Total Extractable Petroleum Hydrocarbons (Diesel)

Case Narrative

NMED Hazardous Waste Bureau

KAFB - BFF

Work Order Number: 1104180

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 04/15/2011.

2. The water sample was extracted by adding hexane to the water sample and shaking the resulting two phase solution according to SOP 603 Revision 12, which was developed at ALS. The hydrocarbons partition into the hexane layer, which is then removed for analysis.

3. The extract was then analyzed using GC with a ZB-5HT capillary column and a flame ionization detector (FID) according to SOP 406 Revision 15 generally based on SW-846 Method 8000B and Method 8015B. The procedures are based on this general method because SW-846 does not have a specific method for total extractable petroleum hydrocarbons (TEPH) or diesel range organics. The only true modification from this method is that TEPH is a multicomponent mixture and is quantitated by summing the entire range, rather than individual peaks. All positive results were quantitated using the responses from the initial calibration curve using the external standard technique. Also, a confirmation column is not used, because the analyte is a multicomponent mixture and the specific carbon range of the peaks detected is specified on the individual sample reporting forms.

4. All initial and continuing calibration criteria were met.

5. The method blank associated with this project was below the reporting limit, but above the MDL for diesel range organics. No diesel or other fuel pattern was present in the method blank. Typically, small fluctuations in the detector baseline are responsible for this type of low level analytical result with no observable fuel pattern.

6. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.

7. Sample 1104180-5 was designated as the quality control sample for this analysis.

8. The sample was extracted and analyzed within the established holding time.

9. All surrogate recoveries were within the acceptance criteria.

10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 4.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Mindy Norton
Organics Primary Data Reviewer

04-28-11
Date

Organics Final Data Reviewer

4/28/11
Date

ALS
Data Qualifier Flags
Fuels

G: **This flag indicates that a pattern resembling gasoline was detected in this sample.**

D: **This flag indicates that a pattern resembling diesel was detected in this sample.**

M: **This flag indicates that a pattern resembling motor oil was detected in this sample.**

C: **This flag indicates that a pattern resembling crude oil was detected in this sample.**

4: **This flag indicates that a pattern resembling JP-4 was detected in this sample.**

5: **This flag indicates that a pattern resembling JP-5 was detected in this sample.**

H: **This flag indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.**

L: **This flag indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.**

Z: **This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:**
gasoline
JP-8
diesel
mineral spirits
motor oil
Stoddard solvent
bunker C

Multiple flags may be used to indicate the presence of more than one product or component.

ALS
Data Qualifier Flags
Chromatography and Mass Spectrometry

U or ND:	**This flag indicates that the compound was analyzed for but not detected.**
J:	**This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the data indicate the presence of a compound that meets the identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.**
B:	**This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.**
E:	**This flag identifies compounds whose concentration exceeds the upper level of the calibration range.**
A:	**This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.**
X:	**This flag indicates that the analyte was diluted below an accurate quantitation level.**
***:**	**This flag indicates that a spike recovery is outside the control criteria.**
+:	**This flag indicates that the relative percent difference (RPD) exceeds the control criteria.**

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1104180
Client Name: NMED Hazardous Waste Bureau
Client Project Name: KAFB - BFF
Client Project Number:
Client PO Number: 10-667-00-13453

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
10615-A	1104180-1		WATER	14-Apr-11	11:43
10615-B	1104180-2		WATER	14-Apr-11	11:45
10615-C	1104180-3		WATER	14-Apr-11	11:49
10615-D	1104180-4		WATER	14-Apr-11	11:51
10615-E	1104180-5		WATER	14-Apr-11	11:55
10615-F	1104180-6		WATER	14-Apr-11	11:58
10615-G	1104180-7		WATER	14-Apr-11	12:00
10615-H	1104180-8		WATER	14-Apr-11	12:01
10615-I	1104180-9		WATER	14-Apr-11	12:03
10615-J	1104180-10		WATER	14-Apr-11	12:04

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER #	1104180
PAGE	1 of 1
DISPOSAL	By Lab (circled) or Return to Client

		SAMPLER	SB / BS
PROJECT NAME	KAFB - BFF	SITE ID	KAFB - 10615
PROJECT No.		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	NMED	BILL TO COMPANY	NMED / HWB
SEND REPORT TO	SID BRANDWEIN	INVOICE ATTN TO	DAVE COBRAIN
ADDRESS	5500 SAN ANTONIO DR NE	ADDRESS	2905 RODEO PARK DR.
CITY / STATE / ZIP	ALBQ, NM 87109	CITY / STATE / ZIP	SANTA FE, NM 875[illegible]
PHONE	505-222-9504	PHONE	505-476-6055
FAX		FAX	
E-MAIL	sid.brandwein@state.nm.us	E-MAIL	

DATE: 4/14/11 TURNAROUND: NORMAL

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	VOC, 8260	EDB 8011/504.1	GRO 8015	DRO 8015	PAH-SVOC, 8270 SIMS	Tot METALS 6010	ALK + ANIONS 310.1 300.0	NH3/Nitrate+Nitrite 350.1 353.3	SULFIDE 376.1	DISS. Fe+Mn only 6010
1	10615-A	W	4/14/11	11:43	3	HCl		X									
2	10615-B	W	"	11:45	3	HCl				X							
3	10615-C	W	"	11:49	3	HCl			X								
4	10615-D	W	"	11:51	1	–						X					
5	10615-E	W	"	11:55	1	–					X						
6	10615-F	W	"	11:58	1	–								X			
7	10615-G	W	"	12:00	1	H2SO4									X		
8	10615-H	W	"	12:01	1	ZnAc										X	
9	10615-I	W	"	12:03	1	HNO3							X				
10	10615-J	W	"	12:04	1	HNO3											X

Entered by [illegible] on 4-18-11.

*Time Zone (Circle): EST CST MST (circled) PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

TOTAL METALS TAL

DISSOLVED METALS Fe + Mn only

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	[signature]	S. BRANDWEIN	4/14/11	2:45PM
RECEIVED BY	C. O'[illegible]	[signature]	4/14/11	2:45PM
RELINQUISHED BY				
RECEIVED BY	[signature]	Lauren Schmitz	4/15/11	0950
RELINQUISHED BY				
RECEIVED BY				

ALS Laboratory Group - Fort Collins

CONDITION OF SAMPLE UPON RECEIPT FORM

Client: NMED Workorder No: 1104180

Project Manager: CRS Initials: LAS Date: 4/15/11

1.	Does this project require any **special handling** in addition to standard Paragon procedures?		YES	(NO)
2.	Are custody **seals** on **shipping containers** intact?	NONE	(YES)	NO
3.	Are Custody seals on **sample containers** intact?	(NONE)	YES	NO
4.	Is there a **COC (Chain-of-Custody) present** or other representative documents?		(YES)	NO
5.	Are the **COC and bottle labels complete and legible**?		(YES)	NO
6.	Is the **COC in agreement** with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7.	Were **airbills / shipping documents** present and/or removable?	DROP OFF	(YES)	NO
(8.)	Are all **aqueous samples requiring preservation preserved correctly? (excluding volatiles)**	N/A	YES	(NO) *
9.	Are all aqueous **non-preserved samples pH 4-9**?	N/A	(YES)	NO
10.	Is there **sufficient sample** for the requested analyses?		(YES)	NO
11.	Were all samples placed in the **proper containers** for the requested analyses?		(YES)	NO
12.	Are all samples within **holding times** for the requested analyses?		(YES)	NO
13.	Were all sample containers received **intact**? (not broken or leaking, etc.)		(YES)	NO
(14)	Are all samples requiring **no** headspace (**VOC, GRO, RSK/MEE, Rx CN/S, radon**) headspace free? **Size of bubble**: ____ < green pea ✓ > green pea	N/A	YES	(NO) *
15.	Do perchlorate LCMS-MS samples **have** headspace? (at least 1/3 of container required)	(N/A)	YES	NO
16.	Were samples checked for and free from the presence of **residual chlorine?** (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	(N/A)	YES	NO
17.	Were the samples **shipped on ice**?		(YES)	NO
18.	Were cooler temperatures measured at 0.1-6.0°C? **IR gun used*:** (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1								
Temperature (°C):	1.4								
No. of custody seals on cooler:	1								
DOT Survey/ Acceptance Information — External µR/hr reading:	14								
Background µR/hr reading:	12								

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

(8*) 1104180-5-1 (10615-E) had an initial pH=7 (analysis = DRO). At 1140, LAS added 0.5mL H_2SO_4 (lot #49245) on 4/15/11 Final pH<2.

(14*) 1104180-3-3 (10615B) & 1104180-2-2 (10615C) have headspace > pea sized

If applicable, was the client contacted? (YES) / NO / NA Contact: Sid B. Date/Time: 4/18

Project Manager Signature / Date: 4/18/11

*IR Gun #2: Oakton, SN 29922500201-0066 *IR Gun #4: Oakton, SN 2372220101-0002

Form 201r22.xls (6/1/09)

FedEx Express US Airbill

8704 5139 7711

0200

Form ID No. 110448

FedEx Retrieval Copy

1 From

Date 4/14/11 Sender's FedEx Account Number

Sender's Name S. BRADLEY Phone 541 222-9543

Company MyED

Address 555 SW Arthur OR NC Dept/Floor/Suite/Room

City ALBA State OR ZIP 97114

2 Your Internal Billing Reference

3 To

Recipient's Name L. STEERE Phone 970 490-1511

Company ALS LAB

1 ☐ HOLD Weekday Print FedEx location address below. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday Print FedEx location address below. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Address 225 COMMERCE DR

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept/Floor/Suite/Room

Address

Print FedEx location address here if a HOLD option is selected.

City FORT COLLINS State CO ZIP 80524-2762

8704 5139 7711

4a Express Package Service * To most locations. Packages up to 150 lbs.

1 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

5 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

6 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

3 ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

4b Express Freight Service ** To most locations. Packages over 150 lbs.

7 ☐ FedEx 1Day Freight — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx 1Day Freight Booking No.

8 ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

83 ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

6 ☐ FedEx Envelope* 2 ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. 3 ☐ FedEx Box 4 ☐ FedEx Tube 1 ☒ Other

6 Special Handling and Delivery Signature Options

3 ☐ **SATURDAY DELIVERY**

☒ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

☒ No 4 ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required 6 ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No. ☐

1 ☐ Sender Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☒ Credit Card 5 ☐ Cash/Check

Total Packages 1 Total Weight 3.0 lbs. Credit Card Auth.

† Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Rev. Date 2/08•Part #158281•©1994–2008 FedEx•PRINTED IN U.S.A. SRY

Diesel Range Organics

Method SW8015MB

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1104180

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF

Lab ID: EX110420-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 20-Apr-11
Date Analyzed: 24-Apr-11

Prep Batch: EX110420-1
QCBatchID: EX110420-1-1
Run ID: HCD110424-3A
Cleanup: NONE
Basis: N/A
File Name: F3F38771

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	0.29	0.5	0.17	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	1.18		1.25	94	57 - 132

Data Package ID: *HCD1104180-1*

Diesel Range Organics

Method SW8015MB

Sample Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1104180
Client Name: NMED Hazardous Waste Bureau
ClientProject ID: KAFB - BFF

Field ID: 10615-E
Lab ID: 1104180-5

Analysis ReqCode: 163

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 14-Apr-11
Date Extracted: 20-Apr-11
Date Analyzed: 24-Apr-11
Prep Method: METHOD

Prep Batch: EX110420-1
QCBatchID: EX110420-1-1
Run ID: HCD110424-3A
Cleanup: NONE
Basis: As Received
File Name: F3F38774

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	0.36	0.5	0.17	J,B	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	1.06		1.25	84	57 - 132

Data Package ID: *HCD1104180-1*

Diesel Range Organics

Method SW8015MB

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1104180

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF

Lab ID: EX110420-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 04/20/2011
Date Analyzed: 04/24/2011
Prep Method: METHOD

Prep Batch: EX110420-1
QCBatchID: EX110420-1-1
Run ID: HCD110424-3A
Cleanup: NONE
Basis: N/A
File Name: F3F38772

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
68334-30-5	Diesel Range Organics	5	4.52	0.5		90	36 - 150%

Lab ID: EX110420-1LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 04/20/2011
Date Analyzed: 04/24/2011
Prep Method: METHOD

Prep Batch: EX110420-1
QCBatchID: EX110420-1-1
Run ID: HCD110424-3A
Cleanup: NONE
Basis: N/A
File Name: F3F38773

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
68334-30-5	Diesel Range Organics	5	4.44	0.5		89	20	2

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
84-15-1	O-TERPHENYL	1.25	90		87		57 - 132

Data Package ID: *HCD1104180-1*

Diesel Range Organics

Method SW8015MB

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1104180
Client Name: NMED Hazardous Waste Bureau
ClientProject ID: KAFB - BFF

Field ID: 10615-E
LabID: 1104180-5MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 14-Apr-11
Date Extracted: 20-Apr-11
Date Analyzed: 24-Apr-11
Prep Method: METHOD

Prep Batch: EX110420-1
QCBatchID: EX110420-1-1
Run ID: HCD110424-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
File Name: F3F38775

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
68334-30-5	Diesel Range Organics	0.36	J,B	4.24		0.5	5	77	36 - 150%

Field ID: 10615-E
LabID: 1104180-5MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 14-Apr-11
Date Extracted: 20-Apr-11
Date Analyzed: 25-Apr-11
Prep Method: METHOD

Prep Batch: EX110420-1
QCBatchID: EX110420-1-1
Run ID: HCD110424-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
File Name: F3F38776

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
68334-30-5	Diesel Range Organics	4.4		5	81	0.5	20	4

Surrogate Recovery MS/MSD

CASNO	Target Analyte	Spike Added	MS % Rec.	MS Flag	MSD % Rec.	MSD Flag	Control Limits
84-15-1	O-TERPHENYL	1.25	81		84		57 - 132

Data Package ID: *HCD1104180-1*