



Jim Harris  
Utah Div. of Water Quality  
PO Box 144870  
SLC, UT 84114

RE: Red Butte

Dear Jim Harris:

Lab Set ID: 1107094

463 West 3600 South  
Salt Lake City, UT 84115

American West Analytical Laboratories received 1 sample(s) on 7/6/2011 for the analyses presented in the following report.

Phone: (801) 263-8686  
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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, Idaho, and Missouri. Certification document is available upon request. If you have any questions or concerns regarding this report please feel free to call.

web: www.awal-labs.com

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.

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Thank You,

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



## ORGANIC ANALYTICAL REPORT

**Client:** Utah Div. of Water Quality  
**Project:** Red Butte  
**Lab Sample ID:** 1107094-001A  
**Client Sample ID:** Vought Property  
**Collection Date:** 7/6/2011 1500h  
**Received Date:** 7/6/2011 1700h

**Contact:** Jim Harris

**Method:** SW8270D

### Analytical Results

SVOA SIM List by GC/MS Method 8270D/3545A

**Analyzed:** 7/19/2011 2100h **Extracted:** 7/7/2011 0927h

**Units:** µg/kg-dry

**Dilution Factor:** 1

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Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1-Methylnaphthalene	90-12-0	14.2	< 14.2	
2-Methylnaphthalene	91-57-6	14.2	< 14.2	
Acenaphthene	83-32-9	14.2	< 14.2	
Acenaphthylene	208-96-8	14.2	< 14.2	
Anthracene	120-12-7	14.2	< 14.2	
Benz(a)anthracene	56-55-3	14.2	<b>71.9</b>	
Benzo(a)pyrene	50-32-8	14.2	<b>35.0</b>	
Benzo(b)fluoranthene	205-99-2	14.2	<b>53.9</b>	
Benzo(g,h,i)perylene	191-24-2	14.2	< 14.2	
Benzo(k)fluoranthene	207-08-9	14.2	< 14.2	
Chrysene	218-01-9	14.2	<b>132</b>	
Dibenz(a,h)anthracene	53-70-3	14.2	< 14.2	
Fluoranthene	206-44-0	14.2	<b>56.8</b>	
Fluorene	86-73-7	14.2	< 14.2	
Indene	95-13-6	14.2	< 14.2	
Indeno(1,2,3-cd)pyrene	193-39-5	14.2	<b>29.3</b>	
Naphthalene	91-20-3	14.2	< 14.2	
Phenanthrene	85-01-8	14.2	<b>74.8</b>	
Pyrene	129-00-0	14.2	<b>80.4</b>	

*Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.*



# ORGANIC ANALYTICAL REPORT

**Client:** Utah Div. of Water Quality **Contact:** Jim Harris  
**Project:** Red Butte  
**Lab Sample ID:** 1107094-001A  
**Client Sample ID:** Vought Property  
**Collection Date:** 7/6/2011 1500h  
**Received Date:** 7/6/2011 1700h **Method:** SW8270D

## Analytical Results SVOA Fractionation by GC/MS Method 8270D/3546

**Analyzed:** 7/8/2011 2130h **Extracted:** 7/7/2011 0927h

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Acenaphthene	83-32-9	483	< 483	
Acenaphthylene	208-96-8	483	< 483	
Anthracene	120-12-7	483	< 483	
Benz(a)anthracene	56-55-3	483	< 483	
Benzo(a)pyrene	50-32-8	483	< 483	
Benzo(b)fluoranthene	205-99-2	483	< 483	
Benzo(g,h,i)perylene	191-24-2	483	< 483	
Benzo(k)fluoranthene	207-08-9	483	< 483	
Chrysene	218-01-9	483	< 483	
Dibenz(a,h)anthracene	53-70-3	483	< 483	
Fluoranthene	206-44-0	483	< 483	
Fluorene	86-73-7	483	< 483	
Indeno(1,2,3-cd)pyrene	193-39-5	483	< 483	
Phenanthrene	85-01-8	483	< 483	
Pyrene	129-00-0	483	< 483	<sup>1</sup> @
C11-C12 Aliphatic hydrocarbons		483	<b>12,000</b>	
C13-C16 Aliphatic hydrocarbons		483	<b>64,600</b>	
C17-C21 Aliphatic hydrocarbons		483	<b>26,400</b>	
C22-C35 Aliphatic hydrocarbons		483	<b>160,000</b>	
C11-C13 Alkyl Naphthalenes		483	< 483	
Total C12-C22 PAH**		483	< 483	
Surr: Terphenyl-d14	1718-51-0	10-265	<b>101</b>	

<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.

\*\* - This value is a summation of the PAH compounds listed above.

Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



## ORGANIC ANALYTICAL REPORT

**Client:** Utah Div. of Water Quality  
**Project:** Red Butte  
**Lab Sample ID:** 1107094-001A  
**Client Sample ID:** Vought Property  
**Collection Date:** 7/6/2011 1500h  
**Received Date:** 7/6/2011 1700h

**Contact:** Jim Harris

**Method:** SW8260C

### Analytical Results

VOAs by GC/MS Method 8260C

**Analyzed:** 7/7/2011 1345h

**Units:** µg/kg-dry

**Dilution Factor:** 10

#### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

1,1,1,2-Tetrachloroethane	630-20-6	28.4	< 28.4	
1,1,1-Trichloroethane	71-55-6	28.4	< 28.4	
1,1,2,2-Tetrachloroethane	79-34-5	28.4	< 28.4	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	28.4	< 28.4	
1,1,2-Trichloroethane	79-00-5	28.4	< 28.4	
1,1-Dichloropropene	563-58-6	28.4	< 28.4	
1,1-Dichloroethane	75-34-3	28.4	< 28.4	
1,1-Dichloroethene	75-35-4	28.4	< 28.4	
1,2,3-Trichlorobenzene	87-61-6	28.4	< 28.4	
1,2,3-Trichloropropane	96-18-4	28.4	< 28.4	
1,2,3-Trimethylbenzene	526-73-8	28.4	< 28.4	
1,2,4-Trichlorobenzene	120-82-1	28.4	< 28.4	
1,2,4-Trimethylbenzene	95-63-6	28.4	< 28.4	
1,2-Dibromo-3-chloropropane	96-12-8	71.0	< 71.0	
1,2-Dibromoethane	106-93-4	28.4	< 28.4	
1,2-Dichlorobenzene	95-50-1	28.4	< 28.4	
1,2-Dichloroethane	107-06-2	28.4	< 28.4	
1,2-Dichloropropane	78-87-5	28.4	< 28.4	
1,3,5-Trimethylbenzene	108-67-8	28.4	< 28.4	
1,3-Dichlorobenzene	541-73-1	28.4	< 28.4	
1,3-Dichloropropane	142-28-9	28.4	< 28.4	
1,4-Dichlorobenzene	106-46-7	28.4	< 28.4	
1,4-Dioxane	123-91-1	710	< 710	
2,2-Dichloropropane	594-20-7	28.4	< 28.4	
2-Butanone	78-93-3	142	< 142	
2-Chloroethyl vinyl ether	110-75-8	71.0	< 71.0	
2-Chlorotoluene	95-49-8	28.4	< 28.4	
2-Hexanone	591-78-6	71.0	< 71.0	
2-Nitropropane	79-46-9	71.0	< 71.0	
4-Chlorotoluene	106-43-4	28.4	< 28.4	

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Laboratory Director

Jose Rocha  
QA Officer



**Lab Sample ID:** 1107094-001A  
**Client Sample ID:** Vought Property

**Analyzed:** 7/7/2011 1345h

**Units:** µg/kg-dry

**Dilution Factor:** 10

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Jose Rocha  
 QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
4-Isopropyltoluene	99-87-6	28.4	< 28.4	
4-Methyl-2-pentanone	108-10-1	71.0	< 71.0	
Acetone	67-64-1	142	< 142	
Acetonitrile	75-05-8	71.0	< 71.0	
Acrolein	107-02-8	71.0	< 71.0	
Acrylonitrile	107-13-1	142	< 142	
Allyl chloride	107-05-1	71.0	< 71.0	
Benzene	71-43-2	28.4	< 28.4	
Benzyl chloride	100-44-7	71.0	< 71.0	
Bis(2-chloroisopropyl) ether	108-60-1	71.0	< 71.0	
Bromobenzene	108-86-1	28.4	< 28.4	
Bromochloromethane	74-97-5	28.4	< 28.4	
Bromodichloromethane	75-27-4	28.4	< 28.4	
Bromoform	75-25-2	28.4	< 28.4	
Bromomethane	74-83-9	71.0	< 71.0	
Butyl acetate	123-86-4	142	< 142	
Carbon disulfide	75-15-0	28.4	< 28.4	
Carbon tetrachloride	56-23-5	28.4	< 28.4	
Chlorobenzene	108-90-7	28.4	< 28.4	
Chloroethane	75-00-3	28.4	< 28.4	
Chloroform	67-66-3	28.4	< 28.4	
Chloromethane	74-87-3	71.0	< 71.0	
Chloroprene	126-99-8	28.4	< 28.4	
cis-1,2-Dichloroethene	156-59-2	28.4	< 28.4	
cis-1,3-Dichloropropene	10061-01-5	28.4	< 28.4	
Cyclohexane	110-82-7	28.4	< 28.4	
Cyclohexanone	108-94-1	710	< 710	
Dibromochloromethane	124-48-1	28.4	< 28.4	
Dibromomethane	74-95-3	28.4	< 28.4	
Dichlorodifluoromethane	75-71-8	28.4	< 28.4	
Ethyl acetate	141-78-6	142	< 142	
Ethyl ether	60-29-7	142	< 142	
Ethyl methacrylate	97-63-2	28.4	< 28.4	
Ethylbenzene	100-41-4	28.4	< 28.4	
Hexachlorobutadiene	87-68-3	28.4	< 28.4	
Iodomethane	74-88-4	71.0	< 71.0	
Isobutyl alcohol	78-83-1	1,420	< 1,420	



**Lab Sample ID:** 1107094-001A  
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**Analyzed:** 7/7/2011 1345h

**Units:** µg/kg-dry

**Dilution Factor:** 10

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Jose Rocha  
 QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Isopropyl acetate	108-21-4	142	< 142	
Isopropyl alcohol	67-63-0	568	< 568	
Isopropylbenzene	98-82-8	28.4	< 28.4	
Isopropyltoluene	99-87-6	28.4	< 28.4	
m,p-Xylene	179601-23-1	28.4	< 28.4	
Methacrylonitrile	126-98-7	71.0	< 71.0	
Methyl Acetate	79-20-9	71.0	< 71.0	
Methyl methacrylate	80-62-6	71.0	< 71.0	
Methyl tert-butyl ether	1634-04-4	28.4	< 28.4	
Methylcyclohexane	108-87-2	28.4	< 28.4	
Methylene chloride	75-09-2	71.0	< 71.0	
n-Amyl acetate	628-63-7	142	< 142	
n-Butyl alcohol	71-36-3	1,420	< 1,420	
n-Butylbenzene	104-51-8	28.4	< 28.4	
n-Hexane	110-54-3	28.4	< 28.4	
n-Octane	111-65-9	28.4	< 28.4	
n-Propylbenzene	103-65-1	28.4	< 28.4	
Naphthalene	91-20-3	28.4	< 28.4	
o-Xylene	95-47-6	28.4	< 28.4	
Pentachloroethane	76-01-7	28.4	< 28.4	
Propionitrile	107-12-0	355	< 355	
Propyl acetate	109-60-4	142	< 142	
sec-Butylbenzene	135-98-8	28.4	< 28.4	
Styrene	100-42-5	28.4	< 28.4	
tert-Butyl alcohol	76-65-0	284	< 284	
tert-Butylbenzene	98-06-6	28.4	< 28.4	
Tetrachloroethene	127-18-4	28.4	< 28.4	
Tetrahydrofuran	109-99-9	28.4	< 28.4	
Toluene	108-88-3	28.4	< 28.4	
trans-1,2-Dichloroethene	156-60-5	28.4	< 28.4	
trans-1,3-Dichloropropene	10061-02-6	28.4	< 28.4	
trans-1,4-Dichloro-2-butene	110-57-6	28.4	< 28.4	
Trichloroethene	79-01-6	28.4	< 28.4	
Trichlorofluoromethane	75-69-4	28.4	< 28.4	
Vinyl acetate	108-05-4	142	< 142	
Vinyl chloride	75-01-4	14.2	< 14.2	
Xylenes, Total	1330-20-7	28.4	< 28.4	



**Lab Sample ID:** 1107094-001A  
**Client Sample ID:** Vought Property

**Analyzed:** 7/7/2011 1345h

**Units:** µg/kg-dry

**Dilution Factor:** 10

<b>Compound</b>	<b>CAS Number</b>	<b>Reporting Limit</b>	<b>Analytical Result</b>	<b>Qual</b>
TPH C6-C10 (GRO)		284	<b>5,230</b>	
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>98.7</b>	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>105</b>	
Surr: Dibromofluoromethane	1868-53-7	71-129	<b>97.8</b>	
Surr: Toluene-d8	2037-26-5	72-129	<b>105</b>	

*The reporting limits were raised due to high analyte concentrations.  
Sampling and analytical preparation performed by method 5030C.*

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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
LCS-13165	Acenaphthene	µg/kg	SW8270D	4,270	5,333	0	80.1	10-150				7/8/2011 2104h
LCS-13165	Benzo(a)pyrene	µg/kg	SW8270D	3,950	5,333	0	74.0	38-194				7/8/2011 2104h
LCS-13165	Pyrene	µg/kg	SW8270D	4,080	5,333	0	76.6	22-167				7/8/2011 2104h
LCS-13165	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	4,900	5,333		91.8	10-157				7/8/2011 2104h
LCS-13165	Surr: 2-Fluorobiphenyl	%REC	SW8270D	2,090	2,667		78.5	22-128				7/8/2011 2104h
LCS-13165	Surr: 2-Fluorophenol	%REC	SW8270D	3,820	5,333		71.7	10-135				7/8/2011 2104h
LCS-13165	Surr: Nitrobenzene-d5	%REC	SW8270D	2,430	2,667		91.1	10-145				7/8/2011 2104h
LCS-13165	Surr: Phenol-d6	%REC	SW8270D	4,270	5,333		80.0	10-157				7/8/2011 2104h
LCS-13165	Surr: Terphenyl-d14	%REC	SW8270D	2,280	2,667		85.4	22-167				7/8/2011 2104h
LCS-13165	Acenaphthene	µg/kg	SW8270D	3,990	5,333	0	74.8	10-150				7/19/2011 2034h
LCS-13165	Benzo(a)pyrene	µg/kg	SW8270D	2,830	5,333	0	53.0	38-194				7/19/2011 2034h
LCS-13165	Pyrene	µg/kg	SW8270D	3,880	5,333	0	72.8	22-167				7/19/2011 2034h
LCS-13165	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	0				-				7/19/2011 2034h
LCS-13165	Surr: 2-Fluorobiphenyl	%REC	SW8270D	0				-				7/19/2011 2034h
LCS-13165	Surr: 2-Fluorophenol	%REC	SW8270D	0				-				7/19/2011 2034h
LCS-13165	Surr: Nitrobenzene-d5	%REC	SW8270D	0				-				7/19/2011 2034h
LCS-13165	Surr: Phenol-d6	%REC	SW8270D	0				-				7/19/2011 2034h
LCS-13165	Surr: Terphenyl-d14	%REC	SW8270D	0				-				7/19/2011 2034h





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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB-13165	1-Methylnaphthalene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	2-Methylnaphthalene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Acenaphthene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Acenaphthylene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Anthracene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Benz(a)anthracene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Benzo(a)pyrene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Benzo(b)fluoranthene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Benzo(g,h,i)perylene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Benzo(k)fluoranthene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	C11-C12 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	C11-C13 Alkyl Naphthalenes	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	C13-C16 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	C17-C21 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	C22-C35 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Chrysene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Dibenz(a,h)anthracene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Fluoranthene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Fluorene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Indene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Naphthalene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Phenanthrene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h



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Laboratory Director

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QA Officer

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**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB-13165	Pyrene	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Total C12-C22 PAH**	µg/kg	SW8270D	< 340				-				7/8/2011 2037h
MB-13165	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	3,560	5,333		66.7	10-157				7/8/2011 2037h
MB-13165	Surr: 2-Fluorobiphenyl	%REC	SW8270D	1,940	2,667		72.9	22-128				7/8/2011 2037h
MB-13165	Surr: 2-Fluorophenol	%REC	SW8270D	3,360	5,333		63.1	10-111				7/8/2011 2037h
MB-13165	Surr: Nitrobenzene-d5	%REC	SW8270D	2,230	2,667		83.6	10-145				7/8/2011 2037h
MB-13165	Surr: Phenol-d6	%REC	SW8270D	3,790	5,333		71.0	10-157				7/8/2011 2037h
MB-13165	Surr: Terphenyl-d14	%REC	SW8270D	2,080	2,667		77.9	22-167				7/8/2011 2037h
MB-13165	1-Methylnaphthalene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	2-Methylnaphthalene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Acenaphthene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Acenaphthylene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Anthracene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Benz(a)anthracene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Benzo(a)pyrene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Benzo(b)fluoranthene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Benzo(g,h,i)perylene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Benzo(k)fluoranthene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Chrysene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Dibenz(a,h)anthracene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Fluoranthene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Fluorene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Indene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB-13165	Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Naphthalene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Phenanthrene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Pyrene	µg/kg	SW8270D	< 10.0				-				7/19/2011 2008h
MB-13165	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	0				-				7/19/2011 2008h
MB-13165	Surr: 2-Fluorobiphenyl	%REC	SW8270D	0				-				7/19/2011 2008h
MB-13165	Surr: 2-Fluorophenol	%REC	SW8270D	0				-				7/19/2011 2008h
MB-13165	Surr: Nitrobenzene-d5	%REC	SW8270D	0				-				7/19/2011 2008h
MB-13165	Surr: Phenol-d6	%REC	SW8270D	0				-				7/19/2011 2008h
MB-13165	Surr: Terphenyl-d14	%REC	SW8270D	0				-				7/19/2011 2008h



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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
1107094-001AMS	Acenaphthene	µg/kg-dry	SW8270D	5,180	7,570	0	68.4	31-113				7/8/2011 2156h
1107094-001AMS	Benzo(a)pyrene	µg/kg-dry	SW8270D	5,620	7,570	0	74.3	38-169				7/8/2011 2156h
1107094-001AMS	Pyrene	µg/kg-dry	SW8270D	709	7,570	0	9.36	31-150			<sup>1</sup>	7/8/2011 2156h
1107094-001AMS	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	5,350	7,570		70.7	10-237				7/8/2011 2156h
1107094-001AMS	Surr: 2-Fluorobiphenyl	%REC	SW8270D	2,700	3,786		71.3	17-179				7/8/2011 2156h
1107094-001AMS	Surr: 2-Fluorophenol	%REC	SW8270D	5,400	7,570		71.4	10-186				7/8/2011 2156h
1107094-001AMS	Surr: Nitrobenzene-d5	%REC	SW8270D	3,450	3,786		91.0	10-166				7/8/2011 2156h
1107094-001AMS	Surr: Phenol-d6	%REC	SW8270D	5,950	7,570		78.6	10-194				7/8/2011 2156h
1107094-001AMS	Surr: Terphenyl-d14	%REC	SW8270D	3,460	3,786		91.5	10-265				7/8/2011 2156h
1107094-001AMS	Acenaphthene	µg/kg-dry	SW8270D	5,750	7,570	0	76.0	31-113				7/19/2011 2126h
1107094-001AMS	Benzo(a)pyrene	µg/kg-dry	SW8270D	3,940	7,570	35.01	51.5	38-169				7/19/2011 2126h
1107094-001AMS	Pyrene	µg/kg-dry	SW8270D	5,600	7,570	80.44	72.9	31-150				7/19/2011 2126h
1107094-001AMS	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	0	0		0	10-237				7/19/2011 2126h
1107094-001AMS	Surr: 2-Fluorobiphenyl	%REC	SW8270D	0	0		0	17-179				7/19/2011 2126h
1107094-001AMS	Surr: 2-Fluorophenol	%REC	SW8270D	0	0		0	10-186				7/19/2011 2126h
1107094-001AMS	Surr: Nitrobenzene-d5	%REC	SW8270D	0	0		0	10-166				7/19/2011 2126h
1107094-001AMS	Surr: Phenol-d6	%REC	SW8270D	0	0		0	10-194				7/19/2011 2126h
1107094-001AMS	Surr: Terphenyl-d14	%REC	SW8270D	0	0		0	10-265				7/19/2011 2126h

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



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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
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**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
1107094-001AMSD	Acenaphthene	µg/kg-dry	SW8270D	5,590	7,570	0	73.8	31-113	7.65	35		7/8/2011 2222h
1107094-001AMSD	Benzo(a)pyrene	µg/kg-dry	SW8270D	5,490	7,570	0	72.5	38-169	2.35	35		7/8/2011 2222h
1107094-001AMSD	Pyrene	µg/kg-dry	SW8270D	6,180	7,570	0	81.7	31-150	159	35	@	7/8/2011 2222h
1107094-001AMSD	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	5,470	7,570		72.2	10-237				7/8/2011 2222h
1107094-001AMSD	Surr: 2-Fluorobiphenyl	%REC	SW8270D	2,740	3,786		72.5	17-179				7/8/2011 2222h
1107094-001AMSD	Surr: 2-Fluorophenol	%REC	SW8270D	5,180	7,570		68.5	10-186				7/8/2011 2222h
1107094-001AMSD	Surr: Nitrobenzene-d5	%REC	SW8270D	3,210	3,786		84.8	10-166				7/8/2011 2222h
1107094-001AMSD	Surr: Phenol-d6	%REC	SW8270D	5,640	7,570		74.5	10-194				7/8/2011 2222h
1107094-001AMSD	Surr: Terphenyl-d14	%REC	SW8270D	3,300	3,786		87.1	10-265				7/8/2011 2222h
1107094-001AMSD	Acenaphthene	µg/kg-dry	SW8270D	5,560	7,570	0	73.5	31-113	3.34	35		7/19/2011 2152h
1107094-001AMSD	Benzo(a)pyrene	µg/kg-dry	SW8270D	4,050	7,570	35.01	53.0	38-169	2.84	35		7/19/2011 2152h
1107094-001AMSD	Pyrene	µg/kg-dry	SW8270D	5,640	7,570	80.44	73.4	31-150	0.673	35		7/19/2011 2152h
1107094-001AMSD	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	0	0		0	10-237				7/19/2011 2152h
1107094-001AMSD	Surr: 2-Fluorobiphenyl	%REC	SW8270D	0	0		0	17-179				7/19/2011 2152h
1107094-001AMSD	Surr: 2-Fluorophenol	%REC	SW8270D	0	0		0	10-186				7/19/2011 2152h
1107094-001AMSD	Surr: Nitrobenzene-d5	%REC	SW8270D	0	0		0	10-166				7/19/2011 2152h
1107094-001AMSD	Surr: Phenol-d6	%REC	SW8270D	0	0		0	10-194				7/19/2011 2152h
1107094-001AMSD	Surr: Terphenyl-d14	%REC	SW8270D	0	0		0	10-265				7/19/2011 2152h

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



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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 070711A	1,1,1-Trichloroethane	µg/kg	SW8260C	24.7	20.00	0	124	52-144				7/7/2011 0917h
LCS VOC 070711A	1,1-Dichloroethene	µg/kg	SW8260C	20.0	20.00	0	100	36-184				7/7/2011 0917h
LCS VOC 070711A	1,2-Dichlorobenzene	µg/kg	SW8260C	21.4	20.00	0	107	70-134				7/7/2011 0917h
LCS VOC 070711A	1,2-Dichloroethane	µg/kg	SW8260C	22.3	20.00	0	111	55-146				7/7/2011 0917h
LCS VOC 070711A	1,2-Dichloropropane	µg/kg	SW8260C	18.3	20.00	0	91.4	56-133				7/7/2011 0917h
LCS VOC 070711A	Benzene	µg/kg	SW8260C	19.3	20.00	0	96.7	60-130				7/7/2011 0917h
LCS VOC 070711A	Chlorobenzene	µg/kg	SW8260C	20.6	20.00	0	103	75-130				7/7/2011 0917h
LCS VOC 070711A	Chloroform	µg/kg	SW8260C	22.0	20.00	0	110	61-130				7/7/2011 0917h
LCS VOC 070711A	Ethylbenzene	µg/kg	SW8260C	21.2	20.00	0	106	69-147				7/7/2011 0917h
LCS VOC 070711A	Isopropylbenzene	µg/kg	SW8260C	22.0	20.00	0	110	65-147				7/7/2011 0917h
LCS VOC 070711A	Methyl tert-butyl ether	µg/kg	SW8260C	19.4	20.00	0	97.0	33.1-139				7/7/2011 0917h
LCS VOC 070711A	Methylene chloride	µg/kg	SW8260C	20.8	20.00	0	104	39-164				7/7/2011 0917h
LCS VOC 070711A	Naphthalene	µg/kg	SW8260C	16.4	20.00	0	82.2	40-131				7/7/2011 0917h
LCS VOC 070711A	Tetrahydrofuran	µg/kg	SW8260C	18.0	20.00	0	90.2	43-146				7/7/2011 0917h
LCS VOC 070711A	Toluene	µg/kg	SW8260C	20.2	20.00	0	101	61-140				7/7/2011 0917h
LCS VOC 070711A	Trichloroethene	µg/kg	SW8260C	22.1	20.00	0	111	51-154				7/7/2011 0917h
LCS VOC 070711A	Xylenes, Total	µg/kg	SW8260C	62.5	60.00	0	104	72-147				7/7/2011 0917h
LCS VOC 070711A	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	58.8	50.00		118	73-132				7/7/2011 0917h
LCS VOC 070711A	Surr: 4-Bromofluorobenzene	%REC	SW8260C	50.9	50.00		102	85-115				7/7/2011 0917h
LCS VOC 070711A	Surr: Dibromofluoromethane	%REC	SW8260C	53.3	50.00		107	84-121				7/7/2011 0917h
LCS VOC 070711A	Surr: Toluene-d8	%REC	SW8260C	49.5	50.00		99.1	85-115				7/7/2011 0917h



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Kyle F. Gross  
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Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB VOC 070711A	1,1,1,2-Tetrachloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1,1-Trichloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1,2,2-Tetrachloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1,2-Trichloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1-Dichloropropene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1-Dichloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,1-Dichloroethene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2,3-Trichlorobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2,3-Trichloropropane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2,3-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2,4-Trichlorobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2,4-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2-Dibromo-3-chloropropane	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	1,2-Dibromoethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2-Dichloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,2-Dichloropropane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,3,5-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,3-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,3-Dichloropropane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	1,4-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h



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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB VOC 070711A	1,4-Dioxane	µg/kg	SW8260C	< 50.0				-				7/7/2011 1002h
MB VOC 070711A	2,2-Dichloropropane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	2-Butanone	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	2-Chloroethyl vinyl ether	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	2-Chlorotoluene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	2-Hexanone	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	2-Nitropropane	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	4-Chlorotoluene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	4-Isopropyltoluene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	4-Methyl-2-pentanone	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Acetone	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Acetonitrile	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Acrolein	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Acrylonitrile	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Allyl chloride	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Benzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Benzyl chloride	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Bis(2-chloroisopropyl) ether	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Bromobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Bromochloromethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Bromodichloromethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Bromoform	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Bromomethane	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h





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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB VOC 070711A	Butyl acetate	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Carbon disulfide	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Carbon tetrachloride	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Chlorobenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Chloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Chloroform	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Chloromethane	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Chloroprene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	cis-1,2-Dichloroethene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	cis-1,3-Dichloropropene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Cyclohexane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Cyclohexanone	µg/kg	SW8260C	< 50.0				-				7/7/2011 1002h
MB VOC 070711A	Dibromochloromethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Dibromomethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Dichlorodifluoromethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Ethyl acetate	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Ethyl ether	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Ethyl methacrylate	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Ethylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Hexachlorobutadiene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Iodomethane	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Isobutyl alcohol	µg/kg	SW8260C	< 100				-				7/7/2011 1002h
MB VOC 070711A	Isopropyl acetate	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB VOC 070711A	Isopropyl alcohol	µg/kg	SW8260C	< 40.0				-				7/7/2011 1002h
MB VOC 070711A	Isopropylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Isopropyltoluene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	m,p-Xylene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Methacrylonitrile	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Methyl Acetate	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Methyl methacrylate	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	Methyl tert-butyl ether	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Methylcyclohexane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Methylene chloride	µg/kg	SW8260C	< 5.00				-				7/7/2011 1002h
MB VOC 070711A	n-Amyl acetate	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Naphthalene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	n-Butyl alcohol	µg/kg	SW8260C	< 100				-				7/7/2011 1002h
MB VOC 070711A	n-Butylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	n-Hexane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	n-Octane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	n-Propylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	o-Xylene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Pentachloroethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Propionitrile	µg/kg	SW8260C	< 25.0				-				7/7/2011 1002h
MB VOC 070711A	Propyl acetate	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	sec-Butylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Styrene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h



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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB VOC 070711A	tert-Butyl alcohol	µg/kg	SW8260C	< 20.0				-				7/7/2011 1002h
MB VOC 070711A	tert-Butylbenzene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Tetrachloroethene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Tetrahydrofuran	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Toluene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	TPH C6-C10 (GRO)	µg/kg	SW8260C	< 20.0				-				7/7/2011 1002h
MB VOC 070711A	trans-1,2-Dichloroethene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	trans-1,3-Dichloropropene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	trans-1,4-Dichloro-2-butene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Trichloroethene	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Trichlorofluoromethane	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Vinyl acetate	µg/kg	SW8260C	< 10.0				-				7/7/2011 1002h
MB VOC 070711A	Vinyl chloride	µg/kg	SW8260C	< 1.00				-				7/7/2011 1002h
MB VOC 070711A	Xylenes, Total	µg/kg	SW8260C	< 2.00				-				7/7/2011 1002h
MB VOC 070711A	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	63.8	50.00		128	73-132				7/7/2011 1002h
MB VOC 070711A	Surr: 4-Bromofluorobenzene	%REC	SW8260C	50.8	50.00		102	85-115				7/7/2011 1002h
MB VOC 070711A	Surr: Dibromofluoromethane	%REC	SW8260C	55.3	50.00		111	84-121				7/7/2011 1002h
MB VOC 070711A	Surr: Toluene-d8	%REC	SW8260C	48.8	50.00		97.7	85-115				7/7/2011 1002h



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
1107094-001AMS	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	298	283.9	0	105	20-144				7/7/2011 1300h
1107094-001AMS	1,1-Dichloroethene	µg/kg-dry	SW8260C	288	283.9	0	101	24-174				7/7/2011 1300h
1107094-001AMS	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	295	283.9	0	104	10-148				7/7/2011 1300h
1107094-001AMS	1,2-Dichloroethane	µg/kg-dry	SW8260C	276	283.9	0	97.0	54-133				7/7/2011 1300h
1107094-001AMS	1,2-Dichloropropane	µg/kg-dry	SW8260C	271	283.9	0	95.5	28-140				7/7/2011 1300h
1107094-001AMS	Benzene	µg/kg-dry	SW8260C	278	283.9	0	97.8	17-138				7/7/2011 1300h
1107094-001AMS	Chlorobenzene	µg/kg-dry	SW8260C	298	283.9	0	105	13-150				7/7/2011 1300h
1107094-001AMS	Chloroform	µg/kg-dry	SW8260C	274	283.9	0	96.6	21-147				7/7/2011 1300h
1107094-001AMS	Ethylbenzene	µg/kg-dry	SW8260C	299	283.9	0	105	10-164				7/7/2011 1300h
1107094-001AMS	Isopropylbenzene	µg/kg-dry	SW8260C	288	283.9	0	101	26-146				7/7/2011 1300h
1107094-001AMS	Methyl tert-butyl ether	µg/kg-dry	SW8260C	267	283.9	0	94.0	28-137				7/7/2011 1300h
1107094-001AMS	Methylene chloride	µg/kg-dry	SW8260C	319	283.9	0	112	10-217				7/7/2011 1300h
1107094-001AMS	Naphthalene	µg/kg-dry	SW8260C	343	283.9	0	121	13-156				7/7/2011 1300h
1107094-001AMS	Tetrahydrofuran	µg/kg-dry	SW8260C	377	283.9	0	133	10-136				7/7/2011 1300h
1107094-001AMS	Toluene	µg/kg-dry	SW8260C	295	283.9	0	104	23-168				7/7/2011 1300h
1107094-001AMS	Trichloroethene	µg/kg-dry	SW8260C	299	283.9	0	105	14-161				7/7/2011 1300h
1107094-001AMS	Xylenes, Total	µg/kg-dry	SW8260C	871	851.7	0	102	10-160				7/7/2011 1300h
1107094-001AMS	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	722	709.7		102	68-147				7/7/2011 1300h
1107094-001AMS	Surr: 4-Bromofluorobenzene	%REC	SW8260C	744	709.7		105	71-144				7/7/2011 1300h
1107094-001AMS	Surr: Dibromofluoromethane	%REC	SW8260C	702	709.7		99.0	71-129				7/7/2011 1300h
1107094-001AMS	Surr: Toluene-d8	%REC	SW8260C	726	709.7		102	72-129				7/7/2011 1300h



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## QC SUMMARY REPORT

**Client:** Utah Div. of Water Quality  
**Lab Set ID:** 1107094  
**Project:** Red Butte

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
1107094-001AMSD	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	295	283.9	0	104	20-144	1.1	35		7/7/2011 1322h
1107094-001AMSD	1,1-Dichloroethene	µg/kg-dry	SW8260C	280	283.9	0	98.5	24-174	2.9	35		7/7/2011 1322h
1107094-001AMSD	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	299	283.9	0	105	10-148	1.34	35		7/7/2011 1322h
1107094-001AMSD	1,2-Dichloroethane	µg/kg-dry	SW8260C	280	283.9	0	98.7	54-133	1.74	35		7/7/2011 1322h
1107094-001AMSD	1,2-Dichloropropane	µg/kg-dry	SW8260C	271	283.9	0	95.6	28-140	0.0523	35		7/7/2011 1322h
1107094-001AMSD	Benzene	µg/kg-dry	SW8260C	277	283.9	0	97.6	17-138	0.153	35		7/7/2011 1322h
1107094-001AMSD	Chlorobenzene	µg/kg-dry	SW8260C	297	283.9	0	104	13-150	0.573	35		7/7/2011 1322h
1107094-001AMSD	Chloroform	µg/kg-dry	SW8260C	279	283.9	0	98.3	21-147	1.74	35		7/7/2011 1322h
1107094-001AMSD	Ethylbenzene	µg/kg-dry	SW8260C	295	283.9	0	104	10-164	1.53	35		7/7/2011 1322h
1107094-001AMSD	Isopropylbenzene	µg/kg-dry	SW8260C	290	283.9	0	102	26-146	0.933	35		7/7/2011 1322h
1107094-001AMSD	Methyl tert-butyl ether	µg/kg-dry	SW8260C	278	283.9	0	97.7	28-137	3.91	35		7/7/2011 1322h
1107094-001AMSD	Methylene chloride	µg/kg-dry	SW8260C	317	283.9	0	112	10-217	0.848	35		7/7/2011 1322h
1107094-001AMSD	Naphthalene	µg/kg-dry	SW8260C	327	283.9	0	115	13-156	4.66	35		7/7/2011 1322h
1107094-001AMSD	Tetrahydrofuran	µg/kg-dry	SW8260C	379	283.9	0	133	10-136	0.526	35		7/7/2011 1322h
1107094-001AMSD	Toluene	µg/kg-dry	SW8260C	291	283.9	0	103	23-168	1.11	35		7/7/2011 1322h
1107094-001AMSD	Trichloroethene	µg/kg-dry	SW8260C	300	283.9	0	106	14-161	0.569	35		7/7/2011 1322h
1107094-001AMSD	Xylenes, Total	µg/kg-dry	SW8260C	876	851.7	0	103	10-160	0.52	35		7/7/2011 1322h
1107094-001AMSD	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	733	709.7		103	68-147				7/7/2011 1322h
1107094-001AMSD	Surr: 4-Bromofluorobenzene	%REC	SW8260C	734	709.7		103	71-144				7/7/2011 1322h
1107094-001AMSD	Surr: Dibromofluoromethane	%REC	SW8260C	713	709.7		100	71-129				7/7/2011 1322h
1107094-001AMSD	Surr: Toluene-d8	%REC	SW8260C	721	709.7		102	72-129				7/7/2011 1322h

# American West Analytical Laboratories

## WORK ORDER Summary

**Client:** Utah DEQ DERR

**Client ID:** UTD100

**Project:** Red Butte

**Comments:** No Hard Copies. QC 2+ SIM for PAH, TOC sent to Paragon, Grain Size sent to IGES.;

**Contact:** Jim Harris

**QC Level:** LEVEL II+

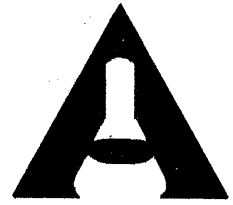
**Work Order:** 1107094

Page 1 of 1 7/6/2011

**WO Type:** Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage
1107094-001A	Vought Property	7/6/2011 1500h	7/6/2011 1700h	7/20/2011	Soil	3545A-SVOA-PR	<input type="checkbox"/>	VOC/PMOI ST 1
						3546-SVOA-PR	<input type="checkbox"/>	VOC/PMOI ST
						8260-S	<input checked="" type="checkbox"/>	VOC/PMOI ST
						8270-S	<input checked="" type="checkbox"/>	VOC/PMOI ST
						8270-S-SIM	<input checked="" type="checkbox"/>	VOC/PMOI ST
1107094-001B						OUTSIDE LAB	<input type="checkbox"/>	IGES
1107094-001C						OUTSIDE LAB	<input type="checkbox"/>	paragon

Client DWQ  
 Address 195 N 1950 W  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone 801 541 3069 Fax \_\_\_\_\_  
 Contact J. HARRIS  
 E-mail James.harris@utah.gov  
 Project Name RED BUTE  
 Project Number/P.O.# \_\_\_\_\_  
 Sampler Name J. HARRIS



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**CHAIN OF CUSTODY**

Lab Sample Set # 1107094  
 Page \_\_\_\_\_ of \_\_\_\_\_

Turn Around Time (Circle One)  
 1 day 2 day 3 day 4 day 5 day Standard

Sample ID	Date/Time Collected	Matrix	Number of Containers (Total)	TESTS REQUIRED								QC LEVEL			COMMENTS			
				TOC	PAH SIM 8270	TPH FRAC	GRAIN SIZE	VOC + gno								1	2	2+
<u>VOUGHT PROPERTY RED BUTE</u>	<u>7/6/11 1300 S</u>		<u>2</u>															

LABORATORY USE ONLY	
<b>SAMPLES WERE:</b>	
1 Shipped or hand delivered	Notes: <u>(circled)</u>
2 Ambient or Chilled	Notes: <u>(circled)</u>
3 Temperature <u>9.4</u>	
4 Received Broken/Leaking (Improperly Sealed)	Y <u>(circled)</u> N
5 Properly Preserved	Y N
Checked at Bench	Y N
6 Received Within Holding Times	Y <u>(circled)</u> N
Notes:	

Relinquished By: Signature <u>J. Harris</u>	Date <u>7/6/11</u>	Received By: Signature <u>Elaine Hayden</u>	Date <u>7-6-11</u>
PRINT NAME <u>JAMES HARRIS</u>	Time <u>1700</u>	PRINT NAME <u>Elaine Hayden</u>	Time <u>1700</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:  
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<b>COC Tape Was:</b>		
1 Present on Outer Package	Y N	NA
2 Unbroken on Outer Package	Y N	NA
3 Present on Sample	Y N	NA
4 Unbroken on Sample	Y N	NA
Discrepancies Between Sample Labels and COC Record?		
Y		<u>(circled)</u> N
Notes:		