



December 8, 2015

Mr. Benjamin Aucoin – Lead Environmental Field Specialist
EnLink Midstream
1209 County Road 1304
Bridgeport, Texas 76426

RE: Remediation Workplan for Devon Cotton Draw 172H
Release Date: November 11, 2015
T25S, R31E, Section1, Unit P
Eddy County, NM

Dear Mr. Aucoin:

EnLink Midstream (EnLink) has retained Enviro Clean Services, LLC (ECS) to prepare and execute this workplan for a release at the Devon Cotton Draw 172H site located in Eddy County, New Mexico (approximately 32152312°N, 103.727134°W). **Figure 1** is a topographic map depicting site location.

The New Mexico Oil Conservation Division's (OCD) Form C-141 prepared for this site indicates that on the evening of November 11, 2015, crude oil overflowed a tank truck while loading for transport, releasing 67 barrels (bbls), with 44 bbls recovered by vacuum truck. The net loss is 23 bbls of crude oil.

General Site Characteristics

The affected property is leased from the Bureau of Land Management (BLM). The *Geologic Map of New Mexico* (NMBGMR, 2003) indicates the site's surface geology is comprised of Qep – Quaternary eolian and piedmont deposits (Holocene to middle Pleistocene). This is interlayered eolian sands and piedmont-slope deposits along the eastern flank of the Pecos River valley, primarily between Roswell and Carlsbad. The unit is typically capped by thin eolian deposits. The Natural Resource Conservation Service identifies the local soils as *BB – Berino complex, 0 to 3 percent slopes, eroded*, which consist of mixed alluvium and/or eolian sands, typically with a profile of fine sand at the surface, with loamy fine sands at depth of five feet or more.

These descriptions are consistent with the surrounding native soils, but the impacted area is comprised of an engineered crushed limestone pad, with the imported materials being more than a foot thick to support storage tanks and vehicular traffic.

OCD Recommended Remediation Action Levels

The OCD Recommended Remediation Action Levels (RRALs) are a ranking system used to evaluate regulatory requirements. RRALs are scored using the depth to water, wellhead protection area distance, and the distance to surface water bodies as the ranking criteria.

The nearest point of diversion is a water well over ½-mile to the west, but depth to water is not reported. The site is not within a wellhead protection area, and scores zero.

The closest well with a reported depth to water indicated groundwater was encountered approximately 348 feet below ground surface (bgs). With depth to groundwater being greater than 100 feet, this ranking scores a zero. The State Land Office Point of Diversion report for C 03830 is attached for review.



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Well Drill Dates & Depths)

(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)
 C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

WR File Nbr	Sub (acre ft per annum)			Cnty	POD Number	Code	Grant	Source	q q q			X	Y Distance	Start Date	Finish Date	Depth (in feet)				
	basin	Use	Diversion						4	Sec	Tws					Rng	Well	Water		
C 02245	C	STK	3	ED	C 02245				1	12	25S	31E	619018	3557785*	1035					
C 02568		COM	3	ED	C 02568			4	3	1	01	25S	31E	619103	3558892*	1234	07/10/1973	07/10/1973	1025	
C 02570		COM	3	ED	C 02570			4	2	4	02	25S	31E	618704	3558489*	1379	04/06/1968	04/06/1968	895	
C 03830	CUB	EXP	0	ED	C 03830 POD1		NON	Shallow	4	2	4	02	25S	31E	618632	3558432	1432	01/28/2015	02/02/2015	450
C 02569		COM	12	ED	C 02569			Shallow	4	4	2	02	25S	31E	618699	3558891*	1556	01/01/1966	01/01/1966	1016

Record Count: 5

UTMNAD83 Radius Search (in meters):
 Easting (X): 620015.73 Northing (Y): 3558061.41 Radius: 1600

Sorted by: Distance

There is no surface water within several miles of the site, earning a score of zero.

The total ranking score for this site is zero, therefore the RRALs for the site are 10 parts per million (ppm, or mg/Kg) benzene, 50 ppm BTEX, and 5,000 ppm TPH.

Chlorides are regulated in New Mexico by the Water Quality Control Commission, regulation 20.6.2.3103 NMAC, table B, *Other Standards for Domestic Water Supply*, which establishes a 250.0 mg/l groundwater standard. The equivalent soil concentration (250 mg/Kg) is commonly used by the OCD as the screening and delineation value.

Oil Conservation Division Work Plan

The release site is covered with an engineered carbonate surface, and the affected area does not support any vegetation. Initial delineation took place on 11/18/2015 with the following tabulated results:

Sample	Depth	Benzene	Total BTEX	TPH	Chlorides
0001A	6"	6.59	129	10800	115
0001B	12"	ND	0.0369	236	34
0002A	6"	-	-	19500	-
0002B	12"	0.0211	0.878	169	26
0003A	6"	-	-	17300	-
0003B	12"	-	-	272	-
0003C	24"	0.00241	0.0138	48.7	161
0004A	6"	-	-	4310	-
0004B	12"	0.00517	0.0666	181	38.4
0005A	6"	-	-	10500	-
0005B	12"	ND	0.00427	ND	29.4
0006A	6"	-	-	14300	-
0006B	12"	0.00148	0.028	20.9	12.8
0007A	6"	-	-	13800	-
0007B	12"	-	-	ND	-
0007C	24"	ND	ND	ND	6.81

Based on the results of the initial sampling, ECS proposes to use "till-and-treat" *in situ* treatment technology, enhanced using Enviro Clean Plus products, consistent with OCD *Guidelines for Remediation of Leaks, Spills and Releases* (Guidelines) section IV.A.2.b.ii. Confirmation sampling would take place within 60 days of treatment to verify the area of release meets OCD RRALs.

ECS appreciates the opportunity to be of service to EnLink. If you have any questions about the information presented in this report, please contact me at james.collier@eccgrp.com or at 432.301.0209.

Sincerely,

Enviro Clean Services, LLC

A handwritten signature in black ink that reads "James M. Collier III". The signature is written in a cursive style with a horizontal line at the end.

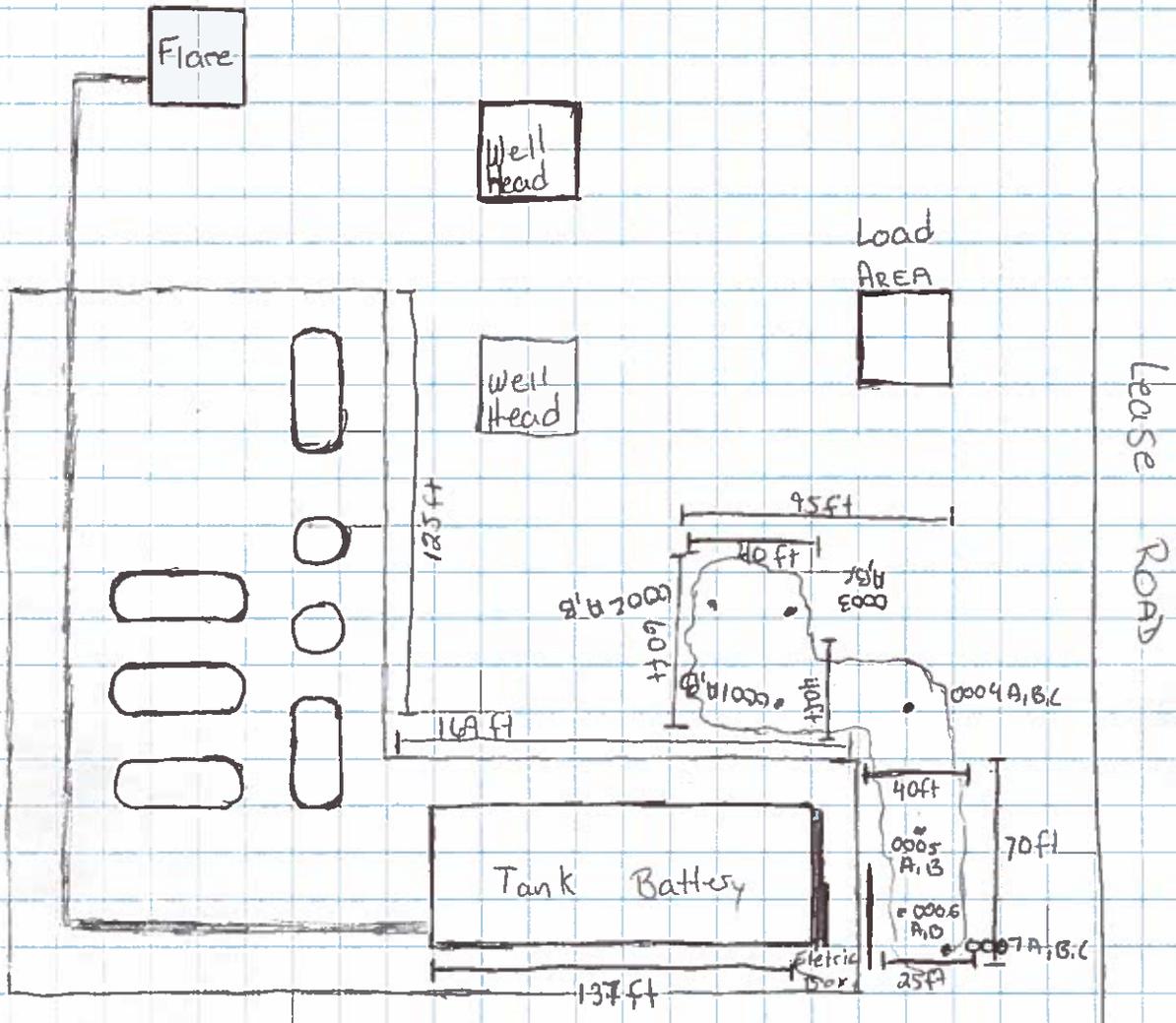
James M. Collier III, EIT
Field Services Manager

Attachments: Figure 1 – Site Location Map
Initial C-141
State Land Office Point of Diversion Report C 03830
Photographic Documentation
Laboratory Analytical Report



Site Location Map
Enlink Midstream—Devon Cotton Draw 172H
 T25S R31E Section 1 Unit P
 Eddy County, New Mexico

Scale: Not to Scale		Drawn By: WDG
Date: 11/17/2015		Project Mgr.: JMC
2405 E. Co. Rd. 123, Midland, Texas 79706		
Project No.:	To Be Determined	Figure: 1



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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: LPC Crude Oil Marketing, LLC	Contact: Benjamin Aucoin
Address: 2501 Cedar Springs Rd, #100, Dallas, TX 75201	Telephone No. 225-313-1338
Facility Name: (Devon) Cotton Draw 172H	Facility Type:

Surface Owner	Mineral Owner	API No.
---------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section 01	Township T25S	Range R31E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
-------------	---------------	------------------	---------------	---------------	------------------	---------------	----------------	----------------

Latitude N 32° 09' 9.41" Longitude W 103° 43' 38.37"

NATURE OF RELEASE

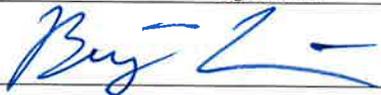
Type of Release: Crude Oil	Volume of Release: 67 bbl	Volume Recovered: 44 bbl
Source of Release: Transport Truck	Date and Hour of Occurrence 11/11/15 - 10:30 PM	Date and Hour of Discovery 11/11/15 - 10:30 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Randy Dade (via voicemail)	
By Whom? Benjamin Aucoin	Date and Hour: 11/12/15 11:00 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Crude oil overflowed from a tank truck while driver was loading the truck from the LACT unit. The LACT unit was turned off upon discovery of the spill preventing more oil from being spilled. The root cause is being investigated.

Describe Area Affected and Cleanup Action Taken.*
67 barrels of crude oil were spilled onto the site, and all spilled material remained on the site. 44 barrels were recovered via vacuum truck. The impacted area has been barricaded to prevent traffic over the area. LPC is working with the pad owner to coordinate remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Benjamin Aucoin	Approved by Environmental Specialist:	
Title: Lead Environmental Field Specialist	Approval Date:	Expiration Date:
E-mail Address: Benjamin.Aucoin@enlink.com	Conditions of Approval:	
Date: 11/12/15 Phone: 225-313-1338	Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64 Q16 Q4 Sec Tws Rng	X	Y
C 03830 POD1	4 2 4 02 25S 31E	618632	3558432 

Driller License: 1607

Driller Name: DURAN, LUIS A.

Drill Start Date: 01/28/2015

Drill Finish Date: 02/02/2015

Plug Date:

Log File Date: 02/23/2015

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 15 GPM

Casing Size: 7.00

Depth Well: 450 feet

Depth Water:

Water Bearing Stratifications:	Top	Bottom	Description
	348	378	Sandstone/Gravel/Conglomerate
	384	448	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	220	450



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Well Drill Dates & Depths)

(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)
 C=the file is closed) (quarters are smallest to largest)

(acre ft per annum)

(NAD83 UTM in meters)

(in feet)

WR File Nbr	Sub basin	Use	Diversion	Cnty	POD Number	Code Grant	Source	q q q 6416 4 Sec Tws Rng	X	Y Distance	Start Date	Finish Date	Depth Well	Depth Water	
C 02245	C	STK	3	ED	C 02245			1 1 12 25S 31E	619018	3557785*	1035				
C 02568		COM	3	ED	C 02568			4 3 1 01 25S 31E	619103	3558892*	1234		07/10/1973	07/10/1973	1025
C 02570		COM	3	ED	C 02570			4 2 4 02 25S 31E	618704	3558489*	1379		04/06/1968	04/06/1968	895
C 03830	CUB	EXP	0	ED	C 03830 POD1	NON	Shallow	4 2 4 02 25S 31E	618632	3558432	1432		01/28/2015	02/02/2015	450
C 02569		COM	12	ED	C 02569		Shallow	4 4 2 02 25S 31E	618699	3558891*	1556		01/01/1966	01/01/1966	1016

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 620015.73

Northing (Y): 3558061.41

Radius: 1600

Sorted by: Distance

*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.



Analytical Report 519729

for
Enviroclean- Midland

Project Manager: BILL GREEN

Devon Cotton Draw 172

20-NOV-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



20-NOV-15

Project Manager: **BILL GREEN**
Enviroclean- Midland
2405 ECR 123
Midland, TX 79706

Reference: XENCO Report No(s): **519729**
Devon Cotton Draw 172
Project Address: Louins, NM

BILL GREEN:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 519729. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 519729 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 519729



Enviroclean- Midland, Midland, TX

Devon Cotton Draw 172

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
0001 A	S	11-18-15 12:35	- 6 In	519729-001
0001 B	S	11-18-15 12:40	- 1 ft	519729-002
0002 A	S	11-18-15 12:50	- 6 In	519729-003
0002 B	S	11-18-15 12:59	- 1 ft	519729-004
0003 A	S	11-18-15 13:03	- 6 In	519729-005
0003 B	S	11-18-15 13:08	- 1 ft	519729-006
0003 C	S	11-18-15 13:10	- 2 ft	519729-007
0004 A	S	11-18-15 13:18	- 6 In	519729-008
0004 B	S	11-18-15 13:19	- 1 ft	519729-009
0004 C	S	11-18-15 13:21	- 2 ft	519729-010
0005 A	S	11-18-15 13:25	- 6 In	519729-011
0005 B	S	11-18-15 13:28	- 1 ft	519729-012
0006 A	S	11-18-15 13:32	- 6 In	519729-013
0006 B	S	11-18-15 13:35	- 1 ft	519729-014
0007 A	S	11-18-15 13:39	- 6 In	519729-015
0007 B	S	11-18-15 13:42	- 1 ft	519729-016
0007 C	S	11-18-15 13:45	- 2 ft	519729-017

*Client Name: Enviroclean- Midland**Project Name: Devon Cotton Draw 172*Project ID:
Work Order Number(s): 519729Report Date: 20-NOV-15
Date Received: 11/19/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-981759 BTEX by EPA 8021B

Lab Sample ID 519729-017 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 519729-001, -002, -004, -007, -010, -012, -014, -017.

The Laboratory Control Sample for Benzene is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 519729



Enviroclean- Midland, Midland, TX

Project Name: Devon Cotton Draw 172

Project Id:
Contact: BILL GREEN
Project Location: Louins, NM

Date Received in Lab: Thu Nov-19-15 09:25 am
Report Date: 20-NOV-15
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	519729-001	519729-002	519729-003	519729-004	519729-005	519729-006
	<i>Field Id:</i>	0001 A	0001 B	0002 A	0002 B	0003 A	0003 B
	<i>Depth:</i>	6 In	1 ft	6 In	1 ft	6 In	1 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-18-15 12:35	Nov-18-15 12:40	Nov-18-15 12:50	Nov-18-15 12:59	Nov-18-15 13:03	Nov-18-15 13:08
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-19-15 13:00	Nov-19-15 13:00		Nov-19-15 13:00		
	<i>Analyzed:</i>	Nov-19-15 19:31	Nov-19-15 18:24		Nov-19-15 14:00		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL		mg/kg RL		
Benzene		6.59 0.101	ND 0.00167		0.0211 0.000994		
Toluene		32.8 0.202	ND 0.00333		0.189 0.00199		
Ethylbenzene		13.2 0.101	0.00385 0.00167		0.0813 0.000994		
m,p-Xylenes		56.0 0.202	0.0230 0.00333		0.415 0.00199		
o-Xylene		20.9 0.101	0.0100 0.00167		0.172 0.000994		
Total Xylenes		76.9 0.101	0.0330 0.00167		0.587 0.000994		
Total BTEX		129 0.101	0.0369 0.00167		0.878 0.000994		
Inorganic Anions by EPA 300	<i>Extracted:</i>	Nov-19-15 11:00	Nov-19-15 11:00		Nov-19-15 11:00		
	<i>Analyzed:</i>	Nov-19-15 13:46	Nov-19-15 14:32		Nov-19-15 14:54		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL		mg/kg RL		
Chloride		115 10.0	34.0 2.00		26.0 2.00		
TPH By SW8015B Mod	<i>Extracted:</i>	Nov-19-15 11:00					
	<i>Analyzed:</i>	Nov-19-15 13:08	Nov-19-15 13:33	Nov-19-15 14:00	Nov-20-15 10:46	Nov-19-15 14:59	Nov-19-15 15:22
	<i>Units/RL:</i>	mg/kg RL					
C6-C10 Gasoline Range Hydrocarbons		1970 75.0	30.9 15.0	5590 75.0	19.4 15.0	4510 75.0	32.5 15.0
C10-C28 Diesel Range Hydrocarbons		8850 75.0	205 15.0	13900 75.0	150 15.0	12800 75.0	239 15.0
C28-C35 Oil Range Hydrocarbons		ND 75.0	ND 15.0	ND 75.0	ND 15.0	ND 75.0	ND 15.0
Total TPH		10800 75.0	236 15.0	19500 75.0	169 15.0	17300 75.0	272 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 519729



Enviroclean- Midland, Midland, TX

Project Name: Devon Cotton Draw 172

Project Id:
Contact: BILL GREEN
Project Location: Louins, NM

Date Received in Lab: Thu Nov-19-15 09:25 am
Report Date: 20-NOV-15
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	519729-007	519729-008	519729-009	519729-010	519729-011	519729-012						
	<i>Field Id:</i>	0003 C	0004 A	0004 B	0004 C	0005 A	0005 B						
	<i>Depth:</i>	2 ft	6 In	1 ft	2 ft	6 In	1 ft						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL						
	<i>Sampled:</i>	Nov-18-15 13:10	Nov-18-15 13:18	Nov-18-15 13:19	Nov-18-15 13:21	Nov-18-15 13:25	Nov-18-15 13:28						
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-19-15 13:00			Nov-19-15 13:00		Nov-19-15 13:00						
	<i>Analyzed:</i>	Nov-19-15 17:17			Nov-19-15 14:33		Nov-19-15 20:05						
	<i>Units/RL:</i>	mg/kg	RL		mg/kg	RL	mg/kg	RL					
Benzene		0.00241	0.00166		0.00517	0.000998		ND	0.000996				
Toluene		ND	0.00332		0.0130	0.00200		ND	0.00199				
Ethylbenzene		ND	0.00166		0.00508	0.000998		ND	0.000996				
m,p-Xylenes		0.0114	0.00332		0.0315	0.00200		0.00427	0.00199				
o-Xylene		ND	0.00166		0.0118	0.000998		ND	0.000996				
Total Xylenes		0.0114	0.00166		0.0433	0.000998		0.00427	0.000996				
Total BTEX		0.0138	0.00166		0.0666	0.000998		0.00427	0.000996				
Inorganic Anions by EPA 300	<i>Extracted:</i>	Nov-19-15 11:00			Nov-19-15 11:00		Nov-19-15 11:00						
	<i>Analyzed:</i>	Nov-19-15 15:40			Nov-19-15 16:03		Nov-19-15 16:25						
	<i>Units/RL:</i>	mg/kg	RL		mg/kg	RL	mg/kg	RL					
Chloride		161	10.0		38.4	2.00		29.4	2.00				
TPH By SW8015B Mod	<i>Extracted:</i>	Nov-19-15 11:00		Nov-19-15 11:00									
	<i>Analyzed:</i>	Nov-19-15 15:46		Nov-19-15 16:10	Nov-19-15 16:34	Nov-19-15 17:23	Nov-19-15 17:30	Nov-19-15 14:07	Nov-19-15 14:07				
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		16.0	15.0	1410	75.0	16.1	15.0	24.3	14.9	2060	74.9	ND	15.0
C10-C28 Diesel Range Hydrocarbons		32.7	15.0	2900	75.0	24.8	15.0	157	14.9	7530	74.9	ND	15.0
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	75.0	ND	15.0	ND	14.9	927	74.9	ND	15.0
Total TPH		48.7	15.0	4310	75.0	40.9	15.0	181	14.9	10500	74.9	ND	15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 519729



Enviroclean- Midland, Midland, TX

Project Name: Devon Cotton Draw 172

Project Id:
Contact: BILL GREEN
Project Location: Louins, NM

Date Received in Lab: Thu Nov-19-15 09:25 am
Report Date: 20-NOV-15
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	519729-013	519729-014	519729-015	519729-016	519729-017	
	<i>Field Id:</i>	0006 A	0006 B	0007 A	0007 B	0007 C	
	<i>Depth:</i>	6 In	1 ft	6 In	1 ft	2 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Nov-18-15 13:32	Nov-18-15 13:35	Nov-18-15 13:39	Nov-18-15 13:42	Nov-18-15 13:45	
BTEX by EPA 8021B	<i>Extracted:</i>		Nov-19-15 13:00			Nov-19-15 13:00	
	<i>Analyzed:</i>		Nov-19-15 20:21			Nov-19-15 17:34	
	<i>Units/RL:</i>		mg/kg RL			mg/kg RL	
Benzene			0.00148 0.00101			ND 0.00167	
Toluene			0.00367 0.00201			ND 0.00334	
Ethylbenzene			ND 0.00101			ND 0.00167	
m,p-Xylenes			0.0159 0.00201			ND 0.00334	
o-Xylene			0.00690 0.00101			ND 0.00167	
Total Xylenes			0.0228 0.00101			ND 0.00167	
Total BTEX			0.0280 0.00101			ND 0.00167	
Inorganic Anions by EPA 300	<i>Extracted:</i>		Nov-19-15 11:00			Nov-19-15 11:00	
	<i>Analyzed:</i>		Nov-19-15 17:33			Nov-19-15 17:56	
	<i>Units/RL:</i>		mg/kg RL			mg/kg RL	
Chloride			12.8 2.00			6.81 2.00	
TPH By SW8015B Mod	<i>Extracted:</i>	Nov-19-15 11:00					
	<i>Analyzed:</i>	Nov-19-15 18:01	Nov-19-15 15:16	Nov-19-15 15:48	Nov-19-15 16:53	Nov-19-15 16:22	
	<i>Units/RL:</i>	mg/kg RL					
C6-C10 Gasoline Range Hydrocarbons		4690 74.9	ND 14.9	4040 74.9	ND 15.0	ND 15.0	
C10-C28 Diesel Range Hydrocarbons		8770 74.9	20.9 14.9	8480 74.9	ND 15.0	ND 15.0	
C28-C35 Oil Range Hydrocarbons		802 74.9	ND 14.9	1290 74.9	ND 15.0	ND 15.0	
Total TPH		14300 74.9	20.9 14.9	13800 74.9	ND 15.0	ND 15.0	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

4143 Greenbriar Dr, Stafford, TX 77477	Phone	Fax
9701 Harry Hines Blvd , Dallas, TX 75220	(281) 240-4200	(281) 240-4280
5332 Blackberry Drive, San Antonio TX 78238	(214) 902 0300	(214) 351-9139
2505 North Falkenburg Rd, Tampa, FL 33619	(210) 509-3334	(210) 509-3335
12600 West I-20 East, Odessa, TX 79765	(813) 620-2000	(813) 620-2033
6017 Financial Drive, Norcross, GA 30071	(432) 563-1800	(432) 563-1713
3725 E. Atlanta Ave, Phoenix, AZ 85040	(770) 449-8800	(770) 449-5477
	(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Project ID:

Lab Batch #: 981750

Sample: 519729-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 13:08

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 981750

Sample: 519729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 13:33

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	100	86	70-135	
o-Terphenyl	38.3	50.0	77	70-135	

Lab Batch #: 981750

Sample: 519729-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 14:00

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	63.0	50.0	126	70-135	

Lab Batch #: 981750

Sample: 519729-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 14:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 981750

Sample: 519729-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 14:07

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	99.7	92	70-135	
o-Terphenyl	41.8	49.9	84	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Lab Batch #: 981759

Sample: 519729-010 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 14:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 981750

Sample: 519729-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 14:59

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	62.5	50.0	125	70-135	

Lab Batch #: 981750

Sample: 519729-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 15:16

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	99.6	92	70-135	
o-Terphenyl	40.9	49.8	82	70-135	

Lab Batch #: 981750

Sample: 519729-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 15:22

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	99.7	85	70-135	
o-Terphenyl	38.9	49.9	78	70-135	

Lab Batch #: 981750

Sample: 519729-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 15:46

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.8	99.9	80	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Lab Batch #: 981750

Sample: 519729-015 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 15:48

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.3	99.9	77	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 981750

Sample: 519729-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 16:10

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	100	92	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 981750

Sample: 519729-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 16:22

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.7	91	70-135	
o-Terphenyl	40.3	49.9	81	70-135	

Lab Batch #: 981750

Sample: 519729-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 16:34

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.7	99.7	79	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 981750

Sample: 519729-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 16:53

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.1	100	95	70-135	
o-Terphenyl	42.3	50.0	85	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Lab Batch #: 981759

Sample: 519729-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 17:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 981750

Sample: 519729-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 17:23

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	99.6	87	70-135	
o-Terphenyl	39.1	49.8	79	70-135	

Lab Batch #: 981750

Sample: 519729-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 17:30

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.9	130	70-135	
o-Terphenyl	37.4	50.0	75	70-135	

Lab Batch #: 981759

Sample: 519729-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 17:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 981750

Sample: 519729-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 18:01

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.9	79	70-135	
o-Terphenyl	38.5	50.0	77	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Project ID:

Lab Batch #: 981759

Sample: 519729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 18:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 981759

Sample: 519729-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 19:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 981759

Sample: 519729-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 20:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 981759

Sample: 519729-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 20:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 981750

Sample: 519729-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/20/15 10:46

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	100	92	70-135	
o-Terphenyl	42.2	50.0	84	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Project ID:

Lab Batch #: 981750

Sample: 701112-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/19/15 11:50

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 981750

Sample: 701109-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/19/15 12:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 981750

Sample: 701112-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/19/15 12:15

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 981750

Sample: 701109-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/19/15 12:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 981750

Sample: 701112-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/19/15 12:40

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.0	50.0	104	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Devon Cotton Draw 172

Work Orders : 519729,

Project ID:

Lab Batch #: 981759

Sample: 701109-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/19/15 12:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 981759

Sample: 519729-017 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 16:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0349	0.0300	116	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 981759

Sample: 519729-017 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/19/15 16:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: Devon Cotton Draw 172

Work Order #: 519729

Project ID:

Analyst: SYG

Date Prepared: 11/19/2015

Date Analyzed: 11/19/2015

Lab Batch ID: 981759

Sample: 701109-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000998	0.0998	0.0839	84	0.100	0.0979	98	15	70-130	35	
Toluene	<0.00200	0.0998	0.0890	89	0.100	0.0986	99	10	70-130	35	
Ethylbenzene	<0.000998	0.0998	0.0964	97	0.100	0.109	109	12	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.200	100	0.200	0.225	113	12	70-135	35	
o-Xylene	<0.000998	0.0998	0.0941	94	0.100	0.104	104	10	71-133	35	

Analyst: MNR

Date Prepared: 11/19/2015

Date Analyzed: 11/19/2015

Lab Batch ID: 981745

Sample: 701088-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<2.00	50.0	51.4	103	50.0	51.5	103	0	90-110	20	

Relative Percent Difference RPD = 200*(C-F)/(C+F)

Blank Spike Recovery [D] = 100*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100*(F)/[E]

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Devon Cotton Draw 172

Work Order #: 519729

Project ID:

Analyst: PJB

Date Prepared: 11/19/2015

Date Analyzed: 11/19/2015

Lab Batch ID: 981750

Sample: 701112-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1140	114	1000	1100	110	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1180	118	1000	1120	112	5	70-135	35	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: Devon Cotton Draw 172



Work Order #: 519729

Lab Batch #: 981745

Date Analyzed: 11/19/2015

QC- Sample ID: 519332-023 S

Reporting Units: mg/kg

Date Prepared: 11/19/2015

Batch #: 1

Project ID:

Analyst: MNR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	2090	2500	4720	105	80-120	

Lab Batch #: 981745

Date Analyzed: 11/19/2015

QC- Sample ID: 519729-001 S

Reporting Units: mg/kg

Date Prepared: 11/19/2015

Batch #: 1

Analyst: MNR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	115	250	376	104	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Relative Percent Difference [E] = 200*(C-A)/(C+B)

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: Devon Cotton Draw 172

Work Order # : 519729

Project ID:

Lab Batch ID: 981759

QC- Sample ID: 519729-017 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 11/19/2015

Date Prepared: 11/19/2015

Analyst: SYG

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0655	66	0.100	0.0659	66	1	70-130	35	X
Toluene	<0.00200	0.100	0.0744	74	0.100	0.0755	76	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0788	79	0.100	0.0796	80	1	71-129	35	
m,p-Xylenes	0.00321	0.200	0.165	81	0.201	0.168	82	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0828	83	0.100	0.0863	86	4	71-133	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(C-F)/(C+F)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Client: Enviroclean- Midland

Date/ Time Received: 11/19/2015 09:25:00 AM

Work Order #: 519729

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Carley Owens Date: 11/19/2015
 Carley Owens

Checklist reviewed by: Kelsey Brooks Date: 11/19/2015
 Kelsey Brooks