

Electronic Correspondence

July 10, 2018

Ms. Olivia Yu Environmental Specialist, District I Oil Conservation Division, EMNRD Olivia.yu@state.nm.us

Mr. Ryan Mann Remediation Specialist Field Operation Division New Mexico State Land Office rmann@slo.state.nm.us **APPROVED** By Olivia Yu at 8:52 am, Jul 27, 2018

NMOCD approves of the delineation completed for 1RP-5091 and proposed additional delineation/remediation plan. Confirmation sidewalls no greater than 50 ft. apart.

Re: Corrective Action Plan 1RP-5091 Former DCP Pump Station Historical Release Legal: Unit F, Sec 4, T22S R36E, Lea County, NM Latitude/Longitude: 32.422898/ -103.274162 Etech Proj. Number: 876-9521-000 Depth to Groundwater: 200-275 feet - Chevron/Texaco Lea County Depth to Groundwater Map - OSE NM Water Rights Reporting System

Release Type: Produced Water Contaminants of Concern (COCs) TPH Benzene BTEX Chlorides

Threshold Levels 5000 mg/kg 10 mg/kg 50 mg/kg 600 mg/kg

Dear Olivia and Ryan:

Etech Environmental & Safety Solutions, Inc. (Etech) is submitting the following corrective action plan on the aforementioned site for your review and approval.

## Background

On February 21, 2018, a Phase I Environmental Site Assessment (ESA) inspection was conducted by a third party at the 8.33 acre former DCP pump station site. Of particular interest was a possibly impacted area which had been identified from historical aerial photos and is located approximately one hundred and forty (140) feet south of the former pump station's concrete pad. The possibly impacted area measures approximately seventy (70) feet in length and fifty (50) feet in width and covers an area of approximately three thousand five hundred (3,500) square feet.

Concurrent with the Phase I ESA inspection, three (3) soil samples were collected by hand auger from two (2) locations of the possibly impacted area (See Annotated Aerial Imagery). Hand auger refusal occurred at a depths of three (3) and three and a half (3.5) feet below ground surface (bgs) where a hard

layer of competent caliche was encountered. The soil samples were submitted to Cardinal Laboratories (Cardinal) and analyzed for TPH, benzene, BTEX, chloride, and pH. The laboratory results determined that the TPH levels ranged from 6,770 mg/kg to 39,573 mg/kg. Benzene levels ranged from no analytical detection to 0.318 mg/kg. BTEX levels ranged from no analytical detection to 14.2 mg/kg. Chloride levels ranged from no analytical detection to 32 mg/kg. (See Annotated Aerial Imagery and Table 1 Summary of Delineation Sampling Analytical Results below).

On July 2, 2018, Etech conducted additional delineation sampling at the site. Basin Environmental excavated two test trenches labeled Test Trench 1 and Test Trench 2 utilizing an excavator. Three (3) soil samples were collected from the Test Trench 1 location and four (4) soil samples were collected from the Test Trench 2 location. The soil samples were submitted to Permian Basin Environmental Laboratory (PBELAB) and analyzed for chloride, TPH, benzene, and BTEX. The laboratory results determined that the chloride levels ranged from no analytical detection to 59.1 mg/kg and were below the regulatory guideline of 600 mg/kg. TPH levels ranged from no analytical detection to 34,400 mg/kg. BTEX levels ranged from no analytical detection to 0.152 mg/kg. Benzene levels indicated no analytical detection for all soil samples. (See Annotated Aerial Imagery and Table 1 Summary of Delineation Sampling Analytical Results below).

	Table 1           Summary of Delineation Sampling Analytical Results													
Sample ID	Depth	Date	C6-C12	>C12- C28	>C28- C35	Total TPH (mg/kg)	Benzene (mg/kg)	BTEX (mg/kg)	Chlorides (mg/kg)					
S-1*	6"	2/21/18	ND	14,200	6,730	20,930	ND	ND	ND					
S-1*	3.5′	2/21/18	ND	5,240	1,530	6,770	ND	ND	32					
S-2*	3'	2/21/18	243	29,400	9,930	39,573	0.318	14.2	32					
Test Trench 1	4.5'	7/02/18	ND	16,400	3,790	20,100	ND	ND	NA					
Test Trench 1	5.5'	7/02/18	1,140	27,400	5,870	34,400	ND	0.152	11.9					
Test Trench 1	6.5'	7/02/18	ND	85.4	42.4	128	ND	ND	NA					
Test Trench 2**	0-6″	7/02/18	NA	NA	NA	NA	NA	NA	ND					
Test Trench 2	4.0'	7/02/18	ND	118	ND	118	ND	ND	NA					
Test Trench 2	5.5'	7/02/18	ND	1,560	390	1,950	ND	ND	59.1					
Test Trench 2	6.5′	7/02/18	ND	ND	ND	ND	ND	ND	NA					

\*denotes collected by third party

ND denotes no analytical detection

**Bold** denotes analytical results above regulatory guidelines

NA denotes not analyzed \*\*denotes collected by hand auger

# Depth to Groundwater Data

Depth to groundwater data was obtained from the Chevron/Texaco Lea County Depth to Groundwater Map and the New Mexico Office of the State Engineer (OSE) New Mexico Water Rights Reporting System.

The Former DCP Pump Station location lies between the 250 foot and 275 foot ground water contour lines as depicted on the Chevron/Texaco Lea County Depth to Groundwater Map. This correlates well with the water depths displayed in the OSE Water Column/ Average Depth to Water Table.

Attachment D contains an image of the pertinent area of the Chevron/ Texaco Lea County Depth to Groundwater Map with the location of the Former DCP Pump Station denoted, and the OSE Water Column/ Average Depth to Water Table.

# Site Ranking Score and Recommended Remediation Action Levels

The New Mexico Oil Conservation Division publication entitled "Guidelines for Remediation of Leaks, Spills and Releases" (August 13, 1993) provides ranking criteria for the setting of recommended remediation action levels for release sites in New Mexico. Per these criteria the following ranking was calculated:

# Criteria Value Ranking

Depth to Groundwater greater than 100 feet = 0

Wellhead Protection Area Greater than 1,000 feet from a water source and greater than 200 feet from a private domestic water source = 0

Distance to Surface Water Body Greater than 1,000 feet = 0

Total Ranking = 0

The recommended remediation action levels for a site that displays a total ranking of zero (0) to nine (9) are:

TPH – 5000 mg/kg

Benzene – 10 mg/kg

BTEX – 50 mg/kg

Chloride – 600 mg/kg

# Scope of Work

The corrective action for this site will be excavation and disposal of impacted soils to a depth of four (4) feet bgs and the installation of a twenty (20) mil plastic liner. TPH, benzene, and BTEX are the only identified constituents of concern since chloride concentrations were no analytical detection to 59.1 mg/kg as indicated by delineation sampling. Therefore, only TPH, benzene, and BTEX are being analyzed during remediation, and the corrective action goal for this project is five thousand (5,000) mg/kg for TPH, ten (10) mg/kg for benzene, and fifty (50) mg/kg for BTEX. The particulars for the remediation to be conducted at the site will involve the actions summarized as follows:

- 1. The site will be excavated to a depth of four (4) feet bgs and the impacted soil will be disposed of at an OCD and SLO approved disposal facility.
- 2. Six (6) sidewall samples will be collected (See Annotated Aerial Imagery for proposed locations).
- 3. In addition, further delineation will be conducted at the Test Trench 1 location to obtain a second vertical soil sample whose analysis indicates constituent of concern concentrations below regulatory guidelines.
- 4. Soil samples will be collected and evaluated for visual and olfactory indications of the presence or absence of hydrocarbon impact. Once a sample indicates the absence of hydrocarbon impact, it will be containerized and submitted for laboratory analysis for TPH, benzene, and BTEX.
- 5. If laboratory results indicate that all constituent of concern concentrations are below regulatory guidelines, then six (6) inches of sand will be emplaced in the bottom of the excavation to cushion the twenty (20) mil plastic liner from the underlying caliche.
- 6. The twenty (20) mil plastic liner will be installed.
- 7. The excavation will be backfilled with top soil of the kind removed and seeded with BLM #2 seed blend or other seed blend as approved by the NMOCD and SLO. The seeded area will be monitored for growth and the operator will repeat seeding until a successful vegetative cover is achieved

Notifications and Special Conditions

- 1. The OCD and SLO will be notified prior to the commencement of on-site operations.
- 2. The OCD and SLO will be notified prior to each sampling event to allow the opportunity to witness the sampling events. Splits will be made available if requested.
- 3. A report documenting the results of the delineation activities will be submitted to the OCD and SLO.

Thank you for your assistance on this matter. Should you have any questions, require additional information, or have any additional stipulations for this site, please contact me at (432) 563-2200 (office) or via email at geoff@etechenv.com.

Respectfully:

Heats Seking

Geoff Leking, Project Manager Etech Environmental & Safety Solutions, Inc.

Attachment A Initial C-141

fOY1816448404

# State of New Mexico Energy Minerals and Natural Resources

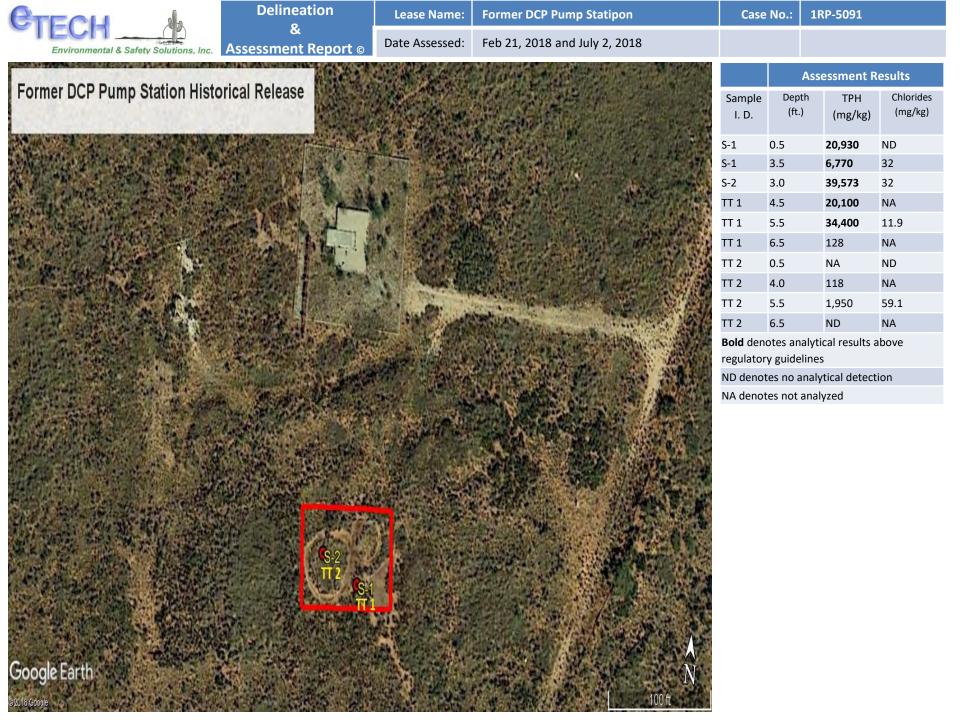
Form C-141 Revised April 3, 2017

**Oil Conservation Division** 1220 South St. Francis Dr. Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

	nta Fe, NM 8750	2	S	anta F	'e, NM 8'	7505						
		Rel	ease Notifi	catio	n and (	Corrective A	ction					
					OPE	RATOR		X Initi	al Report	П	Final Repo	
Name of Company	Goodnight M	idstream	C			alph Tijerina			p			
Address 5910 N. Ce	ntral Expy. Si	uite 850 I	Dallas, Tx 7520	6	Telephone No. 214-444-7001							
Facility Name Form Pump Station					Facility T	ype Pump Statio	n					
Surface Owner Sta	to		Mineral	Owner	State		30-025-0	8769 (	non related			
518						_		losest				
		_				ELEASE						
Unit Letter Section F 04	Township 22S	Range 36E	Feet from the 1900	North North	n/South Line 1	Feet from the 1490	East/West West	Line	County Lea			
	Latitude	32.4228	398	L	ongitude	103.274162		NA	D83			
			NA	TURE	OF REI	EASE						
Type of Release Crude						of Release Unk		Volu	ne Recovere	d Unk		
Source of Release Unk						Hour of Occurrent	ce		and Hour of	Discov	/ery	
Was Immediate Notice			No X Not Re	amirad	Historica If YES, 7	l Fo Whom?		Histo	rical	_		
By Whom?			INO A NOLKO	equireu	Data and	Usua		-	-			
Was a Watercourse Re	ached?				Date and Hour If YES, Volume Impacting the Watercourse.							
		Yes X	No			RECEIVE						
Describe Cause of Prob in the early 1960s a pu one hundred forty (140	mp station was	operated of	on the subject pro	operty. A		By Olivia Y		-				
Describe Area Affected The release(s) affected samples were collected and three and a half (3. mpact is attached.	an area approx by a third part 5) feet below g information g s are required to rironment. The have failed to	imately se y utilizing round surf iven above to report an acceptanc adequately	venty (70) feet lo an hand auger of face (bgs) where is true and comp nd/or file certain the of a C-141 rep investigate and	n Februa hand aug plete to t release r port by th remedia	ary 21, 2018 ger refusal w the best of m notifications are NMOCD te contamina	Initial soil sampli ras observed. A de y knowledge and u and perform correc marked as "Final R ttion that pose a thr	ing indicates lineation wo understand th ctive actions deport" does reat to ground	impact rk plan nat purs for rele not reli d water	t exists to de a for further suant to NM eases which ieve the ope r, surface wa	OCD ro may er rator of ater, hu	f three (3) tion of the ules and ndanger Tlability man health	
or the environment. In rederal, state, or local la			tance of a C-141	report o	loes not reli	eve the operator of	responsibilit	y for c	ompliance v	with any	other	
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Printed Name: KO	12h	4	TINA			y Environmental S	8	A			_	
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ttach Additional Sh	cots II Necess	aly		Г	1RP-509		8164485	00	YOa r	· 1816	6448635	

nOY1816448589

# Attachment B Annotated Aerial Imagery



# Former DCP Pump Station Historical Release

100 ft

wsw 🖸

Google Earth

@2018 Google

Attachment C Photograph Log



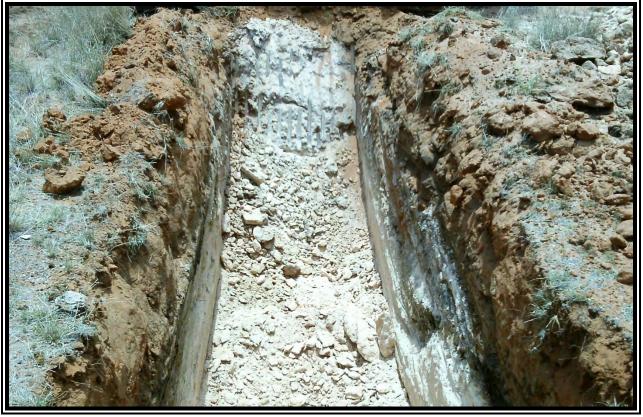
View of release looking northwest.



View of auger hole S-1.



View of Test Trench 1 after excavation looking south.



View of Test Trench 2 after excavation looking south.

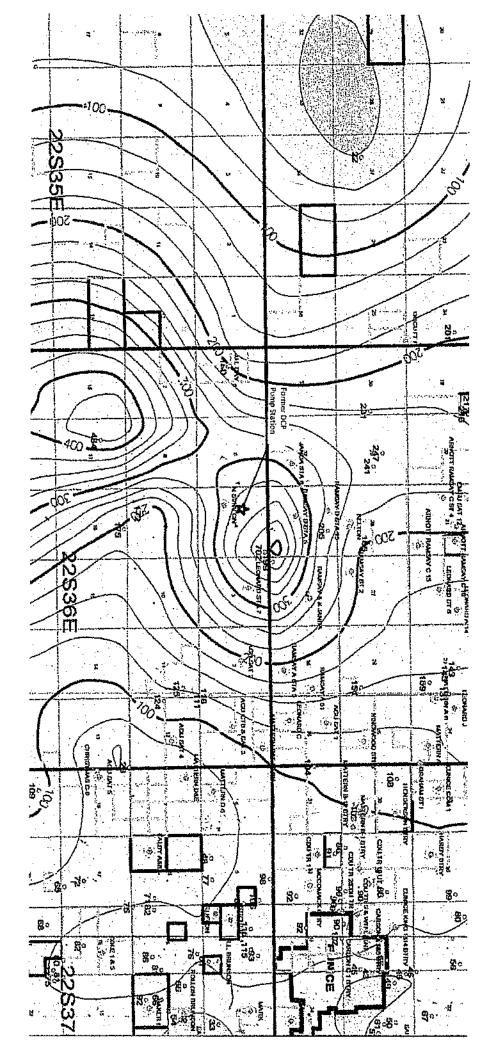


View of Test Trench 1 after backfilling looking west.



View of Test Trench 2 after backfilling looking west.

# Attachment D Depth to Groundwater Data





# New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a	been O=or	OD has replace phaned, e file is		qua	rter	s ar	re 1=	=NW 2	2=NE (	3=SW 4=SE	:)				
water right file.)	close			•					t to la		AD83 UTM in me	eters)	(	In feet)	
POD Number	Code	POD Sub- basin	County		Q 16		Sec	Tws	Rng	х	Y	Distance		Depth Water	Water Column
CP 00727		СР	LE						36E	661130	3588673* 🌍	1143	267	212	55
CP 00727 CLW475753	0	СР	LE	1	3	2	05	22S	36E	661130	3588673* 🌍	1143	228		
<u>L 11013</u>	С	L	LE			3	10	22S	36E	663892	3586402* 🌍	2748	222		
CP 01318 POD2		СР	LE	3	3	3	10	22S	36E	663672	3586106 🌍	2879	260	180	80
CP 00469		СР	LE	1	2	3	06	22S	36E	659127	3588245* 🌍	3167	220	195	25
CP 01469 POD1		СР	LE	2	2	2	18	22S	36E	660234	3585869 🌍	3426	200	140	60
<u>CP 00070</u>		СР	LE	2	2	3	16	22S	36E	662604	3585071* 🌍	3567	220	170	50
CP 00070 CLW472929	0	СР	LE	2	2	3	16	22S	36E	662604	3585071* 🌍	3567	220	170	50
CP 00764 POD1		СР	LE	2	1	4	16	22S	36E	663006	3585079* 🌍	3619	4700	4000	700
<u>CP 00539</u>		СР	LE	4	3	2	30	21S	36E	659663	3591676* 🌍	4016	270	240	30
CP 00760 POD1		СР	LE	1	4	4	35	21S	36E	666347	3589567* 🌍	4182	5000		
CP 00761 POD1		СР	LE	4	3	1	01	22S	36E	666964	3588569* 🌍	4692	5000		
											Avera	ge Depth to	Water:	663	feet
												Minimum	Depth:	140	feet
												Maximum	Depth:	4000	feet
Record Count: 12															
Basin/County Search	<u>h:</u>														

County: Lea

UTMNAD83 Radius Search (in meters):

Easting (X): 662272.3

Northing (Y): 3588623.13

Radius: 4838.7

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

# Attachment E Analytical Results



February 22, 2018

ALAN KANE KANE ENVIROMENTAL 8816 BIG VIEW DRIVE

AUSTIN, TX 78730

RE: 8.33 ACRE SITE

Enclosed are the results of analyses for samples received by the laboratory on 02/21/18 13:03.

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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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. Keine

Celey D. Keene Lab Director/Quality Manager



KANE ENVIROMENTAL 8816 BIG VIEW DRIVE AUSTIN TX, 78730		Project: 8.33 A oject Number: 18-091 oject Manager: ALAN H Fax To:		Reported: 22-Feb-18 13:55
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1 3-3.5'	H800521-01	Soil	21-Feb-18 11:20	21-Feb-18 13:03
S-1 0-6"	H800521-02	Soil	21-Feb-18 11:10	21-Feb-18 13:03
S-2 2.5-3'	H800521-03	Soil	21-Feb-18 11:45	21-Feb-18 13:03

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



KANE ENVIROMENTAL 8816 BIG VIEW DRIVE AUSTIN TX, 78730			Project Nun Project Mana	nber: 18-(		E		2	Reported: 22-Feb-18 13:	55
				-1 3-3.5' 521-01 (So	vil)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										
Chloride	32.0		16.0	mg/kg	4	8022201	AC	22-Feb-18	4500-Cl-B	
pH*	7.83		0.100	pH Units	1	8022202	AC	22-Feb-18	9045	
Volatile Organic Compounds by	y EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			119 %	72	148	8022104	MS	22-Feb-18	8021B	
Petroleum Hydrocarbons by G	C FID									S-06
GRO C6-C10*	<100		100	mg/kg	10	8022105	MS	22-Feb-18	8015B	
DRO >C10-C28*	5240		100	mg/kg	10	8022105	MS	22-Feb-18	8015B	
EXT DRO >C28-C36	1530		100	mg/kg	10	8022105	MS	22-Feb-18	8015B	
Surrogate: 1-Chlorooctane			84.1 %	41-	142	8022105	MS	22-Feb-18	8015B	
Surrogate: 1-Chlorooctadecane			160 %	37.6-	-147	8022105	MS	22-Feb-18	8015B	

#### **Cardinal Laboratories**

\*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



KANE ENVIROMENTAL 8816 BIG VIEW DRIVE AUSTIN TX, 78730	Project:8.33 ACRE SITEReported:Project Number:18-09122-Feb-18 13:55Project Manager:ALAN KANEFax To:Fax To:								55	
			~	-1 0-6'' 521-02 (Sa	;I)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					
Inorganic Compounds										
Chloride	<16.0		16.0	mg/kg	4	8022201	AC	22-Feb-18	4500-Cl-B	
pH*	5.45		0.100	pH Units	1	8022202	AC	22-Feb-18	9045	
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	8022104	MS	22-Feb-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			110 %	72-1	48	8022104	MS	22-Feb-18	8021B	
Petroleum Hydrocarbons by GC	FID									S-06
GRO C6-C10*	<200		200	mg/kg	20	8022105	MS	22-Feb-18	8015B	
DRO >C10-C28*	14200		200	mg/kg	20	8022105	MS	22-Feb-18	8015B	
EXT DRO >C28-C36	6730		200	mg/kg	20	8022105	MS	22-Feb-18	8015B	
Surrogate: 1-Chlorooctane			76.1 %	41-1	42	8022105	MS	22-Feb-18	8015B	
Surrogate: 1-Chlorooctadecane			401 %	37.6-	147	8022105	MS	22-Feb-18	8015B	

#### **Cardinal Laboratories**

\*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



KANE ENVIROMENTAL 8816 BIG VIEW DRIVE AUSTIN TX, 78730			Project Nun Project Mana	nber: 18-(		Ē		2	Reported: 22-Feb-18 13:	55
				-2 2.5-3'	.:1\					
			1800	521-03 (So	)  )					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										
Chloride	32.0		16.0	mg/kg	4	8022201	AC	22-Feb-18	4500-Cl-B	
pH*	6.00		0.100	pH Units	1	8022202	AC	22-Feb-18	9045	
Volatile Organic Compounds b	y EPA Method	8021								
Benzene*	0.318		0.100	mg/kg	100	8022104	MS	22-Feb-18	8021B	
Toluene*	0.796		0.100	mg/kg	100	8022104	MS	22-Feb-18	8021B	
Ethylbenzene*	3.83		0.100	mg/kg	100	8022104	MS	22-Feb-18	8021B	
Total Xylenes*	9.29		0.300	mg/kg	100	8022104	MS	22-Feb-18	8021B	
Total BTEX	14.2		0.600	mg/kg	100	8022104	MS	22-Feb-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			114 %	72	148	8022104	MS	22-Feb-18	8021B	
Petroleum Hydrocarbons by G	C FID									S-06
GRO C6-C10*	243		200	mg/kg	20	8022105	MS	22-Feb-18	8015B	
DRO >C10-C28*	29400		200	mg/kg	20	8022105	MS	22-Feb-18	8015B	
EXT DRO >C28-C36	9930		200	mg/kg	20	8022105	MS	22-Feb-18	8015B	
Surrogate: 1-Chlorooctane			74.9 %	41	142	8022105	MS	22-Feb-18	8015B	
Surrogate: 1-Chlorooctadecane			469 %	37.6-	-147	8022105	MS	22-Feb-18	8015B	

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\*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



KANE ENVIROMENTAL 8816 BIG VIEW DRIVE AUSTIN TX, 78730	Project: 8.33 ACRE SITE Project Number: 18-091 Project Manager: ALAN KANE Fax To:	Reported: 22-Feb-18 13:55
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## **Inorganic Compounds - Quality Control**

# **Cardinal Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 8022201 - 1:4 DI Water										
Blank (8022201-BLK1)				Prepared &	Analyzed:	22-Feb-18				
Chloride	ND	16.0	mg/kg							
LCS (8022201-BS1)				Prepared &	Analyzed:	22-Feb-18				
Chloride	416	16.0	mg/kg	400		104	80-120			
LCS Dup (8022201-BSD1)				Prepared &	Analyzed:	22-Feb-18				
Chloride	400	16.0	mg/kg	400		100	80-120	3.92	20	
Batch 8022202 - 1:1 DI										
LCS (8022202-BS1)				Prepared &	Analyzed:	22-Feb-18				
pH	7.22		pH Units	7.00		103	90-110			
Duplicate (8022202-DUP1)	Sou	rce: H800521	-01	Prepared &	Analyzed:	22-Feb-18				
pH	7.94	0.100	pH Units		7.83			1.40	20	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



KANE ENVIROMENTAL 8816 BIG VIEW DRIVE AUSTIN TX, 78730	Project: 8.33 A Project Number: 18-09 Project Manager: ALAN Fax To:	22-Feb-18 1	
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#### Volatile Organic Compounds by EPA Method 8021 - Quality Control

# **Cardinal Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 8022104 - Volatiles										
Blank (8022104-BLK1)				Prepared &	Analyzed:	22-Feb-18				
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.113		mg/kg	0.100		113	72-148			
LCS (8022104-BS1)				Prepared &	Analyzed:	22-Feb-18				
Benzene	1.91	0.050	mg/kg	2.00		95.7	79.5-124			
Toluene	1.91	0.050	mg/kg	2.00		95.6	75.5-127			
Ethylbenzene	1.83	0.050	mg/kg	2.00		91.4	77.7-125			
Total Xylenes	5.67	0.150	mg/kg	6.00		94.5	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.104		mg/kg	0.100		104	72-148			
LCS Dup (8022104-BSD1)				Prepared &	Analyzed:	22-Feb-18				
Benzene	1.91	0.050	mg/kg	2.00		95.4	79.5-124	0.316	6.5	
Toluene	1.88	0.050	mg/kg	2.00		94.1	75.5-127	1.57	7.02	
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.7	77.7-125	1.43	7.83	
Total Xylenes	5.69	0.150	mg/kg	6.00		94.9	70.9-124	0.440	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.106		mg/kg	0.100		106	72-148			

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



		Reported: -Feb-18 13:55
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### Petroleum Hydrocarbons by GC FID - Quality Control

## **Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8022105 - General Prep - Organics										
Blank (8022105-BLK1)				Prepared &	Analyzed:	21-Feb-18				
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	49.1		mg/kg	50.0		98.2	41-142			
Surrogate: 1-Chlorooctadecane	48.6		mg/kg	50.0		97.2	37.6-147			
LCS (8022105-BS1)				Prepared &	Analyzed:	21-Feb-18				
GRO C6-C10	201	10.0	mg/kg	200		101	76.5-133			
DRO >C10-C28	196	10.0	mg/kg	200		98.2	72.9-138			
Total TPH C6-C28	398	10.0	mg/kg	400		99.4	78-132			
Surrogate: 1-Chlorooctane	50.2		mg/kg	50.0		100	41-142			
Surrogate: 1-Chlorooctadecane	52.0		mg/kg	50.0		104	37.6-147			
LCS Dup (8022105-BSD1)				Prepared &	Analyzed:	21-Feb-18				
GRO C6-C10	207	10.0	mg/kg	200		103	76.5-133	2.67	20.6	
DRO >C10-C28	202	10.0	mg/kg	200		101	72.9-138	2.99	20.6	
Total TPH C6-C28	409	10.0	mg/kg	400		102	78-132	2.83	18	
Surrogate: 1-Chlorooctane	51.9		mg/kg	50.0		104	41-142			
Surrogate: 1-Chlorooctadecane	53.9		mg/kg	50.0		108	37.6-147			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### **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.
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 SM4500CI-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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Celey D. Keene, Lab Director/Quality Manager

Relinquished By Sampler - UPS - Bus - Other: 3.6%/ 3.85% **Relinquished By:** H80052 Delivered By: (Circle One) LEASE NOTE: Liability and Da alyses. All claims Sampler Name: Project Location: SW Project Name: 8,33 Acre Site Phone #: 903-235-9359 Fax #: City: Bullard Project Manager: Project #: Company Name: Address: 125 Pecan Valley Dr. ice. In no event shall Cardinal be liable for incidental or conse Lab I.D. FOR LAB USE ONLY Cardinal cannot accont verhal channes Blease fafuritter barder to \$752.00.000 m Laboratories S 18-09 uding those for negligence and any other 101 East Marland, Hobbs, NM 88240 NS (575) 393-2326 FAX (575) 393-2476 N Raph Relph Kane Environmental Employ Cardinal's liability and c Sample I.D 0 3-3/2 # The HANNEO 2-Harvey Euntie, UM cause whatsoever shall be de-Date: Date:/2.1 uental dam Project Owner: State: TX Zip: 75757 ages, including without limitation, busi nder by Ca **Received By** Received By: G)RAB OR (C)OMP waived unless made in writing and received by Cardinal within 30 days after # CONTAINERS Sample Condition Cool Intact Tres Tres GROUNDWATER WASTEWATER MATRIX < SOIL OIL flons, loss of use, or loss of profits incurred by client, its subsidiaries SLUDGE Phone #281-370-6580 9 OTHER P.O. #: city: Austru Attn: Alan Kane Address: 8816 Big View Company: Kane (Mitials) ACID/BASE PRESERV. any of the above stated < ICE / COOL OTHER BILL TO to the 2424 18-09 2/21 SAMPLING DATE paid by the client for the Inv > alany Kane Depne ast. net Fax Result: REMARKS: Phone Result: completion of the applicable 11:13 Sars CHAIN-OF-CUSTODY AND ANALYSIS REQUEST 11:10 \$ TIME 1:20 LUSH! ORO wharvey agnail. Com □ Yes I No (. Add'l Phone #: Add'l Fax #: lorides ANALYSIS REQUEST

PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



# Analytical Report

# **Prepared for:**

Shane Estep E Tech Environmental & Safety Solutions, Inc. 13000 West County Road 100 Odessa, TX 79765

Project: Goodnight Midstream Former DCP Pump Station Project Number: 876-9521 Location: Lea Co., NM

Lab Order Number: 8G03005



NELAP/TCEQ # T104704516-17-8

Report Date: 07/05/18

E Tech Environmental & Safety Solutions, Inc. 13000 West County Road 100 Odessa TX, 79765 Project: Goodnight Midstream Former DCP Pump Statio Project Number: 876-9521 Project Manager: Shane Estep Fax: (432) 563-2213

# ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Test Trench 1 (4.5')	8G03005-01	Soil	07/02/18 12:00	07-03-2018 09:45
Test Trench 1 (5.5')	8G03005-02	Soil	07/02/18 12:05	07-03-2018 09:45
Test Trench 1 (6.5')	8G03005-03	Soil	07/02/18 12:15	07-03-2018 09:45
Test Trench 2 (0"-6")	8G03005-04	Soil	07/02/18 12:45	07-03-2018 09:45
Test Trench 2 (4.0')	8G03005-05	Soil	07/02/18 12:50	07-03-2018 09:45
Test Trench 2 (5.5')	8G03005-06	Soil	07/02/18 13:00	07-03-2018 09:45
Test Trench 2 (6.5')	8G03005-07	Soil	07/02/18 13:10	07-03-2018 09:45

# Test Trench 1 (4.5') 8G03005-01 (Soil)

8G05005-01 (50II)										
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note	
	Pern	iian Basin F	Environme	ntal Lab, I	L.P.					
Organics by GC										
Benzene	ND	0.0211	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B		
Toluene	ND	0.211	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B		
Ethylbenzene	ND	0.105	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B		
Xylene (p/m)	ND	0.421	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B		
Xylene (o)	ND	0.211	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B		
Surrogate: 4-Bromofluorobenzene		82.7 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B		
Surrogate: 1,4-Difluorobenzene		95.2 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B		
General Chemistry Parameters by EP.	A / Standard Method	ls								
% Moisture	5.0	0.1	%	1	P8G0506	07/05/18	07/05/18	ASTM D2216		
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	015M								
C6-C12	ND	526	mg/kg dry	20	P8G0306	07/03/18	07/03/18	TPH 8015M		
>C12-C28	16400	526	mg/kg dry	20	P8G0306	07/03/18	07/03/18	TPH 8015M		
>C28-C35	3790	526	mg/kg dry	20	P8G0306	07/03/18	07/03/18	TPH 8015M		
Surrogate: 1-Chlorooctane		113 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M		
Surrogate: o-Terphenyl		125 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M		
Total Petroleum Hydrocarbon C6-C35	20100	526	mg/kg dry	20	[CALC]	07/03/18	07/03/18	calc		

Permian Basin Environmental Lab, L.P.

E Tech Environmental & Safety Solutions, Inc.
13000 West County Road 100
Odessa TX, 79765

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# Test Trench 1 (5.5')

8G03005-02 (Soil)
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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin F	Invironme	ntal Lab, I	L <b>.P.</b>				
Organics by GC									
Benzene	ND	0.0213	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B	
Toluene	ND	0.213	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B	
Ethylbenzene	0.152	0.106	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B	
Xylene (p/m)	ND	0.426	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B	
Xylene (o)	ND	0.213	mg/kg dry	20	P8G0501	07/04/18	07/04/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		78.8 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	S							
Chloride	11.9	1.06	mg/kg dry	1	P8G0308	07/03/18	07/03/18	EPA 300.0	
% Moisture	6.0	0.1	%	1	P8G0506	07/05/18	07/05/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	15M							
C6-C12	1140	532	mg/kg dry	20	P8G0306	07/03/18	07/03/18	TPH 8015M	
>C12-C28	27400	532	mg/kg dry	20	P8G0306	07/03/18	07/03/18	TPH 8015M	
>C28-C35	5870	532	mg/kg dry	20	P8G0306	07/03/18	07/03/18	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	34400	532	mg/kg dry	20	[CALC]	07/03/18	07/03/18	calc	

E Tech Environmental & Safety Solutions, Inc.
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Odessa TX, 79765

# Test Trench 1 (6.5') 8G03005-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	nvironmer	tal Lab, l	L.P.				
Organics by GC									
Benzene	ND	0.00106	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		108 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B	
General Chemistry Parameters by EPA	/ Standard Metho	ds							
% Moisture	6.0	0.1	%	1	P8G0506	07/05/18	07/05/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	5 by EPA Method 8	015M							
C6-C12	ND	26.6	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M	
>C12-C28	85.4	26.6	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M	
>C28-C35	42.4	26.6	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M	
Surrogate: 1-Chlorooctane		114 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	
Surrogate: o-Terphenyl		126 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	128	26.6	mg/kg dry	1	[CALC]	07/03/18	07/03/18	calc	

E Tech Environmental & Safety Solutions, Inc. 13000 West County Road 100 Odessa TX, 79765		oject Numb	er: 876-95	Goodnight Midstream Former DCP Pump StatioFax: (432) 563-2213876-9521Shane Estep								
		Test Tre 8G030	nch 2 (0' 05-04 (So	,								
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes			
	Permian Basin Environmental Lab, L.P.											
General Chemistry Parameters by EPA / Stand	ard Methods											
Chloride	ND	1.00	mg/kg dry	1	P8G0308	07/03/18	07/03/18	EPA 300.0				

%

1

P8G0506

07/05/18

ASTM D2216

07/05/18

0.1

ND

Permian Basin Environmental Lab, L.P.

% Moisture

E Tech Environmental & Safety Solutions, Inc.
13000 West County Road 100
Odessa TX, 79765

# Test Trench 2 (4.0') 8G03005-05 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin E	Invironmer	ıtal Lab, I	L.P.				
Organics by GC									
Benzene	ND	1	P8G0501	07/04/18	07/04/18	EPA 8021B			
Toluene	ND	0.0110	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Ethylbenzene	ND	0.00549	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Xylene (p/m)	ND	0.0220	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Xylene (o)	ND	0.0110	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B	
General Chemistry Parameters by EPA	/ Standard Method	S							
% Moisture	9.0	0.1	%	1	P8G0506	07/05/18	07/05/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	5 by EPA Method 80	15M							
C6-C12	ND	27.5	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M	
>C12-C28	118	27.5	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M	
Surrogate: 1-Chlorooctane		105 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	118	27.5	mg/kg dry	1	[CALC]	07/03/18	07/03/18	calc	

Permian Basin Environmental Lab, L.P.

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Odessa TX, 79765

# Test Trench 2 (5.5') 8G03005-06 (Soil)

		8605	005-00 (50	II)											
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note						
	Permian Basin Environmental Lab, L.P.														
Organics by GC															
Benzene         ND         0.00112         mg/kg dry         1         P8G0501         07/04/18         07/04/18         EPA 8021B           Talwana         ND         0.0112         mg/kg dry         1         P8G0501         07/04/18         07/04/18         EPA 8021B															
Toluene	ND	0.0112	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Ethylbenzene	ND	0.00562	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Xylene (p/m)	ND	0.0225	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Xylene (o)	ND	0.0112	0.0112 mg/kg dry		P8G0501	07/04/18	07/04/18	EPA 8021B							
Surrogate: 1,4-Difluorobenzene		98.2 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B							
Surrogate: 4-Bromofluorobenzene		105 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B							
General Chemistry Parameters by EP	A / Standard Method	ds													
Chloride	59.1	1.12	mg/kg dry	1	P8G0308	07/03/18	07/03/18	EPA 300.0							
% Moisture	11.0	0.1	%	1	P8G0506	07/05/18	07/05/18	ASTM D2216							
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 80	015M													
C6-C12	ND	140	mg/kg dry	5	P8G0306	07/03/18	07/03/18	TPH 8015M							
>C12-C28	1560	140	mg/kg dry	5	P8G0306	07/03/18	07/03/18	TPH 8015M							
>C28-C35	390	140	mg/kg dry	5	P8G0306	07/03/18	07/03/18	TPH 8015M							
Surrogate: 1-Chlorooctane		114 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M							
Surrogate: o-Terphenyl		129 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M							
Total Petroleum Hydrocarbon C6-C35	1950	140	mg/kg dry	5	[CALC]	07/03/18	07/03/18	calc							

Permian Basin Environmental Lab, L.P.

E Tech Environmental & Safety Solutions, Inc.
13000 West County Road 100
Odessa TX, 79765

# Test Trench 2 (6.5') 8G03005-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes						
	Permian Basin Environmental Lab, L.P.														
Organics by GC															
Benzene	ND	0.00114	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Toluene	ND	0.0114	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Ethylbenzene	ND	0.00568	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Xylene (p/m)	ND	0.0227	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Xylene (o)	ND	0.0114	mg/kg dry	1	P8G0501	07/04/18	07/04/18	EPA 8021B							
Surrogate: 4-Bromofluorobenzene		109 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B							
Surrogate: 1,4-Difluorobenzene		98.7 %	75-1	25	P8G0501	07/04/18	07/04/18	EPA 8021B							
General Chemistry Parameters by EPA / Sta	ndard Metho	ds													
% Moisture	12.0	0.1	%	1	P8G0506	07/05/18	07/05/18	ASTM D2216							
Total Petroleum Hydrocarbons C6-C35 by E	PA Method 8	8015M													
C6-C12	ND	28.4	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M							
>C12-C28	ND	28.4	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M							
>C28-C35	ND	28.4	mg/kg dry	1	P8G0306	07/03/18	07/03/18	TPH 8015M							
Surrogate: 1-Chlorooctane		123 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M							
Surrogate: o-Terphenyl		139 %	70-1	30	P8G0306	07/03/18	07/03/18	TPH 8015M	S-GC						
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	07/03/18	07/03/18	calc							

Permian Basin Environmental Lab, L.P.

# **Organics by GC - Quality Control**

Permian Basin Environmental Lab, L.P.

Analyta	n 1	Reporting	T T ' 4	Spike	Source	0/850	%REC	מסמ	RPD Limit	NT
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
<b>Batch P8G0501 - General Preparation</b>	(GC)									
Blank (P8G0501-BLK1)				Prepared &	Analyzed:	07/04/18				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 1,4-Difluorobenzene	0.0575		"	0.0600		95.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.0618		"	0.0600		103	75-125			
LCS (P8G0501-BS1)				Prepared &	Analyzed:	07/04/18				
Benzene	0.114	0.00100	mg/kg wet	0.100		114	70-130			
Toluene	0.101	0.0100	"	0.100		101	70-130			
Ethylbenzene	0.110	0.00500	"	0.100		110	70-130			
Xylene (p/m)	0.232	0.0200	"				70-130			
Xylene (o)	0.107	0.0100	"				70-130			
Surrogate: 4-Bromofluorobenzene	0.0632		"	0.0600		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.0627		"	0.0600		104	75-125			
LCS Dup (P8G0501-BSD1)				Prepared &	Analyzed:	07/04/18				
Benzene	0.101	0.00100	mg/kg wet	0.100		101	70-130	11.8	20	
Toluene	0.0889	0.0100	"	0.100		88.9	70-130	12.7	20	
Ethylbenzene	0.0961	0.00500	"	0.100		96.1	70-130	13.4	20	
Xylene (p/m)	0.214	0.0200	"				70-130		20	
Xylene (o)	0.0953	0.0100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0608		"	0.0600		101	75-125			
Surrogate: 4-Bromofluorobenzene	0.0581		"	0.0600		96.8	75-125			
Matrix Spike (P8G0501-MS1)	Sou	irce: 8G03005	-03	Prepared &	Analyzed:	07/04/18				
Benzene	0.0968	0.00106	mg/kg dry	0.106	ND	91.0	80-120			
Toluene	0.0851	0.0106	"	0.106	ND	80.0	80-120			
Ethylbenzene	0.0887	0.00532	"	0.106	ND	83.4	80-120			
Xylene (p/m)	0.205	0.0213	"		ND		80-120			
Xylene (o)	0.0878	0.0106	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0941		"	0.0638		147	75-125			S-G
Surrogate: 1,4-Difluorobenzene	0.0693		"	0.0638		109	75-125			

Permian Basin Environmental Lab, L.P.

# **Organics by GC - Quality Control**

## Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G0501 - General Preparation (GC)										

#### Matrix Spike Dup (P8G0501-MSD1) Source: 8G03005-03 Prepared & Analyzed: 07/04/18 0.00106 Benzene 0.106 ND 88.2 80-120 3.09 20 0.0939 mg/kg dry Toluene 0.0828 0.0106 0.106 ND 77.8 80-120 2.76 20 QM-07 Ethylbenzene 0.0852 0.00532 .. 0.106 ND 80.1 80-120 4.07 20 " Xylene (p/m) 0.187 0.0213 ND 80-120 20 Xylene (o) 0.0839 0.0106 ... ND 80-120 20 " Surrogate: 4-Bromofluorobenzene 0.0714 0.0638 112 75-125 ,, Surrogate: 1,4-Difluorobenzene 0.0724 0.0638 113 75-125

Permian Basin Environmental Lab, L.P.

# General Chemistry Parameters by EPA / Standard Methods - Quality Control

# Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G0308 - *** DEFAULT PREP ***										
Blank (P8G0308-BLK1)				Prepared &	Analyzed:	07/03/18				
Chloride	ND	1.00	mg/kg wet							
LCS (P8G0308-BS1)				Prepared &	Analyzed:	07/03/18				
Chloride	391	1.00	mg/kg wet	400		97.7	80-120			
LCS Dup (P8G0308-BSD1)				Prepared &	Analyzed:	07/03/18				
Chloride	393	1.00	mg/kg wet	400		98.2	80-120	0.569	20	
Duplicate (P8G0308-DUP1)	Sou	rce: 8F28001	-01	Prepared &	Analyzed:	07/03/18				
Chloride	1900	5.21	mg/kg dry		1900			0.00552	20	
Duplicate (P8G0308-DUP2)	Sou	ce: 8G02010	6-32	Prepared &	Analyzed:	07/03/18				
Chloride	31.1	1.04	mg/kg dry		31.5			1.30	20	
Matrix Spike (P8G0308-MS1)	Sou	rce: 8F28001	-01	Prepared &	Analyzed:	07/03/18				
Chloride	2930	5.21	mg/kg dry	1040	1900	98.2	80-120			
Batch P8G0506 - *** DEFAULT PREP ***										
Blank (P8G0506-BLK1)				Prepared &	Analyzed:	07/05/18				
% Moisture	ND	0.1	%		•					

Permian Basin Environmental Lab, L.P.

#### **Notes and Definitions**

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:

Bun Barron

7/5/2018

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Date:

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