

ConocoPhillips Corrective action Plan for the

SEMU 034 1RP-4218

On March 21st 2016 a flow line leak occurred on the SEMU 34 resulting I the release of 15 bbls. of produced water with 1 bbl recovered. When doing our initial site assessment, it was discovered that that the leak occurred on top of an old historic spill. We scheduled a meeting at the site with Jamie Keyes of the NMOCD and Shelly Tucker of the BLM on March 28th 2016. After sampling it was determined chlorides could be cleaned up easily but the old historic spill resulting in high DRO and GRO readings at deeper levels would need to be addressed at the request of the BLM. The initial leak area is approx. 1500 sq. feet the additional area being requested for cleanup by the BLM is 23,368 sq. feet of area. ConocoPhillips will excavate the entire area to a depth of 4' and backfill with clean topsoil. The contaminated material will be transported to a State approved disposal and clean top soil will be sampled before backfill use to insure it is clean. The depth to groundwater in this area is 59'. I have attached maps and sample results from the lab for you to look at. If you have any questions, please feel free to contact me by email or my phone number is 575-631-9092. We will begin work on the spill area of this project as soon as I receive approval to do so. Below I have listed the GPS coordinates and a legal description of the area. Thanks, Justin Wright

GPS: 32.557904-103.189613

UL-K, Section-19

T-20-S, R-38-E

Lea County, NM



April 04, 2016

KYLE NORMAN Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: SEMU PERMIAN #34 HISTORICAL

Enclosed are the results of analyses for samples received by the laboratory on 03/29/16 14:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34 HISTORICAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: PT. 1 @ 2' (H600659-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	<0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.3	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/31/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	64.9	10.0	03/31/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	87.1	% 35-147							
Surrogate: 1-Chlorooctadecane	91.8	% 28-171							

Cardinal Laboratories

*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34 HISTORICAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: PT. 1 @ 4' (H600659-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	<0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/31/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	516	10.0	03/31/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	86.5 9	35-147	7						
Surrogate: 1-Chlorooctadecane	111 %	6 28-171	1						

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34 HISTORICAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: PT. 2 @ 2' (H600659-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	<0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	<i>99.7</i>	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<100	100	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<100	100	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	77.1	% 35-147							
Surrogate: 1-Chlorooctadecane	97.9	% 28-171							

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Celey D. Keene, Lab Director/Quality Manager



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Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34 HISTORICAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: PT. 2 @ 4' (H600659-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	<0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.5	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	84.6	% 35-147							
Surrogate: 1-Chlorooctadecane	97.3	28-171							

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Celey D. Keene, Lab Director/Quality Manager



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Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34 HISTORICAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: PT. 3 @ 2' (H600659-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	<0.050	0.050	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	0.082	0.050	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	<0.150	0.150	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	<0.300	0.300	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.0	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/31/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	395	10.0	03/31/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	89.7	% 35-147	,						
Surrogate: 1-Chlorooctadecane	108 9	28-171							

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Celey D. Keene, Lab Director/Quality Manager



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Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34 HISTORICAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: PT. 3 @ 4' (H600659-06)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	1.06	0.500	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	5.97	0.500	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	9.31	1.50	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	16.3	3.00	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	110	% 73.6-14	0						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	691	200	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	6770	200	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	117	% 35-147	7						
Surrogate: 1-Chlorooctadecane	245	% 28-171	,						

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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.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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. Keine

Celey D. Keene, Lab Director/Quality Manager

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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

#54



April 04, 2016

KYLE NORMAN Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: SEMU PERMIAN #34

Enclosed are the results of analyses for samples received by the laboratory on 03/29/16 14:05.

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/23/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 1 @ 4' (H600660-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	<0.050	0.050	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	<0.050	0.050	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	<0.150	0.150	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	<0.300	0.300	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.0 \$	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	86.5 9	% 35-147							
Surrogate: 1-Chlorooctadecane	95.5 9	% 28-171							

Cardinal Laboratories

*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/23/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 1 @ 6' (H600660-02)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	0.305	0.200	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	1.86	0.200	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	5.91	0.600	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	8.08	1.20	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	126	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	353	100	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	2850	100	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	116 9	% 35-147	7						
Surrogate: 1-Chlorooctadecane	117 9	% 28-171	,						

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/23/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 2 @ 3' (H600660-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	<0.050	0.050	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	<0.050	0.050	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	<0.150	0.150	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	<0.300	0.300	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	81.4 9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	92.2 9	28-171							

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Celey D. Keene, Lab Director/Quality Manager



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Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 3 @ 5' (H600660-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	<0.050	0.050	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	<0.050	0.050	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	<0.150	0.150	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	<0.300	0.300	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	86.3 9	% 35-147							
Surrogate: 1-Chlorooctadecane	98.1 9	28-171							

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 3 @ 8' (H600660-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	<0.050	0.050	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	<0.050	0.050	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	<0.150	0.150	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	<0.300	0.300	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	86.0	% 35-147	,						
Surrogate: 1-Chlorooctadecane	93.1	% 28-171							

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/29/2016	Sampling Date:	03/28/2016
Reported:	04/04/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 4 @ 5' (H600660-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/31/2016	ND	2.00	100	2.00	16.6	
Toluene*	<0.050	0.050	03/31/2016	ND	1.91	95.6	2.00	17.2	
Ethylbenzene*	<0.050	0.050	03/31/2016	ND	1.69	84.5	2.00	17.2	
Total Xylenes*	<0.150	0.150	03/31/2016	ND	5.18	86.4	6.00	16.0	
Total BTEX	<0.300	0.300	03/31/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/31/2016	ND	191	95.4	200	6.17	QR-03
DRO >C10-C28	<10.0	10.0	03/31/2016	ND	173	86.7	200	7.67	QR-03
Surrogate: 1-Chlorooctane	91.3 9	35-147	,						
Surrogate: 1-Chlorooctadecane	110 %	6 28-171							

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values. QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data. ND Analyte NOT DETECTED at or above the reporting limit Relative Percent Difference RPD ** Samples not received at proper temperature of 6°C or below. *** Insufficient time to reach temperature. Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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April 08, 2016

KYLE NORMAN Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: SEMU PERMIAN #34

Enclosed are the results of analyses for samples received by the laboratory on 04/06/16 9:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	04/06/2016	Sampling Date:	03/28/2016
Reported:	04/08/2016	Sampling Type:	Soil
Project Name:	SEMU PERMIAN #34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 1 @ 10' (H600728-01)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	04/07/2016	ND	1.98	98.8	2.00	2.71	
Toluene*	1.69	0.500	04/07/2016	ND	1.88	94.0	2.00	3.17	
Ethylbenzene*	1.94	0.500	04/07/2016	ND	1.67	83.4	2.00	4.10	
Total Xylenes*	4.96	1.50	04/07/2016	ND	5.17	86.1	6.00	4.65	
Total BTEX	8.58	3.00	04/07/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	109 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	04/07/2016	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	290	200	04/07/2016	ND	178	89.0	200	1.81	
DRO >C10-C28	4970	200	04/07/2016	ND	170	85.0	200	4.37	
Surrogate: 1-Chlorooctane	85.6	% 35-147	7						
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*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 EAX (505) 393-2326

Initial Sampling



Initial Sampling

