baxstrom and Brandon Powell, the immediate concern was the amount of water on the surface of the reserve pit. NMOCD suggested we keep a water truck onsite to pull the water.
- XTO promptly arranged for additional trucking. Robert's Trucking dispatches an 80-bbl vacuum truck to the location, where 240 bbl of water are collected over 9 hours for disposal at Basin Disposal's SWD. The majority of the water on the pit that morning was frozen, but the snow and ice melted and was collected throughout the day.
- Conversations with Scott Baxstrom and Brandon Powell throughout the day indicated that satisfactory progress was being made.

#### Tuesday, February 6, 2007

- Scott Baxstrom met Brandon Powell and the NMOCD Inspection Supervisor, Henry Villanueva, on location. Both NMOCD representatives expressed concern that a water truck was not on site that morning and the water level was high, the piece of pit liner was still in the pit, and requested the liner on the west side of the pit be removed at the mud level.
- XTO contacts Robert's Trucking and has a vacuum truck dispatched to remain on standby throughout the day. Approximately 40 bbl of water is removed over the four hours on location.
- NMOCD advised XTO the pit reclamation could continue once the water was removed. Again, it was communicated to XTO that the problems were under control and progress was satisfactory. XTO suggested that the mud and solids be removed to get the level low of enough that stabilization could continue without materials topping the pit liner.
- XTO contacted Riley Industrial Services and their vacuum trucks were mobilized to the location. Approximately 60 bbl of mud were removed and transported to an approved NMOCD landfarm, Industrial Ecosystems. NMOCD Certificate of Waste Status form included as Attachment 2.

#### Wednesday, February 7, 2007

- An XTO Contractor, Rosenbaum Construction, removed the piece of pit liner that was in the middle of the pit and cut and removed the liner that was on the west side of the pit at the mud level, as requested by NMOCD.
- Robert's Trucking had a water truck on location and collected approximately 60 bbl of water over a 12 hour period. The water was hauled to Basin Disposal's SWD.
- Riley Industrial Services and Industrial Ecosystems had vacuum trucks on site and hauled approximately five loads of mud to Industrial Ecosystem's NMOCD approved landfarm.

#### Thursday, February 8, 2007

- XTO temporarily suspends pit reclamation.
- Riley Industrial Services and Industrial Ecosystems had vacuum trucks on site and hauled approximately seven loads of mud to Industrial Ecosystem's NMOCD approved landfarm.

#### Friday, February 9, 2007

- Riley Industrial Services and Industrial Ecosystems had vacuum trucks on site and hauled approximately six loads of mud to Industrial Ecosystem's NMOCD approved landfarm.
- XTO contracts a third party environmental consulting firm, Blagg Engineering, to collect samples of mud for laboratory analysis. A five-point composite sample was collected and submitted to Envirotech Environmental laboratory according to standard chain-ofcustody procedures. There was enough water pooled in one area that a grab sample could be collected, which was also submitted for laboratory analysis according to standard chain-of-custody procedures.

#### Saturday, February 10, 2007

• Riley Industrial Services had vacuum trucks on site and hauled approximately three loads of mud to Industrial Ecosystem's NMOCD approved landfarm.

#### Monday, February 12, 2007

 Riley Industrial Services continues to have vacuum trucks on site and hauls additional loads of mud to Industrial Ecosystem's NMOCD approved landfarm.

#### Tuesday, February 13, 2007

- Riley Industrial Services continues to have vacuum trucks on site and hauls additional loads of mud to Industrial Ecosystem's NMOCD approved landfarm.
- NMOCD contacts XTO to relay concerns that H<sub>2</sub>S may be present at this well. XTO promptly sent a contractor from Southern Flow to the location to collect three air samples using Draeger® tubes to measure ambient levels of H<sub>2</sub>S gas. The tubes will measure H<sub>2</sub>S concentrations between zero parts per million (ppm) and 40 ppm. There were no detectable levels of H<sub>2</sub>S recorded. A gas analysis was also performed on a sample of gas collected from the Hampton D #1E well, which indicated no presence of H<sub>2</sub>S gas (Attachment 3).

#### Wednesday, February 14, 2007

- The mud is sufficiently pumped down. Photographs are included in Attachment 4 to document the mud level in relation to the top of the liner before resuming reclamation activities.
- XTO reinitiates the pit reclamation activities by stabilizing the remaining pit contents and backfilling.

#### Thursday, February 15, 2007

• XTO continues pit reclamation activities.

#### Friday, February 16, 2007

- XTO completes pit closure and reclamation activities.
- The laboratory analysis of the liquid and mud samples are received from the laboratory (Attachment 5).

We regret any disturbance that the nearby resident experienced throughout our operations. XTO makes every effort to be a good neighbor and prudent operator. We responded immediately to

issues raised and concerns that were expressed. As you are aware, we hired Riley Industrial Services to pump down the contents of the pit in order to get the pit contents below the tear in the liner. We did not haul anything from the pit because it was toxic or hazardous.

The composite sample of mud collected from the pit was submitted to the laboratory for the US Environmental Protection Agency's (US EPA) toxic characteristic waste analysis. This is a procedure called Toxic Characteristic Leachate Procedure (TCLP) for metals and organics. The laboratory reports, included as Attachment 5, indicate no detectable levels or trace levels that are well below the regulatory limit of the TCLP constituents.

The liquid sample was submitted to the laboratory for cation and anion analysis, the US EPA reactivity, corrosivity and ignitibility waste analyses, and benzene, toluene, ethyl benzene and total xylene (BTEX) analysis. This liquid sample was collected after approximately 920 bbl of water and almost 720 bbl of mud had been pumped from the pit. The liquid sample collected from the pit should be considered a concentrated liquid from drilling fluids, mud and products used while drilling through hydrocarbon bearing horizons into the Dakota formation. The following table is presented to summarize the BTEX results.

		Remediation Action Level
Parameter	Result	NMOCD - Guidelines for Remediation of
	(presented in ppm)	Leaks, Spills, and Releases
		(presented in ppm)
Benzene	0.0738	10
Toluene	0.136	Not specified
Ethyl Benzene	0.0206	Not specified
Total Xylenes	0.145	Not specified
Total BTEX	0.375	50

ppm = mg/L

The NMOCD Guidelines for Remediation of Leaks, Spills, and Releases provide standards for soil and groundwater. Depth to groundwater is estimated to be greater than 100 feet below ground surface beneath a sandstone bench; therefore the remediation action level should be that for unsaturated contaminated soil under the Guidelines. Based on the NMOCD ranking criteria for this location the total score is 10 and the remediation action levels presented indicate the trace BTEX results are well below regulatory limits. The only other parameter potentially in question is chloride, which was detected at 824 mg/L. Chloride levels, while not addressed by the Guidelines, are below levels established by NMOCD as protective for much larger landfarming operations and hence pose no basis for concern.

XTO management has discussed our pit closure procedures and considered what we can do to prevent future issues with pit reclamation. We have decided to incorporate these changes into our standard operating procedures; training on these issues will be completed with our contractors and staff within the next 30 days:

- Removal of water from the pit surface, to promote drying of the pit contents.
- If the deadline for closing the pit occurs during seasonal periods of high precipitation, an extension for closing the pit will be requested.

- On small or undersized pits, we will partially stabilize the pit by blending clean soil into the pit for solidification and stabilization prior to cutting the pit liner. This best management practice may be implemented to help manage liquids remaining within the solid matrix of the pit.
- Cut and remove the pit liner at the dirt level. Haul excess pit liner off site to an approved solid waste disposal facility.
- Reclaim the pit by backfilling and contouring the surface of the pit to prevent ponding of rain water.

Most of the issues associated with closing this pit appeared to be centered on the liquid accumulation on the surface of the pit and the tear in the liner. The proposed changes to our reclamation process should eliminate future problems. New Mexico has experienced unusually high levels of precipitation this year. The liquids accumulate on the pit and freeze over night, making it difficult to "dry" the pit contents during winter months.

We appreciate the assistance and consideration lent by you and your staff. If you have any other questions or concerns, please don't hesitate to contact us.

Sincerely,

Lisa Winn

**Environmental Coordinator** 

San Juan Division

XTO Energy Inc.

Cc: Del Craddock, Operational Vice President XTO Energy Inc.

Nina Hutton, EHS Vice President XTO Energy Inc.

Attachment 1: Robert's Trucking Water Tickets

Attachment 2: NMOCD Certificate of Waste Status

Attachment 3: Hampton D #1E Gas Analysis

Attachment 4: Photograph

Attachment 5: Laboratory Results

# **ATTACHMENT 1**

#### ROBERT'S TRUCKING

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# ROBERT'S TRUCKING Bloomfield . NM

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5 AM PM	AM PM								· .		
6 AM	AM PM	; ; !	7								
7 AM	AM PM			ļ	<u></u>						
8 AM	, AM PM	·									
9 AM	AM PM										
10 AM	AM PM			<u> </u>							
11 AM	AM PM										
12 AM PM	AM. PM			<u> </u>							
.13 AM	AM PM			ļ							-
14 AM	AM PM										
15 AM	AM PM			<u> </u>	<u> </u>	·					
NOTE! New tkt	@ midnight	TTL HRS	TTL BBLS	HRLY	CHRG	BBL RATE	TRAI	NSIT \$	PUMP CHI	RG	SHOP
Tkts must stay in	sequence	4	40	<u></u>		<u> </u>					
Date 2 -	6-07	Compar	ny Rep. Sig.						- 4	· · · ·	· · · · · · · · · · · · · · · · · · ·
		Truck	Supervisor	·							
							6.4		All and the second second	san juan-	reproduction -r

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#### **ROBERT'S TRUCKING**

Bloomfield , NM

CUSTOMER	XTO	<del>- ; - '</del>		LO	CATION //	amp	tow 1	)#/	E_
DRIVER	5050	10 (	0,100	ra5 RI	JN#	RIG#		FRAC_	
TRUCK\ PUP	2	9		OMPANY	REP. <u>5</u>	otte	13		<u></u>
LOADING PC	INT Re	17:4	·	DEL	POINT _	3000	U 50	D	
WATER SOU	IRCE	· · · · · · · · · · · · · · · · · · ·	DBL.	TRK	FR	OM	TKT#	٠.	
FRESH	CITY	KCLF	PROD.\FLO\	NBACK	TRANS	FER	- PUMP USI	<b>=</b>	
DISPOSALSI									
MILEAGE:								Empty	Loaded
HI-WAY		l l		1		ł			, , , , , , , , , , , , , , , , , , , ,
OFF ROAD		1		1		1			
START	END	HOURS	BBLS						
1 AM PM	AM PM	معدد	60	DETAILS	<del></del>		<del></del>	<del></del>	
2 AM PM	AM PM					<del> </del>			
3 AM	AM PM				· · · · · · · · · · · · · · · · · · ·				
4 AM	AM PM			P					
5 AM	AM PM								
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g AM	AM PM	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		<u></u>					
10 AM	AM PM								
11 AM PM	AM PM								
12 AM	AM PM					<u> </u>			
13 AM	AM- PM								
14 AM PM	AM PM	<del></del>							
15 AM	AM PM			ļ: ————————————————————————————————————			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
NOTE! New tkt	@ midnight	TTL HRS	TTL BBLS	HRLY CHR	G BBL RATE	TRANSIT	\$ PUMP CH	RG	SHOP
Tkts must stay in s	equence	12		<u>L</u>		<u> </u>	1		
Date 7	-07	Compar	ny Rep. Sig.				·		
		Truck	Supervisor	•		<del></del>		san kian	reproduction -r

# **ATTACHMENT 2**



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

#### **BILL RICHARDSON**

Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

#### **CERTIFICATE OF WASTE STATUS**

Generator Name and Address	2. Destination Name:
XTO Energy Inc.	J. F. J. Landfarm C/o Industrial Ecosystems Inc
2700 Farmington Ave., Bldg K, St	te 1 #81 CR 3150
Farmington, New Mexico 87401	Aztec, New Mexico 87410
3. Originating Site (name):	Location of the Waste (Street address &/or ULSTR):
Hampton D #1E	Sec. 10I—30N—11W San Juan County, New Mexico
attach list of originating sites as appropriate	
4. Source and Description of Waste	
700 W	mud and dirt from reserve pit being stabilized for closure
Approximately 220 bbis of drining	s thur and unit from reserve pre being stabilized for closure
Contact Person: Scott Baxtrom (505) 320-	7751
	Lisa Winn representative for :XTO Energy Inc. do hereby certify that, Act (RCRA) and Environmental Protection Agency's July, 1988, regulatory appropriate classification)
_XEXEMPT oilfield waste	NON-EXEMPT oilfield waste which is non-hazardous by characteristic analysis or by product identification and that nothing has been added to the exempt or non-exempt non –hazardous waste defined above.
For NON-EXEMPT waste the following documentation  MSDS Information  RCRA Hazardous Waste Analysis  Chain of Custody	ion is attached (check appropriate items):Other (description
This waste is in compliance with Regulated Levels NMAC 3.1 subpart 1403.C and D.	of Naturally Occurring Radioactive Material (NORM) pursuant to 20
Name (Original Signature): Kim Champlin	
Title: Environmental Assistant	
Phone Number: <u>505-566-7954</u>	
Date: <u>02/06/2007</u>	

# **ATTACHMENT 3**

# SOLTHERN FLOW COMPANIES

SOUTHERN FLOW 2425 WEST AZTEC BLVD. AZTEC 1505) 314-7898

2817-04 FOR:	O EMERGY INC (632	1291	SAMPLE		X10 ENERGY, INC. 85659-7393-77856	I I 1	A70514095844
-374 626 - 27 - DATE -02/14/07 - BL	PLDG K SUITE 1 PLDG K SUITE 1 FARMINGTON NM 874	7401	HAPE.		CAS SAMPLE ANALYSIS	VdS	
E: DATE 02/13/ A: TIME NA 0:	1 ( 1 1	PENP 0 TEMP	138 29 F S	CRAV 0 000 SAMPLED BY	OIFF/IN NEO SFC-J. PETREE	O WATER LBS/HMCF	TAG 012902
COMPONENT ANALYSIS	PERCENT	6PN P61A A	ALT CPM PSIA	A			
	7.99 <u>2</u> 357	1 . 340 039	1.367 040 14.616				
		1.872 269 996	37.7				
1 CS 1 SO PENTANE NGS N PENTANE CG: HEXANEO PLUO	140 142 1055 1056	0.55 0.34 0.34 1.8	1.4.0 1.4.0				
	100.000						5
				300000	COMORESTAIL ITY ELCTOR	A 14 730 PS.A	0.9972
101AL 150-P	TOTAL ETHANE + CPH ISO-PENTANE + CPM	2.036 0.204	2.678	1103d3		3 930	0 69 0
				C6+	MOLECULAR VEIGHT		95, 283
				BIUS PER	DIFFERENCE	VARIANCE	HISTORICAL AVERAGE
		**	i 1	1002 1	***************************************	1 1	
		100	025 DRY 025 UET	1023.2		2 000	
		**	1 1	8-910-	9		d
			*	,			

# **ATTACHMENT 4**

MAMPTEN

# ATTACHMENT 5

	BLAGG ENG		•	LOCATION NO:				
CLIENT: XTO	P.O. BOX 87, BL (505) 63		, NM 874	cocr No: <u>1992</u>				
FIELD REPORT	: PIT CLOSUR	E VERIFI	CATIO	PAGE No: 1 of 1				
LOCATION: NAME: HAMP	TON D WELL#	1E TYPE	RESERVE	DATE STARTED: 2/9/07				
QUAD/UNIT: I SEC: 10	TWP: SON RNG: 11W PI	M: NM CNTY: S.	T ST: NM	DATE FINISHED:				
QTR/FOOTAGE: 1470 FSL	× 820 FEL CO	NTRACTOR:		SPECIALIST: JCB				
EXCAVATION APPROX	<u>NA</u> FT. x <u>NA</u> F	T. x <u>NA</u> FT	. DEEP. ÇI	JBIC YARDAGE:				
DISPOSAL FACILITY:		REMEDIA	TION METH	OD:				
LAND USE: RANGE RESI	ENTIAL LEASE:	FEE		FORMATION: DK				
FIELD NOTES & REMAR				545E FROM WELLHEAD.				
DEPTH TO GROUNDWATER: >1	OO NEAREST WATER SOURCE	E: >1000	NEAREST S	SURFACE WATER: >200				
NMOCD RANKING SCORE: 10	NMOCD TPH CLOSURE ST	D: 1000 P	РМ					
SOIL AND EXCAVATION	ON DESCRIPTION:		OVM CALIB.					
001271110 27071771110	711 0 20 0 1111 110 11.		OVM CALIB.	GA8 =ppm				
SOIL TYPE: SAND / SILTY SAI		Y / GRAVEL /OTH						
SOIL COLOR: LITE GA COHESION (ALL OTHERS): NON C		COHESIVE / HIGHLY	COHESIVE					
CONSISTENCY (NON COHESIVE SO								
PLASTICITY (CLAYS): NON PLAST			/ HIGHLY PLAST	ic				
DENSITY (COHESIVE CLAYS & SILTS): SOFT / FIRM / STIFF / VERY STIFF / HARD  MOISTURE: DRY / SLIGHTLY MOIST / MOIST / WET / SATURATED / SUPER SATURATED								
DISCOLORATION/STAINING OBSERVED: YES / NO EXPLANATION -								
HC ODOR DETECTED: YES / NO EXPLANATION -								
SAMPLE TYPE: GRAB / COMPOSITE) # OF PTS 110 ± × 45 ± PVC LINED DRILLING RESERVE								
PIT. COLLECT WATER SAMPLE (GRAS) & 5-POINT COMPLETE MUD SAMPLE FOR LAB TESTING								
	· · · · · · · · · · · · · · · · · · ·	FIELD 418.1 CALC		OR DAS TESTING				
SCALE SAMP. TI	ME SAMP. ID LAB NO		T	DILUTION READING CALC. (ppm)				
0 FT								
N PIT PERIMET	TER			PIT PROFILE				
	COMPOSITIE D	OVM EADING						
WELL D = LIQUID	GRAS SAMPLE SAMPLE	FIELD HEADSPACE	-					
一 深	10 10	(ppm)						
	2 @ 3 @							
A	4@							
	<u>5</u> @							
- A B								
			-					
(3)	×, ′							
	LAE	SAMPLES						
	, ID	ANALYSIS TIME						
E		CATION/ANION						
SOUDS TELP 1300								
P.D. = PIT DEPRESSION; B.G. = BELOW GRADE; B = BELOW  5-POINT  5-POINT								
P.D. = PIT DEPRESSION; B.G. = BELOV T.H. = TEST HOLE; ~ = APPROX.; T.B. = TRAVEL NOTES:	SOLIDS V GRADE; B = BELOW 5 - PAINT		ā					

# CHAIN OF CUSTODY RECORD

Client / Project Name  BLACY XTD			Project Location	#1E				¥	ANALYSIS / PARAMETERS	METERS		
Sampler:			Client No. 9 4034	010	o. of ainers	17 Y	MOIN	I	(143H /153C		Remarks	
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix		3178 508	ыт <b>4</b> Э Д	Вc	721			
RESEARE RT LIQUIDS	2-6-2	7250	40073	Z/QUID	М	x	X	X		GRAS SANDLE	ample	
RESERVE PT SOLIDS	2	/300	$t\infty1$	50410					X	S-POINT CONDECTE	30	BITE
Relinquished by: (Signature)	re) -9 <i>G</i>		9	Date Time / 07 / 422	Received by: (Signature)	Signatr	ure)	d	(	<u></u>	Date 79/07	Time 1 422
Relinganished by: (Signature)	re)/				Received by: (Signature)	(Signatu	ure)					
Relinquished by: (Signature)	re)			Rec	Received by: (Signature)	(Signatu	ure)					
				ENVIROTECH INC	S		C			Sample	Sample Receipt	
											<b>&gt;</b>	N/A
				5796 U.S. Highway 64 Farmington, New Mexico 87401	ighway Mexico	64 8740	<b>.</b>			Received Intact	7	
				(505) 632-0615	2-0615	? ;	-			Cool - Ice/Blue Ice	7	
						]						



## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / XTO	Project #:	94034-010
Sample ID:	Reserve Pit Liquids	Date Reported:	02-13-07
Chain of Custody:	1992	Date Sampled:	02-09-07
Laboratory Number:	40073	Date Received:	02-09-07
Sample Matrix:	Liquid	Date Analyzed:	02-13-07
Preservative:	Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	73.8	1	0.2
Toluene	136	1	0.2
Ethylbenzene	20.6	1	0.2
p,m-Xylene	107	1	0.2
o-Xylene	37.5	1	0.1

Total BTEX 375

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
,	fluorobenzene	99.8 %
	1,4-difluorobenzene	99.8 %
	4-bromochlorobenzene	99.8 %

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using

Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments:

Hampton D #1E Grab Sample

Analyst

# ENVIROTECH LABS

#### **CATION / ANION ANALYSIS**

Client:	Blagg / XTO	Project #:	94034-010
Sample ID:	Reserve Pit Liquids	Date Reported:	02-13-07
Laboratory Number:	40073	Date Sampled:	02-09-07
Chain of Custody:	1992	Date Received:	02-09-07
Sample Matrix:	Liquid	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-12-07
Condition:	Cool & Intact		

	Analytical			
Parameter	Result	Units		
рН	11.02	s.u.		
Conductivity @ 25° C	9,910	umhos/cm		
Total Dissolved Solids @ 180C	4,620	mg/L		
Total Dissolved Solids (Calc)	2,210	mg/L		
SAR	12.9	ratio		
Total Alkalinity as CaCO3	666	mg/L		
Total Hardness as CaCO3	438	mg/L		
Bicarbonate as HCO3	566	mg/L	9.28	meq/L
Carbonate as CO3	100	mg/L	3.33	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	1.1	mg/L	0.02	meq/L
Nitrite Nitrogen	0.025	mg/L	0.00	meq/L
Chloride	824	mg/L	23.25	meq/L
Fluoride	1.23	mg/L	0.06	meq/L
Phosphate	4.7	mg/L	0.15	meq/L
Sulfate	89.5	mg/L	1.86	meq/L
Iron	< 0.001	mg/L	0.00	meq/L
Calcium	173	mg/L	8.63	meq/L
Magnesium	1.17	mg/L	0.10	meq/L
Potassium	88.5	mg/L	2.26	meq/L
Sodium	620	mg/L	26.97	meq/L
Cations			37.96	meq/L
Anions			37.95	meq/L
Cation/Anion Difference			0.03%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Hampton D #1E Grab Sample

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865



## SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:

Blagg / XTO

Project #:

94034-010

Sample ID:

Reserve Pit Liquids

Date Reported:

02-13-07

Lab ID#:

40073

Date Sampled:

02-13-07

Sample Matrix:

Liquid

Date Received:

02-09-07

Preservative:

Cool

Date Analyzed:

02-12-07

Condition:

Cool and Intact

Chain of Custody:

1992

**Parameter** 

Result

**IGNITABILITY:** 

Negative

CORROSIVITY:

Negative

pH = 11.1

REACTIVITY:

Negative

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

**IGNITABILITY:** 

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.

(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.

(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation

of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

Hampton D #1E

**Grab Sample** 

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Review



## SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:

Blagg / XTO

Project #:

94034-010

Sample ID:

Reserve Pit Solids

Date Reported:

02-13-07

Lab ID#:

40074

Date Sampled:

02-13-07

Sample Matrix:

Solid

Date Received:

02-09-07

Preservative:

Cool

Date Analyzed:

02-09-07

Condition:

Cool and Intact

Chain of Custody:

1992

**Parameter** 

Result

**IGNITABILITY:** 

Negative

**CORROSIVITY:** 

Negative

pH = 8.64

**REACTIVITY:** 

Negative

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

**IGNITABILITY**:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.

(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.

(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

Hampton D #1E

5 - Point Composite

Analyst

Review



# EPA METHOD 8021 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Blagg / XTO	Project #:	94034-010
Sample ID:	Reserve Pit Solids	Date Reported:	02-16-07
Laboratory Number:	40074	Date Sampled:	02-09-07
Chain of Custody:	1992	Date Received:	02-09-07
Sample Matrix:	TCLP Extract	Date Extracted:	02-12-07
Preservative:	Cool	Date Analyzed:	02-16-07
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0026	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	99.8%
	1,4-difluorobenzene	99.9%
:	4-bromochlorobenzene	99.8%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using

PID and/or ECD Dectectors, SW-846, USEPA, December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

Hampton D #1E 5 - Point Composite

Analyst Cleur

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## EPA METHOD 8041 PHENOLS

Client:	Blagg / XTO	Project #:	94034-010
Sample ID:	Reserve Pit Solids	Date Reported:	02-14-07
Laboratory Number:	40074	Date Sampled:	02+09-07
Chain of Custody:	1992	Date Received:	02-09-07
Sample Matrix:	TCLP Extract	Date Extracted:	02-12-07
Preservative:	Cool	Date Analyzed:	02-14-07
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND .	0.020	200
p,m-Cresol	. ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	99%
	2,4,6-Tribromophenol	100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

Hampton D #1E

5 - Point Composite

Analyst

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# EPA METHOD 8091 Nitroaromatics and Cyclic Ketones

Client:	Blagg / XTO	Project #:	94034-010
Sample ID:	Reserve Pit Solids	Date Reported:	02-14-07
Laboratory Number:	40074	Date Sampled:	02-09-07
Chain of Custody:	1992	Date Received:	02-09-07
Sample Matrix:	TCLP Extract	Date Extracted:	02-12-07
Preservative:	Cool	Date Analyzed:	02-14-07
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery

#### 2-fluorobiphenyl

99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992. Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8091, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

Hampton D #1E

5 - Point Composite

Anaivst

Review



# EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Blagg / XTO	Project #:	94034-010
Sample ID:	Reserve Pit Solids	Date Reported:	02-13-07
Laboratory Number:	40074	Date Sampled:	02-09-07
Chain of Custody:	1992	Date Received:	02-09-07
Sample Matrix:	TCLP Extract	Date Analyzed:	02-13-07
Preservative:	Cool	Date Extracted:	02-12-07
Condition:	Cool & Intact	Analysis Needed:	TCLP metals
:		Det.	Regulatory
1	Concentration	Limit	Level
Parameter	(mg/L)	(mg/L)	(mg/L)
Arsenic	0.005	0.001	5.0
Barium	0.481	0.001	100
Cadmium	0.003	0.001	1.0
Chromium	0.007	0.001	5.0
Lead	0.262	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.309	0.001	1.0
			•

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

Hampton D #1E 5 - Point Composite

Analyst

Review