



AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

Jim Harris  
Utah DEQ DERR  
168 N. 1950 W., 1st Floor  
Salt Lake City, Ut 84116  
TEL: (801) 536-4145

RE: Red Butte

Dear Jim Harris:

Lab Set ID: 1011530

463 West 3600 South  
Salt Lake City, UT  
84115

American West Analytical Laboratories received 6 sample(s) on 11/30/2010 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



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001B  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1127h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1'-Biphenyl	92-52-4	616	< 616	
	1,2,4,5-Tetrachlorobenzene	95-94-3	616	< 616	
	1,2,4-Trichlorobenzene	120-82-1	616	< 616	
	1,2-Dichlorobenzene	95-50-1	616	< 616	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	616	< 616	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	1,210	< 1,210	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	616	< 616	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	616	< 616	
	1,4-Dichlorobenzene	106-46-7	616	< 616	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	616	< 616	
Laboratory Director	1-Chloronaphthalene	90-13-1	616	< 616	
	1-Methylnaphthalene	90-12-0	616	< 616	
Jose Rocha	1-Naphthylamine	134-32-7	1,210	< 1,210	
QA Officer	2,3,4,6-Tetrachlorophenol	58-90-2	616	< 616	
	2,4,5-Trichlorophenol	95-95-4	616	< 616	
	2,4,6-Trichlorophenol	88-06-2	616	< 616	
	2,4-Dichlorophenol	120-83-2	616	< 616	
	2,4-Dimethylphenol	105-67-9	616	< 616	
	2,4-Dinitrophenol	51-28-5	1,210	< 1,210	
	2,4-Dinitrotoluene	121-14-2	616	< 616	
	2,6-Dichlorophenol	87-65-0	616	< 616	
	2,6-Dinitrotoluene	606-20-2	616	< 616	
	2-Acetylaminofluorene	53-96-3	616	< 616	
	2-Chloronaphthalene	91-58-7	616	< 616	
	2-Chlorophenol	95-57-8	616	< 616	
	2-Methylnaphthalene	91-57-6	616	< 616	
	2-Methylphenol	95-48-7	616	< 616	
	2-Naphthylamine	91-59-8	1,210	< 1,210	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001B  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1127h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitroaniline	88-74-4	616	< 616	
	2-Nitrophenol	88-75-5	616	< 616	
	2-Picoline	109-06-8	616	< 616	
	3&4-Methylphenol		616	< 616	
(801) 263-8686	3,3'-Dichlorobenzidine	91-94-1	616	< 616	
Toll Free (888) 263-8686	3,3'-Dimethylbenzidine	119-93-7	1,210	< 1,210	
Fax (801)263-8687	3-Methylcholanthrene	56-49-5	616	< 616	
email: awal@awal-labs.com	3-Nitroaniline	99-09-2	1,810	< 1,810	
	4,6-Dinitro-2-methylphenol	534-52-1	1,210	< 1,210	
Kyle F. Gross	4-Aminobiphenyl	92-67-1	616	< 616	
Laboratory Director	4-Bromophenyl phenyl ether	101-55-3	616	< 616	
	4-Chloro-3-methylphenol	59-50-7	616	< 616	
	4-Chloroaniline	106-47-8	616	< 616	
Jose Rocha	4-Chlorophenyl phenyl ether	7005-72-3	616	< 616	
QA Officer	4-Nitroaniline	100-01-6	1,810	< 1,810	
	4-Nitrophenol	100-02-7	1,210	< 1,210	
	5-Nitro-o-toluidine	99-55-8	616	< 616	
	7,12-Dimethylbenz(a)anthracene	57-97-6	616	< 616	
	a,a-Dimethylphenethylamine	122-09-8	1,210	<b>1,730</b>	
	Acenaphthene	83-32-9	616	< 616	
	Acenaphthylene	208-96-8	616	< 616	
	Acetophenone	98-86-2	616	< 616	
	alpha-Terpineol	98-55-5	616	< 616	
	Aniline	62-53-3	1,210	< 1,210	
	Anthracene	120-12-7	616	< 616	
	Aramite	140-57-8	1,210	< 1,210	
	Azobenzene	103-33-3	616	< 616	
	Benz(a)anthracene	56-55-3	616	< 616	



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**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001B  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1127h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
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Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Benzidine	92-87-5	2,430	< 2,430	
	Benzo(a)pyrene	50-32-8	616	< 616	
	Benzo(b)fluoranthene	205-99-2	616	< 616	
	Benzo(g,h,i)perylene	191-24-2	616	< 616	
(801) 263-8686	Benzo(k)fluoranthene	207-08-9	616	< 616	
Toll Free (888) 263-8686	Benzoic acid	65-85-0	1,810	< 1,810	
Fax (801)263-8687	Benzyl alcohol	100-51-6	616	< 616	
email: awal@awal-labs.com	Bis(2-chloroethoxy)methane	111-91-1	616	< 616	
	Bis(2-chloroethyl) ether	111-44-4	616	< 616	
Kyle F. Gross	Bis(2-chloroisopropyl) ether	108-60-1	616	< 616	
Laboratory Director	Bis(2-ethylhexyl) phthalate	117-81-7	616	< 616	
	bis(2-ethylhexyl)adipate	103-23-1	1,210	< 1,210	
Jose Rocha	Butyl benzyl phthalate	85-68-7	616	< 616	
QA Officer	Carbazole	86-74-8	616	< 616	
	Chlorobenzilate	510-15-6	616	< 616	
	Chrysene	218-01-9	616	< 616	
	Di-n-butyl phthalate	84-74-2	616	< 616	
	Di-n-octyl phthalate	117-84-0	616	< 616	
	Diallate (cis or trans)	2303-16-4	616	< 616	
	Dibenz(a,h)anthracene	53-70-3	616	< 616	
	Dibenzofuran	132-64-9	616	< 616	
	Diethyl phthalate	84-66-2	616	< 616	
	Dimethoate	60-51-5	616	< 616	
	Dimethyl phthalate	131-11-3	616	< 616	
	Dimethylaminoazobenzene	60-11-7	616	< 616	
	Dinoseb	88-85-7	1,210	< 1,210	
	Diphenylamine	122-39-4	616	< 616	
	Disulfoton	298-04-4	616	< 616	



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**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001B  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1127h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Ethyl methanesulfonate	62-50-0	616	< 616	
	Famphur	52-85-7	616	< 616	
	Fluoranthene	206-44-0	616	< 616	
	Fluorene	86-73-7	616	< 616	
(801) 263-8686	Hexachlorobenzene	118-74-1	616	< 616	
Toll Free (888) 263-8686	Hexachlorobutadiene	87-68-3	616	< 616	
Fax (801)263-8687	Hexachlorocyclopentadiene	77-47-4	616	< 616	
email: awal@awal-labs.com	Hexachloroethane	67-72-1	616	< 616	
	Hexachlorophene	70-30-4	616	< 616	
Kyle F. Gross	Hexachloropropene	1888-71-7	616	< 616	
Laboratory Director	Indene	95-13-6	616	< 616	
	Indeno(1,2,3-cd)pyrene	193-39-5	616	< 616	
Jose Rocha	Isodrin	465-73-6	616	< 616	
QA Officer	Isophorone	78-59-1	616	< 616	
	Isosafrole	120-58-1	616	< 616	
	Kepone	143-50-0	616	< 616	
	Methapyrilene	91-80-5	1,210	< 1,210	
	Methyl methanesulfonate	66-27-3	616	< 616	
	n-Decane	124-18-5	616	< 616	
	N-Nitrosodi-n-butylamine	924-16-3	616	< 616	
	N-Nitrosodiethylamine	55-18-5	616	< 616	
	N-Nitrosodimethylamine	62-75-9	1,210	< 1,210	
	N-Nitrosodiphenylamine	86-30-6	616	< 616	
	N-Nitrosodi-n-propylamine	621-64-7	616	< 616	
	N-Nitrosomethylethylamine	10595-95-6	616	< 616	
	N-Nitrosomorpholine	59-89-2	616	< 616	
	N-Nitrosopiperidine	100-75-4	616	< 616	
	N-Nitrosopyrrolidine	930-55-2	616	< 616	



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**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001B  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1127h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
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Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	n-Octadecane	593-45-3	616	< 616	
	Naphthalene	91-20-3	616	< 616	
	Nitrobenzene	98-95-3	616	< 616	
	Nitroquinoline-1-oxide	56-57-5	1,210	< 1,210	
(801) 263-8686	O,O,O-Triethyl phosphorothioate	126-68-1	616	< 616	
Toll Free (888) 263-8686	o-Toluidine	95-53-4	616	< 616	
Fax (801)263-8687	Parathion	56-38-2	616	< 616	
email: awal@awal-labs.com	Methyl parathion	298-00-0	616	< 616	
	Pentachlorobenzene	608-93-5	616	< 616	
	Pentachloronitrobenzene	82-68-8	616	< 616	
Kyle F. Gross	Pentachlorophenol	87-86-5	616	< 616	
Laboratory Director	Phenacetin	62-44-2	616	< 616	
	Phenanthrene	85-01-8	616	< 616	
Jose Rocha	Phenol	108-95-2	616	< 616	1
QA Officer	Phorate	298-02-2	616	< 616	
	Pronamide	23950-58-5	616	< 616	
	Pyrene	129-00-0	616	< 616	
	Pyridine	110-86-1	1,210	< 1,210	
	Quinoline	91-22-5	616	< 616	
	Safrole	94-59-7	616	< 616	
	Tetraethyl dithiopyrophosphate	3689-24-5	616	< 616	
	Thionazin	297-97-2	616	< 616	
	C11-C12 Aliphatic hydrocarbons		616	< 616	
	C13-C16 Aliphatic hydrocarbons		616	< 616	
	C17-C21 Aliphatic hydrocarbons		616	< 616	
	C22-C35 Aliphatic hydrocarbons		616	< 616	
	C11-C13 Alkyl Naphthalenes		616	< 616	
	Total C12-C22 PAH**		616	< 616	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001B  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1127h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

Surr: 2,4,6-Tribromophenol

118-79-6

10-237

**65.7**

Surr: 2-Fluorobiphenyl

321-60-8

17-122

**88.8**

Surr: 2-Fluorophenol

367-12-4

10-139

**78.2**

Surr: Nitrobenzene-d5

4165-60-0

10-166

**82.1**

Surr: Phenol-d6

13127-88-3

10-144

**65.9**

Surr: Terphenyl-d14

1718-51-0

10-265

**111**

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

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

The sample was analyzed for TICs. Those results can be found on pages 117 to 122.

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

463 West 3600 South  
Salt Lake City, UT

84115

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002B  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1300h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1'-Biphenyl	92-52-4	472	< 472	
	1,2,4,5-Tetrachlorobenzene	95-94-3	472	< 472	
	1,2,4-Trichlorobenzene	120-82-1	472	< 472	
	1,2-Dichlorobenzene	95-50-1	472	< 472	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	472	< 472	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	931	< 931	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	472	< 472	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	472	< 472	
	1,4-Dichlorobenzene	106-46-7	472	< 472	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	472	< 472	
Laboratory Director	1-Chloronaphthalene	90-13-1	472	< 472	
	1-Methylnaphthalene	90-12-0	472	< 472	
Jose Rocha	1-Naphthylamine	134-32-7	931	< 931	
QA Officer	2,3,4,6-Tetrachlorophenol	58-90-2	472	< 472	
	2,4,5-Trichlorophenol	95-95-4	472	< 472	
	2,4,6-Trichlorophenol	88-06-2	472	< 472	
	2,4-Dichlorophenol	120-83-2	472	< 472	
	2,4-Dimethylphenol	105-67-9	472	< 472	
	2,4-Dinitrophenol	51-28-5	931	< 931	
	2,4-Dinitrotoluene	121-14-2	472	< 472	
	2,6-Dichlorophenol	87-65-0	472	< 472	
	2,6-Dinitrotoluene	606-20-2	472	< 472	
	2-Acetylaminofluorene	53-96-3	472	< 472	
	2-Chloronaphthalene	91-58-7	472	< 472	
	2-Chlorophenol	95-57-8	472	< 472	
	2-Methylnaphthalene	91-57-6	472	< 472	
	2-Methylphenol	95-48-7	472	< 472	
	2-Naphthylamine	91-59-8	931	< 931	





# ORGANIC ANALYTICAL REPORT

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**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002B  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1300h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
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**Qual**

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	2-Nitroaniline	88-74-4	472	< 472	
	2-Nitrophenol	88-75-5	472	< 472	
	2-Picoline	109-06-8	472	< 472	
	3&4-Methylphenol		472	< 472	
(801) 263-8686	3,3'-Dichlorobenzidine	91-94-1	472	< 472	
Toll Free (888) 263-8686	3,3'-Dimethylbenzidine	119-93-7	931	< 931	
Fax (801)263-8687	3-Methylcholanthrene	56-49-5	472	< 472	
email: awal@awal-labs.com	3-Nitroaniline	99-09-2	1,390	< 1,390	
	4,6-Dinitro-2-methylphenol	534-52-1	931	< 931	
	4-Aminobiphenyl	92-67-1	472	< 472	
	4-Bromophenyl phenyl ether	101-55-3	472	< 472	
	4-Chloro-3-methylphenol	59-50-7	472	< 472	
	4-Chloroaniline	106-47-8	472	< 472	
	4-Chlorophenyl phenyl ether	7005-72-3	472	< 472	
	4-Nitroaniline	100-01-6	1,390	< 1,390	
	4-Nitrophenol	100-02-7	931	< 931	
	5-Nitro-o-toluidine	99-55-8	472	< 472	
	7,12-Dimethylbenz(a)anthracene	57-97-6	472	< 472	
	a,a-Dimethylphenethylamine	122-09-8	931	< 931	
	Acenaphthene	83-32-9	472	< 472	
	Acenaphthylene	208-96-8	472	< 472	
	Acetophenone	98-86-2	472	< 472	
	alpha-Terpineol	98-55-5	472	< 472	
	Aniline	62-53-3	931	< 931	
	Anthracene	120-12-7	472	< 472	
	Aramite	140-57-8	931	< 931	
	Azobenzene	103-33-3	472	< 472	
	Benz(a)anthracene	56-55-3	472	< 472	



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AMERICAN  
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**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002B  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1300h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

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Salt Lake City, UT  
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Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Benzidine	92-87-5	1,860	< 1,860	
	Benzo(a)pyrene	50-32-8	472	< 472	
	Benzo(b)fluoranthene	205-99-2	472	< 472	
	Benzo(g,h,i)perylene	191-24-2	472	< 472	
(801) 263-8686	Benzo(k)fluoranthene	207-08-9	472	< 472	
Toll Free (888) 263-8686	Benzoic acid	65-85-0	1,390	< 1,390	
Fax (801)263-8687	Benzyl alcohol	100-51-6	472	< 472	
email: awal@awal-labs.com	Bis(2-chloroethoxy)methane	111-91-1	472	< 472	
	Bis(2-chloroethyl) ether	111-44-4	472	< 472	
Kyle F. Gross	Bis(2-chloroisopropyl) ether	108-60-1	472	< 472	
Laboratory Director	Bis(2-ethylhexyl) phthalate	117-81-7	472	< 472	
	bis(2-ethylhexyl)adipate	103-23-1	931	< 931	
Jose Rocha	Butyl benzyl phthalate	85-68-7	472	< 472	
QA Officer	Carbazole	86-74-8	472	< 472	
	Chlorobenzilate	510-15-6	472	< 472	
	Chrysene	218-01-9	472	< 472	
	Di-n-butyl phthalate	84-74-2	472	< 472	
	Di-n-octyl phthalate	117-84-0	472	< 472	
	Diallate (cis or trans)	2303-16-4	472	< 472	
	Dibenz(a,h)anthracene	53-70-3	472	< 472	
	Dibenzofuran	132-64-9	472	< 472	
	Diethyl phthalate	84-66-2	472	< 472	
	Dimethoate	60-51-5	472	< 472	
	Dimethyl phthalate	131-11-3	472	< 472	
	Dimethylaminoazobenzene	60-11-7	472	< 472	
	Dinoseb	88-85-7	931	< 931	
	Diphenylamine	122-39-4	472	< 472	
	Disulfoton	298-04-4	472	< 472	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002B  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1300h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Ethyl methanesulfonate	62-50-0	472	< 472
	Famphur	52-85-7	472	< 472
	Fluoranthene	206-44-0	472	< 472
	Fluorene	86-73-7	472	< 472
(801) 263-8686	Hexachlorobenzene	118-74-1	472	< 472
Toll Free (888) 263-8686	Hexachlorobutadiene	87-68-3	472	< 472
Fax (801)263-8687	Hexachlorocyclopentadiene	77-47-4	472	< 472
email: awal@awal-labs.com	Hexachloroethane	67-72-1	472	< 472
	Hexachlorophene	70-30-4	472	< 472
Kyle F. Gross	Hexachloropropene	1888-71-7	472	< 472
Laboratory Director	Indene	95-13-6	472	< 472
	Indeno(1,2,3-cd)pyrene	193-39-5	472	< 472
	Isodrin	465-73-6	472	< 472
Jose Rocha	Isophorone	78-59-1	472	< 472
QA Officer	Isosafrole	120-58-1	472	< 472
	Kepone	143-50-0	472	< 472
	Methapyrilene	91-80-5	931	< 931
	Methyl methanesulfonate	66-27-3	472	< 472
	n-Decane	124-18-5	472	< 472
	N-Nitrosodi-n-butylamine	924-16-3	472	< 472
	N-Nitrosodiethylamine	55-18-5	472	< 472
	N-Nitrosodimethylamine	62-75-9	931	< 931
	N-Nitrosodiphenylamine	86-30-6	472	< 472
	N-Nitrosodi-n-propylamine	621-64-7	472	< 472
	N-Nitrosomethylethylamine	10595-95-6	472	< 472
	N-Nitrosomorpholine	59-89-2	472	< 472
	N-Nitrosopiperidine	100-75-4	472	< 472
	N-Nitrosopyrrolidine	930-55-2	472	< 472



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002B  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1300h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	n-Octadecane	593-45-3	472	< 472	
	Naphthalene	91-20-3	472	< 472	
	Nitrobenzene	98-95-3	472	< 472	
	Nitroquinoline-1-oxide	56-57-5	931	< 931	
(801) 263-8686	O,O,O-Triethyl phosphorothioate	126-68-1	472	< 472	
Toll Free (888) 263-8686	o-Toluidine	95-53-4	472	< 472	
Fax (801)263-8687	Parathion	56-38-2	472	< 472	
email: awal@awal-labs.com	Methyl parathion	298-00-0	472	< 472	
	Pentachlorobenzene	608-93-5	472	< 472	
	Pentachloronitrobenzene	82-68-8	472	< 472	
	Pentachlorophenol	87-86-5	472	< 472	
	Phenacetin	62-44-2	472	< 472	
	Phenanthrene	85-01-8	472	< 472	
	Phenol	108-95-2	472	< 472	
	Phorate	298-02-2	472	< 472	
	Pronamide	23950-58-5	472	< 472	
	Pyrene	129-00-0	472	< 472	
	Pyridine	110-86-1	931	< 931	
	Quinoline	91-22-5	472	< 472	
	Safrole	94-59-7	472	< 472	
	Tetraethyl dithiopyrophosphate	3689-24-5	472	< 472	
	Thionazin	297-97-2	472	< 472	
	C11-C12 Aliphatic hydrocarbons		472	< 472	
	C13-C16 Aliphatic hydrocarbons		472	< 472	
	C17-C21 Aliphatic hydrocarbons		472	< 472	
	C22-C35 Aliphatic hydrocarbons		472	< 472	
	C11-C13 Alkyl Naphthalenes		472	< 472	
	Total C12-C22 PAH**		472	< 472	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002B  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1300h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

Surr: 2,4,6-Tribromophenol

118-79-6

10-237

**65.4**

Surr: 2-Fluorobiphenyl

321-60-8

17-122

**87.2**

Surr: 2-Fluorophenol

367-12-4

10-139

**74.5**

Surr: Nitrobenzene-d5

4165-60-0

10-166

**80.4**

Surr: Phenol-d6

13127-88-3

10-144

**65.9**

Surr: Terphenyl-d14

1718-51-0

10-265

**107**

*The sample was analyzed for TICs. Those results can be found on pages 117 to 122.*

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

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

463 West 3600 South  
Salt Lake City, UT

84115

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003B  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 1643h

**Extracted:** 12/3/2010 0806h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

1,1'-Biphenyl	92-52-4	887	< 887	
1,2,4,5-Tetrachlorobenzene	95-94-3	887	< 887	
1,2,4-Trichlorobenzene	120-82-1	887	< 887	
1,2-Dichlorobenzene	95-50-1	887	< 887	
1,3,5-Trinitrobenzene	99-35-4	887	< 887	
1,4-Naphthoquinone	130-15-4	1,750	< 1,750	
1,3-Dichlorobenzene	541-73-1	887	< 887	
1,3-Dinitrobenzene	99-65-0	887	< 887	
1,4-Dichlorobenzene	106-46-7	887	< 887	
1,4-Phenylenediamine	106-50-3	887	< 887	
1-Chloronaphthalene	90-13-1	887	< 887	
1-Methylnaphthalene	90-12-0	887	< 887	
1-Naphthylamine	134-32-7	1,750	< 1,750	
2,3,4,6-Tetrachlorophenol	58-90-2	887	< 887	
2,4,5-Trichlorophenol	95-95-4	887	< 887	
2,4,6-Trichlorophenol	88-06-2	887	< 887	
2,4-Dichlorophenol	120-83-2	887	< 887	
2,4-Dimethylphenol	105-67-9	887	< 887	
2,4-Dinitrophenol	51-28-5	1,750	< 1,750	
2,4-Dinitrotoluene	121-14-2	887	< 887	
2,6-Dichlorophenol	87-65-0	887	< 887	
2,6-Dinitrotoluene	606-20-2	887	< 887	
2-Acetylaminofluorene	53-96-3	887	< 887	
2-Chloronaphthalene	91-58-7	887	< 887	
2-Chlorophenol	95-57-8	887	< 887	
2-Methylnaphthalene	91-57-6	887	< 887	
2-Methylphenol	95-48-7	887	< 887	
2-Naphthylamine	91-59-8	1,750	< 1,750	



## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003B  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 1643h

**Extracted:** 12/3/2010 0806h

### Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

#### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitroaniline	88-74-4	887	< 887	
	2-Nitrophenol	88-75-5	887	< 887	
	2-Picoline	109-06-8	887	< 887	
	3&4-Methylphenol		887	< 887	
(801) 263-8686	3,3'-Dichlorobenzidine	91-94-1	887	< 887	
Toll Free (888) 263-8686	3,3'-Dimethylbenzidine	119-93-7	1,750	< 1,750	
Fax (801)263-8687	3-Methylcholanthrene	56-49-5	887	< 887	
email: awal@awal-labs.com	3-Nitroaniline	99-09-2	2,610	< 2,610	
	4,6-Dinitro-2-methylphenol	534-52-1	1,750	< 1,750	
Kyle F. Gross	4-Aminobiphenyl	92-67-1	887	< 887	
Laboratory Director	4-Bromophenyl phenyl ether	101-55-3	887	< 887	
	4-Chloro-3-methylphenol	59-50-7	887	< 887	
Jose Rocha	4-Chloroaniline	106-47-8	887	< 887	
QA Officer	4-Chlorophenyl phenyl ether	7005-72-3	887	< 887	
	4-Nitroaniline	100-01-6	2,610	< 2,610	
	4-Nitrophenol	100-02-7	1,750	< 1,750	
	5-Nitro-o-toluidine	99-55-8	887	< 887	
	7,12-Dimethylbenz(a)anthracene	57-97-6	887	< 887	
	a,a-Dimethylphenethylamine	122-09-8	1,750	< 1,750	
	Acenaphthene	83-32-9	887	< 887	
	Acenaphthylene	208-96-8	887	< 887	
	Acetophenone	98-86-2	887	< 887	
	alpha-Terpineol	98-55-5	887	< 887	
	Aniline	62-53-3	1,750	< 1,750	
	Anthracene	120-12-7	887	< 887	
	Aramite	140-57-8	1,750	< 1,750	
	Azobenzene	103-33-3	887	< 887	
	Benz(a)anthracene	56-55-3	887	< 887	

Report Date: 12/6/2010 Page 15 of 122



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003B  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 1643h

**Extracted:** 12/3/2010 0806h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Benzidine	92-87-5	3,500	< 3,500	
	Benzo(a)pyrene	50-32-8	887	< 887	
	Benzo(b)fluoranthene	205-99-2	887	< 887	
	Benzo(g,h,i)perylene	191-24-2	887	< 887	
(801) 263-8686	Benzo(k)fluoranthene	207-08-9	887	< 887	
Toll Free (888) 263-8686	Benzoic acid	65-85-0	2,610	< 2,610	
Fax (801)263-8687	Benzyl alcohol	100-51-6	887	< 887	
email: awal@awal-labs.com	Bis(2-chloroethoxy)methane	111-91-1	887	< 887	
	Bis(2-chloroethyl) ether	111-44-4	887	< 887	
Kyle F. Gross	Bis(2-chloroisopropyl) ether	108-60-1	887	< 887	
Laboratory Director	Bis(2-ethylhexyl) phthalate	117-81-7	887	< 887	
	bis(2-ethylhexyl)adipate	103-23-1	1,750	< 1,750	
Jose Rocha	Butyl benzyl phthalate	85-68-7	887	< 887	
QA Officer	Carbazole	86-74-8	887	< 887	
	Chlorobenzilate	510-15-6	887	< 887	
	Chrysene	218-01-9	887	< 887	
	Di-n-butyl phthalate	84-74-2	887	<b>1,810</b>	
	Di-n-octyl phthalate	117-84-0	887	< 887	
	Diallate (cis or trans)	2303-16-4	887	< 887	
	Dibenz(a,h)anthracene	53-70-3	887	< 887	
	Dibenzofuran	132-64-9	887	< 887	
	Diethyl phthalate	84-66-2	887	< 887	
	Dimethoate	60-51-5	887	< 887	
	Dimethyl phthalate	131-11-3	887	< 887	
	Dimethylaminoazobenzene	60-11-7	887	< 887	
	Dinoseb	88-85-7	1,750	< 1,750	
	Diphenylamine	122-39-4	887	< 887	
	Disulfoton	298-04-4	887	< 887	





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003B  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 1643h

**Extracted:** 12/3/2010 0806h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Ethyl methanesulfonate	62-50-0	887	< 887	
Famphur	52-85-7	887	< 887	
Fluoranthene	206-44-0	887	< 887	
Fluorene	86-73-7	887	< 887	
(801) 263-8686 Hexachlorobenzene	118-74-1	887	< 887	
Toll Free (888) 263-8686 Hexachlorobutadiene	87-68-3	887	< 887	
Fax (801)263-8687 Hexachlorocyclopentadiene	77-47-4	887	< 887	
email: awal@awal-labs.com Hexachloroethane	67-72-1	887	< 887	
Hexachlorophene	70-30-4	887	< 887	
Kyle F. Gross Hexachloropropene	1888-71-7	887	< 887	
Laboratory Director Indene	95-13-6	887	< 887	
Indeno(1,2,3-cd)pyrene	193-39-5	887	< 887	
Jose Rocha Isodrin	465-73-6	887	< 887	
QA Officer Isophorone	78-59-1	887	< 887	
Isosafrole	120-58-1	887	< 887	
Kepone	143-50-0	887	< 887	
Methapyrilene	91-80-5	1,750	< 1,750	
Methyl methanesulfonate	66-27-3	887	< 887	
n-Decane	124-18-5	887	< 887	
N-Nitrosodi-n-butylamine	924-16-3	887	< 887	
N-Nitrosodiethylamine	55-18-5	887	< 887	
N-Nitrosodimethylamine	62-75-9	1,750	< 1,750	
N-Nitrosodiphenylamine	86-30-6	887	< 887	
N-Nitrosodi-n-propylamine	621-64-7	887	< 887	
N-Nitrosomethylethylamine	10595-95-6	887	< 887	
N-Nitrosomorpholine	59-89-2	887	< 887	
N-Nitrosopiperidine	100-75-4	887	< 887	
N-Nitrosopyrrolidine	930-55-2	887	< 887	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003B  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 1643h

**Extracted:** 12/3/2010 0806h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	n-Octadecane	593-45-3	887	< 887	
	Naphthalene	91-20-3	887	< 887	
	Nitrobenzene	98-95-3	887	< 887	
	Nitroquinoline-1-oxide	56-57-5	1,750	< 1,750	
(801) 263-8686	O,O,O-Triethyl phosphorothioate	126-68-1	887	< 887	
Toll Free (888) 263-8686	o-Toluidine	95-53-4	887	< 887	
Fax (801)263-8687	Parathion	56-38-2	887	< 887	
email: awal@awal-labs.com	Methyl parathion	298-00-0	887	< 887	
	Pentachlorobenzene	608-93-5	887	< 887	
	Pentachloronitrobenzene	82-68-8	887	< 887	
	Pentachlorophenol	87-86-5	887	< 887	
	Phenacetin	62-44-2	887	< 887	
	Phenanthrene	85-01-8	887	< 887	
	Phenol	108-95-2	887	< 887	
	Phorate	298-02-2	887	< 887	
	Pronamide	23950-58-5	887	< 887	
	Pyrene	129-00-0	887	< 887	
	Pyridine	110-86-1	1,750	< 1,750	
	Quinoline	91-22-5	887	< 887	
	Safrole	94-59-7	887	< 887	
	Tetraethyl dithiopyrophosphate	3689-24-5	887	< 887	
	Thionazin	297-97-2	887	< 887	
	C11-C12 Aliphatic hydrocarbons		887	<b>4,330</b>	
	C13-C16 Aliphatic hydrocarbons		887	< 887	
	C17-C21 Aliphatic hydrocarbons		887	<b>32,400</b>	
	C22-C35 Aliphatic hydrocarbons		887	<b>264,000</b>	
	C11-C13 Alkyl Naphthalenes		887	< 887	
	Total C12-C22 PAH**		887	< 887	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003B  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 1643h

**Extracted:** 12/3/2010 0806h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 2,4,6-Tribromophenol	118-79-6	10-237	<b>74.5</b>	
Surr: 2-Fluorobiphenyl	321-60-8	17-122	<b>81.0</b>	
Surr: 2-Fluorophenol	367-12-4	10-139	<b>53.0</b>	
Surr: Nitrobenzene-d5	4165-60-0	10-166	<b>65.2</b>	
Surr: Phenol-d6	13127-88-3	10-144	<b>60.1</b>	
Surr: Terphenyl-d14	1718-51-0	10-265	<b>96.7</b>	

*The sample was analyzed for TICs. Those results can be found on pages 117 to 122.*

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

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

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004B  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1355h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1'-Biphenyl	92-52-4	467	< 467	
	1,2,4,5-Tetrachlorobenzene	95-94-3	467	< 467	
	1,2,4-Trichlorobenzene	120-82-1	467	< 467	
	1,2-Dichlorobenzene	95-50-1	467	< 467	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	467	< 467	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	921	< 921	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	467	< 467	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	467	< 467	
	1,4-Dichlorobenzene	106-46-7	467	< 467	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	467	< 467	
Laboratory Director	1-Chloronaphthalene	90-13-1	467	< 467	
	1-Methylnaphthalene	90-12-0	467	< 467	
Jose Rocha	1-Naphthylamine	134-32-7	921	< 921	
QA Officer	2,3,4,6-Tetrachlorophenol	58-90-2	467	< 467	
	2,4,5-Trichlorophenol	95-95-4	467	< 467	
	2,4,6-Trichlorophenol	88-06-2	467	< 467	
	2,4-Dichlorophenol	120-83-2	467	< 467	
	2,4-Dimethylphenol	105-67-9	467	< 467	
	2,4-Dinitrophenol	51-28-5	921	< 921	
	2,4-Dinitrotoluene	121-14-2	467	< 467	
	2,6-Dichlorophenol	87-65-0	467	< 467	
	2,6-Dinitrotoluene	606-20-2	467	< 467	
	2-Acetylaminofluorene	53-96-3	467	< 467	
	2-Chloronaphthalene	91-58-7	467	< 467	
	2-Chlorophenol	95-57-8	467	< 467	
	2-Methylnaphthalene	91-57-6	467	< 467	
	2-Methylphenol	95-48-7	467	< 467	
	2-Naphthylamine	91-59-8	921	< 921	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004B  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1355h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitroaniline	88-74-4	467	< 467	
	2-Nitrophenol	88-75-5	467	< 467	
	2-Picoline	109-06-8	467	< 467	
	3&4-Methylphenol		467	< 467	
(801) 263-8686	3,3'-Dichlorobenzidine	91-94-1	467	< 467	
Toll Free (888) 263-8686	3,3'-Dimethylbenzidine	119-93-7	921	< 921	
Fax (801)263-8687	3-Methylcholanthrene	56-49-5	467	< 467	
email: awal@awal-labs.com	3-Nitroaniline	99-09-2	1,370	< 1,370	
	4,6-Dinitro-2-methylphenol	534-52-1	921	< 921	
Kyle F. Gross	4-Aminobiphenyl	92-67-1	467	< 467	
Laboratory Director	4-Bromophenyl phenyl ether	101-55-3	467	< 467	
	4-Chloro-3-methylphenol	59-50-7	467	< 467	
Jose Rocha	4-Chloroaniline	106-47-8	467	< 467	
QA Officer	4-Chlorophenyl phenyl ether	7005-72-3	467	< 467	
	4-Nitroaniline	100-01-6	1,370	< 1,370	
	4-Nitrophenol	100-02-7	921	< 921	
	5-Nitro-o-toluidine	99-55-8	467	< 467	
	7,12-Dimethylbenz(a)anthracene	57-97-6	467	< 467	
	a,a-Dimethylphenethylamine	122-09-8	921	< 921	
	Acenaphthene	83-32-9	467	< 467	
	Acenaphthylene	208-96-8	467	< 467	
	Acetophenone	98-86-2	467	< 467	
	alpha-Terpineol	98-55-5	467	< 467	
	Aniline	62-53-3	921	< 921	
	Anthracene	120-12-7	467	< 467	
	Aramite	140-57-8	921	< 921	
	Azobenzene	103-33-3	467	< 467	
	Benz(a)anthracene	56-55-3	467	< 467	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004B  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1355h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzidine	92-87-5	1,840	< 1,840	
Benzo(a)pyrene	50-32-8	467	< 467	
Benzo(b)fluoranthene	205-99-2	467	< 467	
Benzo(g,h,i)perylene	191-24-2	467	< 467	
(801) 263-8686 Benzo(k)fluoranthene	207-08-9	467	< 467	
Toll Free (888) 263-8686 Benzoic acid	65-85-0	1,370	< 1,370	
Fax (801)263-8687 Benzyl alcohol	100-51-6	467	< 467	
email: awal@awal-labs.com Bis(2-chloroethoxy)methane	111-91-1	467	< 467	
Bis(2-chloroethyl) ether	111-44-4	467	< 467	
Kyle F. Gross Bis(2-chloroisopropyl) ether	108-60-1	467	< 467	
Laboratory Director Bis(2-ethylhexyl) phthalate	117-81-7	467	< 467	
bis(2-ethylhexyl)adipate	103-23-1	921	< 921	
Jose Rocha Butyl benzyl phthalate	85-68-7	467	< 467	
QA Officer Carbazole	86-74-8	467	< 467	
Chlorobenzilate	510-15-6	467	< 467	
Chrysene	218-01-9	467	< 467	
Di-n-butyl phthalate	84-74-2	467	< 467	
Di-n-octyl phthalate	117-84-0	2,340	<b>49,500</b>	D
Diallate (cis or trans)	2303-16-4	467	< 467	
Dibenz(a,h)anthracene	53-70-3	467	< 467	
Dibenzofuran	132-64-9	467	< 467	
Diethyl phthalate	84-66-2	467	< 467	
Dimethoate	60-51-5	467	< 467	
Dimethyl phthalate	131-11-3	467	< 467	
Dimethylaminoazobenzene	60-11-7	467	< 467	
Dinoseb	88-85-7	921	< 921	
Diphenylamine	122-39-4	467	< 467	
Disulfoton	298-04-4	467	< 467	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004B  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1355h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Ethyl methanesulfonate	62-50-0	467	< 467
	Famphur	52-85-7	467	< 467
	Fluoranthene	206-44-0	467	< 467
	Fluorene	86-73-7	467	< 467
(801) 263-8686	Hexachlorobenzene	118-74-1	467	< 467
Toll Free (888) 263-8686	Hexachlorobutadiene	87-68-3	467	< 467
Fax (801)263-8687	Hexachlorocyclopentadiene	77-47-4	467	< 467
email: awal@awal-labs.com	Hexachloroethane	67-72-1	467	< 467
	Hexachlorophene	70-30-4	467	< 467
Kyle F. Gross	Hexachloropropene	1888-71-7	467	< 467
Laboratory Director	Indene	95-13-6	467	< 467
	Indeno(1,2,3-cd)pyrene	193-39-5	467	< 467
Jose Rocha	Isodrin	465-73-6	467	< 467
QA Officer	Isophorone	78-59-1	467	< 467
	Isosafrole	120-58-1	467	< 467
	Kepone	143-50-0	467	< 467
	Methapyrilene	91-80-5	921	< 921
	Methyl methanesulfonate	66-27-3	467	< 467
	n-Decane	124-18-5	467	< 467
	N-Nitrosodi-n-butylamine	924-16-3	467	< 467
	N-Nitrosodiethylamine	55-18-5	467	< 467
	N-Nitrosodimethylamine	62-75-9	921	< 921
	N-Nitrosodiphenylamine	86-30-6	467	< 467
	N-Nitrosodi-n-propylamine	621-64-7	467	< 467
	N-Nitrosomethylethylamine	10595-95-6	467	< 467
	N-Nitrosomorpholine	59-89-2	467	< 467
	N-Nitrosopiperidine	100-75-4	467	< 467
	N-Nitrosopyrrolidine	930-55-2	467	< 467



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004B  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1355h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
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email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	n-Octadecane	593-45-3	467	< 467	
	Naphthalene	91-20-3	467	< 467	
	Nitrobenzene	98-95-3	467	< 467	
	Nitroquinoline-1-oxide	56-57-5	921	< 921	
(801) 263-8686	O,O,O-Triethyl phosphorothioate	126-68-1	467	< 467	
Toll Free (888) 263-8686	o-Toluidine	95-53-4	467	< 467	
Fax (801)263-8687	Parathion	56-38-2	467	< 467	
email: awal@awal-labs.com	Methyl parathion	298-00-0	467	< 467	
	Pentachlorobenzene	608-93-5	467	< 467	
Kyle F. Gross	Pentachloronitrobenzene	82-68-8	467	< 467	
Laboratory Director	Pentachlorophenol	87-86-5	467	< 467	
	Phenacetin	62-44-2	467	< 467	
Jose Rocha	Phenanthrene	85-01-8	467	< 467	
QA Officer	Phenol	108-95-2	467	< 467	
	Phorate	298-02-2	467	< 467	
	Pronamide	23950-58-5	467	< 467	
	Pyrene	129-00-0	467	< 467	
	Pyridine	110-86-1	921	< 921	
	Quinoline	91-22-5	467	< 467	
	Safrole	94-59-7	467	< 467	
	Tetraethyl dithiopyrophosphate	3689-24-5	467	< 467	
	Thionazin	297-97-2	467	< 467	
	C11-C12 Aliphatic hydrocarbons		467	< 467	
	C13-C16 Aliphatic hydrocarbons		467	< 467	
	C17-C21 Aliphatic hydrocarbons		467	< 467	
	C22-C35 Aliphatic hydrocarbons		467	< 467	
	C11-C13 Alkyl Naphthalenes		467	< 467	
	Total C12-C22 PAH**		467	< 467	





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004B  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1355h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 2,4,6-Tribromophenol	118-79-6	10-237	<b>74.9</b>	
Surr: 2-Fluorobiphenyl	321-60-8	17-122	<b>90.8</b>	
Surr: 2-Fluorophenol	367-12-4	10-139	<b>74.5</b>	
Surr: Nitrobenzene-d5	4165-60-0	10-166	<b>85.5</b>	
Surr: Phenol-d6	13127-88-3	10-144	<b>67.8</b>	
Surr: Terphenyl-d14	1718-51-0	10-265	<b>110</b>	

*D - This analyte was obtained from a 1:5 dilution.*

*The sample was analyzed for TICs. Those results can be found on pages 117 to 122.*

*\*\* - 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

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005B  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1422h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1'-Biphenyl	92-52-4	452	< 452	
	1,2,4,5-Tetrachlorobenzene	95-94-3	452	< 452	
	1,2,4-Trichlorobenzene	120-82-1	452	< 452	
	1,2-Dichlorobenzene	95-50-1	452	< 452	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	452	< 452	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	891	< 891	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	452	< 452	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	452	< 452	
	1,4-Dichlorobenzene	106-46-7	452	< 452	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	452	< 452	
Laboratory Director	1-Chloronaphthalene	90-13-1	452	< 452	
	1-Methylnaphthalene	90-12-0	452	< 452	
Jose Rocha	1-Naphthylamine	134-32-7	891	< 891	
QA Officer	2,3,4,6-Tetrachlorophenol	58-90-2	452	< 452	
	2,4,5-Trichlorophenol	95-95-4	452	< 452	
	2,4,6-Trichlorophenol	88-06-2	452	< 452	
	2,4-Dichlorophenol	120-83-2	452	< 452	
	2,4-Dimethylphenol	105-67-9	452	< 452	
	2,4-Dinitrophenol	51-28-5	891	< 891	
	2,4-Dinitrotoluene	121-14-2	452	< 452	
	2,6-Dichlorophenol	87-65-0	452	< 452	
	2,6-Dinitrotoluene	606-20-2	452	< 452	
	2-Acetylaminofluorene	53-96-3	452	< 452	
	2-Chloronaphthalene	91-58-7	452	< 452	
	2-Chlorophenol	95-57-8	452	< 452	
	2-Methylnaphthalene	91-57-6	452	< 452	
	2-Methylphenol	95-48-7	452	< 452	
	2-Naphthylamine	91-59-8	891	< 891	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005B  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1422h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitroaniline	88-74-4	452	< 452	
	2-Nitrophenol	88-75-5	452	< 452	
	2-Picoline	109-06-8	452	< 452	
	3&4-Methylphenol		452	< 452	
(801) 263-8686	3,3'-Dichlorobenzidine	91-94-1	452	< 452	
Toll Free (888) 263-8686	3,3'-Dimethylbenzidine	119-93-7	891	< 891	
Fax (801)263-8687	3-Methylcholanthrene	56-49-5	452	< 452	
email: awal@awal-labs.com	3-Nitroaniline	99-09-2	1,330	< 1,330	
	4,6-Dinitro-2-methylphenol	534-52-1	891	< 891	
Kyle F. Gross	4-Aminobiphenyl	92-67-1	452	< 452	
Laboratory Director	4-Bromophenyl phenyl ether	101-55-3	452	< 452	
	4-Chloro-3-methylphenol	59-50-7	452	< 452	
	4-Chloroaniline	106-47-8	452	< 452	
Jose Rocha	4-Chlorophenyl phenyl ether	7005-72-3	452	< 452	
QA Officer	4-Nitroaniline	100-01-6	1,330	< 1,330	
	4-Nitrophenol	100-02-7	891	< 891	
	5-Nitro-o-toluidine	99-55-8	452	< 452	
	7,12-Dimethylbenz(a)anthracene	57-97-6	452	< 452	
	a,a-Dimethylphenethylamine	122-09-8	891	< 891	
	Acenaphthene	83-32-9	452	< 452	
	Acenaphthylene	208-96-8	452	< 452	
	Acetophenone	98-86-2	452	< 452	
	alpha-Terpineol	98-55-5	452	< 452	
	Aniline	62-53-3	891	< 891	
	Anthracene	120-12-7	452	< 452	
	Aramite	140-57-8	891	< 891	
	Azobenzene	103-33-3	452	< 452	
	Benz(a)anthracene	56-55-3	452	< 452	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005B  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1422h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
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email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Benzidine	92-87-5	1,780	< 1,780	
	Benzo(a)pyrene	50-32-8	452	< 452	
	Benzo(b)fluoranthene	205-99-2	452	< 452	
	Benzo(g,h,i)perylene	191-24-2	452	< 452	
(801) 263-8686	Benzo(k)fluoranthene	207-08-9	452	< 452	
Toll Free (888) 263-8686	Benzoic acid	65-85-0	1,330	< 1,330	
Fax (801)263-8687	Benzyl alcohol	100-51-6	452	< 452	
email: awal@awal-labs.com	Bis(2-chloroethoxy)methane	111-91-1	452	< 452	
	Bis(2-chloroethyl) ether	111-44-4	452	< 452	
Kyle F. Gross	Bis(2-chloroisopropyl) ether	108-60-1	452	< 452	
Laboratory Director	Bis(2-ethylhexyl) phthalate	117-81-7	452	< 452	
	bis(2-ethylhexyl)adipate	103-23-1	891	< 891	
Jose Rocha	Butyl benzyl phthalate	85-68-7	452	< 452	
QA Officer	Carbazole	86-74-8	452	< 452	
	Chlorobenzilate	510-15-6	452	< 452	
	Chrysene	218-01-9	452	< 452	
	Di-n-butyl phthalate	84-74-2	452	< 452	
	Di-n-octyl phthalate	117-84-0	452	< 452	
	Diallate (cis or trans)	2303-16-4	452	< 452	
	Dibenz(a,h)anthracene	53-70-3	452	< 452	
	Dibenzofuran	132-64-9	452	< 452	
	Diethyl phthalate	84-66-2	452	< 452	
	Dimethoate	60-51-5	452	< 452	
	Dimethyl phthalate	131-11-3	452	< 452	
	Dimethylaminoazobenzene	60-11-7	452	< 452	
	Dinoseb	88-85-7	891	< 891	
	Diphenylamine	122-39-4	452	< 452	
	Disulfoton	298-04-4	452	< 452	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005B  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1422h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Ethyl methanesulfonate	62-50-0	452	< 452
	Famphur	52-85-7	452	< 452
	Fluoranthene	206-44-0	452	< 452
	Fluorene	86-73-7	452	< 452
(801) 263-8686	Hexachlorobenzene	118-74-1	452	< 452
Toll Free (888) 263-8686	Hexachlorobutadiene	87-68-3	452	< 452
Fax (801)263-8687	Hexachlorocyclopentadiene	77-47-4	452	< 452
email: awal@awal-labs.com	Hexachloroethane	67-72-1	452	< 452
	Hexachlorophene	70-30-4	452	< 452
Kyle F. Gross	Hexachloropropene	1888-71-7	452	< 452
Laboratory Director	Indene	95-13-6	452	< 452
	Indeno(1,2,3-cd)pyrene	193-39-5	452	< 452
	Isodrin	465-73-6	452	< 452
Jose Rocha	Isophorone	78-59-1	452	< 452
QA Officer	Isosafrole	120-58-1	452	< 452
	Kepone	143-50-0	452	< 452
	Methapyrilene	91-80-5	891	< 891
	Methyl methanesulfonate	66-27-3	452	< 452
	n-Decane	124-18-5	452	< 452
	N-Nitrosodi-n-butylamine	924-16-3	452	< 452
	N-Nitrosodiethylamine	55-18-5	452	< 452
	N-Nitrosodimethylamine	62-75-9	891	< 891
	N-Nitrosodiphenylamine	86-30-6	452	< 452
	N-Nitrosodi-n-propylamine	621-64-7	452	< 452
	N-Nitrosomethylethylamine	10595-95-6	452	< 452
	N-Nitrosomorpholine	59-89-2	452	< 452
	N-Nitrosopiperidine	100-75-4	452	< 452
	N-Nitrosopyrrolidine	930-55-2	452	< 452



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005B  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1422h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	n-Octadecane	593-45-3	452	< 452	
	Naphthalene	91-20-3	452	< 452	
	Nitrobenzene	98-95-3	452	< 452	
	Nitroquinoline-1-oxide	56-57-5	891	< 891	
(801) 263-8686	O,O,O-Triethyl phosphorothioate	126-68-1	452	< 452	
Toll Free (888) 263-8686	o-Toluidine	95-53-4	452	< 452	
Fax (801)263-8687	Parathion	56-38-2	452	< 452	
email: awal@awal-labs.com	Methyl parathion	298-00-0	452	< 452	
	Pentachlorobenzene	608-93-5	452	< 452	
	Pentachloronitrobenzene	82-68-8	452	< 452	
Kyle F. Gross	Pentachlorophenol	87-86-5	452	< 452	
Laboratory Director	Phenacetin	62-44-2	452	< 452	
	Phenanthrene	85-01-8	452	< 452	
Jose Rocha	Phenol	108-95-2	452	< 452	
QA Officer	Phorate	298-02-2	452	< 452	
	Pronamide	23950-58-5	452	< 452	
	Pyrene	129-00-0	452	< 452	
	Pyridine	110-86-1	891	< 891	
	Quinoline	91-22-5	452	< 452	
	Safrole	94-59-7	452	< 452	
	Tetraethyl dithiopyrophosphate	3689-24-5	452	< 452	
	Thionazin	297-97-2	452	< 452	
	C11-C12 Aliphatic hydrocarbons		452	< 452	
	C13-C16 Aliphatic hydrocarbons		452	< 452	
	C17-C21 Aliphatic hydrocarbons		452	< 452	
	C22-C35 Aliphatic hydrocarbons		452	< 452	
	C11-C13 Alkyl Naphthalenes		452	< 452	
	Total C12-C22 PAH**		452	< 452	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005B  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1422h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

Surr: 2,4,6-Tribromophenol

118-79-6

10-237

**79.0**

Surr: 2-Fluorobiphenyl

321-60-8

17-122

**95.0**

Surr: 2-Fluorophenol

367-12-4

10-139

**84.3**

Surr: Nitrobenzene-d5

4165-60-0

10-166

**91.6**

Surr: Phenol-d6

13127-88-3

10-144

**76.4**

Surr: Terphenyl-d14

1718-51-0

10-265

**117**

*The sample was analyzed for TICs. Those results can be found on pages 117 to 122.*

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

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

463 West 3600 South  
Salt Lake City, UT

84115

(801) 263-8686  
Toll Free (888) 263-8686

Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006B  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1450h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1'-Biphenyl	92-52-4	452	< 452	
	1,2,4,5-Tetrachlorobenzene	95-94-3	452	< 452	
	1,2,4-Trichlorobenzene	120-82-1	452	< 452	
	1,2-Dichlorobenzene	95-50-1	452	< 452	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	452	< 452	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	890	< 890	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	452	< 452	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	452	< 452	
	1,4-Dichlorobenzene	106-46-7	452	< 452	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	452	< 452	
Laboratory Director	1-Chloronaphthalene	90-13-1	452	< 452	
	1-Methylnaphthalene	90-12-0	452	< 452	
Jose Rocha	1-Naphthylamine	134-32-7	890	< 890	
QA Officer	2,3,4,6-Tetrachlorophenol	58-90-2	452	< 452	
	2,4,5-Trichlorophenol	95-95-4	452	< 452	
	2,4,6-Trichlorophenol	88-06-2	452	< 452	
	2,4-Dichlorophenol	120-83-2	452	< 452	
	2,4-Dimethylphenol	105-67-9	452	< 452	
	2,4-Dinitrophenol	51-28-5	890	< 890	
	2,4-Dinitrotoluene	121-14-2	452	< 452	
	2,6-Dichlorophenol	87-65-0	452	< 452	
	2,6-Dinitrotoluene	606-20-2	452	< 452	
	2-Acetylaminofluorene	53-96-3	452	< 452	
	2-Chloronaphthalene	91-58-7	452	< 452	
	2-Chlorophenol	95-57-8	452	< 452	
	2-Methylnaphthalene	91-57-6	452	< 452	
	2-Methylphenol	95-48-7	452	< 452	
	2-Naphthylamine	91-59-8	890	< 890	





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006B  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1450h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitroaniline	88-74-4	452	< 452	
	2-Nitrophenol	88-75-5	452	< 452	
	2-Picoline	109-06-8	452	< 452	
	3&4-Methylphenol		452	< 452	
(801) 263-8686	3,3'-Dichlorobenzidine	91-94-1	452	< 452	
Toll Free (888) 263-8686	3,3'-Dimethylbenzidine	119-93-7	890	< 890	
Fax (801)263-8687	3-Methylcholanthrene	56-49-5	452	< 452	
email: awal@awal-labs.com	3-Nitroaniline	99-09-2	1,330	< 1,330	
	4,6-Dinitro-2-methylphenol	534-52-1	890	< 890	
Kyle F. Gross	4-Aminobiphenyl	92-67-1	452	< 452	
Laboratory Director	4-Bromophenyl phenyl ether	101-55-3	452	< 452	
	4-Chloro-3-methylphenol	59-50-7	452	< 452	
	4-Chloroaniline	106-47-8	452	< 452	
Jose Rocha	4-Chlorophenyl phenyl ether	7005-72-3	452	< 452	
QA Officer	4-Nitroaniline	100-01-6	1,330	< 1,330	
	4-Nitrophenol	100-02-7	890	< 890	
	5-Nitro-o-toluidine	99-55-8	452	< 452	
	7,12-Dimethylbenz(a)anthracene	57-97-6	452	< 452	
	a,a-Dimethylphenethylamine	122-09-8	890	< 890	
	Acenaphthene	83-32-9	452	< 452	
	Acenaphthylene	208-96-8	452	< 452	
	Acetophenone	98-86-2	452	< 452	
	alpha-Terpineol	98-55-5	452	< 452	
	Aniline	62-53-3	890	< 890	
	Anthracene	120-12-7	452	< 452	
	Aramite	140-57-8	890	< 890	
	Azobenzene	103-33-3	452	< 452	
	Benz(a)anthracene	56-55-3	452	<b>604</b>	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006B  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1450h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Benzidine	92-87-5	1,780	< 1,780	
	Benzo(a)pyrene	50-32-8	452	< 452	
	Benzo(b)fluoranthene	205-99-2	452	< 452	
	Benzo(g,h,i)perylene	191-24-2	452	< 452	
(801) 263-8686	Benzo(k)fluoranthene	207-08-9	452	< 452	
Toll Free (888) 263-8686	Benzoic acid	65-85-0	1,330	< 1,330	
Fax (801)263-8687	Benzyl alcohol	100-51-6	452	< 452	
email: awal@awal-labs.com	Bis(2-chloroethoxy)methane	111-91-1	452	< 452	
	Bis(2-chloroethyl) ether	111-44-4	452	< 452	
Kyle F. Gross	Bis(2-chloroisopropyl) ether	108-60-1	452	< 452	
Laboratory Director	Bis(2-ethylhexyl) phthalate	117-81-7	452	<b>466</b>	
	bis(2-ethylhexyl)adipate	103-23-1	890	< 890	
Jose Rocha	Butyl benzyl phthalate	85-68-7	452	< 452	
QA Officer	Carbazole	86-74-8	452	< 452	
	Chlorobenzilate	510-15-6	452	< 452	
	Chrysene	218-01-9	452	<b>800</b>	
	Di-n-butyl phthalate	84-74-2	452	< 452	
	Di-n-octyl phthalate	117-84-0	452	< 452	
	Diallate (cis or trans)	2303-16-4	452	< 452	
	Dibenz(a,h)anthracene	53-70-3	452	< 452	
	Dibenzofuran	132-64-9	452	< 452	
	Diethyl phthalate	84-66-2	452	< 452	
	Dimethoate	60-51-5	452	< 452	
	Dimethyl phthalate	131-11-3	452	< 452	
	Dimethylaminoazobenzene	60-11-7	452	< 452	
	Dinoseb	88-85-7	890	< 890	
	Diphenylamine	122-39-4	452	< 452	
	Disulfoton	298-04-4	452	< 452	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006B  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1450h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Ethyl methanesulfonate	62-50-0	452	< 452	
	Famphur	52-85-7	452	< 452	
	Fluoranthene	206-44-0	452	<b>1,510</b>	
	Fluorene	86-73-7	452	< 452	
(801) 263-8686	Hexachlorobenzene	118-74-1	452	< 452	
Toll Free (888) 263-8686	Hexachlorobutadiene	87-68-3	452	< 452	
Fax (801)263-8687	Hexachlorocyclopentadiene	77-47-4	452	< 452	
email: awal@awal-labs.com	Hexachloroethane	67-72-1	452	< 452	
	Hexachlorophene	70-30-4	452	< 452	
Kyle F. Gross	Hexachloropropene	1888-71-7	452	< 452	
Laboratory Director	Indene	95-13-6	452	< 452	
	Indeno(1,2,3-cd)pyrene	193-39-5	452	< 452	
Jose Rocha	Isodrin	465-73-6	452	< 452	
QA Officer	Isophorone	78-59-1	452	< 452	
	Isosafrole	120-58-1	452	< 452	
	Kepone	143-50-0	452	< 452	
	Methapyrilene	91-80-5	890	< 890	
	Methyl methanesulfonate	66-27-3	452	< 452	
	n-Decane	124-18-5	452	< 452	
	N-Nitrosodi-n-butylamine	924-16-3	452	< 452	
	N-Nitrosodiethylamine	55-18-5	452	< 452	
	N-Nitrosodimethylamine	62-75-9	890	< 890	
	N-Nitrosodiphenylamine	86-30-6	452	< 452	
	N-Nitrosodi-n-propylamine	621-64-7	452	< 452	
	N-Nitrosomethylethylamine	10595-95-6	452	< 452	
	N-Nitrosomorpholine	59-89-2	452	< 452	
	N-Nitrosopiperidine	100-75-4	452	< 452	
	N-Nitrosopyrrolidine	930-55-2	452	< 452	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006B  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1450h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	n-Octadecane	593-45-3	452	< 452	
	Naphthalene	91-20-3	452	< 452	
	Nitrobenzene	98-95-3	452	< 452	
	Nitroquinoline-1-oxide	56-57-5	890	< 890	
(801) 263-8686	O,O,O-Triethyl phosphorothioate	126-68-1	452	< 452	
Toll Free (888) 263-8686	o-Toluidine	95-53-4	452	< 452	
Fax (801)263-8687	Parathion	56-38-2	452	< 452	
email: awal@awal-labs.com	Methyl parathion	298-00-0	452	< 452	
	Pentachlorobenzene	608-93-5	452	< 452	
	Pentachloronitrobenzene	82-68-8	452	< 452	
	Pentachlorophenol	87-86-5	452	< 452	
	Phenacetin	62-44-2	452	< 452	
	Phenanthrene	85-01-8	452	<b>763</b>	
	Phenol	108-95-2	452	< 452	
	Phorate	298-02-2	452	< 452	
	Pronamide	23950-58-5	452	< 452	
	Pyrene	129-00-0	452	<b>1,420</b>	
	Pyridine	110-86-1	890	< 890	
	Quinoline	91-22-5	452	< 452	
	Safrole	94-59-7	452	< 452	
	Tetraethyl dithiopyrophosphate	3689-24-5	452	< 452	
	Thionazin	297-97-2	452	< 452	
	C11-C12 Aliphatic hydrocarbons		452	< 452	
	C13-C16 Aliphatic hydrocarbons		452	< 452	
	C17-C21 Aliphatic hydrocarbons		452	< 452	
	C22-C35 Aliphatic hydrocarbons		452	< 452	
	C11-C13 Alkyl Naphthalenes		452	< 452	
	Total C12-C22 PAH**		452	<b>5,090</b>	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006B  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/2/2010 1450h

**Extracted:** 12/1/2010 0927h

## Analytical Results

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

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 2,4,6-Tribromophenol	118-79-6	10-237	<b>83.3</b>	
Surr: 2-Fluorobiphenyl	321-60-8	17-122	<b>93.1</b>	
Surr: 2-Fluorophenol	367-12-4	10-139	<b>77.0</b>	
Surr: Nitrobenzene-d5	4165-60-0	10-166	<b>88.9</b>	
Surr: Phenol-d6	13127-88-3	10-144	<b>74.2</b>	
Surr: Terphenyl-d14	1718-51-0	10-265	<b>116</b>	

*The sample was analyzed for TICs. Those results can be found on pages 117 to 122.*

*\*\* - 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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84115

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001A  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2151h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

1,1,1,2-Tetrachloroethane	630-20-6	3.63	< 3.63	
1,1,1-Trichloroethane	71-55-6	3.63	< 3.63	
1,1,2,2-Tetrachloroethane	79-34-5	3.63	< 3.63	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	3.63	< 3.63	
1,1,2-Trichloroethane	79-00-5	3.63	< 3.63	
1,1-Dichloropropene	563-58-6	3.63	< 3.63	
1,1-Dichloroethane	75-34-3	3.63	< 3.63	
1,1-Dichloroethene	75-35-4	3.63	< 3.63	
1,2,3-Trichlorobenzene	87-61-6	3.63	< 3.63	
1,2,3-Trichloropropane	96-18-4	3.63	< 3.63	
1,2,3-Trimethylbenzene	526-73-8	3.63	< 3.63	
1,2,4-Trichlorobenzene	120-82-1	3.63	< 3.63	
1,2,4-Trimethylbenzene	95-63-6	3.63	< 3.63	
1,2-Dibromo-3-chloropropane	96-12-8	9.06	< 9.06	
1,2-Dibromoethane	106-93-4	3.63	< 3.63	
1,2-Dichlorobenzene	95-50-1	3.63	< 3.63	
1,2-Dichloroethane	107-06-2	3.63	< 3.63	
1,2-Dichloropropane	78-87-5	3.63	< 3.63	
1,3,5-Trimethylbenzene	108-67-8	3.63	< 3.63	
1,3-Dichlorobenzene	541-73-1	3.63	< 3.63	
1,3-Dichloropropane	142-28-9	3.63	< 3.63	
1,4-Dichlorobenzene	106-46-7	3.63	< 3.63	
1,4-Dioxane	123-91-1	90.6	< 90.6	
2,2-Dichloropropane	594-20-7	3.63	< 3.63	
2-Butanone	78-93-3	18.1	< 18.1	
2-Chloroethyl vinyl ether	110-75-8	9.06	< 9.06	
2-Chlorotoluene	95-49-8	3.63	< 3.63	
2-Hexanone	591-78-6	9.06	< 9.06	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001A  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2151h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitropropane	79-46-9	9.06	< 9.06
	4-Chlorotoluene	106-43-4	3.63	< 3.63
	4-Isopropyltoluene	99-87-6	3.63	< 3.63
	4-Methyl-2-pentanone	108-10-1	9.06	< 9.06
(801) 263-8686	Acetone	67-64-1	18.1	< 18.1
Toll Free (888) 263-8686	Acetonitrile	75-05-8	9.06	< 9.06
Fax (801)263-8687	Acrolein	107-02-8	9.06	< 9.06
email: awal@awal-labs.com	Acrylonitrile	107-13-1	18.1	< 18.1
	Allyl chloride	107-05-1	9.06	< 9.06
Kyle F. Gross	Benzene	71-43-2	3.63	< 3.63
Laboratory Director	Benzyl chloride	100-44-7	9.06	< 9.06
	Bis(2-chloroisopropyl) ether	108-60-1	9.06	< 9.06
Jose Rocha	Bromobenzene	108-86-1	3.63	< 3.63
QA Officer	Bromochloromethane	74-97-5	3.63	< 3.63
	Bromodichloromethane	75-27-4	3.63	< 3.63
	Bromoform	75-25-2	3.63	< 3.63
	Bromomethane	74-83-9	9.06	< 9.06
	Butyl acetate	123-86-4	18.1	< 18.1
	Carbon disulfide	75-15-0	3.63	< 3.63
	Carbon tetrachloride	56-23-5	3.63	< 3.63
	Chlorobenzene	108-90-7	3.63	< 3.63
	Chloroethane	75-00-3	3.63	< 3.63
	Chloroform	67-66-3	3.63	< 3.63
	Chloromethane	74-87-3	9.06	< 9.06
	Chloroprene	126-99-8	3.63	< 3.63
	cis-1,2-Dichloroethene	156-59-2	3.63	< 3.63
	cis-1,3-Dichloropropene	10061-01-5	3.63	< 3.63
	Cyclohexane	110-82-7	3.63	< 3.63



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001A  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2151h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Cyclohexanone	108-94-1	90.6	< 90.6
	Dibromochloromethane	124-48-1	3.63	< 3.63
	Dibromomethane	74-95-3	3.63	< 3.63
	Dichlorodifluoromethane	75-71-8	3.63	< 3.63
(801) 263-8686	Ethyl acetate	141-78-6	18.1	< 18.1
Toll Free (888) 263-8686	Ethyl ether	60-29-7	18.1	< 18.1
Fax (801)263-8687	Ethyl methacrylate	97-63-2	3.63	< 3.63
email: awal@awal-labs.com	Ethylbenzene	100-41-4	3.63	< 3.63
	Hexachlorobutadiene	87-68-3	3.63	< 3.63
Kyle F. Gross	Iodomethane	74-88-4	9.06	< 9.06
Laboratory Director	Isobutyl alcohol	78-83-1	181	< 181
	Isopropyl acetate	108-21-4	18.1	< 18.1
	Isopropyl alcohol	67-63-0	72.5	< 72.5
Jose Rocha	Isopropylbenzene	98-82-8	3.63	< 3.63
QA Officer	Isopropyltoluene	99-87-6	3.63	< 3.63
	m,p-Xylene	179601-23-1	3.63	< 3.63
	Methacrylonitrile	126-98-7	9.06	< 9.06
	Methyl Acetate	79-20-9	9.06	< 9.06
	Methyl methacrylate	80-62-6	9.06	< 9.06
	Methyl tert-butyl ether	1634-04-4	3.63	< 3.63
	Methylcyclohexane	108-87-2	3.63	< 3.63
	Methylene chloride	75-09-2	9.06	< 9.06
	n-Amyl acetate	628-63-7	18.1	< 18.1
	n-Butyl alcohol	71-36-3	181	< 181
	n-Butylbenzene	104-51-8	3.63	< 3.63
	n-Hexane	110-54-3	3.63	< 3.63
	n-Octane	111-65-9	3.63	< 3.63
	n-Propylbenzene	103-65-1	3.63	< 3.63





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001A  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2151h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Naphthalene	91-20-3	3.63	< 3.63	
	o-Xylene	95-47-6	3.63	< 3.63	
	Pentachloroethane	76-01-7	3.63	< 3.63	
	Propionitrile	107-12-0	45.3	< 45.3	
(801) 263-8686	Propyl acetate	109-60-4	18.1	< 18.1	
Toll Free (888) 263-8686	sec-Butylbenzene	135-98-8	3.63	< 3.63	
Fax (801)263-8687	Styrene	100-42-5	3.63	< 3.63	
email: awal@awal-labs.com	tert-Butyl alcohol	76-65-0	36.3	< 36.3	
	tert-Butylbenzene	98-06-6	3.63	< 3.63	
	Tetrachloroethene	127-18-4	3.63	< 3.63	
Kyle F. Gross	Tetrahydrofuran	109-99-9	3.63	< 3.63	
Laboratory Director	Toluene	108-88-3	3.63	< 3.63	
	trans-1,2-Dichloroethene	156-60-5	3.63	< 3.63	
	trans-1,3-Dichloropropene	10061-02-6	3.63	< 3.63	
	trans-1,4-Dichloro-2-butene	110-57-6	3.63	< 3.63	
	Trichloroethene	79-01-6	3.63	< 3.63	
	Trichlorofluoromethane	75-69-4	3.63	< 3.63	
	Vinyl acetate	108-05-4	18.1	< 18.1	
	Vinyl chloride	75-01-4	1.81	< 1.81	
	Xylenes, Total	1330-20-7	3.63	< 3.63	
	C11&C12 Aliphatic hydrocarbons		36.3	< 36.3	
	C6 Aliphatic hydrocarbons		36.3	< 36.3	
	C7&C8 Aliphatic hydrocarbons		36.3	< 36.3	
	C9&C10 Aliphatic hydrocarbons		36.3	< 36.3	
	C9&C10 Alkyl Benzenes		36.3	< 36.3	
	Total Purgable Petroleum Hydrocarbons (C6-C15)		36.3	< 36.3	
	TPH C11-C15 (DRO)		36.3	< 36.3	
	TPH C6-C10 (GRO)		36.3	< 36.3	



## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-001A  
**Client Sample ID:** A1  
**Collection Date:** 11/30/2010 1022h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2151h

### Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

<b>Compound</b>	<b>CAS Number</b>	<b>Reporting Limit</b>	<b>Analytical Result</b>	<b>Qual</b>
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>112</b>	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>106</b>	
Surr: Dibromofluoromethane	1868-53-7	71-129	<b>104</b>	
Surr: Toluene-d8	2037-26-5	72-129	<b>110</b>	

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

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002A  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2213h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry  
**Dilution Factor:** 0.99

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 1,1,1,2-Tetrachloroethane	630-20-6	2.75	< 2.75	
1,1,1-Trichloroethane	71-55-6	2.75	< 2.75	
1,1,2,2-Tetrachloroethane	79-34-5	2.75	< 2.75	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.75	< 2.75	
(801) 263-8686 1,1,2-Trichloroethane	79-00-5	2.75	< 2.75	
Toll Free (888) 263-8686 1,1-Dichloropropene	563-58-6	2.75	< 2.75	
Fax (801)263-8687 1,1-Dichloroethane	75-34-3	2.75	< 2.75	
email: awal@awal-labs.com 1,1-Dichloroethene	75-35-4	2.75	< 2.75	
1,2,3-Trichlorobenzene	87-61-6	2.75	< 2.75	
Kyle F. Gross 1,2,3-Trichloropropane	96-18-4	2.75	< 2.75	
Laboratory Director 1,2,3-Trimethylbenzene	526-73-8	2.75	< 2.75	
1,2,4-Trichlorobenzene	120-82-1	2.75	< 2.75	
Jose Rocha 1,2,4-Trimethylbenzene	95-63-6	2.75	< 2.75	
QA Officer 1,2-Dibromo-3-chloropropane	96-12-8	6.88	< 6.88	
1,2-Dibromoethane	106-93-4	2.75	< 2.75	
1,2-Dichlorobenzene	95-50-1	2.75	< 2.75	
1,2-Dichloroethane	107-06-2	2.75	< 2.75	
1,2-Dichloropropane	78-87-5	2.75	< 2.75	
1,3,5-Trimethylbenzene	108-67-8	2.75	< 2.75	
1,3-Dichlorobenzene	541-73-1	2.75	< 2.75	
1,3-Dichloropropane	142-28-9	2.75	< 2.75	
1,4-Dichlorobenzene	106-46-7	2.75	< 2.75	
1,4-Dioxane	123-91-1	68.8	< 68.8	
2,2-Dichloropropane	594-20-7	2.75	< 2.75	
2-Butanone	78-93-3	13.8	< 13.8	
2-Chloroethyl vinyl ether	110-75-8	6.88	< 6.88	
2-Chlorotoluene	95-49-8	2.75	< 2.75	
2-Hexanone	591-78-6	6.88	< 6.88	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002A  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2213h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry  
**Dilution Factor:** 0.99

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 2-Nitropropane	79-46-9	6.88	< 6.88	
4-Chlorotoluene	106-43-4	2.75	< 2.75	
4-Isopropyltoluene	99-87-6	2.75	< 2.75	
4-Methyl-2-pentanone	108-10-1	6.88	< 6.88	
Acetone	67-64-1	13.8	< 13.8	
Acetonitrile	75-05-8	6.88	< 6.88	
Acrolein	107-02-8	6.88	< 6.88	
Acrylonitrile	107-13-1	13.8	< 13.8	
Allyl chloride	107-05-1	6.88	< 6.88	
Benzene	71-43-2	2.75	< 2.75	
Benzyl chloride	100-44-7	6.88	< 6.88	
Bis(2-chloroisopropyl) ether	108-60-1	6.88	< 6.88	
Bromobenzene	108-86-1	2.75	< 2.75	
Bromochloromethane	74-97-5	2.75	< 2.75	
Bromodichloromethane	75-27-4	2.75	< 2.75	
Bromoform	75-25-2	2.75	< 2.75	
Bromomethane	74-83-9	6.88	< 6.88	
Butyl acetate	123-86-4	13.8	< 13.8	
Carbon disulfide	75-15-0	2.75	< 2.75	
Carbon tetrachloride	56-23-5	2.75	< 2.75	
Chlorobenzene	108-90-7	2.75	< 2.75	
Chloroethane	75-00-3	2.75	< 2.75	
Chloroform	67-66-3	2.75	< 2.75	
Chloromethane	74-87-3	6.88	< 6.88	
Chloroprene	126-99-8	2.75	< 2.75	
cis-1,2-Dichloroethene	156-59-2	2.75	< 2.75	
cis-1,3-Dichloropropene	10061-01-5	2.75	< 2.75	
Cyclohexane	110-82-7	2.75	< 2.75	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002A  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2213h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry  
**Dilution Factor:** 0.99

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Cyclohexanone	108-94-1	68.8	< 68.8	
Dibromochloromethane	124-48-1	2.75	< 2.75	
Dibromomethane	74-95-3	2.75	< 2.75	
Dichlorodifluoromethane	75-71-8	2.75	< 2.75	
(801) 263-8686 Ethyl acetate	141-78-6	13.8	< 13.8	
Toll Free (888) 263-8686 Ethyl ether	60-29-7	13.8	< 13.8	
Fax (801)263-8687 Ethyl methacrylate	97-63-2	2.75	< 2.75	
email: awal@awal-labs.com Ethylbenzene	100-41-4	2.75	< 2.75	
Hexachlorobutadiene	87-68-3	2.75	< 2.75	
Kyle F. Gross Iodomethane	74-88-4	6.88	< 6.88	
Laboratory Director Isobutyl alcohol	78-83-1	138	< 138	
Isopropyl acetate	108-21-4	13.8	< 13.8	
Isopropyl alcohol	67-63-0	55.0	< 55.0	
Jose Rocha Isopropylbenzene	98-82-8	2.75	< 2.75	
QA Officer Isopropyltoluene	99-87-6	2.75	< 2.75	
m,p-Xylene	179601-23-1	2.75	< 2.75	
Methacrylonitrile	126-98-7	6.88	< 6.88	
Methyl Acetate	79-20-9	6.88	< 6.88	
Methyl methacrylate	80-62-6	6.88	< 6.88	
Methyl tert-butyl ether	1634-04-4	2.75	< 2.75	
Methylcyclohexane	108-87-2	2.75	< 2.75	
Methylene chloride	75-09-2	6.88	< 6.88	
n-Amyl acetate	628-63-7	13.8	< 13.8	
n-Butyl alcohol	71-36-3	138	< 138	
n-Butylbenzene	104-51-8	2.75	< 2.75	
n-Hexane	110-54-3	2.75	< 2.75	
n-Octane	111-65-9	2.75	< 2.75	
n-Propylbenzene	103-65-1	2.75	< 2.75	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002A  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2213h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry  
**Dilution Factor:** 0.99

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Naphthalene	91-20-3	2.75	< 2.75	
o-Xylene	95-47-6	2.75	< 2.75	
Pentachloroethane	76-01-7	2.75	< 2.75	
Propionitrile	107-12-0	34.4	< 34.4	
(801) 263-8686 Propyl acetate	109-60-4	13.8	< 13.8	
Toll Free (888) 263-8686 sec-Butylbenzene	135-98-8	2.75	< 2.75	
Fax (801)263-8687 Styrene	100-42-5	2.75	< 2.75	
email: awal@awal-labs.com tert-Butyl alcohol	76-65-0	27.5	< 27.5	
tert-Butylbenzene	98-06-6	2.75	< 2.75	
Kyle F. Gross Tetrachloroethene	127-18-4	2.75	< 2.75	
Laboratory Director Tetrahydrofuran	109-99-9	2.75	< 2.75	
Toluene	108-88-3	2.75	< 2.75	
Jose Rocha trans-1,2-Dichloroethene	156-60-5	2.75	< 2.75	
QA Officer trans-1,3-Dichloropropene	10061-02-6	2.75	< 2.75	
trans-1,4-Dichloro-2-butene	110-57-6	2.75	< 2.75	
Trichloroethene	79-01-6	2.75	< 2.75	
Trichlorofluoromethane	75-69-4	2.75	< 2.75	
Vinyl acetate	108-05-4	13.8	< 13.8	
Vinyl chloride	75-01-4	1.38	< 1.38	
Xylenes, Total	1330-20-7	2.75	< 2.75	
C11&C12 Aliphatic hydrocarbons		27.5	< 27.5	
C6 Aliphatic hydrocarbons		27.5	< 27.5	
C7&C8 Aliphatic hydrocarbons		27.5	< 27.5	
C9&C10 Aliphatic hydrocarbons		27.5	< 27.5	
C9&C10 Alkyl Benzenes		27.5	< 27.5	
Total Purgable Petroleum Hydrocarbons (C6-C15)		27.5	< 27.5	
TPH C11-C15 (DRO)		27.5	< 27.5	
TPH C6-C10 (GRO)		27.5	< 27.5	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-002A  
**Client Sample ID:** A2  
**Collection Date:** 11/30/2010 1100h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2213h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 0.99

463 West 3600 South  
Salt Lake City, UT  
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>93.3</b>	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>110</b>	
Surr: Dibromofluoromethane	1868-53-7	71-129	<b>101</b>	
Surr: Toluene-d8	2037-26-5	72-129	<b>109</b>	

*The sample was received with headspace.*

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

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003A  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2235h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

1,1,1,2-Tetrachloroethane	630-20-6	5.22	< 5.22	
1,1,1-Trichloroethane	71-55-6	5.22	< 5.22	
1,1,2,2-Tetrachloroethane	79-34-5	5.22	< 5.22	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5.22	< 5.22	
1,1,2-Trichloroethane	79-00-5	5.22	< 5.22	
1,1-Dichloropropene	563-58-6	5.22	< 5.22	
1,1-Dichloroethane	75-34-3	5.22	< 5.22	
1,1-Dichloroethene	75-35-4	5.22	< 5.22	
1,2,3-Trichlorobenzene	87-61-6	5.22	< 5.22	
1,2,3-Trichloropropane	96-18-4	5.22	< 5.22	
1,2,3-Trimethylbenzene	526-73-8	5.22	< 5.22	
1,2,4-Trichlorobenzene	120-82-1	5.22	< 5.22	
1,2,4-Trimethylbenzene	95-63-6	5.22	< 5.22	
1,2-Dibromo-3-chloropropane	96-12-8	13.1	< 13.1	
1,2-Dibromoethane	106-93-4	5.22	< 5.22	
1,2-Dichlorobenzene	95-50-1	5.22	< 5.22	
1,2-Dichloroethane	107-06-2	5.22	< 5.22	
1,2-Dichloropropane	78-87-5	5.22	< 5.22	
1,3,5-Trimethylbenzene	108-67-8	5.22	< 5.22	
1,3-Dichlorobenzene	541-73-1	5.22	< 5.22	
1,3-Dichloropropane	142-28-9	5.22	< 5.22	
1,4-Dichlorobenzene	106-46-7	5.22	< 5.22	
1,4-Dioxane	123-91-1	131	< 131	
2,2-Dichloropropane	594-20-7	5.22	< 5.22	
2-Butanone	78-93-3	26.1	< 26.1	
2-Chloroethyl vinyl ether	110-75-8	13.1	< 13.1	
2-Chlorotoluene	95-49-8	5.22	< 5.22	
2-Hexanone	591-78-6	13.1	< 13.1	





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003A  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2235h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitropropane	79-46-9	13.1	< 13.1
	4-Chlorotoluene	106-43-4	5.22	< 5.22
	4-Isopropyltoluene	99-87-6	5.22	< 5.22
	4-Methyl-2-pentanone	108-10-1	13.1	< 13.1
(801) 263-8686	Acetone	67-64-1	26.1	< 26.1
Toll Free (888) 263-8686	Acetonitrile	75-05-8	13.1	< 13.1
Fax (801)263-8687	Acrolein	107-02-8	13.1	< 13.1
email: awal@awal-labs.com	Acrylonitrile	107-13-1	26.1	< 26.1
	Allyl chloride	107-05-1	13.1	< 13.1
Kyle F. Gross	Benzene	71-43-2	5.22	< 5.22
Laboratory Director	Benzyl chloride	100-44-7	13.1	< 13.1
	Bis(2-chloroisopropyl) ether	108-60-1	13.1	< 13.1
Jose Rocha	Bromobenzene	108-86-1	5.22	< 5.22
QA Officer	Bromochloromethane	74-97-5	5.22	< 5.22
	Bromodichloromethane	75-27-4	5.22	< 5.22
	Bromoform	75-25-2	5.22	< 5.22
	Bromomethane	74-83-9	13.1	< 13.1
	Butyl acetate	123-86-4	26.1	< 26.1
	Carbon disulfide	75-15-0	5.22	< 5.22
	Carbon tetrachloride	56-23-5	5.22	< 5.22
	Chlorobenzene	108-90-7	5.22	< 5.22
	Chloroethane	75-00-3	5.22	< 5.22
	Chloroform	67-66-3	5.22	< 5.22
	Chloromethane	74-87-3	13.1	< 13.1
	Chloroprene	126-99-8	5.22	< 5.22
	cis-1,2-Dichloroethene	156-59-2	5.22	< 5.22
	cis-1,3-Dichloropropene	10061-01-5	5.22	< 5.22
	Cyclohexane	110-82-7	5.22	< 5.22



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003A  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2235h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
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email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Cyclohexanone	108-94-1	131	< 131	
	Dibromochloromethane	124-48-1	5.22	< 5.22	
	Dibromomethane	74-95-3	5.22	< 5.22	
	Dichlorodifluoromethane	75-71-8	5.22	< 5.22	
(801) 263-8686	Ethyl acetate	141-78-6	26.1	< 26.1	
Toll Free (888) 263-8686	Ethyl ether	60-29-7	26.1	< 26.1	
Fax (801)263-8687	Ethyl methacrylate	97-63-2	5.22	< 5.22	
email: awal@awal-labs.com	Ethylbenzene	100-41-4	5.22	< 5.22	
	Hexachlorobutadiene	87-68-3	5.22	< 5.22	
Kyle F. Gross	Iodomethane	74-88-4	13.1	< 13.1	
Laboratory Director	Isobutyl alcohol	78-83-1	261	< 261	
	Isopropyl acetate	108-21-4	26.1	< 26.1	
	Isopropyl alcohol	67-63-0	104	< 104	
Jose Rocha	Isopropylbenzene	98-82-8	5.22	< 5.22	
QA Officer	Isopropyltoluene	99-87-6	5.22	< 5.22	
	m,p-Xylene	179601-23-1	5.22	< 5.22	
	Methacrylonitrile	126-98-7	13.1	< 13.1	
	Methyl Acetate	79-20-9	13.1	< 13.1	
	Methyl methacrylate	80-62-6	13.1	< 13.1	
	Methyl tert-butyl ether	1634-04-4	5.22	< 5.22	
	Methylcyclohexane	108-87-2	5.22	< 5.22	
	Methylene chloride	75-09-2	13.1	< 13.1	
	n-Amyl acetate	628-63-7	26.1	< 26.1	
	n-Butyl alcohol	71-36-3	261	< 261	
	n-Butylbenzene	104-51-8	5.22	< 5.22	
	n-Hexane	110-54-3	5.22	< 5.22	
	n-Octane	111-65-9	5.22	< 5.22	
	n-Propylbenzene	103-65-1	5.22	< 5.22	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003A  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2235h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Naphthalene	91-20-3	5.22	< 5.22	
o-Xylene	95-47-6	5.22	< 5.22	
Pentachloroethane	76-01-7	5.22	< 5.22	
Propionitrile	107-12-0	65.3	< 65.3	
Propyl acetate	109-60-4	26.1	< 26.1	
sec-Butylbenzene	135-98-8	5.22	< 5.22	
Styrene	100-42-5	5.22	<b>7.39</b>	
tert-Butyl alcohol	76-65-0	52.2	< 52.2	
tert-Butylbenzene	98-06-6	5.22	< 5.22	
Tetrachloroethene	127-18-4	5.22	< 5.22	
Tetrahydrofuran	109-99-9	5.22	< 5.22	
Toluene	108-88-3	5.22	< 5.22	
trans-1,2-Dichloroethene	156-60-5	5.22	< 5.22	
trans-1,3-Dichloropropene	10061-02-6	5.22	< 5.22	
trans-1,4-Dichloro-2-butene	110-57-6	5.22	< 5.22	
Trichloroethene	79-01-6	5.22	< 5.22	
Trichlorofluoromethane	75-69-4	5.22	< 5.22	
Vinyl acetate	108-05-4	26.1	< 26.1	
Vinyl chloride	75-01-4	2.61	< 2.61	
Xylenes, Total	1330-20-7	5.22	< 5.22	
C11&C12 Aliphatic hydrocarbons		52.2	<b>2,630</b>	
C6 Aliphatic hydrocarbons		52.2	< 52.2	
C7&C8 Aliphatic hydrocarbons		52.2	< 52.2	
C9&C10 Aliphatic hydrocarbons		52.2	<b>106</b>	
C9&C10 Alkyl Benzenes		52.2	< 52.2	
Total Purgable Petroleum Hydrocarbons (C6-C15)		52.2	<b>2,770</b>	
TPH C11-C15 (DRO)		52.2	<b>2,630</b>	
TPH C6-C10 (GRO)		52.2	<b>133</b>	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-003A  
**Client Sample ID:** B1  
**Collection Date:** 11/30/2010 1120h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2235h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

463 West 3600 South  
Salt Lake City, UT  
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	85.5	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	120	
Surr: Dibromofluoromethane	1868-53-7	71-129	93.0	
Surr: Toluene-d8	2037-26-5	72-129	116	

*The sample was received with headspace.*

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

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004A  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2257h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.75	< 2.75
	1,1,1-Trichloroethane	71-55-6	2.75	< 2.75
	1,1,2,2-Tetrachloroethane	79-34-5	2.75	< 2.75
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.75	< 2.75
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.75	< 2.75
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.75	< 2.75
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.75	< 2.75
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.75	< 2.75
	1,2,3-Trichlorobenzene	87-61-6	2.75	< 2.75
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.75	< 2.75
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.75	< 2.75
	1,2,4-Trichlorobenzene	120-82-1	2.75	< 2.75
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.75	< 2.75
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	6.87	< 6.87
	1,2-Dibromoethane	106-93-4	2.75	< 2.75
	1,2-Dichlorobenzene	95-50-1	2.75	< 2.75
	1,2-Dichloroethane	107-06-2	2.75	< 2.75
	1,2-Dichloropropane	78-87-5	2.75	< 2.75
	1,3,5-Trimethylbenzene	108-67-8	2.75	< 2.75
	1,3-Dichlorobenzene	541-73-1	2.75	< 2.75
	1,3-Dichloropropane	142-28-9	2.75	< 2.75
	1,4-Dichlorobenzene	106-46-7	2.75	< 2.75
	1,4-Dioxane	123-91-1	68.7	< 68.7
	2,2-Dichloropropane	594-20-7	2.75	< 2.75
	2-Butanone	78-93-3	13.7	< 13.7
	2-Chloroethyl vinyl ether	110-75-8	6.87	< 6.87
	2-Chlorotoluene	95-49-8	2.75	< 2.75
	2-Hexanone	591-78-6	6.87	< 6.87



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004A  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2257h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
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Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	2-Nitropropane	79-46-9	6.87	< 6.87	
	4-Chlorotoluene	106-43-4	2.75	< 2.75	
	4-Isopropyltoluene	99-87-6	2.75	< 2.75	
	4-Methyl-2-pentanone	108-10-1	6.87	<b>7.64</b>	
(801) 263-8686	Acetone	67-64-1	13.7	< 13.7	
Toll Free (888) 263-8686	Acetonitrile	75-05-8	6.87	< 6.87	
Fax (801)263-8687	Acrolein	107-02-8	6.87	< 6.87	
email: awal@awal-labs.com	Acrylonitrile	107-13-1	13.7	< 13.7	
	Allyl chloride	107-05-1	6.87	< 6.87	
Kyle F. Gross	Benzene	71-43-2	2.75	< 2.75	
Laboratory Director	Benzyl chloride	100-44-7	6.87	< 6.87	
	Bis(2-chloroisopropyl) ether	108-60-1	6.87	< 6.87	
Jose Rocha	Bromobenzene	108-86-1	2.75	< 2.75	
QA Officer	Bromochloromethane	74-97-5	2.75	< 2.75	
	Bromodichloromethane	75-27-4	2.75	< 2.75	
	Bromoform	75-25-2	2.75	< 2.75	
	Bromomethane	74-83-9	6.87	< 6.87	
	Butyl acetate	123-86-4	13.7	< 13.7	
	Carbon disulfide	75-15-0	2.75	< 2.75	
	Carbon tetrachloride	56-23-5	2.75	< 2.75	
	Chlorobenzene	108-90-7	2.75	< 2.75	
	Chloroethane	75-00-3	2.75	< 2.75	
	Chloroform	67-66-3	2.75	< 2.75	
	Chloromethane	74-87-3	6.87	< 6.87	
	Chloroprene	126-99-8	2.75	< 2.75	
	cis-1,2-Dichloroethene	156-59-2	2.75	< 2.75	
	cis-1,3-Dichloropropene	10061-01-5	2.75	< 2.75	
	Cyclohexane	110-82-7	2.75	< 2.75	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004A  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2257h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Cyclohexanone	108-94-1	68.7	< 68.7	
	Dibromochloromethane	124-48-1	2.75	< 2.75	
	Dibromomethane	74-95-3	2.75	< 2.75	
	Dichlorodifluoromethane	75-71-8	2.75	< 2.75	
(801) 263-8686	Ethyl acetate	141-78-6	13.7	< 13.7	
Toll Free (888) 263-8686	Ethyl ether	60-29-7	13.7	< 13.7	
Fax (801)263-8687	Ethyl methacrylate	97-63-2	2.75	< 2.75	
email: awal@awal-labs.com	Ethylbenzene	100-41-4	2.75	< 2.75	
	Hexachlorobutadiene	87-68-3	2.75	< 2.75	
Kyle F. Gross	Iodomethane	74-88-4	6.87	< 6.87	
Laboratory Director	Isobutyl alcohol	78-83-1	137	< 137	
	Isopropyl acetate	108-21-4	13.7	< 13.7	
	Isopropyl alcohol	67-63-0	55.0	< 55.0	
Jose Rocha	Isopropylbenzene	98-82-8	2.75	< 2.75	
QA Officer	Isopropyltoluene	99-87-6	2.75	< 2.75	
	m,p-Xylene	179601-23-1	2.75	< 2.75	
	Methacrylonitrile	126-98-7	6.87	< 6.87	
	Methyl Acetate	79-20-9	6.87	< 6.87	
	Methyl methacrylate	80-62-6	6.87	< 6.87	
	Methyl tert-butyl ether	1634-04-4	2.75	< 2.75	
	Methylcyclohexane	108-87-2	2.75	< 2.75	
	Methylene chloride	75-09-2	6.87	< 6.87	
	n-Amyl acetate	628-63-7	13.7	< 13.7	
	n-Butyl alcohol	71-36-3	137	< 137	
	n-Butylbenzene	104-51-8	2.75	< 2.75	
	n-Hexane	110-54-3	2.75	< 2.75	
	n-Octane	111-65-9	2.75	<b>3.46</b>	
	n-Propylbenzene	103-65-1	2.75	< 2.75	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004A  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2257h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Naphthalene	91-20-3	2.75	< 2.75	
o-Xylene	95-47-6	2.75	< 2.75	
Pentachloroethane	76-01-7	2.75	< 2.75	
Propionitrile	107-12-0	34.4	< 34.4	
Propyl acetate	109-60-4	13.7	< 13.7	
sec-Butylbenzene	135-98-8	2.75	< 2.75	
Styrene	100-42-5	2.75	< 2.75	
tert-Butyl alcohol	76-65-0	27.5	< 27.5	
tert-Butylbenzene	98-06-6	2.75	< 2.75	
Tetrachloroethene	127-18-4	2.75	< 2.75	
Tetrahydrofuran	109-99-9	2.75	< 2.75	
Toluene	108-88-3	2.75	< 2.75	
trans-1,2-Dichloroethene	156-60-5	2.75	< 2.75	
trans-1,3-Dichloropropene	10061-02-6	2.75	< 2.75	
trans-1,4-Dichloro-2-butene	110-57-6	2.75	< 2.75	
Trichloroethene	79-01-6	2.75	< 2.75	
Trichlorofluoromethane	75-69-4	2.75	< 2.75	
Vinyl acetate	108-05-4	13.7	< 13.7	
Vinyl chloride	75-01-4	1.37	< 1.37	
Xylenes, Total	1330-20-7	2.75	< 2.75	
C11&C12 Aliphatic hydrocarbons		27.5	<b>5,850</b>	
C6 Aliphatic hydrocarbons		27.5	< 27.5	
C7&C8 Aliphatic hydrocarbons		27.5	< 27.5	
C9&C10 Aliphatic hydrocarbons		27.5	<b>286</b>	
C9&C10 Alkyl Benzenes		27.5	<b>50.4</b>	
Total Purgable Petroleum Hydrocarbons (C6-C15)		27.5	<b>6,200</b>	
TPH C11-C15 (DRO)		27.5	<b>5,850</b>	
TPH C6-C10 (GRO)		27.5	<b>345</b>	





## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-004A  
**Client Sample ID:** B2  
**Collection Date:** 11/30/2010 1200h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 11/30/2010 2257h

### Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

<b>Compound</b>	<b>CAS Number</b>	<b>Reporting Limit</b>	<b>Analytical Result</b>	<b>Qual</b>
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>93.9</b>	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>113</b>	
Surr: Dibromofluoromethane	1868-53-7	71-129	<b>101</b>	
Surr: Toluene-d8	2037-26-5	72-129	<b>111</b>	

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

463 West 3600 South  
Salt Lake City, UT  
84115

(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005A  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1117h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.66	< 2.66
	1,1,1-Trichloroethane	71-55-6	2.66	< 2.66
	1,1,2,2-Tetrachloroethane	79-34-5	2.66	< 2.66
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.66	< 2.66
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.66	< 2.66
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.66	< 2.66
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.66	< 2.66
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.66	< 2.66
	1,2,3-Trichlorobenzene	87-61-6	2.66	< 2.66
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.66	< 2.66
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.66	< 2.66
	1,2,4-Trichlorobenzene	120-82-1	2.66	< 2.66
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.66	< 2.66
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	6.65	< 6.65
	1,2-Dibromoethane	106-93-4	2.66	< 2.66
	1,2-Dichlorobenzene	95-50-1	2.66	< 2.66
	1,2-Dichloroethane	107-06-2	2.66	< 2.66
	1,2-Dichloropropane	78-87-5	2.66	< 2.66
	1,3,5-Trimethylbenzene	108-67-8	2.66	< 2.66
	1,3-Dichlorobenzene	541-73-1	2.66	< 2.66
	1,3-Dichloropropane	142-28-9	2.66	< 2.66
	1,4-Dichlorobenzene	106-46-7	2.66	< 2.66
	1,4-Dioxane	123-91-1	66.5	< 66.5
	2,2-Dichloropropane	594-20-7	2.66	< 2.66
	2-Butanone	78-93-3	13.3	< 13.3
	2-Chloroethyl vinyl ether	110-75-8	6.65	< 6.65
	2-Chlorotoluene	95-49-8	2.66	< 2.66
	2-Hexanone	591-78-6	6.65	< 6.65



## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005A  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1117h

### Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

#### Compound

CAS  
Number

Reporting  
Limit

Analytical  
Result

Qual

84115	2-Nitropropane	79-46-9	6.65	< 6.65
	4-Chlorotoluene	106-43-4	2.66	< 2.66
	4-Isopropyltoluene	99-87-6	2.66	< 2.66
	4-Methyl-2-pentanone	108-10-1	6.65	< 6.65
(801) 263-8686	Acetone	67-64-1	13.3	< 13.3
Toll Free (888) 263-8686	Acetonitrile	75-05-8	6.65	< 6.65
Fax (801)263-8687	Acrolein	107-02-8	6.65	< 6.65
email: awal@awal-labs.com	Acrylonitrile	107-13-1	13.3	< 13.3
	Allyl chloride	107-05-1	6.65	< 6.65
Kyle F. Gross	Benzene	71-43-2	2.66	< 2.66
Laboratory Director	Benzyl chloride	100-44-7	6.65	< 6.65
	Bis(2-chloroisopropyl) ether	108-60-1	6.65	< 6.65
Jose Rocha	Bromobenzene	108-86-1	2.66	< 2.66
QA Officer	Bromochloromethane	74-97-5	2.66	< 2.66
	Bromodichloromethane	75-27-4	2.66	< 2.66
	Bromoform	75-25-2	2.66	< 2.66
	Bromomethane	74-83-9	6.65	< 6.65
	Butyl acetate	123-86-4	13.3	< 13.3
	Carbon disulfide	75-15-0	2.66	< 2.66
	Carbon tetrachloride	56-23-5	2.66	< 2.66
	Chlorobenzene	108-90-7	2.66	< 2.66
	Chloroethane	75-00-3	2.66	< 2.66
	Chloroform	67-66-3	2.66	< 2.66
	Chloromethane	74-87-3	6.65	< 6.65
	Chloroprene	126-99-8	2.66	< 2.66
	cis-1,2-Dichloroethene	156-59-2	2.66	< 2.66
	cis-1,3-Dichloropropene	10061-01-5	2.66	< 2.66
	Cyclohexane	110-82-7	2.66	< 2.66



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005A  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1117h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Cyclohexanone	108-94-1	66.5	< 66.5
	Dibromochloromethane	124-48-1	2.66	< 2.66
	Dibromomethane	74-95-3	2.66	< 2.66
	Dichlorodifluoromethane	75-71-8	2.66	< 2.66
(801) 263-8686	Ethyl acetate	141-78-6	13.3	< 13.3
Toll Free (888) 263-8686	Ethyl ether	60-29-7	13.3	< 13.3
Fax (801)263-8687	Ethyl methacrylate	97-63-2	2.66	< 2.66
email: awal@awal-labs.com	Ethylbenzene	100-41-4	2.66	< 2.66
	Hexachlorobutadiene	87-68-3	2.66	< 2.66
Kyle F. Gross	Iodomethane	74-88-4	6.65	< 6.65
Laboratory Director	Isobutyl alcohol	78-83-1	133	< 133
	Isopropyl acetate	108-21-4	13.3	< 13.3
	Isopropyl alcohol	67-63-0	53.2	< 53.2
Jose Rocha	Isopropylbenzene	98-82-8	2.66	< 2.66
QA Officer	Isopropyltoluene	99-87-6	2.66	< 2.66
	m,p-Xylene	179601-23-1	2.66	< 2.66
	Methacrylonitrile	126-98-7	6.65	< 6.65
	Methyl Acetate	79-20-9	6.65	< 6.65
	Methyl methacrylate	80-62-6	6.65	< 6.65
	Methyl tert-butyl ether	1634-04-4	2.66	< 2.66
	Methylcyclohexane	108-87-2	2.66	< 2.66
	Methylene chloride	75-09-2	6.65	< 6.65
	n-Amyl acetate	628-63-7	13.3	< 13.3
	n-Butyl alcohol	71-36-3	133	< 133
	n-Butylbenzene	104-51-8	2.66	< 2.66
	n-Hexane	110-54-3	2.66	< 2.66
	n-Octane	111-65-9	2.66	< 2.66
	n-Propylbenzene	103-65-1	2.66	< 2.66

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005A  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1117h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

463 West 3600 South  
Salt Lake City, UT  
84115  
(801) 263-8686  
Toll Free (888) 263-8686  
Fax (801)263-8687  
email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

84115	Naphthalene	91-20-3	2.66	< 2.66	
	o-Xylene	95-47-6	2.66	< 2.66	
	Pentachloroethane	76-01-7	2.66	< 2.66	
	Propionitrile	107-12-0	33.2	< 33.2	
(801) 263-8686	Propyl acetate	109-60-4	13.3	< 13.3	
Toll Free (888) 263-8686	sec-Butylbenzene	135-98-8	2.66	< 2.66	
Fax (801)263-8687	Styrene	100-42-5	2.66	< 2.66	
email: awal@awal-labs.com	tert-Butyl alcohol	76-65-0	26.6	< 26.6	
	tert-Butylbenzene	98-06-6	2.66	< 2.66	
Kyle F. Gross	Tetrachloroethene	127-18-4	2.66	< 2.66	
Laboratory Director	Tetrahydrofuran	109-99-9	2.66	< 2.66	1
	Toluene	108-88-3	2.66	< 2.66	
Jose Rocha	trans-1,2-Dichloroethene	156-60-5	2.66	< 2.66	
QA Officer	trans-1,3-Dichloropropene	10061-02-6	2.66	< 2.66	
	trans-1,4-Dichloro-2-butene	110-57-6	2.66	< 2.66	
	Trichloroethene	79-01-6	2.66	< 2.66	
	Trichlorofluoromethane	75-69-4	2.66	< 2.66	
	Vinyl acetate	108-05-4	13.3	< 13.3	
	Vinyl chloride	75-01-4	1.33	< 1.33	
	Xylenes, Total	1330-20-7	2.66	< 2.66	
	C11&C12 Aliphatic hydrocarbons		26.6	< 26.6	
	C6 Aliphatic hydrocarbons		26.6	< 26.6	
	C7&C8 Aliphatic hydrocarbons		26.6	< 26.6	
	C9&C10 Aliphatic hydrocarbons		26.6	< 26.6	
	C9&C10 Alkyl Benzenes		26.6	< 26.6	
	Total Purgable Petroleum Hydrocarbons (C6-C15)		26.6	< 26.6	
	TPH C11-C15 (DRO)		26.6	< 26.6	
	TPH C6-C10 (GRO)		26.6	< 26.6	



## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-005A  
**Client Sample ID:** C1  
**Collection Date:** 11/30/2010 1230h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1117h

### Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>92.9</b>	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>107</b>	
Surr: Dibromofluoromethane	1868-53-7	71-129	<b>100</b>	
Surr: Toluene-d8	2037-26-5	72-129	<b>109</b>	

*The sample was received with headspace.*

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

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

463 West 3600 South  
Salt Lake City, UT  
84115

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006A  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1307h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.66	< 2.66	
	1,1,1-Trichloroethane	71-55-6	2.66	< 2.66	
	1,1,2,2-Tetrachloroethane	79-34-5	2.66	< 2.66	
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.66	< 2.66	
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.66	< 2.66	
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.66	< 2.66	
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.66	< 2.66	
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.66	< 2.66	
	1,2,3-Trichlorobenzene	87-61-6	2.66	< 2.66	
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.66	< 2.66	
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.66	< 2.66	
	1,2,4-Trichlorobenzene	120-82-1	2.66	< 2.66	
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.66	< 2.66	
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	6.64	< 6.64	
	1,2-Dibromoethane	106-93-4	2.66	< 2.66	
	1,2-Dichlorobenzene	95-50-1	2.66	< 2.66	
	1,2-Dichloroethane	107-06-2	2.66	< 2.66	
	1,2-Dichloropropane	78-87-5	2.66	< 2.66	
	1,3,5-Trimethylbenzene	108-67-8	2.66	< 2.66	
	1,3-Dichlorobenzene	541-73-1	2.66	< 2.66	
	1,3-Dichloropropane	142-28-9	2.66	< 2.66	
	1,4-Dichlorobenzene	106-46-7	2.66	< 2.66	
	1,4-Dioxane	123-91-1	66.4	< 66.4	
	2,2-Dichloropropane	594-20-7	2.66	< 2.66	
	2-Butanone	78-93-3	13.3	< 13.3	
	2-Chloroethyl vinyl ether	110-75-8	6.64	< 6.64	
	2-Chlorotoluene	95-49-8	2.66	< 2.66	
	2-Hexanone	591-78-6	6.64	< 6.64	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006A  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1307h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitropropane	79-46-9	6.64	< 6.64
	4-Chlorotoluene	106-43-4	2.66	< 2.66
	4-Isopropyltoluene	99-87-6	2.66	< 2.66
	4-Methyl-2-pentanone	108-10-1	6.64	< 6.64
(801) 263-8686	Acetone	67-64-1	13.3	< 13.3
Toll Free (888) 263-8686	Acetonitrile	75-05-8	6.64	< 6.64
Fax (801)263-8687	Acrolein	107-02-8	6.64	< 6.64
email: awal@awal-labs.com	Acrylonitrile	107-13-1	13.3	< 13.3
	Allyl chloride	107-05-1	6.64	< 6.64
Kyle F. Gross	Benzene	71-43-2	2.66	< 2.66
Laboratory Director	Benzyl chloride	100-44-7	6.64	< 6.64
	Bis(2-chloroisopropyl) ether	108-60-1	6.64	< 6.64
Jose Rocha	Bromobenzene	108-86-1	2.66	< 2.66
QA Officer	Bromochloromethane	74-97-5	2.66	< 2.66
	Bromodichloromethane	75-27-4	2.66	< 2.66
	Bromoform	75-25-2	2.66	< 2.66
	Bromomethane	74-83-9	6.64	< 6.64
	Butyl acetate	123-86-4	13.3	< 13.3
	Carbon disulfide	75-15-0	2.66	< 2.66
	Carbon tetrachloride	56-23-5	2.66	< 2.66
	Chlorobenzene	108-90-7	2.66	< 2.66
	Chloroethane	75-00-3	2.66	< 2.66
	Chloroform	67-66-3	2.66	< 2.66
	Chloromethane	74-87-3	6.64	< 6.64
	Chloroprene	126-99-8	2.66	< 2.66
	cis-1,2-Dichloroethene	156-59-2	2.66	< 2.66
	cis-1,3-Dichloropropene	10061-01-5	2.66	< 2.66
	Cyclohexane	110-82-7	2.66	< 2.66





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006A  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1307h

## Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Cyclohexanone	108-94-1	66.4	< 66.4
	Dibromochloromethane	124-48-1	2.66	< 2.66
	Dibromomethane	74-95-3	2.66	< 2.66
	Dichlorodifluoromethane	75-71-8	2.66	< 2.66
(801) 263-8686	Ethyl acetate	141-78-6	13.3	< 13.3
Toll Free (888) 263-8686	Ethyl ether	60-29-7	13.3	< 13.3
Fax (801)263-8687	Ethyl methacrylate	97-63-2	2.66	< 2.66
email: awal@awal-labs.com	Ethylbenzene	100-41-4	2.66	< 2.66
	Hexachlorobutadiene	87-68-3	2.66	< 2.66
Kyle F. Gross	Iodomethane	74-88-4	6.64	< 6.64
Laboratory Director	Isobutyl alcohol	78-83-1	133	< 133
	Isopropyl acetate	108-21-4	13.3	< 13.3
	Isopropyl alcohol	67-63-0	53.1	< 53.1
Jose Rocha	Isopropylbenzene	98-82-8	2.66	< 2.66
QA Officer	Isopropyltoluene	99-87-6	2.66	< 2.66
	m,p-Xylene	179601-23-1	2.66	< 2.66
	Methacrylonitrile	126-98-7	6.64	< 6.64
	Methyl Acetate	79-20-9	6.64	< 6.64
	Methyl methacrylate	80-62-6	6.64	< 6.64
	Methyl tert-butyl ether	1634-04-4	2.66	< 2.66
	Methylcyclohexane	108-87-2	2.66	< 2.66
	Methylene chloride	75-09-2	6.64	< 6.64
	n-Amyl acetate	628-63-7	13.3	< 13.3
	n-Butyl alcohol	71-36-3	133	< 133
	n-Butylbenzene	104-51-8	2.66	< 2.66
	n-Hexane	110-54-3	2.66	< 2.66
	n-Octane	111-65-9	2.66	< 2.66
	n-Propylbenzene	103-65-1	2.66	< 2.66



## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006A  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1307h

### Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

#### Compound

CAS  
Number

Reporting  
Limit

Analytical  
Result

Qual

463 West 3600 South  
Salt Lake City, UT

84115

Naphthalene

91-20-3

2.66

< 2.66

o-Xylene

95-47-6

2.66

< 2.66

Pentachloroethane

76-01-7

2.66

< 2.66

Propionitrile

107-12-0

33.2

< 33.2

(801) 263-8686

Propyl acetate

109-60-4

13.3

< 13.3

Toll Free (888) 263-8686

sec-Butylbenzene

135-98-8

2.66

< 2.66

Fax (801)263-8687

Styrene

100-42-5

2.66

< 2.66

email: awal@awal-labs.com

tert-Butyl alcohol

76-65-0

26.6

< 26.6

tert-Butylbenzene

98-06-6

2.66

< 2.66

Kyle F. Gross

Tetrachloroethene

127-18-4

2.66

< 2.66

Laboratory Director

Tetrahydrofuran

109-99-9

2.66

< 2.66

Toluene

108-88-3

2.66

< 2.66

Jose Rocha

trans-1,2-Dichloroethene

156-60-5

2.66

< 2.66

QA Officer

trans-1,3-Dichloropropene

10061-02-6

2.66

< 2.66

trans-1,4-Dichloro-2-butene

110-57-6

2.66

< 2.66

Trichloroethene

79-01-6

2.66

< 2.66

Trichlorofluoromethane

75-69-4

2.66

< 2.66

Vinyl acetate

108-05-4

13.3

< 13.3

Vinyl chloride

75-01-4

1.33

< 1.33

Xylenes, Total

1330-20-7

2.66

< 2.66

C11&C12 Aliphatic hydrocarbons

26.6

< 26.6

C6 Aliphatic hydrocarbons

26.6

< 26.6

C7&C8 Aliphatic hydrocarbons

26.6

< 26.6

C9&C10 Aliphatic hydrocarbons

26.6

< 26.6

C9&C10 Alkyl Benzenes

26.6

< 26.6

Total Purgable Petroleum Hydrocarbons (C6-C15)

26.6

< 26.6

TPH C11-C15 (DRO)

26.6

< 26.6

TPH C6-C10 (GRO)

26.6

< 26.6



## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte  
**Lab Sample ID:** 1011530-006A  
**Client Sample ID:** C2  
**Collection Date:** 11/30/2010 1305h  
**Received Date:** 11/30/2010 1538h  
**Method Used:** SW8260C

**Contact:** Jim Harris

**Analyzed:** 12/1/2010 1307h

### Analytical Results

VOAs by GC/MS Method 8260C

**Units:** µg/kg-dry

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	68-147	<b>92.8</b>	
Surr: 4-Bromofluorobenzene	460-00-4	71-144	<b>108</b>	
Surr: Dibromofluoromethane	1868-53-7	71-129	<b>100</b>	
Surr: Toluene-d8	2037-26-5	72-129	<b>107</b>	

*The sample was received with headspace.*

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

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCS-9640	1,2,4-Trichlorobenzene	µg/kg	SW8270D	4,360	5,333	0	81.7	27-104				12/2/2010 1100h
LCS-9640	1,4-Dichlorobenzene	µg/kg	SW8270D	4,260	5,333	0	79.9	10-118				12/2/2010 1100h
LCS-9640	2,4,6-Trichlorophenol	µg/kg	SW8270D	3,930	5,333	0	73.7	37-117				12/2/2010 1100h
LCS-9640	2,4-Dimethylphenol	µg/kg	SW8270D	4,360	5,333	0	81.8	29-131				12/2/2010 1100h
LCS-9640	2,4-Dinitrotoluene	µg/kg	SW8270D	7,210	5,333	0	135	10-169				12/2/2010 1100h
LCS-9640	2-Chloronaphthalene	µg/kg	SW8270D	5,090	5,333	0	95.4	23-126				12/2/2010 1100h
LCS-9640	2-Chlorophenol	µg/kg	SW8270D	4,630	5,333	0	86.7	13-114				12/2/2010 1100h
LCS-9640	4,6-Dinitro-2-methylphenol	µg/kg	SW8270D	7,030	5,333	0	132	17-190				12/2/2010 1100h
LCS-9640	4-Chloro-3-methylphenol	µg/kg	SW8270D	4,510	5,333	0	84.6	14-148				12/2/2010 1100h
LCS-9640	4-Nitrophenol	µg/kg	SW8270D	1,360	5,333	0	25.4	10-114				12/2/2010 1100h
LCS-9640	Acenaphthene	µg/kg	SW8270D	5,410	5,333	0	102	29-116				12/2/2010 1100h
LCS-9640	Benzo(a)pyrene	µg/kg	SW8270D	5,190	5,333	0	97.3	38-194				12/2/2010 1100h
LCS-9640	N-Nitrosodi-n-propylamine	µg/kg	SW8270D	4,300	5,333	0	80.6	25-148				12/2/2010 1100h
LCS-9640	Pentachlorophenol	µg/kg	SW8270D	3,450	5,333	0	64.7	10-112				12/2/2010 1100h
LCS-9640	Phenol	µg/kg	SW8270D	4,550	5,333	0	85.3	24-131				12/2/2010 1100h
LCS-9640	Pyrene	µg/kg	SW8270D	6,150	5,333	0	115	22-167				12/2/2010 1100h
LCS-9640	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	4,450	5,333		83.4	10-118				12/2/2010 1100h
LCS-9640	Surr: 2-Fluorobiphenyl	% REC	SW8270D	2,710	2,667		102	22-128				12/2/2010 1100h
LCS-9640	Surr: 2-Fluorophenol	% REC	SW8270D	4,600	5,333		86.3	10-111				12/2/2010 1100h
LCS-9640	Surr: Nitrobenzene-d5	% REC	SW8270D	2,480	2,667		92.8	10-131				12/2/2010 1100h

Report Date: 12/6/2010 Page 68 of 122



# AMERICAN WEST ANALYTICAL LABORATORIES

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCS-9640	Surr: Phenol-d6	% REC	SW8270D	4,670	5,333		87.6	10-157				12/2/2010 1100h
LCS-9640	Surr: Terphenyl-d14	% REC	SW8270D	3,020	2,667		113	22-167				12/2/2010 1100h
LCS-9677	1,2,4-Trichlorobenzene	µg/kg	SW8270D	4,360	5,333	0	81.8	27-104				12/4/2010 1549h
LCS-9677	1,4-Dichlorobenzene	µg/kg	SW8270D	4,220	5,333	0	79.1	10-118				12/4/2010 1549h
LCS-9677	2,4,6-Trichlorophenol	µg/kg	SW8270D	3,850	5,333	0	72.2	37-117				12/4/2010 1549h
LCS-9677	2,4-Dimethylphenol	µg/kg	SW8270D	4,300	5,333	0	80.6	29-131				12/4/2010 1549h
LCS-9677	2,4-Dinitrotoluene	µg/kg	SW8270D	6,790	5,333	0	127	10-169				12/4/2010 1549h
LCS-9677	2-Chloronaphthalene	µg/kg	SW8270D	5,010	5,333	0	94.0	23-126				12/4/2010 1549h
LCS-9677	2-Chlorophenol	µg/kg	SW8270D	4,600	5,333	0	86.2	13-114				12/4/2010 1549h
LCS-9677	4,6-Dinitro-2-methylphenol	µg/kg	SW8270D	5,650	5,333	0	106	17-190				12/4/2010 1549h
LCS-9677	4-Chloro-3-methylphenol	µg/kg	SW8270D	4,310	5,333	0	80.8	14-148				12/4/2010 1549h
LCS-9677	4-Nitrophenol	µg/kg	SW8270D	1,450	5,333	0	27.2	10-114				12/4/2010 1549h
LCS-9677	Acenaphthene	µg/kg	SW8270D	5,170	5,333	0	96.9	29-116				12/4/2010 1549h
LCS-9677	Benzo(a)pyrene	µg/kg	SW8270D	5,940	5,333	0	111	38-194				12/4/2010 1549h
LCS-9677	N-Nitrosodi-n-propylamine	µg/kg	SW8270D	4,220	5,333	0	79.0	25-148				12/4/2010 1549h
LCS-9677	Pentachlorophenol	µg/kg	SW8270D	3,140	5,333	0	58.8	10-112				12/4/2010 1549h
LCS-9677	Phenol	µg/kg	SW8270D	5,270	5,333	0	98.9	24-131				12/4/2010 1549h
LCS-9677	Pyrene	µg/kg	SW8270D	5,600	5,333	0	105	22-167				12/4/2010 1549h
LCS-9677	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	4,620	5,333		86.7	10-118				12/4/2010 1549h
LCS-9677	Surr: 2-Fluorobiphenyl	% REC	SW8270D	2,610	2,667		98.0	22-128				12/4/2010 1549h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCS-9677	Surr: 2-Fluorophenol	% REC	SW8270D	4,730	5,333		88.7	10-111				12/4/2010 1549h
LCS-9677	Surr: Nitrobenzene-d5	% REC	SW8270D	2,550	2,667		95.5	10-131				12/4/2010 1549h
LCS-9677	Surr: Phenol-d6	% REC	SW8270D	4,770	5,333		89.5	10-157				12/4/2010 1549h
LCS-9677	Surr: Terphenyl-d14	% REC	SW8270D	2,880	2,667		108	22-167				12/4/2010 1549h

*LCS-9640: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.*



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** LCSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCSD-9677	1,2,4-Trichlorobenzene	µg/kg	SW8270D	4,430	5,333	0	83.1	27-104	1.58	35		12/4/2010 1616h
LCSD-9677	1,4-Dichlorobenzene	µg/kg	SW8270D	4,210	5,333	0	78.9	10-118	0.222	35		12/4/2010 1616h
LCSD-9677	2,4,6-Trichlorophenol	µg/kg	SW8270D	3,960	5,333	0	74.3	37-117	2.82	35		12/4/2010 1616h
LCSD-9677	2,4-Dimethylphenol	µg/kg	SW8270D	4,500	5,333	0	84.3	29-131	4.52	35		12/4/2010 1616h
LCSD-9677	2,4-Dinitrotoluene	µg/kg	SW8270D	7,440	5,333	0	139	10-169	9.16	35		12/4/2010 1616h
LCSD-9677	2-Chloronaphthalene	µg/kg	SW8270D	5,210	5,333	0	97.8	23-126	3.92	35		12/4/2010 1616h
LCSD-9677	2-Chlorophenol	µg/kg	SW8270D	4,680	5,333	0	87.8	13-114	1.80	35		12/4/2010 1616h
LCSD-9677	4,6-Dinitro-2-methylphenol	µg/kg	SW8270D	6,630	5,333	0	124	17-190	16.0	35		12/4/2010 1616h
LCSD-9677	4-Chloro-3-methylphenol	µg/kg	SW8270D	4,720	5,333	0	88.6	14-148	9.11	35		12/4/2010 1616h
LCSD-9677	4-Nitrophenol	µg/kg	SW8270D	1,750	5,333	0	32.9	10-114	18.8	35		12/4/2010 1616h
LCSD-9677	Acenaphthene	µg/kg	SW8270D	5,390	5,333	0	101	29-116	4.28	35		12/4/2010 1616h
LCSD-9677	Benzo(a)pyrene	µg/kg	SW8270D	6,770	5,333	0	127	38-194	13.0	35		12/4/2010 1616h
LCSD-9677	N-Nitrosodi-n-propylamine	µg/kg	SW8270D	4,270	5,333	0	80.1	25-148	1.30	35		12/4/2010 1616h
LCSD-9677	Pentachlorophenol	µg/kg	SW8270D	3,580	5,333	0	67.1	10-112	13.2	35		12/4/2010 1616h
LCSD-9677	Phenol	µg/kg	SW8270D	5,350	5,333	0	100	24-131	1.38	35		12/4/2010 1616h
LCSD-9677	Pyrene	µg/kg	SW8270D	6,160	5,333	0	116	22-167	9.63	35		12/4/2010 1616h
LCSD-9677	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	4,690	5,333		87.9	10-118				12/4/2010 1616h
LCSD-9677	Surr: 2-Fluorobiphenyl	% REC	SW8270D	2,450	2,667		91.9	22-128				12/4/2010 1616h
LCSD-9677	Surr: 2-Fluorophenol	% REC	SW8270D	4,230	5,333		79.3	10-111				12/4/2010 1616h
LCSD-9677	Surr: Nitrobenzene-d5	% REC	SW8270D	2,350	2,667		88.1	10-131				12/4/2010 1616h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** LCSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCSD-9677	Surr: Phenol-d6	% REC	SW8270D	4,470	5,333		83.8	10-157				12/4/2010 1616h
LCSD-9677	Surr: Terphenyl-d14	% REC	SW8270D	2,900	2,667		109	22-167				12/4/2010 1616h





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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	1,1'-Biphenyl	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,2,4,5-Tetrachlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,2,4-Trichlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,2-Dichlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,3,5-Trinitrobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,3-Dichlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,3-Dinitrobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,4-Dichlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1,4-Naphthoquinone	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	1,4-Phenylenediamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1-Chloronaphthalene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1-Methylnaphthalene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	1-Naphthylamine	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2,4,5-Trichlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2,4,6-Trichlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2,4-Dichlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2,4-Dimethylphenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2,4-Dinitrophenol	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	2,4-Dinitrotoluene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	2,6-Dichlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2,6-Dinitrotoluene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Acetylaminofluorene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Chloronaphthalene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Chlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Methylnaphthalene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Methylphenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Naphthylamine	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	2-Nitroaniline	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Nitrophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	2-Picoline	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	3&4-Methylphenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	3,3'-Dichlorobenzidine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	3,3'-Dimethylbenzidine	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	3-Methylcholanthrene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	3-Nitroaniline	µg/kg	SW8270D	< 1,000				-				12/2/2010 1032h
MB-9640	4,6-Dinitro-2-methylphenol	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	4-Aminobiphenyl	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	4-Bromophenyl phenyl ether	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	4-Chloro-3-methylphenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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Kyle F. Gross

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Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	4-Chloroaniline	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	4-Chlorophenyl phenyl ether	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	4-Nitroaniline	µg/kg	SW8270D	< 1,000				-				12/2/2010 1032h
MB-9640	4-Nitrophenol	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	5-Nitro-o-toluidine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	7,12-Dimethylbenz(a)anthracene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	a,a-Dimethylphenethylamine	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Acenaphthene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Acenaphthylene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Acetophenone	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	alpha-Terpineol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Aniline	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Anthracene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Aramite	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Azobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Benz(a)anthracene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Benzidine	µg/kg	SW8270D	< 1,340				-				12/2/2010 1032h
MB-9640	Benzo(a)pyrene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Benzo(b)fluoranthene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Benzo(g,h,i)perylene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	Benzo(k)fluoranthene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Benzoic acid	µg/kg	SW8270D	< 1,000				-				12/2/2010 1032h
MB-9640	Benzyl alcohol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Bis(2-chloroethoxy)methane	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Bis(2-chloroethyl) ether	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Bis(2-chloroisopropyl) ether	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Bis(2-ethylhexyl) phthalate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	bis(2-ethylhexyl)adipate	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Butyl benzyl phthalate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	C11-C12 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	C11-C13 Alkyl Naphthalenes	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	C13-C16 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	C17-C21 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	C22-C35 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Carbazole	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Chlorobenzilate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Chrysene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Diallate (cis or trans)	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Dibenz(a,h)anthracene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Dibenzofuran	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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## QC SUMMARY REPORT

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**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	Diethyl phthalate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Dimethoate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Dimethyl phthalate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Dimethylaminoazobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Di-n-butyl phthalate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Di-n-octyl phthalate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Dinoseb	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Diphenylamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Disulfoton	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Ethyl methanesulfonate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Famphur	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Fluoranthene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Fluorene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Hexachlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Hexachlorobutadiene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Hexachlorocyclopentadiene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Hexachloroethane	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Hexachlorophene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Hexachloropropene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Indene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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## QC SUMMARY REPORT

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**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Isodrin	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Isophorone	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Isosafrole	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Kepone	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Methapyrilene	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Methyl methanesulfonate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Naphthalene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	n-Decane	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Nitrobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Nitroquinoline-1-oxide	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	N-Nitrosodiethylamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosodimethylamine	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	N-Nitrosodi-n-butylamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosodiphenylamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosodi-n-propylamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosomethylethylamine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosomorpholine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosopiperidine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	N-Nitrosopyrrolidine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	n-Octadecane	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	O,O,O-Triethyl phosphorothioate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	o-Toluidine	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Parathion	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Methyl parathion	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Pentachlorobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Pentachloronitrobenzene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Pentachlorophenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Phenacetin	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Phenanthrene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Phenol	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Phorate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Pronamide	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Pyrene	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Pyridine	µg/kg	SW8270D	< 670				-				12/2/2010 1032h
MB-9640	Quinoline	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Safrole	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Tetraethyl dithiopyrophosphate	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Thionazin	µg/kg	SW8270D	< 340				-				12/2/2010 1032h
MB-9640	Total C12-C22 PAH**	µg/kg	SW8270D	< 340				-				12/2/2010 1032h

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Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9640	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	2,210	5,333		41.5	10-118				12/2/2010 1032h
MB-9640	Surr: 2-Fluorobiphenyl	% REC	SW8270D	2,150	2,667		80.8	22-128				12/2/2010 1032h
MB-9640	Surr: 2-Fluorophenol	% REC	SW8270D	3,450	5,333		64.8	10-111				12/2/2010 1032h
MB-9640	Surr: Nitrobenzene-d5	% REC	SW8270D	1,950	2,667		73.2	10-131				12/2/2010 1032h
MB-9640	Surr: Phenol-d6	% REC	SW8270D	3,050	5,333		57.1	10-157				12/2/2010 1032h
MB-9640	Surr: Terphenyl-d14	% REC	SW8270D	3,250	2,667		122	22-167				12/2/2010 1032h
MB-9677	1,1'-Biphenyl	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,2,4,5-Tetrachlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,2,4-Trichlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,2-Dichlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,3,5-Trinitrobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,3-Dichlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,3-Dinitrobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,4-Dichlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1,4-Naphthoquinone	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	1,4-Phenylenediamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1-Chloronaphthalene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1-Methylnaphthalene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	1-Naphthylamine	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h

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Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	2,4,5-Trichlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2,4,6-Trichlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2,4-Dichlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2,4-Dimethylphenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2,4-Dinitrophenol	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	2,4-Dinitrotoluene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2,6-Dichlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2,6-Dinitrotoluene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Acetylaminofluorene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Chloronaphthalene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Chlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Methylnaphthalene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Methylphenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Naphthylamine	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	2-Nitroaniline	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Nitrophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	2-Picoline	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	3&4-Methylphenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	3,3'-Dichlorobenzidine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	3,3'-Dimethylbenzidine	µg/kg	SW8270D	< 670				-				12/4/2010 1521h

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	3-Methylcholanthrene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	3-Nitroaniline	µg/kg	SW8270D	< 1,000				-				12/4/2010 1521h
MB-9677	4,6-Dinitro-2-methylphenol	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	4-Aminobiphenyl	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	4-Bromophenyl phenyl ether	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	4-Chloro-3-methylphenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	4-Chloroaniline	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	4-Chlorophenyl phenyl ether	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	4-Nitroaniline	µg/kg	SW8270D	< 1,000				-				12/4/2010 1521h
MB-9677	4-Nitrophenol	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	5-Nitro-o-toluidine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	7,12-Dimethylbenz(a)anthracene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	a,a-Dimethylphenethylamine	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	Acenaphthene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Acenaphthylene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Acetophenone	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	alpha-Terpineol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Aniline	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	Anthracene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Aramite	µg/kg	SW8270D	< 670				-				12/4/2010 1521h

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# AMERICAN WEST ANALYTICAL LABORATORIES

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	Azobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Benz(a)anthracene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Benzidine	µg/kg	SW8270D	< 1,340				-				12/4/2010 1521h
MB-9677	Benzo(a)pyrene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Benzo(b)fluoranthene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Benzo(g,h,i)perylene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Benzo(k)fluoranthene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Benzoic acid	µg/kg	SW8270D	< 1,000				-				12/4/2010 1521h
MB-9677	Benzyl alcohol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Bis(2-chloroethoxy)methane	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Bis(2-chloroethyl) ether	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Bis(2-chloroisopropyl) ether	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Bis(2-ethylhexyl) phthalate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	bis(2-ethylhexyl)adipate	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	Butyl benzyl phthalate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	C11-C12 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	C11-C13 Alkyl Naphthalenes	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	C13-C16 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	C17-C21 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	C22-C35 Aliphatic hydrocarbons	µg/kg	SW8270D	< 340				-				12/4/2010 1521h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	Carbazole	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Chlorobenzilate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Chrysene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Diallate (cis or trans)	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Dibenz(a,h)anthracene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Dibenzofuran	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Diethyl phthalate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Dimethoate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Dimethyl phthalate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Dimethylaminoazobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Di-n-butyl phthalate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Di-n-octyl phthalate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Dinoseb	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	Diphenylamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Disulfoton	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Ethyl methanesulfonate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Famphur	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Fluoranthene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Fluorene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Hexachlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h

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Laboratory Director

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	Hexachlorobutadiene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Hexachlorocyclopentadiene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Hexachloroethane	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Hexachlorophene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Hexachloropropene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Indene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Isodrin	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Isophorone	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Isosafrole	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Kepone	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Methapyrilene	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	Methyl methanesulfonate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Naphthalene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	n-Decane	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Nitrobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Nitroquinoline-1-oxide	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	N-Nitrosodiethylamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	N-Nitrosodimethylamine	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	N-Nitrosodi-n-butylamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	N-Nitrosodiphenylamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	N-Nitrosodi-n-propylamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	N-Nitrosomethylethylamine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	N-Nitrosomorpholine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	N-Nitrosopiperidine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	N-Nitrosopyrrolidine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	n-Octadecane	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	O,O,O-Triethyl phosphorothioate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	o-Toluidine	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Parathion	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Methyl parathion	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Pentachlorobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Pentachloronitrobenzene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Pentachlorophenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Phenacetin	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Phenanthrene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Phenol	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Phorate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Pronamide	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Pyrene	µg/kg	SW8270D	< 340				-				12/4/2010 1521h

Report Date: 12/6/2010 Page 86 of 122



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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB-9677	Pyridine	µg/kg	SW8270D	< 670				-				12/4/2010 1521h
MB-9677	Quinoline	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Safrole	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Tetraethyl dithiopyrophosphate	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Thionazin	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Total C12-C22 PAH**	µg/kg	SW8270D	< 340				-				12/4/2010 1521h
MB-9677	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	2,470	5,333		46.3	10-118				12/4/2010 1521h
MB-9677	Surr: 2-Fluorobiphenyl	% REC	SW8270D	2,410	2,667		90.5	22-128				12/4/2010 1521h
MB-9677	Surr: 2-Fluorophenol	% REC	SW8270D	3,720	5,333		69.7	10-111				12/4/2010 1521h
MB-9677	Surr: Nitrobenzene-d5	% REC	SW8270D	2,050	2,667		76.9	10-131				12/4/2010 1521h
MB-9677	Surr: Phenol-d6	% REC	SW8270D	3,790	5,333		71.0	10-157				12/4/2010 1521h
MB-9677	Surr: Terphenyl-d14	% REC	SW8270D	2,700	2,667		101	22-167				12/4/2010 1521h

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

MB-9640: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011530-001BMS	1,2,4-Trichlorobenzene	µg/kg-dry	SW8270D	7,390	9,666	0	76.5	10-107				12/2/2010 1155h
1011530-001BMS	1,4-Dichlorobenzene	µg/kg-dry	SW8270D	6,970	9,666	0	72.1	10-90				12/2/2010 1155h
1011530-001BMS	2,4,6-Trichlorophenol	µg/kg-dry	SW8270D	6,510	9,666	0	67.4	26-128				12/2/2010 1155h
1011530-001BMS	2,4-Dimethylphenol	µg/kg-dry	SW8270D	7,510	9,666	0	77.7	10-176				12/2/2010 1155h
1011530-001BMS	2,4-Dinitrotoluene	µg/kg-dry	SW8270D	11,100	9,666	0	115	10-191				12/2/2010 1155h
1011530-001BMS	2-Chloronaphthalene	µg/kg-dry	SW8270D	7,930	9,666	0	82.1	10-132				12/2/2010 1155h
1011530-001BMS	2-Chlorophenol	µg/kg-dry	SW8270D	7,720	9,666	0	79.8	10-107				12/2/2010 1155h
1011530-001BMS	4,6-Dinitro-2-methylphenol	µg/kg-dry	SW8270D	8,550	9,666	0	88.5	10-250				12/2/2010 1155h
1011530-001BMS	4-Chloro-3-methylphenol	µg/kg-dry	SW8270D	7,660	9,666	0	79.2	10-136				12/2/2010 1155h
1011530-001BMS	4-Nitrophenol	µg/kg-dry	SW8270D	1,770	9,666	0	18.3	10-135				12/2/2010 1155h
1011530-001BMS	Acenaphthene	µg/kg-dry	SW8270D	8,200	9,666	0	84.8	31-113				12/2/2010 1155h
1011530-001BMS	Benzo(a)pyrene	µg/kg-dry	SW8270D	7,600	9,666	0	78.6	38-169				12/2/2010 1155h
1011530-001BMS	N-Nitrosodi-n-propylamine	µg/kg-dry	SW8270D	6,900	9,666	0	71.4	10-133				12/2/2010 1155h
1011530-001BMS	Pentachlorophenol	µg/kg-dry	SW8270D	6,230	9,666	0	64.5	20-131				12/2/2010 1155h
1011530-001BMS	Phenol	µg/kg-dry	SW8270D	8,650	9,666	0	89.5	10-71			1	12/2/2010 1155h
1011530-001BMS	Pyrene	µg/kg-dry	SW8270D	9,870	9,666	0	102	31-150				12/2/2010 1155h
1011530-001BMS	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	7,700	9,666		79.7	10-237				12/2/2010 1155h
1011530-001BMS	Surr: 2-Fluorobiphenyl	%REC	SW8270D	3,920	4,834		81.0	17-122				12/2/2010 1155h
1011530-001BMS	Surr: 2-Fluorophenol	%REC	SW8270D	7,400	9,666		76.6	10-139				12/2/2010 1155h
1011530-001BMS	Surr: Nitrobenzene-d5	%REC	SW8270D	3,950	4,834		81.8	10-166				12/2/2010 1155h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011530-001BMS	Surr: Phenol-d6	% REC	SW8270D	7,460	9,666		77.2	10-144				12/2/2010 1155h
1011530-001BMS	Surr: Terphenyl-d14	% REC	SW8270D	4,840	4,834		100	10-265				12/2/2010 1155h
1012003-001BMS	1,2,4-Trichlorobenzene	µg/kg-dry	SW8270D	5,770	7,478	0	77.1	10-107				12/2/2010 1545h
1012003-001BMS	1,4-Dichlorobenzene	µg/kg-dry	SW8270D	5,230	7,478	0	69.9	10-90				12/2/2010 1545h
1012003-001BMS	2,4,6-Trichlorophenol	µg/kg-dry	SW8270D	6,350	7,478	0	84.9	26-128				12/2/2010 1545h
1012003-001BMS	2,4-Dimethylphenol	µg/kg-dry	SW8270D	6,100	7,478	0	81.6	10-176				12/2/2010 1545h
1012003-001BMS	2,4-Dinitrotoluene	µg/kg-dry	SW8270D	8,930	7,478	0	119	10-191				12/2/2010 1545h
1012003-001BMS	2-Chloronaphthalene	µg/kg-dry	SW8270D	6,580	7,478	0	88.1	10-132				12/2/2010 1545h
1012003-001BMS	2-Chlorophenol	µg/kg-dry	SW8270D	6,420	7,478	0	85.9	10-107				12/2/2010 1545h
1012003-001BMS	4,6-Dinitro-2-methylphenol	µg/kg-dry	SW8270D	4,850	7,478	0	64.8	10-250				12/2/2010 1545h
1012003-001BMS	4-Chloro-3-methylphenol	µg/kg-dry	SW8270D	6,580	7,478	0	87.9	10-136				12/2/2010 1545h
1012003-001BMS	4-Nitrophenol	µg/kg-dry	SW8270D	< 939	7,478	0	9.13	10-135			1	12/2/2010 1545h
1012003-001BMS	Acenaphthene	µg/kg-dry	SW8270D	6,910	7,478	0	92.4	31-113				12/2/2010 1545h
1012003-001BMS	Benzo(a)pyrene	µg/kg-dry	SW8270D	5,780	7,478	0	77.3	38-169				12/2/2010 1545h
1012003-001BMS	N-Nitrosodi-n-propylamine	µg/kg-dry	SW8270D	5,710	7,478	0	76.4	10-133				12/2/2010 1545h
1012003-001BMS	Pentachlorophenol	µg/kg-dry	SW8270D	5,590	7,478	0	74.8	20-131				12/2/2010 1545h
1012003-001BMS	Phenol	µg/kg-dry	SW8270D	5,900	7,478	0	78.9	10-71			1	12/2/2010 1545h
1012003-001BMS	Pyrene	µg/kg-dry	SW8270D	8,440	7,478	0	113	31-150				12/2/2010 1545h
1012003-001BMS	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	6,890	7,478		92.1	10-237				12/2/2010 1545h
1012003-001BMS	Surr: 2-Fluorobiphenyl	% REC	SW8270D	3,280	3,739		87.8	17-122				12/2/2010 1545h

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# AMERICAN WEST ANALYTICAL LABORATORIES

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1012003-001BMS	Surr: 2-Fluorophenol	% REC	SW8270D	6,020	7,478		80.5	10-139				12/2/2010 1545h
1012003-001BMS	Surr: Nitrobenzene-d5	% REC	SW8270D	3,160	3,739		84.4	10-166				12/2/2010 1545h
1012003-001BMS	Surr: Phenol-d6	% REC	SW8270D	5,940	7,478		79.5	10-144				12/2/2010 1545h
1012003-001BMS	Surr: Terphenyl-d14	% REC	SW8270D	4,140	3,739		111	10-265				12/2/2010 1545h

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

1011530-001BMS: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011530-001BM	1,2,4-Trichlorobenzene	µg/kg-dry	SW8270D	8,220	9,666	0	85.0	10-107	10.6	35		12/2/2010 1230h
1011530-001BM	1,4-Dichlorobenzene	µg/kg-dry	SW8270D	7,960	9,666	0	82.3	10-90	13.3	35		12/2/2010 1230h
1011530-001BM	2,4,6-Trichlorophenol	µg/kg-dry	SW8270D	7,770	9,666	0	80.4	26-128	17.6	35		12/2/2010 1230h
1011530-001BM	2,4-Dimethylphenol	µg/kg-dry	SW8270D	8,170	9,666	0	84.5	10-176	8.37	35		12/2/2010 1230h
1011530-001BM	2,4-Dinitrotoluene	µg/kg-dry	SW8270D	12,700	9,666	0	131	10-191	13.0	35		12/2/2010 1230h
1011530-001BM	2-Chloronaphthalene	µg/kg-dry	SW8270D	8,700	9,666	0	90.0	10-132	9.23	35		12/2/2010 1230h
1011530-001BM	2-Chlorophenol	µg/kg-dry	SW8270D	8,700	9,666	0	90.0	10-107	12.0	35		12/2/2010 1230h
1011530-001BM	4,6-Dinitro-2-methylphenol	µg/kg-dry	SW8270D	11,600	9,666	0	120	10-250	30.0	35		12/2/2010 1230h
1011530-001BM	4-Chloro-3-methylphenol	µg/kg-dry	SW8270D	8,450	9,666	0	87.5	10-136	9.85	35		12/2/2010 1230h
1011530-001BM	4-Nitrophenol	µg/kg-dry	SW8270D	2,250	9,666	0	23.3	10-135	23.8	35		12/2/2010 1230h
1011530-001BM	Acenaphthene	µg/kg-dry	SW8270D	9,190	9,666	0	95.1	31-113	11.4	35		12/2/2010 1230h
1011530-001BM	Benzo(a)pyrene	µg/kg-dry	SW8270D	8,530	9,666	0	88.2	38-169	11.5	35		12/2/2010 1230h
1011530-001BM	N-Nitrosodi-n-propylamine	µg/kg-dry	SW8270D	7,860	9,666	0	81.4	10-133	13.1	35		12/2/2010 1230h
1011530-001BM	Pentachlorophenol	µg/kg-dry	SW8270D	7,930	9,666	0	82.1	20-131	24.0	35		12/2/2010 1230h
1011530-001BM	Phenol	µg/kg-dry	SW8270D	8,150	9,666	0	84.3	10-71	5.96	35	1	12/2/2010 1230h
1011530-001BM	Pyrene	µg/kg-dry	SW8270D	10,700	9,666	0	111	31-150	8.35	35		12/2/2010 1230h
1011530-001BM	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	8,930	9,666		92.3	10-237				12/2/2010 1230h
1011530-001BM	Surr: 2-Fluorobiphenyl	% REC	SW8270D	4,410	4,834		91.3	17-122				12/2/2010 1230h
1011530-001BM	Surr: 2-Fluorophenol	% REC	SW8270D	8,180	9,666		84.6	10-139				12/2/2010 1230h
1011530-001BM	Surr: Nitrobenzene-d5	% REC	SW8270D	4,430	4,834		91.7	10-166				12/2/2010 1230h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011530-001BMSD	Surr: Phenol-d6	% REC	SW8270D	8,270	9,666		85.5	10-144				12/2/2010 1230h
1011530-001BMSD	Surr: Terphenyl-d14	% REC	SW8270D	5,180	4,834		107	10-265				12/2/2010 1230h
1012003-001BMSD	1,2,4-Trichlorobenzene	µg/kg-dry	SW8270D	6,660	7,478	0	89.1	10-107	14.4	35		12/2/2010 1613h
1012003-001BMSD	1,4-Dichlorobenzene	µg/kg-dry	SW8270D	6,210	7,478	0	83.1	10-90	17.2	35		12/2/2010 1613h
1012003-001BMSD	2,4,6-Trichlorophenol	µg/kg-dry	SW8270D	7,180	7,478	0	96.0	26-128	12.2	35		12/2/2010 1613h
1012003-001BMSD	2,4-Dimethylphenol	µg/kg-dry	SW8270D	6,870	7,478	0	91.9	10-176	11.9	35		12/2/2010 1613h
1012003-001BMSD	2,4-Dinitrotoluene	µg/kg-dry	SW8270D	10,700	7,478	0	144	10-191	18.4	35		12/2/2010 1613h
1012003-001BMSD	2-Chloronaphthalene	µg/kg-dry	SW8270D	8,130	7,478	0	109	10-132	21.0	35		12/2/2010 1613h
1012003-001BMSD	2-Chlorophenol	µg/kg-dry	SW8270D	7,270	7,478	0	97.2	10-107	12.4	35		12/2/2010 1613h
1012003-001BMSD	4,6-Dinitro-2-methylphenol	µg/kg-dry	SW8270D	5,880	7,478	0	78.6	10-250	19.2	35		12/2/2010 1613h
1012003-001BMSD	4-Chloro-3-methylphenol	µg/kg-dry	SW8270D	7,520	7,478	0	101	10-136	13.4	35		12/2/2010 1613h
1012003-001BMSD	4-Nitrophenol	µg/kg-dry	SW8270D	1,100	7,478	0	14.8	10-135	47.3	35	@	12/2/2010 1613h
1012003-001BMSD	Acenaphthene	µg/kg-dry	SW8270D	8,240	7,478	0	110	31-113	17.6	35		12/2/2010 1613h
1012003-001BMSD	Benzo(a)pyrene	µg/kg-dry	SW8270D	6,890	7,478	0	92.1	38-169	17.5	35		12/2/2010 1613h
1012003-001BMSD	N-Nitrosodi-n-propylamine	µg/kg-dry	SW8270D	6,540	7,478	0	87.5	10-133	13.5	35		12/2/2010 1613h
1012003-001BMSD	Pentachlorophenol	µg/kg-dry	SW8270D	6,230	7,478	0	83.3	20-131	10.9	35		12/2/2010 1613h
1012003-001BMSD	Phenol	µg/kg-dry	SW8270D	7,970	7,478	0	107	10-71	29.8	35	1	12/2/2010 1613h
1012003-001BMSD	Pyrene	µg/kg-dry	SW8270D	10,100	7,478	0	135	31-150	18.0	35		12/2/2010 1613h
1012003-001BMSD	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	8,190	7,478		110	10-237				12/2/2010 1613h
1012003-001BMSD	Surr: 2-Fluorobiphenyl	% REC	SW8270D	3,850	3,739		103	17-122				12/2/2010 1613h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSSV

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1012003-001BMSD	Surr: 2-Fluorophenol	% REC	SW8270D	6,590	7,478		88.1	10-139				12/2/2010 1613h
1012003-001BMSD	Surr: Nitrobenzene-d5	% REC	SW8270D	3,510	3,739		93.8	10-166				12/2/2010 1613h
1012003-001BMSD	Surr: Phenol-d6	% REC	SW8270D	6,700	7,478		89.5	10-144				12/2/2010 1613h
1012003-001BMSD	Surr: Terphenyl-d14	% REC	SW8270D	4,890	3,739		131	10-265				12/2/2010 1613h

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

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

1011530-001BMSD: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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Laboratory Director

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCS VOC 113010A	1,1,1-Trichloroethane	µg/kg	SW8260C	22.5	20.00	0	112	64-144				11/30/2010 1233h
LCS VOC 113010A	1,1-Dichloroethene	µg/kg	SW8260C	21.5	20.00	0	107	36-184				11/30/2010 1233h
LCS VOC 113010A	1,2-Dichlorobenzene	µg/kg	SW8260C	23.9	20.00	0	119	70-134				11/30/2010 1233h
LCS VOC 113010A	1,2-Dichloroethane	µg/kg	SW8260C	19.3	20.00	0	96.3	55-146				11/30/2010 1233h
LCS VOC 113010A	1,2-Dichloropropane	µg/kg	SW8260C	20.5	20.00	0	103	56-133				11/30/2010 1233h
LCS VOC 113010A	Benzene	µg/kg	SW8260C	22.2	20.00	0	111	60-130				11/30/2010 1233h
LCS VOC 113010A	Chlorobenzene	µg/kg	SW8260C	24.4	20.00	0	122	75-130				11/30/2010 1233h
LCS VOC 113010A	Chloroform	µg/kg	SW8260C	18.3	20.00	0	91.5	61-130				11/30/2010 1233h
LCS VOC 113010A	Ethylbenzene	µg/kg	SW8260C	24.3	20.00	0	122	69-147				11/30/2010 1233h
LCS VOC 113010A	Isopropylbenzene	µg/kg	SW8260C	24.6	20.00	0	123	65-147				11/30/2010 1233h
LCS VOC 113010A	Methyl tert-butyl ether	µg/kg	SW8260C	23.1	20.00	0	116	33.1-139				11/30/2010 1233h
LCS VOC 113010A	Methylene chloride	µg/kg	SW8260C	18.3	20.00	0	91.5	39-164				11/30/2010 1233h
LCS VOC 113010A	Naphthalene	µg/kg	SW8260C	22.2	20.00	0	111	40-131				11/30/2010 1233h
LCS VOC 113010A	Tetrahydrofuran	µg/kg	SW8260C	17.6	20.00	0	88.1	43-146				11/30/2010 1233h
LCS VOC 113010A	Toluene	µg/kg	SW8260C	23.0	20.00	0	115	61-140				11/30/2010 1233h
LCS VOC 113010A	Trichloroethene	µg/kg	SW8260C	23.3	20.00	0	117	51-154				11/30/2010 1233h
LCS VOC 113010A	Xylenes, Total	µg/kg	SW8260C	74.8	60.00	0	125	72-147				11/30/2010 1233h
LCS VOC 113010A	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	44.1	50.00		88.2	73-132				11/30/2010 1233h
LCS VOC 113010A	Surr: 4-Bromofluorobenzene	%REC	SW8260C	52.2	50.00		104	85-115				11/30/2010 1233h
LCS VOC 113010A	Surr: Dibromofluoromethane	%REC	SW8260C	47.2	50.00		94.5	84-121				11/30/2010 1233h

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Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCS VOC 113010A	Surr: Toluene-d8	% REC	SW8260C	52.1	50.00		104	85-115				11/30/2010 1233h
LCS VOC 120110A	1,1,1-Trichloroethane	µg/kg	SW8260C	21.1	20.00	0	106	64-144				12/1/2010 1011h
LCS VOC 120110A	1,1-Dichloroethene	µg/kg	SW8260C	19.0	20.00	0	95.2	36-184				12/1/2010 1011h
LCS VOC 120110A	1,2-Dichlorobenzene	µg/kg	SW8260C	20.5	20.00	0	103	70-134				12/1/2010 1011h
LCS VOC 120110A	1,2-Dichloroethane	µg/kg	SW8260C	17.3	20.00	0	86.5	55-146				12/1/2010 1011h
LCS VOC 120110A	1,2-Dichloropropane	µg/kg	SW8260C	18.6	20.00	0	92.9	56-133				12/1/2010 1011h
LCS VOC 120110A	Benzene	µg/kg	SW8260C	20.4	20.00	0	102	60-130				12/1/2010 1011h
LCS VOC 120110A	Chlorobenzene	µg/kg	SW8260C	21.8	20.00	0	109	75-130				12/1/2010 1011h
LCS VOC 120110A	Chloroform	µg/kg	SW8260C	16.8	20.00	0	84.0	61-130				12/1/2010 1011h
LCS VOC 120110A	Ethylbenzene	µg/kg	SW8260C	21.3	20.00	0	106	69-147				12/1/2010 1011h
LCS VOC 120110A	Isopropylbenzene	µg/kg	SW8260C	21.6	20.00	0	108	65-147				12/1/2010 1011h
LCS VOC 120110A	Methyl tert-butyl ether	µg/kg	SW8260C	20.1	20.00	0	100	33.1-139				12/1/2010 1011h
LCS VOC 120110A	Methylene chloride	µg/kg	SW8260C	16.3	20.00	0	81.7	39-164				12/1/2010 1011h
LCS VOC 120110A	Naphthalene	µg/kg	SW8260C	19.1	20.00	0	95.6	40-131				12/1/2010 1011h
LCS VOC 120110A	Tetrahydrofuran	µg/kg	SW8260C	14.3	20.00	0	71.7	43-146				12/1/2010 1011h
LCS VOC 120110A	Toluene	µg/kg	SW8260C	20.5	20.00	0	103	61-140				12/1/2010 1011h
LCS VOC 120110A	Trichloroethene	µg/kg	SW8260C	20.7	20.00	0	104	51-154				12/1/2010 1011h
LCS VOC 120110A	Xylenes, Total	µg/kg	SW8260C	65.5	60.00	0	109	72-147				12/1/2010 1011h
LCS VOC 120110A	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	41.8	50.00		83.7	73-132				12/1/2010 1011h
LCS VOC 120110A	Surr: 4-Bromofluorobenzene	% REC	SW8260C	52.0	50.00		104	85-115				12/1/2010 1011h

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
LCS VOC 120110A	Surr: Dibromofluoromethane	% REC	SW8260C	47.1	50.00		94.3	84-121				12/1/2010 1011h
LCS VOC 120110A	Surr: Toluene-d8	% REC	SW8260C	52.5	50.00		105	85-115				12/1/2010 1011h





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Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 113010A	1,1,1,2-Tetrachloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1,1-Trichloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1,2,2-Tetrachloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1,2-Trichloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1-Dichloropropene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1-Dichloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,1-Dichloroethene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2,3-Trichlorobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2,3-Trichloropropane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2,3-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2,4-Trichlorobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2,4-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2-Dibromo-3-chloropropane	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	1,2-Dibromoethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2-Dichloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,2-Dichloropropane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,3,5-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,3-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 113010A	1,3-Dichloropropane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,4-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	1,4-Dioxane	µg/kg	SW8260C	< 50.0				-				11/30/2010 1318h
MB VOC 113010A	2,2-Dichloropropane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	2-Butanone	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	2-Chloroethyl vinyl ether	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	2-Chlorotoluene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	2-Hexanone	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	2-Nitropropane	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	4-Chlorotoluene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	4-Isopropyltoluene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	4-Methyl-2-pentanone	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Acetone	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Acetonitrile	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Acrolein	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Acrylonitrile	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Allyl chloride	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Benzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Benzyl chloride	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Bis(2-chloroisopropyl) ether	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h

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# AMERICAN WEST ANALYTICAL LABORATORIES

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 113010A	Bromobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Bromochloromethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Bromodichloromethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Bromoform	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Bromomethane	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Butyl acetate	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	C11&C12 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	C6 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	C7&C8 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	C9&C10 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	C9&C10 Alkyl Benzenes	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	Carbon disulfide	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Carbon tetrachloride	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Chlorobenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Chloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Chloroform	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Chloromethane	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Chloroprene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	cis-1,2-Dichloroethene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	cis-1,3-Dichloropropene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h

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Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 113010A	Cyclohexane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Cyclohexanone	µg/kg	SW8260C	< 50.0				-				11/30/2010 1318h
MB VOC 113010A	Dibromochloromethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Dibromomethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Dichlorodifluoromethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Ethyl acetate	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Ethyl ether	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Ethyl methacrylate	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Ethylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Hexachlorobutadiene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Iodomethane	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Isobutyl alcohol	µg/kg	SW8260C	< 100				-				11/30/2010 1318h
MB VOC 113010A	Isopropyl acetate	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Isopropyl alcohol	µg/kg	SW8260C	< 40.0				-				11/30/2010 1318h
MB VOC 113010A	Isopropylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Isopropyltoluene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	m,p-Xylene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Methacrylonitrile	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Methyl Acetate	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	Methyl methacrylate	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 113010A	Methyl tert-butyl ether	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Methylcyclohexane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Methylene chloride	µg/kg	SW8260C	< 5.00				-				11/30/2010 1318h
MB VOC 113010A	n-Amyl acetate	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Naphthalene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	n-Butyl alcohol	µg/kg	SW8260C	< 100				-				11/30/2010 1318h
MB VOC 113010A	n-Butylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	n-Hexane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	n-Octane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	n-Propylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	o-Xylene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Pentachloroethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Propionitrile	µg/kg	SW8260C	< 25.0				-				11/30/2010 1318h
MB VOC 113010A	Propyl acetate	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	sec-Butylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Styrene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	tert-Butyl alcohol	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	tert-Butylbenzene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Tetrachloroethene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Tetrahydrofuran	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 113010A	Toluene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Total Purgable Petroleum Hydroca	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	TPH C11-C15 (DRO)	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	TPH C6-C10 (GRO)	µg/kg	SW8260C	< 20.0				-				11/30/2010 1318h
MB VOC 113010A	trans-1,2-Dichloroethene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	trans-1,3-Dichloropropene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	trans-1,4-Dichloro-2-butene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Trichloroethene	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Trichlorofluoromethane	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Vinyl acetate	µg/kg	SW8260C	< 10.0				-				11/30/2010 1318h
MB VOC 113010A	Vinyl chloride	µg/kg	SW8260C	< 1.00				-				11/30/2010 1318h
MB VOC 113010A	Xylenes, Total	µg/kg	SW8260C	< 2.00				-				11/30/2010 1318h
MB VOC 113010A	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	44.0	50.00		87.9	73-132				11/30/2010 1318h
MB VOC 113010A	Surr: 4-Bromofluorobenzene	% REC	SW8260C	52.3	50.00		105	85-115				11/30/2010 1318h
MB VOC 113010A	Surr: Dibromofluoromethane	% REC	SW8260C	47.6	50.00		95.2	84-121				11/30/2010 1318h
MB VOC 113010A	Surr: Toluene-d8	% REC	SW8260C	52.9	50.00		106	85-115				11/30/2010 1318h
MB VOC 120110A	1,1,1,2-Tetrachloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,1,1-Trichloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,1,2,2-Tetrachloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 120110A	1,1,2-Trichloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,1-Dichloropropene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,1-Dichloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,1-Dichloroethene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2,3-Trichlorobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2,3-Trichloropropane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2,3-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2,4-Trichlorobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2,4-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2-Dibromo-3-chloropropane	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	1,2-Dibromoethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2-Dichloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,2-Dichloropropane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,3,5-Trimethylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,3-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,3-Dichloropropane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,4-Dichlorobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	1,4-Dioxane	µg/kg	SW8260C	< 50.0				-				12/1/2010 1055h
MB VOC 120110A	2,2-Dichloropropane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 120110A	2-Butanone	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	2-Chloroethyl vinyl ether	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	2-Chlorotoluene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	2-Hexanone	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	2-Nitropropane	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	4-Chlorotoluene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	4-Isopropyltoluene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	4-Methyl-2-pentanone	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Acetone	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	Acetonitrile	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Acrolein	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Acrylonitrile	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	Allyl chloride	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Benzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Benzyl chloride	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Bis(2-chloroisopropyl) ether	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Bromobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Bromochloromethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Bromodichloromethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Bromoform	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 120110A	Bromomethane	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Butyl acetate	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	C11&C12 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	C6 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	C7&C8 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	C9&C10 Aliphatic hydrocarbons	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	C9&C10 Alkyl Benzenes	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	Carbon disulfide	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Carbon tetrachloride	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Chlorobenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Chloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Chloroform	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Chloromethane	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Chloroprene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	cis-1,2-Dichloroethene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	cis-1,3-Dichloropropene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Cyclohexane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Cyclohexanone	µg/kg	SW8260C	< 50.0				-				12/1/2010 1055h
MB VOC 120110A	Dibromochloromethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Dibromomethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 120110A	Dichlorodifluoromethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Ethyl acetate	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	Ethyl ether	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	Ethyl methacrylate	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Ethylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Hexachlorobutadiene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Iodomethane	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Isobutyl alcohol	µg/kg	SW8260C	< 100				-				12/1/2010 1055h
MB VOC 120110A	Isopropyl acetate	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	Isopropyl alcohol	µg/kg	SW8260C	< 40.0				-				12/1/2010 1055h
MB VOC 120110A	Isopropylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Isopropyltoluene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	m,p-Xylene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Methacrylonitrile	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Methyl Acetate	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Methyl methacrylate	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	Methyl tert-butyl ether	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Methylcyclohexane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Methylene chloride	µg/kg	SW8260C	< 5.00				-				12/1/2010 1055h
MB VOC 120110A	n-Amyl acetate	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 120110A	Naphthalene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	n-Butyl alcohol	µg/kg	SW8260C	< 100				-				12/1/2010 1055h
MB VOC 120110A	n-Butylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	n-Hexane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	n-Octane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	n-Propylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	o-Xylene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Pentachloroethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Propionitrile	µg/kg	SW8260C	< 25.0				-				12/1/2010 1055h
MB VOC 120110A	Propyl acetate	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	sec-Butylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Styrene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	tert-Butyl alcohol	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	tert-Butylbenzene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Tetrachloroethene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Tetrahydrofuran	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Toluene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Total Purgable Petroleum Hydroca	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	TPH C11-C15 (DRO)	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h
MB VOC 120110A	TPH C6-C10 (GRO)	µg/kg	SW8260C	< 20.0				-				12/1/2010 1055h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
MB VOC 120110A	trans-1,2-Dichloroethene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	trans-1,3-Dichloropropene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	trans-1,4-Dichloro-2-butene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Trichloroethene	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Trichlorofluoromethane	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Vinyl acetate	µg/kg	SW8260C	< 10.0				-				12/1/2010 1055h
MB VOC 120110A	Vinyl chloride	µg/kg	SW8260C	< 1.00				-				12/1/2010 1055h
MB VOC 120110A	Xylenes, Total	µg/kg	SW8260C	< 2.00				-				12/1/2010 1055h
MB VOC 120110A	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	48.3	50.00		96.6	73-132				12/1/2010 1055h
MB VOC 120110A	Surr: 4-Bromofluorobenzene	% REC	SW8260C	53.4	50.00		107	85-115				12/1/2010 1055h
MB VOC 120110A	Surr: Dibromofluoromethane	% REC	SW8260C	52.4	50.00		105	84-121				12/1/2010 1055h
MB VOC 120110A	Surr: Toluene-d8	% REC	SW8260C	53.0	50.00		106	85-115				12/1/2010 1055h



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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
101 1494-003AMS	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	22.4	23.13	0	96.8	20-144				11/30/2010 1424h
101 1494-003AMS	1,1-Dichloroethene	µg/kg-dry	SW8260C	22.0	23.13	0	95.2	24-174				11/30/2010 1424h
101 1494-003AMS	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	21.7	23.13	0	93.7	10-148				11/30/2010 1424h
101 1494-003AMS	1,2-Dichloroethane	µg/kg-dry	SW8260C	19.5	23.13	0	84.4	54-133				11/30/2010 1424h
101 1494-003AMS	1,2-Dichloropropane	µg/kg-dry	SW8260C	19.7	23.13	0	85.3	28-140				11/30/2010 1424h
101 1494-003AMS	Benzene	µg/kg-dry	SW8260C	21.2	23.13	0	91.7	17-138				11/30/2010 1424h
101 1494-003AMS	Chlorobenzene	µg/kg-dry	SW8260C	22.7	23.13	0	98.0	13-150				11/30/2010 1424h
101 1494-003AMS	Chloroform	µg/kg-dry	SW8260C	17.6	23.13	0	75.9	21-147				11/30/2010 1424h
101 1494-003AMS	Ethylbenzene	µg/kg-dry	SW8260C	22.3	23.13	0	96.4	10-164				11/30/2010 1424h
101 1494-003AMS	Isopropylbenzene	µg/kg-dry	SW8260C	22.2	23.13	0	95.8	26-146				11/30/2010 1424h
101 1494-003AMS	Methyl tert-butyl ether	µg/kg-dry	SW8260C	24.9	23.13	0	108	28-137				11/30/2010 1424h
101 1494-003AMS	Methylene chloride	µg/kg-dry	SW8260C	18.2	23.13	0	78.7	10-217				11/30/2010 1424h
101 1494-003AMS	Naphthalene	µg/kg-dry	SW8260C	19.1	23.13	0	82.7	13-156				11/30/2010 1424h
101 1494-003AMS	Tetrahydrofuran	µg/kg-dry	SW8260C	15.9	23.13	0	68.8	70-130			1	11/30/2010 1424h
101 1494-003AMS	Toluene	µg/kg-dry	SW8260C	21.6	23.13	0	93.3	23-168				11/30/2010 1424h
101 1494-003AMS	Trichloroethene	µg/kg-dry	SW8260C	22.1	23.13	0	95.5	14-161				11/30/2010 1424h
101 1494-003AMS	Xylenes, Total	µg/kg-dry	SW8260C	67.6	69.39	0	97.4	10-160				11/30/2010 1424h
101 1494-003AMS	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	53.7	57.82		92.9	68-147				11/30/2010 1424h
101 1494-003AMS	Surr: 4-Bromofluorobenzene	%REC	SW8260C	60.7	57.82		105	71-144				11/30/2010 1424h
101 1494-003AMS	Surr: Dibromofluoromethane	%REC	SW8260C	57.1	57.82		98.8	71-129				11/30/2010 1424h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011494-003AMS	Surr: Toluene-d8	% REC	SW8260C	60.3	57.82		104	72-129				11/30/2010 1424h
1011530-005AMS	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	31.1	26.59	0	117	20-144				12/1/2010 1139h
1011530-005AMS	1,1-Dichloroethene	µg/kg-dry	SW8260C	30.3	26.59	0	114	24-174				12/1/2010 1139h
1011530-005AMS	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	27.9	26.59	0	105	10-148				12/1/2010 1139h
1011530-005AMS	1,2-Dichloroethane	µg/kg-dry	SW8260C	26.6	26.59	0	100	54-133				12/1/2010 1139h
1011530-005AMS	1,2-Dichloropropane	µg/kg-dry	SW8260C	26.2	26.59	0	98.5	28-140				12/1/2010 1139h
1011530-005AMS	Benzene	µg/kg-dry	SW8260C	28.7	26.59	0	108	17-138				12/1/2010 1139h
1011530-005AMS	Chlorobenzene	µg/kg-dry	SW8260C	30.1	26.59	0	113	13-150				12/1/2010 1139h
1011530-005AMS	Chloroform	µg/kg-dry	SW8260C	24.4	26.59	0	91.6	21-147				12/1/2010 1139h
1011530-005AMS	Ethylbenzene	µg/kg-dry	SW8260C	29.2	26.59	0	110	10-164				12/1/2010 1139h
1011530-005AMS	Isopropylbenzene	µg/kg-dry	SW8260C	28.3	26.59	0	107	26-146				12/1/2010 1139h
1011530-005AMS	Methyl tert-butyl ether	µg/kg-dry	SW8260C	28.5	26.59	0	107	28-137				12/1/2010 1139h
1011530-005AMS	Methylene chloride	µg/kg-dry	SW8260C	26.8	26.59	0	101	10-217				12/1/2010 1139h
1011530-005AMS	Naphthalene	µg/kg-dry	SW8260C	25.2	26.59	0	94.8	13-156				12/1/2010 1139h
1011530-005AMS	Tetrahydrofuran	µg/kg-dry	SW8260C	15.9	26.59	0	59.7	70-130			1	12/1/2010 1139h
1011530-005AMS	Toluene	µg/kg-dry	SW8260C	28.5	26.59	0	107	23-168				12/1/2010 1139h
1011530-005AMS	Trichloroethene	µg/kg-dry	SW8260C	30.0	26.59	0	113	14-161				12/1/2010 1139h
1011530-005AMS	Xylenes, Total	µg/kg-dry	SW8260C	88.2	79.77	0	111	10-160				12/1/2010 1139h
1011530-005AMS	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	61.7	66.47		92.9	68-147				12/1/2010 1139h
1011530-005AMS	Surr: 4-Bromofluorobenzene	% REC	SW8260C	69.3	66.47		104	71-144				12/1/2010 1139h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011530-005AMS	Surr: Dibromofluoromethane	% REC	SW8260C	66.7	66.47		100	71-129				12/1/2010 1139h
1011530-005AMS	Surr: Toluene-d8	% REC	SW8260C	69.3	66.47		104	72-129				12/1/2010 1139h
1012003-001AMS	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	29.3	27.76	0	106	20-144				12/1/2010 1541h
1012003-001AMS	1,1-Dichloroethene	µg/kg-dry	SW8260C	29.2	27.76	0	105	24-174				12/1/2010 1541h
1012003-001AMS	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	27.7	27.76	0	99.8	10-148				12/1/2010 1541h
1012003-001AMS	1,2-Dichloroethane	µg/kg-dry	SW8260C	26.4	27.76	0	95.0	54-133				12/1/2010 1541h
1012003-001AMS	1,2-Dichloropropane	µg/kg-dry	SW8260C	25.5	27.76	0	92.0	28-140				12/1/2010 1541h
1012003-001AMS	Benzene	µg/kg-dry	SW8260C	27.4	27.76	0	98.6	17-138				12/1/2010 1541h
1012003-001AMS	Chlorobenzene	µg/kg-dry	SW8260C	29.5	27.76	0	106	13-150				12/1/2010 1541h
1012003-001AMS	Chloroform	µg/kg-dry	SW8260C	24.2	27.76	0	87.1	21-147				12/1/2010 1541h
1012003-001AMS	Ethylbenzene	µg/kg-dry	SW8260C	28.2	27.76	0	101	10-164				12/1/2010 1541h
1012003-001AMS	Isopropylbenzene	µg/kg-dry	SW8260C	25.7	27.76	0	92.4	26-146				12/1/2010 1541h
1012003-001AMS	Methyl tert-butyl ether	µg/kg-dry	SW8260C	28.6	27.76	0	103	28-137				12/1/2010 1541h
1012003-001AMS	Methylene chloride	µg/kg-dry	SW8260C	27.7	27.76	0	99.6	10-217				12/1/2010 1541h
1012003-001AMS	Naphthalene	µg/kg-dry	SW8260C	20.3	27.76	0	73.2	13-156				12/1/2010 1541h
1012003-001AMS	Tetrahydrofuran	µg/kg-dry	SW8260C	15.4	27.76	0	55.6	70-130			1	12/1/2010 1541h
1012003-001AMS	Toluene	µg/kg-dry	SW8260C	28.4	27.76	0	102	23-168				12/1/2010 1541h
1012003-001AMS	Trichloroethene	µg/kg-dry	SW8260C	28.5	27.76	0	103	14-161				12/1/2010 1541h
1012003-001AMS	Xylenes, Total	µg/kg-dry	SW8260C	84.6	83.29	0	102	10-160				12/1/2010 1541h
1012003-001AMS	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	64.6	69.41		93.1	68-147				12/1/2010 1541h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1012003-001AMS	Surr: 4-Bromofluorobenzene	% REC	SW8260C	80.5	69.41		116	71-144				12/1/2010 1541h
1012003-001AMS	Surr: Dibromofluoromethane	% REC	SW8260C	70.3	69.41		101	71-129				12/1/2010 1541h
1012003-001AMS	Surr: Toluene-d8	% REC	SW8260C	75.5	69.41		109	72-129				12/1/2010 1541h

<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 DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
101 1494-003AMSD	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	22.7	23.13	0	98.3	20-144	1.49	35		11/30/2010 1446h
101 1494-003AMSD	1,1-Dichloroethene	µg/kg-dry	SW8260C	22.2	23.13	0	96.1	24-174	0.888	35		11/30/2010 1446h
101 1494-003AMSD	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	23.1	23.13	0	99.9	10-148	6.35	35		11/30/2010 1446h
101 1494-003AMSD	1,2-Dichloroethane	µg/kg-dry	SW8260C	19.7	23.13	0	85.3	54-133	1.06	35		11/30/2010 1446h
101 1494-003AMSD	1,2-Dichloropropane	µg/kg-dry	SW8260C	19.8	23.13	0	85.6	28-140	0.351	35		11/30/2010 1446h
101 1494-003AMSD	Benzene	µg/kg-dry	SW8260C	21.5	23.13	0	92.7	17-138	1.14	35		11/30/2010 1446h
101 1494-003AMSD	Chlorobenzene	µg/kg-dry	SW8260C	23.2	23.13	0	100	13-150	2.32	35		11/30/2010 1446h
101 1494-003AMSD	Chloroform	µg/kg-dry	SW8260C	17.7	23.13	0	76.3	21-147	0.525	35		11/30/2010 1446h
101 1494-003AMSD	Ethylbenzene	µg/kg-dry	SW8260C	23.0	23.13	0	99.6	10-164	3.32	35		11/30/2010 1446h
101 1494-003AMSD	Isopropylbenzene	µg/kg-dry	SW8260C	23.3	23.13	0	101	26-146	5.13	35		11/30/2010 1446h
101 1494-003AMSD	Methyl tert-butyl ether	µg/kg-dry	SW8260C	25.0	23.13	0	108	28-137	0.416	35		11/30/2010 1446h
101 1494-003AMSD	Methylene chloride	µg/kg-dry	SW8260C	18.0	23.13	0	77.8	10-217	1.15	35		11/30/2010 1446h
101 1494-003AMSD	Naphthalene	µg/kg-dry	SW8260C	20.7	23.13	0	89.5	13-156	7.89	35		11/30/2010 1446h
101 1494-003AMSD	Tetrahydrofuran	µg/kg-dry	SW8260C	15.4	23.13	0	66.7	70-130	3.17	35	1	11/30/2010 1446h
101 1494-003AMSD	Toluene	µg/kg-dry	SW8260C	21.8	23.13	0	94.4	23-168	1.17	35		11/30/2010 1446h
101 1494-003AMSD	Trichloroethene	µg/kg-dry	SW8260C	22.3	23.13	0	96.3	14-161	0.886	35		11/30/2010 1446h
101 1494-003AMSD	Xylenes, Total	µg/kg-dry	SW8260C	69.7	69.39	0	100	10-160	2.98	35		11/30/2010 1446h
101 1494-003AMSD	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	53.8	57.82		93.1	68-147				11/30/2010 1446h
101 1494-003AMSD	Surr: 4-Bromofluorobenzene	%REC	SW8260C	60.3	57.82		104	71-144				11/30/2010 1446h
101 1494-003AMSD	Surr: Dibromofluoromethane	%REC	SW8260C	57.1	57.82		98.8	71-129				11/30/2010 1446h

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# AMERICAN WEST ANALYTICAL LABORATORIES

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011494-003AMSD	Surr: Toluene-d8	% REC	SW8260C	60.7	57.82		105	72-129				11/30/2010 1446h
1011530-005AMSD	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	32.9	26.59	0	124	20-144	5.65	35		12/1/2010 1201h
1011530-005AMSD	1,1-Dichloroethene	µg/kg-dry	SW8260C	31.1	26.59	0	117	24-174	2.64	35		12/1/2010 1201h
1011530-005AMSD	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	31.7	26.59	0	119	10-148	13.0	35		12/1/2010 1201h
1011530-005AMSD	1,2-Dichloroethane	µg/kg-dry	SW8260C	26.7	26.59	0	100	54-133	0.399	35		12/1/2010 1201h
1011530-005AMSD	1,2-Dichloropropane	µg/kg-dry	SW8260C	27.3	26.59	0	103	28-140	4.27	35		12/1/2010 1201h
1011530-005AMSD	Benzene	µg/kg-dry	SW8260C	30.4	26.59	0	114	17-138	5.63	35		12/1/2010 1201h
1011530-005AMSD	Chlorobenzene	µg/kg-dry	SW8260C	32.9	26.59	0	124	13-150	9.03	35		12/1/2010 1201h
1011530-005AMSD	Chloroform	µg/kg-dry	SW8260C	24.7	26.59	0	93.0	21-147	1.46	35		12/1/2010 1201h
1011530-005AMSD	Ethylbenzene	µg/kg-dry	SW8260C	32.2	26.59	0	121	10-164	9.92	35		12/1/2010 1201h
1011530-005AMSD	Isopropylbenzene	µg/kg-dry	SW8260C	31.5	26.59	0	118	26-146	10.5	35		12/1/2010 1201h
1011530-005AMSD	Methyl tert-butyl ether	µg/kg-dry	SW8260C	29.0	26.59	0	109	28-137	1.71	35		12/1/2010 1201h
1011530-005AMSD	Methylene chloride	µg/kg-dry	SW8260C	29.2	26.59	0	110	10-217	8.53	35		12/1/2010 1201h
1011530-005AMSD	Naphthalene	µg/kg-dry	SW8260C	26.3	26.59	0	98.9	13-156	4.29	35		12/1/2010 1201h
1011530-005AMSD	Tetrahydrofuran	µg/kg-dry	SW8260C	15.0	26.59	0	56.4	70-130	5.60	35	1	12/1/2010 1201h
1011530-005AMSD	Toluene	µg/kg-dry	SW8260C	31.4	26.59	0	118	23-168	9.76	35		12/1/2010 1201h
1011530-005AMSD	Trichloroethene	µg/kg-dry	SW8260C	31.6	26.59	0	119	14-161	5.18	35		12/1/2010 1201h
1011530-005AMSD	Xylenes, Total	µg/kg-dry	SW8260C	97.4	79.77	0	122	10-160	9.89	35		12/1/2010 1201h
1011530-005AMSD	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	59.4	66.47		89.4	68-147				12/1/2010 1201h
1011530-005AMSD	Surr: 4-Bromofluorobenzene	% REC	SW8260C	73.1	66.47		110	71-144				12/1/2010 1201h

Report Date: 12/6/2010 Page 114 of 122



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1011530-005AMSD	Surr: Dibromofluoromethane	% REC	SW8260C	64.4	66.47		96.9	71-129				12/1/2010 1201h
1011530-005AMSD	Surr: Toluene-d8	% REC	SW8260C	70.9	66.47		107	72-129				12/1/2010 1201h
1012003-001AMSD	1,1,1-Trichloroethane	µg/kg-dry	SW8260C	26.0	28.04	0	92.6	20-144	12.1	35		12/1/2010 1603h
1012003-001AMSD	1,1-Dichloroethene	µg/kg-dry	SW8260C	26.6	28.04	0	94.9	24-174	9.34	35		12/1/2010 1603h
1012003-001AMSD	1,2-Dichlorobenzene	µg/kg-dry	SW8260C	18.8	28.04	0	67.2	10-148	38.1	35	@	12/1/2010 1603h
1012003-001AMSD	1,2-Dichloroethane	µg/kg-dry	SW8260C	23.9	28.04	0	85.2	54-133	9.87	35		12/1/2010 1603h
1012003-001AMSD	1,2-Dichloropropane	µg/kg-dry	SW8260C	22.8	28.04	0	81.4	28-140	11.2	35		12/1/2010 1603h
1012003-001AMSD	Benzene	µg/kg-dry	SW8260C	24.2	28.04	0	86.4	17-138	12.1	35		12/1/2010 1603h
1012003-001AMSD	Chlorobenzene	µg/kg-dry	SW8260C	24.0	28.04	0	85.8	13-150	20.5	35		12/1/2010 1603h
1012003-001AMSD	Chloroform	µg/kg-dry	SW8260C	22.0	28.04	0	78.6	21-147	9.26	35		12/1/2010 1603h
1012003-001AMSD	Ethylbenzene	µg/kg-dry	SW8260C	22.3	28.04	0	79.6	10-164	23.2	35		12/1/2010 1603h
1012003-001AMSD	Isopropylbenzene	µg/kg-dry	SW8260C	19.8	28.04	0	70.6	26-146	25.9	35		12/1/2010 1603h
1012003-001AMSD	Methyl tert-butyl ether	µg/kg-dry	SW8260C	25.8	28.04	0	92.1	28-137	10.1	35		12/1/2010 1603h
1012003-001AMSD	Methylene chloride	µg/kg-dry	SW8260C	25.6	28.04	0	91.2	10-217	7.80	35		12/1/2010 1603h
1012003-001AMSD	Naphthalene	µg/kg-dry	SW8260C	13.2	28.04	0	47.2	13-156	42.3	35	@	12/1/2010 1603h
1012003-001AMSD	Tetrahydrofuran	µg/kg-dry	SW8260C	13.3	28.04	0	47.6	70-130	14.6	35	1	12/1/2010 1603h
1012003-001AMSD	Toluene	µg/kg-dry	SW8260C	24.0	28.04	0	85.5	23-168	16.8	35		12/1/2010 1603h
1012003-001AMSD	Trichloroethene	µg/kg-dry	SW8260C	24.5	28.04	0	87.2	14-161	15.4	35		12/1/2010 1603h
1012003-001AMSD	Xylenes, Total	µg/kg-dry	SW8260C	66.9	84.13	0	79.5	10-160	23.4	35		12/1/2010 1603h
1012003-001AMSD	Surr: 1,2-Dichloroethane-d4	% REC	SW8260C	65.0	70.11		92.7	68-147				12/1/2010 1603h

Report Date: 12/6/2010 Page 115 of 122



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Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1011530

**Project:** Red Butte

**Dept:** MSVOA

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Analysis Date
1012003-001AMSD	Surr: 4-Bromofluorobenzene	% REC	SW8260C	74.5	70.11		106	71-144				12/1/2010 1603h
1012003-001AMSD	Surr: Dibromofluoromethane	% REC	SW8260C	70.7	70.11		101	71-129				12/1/2010 1603h
1012003-001AMSD	Surr: Toluene-d8	% REC	SW8260C	75.7	70.11		108	72-129				12/1/2010 1603h

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

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

Tentatively Identified Compound (LSC) summary

Data Path : M:\SVOAB\Raw Instrument Data 5973-B\DECEMBER10\02DECEMBER10\  
 Data File : D58 1011530-001B.D  
 Acq On : 2 Dec 2010 11:27 am  
 Operator : ROBERT A MILLAR  
 Sample : 1011530-001B  
 Misc : SAMP  
 ALS Vial : 7 Sample Multiplier: 1

Quant Method : M:\SVOAB\METHODS\QUANT-ORIGINAL-PERFECTFULLSV-X2\_11-22-10.M  
 Quant Title : Semi-Volatile Compounds HP-GCMS 5973-B

TIC Library : C:\DATABASE\NIST02.L  
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--		
					#	RT	Resp Conc
2-Pentanone, 4-hy...	3.14	275.5 ug/l		11751400	1	4.47	1706500 40.0
Heptacosane	12.36	4.4 ug/l		181983	5	11.61	1645590 40.0
Tetratriacontane	13.42	13.6 ug/l		273332	6	13.77	806024 40.0
Tetratriacontane	14.58	11.7 ug/l		235879	6	13.77	806024 40.0

Tentatively Identified Compound (LSC) summary

Data Path : M:\SVOAB\Raw Instrument Data 5973-B\DECEMBER10\02DECEMBER10\  
 Data File : D61 1011530-002B.D  
 Acq On : 2 Dec 2010 1:00 pm  
 Operator : ROBERT A MILLAR  
 Sample : 1011530-002B  
 Misc : SAMP  
 ALS Vial : 10 Sample Multiplier: 1

Quant Method : M:\SVOAB\METHODS\QUANT-ORIGINAL-PERFECTFULLSV-X2\_11-22-10.M  
 Quant Title : Semi-Volatile Compounds HP-GCMS 5973-B

TIC Library : C:\DATABASE\NIST02.L  
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp Conc	
Azetidine, 1-nitr...	2.75	8.7 ug/l		330884	1	4.47	1521110	40.0
2-Pentanone, 4-hy...	3.14	212.2 ug/l		8070420	1	4.47	1521110	40.0
Phenol, 4-[(2-nit...	13.27	11.2 ug/l		178214	6	13.76	634733	40.0
Tetratriacontane	13.42	10.9 ug/l		172572	6	13.76	634733	40.0
28-Nor-17.alpha.(...	14.68	11.4 ug/l		180758	6	13.76	634733	40.0
1-Penten-3-one, 1...	15.19	9.1 ug/l		144880	6	13.76	634733	40.0
2,4,5,5,8a-Pentam...	15.80	6.1 ug/l		97409	6	13.76	634733	40.0

Tentatively Identified Compound (LSC) summary

Data Path : M:\SVOAB\Raw Instrument Data 5973-B\DECEMBER10\02DECEMBER10\  
 Data File : D62 1011530-003B.D  
 Acq On : 2 Dec 2010 1:27 pm  
 Operator : ROBERT A MILLAR  
 Sample : 1011530-003B  
 Misc : SAMP  
 ALS Vial : 11 Sample Multiplier: 1

Quant Method : M:\SVOAB\METHODS\QUANT-ORIGINAL-PERFECTFULLSV-X2\_11-22-10.M  
 Quant Title : Semi-Volatile Compounds HP-GCMS 5973-B

TIC Library : C:\DATABASE\NIST02.L  
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp Conc	
3-Hexen-2-one	2.79	5.6 ug/l		201736	1	4.47	1453290	40.0
2-Pentanone, 4-hy...	3.15	464.6 ug/l		16878700	1	4.47	1453290	40.0
Phytol	10.09	7.9 ug/l		379708	4	8.83	1919150	40.0
Heptadecane, 9-oc...	12.36	7.1 ug/l		362017	5	11.60	2041190	40.0
2,6,10,14,18,22-T...	12.99	15.5 ug/l		365674	6	13.75	945488	40.0
Nonacosane	13.42	41.9 ug/l		989319	6	13.75	945488	40.0
Eicosane	14.58	30.2 ug/l		714023	6	13.75	945488	40.0
.beta.-Sitosterol	16.30	38.5 ug/l		910335	6	13.75	945488	40.0

Tentatively Identified Compound (LSC) summary

Data Path : M:\SVOAB\Raw Instrument Data 5973-B\DECEMBER10\02DECEMBER10\  
 Data File : D63 1011530-004B.D  
 Acq On : 2 Dec 2010 1:55 pm  
 Operator : ROBERT A MILLAR  
 Sample : 1011530-004B  
 Misc : SAMP  
 ALS Vial : 12 Sample Multiplier: 1

Quant Method : M:\SVOAB\METHODS\QUANT-ORIGINAL-PERFECTFULLSV-X2\_11-22-10.M  
 Quant Title : Semi-Volatile Compounds HP-GCMS 5973-B

TIC Library : C:\DATABASE\NIST02.L  
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--		
					#	RT	Resp Conc
2-Pentanone, 4-hy...	3.14	311.8 ug/l		12405100	1	4.47 1591530	40.0
9-(2',2'-Dimethyl...	12.37	19.7 ug/l		845136	5	11.61 1713330	40.0
Cyclobutane, 1,2:...	12.48	20.5 ug/l		879442	5	11.61 1713330	40.0
1,3-Benzenedicarb...	12.57	52.1 ug/l		2232380	5	11.61 1713330	40.0



Tentatively Identified Compound (LSC) summary

Data Path : M:\SVOAB\Raw Instrument Data 5973-B\DECEMBER10\02DECEMBER10\  
 Data File : D64 1011530-005B.D  
 Acq On : 2 Dec 2010 2:22 pm  
 Operator : ROBERT A MILLAR  
 Sample : 1011530-005B  
 Misc : SAMP  
 ALS Vial : 13 Sample Multiplier: 1

Quant Method : M:\SVOAB\METHODS\QUANT-ORIGINAL-PERPECTFULLSV-X2\_11-22-10.M  
 Quant Title : Semi-Volatile Compounds HP-GCMS 5973-B

TIC Library : C:\DATABASE\NIST02.L  
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--		
					#	RT	Resp Conc
2-Pentanone, 4-hy...	3.15	441.4 ug/l		17018400	1	4.47	1542330 40.0
Phenol, p-tert-bu...	8.37	35.3 ug/l		1691390	4	8.83	1915000 40.0
Phenol, m-tert-bu...	8.40	25.4 ug/l		1216260	4	8.83	1915000 40.0
9H-Purin-6-amine,...	8.48	23.5 ug/l		1127190	4	8.83	1915000 40.0
Phenol, 2-methyl-...	8.51	28.9 ug/l		1385470	4	8.83	1915000 40.0
Phenol, 4-(1,1,3,...	8.55	26.2 ug/l		1256660	4	8.83	1915000 40.0
5H-PYRROLO(3,2-D)...	8.60	14.2 ug/l		678843	4	8.83	1915000 40.0
Heptadecane	13.42	19.6 ug/l		352333	6	13.75	720728 40.0
.beta.-iso-Methyl...	14.69	11.2 ug/l		202055	6	13.75	720728 40.0
.beta.-iso-Methyl...	15.19	13.5 ug/l		243561	6	13.75	720728 40.0

Tentatively Identified Compound (LSC) summary

Data Path : M:\SVOAB\Raw Instrument Data 5973-B\DECEMBER10\02DECEMBER10\  
 Data File : D65 1011530-006B.D  
 Acq On : 2 Dec 2010 2:50 pm  
 Operator : ROBERT A MILLAR  
 Sample : 1011530-006B  
 Misc : SAMP  
 ALS Vial : 14 Sample Multiplier: 1

Quant Method : M:\SVOAB\METHODS\QUANT-ORIGINAL-PERFECTFULLSV-X2\_11-22-10.M  
 Quant Title : Semi-Volatile Compounds HP-GCMS 5973-B

TIC Library : C:\DATABASE\NIST02.L  
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--		
					#	RT	Resp Conc
Acetaldehyde, dim...	2.74	17.0 ug/l		652336	1	4.48	1532350 40.0
3-Hexen-2-one	2.79	7.7 ug/l		294402	1	4.48	1532350 40.0
2-Pentanone, 4-hy...	3.14	243.5 ug/l		9326820	1	4.48	1532350 40.0
Tetratriacontane	13.42	10.7 ug/l		218367	6	13.75	813501 40.0
28-Nor-17.alpha.(...	14.69	6.5 ug/l		133017	6	13.75	813501 40.0
Anthracene, 9-dod...	15.19	6.7 ug/l		135567	6	13.75	813501 40.0

# American West Analytical Laboratories

## WORK ORDER Summary

Work Order: **1011530**

Client: Utah DEQ DERR

Page 1 of 2

Client ID: UTD100

Contact: Jim Harris

12/6/2010

Project: Red Butte

QC Level: LEVEL II+

WO Type: Standard

Comments: No Hard Copies. QC 2+ / Please run a library search for the semi's. Samples for TOC sent to Paragon Labs, samples for Granular Size sent to IGES.;

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011530-001A	A1	11/30/2010 10:22:00 AM	11/30/2010 3:38:00 PM	12/14/2010	Solid	8260-S	<input checked="" type="checkbox"/>	VOCFridge	1
1011530-001B				12/14/2010		3545A-SVOA-PR	<input type="checkbox"/>	Hall-Semi	
				12/14/2010		8270-S	<input checked="" type="checkbox"/>	Hall-Semi	
				12/14/2010		PMOIST	<input type="checkbox"/>	Hall-Semi	
1011530-001C				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	Paragon	
1011530-001D				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	IGES	
1011530-002A	A2	11/30/2010 11:00:00 AM		12/14/2010		8260-S	<input checked="" type="checkbox"/>	VOCFridge	
1011530-002B				12/14/2010		3545A-SVOA-PR	<input type="checkbox"/>	Hall-Semi	
				12/14/2010		8270-S	<input checked="" type="checkbox"/>	Hall-Semi	
				12/14/2010		PMOIST	<input type="checkbox"/>	Hall-Semi	
1011530-002C				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	Paragon	
1011530-002D				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	IGES	
1011530-003A	B1	11/30/2010 11:20:00 AM		12/14/2010		8260-S	<input checked="" type="checkbox"/>	VOCFridge	
1011530-003B				12/14/2010		3545A-SVOA-PR	<input type="checkbox"/>	Hall-Semi	
				12/14/2010		8270-S	<input checked="" type="checkbox"/>	Hall-Semi	
				12/14/2010		PMOIST	<input type="checkbox"/>	Hall-Semi	
1011530-003C				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	Paragon	
1011530-003D				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	IGES	
1011530-004A	B2	11/30/2010 12:00:00 PM		12/14/2010		8260-S	<input checked="" type="checkbox"/>	VOCFridge	
1011530-004B				12/14/2010		3545A-SVOA-PR	<input type="checkbox"/>	Hall-Semi	
				12/14/2010		8270-S	<input checked="" type="checkbox"/>	Hall-Semi	
				12/14/2010		PMOIST	<input type="checkbox"/>	Hall-Semi	
1011530-004C				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	Paragon	
1011530-004D				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	IGES	
1011530-005A	C1	11/30/2010 12:30:00 PM		12/14/2010		8260-S	<input checked="" type="checkbox"/>	VOCFridge	
1011530-005B				12/14/2010		3545A-SVOA-PR	<input type="checkbox"/>	Hall-Semi	
				12/14/2010		8270-S	<input checked="" type="checkbox"/>	Hall-Semi	
				12/14/2010		PMOIST	<input type="checkbox"/>	Hall-Semi	
1011530-005C				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	Paragon	

## WORK ORDER Summary

Work Order: **1011530**

Client: Utah DEQ DERR

Page 2 of 2

Client ID: UTD100

Contact: Jim Harris

12/6/2010

Project: Red Butte

QC Level: LEVEL II+

WO Type: Standard

Comments: No Hard Copies. QC 2+ / Please run a library search for the semi's. Samples for TOC sent to Paragon Labs, samples for Granular Size sent to IGES.;

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011530-005D	C1	11/30/2010 12:30:00 PM	11/30/2010 3:38:00 PM	12/14/2010	Solid	OUTSIDE LAB	<input type="checkbox"/>	IGES	1
1011530-006A	C2	11/30/2010 1:05:00 PM		12/14/2010		8260-S	<input checked="" type="checkbox"/>	VOCFridge	
1011530-006B				12/14/2010		3545A-SVOA-PR	<input type="checkbox"/>	Hall-Semi	
				12/14/2010		8270-S	<input checked="" type="checkbox"/>	Hall-Semi	
				12/14/2010		PMOIST	<input type="checkbox"/>	Hall-Semi	
1011530-006C				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	Paragon	
1011530-006D				12/14/2010		OUTSIDE LAB	<input type="checkbox"/>	IGES	

