



February 19, 2013

Ms. Denise Elston, Environmental Program Specialist
Alaska Department of Environmental Conservation
Regulatory Development and Implementation Section
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99811

Re: Eaglecrest Ski Area Maintenance Shop Site – Groundwater Monitoring

Dear Ms. Elston,

This letter summarizes the results of groundwater well installation and sampling conducted by Carson Dorn, Inc. (CDI) at the Eaglecrest Ski Area Maintenance Shop Site in Juneau, Alaska.

In 1991, soil and groundwater contamination was discovered during a routine site assessment of four underground storage tanks (USTs) at the maintenance shop. In 1997, soil and groundwater contamination was discovered during removal of nine USTs. Two of the USTs were 5,000 gallon and 500 gallon USTs located at the Ski Lodge, the third was a 1,500 gallon diesel UST located at the Platter Pull Lift Terminal, the fourth was a 10,000 diesel UST located at the Ptarmigan Lift Terminal, four of the diesel USTs (2 – 2,000 gallon USTs and 2 – 10,000 gallon USTs) were located at the east end of the Maintenance Building, and the ninth tank was a 6,000 gallon diesel UST located at the Hooter Lift Terminal. As part of the removal, approximately 500 cubic yards of material was stockpiled off-site and later remediated but contaminated soil remains on-site. Four groundwater wells were installed and sampled in 1998; all groundwater samples had elevated diesel contamination (9.3 mg/L in MW-1, 28 mg/L in MW-2, 8.3 mg/L in MW-3, and 7.4 mg/L in MW-4). All groundwater samples were non-detect for total BTEX. Two additional water samples were collected in 1998. One from the monitoring well port at the old tanks and one from about 100 feet downstream from the work area in Fish Creek. Both samples were non-detect for DRO and total BTEX.

The results of site assessment and removal actions to date are presented in the following documents:

- Montgomery Watson. *UST Site Assessment – Eaglecrest Ski Area*. March 1998.
- Smith Bayliss LeResche, Inc. *Test Wells, Soils/Water Sampling at Eaglecrest Maintenance Shop*. October 22, 1998.

In order to determine the extent of groundwater contamination and evaluate potential impacts to the adjacent Fish Creek, Denali Drilling was subcontracted to install three



Carson Dorn, Inc.

712 West 12th Street Juneau, Alaska 99801

new permanent groundwater monitoring wells. Efforts to locate the four wells installed in 1998 were unsuccessful or the wells were damaged and unable to be sampled.

On October 25, 2012, two permanent groundwater monitoring wells (MW-1 and MW-2) were installed. The monitoring wells are 10 feet in depth with 5 feet PVC screens. From the bottom of the wells, there is about 1 to 2 feet of existing gravel and sand material, then 5 to 6 feet of silica sand topped by 2 feet bentonite seals. The flush mounted well covers are on top of the bentonite seals. Depth to groundwater was 8 feet in both MW-1 and MW-2 during installation.

The planned monitoring well nearest Fish Creek was not installed due to repeated refusal due to cobbles and large boulders. Edmon Cruz of R&M Engineering, instructed the driller to move the well location several times, on the fourth location the drill hit an underground culvert pipe and a decision was made to discontinue drilling.

Groundwater sampling for diesel range organics (DRO), residual range organics (RRO), and benzene, toluene, ethylbenzene, and xylenes (BTEX) was conducted at MW-1 and MW-2 on January 4, 2013. DRO was detected at a concentration of 0.85 mg/L in MW-1 (0.754 mg/L in MW-1 and 0.959 mg/L in MW-D) and 1.07 mg/L in MW-2 which is below the ADEC groundwater cleanup level of 1.5 mg/L. RRO was detected at a concentration of 0.54 mg/L in MW-1 (0.545 mg/L in MW-1 and 0.542 mg/L in MW-D) and 0.638 mg/L in MW-2 which is below the ADEC groundwater cleanup level of 1.1 mg/L. BTEX were not detected in the samples.

The locations of the removed tanks along with limits of the historical excavation and the new monitoring wells are depicted on Figure 1. The laboratory analytical report, and laboratory data review checklist are included as Attachment A.

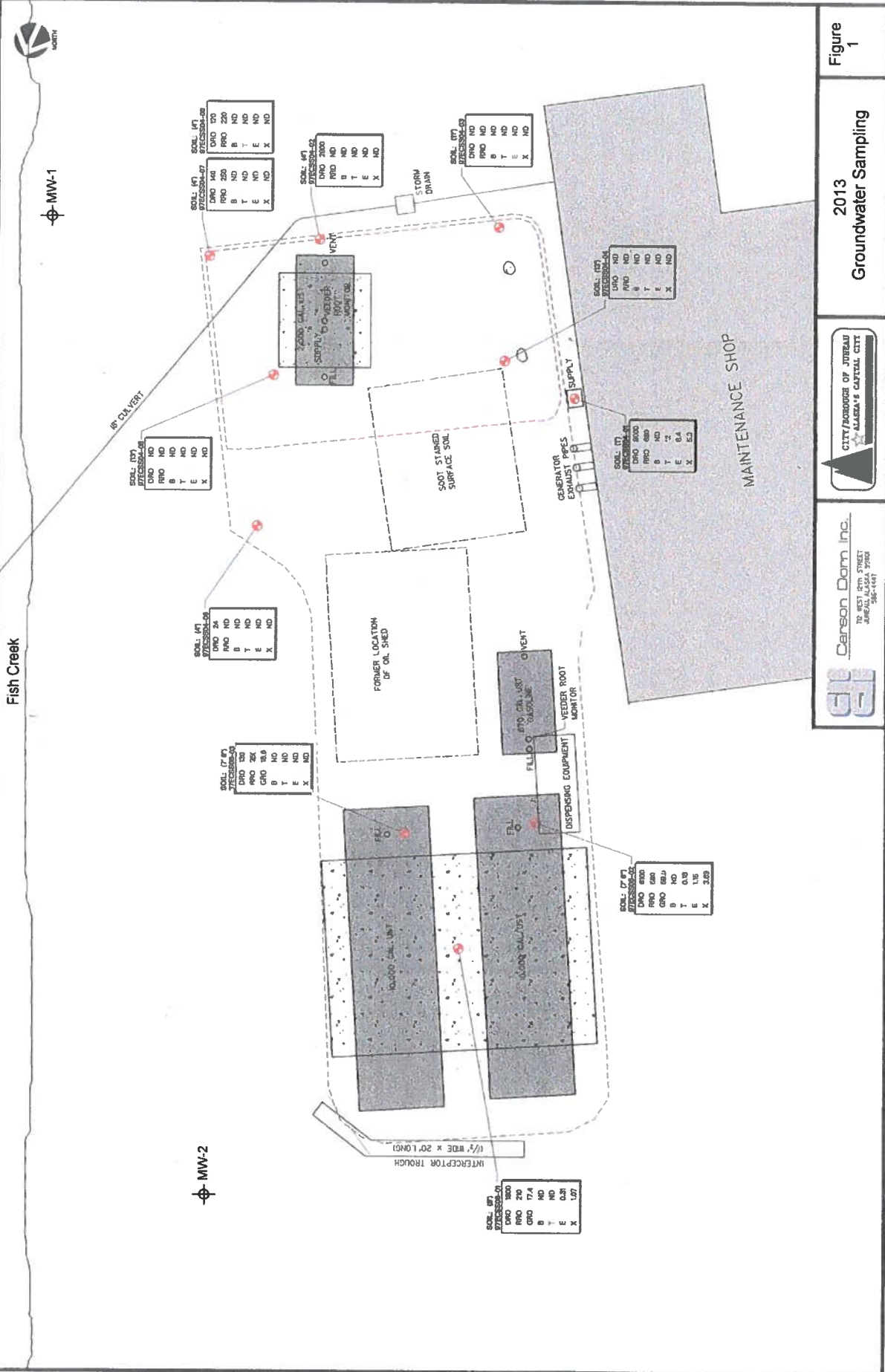
The groundwater sampling of MW-1 and MW-2 indicates existing residual contamination is below ADEC groundwater cleanup levels and contaminated groundwater does not appear likely to be impacting Fish Creek. CDI requests a "closure determination" for the site.

Please don't hesitate to contact me at 586-4447 if you have any questions.

Sincerely

A handwritten signature in black ink that reads "Jolene M Cox". The signature is written in a cursive, flowing style.

Jolene M Cox, Environmental Professional



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Anchorage

2000 West International Airport Road Suite A10

Anchorage, AK 99502-1119

Tel: (907) 563-9200

TestAmerica Job ID: AWA0005

Client Project/Site: [none]

Client Project Description: Eaglecrest Maint. Bldg

For:

Carson Dorn, Inc.

712 W. 12th Street

Juneau, AK/USA 99801

Attn: Jolene Cox

Johanna Dreher

Authorized for release by:

1/23/2013 11:26:08 AM

Johanna L Dreher

Client Services Manager

johanna.dreher@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?

**Ask
The
Expert**

Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
Surrogate Summary	8
QC Sample Results	10
QC Association Summary	13
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18



Definitions/Glossary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Qualifiers

Fuels

Qualifier	Qualifier Description
Q4	The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.

GC Volatiles

Qualifier	Qualifier Description
R4	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Case Narrative

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Job ID: AWA0005

Laboratory: TestAmerica Anchorage

Narrative

Receipt

All samples were received in good condition within temperature requirements.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Client Sample ID: MW-1

Lab Sample ID: AWA0005-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	0.754	Q4	0.400		mg/l	1.00		AK102/103	Total
Residual Range Organics	0.545	Q4	0.400		mg/l	1.00		AK102/103	Total

Client Sample ID: MW-D

Lab Sample ID: AWA0005-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	0.959	Q4	0.391		mg/l	1.00		AK102/103	Total
Residual Range Organics	0.542	Q4	0.391		mg/l	1.00		AK102/103	Total

Client Sample ID: MW-2

Lab Sample ID: AWA0005-03

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	1.07	Q4	0.391		mg/l	1.00		AK102/103	Total
Residual Range Organics	0.638	Q4	0.391		mg/l	1.00		AK102/103	Total

This Detection Summary does not include radiochemical test results.

TestAmerica Anchorage



Client Sample Results

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Client Sample ID: MW-1

Lab Sample ID: AWA0005-01

Date Collected: 01/04/13 11:00

Matrix: Water

Date Received: 01/09/13 08:20

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	0.754	Q4	0.400		mg/l		01/16/13 08:04	01/17/13 12:55	1.00
Residual Range Organics	0.545	Q4	0.400		mg/l		01/16/13 08:04	01/17/13 12:55	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	110		50 - 150	01/16/13 08:04	01/17/13 12:55	1.00
Triacotane	109		50 - 150	01/16/13 08:04	01/17/13 12:55	1.00

Method: EPA 8021B - BTEX by EPA Method 8021B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 16:11	1.00
Toluene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 16:11	1.00
Ethylbenzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 16:11	1.00
Xylenes (total)	ND		1.50		ug/l		01/10/13 10:27	01/10/13 16:11	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-BFB (PID)	98.6		50 - 150	01/10/13 10:27	01/10/13 16:11	1.00
a,a,a-TFT (PID)	97.1		50 - 150	01/10/13 10:27	01/10/13 16:11	1.00

Client Sample ID: MW-D

Lab Sample ID: AWA0005-02

Date Collected: 01/04/13 11:25

Matrix: Water

Date Received: 01/09/13 08:20

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	0.959	Q4	0.391		mg/l		01/16/13 08:04	01/17/13 13:28	1.00
Residual Range Organics	0.542	Q4	0.391		mg/l		01/16/13 08:04	01/17/13 13:28	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	106		50 - 150	01/16/13 08:04	01/17/13 13:28	1.00
Triacotane	104		50 - 150	01/16/13 08:04	01/17/13 13:28	1.00

Method: EPA 8021B - BTEX by EPA Method 8021B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 16:38	1.00
Toluene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 16:38	1.00
Ethylbenzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 16:38	1.00
Xylenes (total)	ND		1.50		ug/l		01/10/13 10:27	01/10/13 16:38	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-BFB (PID)	104		50 - 150	01/10/13 10:27	01/10/13 16:38	1.00
a,a,a-TFT (PID)	100		50 - 150	01/10/13 10:27	01/10/13 16:38	1.00

Client Sample ID: MW-2

Lab Sample ID: AWA0005-03

Date Collected: 01/04/13 13:15

Matrix: Water

Date Received: 01/09/13 08:20

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	1.07	Q4	0.391		mg/l		01/16/13 08:04	01/17/13 14:00	1.00
Residual Range Organics	0.638	Q4	0.391		mg/l		01/16/13 08:04	01/17/13 14:00	1.00

TestAmerica Anchorage

Client Sample Results

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Client Sample ID: MW-2

Lab Sample ID: AWA0005-03

Date Collected: 01/04/13 13:15

Matrix: Water

Date Received: 01/09/13 08:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	107		50 - 150	01/16/13 08:04	01/17/13 14:00	1.00
Triacontane	112		50 - 150	01/16/13 08:04	01/17/13 14:00	1.00

Method: EPA 8021B - BTEX by EPA Method 8021B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 17:05	1.00
Toluene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 17:05	1.00
Ethylbenzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 17:05	1.00
Xylenes (total)	ND		1.50		ug/l		01/10/13 10:27	01/10/13 17:05	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-BFB (PID)	105		50 - 150	01/10/13 10:27	01/10/13 17:05	1.00
a,a,a-TFT (PID)	102		50 - 150	01/10/13 10:27	01/10/13 17:05	1.00



Surrogate Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1COD (50-150)	TC (50-150)
13A0012-BLK1	Method Blank	103	103
13A0012-DUP1	MW-1	94.1	97.4
AWA0005-01	MW-1	110	109
AWA0005-02	MW-D	106	104
AWA0005-03	MW-2	107	112

Surrogate Legend
1COD = 1-Chlorooctadecane
TC = Triacontane

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1COD (60-120)	TC (60-120)
13A0012-BS1	Lab Control Sample	104	109
13A0012-BSD1	Lab Control Sample Dup	91.4	98.6

Surrogate Legend
1COD = 1-Chlorooctadecane
TC = Triacontane

Method: EPA 8021B - BTEX by EPA Method 8021B

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		4-BFB (PID) (50-150)	a,a-TFT (PI) (50-150)
13A0011-BLK1	Method Blank	107	109
13A0011-DUP1	MW-1	98.4	101
AWA0005-01	MW-1	98.6	97.1
AWA0005-02	MW-D	104	100
AWA0005-03	MW-2	105	102

Surrogate Legend
4-BFB (PID) = 4-BFB (PID)
a,a,a-TFT (PID) = a,a,a-TFT (PID)

Method: EPA 8021B - BTEX by EPA Method 8021B

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		4-BFB (PID) (60-120)	a,a-TFT (PI) (60-120)
13A0011-BS1	Lab Control Sample	102	111
13A0011-BSD1	Lab Control Sample Dup	98.0	102

TestAmerica Anchorage

Surrogate Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Surrogate Legend

4-BFB (PID) = 4-BFB (PID)

a,a,a-TFT (PID) = a,a,a-TFT (PID)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Sample Results

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Lab Sample ID: 13A0012-BLK1
Matrix: Water
Analysis Batch: W000017

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13A0012_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics	ND		0.500		mg/l		01/16/13 08:04	01/17/13 10:46	1.00
Residual Range Organics	ND		0.500		mg/l		01/16/13 08:04	01/17/13 10:46	1.00

Surrogate	Blank	Blank	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctadecane	103		50 - 150	01/16/13 08:04	01/17/13 10:46	1.00
Triacontane	103		50 - 150	01/16/13 08:04	01/17/13 10:46	1.00

Lab Sample ID: 13A0012-BS1
Matrix: Water
Analysis Batch: W000017

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13A0012_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Residual Range Organics	10.4	11.3		mg/l		108 60 - 120	

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1-Chlorooctadecane	104		60 - 120
Triacontane	109		60 - 120

Lab Sample ID: 13A0012-BSD1
Matrix: Water
Analysis Batch: W000017

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13A0012_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Residual Range Organics	10.4	10.1		mg/l		96.9 60 - 120	11.1	20	

Surrogate	LCS Dup	LCS Dup	Limits
	%Recovery	Qualifier	
1-Chlorooctadecane	91.4		60 - 120
Triacontane	98.6		60 - 120

Lab Sample ID: 13A0012-DUP1
Matrix: Water
Analysis Batch: W000017

Client Sample ID: MW-1
Prep Type: Total
Prep Batch: 13A0012_P

Analyte	Sample	Sample	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
	Result	Qualifier						
Diesel Range Organics	0.754	Q4	0.719		mg/l		4.78	20
Residual Range Organics	0.545	Q4	0.508		mg/l		6.90	20

Surrogate	Duplicate	Duplicate	Limits
	%Recovery	Qualifier	
1-Chlorooctadecane	94.1		50 - 150
Triacontane	97.4		50 - 150

TestAmerica Anchorage



QC Sample Results

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Method: EPA 8021B - BTEX by EPA Method 8021B

Lab Sample ID: 13A0011-BLK1
Matrix: Water
Analysis Batch: W000013

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13A0011_P

Analyte	Blank		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 14:17	1.00
Toluene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 14:17	1.00
Ethylbenzene	ND		0.500		ug/l		01/10/13 10:27	01/10/13 14:17	1.00
Xylenes (total)	ND		1.50		ug/l		01/10/13 10:27	01/10/13 14:17	1.00
Surrogate	Blank		Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
4-BFB (PID)	107		50 - 150				01/10/13 10:27	01/10/13 14:17	1.00
a,a,a-TFT (PID)	109		50 - 150				01/10/13 10:27	01/10/13 14:17	1.00

Lab Sample ID: 13A0011-BS1
Matrix: Water
Analysis Batch: W000013

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13A0011_P

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits	
		Result	Qualifier					
Benzene	7.30	6.09		ug/l		83.4	70 - 130	
Toluene	53.4	43.1		ug/l		80.7	70 - 130	
Ethylbenzene	12.6	9.90		ug/l		78.6	70 - 130	
Xylenes (total)	63.9	48.5		ug/l		76.0	70 - 130	
Surrogate	LCS		Limits			D	%Rec	%Rec. Limits
	%Recovery	Qualifier						
4-BFB (PID)	102		60 - 120					
a,a,a-TFT (PID)	111		60 - 120					

Lab Sample ID: 13A0011-BSD1
Matrix: Water
Analysis Batch: W000013

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13A0011_P

Analyte	Spike Added	LCS Dup		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
		Result	Qualifier						
Benzene	7.30	6.09		ug/l		83.4	70 - 130	0.016	20
Toluene	53.4	43.1		ug/l		80.7	70 - 130	0.065	20
Ethylbenzene	12.6	9.82		ug/l		78.0	70 - 130	0.771	20
Xylenes (total)	63.9	48.4		ug/l		75.8	70 - 130	0.194	20
Surrogate	LCS Dup		Limits			D	%Rec	%Rec. Limits	RPD
	%Recovery	Qualifier							
4-BFB (PID)	98.0		60 - 120						
a,a,a-TFT (PID)	102		60 - 120						

Lab Sample ID: 13A0011-DUP1
Matrix: Water
Analysis Batch: W000013

Client Sample ID: MW-1
Prep Type: Total
Prep Batch: 13A0011_P

Analyte	Sample		Duplicate		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Benzene	ND		ND		ug/l			20
Toluene	0.131		0.192	R4	ug/l		37.8	20
Ethylbenzene	ND		ND		ug/l			20
Xylenes (total)	ND		ND		ug/l			20

TestAmerica Anchorage

QC Sample Results

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Method: EPA 8021B - BTEX by EPA Method 8021B (Continued)

Lab Sample ID: 13A0011-DUP1
Matrix: Water
Analysis Batch: W000013

Client Sample ID: MW-1
Prep Type: Total
Prep Batch: 13A0011_P

<i>Surrogate</i>	<i>Duplicate %Recovery</i>	<i>Duplicate Qualifier</i>	<i>Limits</i>
4-BFB (PID)	98.4		50 - 150
a,a,a-TFT (PID)	101		50 - 150

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Association Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Fuels

Analysis Batch: W000017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13A0012-BLK1	Method Blank	Total	Water	AK102/103	13A0012_P
13A0012-BS1	Lab Control Sample	Total	Water	AK102/103	13A0012_P
13A0012-BSD1	Lab Control Sample Dup	Total	Water	AK102/103	13A0012_P
13A0012-DUP1	MW-1	Total	Water	AK102/103	13A0012_P
AWA0005-01	MW-1	Total	Water	AK102/103	13A0012_P
AWA0005-02	MW-D	Total	Water	AK102/103	13A0012_P
AWA0005-03	MW-2	Total	Water	AK102/103	13A0012_P

Prep Batch: 13A0012_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13A0012-BLK1	Method Blank	Total	Water	EPA 3510	
13A0012-BS1	Lab Control Sample	Total	Water	EPA 3510	
13A0012-BSD1	Lab Control Sample Dup	Total	Water	EPA 3510	
13A0012-DUP1	MW-1	Total	Water	EPA 3510	
AWA0005-01	MW-1	Total	Water	EPA 3510	
AWA0005-02	MW-D	Total	Water	EPA 3510	
AWA0005-03	MW-2	Total	Water	EPA 3510	

GC Volatiles

Analysis Batch: W000013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13A0011-BLK1	Method Blank	Total	Water	EPA 8021B	13A0011_P
13A0011-BS1	Lab Control Sample	Total	Water	EPA 8021B	13A0011_P
13A0011-BSD1	Lab Control Sample Dup	Total	Water	EPA 8021B	13A0011_P
13A0011-DUP1	MW-1	Total	Water	EPA 8021B	13A0011_P
AWA0005-01	MW-1	Total	Water	EPA 8021B	13A0011_P
AWA0005-02	MW-D	Total	Water	EPA 8021B	13A0011_P
AWA0005-03	MW-2	Total	Water	EPA 8021B	13A0011_P

Prep Batch: 13A0011_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13A0011-BLK1	Method Blank	Total	Water	EPA 5030B	
13A0011-BS1	Lab Control Sample	Total	Water	EPA 5030B	
13A0011-BSD1	Lab Control Sample Dup	Total	Water	EPA 5030B	
13A0011-DUP1	MW-1	Total	Water	EPA 5030B	
AWA0005-01	MW-1	Total	Water	EPA 5030B	
AWA0005-02	MW-D	Total	Water	EPA 5030B	
AWA0005-03	MW-2	Total	Water	EPA 5030B	

Lab Chronicle

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Client Sample ID: MW-1

Lab Sample ID: AWA0005-01

Date Collected: 01/04/13 11:00

Matrix: Water

Date Received: 01/09/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3510		0.800	13A0012_P	01/16/13 08:04	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000017	01/17/13 12:55	KDC	TAL ANC
Total	Prep	EPA 5030B		1.00	13A0011_P	01/10/13 10:27	JPN	TAL ANC
Total	Analysis	EPA 8021B		1.00	W000013	01/10/13 16:11	JPN	TAL ANC

Client Sample ID: MW-D

Lab Sample ID: AWA0005-02

Date Collected: 01/04/13 11:25

Matrix: Water

Date Received: 01/09/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3510		0.781	13A0012_P	01/16/13 08:04	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000017	01/17/13 13:28	KDC	TAL ANC
Total	Prep	EPA 5030B		1.00	13A0011_P	01/10/13 10:27	JPN	TAL ANC
Total	Analysis	EPA 8021B		1.00	W000013	01/10/13 16:38	JPN	TAL ANC

Client Sample ID: MW-2

Lab Sample ID: AWA0005-03

Date Collected: 01/04/13 13:15

Matrix: Water

Date Received: 01/09/13 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3510		0.781	13A0012_P	01/16/13 08:04	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000017	01/17/13 14:00	KDC	TAL ANC
Total	Prep	EPA 5030B		1.00	13A0011_P	01/10/13 10:27	JPN	TAL ANC
Total	Analysis	EPA 8021B		1.00	W000013	01/10/13 17:05	JPN	TAL ANC

Laboratory References:

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road Suite A10, Anchorage, AK 99502-1119, TEL (907) 563-9200



Certification Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Laboratory: TestAmerica Anchorage

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	AK00975	06-30-13
Alaska (UST)	State Program	10	UST-067	06-16-13

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Method	Method Description	Protocol	Laboratory
AK102/103	Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO		TAL ANC
EPA 8021B	BTEX by EPA Method 8021B		TAL ANC

Protocol References:

Laboratory References:

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road Suite A10, Anchorage, AK 99502-1119, TEL (907) 563-9200



Sample Summary

Client: Carson Dorn, Inc.
Project/Site: [none]

TestAmerica Job ID: AWA0005

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
AWA0005-01	MW-1	Water	01/04/13 11:00	01/09/13 08:20
AWA0005-02	MW-D	Water	01/04/13 11:25	01/09/13 08:20
AWA0005-03	MW-2	Water	01/04/13 13:15	01/09/13 08:20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

AWA0005

CHAIN OF CUSTODY/TRANSMITTAL RECORD							
PROJECT NAME:	ANALYSIS REQUIRED:	GROUP NO:	LAB #:	COMMENTS:	CUSTODY SEAL:	YES	COMMENTS:
PROJECT NAME: <u>Engineering Inkjet, Bids</u>	<u>AK101/BTX ONLY</u>	<u>Carson Dorn, Inc.</u>					
SAMPLER(S): <u>J. COX</u>	PROJECT NO:	712 West 12th Street Juneau, Alaska 99801					
COMMENTS:		Telephone: 907-586-4447 Fax: 907-586-5917					
Contact Name: <u>Jolene Cox</u>							
Contact E-mail: <u>jcox@carsondorn.com</u>							
TIME: DATE:	SAMPLE ID/DESCRIPTION:	MATRIX:	NUMBER OF CONTAINERS:				
11:00 1/4/13	MN-1	H ₂ O	2-100, 3-110	X	X		
11:25 ↓	MN-1D	↓	↓	X	X		
12:15 ↓	MN-2	↓	↓	X	X		
RELINQUISHED BY: (signature)	Date:	Time:	RECEIVED BY: (signature)	Date:	Time:	CUSTODY SEAL: YES	COMMENTS:
<u>J. Cox</u>	1/5/13	10:20	<u>Jolene Cox</u>	01-07-13	820	NO	
RELINQUISHED BY: (signature)	Date:	Time:	RECEIVED BY: (signature)	Date:	Time:	CUSTODY SEAL: YES	COMMENTS:
						NO	
RELINQUISHED BY: (signature)	Date:	Time:	RECEIVED BY: (signature)	Date:	Time:	CUSTODY SEAL: YES	COMMENTS:
						NO	
TEMPERATURE RECEIVED: <u>2.6°C</u>							TURNAROUND TIME: <u>Standard turn</u>

01
02
03



Test America Cooler Receipt Form

(Army Corps. Compliant)



WORK ORDER # AWA0005 CLIENT: Carson Dorn PROJECT: Eaglecrest Maint. Bldg

Date/Time Cooler Arrived 01 / 09 / 13 08:20 Cooler signed for by: Johanna Dreher
(Print name)

Preliminary Examination Phase:

Date cooler opened: same as date received or / /

Cooler opened by (print) Johanna Dreher (sign) Johanna E. Dreher

1. Delivered by ALASKA AIRLINES Fed-Ex UPS NAC LYNDEN CLIENT Other:

Shipment Tracking # if applicable 86863840 (include copy of shipping papers in file)

2. Number of Custody Seals 0 Signed by N/A Date / /

Were custody seals unbroken and intact on arrival? Yes No

3. Were custody papers sealed in a plastic bag? Yes No

4. Were custody papers filled out properly (ink, signed, etc.)? Yes No

5. Did you sign the custody papers in the appropriate place? Yes No

6. Was ice used? Yes No Type of ice: blue ice gel ice real ice dry ice Condition of Ice: Solid

Temperature 2.6 °C (corrected) Thermometer # rec # 5

7. Packing in Cooler: bubble wrap styrofoam cardboard Other:

8. Did samples arrive in plastic bags? Yes No

9. Did all bottles arrive unbroken, and with labels in good condition? Yes No

10. Are all bottle labels complete (ID, date, time, etc.) Yes No

11. Do bottle labels and Chain of Custody agree? Yes No

12. Are the containers and preservatives correct for the tests indicated? Yes No

13. Conoco Phillips, Alyeska, BP H2O samples only, pH <2? Yes No N/A

14. Is there adequate volume for the tests requested? Yes No

14. Is there dry weight volume provided? Yes No waters

15. Were VOA vials free of bubbles? N/A Yes No

If "NO" which containers contained "head space" or bubbles?

16. Are methanol soils immersed in methanol? Yes No N/A

Log-in Phase:

Date of sample log-in 01 / 10 / 13

Samples logged in by (print) Jason Nutter (sign)

1. Was project identifiable from custody papers? Yes No

2. Do Turn Around Times and Due Dates agree? Yes No

3. Was the Project Manager notified of status? Yes No

4. Was the Lab notified of status? Yes No

5. Was the COC scanned and copied? Yes No

AK-FORM-SPL-005 5 October 2011

Laboratory Data Review Checklist

Completed by:	Jolene Cox		
Title:	Environmental Professional	Date:	Feb 7, 2013
CS Report Name:	Eaglecrest Maintenance Shop Site	Report Date:	Jan 23, 2013
Consultant Firm:	Carson Dorn, Inc.		
Laboratory Name:	TestAmerica	Laboratory Report Number:	AWA0005
ADEC File Number:		ADEC RecKey Number:	

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No NA (Please explain) Comments:

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes No NA (Please explain) Comments:

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes No NA (Please explain) Comments:

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain) Comments:

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain) Comments:

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

Yes No NA (Please explain) Comments:

e. Data quality or usability affected? (Please explain)

Comments:

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain) Comments:

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain) Comments:

b. All applicable holding times met?

Yes No NA (Please explain) Comments:

c. All soils reported on a dry weight basis?

Yes No NA (Please explain) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes No NA (Please explain) Comments:

e. Data quality or usability affected? (Please explain)

Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No NA (Please explain) Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain) Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

v. Data quality or usability affected? (Please explain) Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No NA (Please explain) Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No NA (Please explain) Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain) Comments:

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

vii. Data quality or usability affected? (Please explain) Comments:

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.).

Comments:

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No NA (Please explain.) Comments:

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No NA (Please explain)

Comments:

ii. Submitted blind to lab?

Yes No NA (Please explain.)

Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain)

Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Yes No NA (Please explain)

Comments:

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

Reset Form