

PO Box 301 | Lovington, NM 88260 | Phone 575.396.2378

February 21, 2018

Attn. Mike Bratcher NMOCD, District 2 811 South First Street Artesia, NM 88210

> RE: Corrective Action Plan XTO Energy Big Eddy Unit #74 UL/B Sec25, T21S R28E 32.456770, -104.037534 NMOCD Reference # 2RP – 2664, 2RP - 3213

Mr. Bratcher:

XTO Energy (XTO) has retained Basin Environmental Service Technologies (Basin) to address potential environmental concerns at the above-referenced site.

Background and Previous Work

The site is located approximately eleven and one-half (11.5) miles northeast of Carlsbad, New Mexico at Unit Letter B of Section 25 in Township 21 South of Range 28 East. (See Figure 1) This site is located in an area where groundwater can be anticipated to be found at a depth of over two-hundred feet (200') below ground surface (bgs) (See Figure 2).

On December 4th, 2014, XTO discovered a release of approximately one barrel (bbl) of crude oil and four (4) bbls of produced water when a float valve failed causing fluid to escape the flare stack. The valve was repaired. An estimated one bbl of total fluid was recovered. An estimated five hundred square feet (500 ft²) of pasture was misted and approximately six-hundred forty-eight square feet (648 ft²) of earthen containment around the flare stack was impacted. Micro-Blaze® was applied to the pasture area. The New Mexico Oil Conservation Division (NMOCD) was notified of the release on December 16th, 2014. An initial Release Notification and Corrective Action form (C-141) was submitted to NMOCD on December 16th, 2014, for approval.

On August 13th, 2015, XTO discovered a release of approximately twelve (12) barrels (bbls) of crude oil when the heater began leaking. The heater was removed from production. An estimated ten (10) bbls of crude were recovered. Approximately five-hundred forty-five square feet (545 ft²) of the gypsum (caliche) pad area were impacted. The New Mexico Oil Conservation Division (NMOCD) was notified of the release on August 20th, 2015. An initial Release Notification and Corrective Action form (C-141) was submitted to NMOCD on August 20th, 2015, for approval.

Basin personnel were on site beginning January 4th, 2017, to begin delineation activities and reapply Micro-Blaze® to the flare release area (2RP-2664). Two (2) soil sample points were established. The soil sample points, (SP 1, SP 2) were advanced to one-foot bgs. Discrete soil samples were retrieved at the surface and at one foot. The soil samples were delivered to an NMOCD approved laboratory for concentration analysis of Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX), Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Oil Range Organics (ORO) [Total Petroleum Hydrocarbons (TPH)] and chloride concentrations. (See Soil Chemistry Table).

In addition, two (2) soil sample points were established for the heater release (2RP-3213). The soil sample points, (SP 1, SP 2) were advanced in one-foot increments to 2' bgs. Discrete soil samples were collected at the surface and at 2'to be delivered to an NMOCD approved laboratory for concentration analysis of Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX), Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Oil Range Organics (ORO) [Total Petroleum Hydrocarbons (TPH)] and chloride concentrations.

Corrective Action Plan

Analytical results indicate the concentrations of TPH, BTEX, and chlorides were below the recommended remediation action levels (RRALs) for the flare release area (2RP-2664).

The impacted area for the heater release will be excavated to 2' bgs outside of the fence on the pad. The contaminated area within the fence line will be excavated to approximately six inches (6") or the depth practical. The contaminated soils will be removed and disposed of at an NMOCD approved facility. Floor soil samples will be retrieved at the completion of remediation to ensure the impacted soils have been removed from the release area outside the fence. Floor samples will be retrieved inside the fence for clarity of remaining contamination (if any) to be remediated at the time of abandonment. The excavated area will then be backfilled with clean, imported, non-impacted soils and contoured to the surrounding area.

The supporting documentation for this Corrective Action Plan is attached.

Basin appreciates the opportunity to work with you on this project. Please contact me if you have any questions or wish to discuss the site.

Sincerely,

M

Robbie Runnels Project Manager

Basin Environmental Service Technologies

(575) 396-2378

Attachments:

Figure 1 – Site Location Map

Figure 2 – Depth to Groundwater Map

Figure 3 - Area Sampling and Proposed Excavation Map

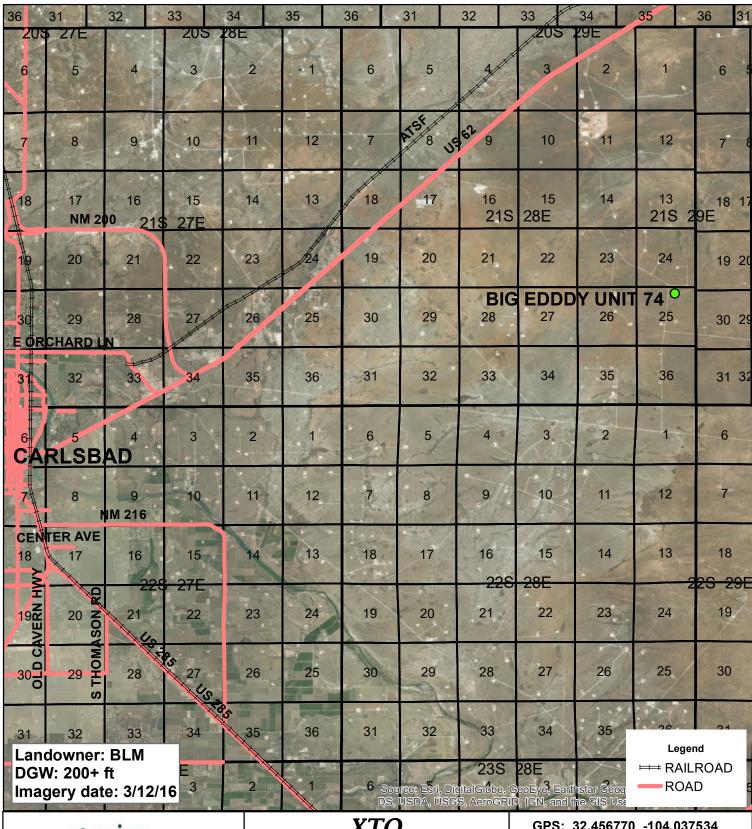
Figure 4 - Soil Chemistry Table

Appendix A – Initial C-141

Appendix B - Photo Documentation

Appendix C - Laboratory Analysis

Geographic Location

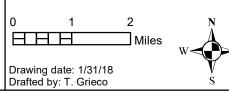




XTO **BIG EDDY** UNIT 74

UL B SECTION 25 T-21-S R-28-E **EDDY COUNTY, NM** GPS: 32.456770 -104.037534

Figure 1



Depth to Groundwater

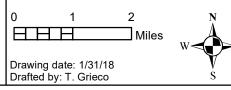
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1 6	5	4	3 %	2	1 2	6	5	4	3	2	1	6
36 31	32	33	34	35	36	31	32	33	34	35	36	31
5 91.0 2 5 20 30	29	28	27	F26TS	254	30	29	28 28	A RIDGE 27	26	25	30 200
24 19	20	21	22	23	24	19 BIG E	20 DDY L	21 NIT 74	22	23	24	19
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12 47	8	0	UAHA 10 RID	GE 11	12	⁷ 205	3435 ft 8	9	10	11	12	7
Owenth 6	5 Magne Fentag	4	3	US 62	1	6	5 3524 ft	4	225 • 3	2	1	6
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XTO BIG EDDY UNIT 74

UL B SECTION 25 T-21-S R-28-E EDDY COUNTY, NM GPS: 32.456770 -104.037534

Figure 2



Initial Sampling





UNIT 74

UL B SECTION 25 T-21-S R-28-E **EDDY COUNTY, NM**

Figure 3

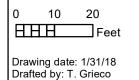




FIGURE 4

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL SOIL CHEMISTRY TABLE

XTO Energy BIG EDDY UNIT #74

EDDY COUNTY, NEW MEXICO

Unit Letter B, Section 25, Township 21 South, Range 28 East NMOCD# - 2RP - 2664

					METHOD: E	PA SW 846	6-8021B, 503	0	MET	HOD: 80	15M	TD	4500 CI-B
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₀ (mg/Kg)	DRO C ₁₀ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)	TPH C ₆ -C ₃₅ (mg/Kg)	CHLORIDE (mg/Kg)
SP 1 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	< 0.300	<10.0	532.0	378.0	910.0	144
SP 1 @ 1'	1'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	66.8	49.8	116.6	64.0
SP 2 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<16.0
SP 2 @ 1'	1'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<16.0
				-	NMOCD #	2RP- 3213							
SP 1 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	34.2	10.3	44.5	432
SP 1 @ 2'	2'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	231.0	92.9	323.9	128
SP 2 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	< 0.300	<10.0	5470.0	1160.0	6630.0	48.0
SP 2 @ 2'	2'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	13.1	10.7	23.8	<16.0
NMOCD Recommended Rem	nediation Ac	tion Level		10				50				5000	600

NA = Not analyzed.

NM OIL CONSERVATION

Form C-141

ARTESIA DISTRICT

DEU 1 5 2014 Revised August 8, 2011

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

Oil Conservation Division 1220 South St. Francis Dr.

State of New Mexico

Energy Minerals and Natural Resources

Submit 1 Copy to appropriate District Office in RECEIVED NMAC. Santa Fe, NM 87505

			Rel	ease Notific	atio	n and Co	orrective A	ctio	n			•
NAB14	13504	2878				OPERA?	TOR			al Report		Final Repor
Name of Co	ompany: B	OPCO, L.P.		200737	7	Contact: To						
				bad, N.M. 88220			No. 575-887 - 73					
Facility Na	me: Big Ed	ldy Unit #74	Tank Ba	attery		Facility Typ	e: Exploration	and Pro	oduction			
Surface Ow	ner: Feder	al		Mineral O	wner:	Federal			API No	o. 30-015-2	2839	
				LOCA	TIO	N OF REI	LEASE					
Unit Letter B	Section 25	Township 21S	Range 28E	Feet from the	North	/South Line	Feet from the	East/	West Line	County Eddy		
	-1-,	·	1	Latitude N 32.4	15685	5_Longitud	e W 103.037608	8	· J			
				NAT	URE	OF RELI	EASE					ì
Type of Rele	ase: Crude	Oil and produ	ced water			Volume of	Release: 1 Bbl cr		Volume F	Recovered: 1	bbl to	tal fluid
Source of Re	lease: Facili	ity flare stack					bls produced water lour of Occurrence		Date and	Hour of Dis	coverv	
						12/4/14 tim	ne unknown			t approxima		
Was Immedia	ate Notice C		Yes [No 🛛 Not Rec	quired	If YES, To	Whom?					
By Whom?						Date and H	lour					
Was a Water	course Reac	hed?	Yes 🗵	1 No		If YES, Vo	lume Impacting t	he Wat	ercourse.			
If a Watercou	unaa uuaa Imu				.	<u> </u>						
II a Walercou	nse was iinj	pacieu, Descri	be runy.			*						
i												
Describe Cau						•						
				coming from the vertical float valve was rep			float valve failed	on the	scrubber ca	using fluid t	o escap	pe from the
nare stack. 11	10 0,0304 14	ave was open	ou una me	mout varve was rep	panea.						•	
Describe Area	Affected a	nd Cleanup A	ction Tak	en *								
The spill mist	ed approxin	nately 500 sq.	ft. of pasti	ure area and puddle	ed up i	n an area of ap	oproximately 648	sq.ft. o	f earthen co	ntainment a	round 1	the flare
stack. The pas	ture area w	as washed do	wn with m	nicro-blaze. All of t	he free	standing flui	d was recovered v	with a v	acuum truc	k.		
ine spili area	will be clea	ined up in acc	ordance to	the NMOCD and	BLM	remediation g	uidelines.					
				is true and comple								
regulations all	operators a	re required to	report an	d/or file certain rele e of a C-141 report	ease no	otifications and	d perform correct rked as "Final Re	ive acti	ons for rele	ases which i	may en	danger
should their of	perations ha	ve failed to a	dequately	investigate and ren	nediate	contaminatio	n that pose a thre	at to gr	ound water,	surface wat	ter, hun	man health
or the environ				ance of a C-141 re	port de	es not relieve	the operator of re	esponsi	bility for co	mpliance wi	ith any	other
ieuciai, state,	or local law	s and/or regul	ations.				OIL CONS	FRV	ATION	DIVISIO	N	
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Signature:	(Our	×)au	uv		╣.		Giornal B. C.	a L.Z	/ /			
Printed Name:	Tony Savo	ie ·			P	Approved by E	En Sisnad Bay Se	ecransv	DRAM	alc De	.	
Title: Waste M	lanagement	and Remedia	tion Speci	ialist	A	Approval Date	12/14/14	E	Expiration D	ate:	4	
E-mail Addres						Conditions of a		•	`,			
				1	્રRe	mediation	per O.C.D. Re			Attached nes	Ц	
Date: 12/15/14 Attach Additie		s If Necessa		hone: 432-556-873	<u>0</u> 50	IBMIT REN	TEDIATION PL					
itanii itaaiii	onar oncet	5 11 140003a	• 3		LA	TER THAN	:	0	<u></u>	1	KP	-2664

District I 1625 N. French Dr., Hobbs, NM 88240 District II

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**

Form C-141 Revised August 8, 2011

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

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

				ease Notific	cation	and Co	rrective A	ction				
		23104	2			OPERA	TOR		🛛 Initia	al Report	Final Repo	ort
		OPCO, L.P.		100137		Contact: An						_
				bad, N.M. 8822			lo. 575-887-732					
Facility Nai	ne: Big E	ddy Unit #74	I I ank B	attery		Facility Typ	e: Exploration a	ind Prod	uction			
Surface Ow	ner: Fede	ral		Mineral (Owner:	Federal		I	API No	. 30-015-	22839	
						OF REI	LEASE					
Unit Letter B	Section 25	Township 21S	Range 28E	Feet from the 660	North/ North	South Line	Feet from the 1980	East/We East	est Line	County Eddy		
		<u> </u>	La	titude32.456	689°	Longitude	104.037531	D				
				NAT	TURE	OF RELI						
Type of Rele		de Oil				· · · · · · · · · · · · · · · · · · ·	Release 12 bbls			ecovered		_
Source of Re	lease He	ater				1	our of Occurrence time unknown		Date and 1 8/13/2015	Hour of Di	scovery	
Was Immedia	ate Notice (Given?				If YES, To			3/13/2013	Ath		-
			Yes [] No 🛛 Not Re	equired	N/A				MIN	OIL COM	
By Whom?						Date and H					ARTESIA	A
Was a Water	course Read		Yes 🗵] No		If YES, Vo	lume Impacting th	he Watero	course.		OIL CONSERVA ARTESIA DISTRICT AUG 17 2015	וסיני
If a Watercou	rse was Im	pacted, Descri	be Fully.	•							250	
,				•						•	RECEIVED	
Describe Cau Heater began				n Taken.* e heater was drain	ned, clear	ned, and LOT	O – will not be in	ı use unti	l it is rem	oved from	location	
Describe Area The leak affect				en.* of caliche pad. A	\ vacuum	truck recove	red standing fluid	is.				
regulations all public health should their o	l operators or the envir perations himent. In ac	are required to onment. The type failed to a dittion, NMO	report an acceptance dequately CD accept	is true and compled/or file certain re- te of a C-141 repo- investigate and re- tance of a C-141 re-	elease no ort by the emediate	tifications an NMOCD ma contamination	d perform correct rked as "Final Re in that pose a thre the operator of re	ive action port" doe at to grou esponsibil	ns for rele is not relie and water, lity for co	ases which eve the oper surface wa mpliance w	may endanger rator of liability iter, human health rith any other	
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Signature:	17.mi	XX	ull	λ					1/			
Printed Name	Amy Ruth)`			^	ipproved by i	Environmental Sp	ecialist:	Mu	fu		
Title: Assistan	t-Remediat	ion Foreman			A	pproval Date	8 20 15	Ex	piration D	Pate: N	A	4
E-mail Addres		@basspet.com				onditions of mediation		Rules &	Guide	inanached		
Date: 8/17/2		ICNI		432-661-0571	51	IBMIT RE	MEDIATION	PROPO	SAL 14	Ľ		
Attach Additi	onai Sheet	is II Necessa	ry		LA	TER THA	N: <u>611211</u>	19			2RP-3213	3

XTO Energy – Big Eddy Unit #74 Unit Letter B of Section 25, T21S, R28E



Flare release area, facing east



Release area, facing northeast



Flare release area, facing east



Release area, facing southeast



January 11, 2018

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BIG EDDY

Enclosed are the results of analyses for samples received by the laboratory on 01/05/18 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Celey D. Keine

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service **ROBBIE RUNNELS** P.O. Box 301 Lovington NM, 88260 Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018 Reported: 01/11/2018 Sampling Type: Soil

Project Name: **BIG EDDY** Sampling Condition: Cool & Intact Project Number: UNIT #74 FLARE Sample Received By: Tamara Oldaker

Project Location: XTO ENERGY - EDDY CO NM

Sample ID: SP 1 @ SURFACE (H800043-01)

BTEX 8021B	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 72-148	}						
Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	532	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	378	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	87.4	% 41-142							
Surrogate: 1-Chlorooctadecane	108 9	% 37.6-14	7						

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after competent of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Basin Environmental Service **ROBBIE RUNNELS** P.O. Box 301 Lovington NM, 88260 Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018 Reported: 01/11/2018 Sampling Type: Soil

Project Name: **BIG EDDY** Sampling Condition: Cool & Intact Project Number: Sample Received By: UNIT #74 FLARE Tamara Oldaker

XTO ENERGY - EDDY CO NM Project Location:

Sample ID: SP 1 @ 1' (H800043-02)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	102	% 72-148	3						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	66.8	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	49.8	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	97.3	% 41-142	?						
Comment of Chlores at also me	101	0/ 27 / 14	17						

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Basin Environmental Service ROBBIE RUNNELS P.O. Box 301 Lovington NM, 88260 Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018

Reported: 01/11/2018 Sampling Type: Soil

Project Name: BIG EDDY Sampling Condition: Cool & Intact
Project Number: UNIT #74 FLARE Sample Received By: Tamara Oldaker

Project Location: XTO ENERGY - EDDY CO NM

Sample ID: SP 2 @ SURFACE (H800043-03)

BTEX 8021B	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	103	% 72-148	}						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	<10.0	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	96.9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	98.6	% 37.6-14	7						

Cardinal Laboratories *=Accredited Analyte

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Basin Environmental Service ROBBIE RUNNELS P.O. Box 301 Lovington NM, 88260 Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018

Reported: 01/11/2018 Sampling Type: Soil

Project Name: BIG EDDY Sampling Condition: Cool & Intact
Project Number: UNIT #74 FLARE Sample Received By: Tamara Oldaker

Analyzed By: MC

Project Location: XTO ENERGY - EDDY CO NM

ma/ka

Sample ID: SP 2 @ 1' (H800043-04)

RTFY 8021R

B1EX 8021B	mg	кд	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	102	% 72-148	,						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg,	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	<10.0	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	90.8	% 41-142							
Surrogate: 1-Chlorooctadecane	90.0	% 37.6-14	7						

Surrogate: 1-Chlorooctadecane 90.0 % 37.6-14/

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Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

ecovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:	: Basin Environmental Service Technologies, LLC	ologie	<u>ک</u> ر	TC		9	B/LL 10		٦			AN	SISA IVN		2	RECHEST				
Project Manager:					P.C	P.O. #:			T		\perp	-			1	- 5	+	+		
Address: P.O	P.O. Box 301				င္ပ	Company:	XTO Energy	nerav												
City: Lovington	n State: NM	Zip:		88260	Attn:		Amy Ruth	-			_					,				
Phone #: (575	(575)396-2378 Fax # : (575)396-1429	96-1	429		Ado	Address:					_									
Project #:	Project Owner:	ה	×	XTO Energy	City:	Y.)					_				
Project Name:	Big Eddy Unit #74 Flare				State:	Z	Zip:	88260	е	5 M)	1B)									
Project Location:	: Eddy				Pho	#			orid	3015	(802							_		
Sampler Name:	Jimmy Hand				Fax #:	#:			Chl	Н (EX						_			
FOR LAB USE ONLY		P.		MATRIX		PRESERV.	SAMPLING	G	(TP	вт						,			
Lab I.D. <i>}} 8000 43</i>	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL SLUDGE	OTHER:	ACID/BASE: ICE / COOL OTHER :	DATE	TIME												*
	SP 1 @ Surface	9		×	_	×	1/4/18	9:40	×	×	×	+	1	\neg	7	+	+	+	4	
	SP 1 @ 1'	9	_	×		×	1/4/18	9:50	×	×	×	+			\forall	\dashv	+	+	_	
	SP 2 @ Surface	9	_	×		×	1/4/18	10:00	×	×	×				1	\dashv	+	+	_	
	SP 2 @ 1'	9		×		×	1/4/18	10:10	×	×	×	+			+	+	+	+	+	
			-																	
analyses. All claims including the service. In no event shall Card affiliates or successors arising.	aralyses. All claims including those of regigence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal whitin 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliations or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.	aim aris ed waiv out limita	ed unk ation, b ardless	rether based in contract or tort, shees made in writing and received to business interruptions, loss of use, s of whether such claim is based use.	all be I y Card or loss pon ar	limited to the amous dinal within 30 days s of profits incurred my of the above stal	nt paid by the clien after completion of by client, its subsi- ted reasons or oth	t for the of the applicable idiaries, erwise.												
veilinduisiled by:	Jimmy Hand Time: 600		cel	Received By: Robbie Runnels	R	innels		Phone Result: Fax Result: REMARKS:	Ħ	□ Yes	O No	Add'l	Add'l Phone #: Add'l Fax #:							
Relinquished By:	Date: /-5-/8 Time: /41/5		(\ <u>8</u>	Received By: Muara c	1	The state of the s	A.	Please email		sults to	results to pm@basinenv.com. amv_Ruth@xtoenergv.com	asinenv	.com. a	mv F	rith	© xtoe	nerav	COM		
Delivered By: (Circle One)	2010	6	ì,	Sample Condition Cool Intact		CHECKED BY: (Initials)		\ 000		Solio w	@		icolli, a	, .	á	@vioc	dieigy			
Sall Dier - Les	11	11			250	,	-													

Revision 1.0 FORM-006 Sampler - UPS - Bus - Other:

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



January 11, 2018

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BIG EDDY

Enclosed are the results of analyses for samples received by the laboratory on 01/05/18 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Celey D. Keine

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service **ROBBIE RUNNELS** P.O. Box 301 Lovington NM, 88260

Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018 Reported: 01/11/2018 Sampling Type: Soil

Project Name: **BIG EDDY** Sampling Condition: Cool & Intact Project Number: UNIT #74 BATTERY Sample Received By: Tamara Oldaker

Project Location: XTO ENERGY - EDDY CO NM

Sample ID: SP 1 @ SURFACE (H800044-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	% 72-148	}						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	34.2	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	10.3	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	103 %	% 41-142	?						
Surrogate: 1-Chlorooctadecane	104 %	% 37.6-14	7						

Surrogate: 1-Chlorooctadecane

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Basin Environmental Service **ROBBIE RUNNELS** P.O. Box 301 Lovington NM, 88260

Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018

Reported: 01/11/2018 Sampling Type: Soil

Project Name: **BIG EDDY** Sampling Condition: Cool & Intact Sample Received By: Project Number: UNIT #74 BATTERY Tamara Oldaker

XTO ENERGY - EDDY CO NM Project Location:

Sample ID: SP 1 @ 2' (H800044-02)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	103	% 72-148	}						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	231	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	92.9	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	80.2	% 41-142	?						
	00.3	0/ 27/1							

Surrogate: 1-Chlorooctadecane 89.2 % 37.6-147

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Basin Environmental Service ROBBIE RUNNELS P.O. Box 301 Lovington NM, 88260

Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018

Reported: 01/11/2018 Sampling Type: Soil

Project Name: BIG EDDY Sampling Condition: Cool & Intact
Project Number: UNIT #74 BATTERY Sample Received By: Tamara Oldaker

Project Location: XTO ENERGY - EDDY CO NM

Sample ID: SP 2 @ SURFACE (H800044-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 %	% 72-148	}						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	5470	50.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	1160	50.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	78.65	% 41-142	,						

Surrogate: 1-Chlorooctadecane 182 % 37.6-147

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Basin Environmental Service ROBBIE RUNNELS P.O. Box 301 Lovington NM, 88260

Fax To: (575) 396-1429

Received: 01/05/2018 Sampling Date: 01/04/2018
Reported: 01/11/2018 Sampling Type: Soil

Project Name: BIG EDDY Sampling Condition: Cool & Intact
Project Number: UNIT #74 BATTERY Sample Received By: Tamara Oldaker

Project Location: XTO ENERGY - EDDY CO NM

Sample ID: SP 2 @ 2' (H800044-04)

BTEX 8021B	mg/	'kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTEX	<0.300	0.300	01/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	% 72-148							
Chloride, SM4500CI-B	mg/	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/10/2018	ND	432	108	400	0.00	
TPH 8015M	mg/	'kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	13.1	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	10.7	10.0	01/10/2018	ND					
Surrogate: 1-Chlorooctane	105 9	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	106 9	% 37.6-14	7						

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Notes and Definitions

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or

matrix interference's.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

ecovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 80240 (575) 393-2326 FAX (575) 393-2476	(575) 393-2476				ANALYSIS REQUEST
Company Name: Basin Environmental S	Basin Environmental Service Technologies, LLC	BILLIO	T	+	
Dobbie Bunnels		P.O. #:			
Project Manager: Kopple Kullilels				_	
Address: P.O. Box 301		Company: XTO Energy			
	State: NM Zip: 88260	Attn: Amy Ruth			
396-2378	Fax #: (575)396-1429	Address:			
	Project Owner: XTO Energy	City:		_	
		State: NM Zin: 88260	е	_	
Project Name: Big Eddy Unit #/4 Ballery			rid	80:	
		2			

	(5/5) 393-2320 FAA (3/3) 333-27	3			١	l	١	١	١							>	ANAI YSIS	3	P	2	REQUES						
Company Name:	Basin Environmental Service Technologies, LLC	ogies	, LE							E	BILL 10			4	1	١,	1	7	1	1	_		\dashv	\dashv		\dashv	
Project Manager:	Robbie Runnels						P.O. #:	#															_				
Address: P.O.	P.O. Box 301						Company:	npa	Ŋ.		XTO Energy	ergy															
City: Lovington	State: NM	Zip		Zip : 88260			Attn:	·			Amy Ruth																
e #:	(575)396-2378 Fax #: (575)396-1429	96-14	29				Address:	res	S																		
Project #:	Project Owner:		×	XTO Energy			City:							M)	1B)												-
ame:	Big Eddy Unit #74 Battery						State:	e	Z		Zip: 88	88260	ride	015	3021												
Project Location:	Eddy						Phone #:	ne	#				hlo	8) H	X (8												
Sampler Name: Jimmy Hand	Jimmy Hand	1	1				Fax #:	#	i i	2	SAMDI ING	7	С	TPI	ВТЕ												
EOB I AB LISE ON Y			_	M	MATRIX			PKEUEKY.	S C	3	OMMIT LIN	•			E					_			_				_
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER WASTEWATER SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	<	4	4			-									
_	001000000000000000000000000000000000000	a (V					×		1/4/18	9:00	×	×	×			+		+		T	+		T	+	
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	SP 3 @ Surface	0 0	_		×				×		1/4/18	9:20	×	×	×			+	T	+			+			+	
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7	SF 2 @ 2		_													,		+		+			+				
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A Yes A Yes
No No Sample Condition Robbie Runnels CHECKED BY: (Initials) Fax Result: REMARKS: Please email results to pm@basinenv.com, amy_Ruth@xtoenergy.com Phone Result:

Yes

ON O

Add'l Phone #: Add'l Fax #:

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