



AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

Galen Williams  
EarthFax Engineering  
7324 So. Union Park Ave., # 100  
Midvale, UT 84047  
TEL: (801) 561-1555

RE: Red Butte / BV-7

Dear Galen Williams:

Lab Set ID: 1012085

463 West 3600 South  
Salt Lake City, UT  
84115

American West Analytical Laboratories received 5 sample(s) on 12/3/2010 for the analyses presented in the following report.

All analyses were performed in accordance to The NELAC Institute protocols unless noted otherwise. American West Analytical Laboratories is certified by The NELAC Institute in Utah and Texas; and is state certified in Colorado and Idaho. Certification document is available upon request. If you have any questions or concerns regarding this report please feel free to call.

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Jose Rocha  
QA Officer

Thank You,

Approved by: \_\_\_\_\_  
Laboratory Director or designee



# INORGANIC ANALYTICAL REPORT

**Client:** EarthFax Engineering

**Contact:** Galen Williams

**Project:** Red Butte / BV-7

**Lab Sample ID:** 1012085-005

**Client Sample ID:** Roll-off Comp

**Collection Date:** 12/3/2010 1710h

**Received Date:** 12/3/2010 1808h

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Analytical Results	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Flashpoint	°F		12/4/2010 1100h	SW1010A	25.0	<b>117</b>	\$

*\$ - Method 1010A is not an approved procedure for solid materials.*

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84115

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-001B  
**Client Sample ID:** RB-1  
**Collection Date:** 12/3/2010 1525h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8015D

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1914h

**Extracted:** 12/4/2010 1229h

## Analytical Results

TPH-DRO (C10-C28) by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

463 West 3600 South  
Salt Lake City, UT

84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>74.0</b>	

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Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-002B  
**Client Sample ID:** RB-2  
**Collection Date:** 12/3/2010 1545h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8015D

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1935h

**Extracted:** 12/4/2010 1229h

## Analytical Results

TPH-DRO (C10-C28) by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

463 West 3600 South  
Salt Lake City, UT

84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>59.0</b>	

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Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-003B  
**Client Sample ID:** RB-3  
**Collection Date:** 12/3/2010 1445h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8015D

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1956h

**Extracted:** 12/4/2010 1229h

## Analytical Results

TPH-DRO (C10-C28) by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

463 West 3600 South  
Salt Lake City, UT  
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>37.8</b>	

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Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-004B  
**Client Sample ID:** RB-4  
**Collection Date:** 12/3/2010 1655h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8015D

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 2017h

**Extracted:** 12/4/2010 1229h

## Analytical Results

TPH-DRO (C10-C28) by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

463 West 3600 South  
Salt Lake City, UT  
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>46.0</b>	

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QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-005B  
**Client Sample ID:** Roll-off Comp  
**Collection Date:** 12/3/2010 1710h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8015D

**Contact:** Galen Williams

**Analyzed:** 12/5/2010 0758h

**Extracted:** 12/4/2010 1859h

## Analytical Results

TPH-DRO (C10-C28) by Method 8015D Mod/3545A

**Units:** mg/kg-dry

**Dilution Factor:** 10

463 West 3600 South  
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84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	252	<b>3,240</b>	<sup>1</sup> @
Surr: 4-Bromofluorobenzene	460-00-4	10-122	<b>279</b>	S

<sup>1</sup> - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

The reporting limits were raised due to high analyte concentrations.

S - High surrogate recovery attributed to TPH interference. The method is in control as indicated by the method blank and LCS.

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QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-001A  
**Client Sample ID:** RB-1  
**Collection Date:** 12/3/2010 1525h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8260C

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1734h

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260C/5030C

**Units:** mg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
(801) 263-8686 Xylenes, Total	1330-20-7	0.00200	< 0.00200	
Toll Free (888) 263-8686 TPH C6-C10 (GRO)		0.0200	< 0.0200	
Fax (801)263-8687 Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>114</b>	
email: awal@awal-labs.com Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>105</b>	
Surr: Dibromofluoromethane	1868-53-7	80-124	<b>104</b>	
Kyle F. Gross Surr: Toluene-d8	2037-26-5	80-125	<b>96.6</b>	

Laboratory Director

Jose Rocha

QA Officer





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-002A  
**Client Sample ID:** RB-2  
**Collection Date:** 12/3/2010 1545h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8260C

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1753h

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260C/5030C

**Units:** mg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Benzene	71-43-2	0.00100	< 0.00100	
	Ethylbenzene	100-41-4	0.00200	< 0.00200	
	Naphthalene	91-20-3	0.00200	< 0.00200	
	Toluene	108-88-3	0.00200	< 0.00200	
(801) 263-8686	Xylenes, Total	1330-20-7	0.00200	< 0.00200	
Toll Free (888) 263-8686	TPH C6-C10 (GRO)		0.0200	< 0.0200	
Fax (801)263-8687	Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>117</b>	
email: awal@awal-labs.com	Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>106</b>	
	Surr: Dibromofluoromethane	1868-53-7	80-124	<b>106</b>	
Kyle F. Gross	Surr: Toluene-d8	2037-26-5	80-125	<b>97.5</b>	

Laboratory Director

Jose Rocha

QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
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LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-003A  
**Client Sample ID:** RB-3  
**Collection Date:** 12/3/2010 1445h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8260C

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1812h

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260C/5030C

**Units:** mg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
(801) 263-8686 Xylenes, Total	1330-20-7	0.00200	< 0.00200	
Toll Free (888) 263-8686 TPH C6-C10 (GRO)		0.0200	< 0.0200	
Fax (801)263-8687 Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>116</b>	
email: awal@awal-labs.com Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>108</b>	
Surr: Dibromofluoromethane	1868-53-7	80-124	<b>107</b>	
Kyle F. Gross Surr: Toluene-d8	2037-26-5	80-125	<b>97.9</b>	

Laboratory Director

Jose Rocha

QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-004A  
**Client Sample ID:** RB-4  
**Collection Date:** 12/3/2010 1655h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8260C

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1831h

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260C/5030C

**Units:** mg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
(801) 263-8686 Xylenes, Total	1330-20-7	0.00200	< 0.00200	
Toll Free (888) 263-8686 TPH C6-C10 (GRO)		0.0200	< 0.0200	
Fax (801)263-8687 Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>116</b>	
email: awal@awal-labs.com Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>106</b>	
Surr: Dibromofluoromethane	1868-53-7	80-124	<b>106</b>	
Kyle F. Gross Surr: Toluene-d8	2037-26-5	80-125	<b>96.1</b>	

Laboratory Director

Jose Rocha

QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-005A  
**Client Sample ID:** Roll-off Comp  
**Collection Date:** 12/3/2010 1710h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8260C

**Contact:** Galen Williams

**Analyzed:** 12/4/2010 1701h

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260C

**Units:** mg/kg-dry

**Dilution Factor:** 50

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Benzene	71-43-2	0.0631	<b>7.82</b>	
	Ethylbenzene	100-41-4	0.126	<b>14.6</b>	
	Naphthalene	91-20-3	0.126	<b>7.45</b>	
	Toluene	108-88-3	1.26	<b>80.7</b>	D
(801) 263-8686	Xylenes, Total	1330-20-7	1.26	<b>223</b>	D
Toll Free (888) 263-8686	TPH C6-C10 (GRO)		1.26	<b>973</b>	
Fax (801)263-8687	Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>85.1</b>	
email: awal@awal-labs.com	Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>95.8</b>	
	Surr: Dibromofluoromethane	1868-53-7	71-129	<b>81.1</b>	
Kyle F. Gross	Surr: Toluene-d8	2037-26-5	72-129	<b>109</b>	

*D - This analyte was obtained from a 1:500 dilution.*

*The reporting limits were raised due to high analyte concentrations.*

*Sampling and analytical preparation performed by method 5030C.*

Laboratory Director

Jose Rocha

QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** EarthFax Engineering  
**Project:** Red Butte / BV-7  
**Lab Sample ID:** 1012085-005D  
**Client Sample ID:** Roll-off Comp  
**Collection Date:** 12/3/2010 1710h  
**Received Date:** 12/3/2010 1808h  
**Method Used:** SW8260C

**Contact:** Galen Williams

**Analyzed:** 12/5/2010 1430h

## Analytical Results

TCLP VOAs by GC/MS Method 8260C/1311/5030C

**Units:** mg/L

**Dilution Factor:** 20

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.0200	<b>0.359</b>	
Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>116</b>	
Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>100</b>	
Surr: Dibromofluoromethane	1868-53-7	80-124	<b>106</b>	
Surr: Toluene-d8	2037-26-5	80-125	<b>95.7</b>	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

# RUSH

## American West Analytical Laboratories

### WORK ORDER Summary

Client: EarthFax Engineering  
 Client ID: EAR100  
 Project: Red Butte / BV-7  
 Comments: No Hard Copies. Next Day Rush.;

Contact: Galen Williams  
 QC Level: LEVEL I

Work Order: **1012085**

Page 1 of 1

12/3/2010

WO Type: Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1012085-001A	RB-1	12/3/2010 3:25:00 PM	12/3/2010 6:08:00 PM	12/7/2010	Aqueous	8260-W-PPM	<input checked="" type="checkbox"/>	Purge	3
1012085-001B				12/7/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH (liters)	2
				12/7/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH (liters)	
1012085-002A	RB-2	12/3/2010 3:45:00 PM		12/7/2010		8260-W-PPM	<input checked="" type="checkbox"/>	Purge	3
1012085-002B				12/7/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH (liters)	2
				12/7/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH (liters)	
1012085-003A	RB-3	12/3/2010 2:45:00 PM		12/7/2010		8260-W-PPM	<input checked="" type="checkbox"/>	Purge	3
1012085-003B				12/7/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH (liters)	2
				12/7/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH (liters)	
1012085-004A	RB-4	12/3/2010 4:55:00 PM		12/7/2010		8260-W-PPM	<input checked="" type="checkbox"/>	Purge	3
1012085-004B				12/7/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH (liters)	2
				12/7/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH (liters)	
1012085-005A	Roll-off Comp	12/3/2010 5:10:00 PM		12/7/2010	Soil	8260-S-PPM	<input checked="" type="checkbox"/>	Purge/pmoist	
				12/7/2010		PMOIST	<input type="checkbox"/>	Purge/pmoist	
1012085-005B				12/7/2010		3545A-TPH-PR	<input type="checkbox"/>	Hall-TPH	1
				12/7/2010		8015-S-TPH	<input checked="" type="checkbox"/>	Hall-TPH	
1012085-005C				12/7/2010		FLASH-1010A	<input type="checkbox"/>	df - flash	
1012085-005D				12/7/2010		1311ZHE-PR	<input type="checkbox"/>	TCLPFridge	
				12/7/2010		8260-W-TCLP	<input checked="" type="checkbox"/>	TCLPFridge	

DB

Client Earth Fax  
 Address 7324 So. Union Park Ave  
Midvale, UT 84047  
 City State Zip  
 Phone 801-561-1555 Fax \_\_\_\_\_  
 Contact Galen Williams  
 E-mail gwilliams@earthfax.com  
 Project Name Red Butte  
 Project Number/P.O.# BV-7  
 Sampler Name \_\_\_\_\_



AMERICAN WEST ANALYTICAL LABORATORIES  
 463 West 3600 South Salt Lake City, Utah 84115  
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CHAIN OF CUSTODY

Lab Sample Set # 1012085  
 Page \_\_\_\_\_ of \_\_\_\_\_

Turn Around Time (Circle One)

1 day 2 day 3 day 4 day 5 day Standard

Sample ID

Sample ID	Date/Time Collected	Matrix	Number of Containers (Total)	TESTS REQUIRED								QC LEVEL			COMMENTS	
				DRO	GRO	BTEAN	Phase Point	TCLP Benzene	1	2	2+	3	3+	4		
RB-1	3 Dec 10 / 15:25	W	5	✓	✓	✓										
RB-2	3 Dec 10 / 15:45		5	✓	✓	✓										
RB-3	3 Dec 10 / 14:45		5	✓	✓	✓										
RB-4	3 Dec 10 / 16:55		5	✓	✓	✓										
Roll off comp	3 Dec 10 / 17:10	S	5	✓	✓	✓	✓	✓								

LABORATORY USE ONLY

SAMPLES WERE:

- Shipped or hand delivered  
Notes: \_\_\_\_\_
- Ambient or Chilled  
Notes: \_\_\_\_\_
- Temperature 7.4°
- Received Broken/Leaking (Improperly Sealed)  
Y N  
Notes: \_\_\_\_\_
- Properly Preserved  
Y N  
Checked at Bench  
Y N  
Notes: \_\_\_\_\_
- Received Within Holding Times  
Y N  
Notes: \_\_\_\_\_

COC Tape Was:

- Present on Outer Package  
Y N NA
- Unbroken on Outer Package  
Y N NA
- Present on Sample  
Y N NA
- Unbroken on Sample  
Y N NA

Discrepancies Between Sample Labels and COC Record?  
Y N  
Notes: \_\_\_\_\_

Relinquished By: Signature <u>[Signature]</u>	Date <u>3 Dec 2010</u>	Received By: Signature <u>[Signature]</u>	Date <u>12-3-10</u>
PRINT NAME <u>Rich White</u>	Time <u>18:08</u>	PRINT NAME <u>Denise Bruun</u>	Time <u>18:08</u>
Relinquished By: Signature	Date	Received By: Signature	Date
PRINT NAME	Time	PRINT NAME	Time
Relinquished By: Signature	Date	Received By: Signature	Date
PRINT NAME	Time	PRINT NAME	Time
Relinquished By: Signature	Date	Received By: Signature	Date
PRINT NAME	Time	PRINT NAME	Time

Special Instructions:

Galen  
801-550-2902