



January 26, 2018

VERNON BLACK

Hungry Horse Environmental

P.O. Box 1058

Hobbs, NM 88240

RE: SPICA 25

Enclosed are the results of analyses for samples received by the laboratory on 01/22/18 8:08.

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

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 Hungry Horse Environmental
 VERNON BLACK
 P.O. Box 1058
 Hobbs NM, 88240
 Fax To: (505) 391-4585

Received:	01/22/2018	Sampling Date:	01/19/2018
Reported:	01/26/2018	Sampling Type:	Soil
Project Name:	SPICA 25	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: SP1 6" (H800223-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	1.91	95.3	2.00	2.03	
Toluene*	<0.050	0.050	01/23/2018	ND	1.99	99.3	2.00	1.44	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	1.96	98.1	2.00	1.33	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.12	102	6.00	1.19	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6960	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	01/23/2018	ND	204	102	200	0.418		
DRO >C10-C28*	2280	10.0	01/23/2018	ND	225	112	200	1.95		
EXT DRO >C28-C36	609	10.0	01/23/2018	ND						

Surrogate: 1-Chlorooctane 86.0 % 41-142
Surrogate: 1-Chlorooctadecane 189 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Hungry Horse Environmental
 VERNON BLACK
 P.O. Box 1058
 Hobbs NM, 88240
 Fax To: (505) 391-4585

 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP1 4' (H800223-02)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	1.91	95.3	2.00	2.03	
Toluene*	<0.050	0.050	01/23/2018	ND	1.99	99.3	2.00	1.44	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	1.96	98.1	2.00	1.33	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.12	102	6.00	1.19	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/22/2018	ND	204	102	200	0.418	
DRO >C10-C28*	<10.0	10.0	01/22/2018	ND	225	112	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	01/22/2018	ND					

Surrogate: 1-Chlorooctane 89.4 % 41-142

Surrogate: 1-Chlorooctadecane 85.3 % 37.6-147

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 VERNON BLACK
 P.O. Box 1058
 Hobbs NM, 88240
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 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP2 6" (H800223-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	1.91	95.3	2.00	2.03	
Toluene*	<0.050	0.050	01/23/2018	ND	1.99	99.3	2.00	1.44	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	1.96	98.1	2.00	1.33	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.12	102	6.00	1.19	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4120	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	01/22/2018	ND	204	102	200	0.418		
DRO >C10-C28*	1870	10.0	01/22/2018	ND	225	112	200	1.95		
EXT DRO >C28-C36	397	10.0	01/22/2018	ND						

Surrogate: 1-Chlorooctane 89.9 % 41-142

Surrogate: 1-Chlorooctadecane 168 % 37.6-147

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 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP2 3' (H800223-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	1.91	95.3	2.00	2.03	
Toluene*	<0.050	0.050	01/23/2018	ND	1.99	99.3	2.00	1.44	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	1.96	98.1	2.00	1.33	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.12	102	6.00	1.19	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5760	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/22/2018	ND	204	102	200	0.418	
DRO >C10-C28*	22.5	10.0	01/22/2018	ND	225	112	200	1.95	
EXT DRO >C28-C36	26.6	10.0	01/22/2018	ND					

Surrogate: 1-Chlorooctane 90.6 % 41-142

Surrogate: 1-Chlorooctadecane 86.9 % 37.6-147

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 Hungry Horse Environmental
 VERNON BLACK
 P.O. Box 1058
 Hobbs NM, 88240
 Fax To: (505) 391-4585

 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP2 7' (H800223-05)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	2.05	102	2.00	0.148	
Toluene*	<0.050	0.050	01/23/2018	ND	2.10	105	2.00	1.70	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	2.11	106	2.00	1.81	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.52	109	6.00	1.55	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1650	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/22/2018	ND	204	102	200	0.418	
DRO >C10-C28*	<10.0	10.0	01/22/2018	ND	225	112	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	01/22/2018	ND					

Surrogate: 1-Chlorooctane 91.6 % 41-142

Surrogate: 1-Chlorooctadecane 86.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Hungry Horse Environmental
 VERNON BLACK
 P.O. Box 1058
 Hobbs NM, 88240
 Fax To: (505) 391-4585

 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP2 8' (H800223-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	2.05	102	2.00	0.148	
Toluene*	<0.050	0.050	01/23/2018	ND	2.10	105	2.00	1.70	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	2.11	106	2.00	1.81	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.52	109	6.00	1.55	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/22/2018	ND	204	102	200	0.418	
DRO >C10-C28*	<10.0	10.0	01/22/2018	ND	225	112	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	01/22/2018	ND					

Surrogate: 1-Chlorooctane 92.5 % 41-142

Surrogate: 1-Chlorooctadecane 87.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Hungry Horse Environmental
 VERNON BLACK
 P.O. Box 1058
 Hobbs NM, 88240
 Fax To: (505) 391-4585

 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP3 6" (H800223-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	2.05	102	2.00	0.148	
Toluene*	<0.050	0.050	01/23/2018	ND	2.10	105	2.00	1.70	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	2.11	106	2.00	1.81	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.52	109	6.00	1.55	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1540	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/22/2018	ND	204	102	200	0.418	
DRO >C10-C28*	184	10.0	01/22/2018	ND	225	112	200	1.95	
EXT DRO >C28-C36	49.5	10.0	01/22/2018	ND					

Surrogate: 1-Chlorooctane 84.5 % 41-142

Surrogate: 1-Chlorooctadecane 90.3 % 37.6-147

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 Hungry Horse Environmental
 VERNON BLACK
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 Hobbs NM, 88240
 Fax To: (505) 391-4585

 Received: 01/22/2018
 Reported: 01/26/2018
 Project Name: SPICA 25
 Project Number: NONE GIVEN
 Project Location: EDDY CO NM

 Sampling Date: 01/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP3 1.5' (H800223-08)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/23/2018	ND	2.05	102	2.00	0.148	
Toluene*	<0.050	0.050	01/23/2018	ND	2.10	105	2.00	1.70	
Ethylbenzene*	<0.050	0.050	01/23/2018	ND	2.11	106	2.00	1.81	
Total Xylenes*	<0.150	0.150	01/23/2018	ND	6.52	109	6.00	1.55	
Total BTEX	<0.300	0.300	01/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	01/22/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	10.3	10.0	01/23/2018	ND	209	104	200	1.31	
DRO >C10-C28*	<10.0	10.0	01/23/2018	ND	228	114	200	2.89	
EXT DRO >C28-C36	<10.0	10.0	01/23/2018	ND					

Surrogate: 1-Chlorooctane 93.0 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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



Celey D. Keene, Lab Director/Quality Manager

