



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 Spill

Dear Jim Harris:

Lab Set ID: 1012071

463 West 3600 South  
Salt Lake City, UT  
84115

American West Analytical Laboratories received 4 sample(s) on 12/3/2010 for the analyses presented in the following report.

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

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross  
Laboratory Director

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

Jose Rocha  
QA Officer

Thank You,

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



# INORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h

**Contact:** Jim Harris

463 West 3600 South  
Salt Lake City, UT  
84115

Analytical Results	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chemical Oxygen Demand	mg/L		12/3/2010 1530h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/3/2010 1702h	E1664A-SGT	3.00	< 3.00	

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Laboratory Director

Jose Rocha  
QA Officer



# INORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h

**Contact:** Jim Harris

463 West 3600 South  
Salt Lake City, UT  
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Analytical Results	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chemical Oxygen Demand	mg/L		12/3/2010 1530h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/3/2010 1702h	E1664A-SGT	3.00	< 3.00	

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QA Officer



# INORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h

**Contact:** Jim Harris

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Salt Lake City, UT  
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Analytical Results	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chemical Oxygen Demand	mg/L		12/3/2010 1530h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/3/2010 1702h	E1664A-SGT	3.00	< 3.00	

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QA Officer



## ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001C  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8015D

**Contact:** Jim Harris

**Analyzed:** 12/6/2010 0739h

**Extracted:** 12/5/2010 1108h

### Analytical Results

TPH-ORO by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

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<b>Compound</b>	<b>CAS Number</b>	<b>Reporting Limit</b>	<b>Analytical Result</b>	<b>Qual</b>
Oil Range Organics (ORO) (C28-C36)		0.0625	< 0.0625	
Surr: C36		10-200	<b>132</b>	

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QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002C  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8015D

**Contact:** Jim Harris

**Analyzed:** 12/6/2010 0757h

**Extracted:** 12/5/2010 1108h

## Analytical Results

TPH-ORO by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

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Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	127	

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QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003C  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8015D

**Contact:** Jim Harris

**Analyzed:** 12/6/2010 0852h

**Extracted:** 12/5/2010 1108h

## Analytical Results

TPH-ORO by GC/FID Method 8015D/3510C

**Units:** mg/L

**Dilution Factor:** 1

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Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	128	

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## ORGANIC ANALYTICAL REPORT

AMERICAN  
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**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001B  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8015D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 0104h

**Extracted:** 12/3/2010 1614h

### Analytical Results

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

**Units:** mg/L

**Dilution Factor:** 1

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<b>Compound</b>	<b>CAS Number</b>	<b>Reporting Limit</b>	<b>Analytical Result</b>	<b>Qual</b>
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>75.5</b>	

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# ORGANIC ANALYTICAL REPORT

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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002B  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8015D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 0125h

**Extracted:** 12/3/2010 1614h

## Analytical Results

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

**Units:** mg/L

**Dilution Factor:** 1

463 West 3600 South  
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Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>76.0</b>	

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QA Officer



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003B  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8015D

**Contact:** Jim Harris

**Analyzed:** 12/4/2010 0229h

**Extracted:** 12/3/2010 1614h

## Analytical Results

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

**Units:** mg/L

**Dilution Factor:** 1

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84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	<b>82.0</b>	

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001E  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1525h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA Fractionation by GC/MS Method 8270D/3510C

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Acenaphthene	83-32-9	11.1	< 11.1	
	Acenaphthylene	208-96-8	11.1	< 11.1	
	Anthracene	120-12-7	11.1	< 11.1	
	Benz(a)anthracene	56-55-3	11.1	< 11.1	
(801) 263-8686	Benzo(a)pyrene	50-32-8	11.1	< 11.1	
Toll Free (888) 263-8686	Benzo(b)fluoranthene	205-99-2	11.1	< 11.1	
Fax (801)263-8687	Benzo(g,h,i)perylene	191-24-2	11.1	< 11.1	
email: awal@awal-labs.com	Benzo(k)fluoranthene	207-08-9	11.1	< 11.1	
	Chrysene	218-01-9	11.1	< 11.1	
Kyle F. Gross	Dibenz(a,h)anthracene	53-70-3	11.1	< 11.1	
Laboratory Director	Fluoranthene	206-44-0	11.1	< 11.1	
	Fluorene	86-73-7	11.1	< 11.1	
Jose Rocha	Indeno(1,2,3-cd)pyrene	193-39-5	11.1	< 11.1	
QA Officer	Phenanthrene	85-01-8	11.1	< 11.1	
	Pyrene	129-00-0	11.1	< 11.1	
	C11-C12 Aliphatic hydrocarbons		11.1	< 11.1	
	C13-C16 Aliphatic hydrocarbons		11.1	< 11.1	
	C17-C21 Aliphatic hydrocarbons		11.1	< 11.1	
	C22-C35 Aliphatic hydrocarbons		11.1	< 11.1	
	C11-C13 Alkyl Naphthalenes		11.1	< 11.1	
	Total C12-C22 PAH**		11.1	< 11.1	
	Surr: Terphenyl-d14	1718-51-0	10-199	<b>92.5</b>	

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



# ORGANIC ANALYTICAL REPORT

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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002E  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1552h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA Fractionation by GC/MS Method 8270D/3510C

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Acenaphthene	83-32-9	10.0	< 10.0	
	Acenaphthylene	208-96-8	10.0	< 10.0	
	Anthracene	120-12-7	10.0	< 10.0	
	Benz(a)anthracene	56-55-3	10.0	< 10.0	
(801) 263-8686	Benzo(a)pyrene	50-32-8	10.0	< 10.0	
Toll Free (888) 263-8686	Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Fax (801)263-8687	Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	
email: awal@awal-labs.com	Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
	Chrysene	218-01-9	10.0	< 10.0	
Kyle F. Gross	Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Laboratory Director	Fluoranthene	206-44-0	10.0	< 10.0	
	Fluorene	86-73-7	10.0	< 10.0	
	Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
Jose Rocha	Phenanthrene	85-01-8	10.0	< 10.0	
QA Officer	Pyrene	129-00-0	10.0	< 10.0	
	C11-C12 Aliphatic hydrocarbons		10.0	< 10.0	
	C13-C16 Aliphatic hydrocarbons		10.0	< 10.0	
	C17-C21 Aliphatic hydrocarbons		10.0	< 10.0	
	C22-C35 Aliphatic hydrocarbons		10.0	< 10.0	
	C11-C13 Alkyl Naphthalenes		10.0	< 10.0	
	Total C12-C22 PAH**		10.0	< 10.0	
	Surr: Terphenyl-d14	1718-51-0	10-199	<b>89.9</b>	

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



# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003E  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** SW8270D

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1714h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA Fractionation by GC/MS Method 8270D/3510C

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Acenaphthene	83-32-9	10.0	< 10.0	
	Acenaphthylene	208-96-8	10.0	< 10.0	
	Anthracene	120-12-7	10.0	< 10.0	
	Benz(a)anthracene	56-55-3	10.0	< 10.0	
(801) 263-8686	Benzo(a)pyrene	50-32-8	10.0	< 10.0	
Toll Free (888) 263-8686	Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Fax (801)263-8687	Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	
email: awal@awal-labs.com	Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
	Chrysene	218-01-9	10.0	< 10.0	
Kyle F. Gross	Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Laboratory Director	Fluoranthene	206-44-0	10.0	< 10.0	
	Fluorene	86-73-7	10.0	< 10.0	
Jose Rocha	Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
QA Officer	Phenanthrene	85-01-8	10.0	< 10.0	
	Pyrene	129-00-0	10.0	< 10.0	
	C11-C12 Aliphatic hydrocarbons		10.0	< 10.0	
	C13-C16 Aliphatic hydrocarbons		10.0	< 10.0	
	C17-C21 Aliphatic hydrocarbons		10.0	< 10.0	
	C22-C35 Aliphatic hydrocarbons		10.0	< 10.0	
	C11-C13 Alkyl Naphthalenes		10.0	< 10.0	
	Total C12-C22 PAH**		10.0	< 10.0	
	Surr: Terphenyl-d14	1718-51-0	10-199	<b>81.7</b>	

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



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001E  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1525h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

**Compound**

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

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Laboratory Director

Jose Rocha  
QA Officer

1,1'-Biphenyl	92-52-4	11.1	< 11.1	
1,2,4,5-Tetrachlorobenzene	95-94-3	11.1	< 11.1	
1,2,4-Trichlorobenzene	120-82-1	11.1	< 11.1	
1,2-Dichlorobenzene	95-50-1	11.1	< 11.1	
1,3,5-Trinitrobenzene	99-35-4	11.1	< 11.1	
1,4-Naphthoquinone	130-15-4	11.1	< 11.1	
1,3-Dichlorobenzene	541-73-1	11.1	< 11.1	
1,3-Dinitrobenzene	99-65-0	11.1	< 11.1	
1,4-Dichlorobenzene	106-46-7	11.1	< 11.1	
1,4-Phenylenediamine	106-50-3	11.1	< 11.1	
1-Chloronaphthalene	90-13-1	11.1	< 11.1	
1-Methylnaphthalene	90-12-0	11.1	< 11.1	
1-Naphthylamine	134-32-7	11.1	< 11.1	
2,3,4,6-Tetrachlorophenol	58-90-2	11.1	< 11.1	
2,4,5-Trichlorophenol	95-95-4	11.1	< 11.1	
2,4,6-Trichlorophenol	88-06-2	11.1	< 11.1	
2,4-Dichlorophenol	120-83-2	11.1	< 11.1	
2,4-Dimethylphenol	105-67-9	11.1	< 11.1	
2,4-Dinitrophenol	51-28-5	22.2	< 22.2	
2,4-Dinitrotoluene	121-14-2	11.1	< 11.1	
2,6-Dichlorophenol	87-65-0	11.1	< 11.1	
2,6-Dinitrotoluene	606-20-2	11.1	< 11.1	
2-Acetylaminofluorene	53-96-3	11.1	< 11.1	
2-Chloronaphthalene	91-58-7	11.1	< 11.1	
2-Chlorophenol	95-57-8	11.1	< 11.1	
2-Methylnaphthalene	91-57-6	11.1	< 11.1	
2-Methylphenol	95-48-7	11.1	< 11.1	
2-Naphthylamine	91-59-8	11.1	< 11.1	
2-Nitroaniline	88-74-4	11.1	< 11.1	

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
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LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001E  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1525h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

**Compound**

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitrophenol	88-75-5	11.1	< 11.1	
	2-Picoline	109-06-8	11.1	< 11.1	
	3&4-Methylphenol		11.1	< 11.1	
	3,3'-Dichlorobenzidine	91-94-1	11.1	< 11.1	
(801) 263-8686	3,3'-Dimethylbenzidine	119-93-7	11.1	< 11.1	
Toll Free (888) 263-8686	3-Methylcholanthrene	56-49-5	11.1	< 11.1	
Fax (801)263-8687	3-Nitroaniline	99-09-2	11.1	< 11.1	
email: awal@awal-labs.com	4,6-Dinitro-2-methylphenol	534-52-1	11.1	< 11.1	
	4-Aminobiphenyl	92-67-1	11.1	< 11.1	
Kyle F. Gross	4-Bromophenyl phenyl ether	101-55-3	11.1	< 11.1	
Laboratory Director	4-Chloro-3-methylphenol	59-50-7	11.1	< 11.1	
	4-Chloroaniline	106-47-8	11.1	< 11.1	
Jose Rocha	4-Chlorophenyl phenyl ether	7005-72-3	11.1	< 11.1	
QA Officer	4-Nitroaniline	100-01-6	11.1	< 11.1	
	4-Nitrophenol	100-02-7	11.1	< 11.1	
	5-Nitro-o-toluidine	99-55-8	11.1	< 11.1	
	7,12-Dimethylbenz(a)anthracene	57-97-6	11.1	< 11.1	
	a,a-Dimethylphenethylamine	122-09-8	11.1	< 11.1	
	Acenaphthene	83-32-9	11.1	< 11.1	
	Acenaphthylene	208-96-8	11.1	< 11.1	
	Acetophenone	98-86-2	11.1	< 11.1	
	alpha-Terpineol	98-55-5	11.1	< 11.1	
	Aniline	62-53-3	11.1	< 11.1	
	Anthracene	120-12-7	11.1	< 11.1	
	Aramite	140-57-8	11.1	< 11.1	
	Azobenzene	103-33-3	11.1	< 11.1	
	Benz(a)anthracene	56-55-3	11.1	< 11.1	
	Benzidine	92-87-5	11.1	< 11.1	
	Benzo(a)pyrene	50-32-8	11.1	< 11.1	

Report Date: 12/6/2010 Page 15 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001E  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1525h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzo(b)fluoranthene	205-99-2	11.1	< 11.1	
Benzo(g,h,i)perylene	191-24-2	11.1	< 11.1	
Benzo(k)fluoranthene	207-08-9	11.1	< 11.1	
Benzoic acid	65-85-0	22.2	< 22.2	
(801) 263-8686 Benzyl alcohol	100-51-6	11.1	< 11.1	
Toll Free (888) 263-8686 Bis(2-chloroethoxy)methane	111-91-1	11.1	< 11.1	
Fax (801)263-8687 Bis(2-chloroethyl) ether	111-44-4	11.1	< 11.1	
email: awal@awal-labs.com Bis(2-chloroisopropyl) ether	108-60-1	11.1	< 11.1	
Bis(2-ethylhexyl) phthalate	117-81-7	11.1	< 11.1	
Kyle F. Gross Laboratory Director bis(2-ethylhexyl)adipate	103-23-1	11.1	< 11.1	
Butyl benzyl phthalate	85-68-7	11.1	< 11.1	
Carbazole	86-74-8	11.1	< 11.1	
Chlorobenzilate	510-15-6	11.1	< 11.1	
Jose Rocha QA Officer Chrysene	218-01-9	11.1	< 11.1	
Di-n-butyl phthalate	84-74-2	11.1	< 11.1	
Di-n-octyl phthalate	117-84-0	11.1	< 11.1	
Diallate (cis or trans)	2303-16-4	11.1	< 11.1	
Dibenz(a,h)anthracene	53-70-3	11.1	< 11.1	
Dibenzofuran	132-64-9	11.1	< 11.1	
Diethyl phthalate	84-66-2	11.1	< 11.1	
Dimethoate	60-51-5	11.1	< 11.1	
Dimethyl phthalate	131-11-3	11.1	< 11.1	
Dimethylaminoazobenzene	60-11-7	11.1	< 11.1	
Dinoseb	88-85-7	11.1	< 11.1	
Diphenylamine	122-39-4	11.1	< 11.1	
Disulfoton	298-04-4	11.1	< 11.1	
Ethyl methanesulfonate	62-50-0	11.1	< 11.1	
Famphur	52-85-7	11.1	< 11.1	
Fluoranthene	206-44-0	11.1	< 11.1	





## ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001E  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1525h

**Extracted:** 12/3/2010 1523h

### Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**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	Fluorene	86-73-7	11.1	< 11.1	
	Hexachlorobenzene	118-74-1	11.1	< 11.1	
	Hexachlorobutadiene	87-68-3	11.1	< 11.1	
	Hexachlorocyclopentadiene	77-47-4	11.1	< 11.1	
(801) 263-8686	Hexachloroethane	67-72-1	11.1	< 11.1	
Toll Free (888) 263-8686	Hexachlorophene	70-30-4	11.1	< 11.1	
Fax (801)263-8687	Hexachloropropene	1888-71-7	11.1	< 11.1	
email: awal@awal-labs.com	Indene	95-13-6	11.1	< 11.1	
	Indeno(1,2,3-cd)pyrene	193-39-5	11.1	< 11.1	
Kyle F. Gross	Isodrin	465-73-6	11.1	< 11.1	
Laboratory Director	Isophorone	78-59-1	11.1	< 11.1	
	Isosafrole	120-58-1	11.1	< 11.1	
Jose Rocha	Kepone	143-50-0	11.1	< 11.1	
QA Officer	Methapyrilene	91-80-5	11.1	< 11.1	
	Methyl methanesulfonate	66-27-3	11.1	< 11.1	
	n-Decane	124-18-5	11.1	< 11.1	
	N-Nitrosodi-n-butylamine	924-16-3	11.1	< 11.1	
	N-Nitrosodiethylamine	55-18-5	11.1	< 11.1	
	N-Nitrosodimethylamine	62-75-9	11.1	< 11.1	
	N-Nitrosodiphenylamine	86-30-6	11.1	< 11.1	
	N-Nitrosodi-n-propylamine	621-64-7	11.1	< 11.1	
	N-Nitrosomethylethylamine	10595-95-6	11.1	< 11.1	
	N-Nitrosomorpholine	59-89-2	11.1	< 11.1	
	N-Nitrosopiperidine	100-75-4	11.1	< 11.1	
	N-Nitrosopyrrolidine	930-55-2	11.1	< 11.1	
	n-Octadecane	593-45-3	11.1	< 11.1	
	Naphthalene	91-20-3	11.1	< 11.1	
	Nitrobenzene	98-95-3	11.1	< 11.1	
	Nitroquinoline-1-oxide	56-57-5	11.1	< 11.1	

Report Date: 12/6/2010 Page 17 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001E  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1525h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

**Compound**

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	O,O,O-Triethyl phosphorothioate	126-68-1	11.1	< 11.1	
	o-Toluidine	95-53-4	11.1	< 11.1	
	Parathion	56-38-2	11.1	< 11.1	
	Methyl parathion	298-00-0	11.1	< 11.1	
(801) 263-8686	Pentachlorobenzene	608-93-5	11.1	< 11.1	
Toll Free (888) 263-8686	Pentachloronitrobenzene	82-68-8	11.1	< 11.1	
Fax (801)263-8687	Pentachlorophenol	87-86-5	11.1	< 11.1	
email: awal@awal-labs.com	Phenacetin	62-44-2	11.1	< 11.1	
	Phenanthrene	85-01-8	11.1	< 11.1	
Kyle F. Gross	Phenol	108-95-2	11.1	< 11.1	
Laboratory Director	Phorate	298-02-2	11.1	< 11.1	
	Pronamide	23950-58-5	11.1	< 11.1	
Jose Rocha	Pyrene	129-00-0	11.1	< 11.1	
QA Officer	Pyridine	110-86-1	11.1	< 11.1	
	Quinoline	91-22-5	11.1	< 11.1	
	Safrole	94-59-7	11.1	< 11.1	
	Tetraethyl dithiopyrophosphate	3689-24-5	11.1	< 11.1	
	Thionazin	297-97-2	11.1	< 11.1	
	Surr: 2,4,6-Tribromophenol	118-79-6	10-159	<b>59.7</b>	
	Surr: 2-Fluorobiphenyl	321-60-8	10-124	<b>50.6</b>	
	Surr: 2-Fluorophenol	367-12-4	14-106	<b>25.8</b>	
	Surr: Nitrobenzene-d5	4165-60-0	10-180	<b>37.6</b>	
	Surr: Phenol-d6	13127-88-3	10-122	<b>22.2</b>	
	Surr: Terphenyl-d14	1718-51-0	10-199	<b>92.5</b>	

*The sample was analyzed for TICs and no unknown peaks were detected.*



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002E  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1552h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**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

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,1'-Biphenyl	92-52-4	10.0	< 10.0	
1,2,4,5-Tetrachlorobenzene	95-94-3	10.0	< 10.0	
1,2,4-Trichlorobenzene	120-82-1	10.0	< 10.0	
1,2-Dichlorobenzene	95-50-1	10.0	< 10.0	
1,3,5-Trinitrobenzene	99-35-4	10.0	< 10.0	1
1,4-Naphthoquinone	130-15-4	10.0	< 10.0	
1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
1,3-Dinitrobenzene	99-65-0	10.0	< 10.0	
1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
1,4-Phenylenediamine	106-50-3	10.0	< 10.0	
1-Chloronaphthalene	90-13-1	10.0	< 10.0	
1-Methylnaphthalene	90-12-0	10.0	< 10.0	
1-Naphthylamine	134-32-7	10.0	< 10.0	
2,3,4,6-Tetrachlorophenol	58-90-2	10.0	< 10.0	
2,4,5-Trichlorophenol	95-95-4	10.0	< 10.0	
2,4,6-Trichlorophenol	88-06-2	10.0	< 10.0	
2,4-Dichlorophenol	120-83-2	10.0	< 10.0	
2,4-Dimethylphenol	105-67-9	10.0	< 10.0	
2,4-Dinitrophenol	51-28-5	20.0	< 20.0	
2,4-Dinitrotoluene	121-14-2	10.0	< 10.0	
2,6-Dichlorophenol	87-65-0	10.0	< 10.0	
2,6-Dinitrotoluene	606-20-2	10.0	< 10.0	
2-Acetylaminofluorene	53-96-3	10.0	< 10.0	1
2-Chloronaphthalene	91-58-7	10.0	< 10.0	
2-Chlorophenol	95-57-8	10.0	< 10.0	
2-Methylnaphthalene	91-57-6	10.0	< 10.0	
2-Methylphenol	95-48-7	10.0	< 10.0	
2-Naphthylamine	91-59-8	10.0	< 10.0	
2-Nitroaniline	88-74-4	10.0	< 10.0	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002E  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1552h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	2-Nitrophenol	88-75-5	10.0	< 10.0	
	2-Picoline	109-06-8	10.0	< 10.0	
	3&4-Methylphenol		10.0	< 10.0	
	3,3'-Dichlorobenzidine	91-94-1	10.0	< 10.0	
(801) 263-8686	3,3'-Dimethylbenzidine	119-93-7	10.0	< 10.0	
Toll Free (888) 263-8686	3-Methylcholanthrene	56-49-5	10.0	< 10.0	
Fax (801)263-8687	3-Nitroaniline	99-09-2	10.0	< 10.0	
email: awal@awal-labs.com	4,6-Dinitro-2-methylphenol	534-52-1	10.0	< 10.0	
	4-Aminobiphenyl	92-67-1	10.0	< 10.0	
Kyle F. Gross	4-Bromophenyl phenyl ether	101-55-3	10.0	< 10.0	
Laboratory Director	4-Chloro-3-methylphenol	59-50-7	10.0	< 10.0	
	4-Chloroaniline	106-47-8	10.0	< 10.0	
Jose Rocha	4-Chlorophenyl phenyl ether	7005-72-3	10.0	< 10.0	
QA Officer	4-Nitroaniline	100-01-6	10.0	< 10.0	
	4-Nitrophenol	100-02-7	10.0	< 10.0	
	5-Nitro-o-toluidine	99-55-8	10.0	< 10.0	
	7,12-Dimethylbenz(a)anthracene	57-97-6	10.0	< 10.0	
	a,a-Dimethylphenethylamine	122-09-8	10.0	< 10.0	
	Acenaphthene	83-32-9	10.0	< 10.0	
	Acenaphthylene	208-96-8	10.0	< 10.0	
	Acetophenone	98-86-2	10.0	< 10.0	
	alpha-Terpineol	98-55-5	10.0	< 10.0	
	Aniline	62-53-3	10.0	< 10.0	
	Anthracene	120-12-7	10.0	< 10.0	
	Aramite	140-57-8	10.0	< 10.0	
	Azobenzene	103-33-3	10.0	< 10.0	
	Benz(a)anthracene	56-55-3	10.0	< 10.0	
	Benzidine	92-87-5	10.0	< 10.0	
	Benzo(a)pyrene	50-32-8	10.0	< 10.0	

Report Date: 12/6/2010 Page 20 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002E  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1552h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	
Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
Benzoic acid	65-85-0	20.0	< 20.0	
(801) 263-8686 Benzyl alcohol	100-51-6	10.0	< 10.0	
Toll Free (888) 263-8686 Bis(2-chloroethoxy)methane	111-91-1	10.0	< 10.0	
Fax (801)263-8687 Bis(2-chloroethyl) ether	111-44-4	10.0	< 10.0	
email: awal@awal-labs.com Bis(2-chloroisopropyl) ether	108-60-1	10.0	< 10.0	
Bis(2-ethylhexyl) phthalate	117-81-7	10.0	<b>12.8</b>	1
Kyle F. Gross Laboratory Director bis(2-ethylhexyl)adipate	103-23-1	10.0	< 10.0	
Butyl benzyl phthalate	85-68-7	10.0	< 10.0	
Carbazole	86-74-8	10.0	< 10.0	
Chlorobenzilate	510-15-6	10.0	< 10.0	
Jose Rocha QA Officer Chrysene	218-01-9	10.0	< 10.0	
Di-n-butyl phthalate	84-74-2	10.0	< 10.0	
Di-n-octyl phthalate	117-84-0	10.0	< 10.0	
Diallate (cis or trans)	2303-16-4	10.0	< 10.0	
Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Dibenzofuran	132-64-9	10.0	< 10.0	
Diethyl phthalate	84-66-2	10.0	< 10.0	
Dimethoate	60-51-5	10.0	< 10.0	
Dimethyl phthalate	131-11-3	10.0	< 10.0	
Dimethylaminoazobenzene	60-11-7	10.0	< 10.0	
Dinoseb	88-85-7	10.0	< 10.0	
Diphenylamine	122-39-4	10.0	< 10.0	
Disulfoton	298-04-4	10.0	< 10.0	
Ethyl methanesulfonate	62-50-0	10.0	< 10.0	
Famphur	52-85-7	10.0	< 10.0	1
Fluoranthene	206-44-0	10.0	< 10.0	

Report Date: 12/6/2010 Page 21 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002E  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1552h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**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

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Fluorene	86-73-7	10.0	< 10.0	
Hexachlorobenzene	118-74-1	10.0	< 10.0	
Hexachlorobutadiene	87-68-3	10.0	< 10.0	
Hexachlorocyclopentadiene	77-47-4	10.0	< 10.0	
(801) 263-8686 Hexachloroethane	67-72-1	10.0	< 10.0	
Toll Free (888) 263-8686 Hexachlorophene	70-30-4	10.0	< 10.0	
Fax (801)263-8687 Hexachloropropene	1888-71-7	10.0	< 10.0	
email: awal@awal-labs.com Indene	95-13-6	10.0	< 10.0	1
Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
Isodrin	465-73-6	10.0	< 10.0	
Isophorone	78-59-1	10.0	< 10.0	
Isosafrole	120-58-1	10.0	< 10.0	
Kepone	143-50-0	10.0	< 10.0	1
Methapyrilene	91-80-5	10.0	< 10.0	
Methyl methanesulfonate	66-27-3	10.0	< 10.0	
n-Decane	124-18-5	10.0	< 10.0	
N-Nitrosodi-n-butylamine	924-16-3	10.0	< 10.0	
N-Nitrosodiethylamine	55-18-5	10.0	< 10.0	
N-Nitrosodimethylamine	62-75-9	10.0	< 10.0	
N-Nitrosodiphenylamine	86-30-6	10.0	< 10.0	
N-Nitrosodi-n-propylamine	621-64-7	10.0	< 10.0	
N-Nitrosomethylethylamine	10595-95-6	10.0	< 10.0	
N-Nitrosomorpholine	59-89-2	10.0	< 10.0	
N-Nitrosopiperidine	100-75-4	10.0	< 10.0	
N-Nitrosopyrrolidine	930-55-2	10.0	< 10.0	
n-Octadecane	593-45-3	10.0	< 10.0	
Naphthalene	91-20-3	10.0	< 10.0	
Nitrobenzene	98-95-3	10.0	< 10.0	
Nitroquinoline-1-oxide	56-57-5	10.0	< 10.0	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002E  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1552h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**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

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
O,O,O-Triethyl phosphorothioate	126-68-1	10.0	< 10.0	
o-Toluidine	95-53-4	10.0	< 10.0	<sup>1</sup>
Parathion	56-38-2	10.0	< 10.0	
Methyl parathion	298-00-0	10.0	< 10.0	
Pentachlorobenzene	608-93-5	10.0	< 10.0	
Pentachloronitrobenzene	82-68-8	10.0	< 10.0	
Pentachlorophenol	87-86-5	10.0	< 10.0	
Phenacetin	62-44-2	10.0	< 10.0	
Phenanthrene	85-01-8	10.0	< 10.0	
Phenol	108-95-2	10.0	< 10.0	
Phorate	298-02-2	10.0	< 10.0	
Pronamide	23950-58-5	10.0	< 10.0	
Pyrene	129-00-0	10.0	< 10.0	
Pyridine	110-86-1	10.0	< 10.0	
Quinoline	91-22-5	10.0	< 10.0	<sup>1</sup>
Safrole	94-59-7	10.0	< 10.0	
Tetraethyl dithiopyrophosphate	3689-24-5	10.0	< 10.0	
Thionazin	297-97-2	10.0	< 10.0	
Surr: 2,4,6-Tribromophenol	118-79-6	10-159	<b>65.4</b>	
Surr: 2-Fluorobiphenyl	321-60-8	10-124	<b>51.8</b>	
Surr: 2-Fluorophenol	367-12-4	14-106	<b>31.5</b>	
Surr: Nitrobenzene-d5	4165-60-0	10-180	<b>37.1</b>	
Surr: Phenol-d6	13127-88-3	10-122	<b>23.6</b>	
Surr: Terphenyl-d14	1718-51-0	10-199	<b>89.9</b>	

<sup>1</sup> - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.  
The sample was analyzed for TICs and no unknown peaks were detected.



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003E  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1714h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**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	10.0	< 10.0	
1,2,4,5-Tetrachlorobenzene	95-94-3	10.0	< 10.0	
1,2,4-Trichlorobenzene	120-82-1	10.0	< 10.0	
1,2-Dichlorobenzene	95-50-1	10.0	< 10.0	
1,3,5-Trinitrobenzene	99-35-4	10.0	< 10.0	
1,4-Naphthoquinone	130-15-4	10.0	< 10.0	
1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
1,3-Dinitrobenzene	99-65-0	10.0	< 10.0	
1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
1,4-Phenylenediamine	106-50-3	10.0	< 10.0	
1-Chloronaphthalene	90-13-1	10.0	< 10.0	
1-Methylnaphthalene	90-12-0	10.0	< 10.0	
1-Naphthylamine	134-32-7	10.0	< 10.0	
2,3,4,6-Tetrachlorophenol	58-90-2	10.0	< 10.0	
2,4,5-Trichlorophenol	95-95-4	10.0	< 10.0	
2,4,6-Trichlorophenol	88-06-2	10.0	< 10.0	
2,4-Dichlorophenol	120-83-2	10.0	< 10.0	
2,4-Dimethylphenol	105-67-9	10.0	< 10.0	
2,4-Dinitrophenol	51-28-5	20.0	< 20.0	
2,4-Dinitrotoluene	121-14-2	10.0	< 10.0	
2,6-Dichlorophenol	87-65-0	10.0	< 10.0	
2,6-Dinitrotoluene	606-20-2	10.0	< 10.0	
2-Acetylaminofluorene	53-96-3	10.0	< 10.0	
2-Chloronaphthalene	91-58-7	10.0	< 10.0	
2-Chlorophenol	95-57-8	10.0	< 10.0	
2-Methylnaphthalene	91-57-6	10.0	< 10.0	
2-Methylphenol	95-48-7	10.0	< 10.0	
2-Naphthylamine	91-59-8	10.0	< 10.0	
2-Nitroaniline	88-74-4	10.0	< 10.0	

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003E  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1714h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 2-Nitrophenol	88-75-5	10.0	< 10.0	
2-Picoline	109-06-8	10.0	< 10.0	
3&4-Methylphenol		10.0	< 10.0	
3,3'-Dichlorobenzidine	91-94-1	10.0	< 10.0	
(801) 263-8686 3,3'-Dimethylbenzidine	119-93-7	10.0	< 10.0	
Toll Free (888) 263-8686 3-Methylcholanthrene	56-49-5	10.0	< 10.0	
Fax (801)263-8687 3-Nitroaniline	99-09-2	10.0	< 10.0	
email: awal@awal-labs.com 4,6-Dinitro-2-methylphenol	534-52-1	10.0	< 10.0	
4-Aminobiphenyl	92-67-1	10.0	< 10.0	
Kyle F. Gross 4-Bromophenyl phenyl ether	101-55-3	10.0	< 10.0	
Laboratory Director 4-Chloro-3-methylphenol	59-50-7	10.0	< 10.0	
4-Chloroaniline	106-47-8	10.0	< 10.0	
4-Chlorophenyl phenyl ether	7005-72-3	10.0	< 10.0	
Jose Rocha 4-Nitroaniline	100-01-6	10.0	< 10.0	
QA Officer 4-Nitrophenol	100-02-7	10.0	< 10.0	
5-Nitro-o-toluidine	99-55-8	10.0	< 10.0	
7,12-Dimethylbenz(a)anthracene	57-97-6	10.0	< 10.0	
a,a-Dimethylphenethylamine	122-09-8	10.0	< 10.0	
Acenaphthene	83-32-9	10.0	< 10.0	
Acenaphthylene	208-96-8	10.0	< 10.0	
Acetophenone	98-86-2	10.0	< 10.0	
alpha-Terpineol	98-55-5	10.0	< 10.0	
Aniline	62-53-3	10.0	< 10.0	
Anthracene	120-12-7	10.0	< 10.0	
Aramite	140-57-8	10.0	< 10.0	
Azobenzene	103-33-3	10.0	< 10.0	
Benz(a)anthracene	56-55-3	10.0	< 10.0	
Benzidine	92-87-5	10.0	< 10.0	
Benzo(a)pyrene	50-32-8	10.0	< 10.0	

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003E  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1714h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**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

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	
Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
Benzoic acid	65-85-0	20.0	< 20.0	
(801) 263-8686 Benzyl alcohol	100-51-6	10.0	< 10.0	
Toll Free (888) 263-8686 Bis(2-chloroethoxy)methane	111-91-1	10.0	< 10.0	
Fax (801)263-8687 Bis(2-chloroethyl) ether	111-44-4	10.0	< 10.0	
email: awal@awal-labs.com Bis(2-chloroisopropyl) ether	108-60-1	10.0	< 10.0	
Bis(2-ethylhexyl) phthalate	117-81-7	10.0	< 10.0	
Kyle F. Gross bis(2-ethylhexyl)adipate	103-23-1	10.0	< 10.0	
Laboratory Director Butyl benzyl phthalate	85-68-7	10.0	< 10.0	
Carbazole	86-74-8	10.0	< 10.0	
Chlorobenzilate	510-15-6	10.0	< 10.0	
Jose Rocha Chrysene	218-01-9	10.0	< 10.0	
QA Officer Di-n-butyl phthalate	84-74-2	10.0	< 10.0	
Di-n-octyl phthalate	117-84-0	10.0	< 10.0	
Diallate (cis or trans)	2303-16-4	10.0	< 10.0	
Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Dibenzofuran	132-64-9	10.0	< 10.0	
Diethyl phthalate	84-66-2	10.0	< 10.0	
Dimethoate	60-51-5	10.0	< 10.0	
Dimethyl phthalate	131-11-3	10.0	< 10.0	
Dimethylaminoazobenzene	60-11-7	10.0	< 10.0	
Dinoseb	88-85-7	10.0	< 10.0	
Diphenylamine	122-39-4	10.0	< 10.0	
Disulfoton	298-04-4	10.0	< 10.0	
Ethyl methanesulfonate	62-50-0	10.0	< 10.0	
Famphur	52-85-7	10.0	< 10.0	
Fluoranthene	206-44-0	10.0	< 10.0	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003E  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1714h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

**Compound**

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Fluorene	86-73-7	10.0	< 10.0	
	Hexachlorobenzene	118-74-1	10.0	< 10.0	
	Hexachlorobutadiene	87-68-3	10.0	< 10.0	
	Hexachlorocyclopentadiene	77-47-4	10.0	< 10.0	
(801) 263-8686	Hexachloroethane	67-72-1	10.0	< 10.0	
Toll Free (888) 263-8686	Hexachlorophene	70-30-4	10.0	< 10.0	
Fax (801)263-8687	Hexachloropropene	1888-71-7	10.0	< 10.0	
email: awal@awal-labs.com	Indene	95-13-6	10.0	< 10.0	
	Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
Kyle F. Gross	Isodrin	465-73-6	10.0	< 10.0	
Laboratory Director	Isophorone	78-59-1	10.0	< 10.0	
	Isosafrole	120-58-1	10.0	< 10.0	
Jose Rocha	Kepone	143-50-0	10.0	< 10.0	
QA Officer	Methapyrilene	91-80-5	10.0	< 10.0	
	Methyl methanesulfonate	66-27-3	10.0	< 10.0	
	n-Decane	124-18-5	10.0	< 10.0	
	N-Nitrosodi-n-butylamine	924-16-3	10.0	< 10.0	
	N-Nitrosodiethylamine	55-18-5	10.0	< 10.0	
	N-Nitrosodimethylamine	62-75-9	10.0	< 10.0	
	N-Nitrosodiphenylamine	86-30-6	10.0	< 10.0	
	N-Nitrosodi-n-propylamine	621-64-7	10.0	< 10.0	
	N-Nitrosomethylethylamine	10595-95-6	10.0	< 10.0	
	N-Nitrosomorpholine	59-89-2	10.0	< 10.0	
	N-Nitrosopiperidine	100-75-4	10.0	< 10.0	
	N-Nitrosopyrrolidine	930-55-2	10.0	< 10.0	
	n-Octadecane	593-45-3	10.0	< 10.0	
	Naphthalene	91-20-3	10.0	< 10.0	
	Nitrobenzene	98-95-3	10.0	< 10.0	
	Nitroquinoline-1-oxide	56-57-5	10.0	< 10.0	

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003E  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA625

**Contact:** Jim Harris

**Analyzed:** 12/5/2010 1714h

**Extracted:** 12/3/2010 1523h

## Analytical Results

SVOA by GC/MS Method 625/3510

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	O,O,O-Triethyl phosphorothioate	126-68-1	10.0	< 10.0	
	o-Toluidine	95-53-4	10.0	< 10.0	
	Parathion	56-38-2	10.0	< 10.0	
	Methyl parathion	298-00-0	10.0	< 10.0	
(801) 263-8686	Pentachlorobenzene	608-93-5	10.0	< 10.0	
Toll Free (888) 263-8686	Pentachloronitrobenzene	82-68-8	10.0	< 10.0	
Fax (801)263-8687	Pentachlorophenol	87-86-5	10.0	< 10.0	
email: awal@awal-labs.com	Phenacetin	62-44-2	10.0	< 10.0	
	Phenanthrene	85-01-8	10.0	< 10.0	
Kyle F. Gross	Phenol	108-95-2	10.0	< 10.0	
Laboratory Director	Phorate	298-02-2	10.0	< 10.0	
	Pronamide	23950-58-5	10.0	< 10.0	
Jose Rocha	Pyrene	129-00-0	10.0	< 10.0	
QA Officer	Pyridine	110-86-1	10.0	< 10.0	
	Quinoline	91-22-5	10.0	< 10.0	
	Safrole	94-59-7	10.0	< 10.0	
	Tetraethyl dithiopyrophosphate	3689-24-5	10.0	< 10.0	
	Thionazin	297-97-2	10.0	< 10.0	
	Surr: 2,4,6-Tribromophenol	118-79-6	10-159	<b>68.2</b>	
	Surr: 2-Fluorobiphenyl	321-60-8	10-124	<b>60.1</b>	
	Surr: 2-Fluorophenol	367-12-4	14-106	<b>37.4</b>	
	Surr: Nitrobenzene-d5	4165-60-0	10-180	<b>46.5</b>	
	Surr: Phenol-d6	13127-88-3	10-122	<b>19.3</b>	
	Surr: Terphenyl-d14	1718-51-0	10-199	<b>81.7</b>	

*The sample was analyzed for TICs and no unknown peaks were detected.*



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001D  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 1955h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.00	< 2.00	
	1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
	1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.00	< 2.00	
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.00	< 2.00	
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.00	< 2.00	
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.00	< 2.00	
	1,2,3-Trichlorobenzene	87-61-6	2.00	< 2.00	
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.00	< 2.00	
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.00	< 2.00	
	1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.00	< 2.00	
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	2.00	< 2.00	
	1,2-Dibromoethane	106-93-4	2.00	< 2.00	
	1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
	1,2-Dichloroethane	107-06-2	2.00	< 2.00	
	1,2-Dichloropropane	78-87-5	2.00	< 2.00	
	1,3,5-Trimethylbenzene	108-67-8	2.00	< 2.00	
	1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
	1,3-Dichloropropane	142-28-9	2.00	< 2.00	
	1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
	1,4-Dioxane	123-91-1	40.0	< 40.0	
	2,2-Dichloropropane	594-20-7	2.00	< 2.00	
	2-Butanone	78-93-3	10.0	< 10.0	
	2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	1
	2-Chlorotoluene	95-49-8	2.00	< 2.00	
	2-Hexanone	591-78-6	5.00	< 5.00	
	2-Nitropropane	79-46-9	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001D  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 1955h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 4-Chlorotoluene	106-43-4	2.00	< 2.00	
4-Isopropyltoluene	99-87-6	2.00	< 2.00	
4-Methyl-2-pentanone	108-10-1	5.00	< 5.00	
Acetone	67-64-1	10.0	< 10.0	
(801) 263-8686 Acetonitrile	75-05-8	5.00	< 5.00	
Toll Free (888) 263-8686 Acrolein	107-02-8	5.00	< 5.00	
Fax (801)263-8687 Acrylonitrile	107-13-1	10.0	< 10.0	
email: awal@awal-labs.com Allyl chloride	107-05-1	5.00	< 5.00	
Benzene	71-43-2	2.00	< 2.00	
Kyle F. Gross Benzyl chloride	100-44-7	5.00	< 5.00	
Laboratory Director Bis(2-chloroisopropyl) ether	108-60-1	5.00	< 5.00	
Bromobenzene	108-86-1	2.00	< 2.00	
Jose Rocha Bromochloromethane	74-97-5	2.00	< 2.00	
QA Officer Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	
Butyl acetate	123-86-4	5.00	< 5.00	
Carbon disulfide	75-15-0	2.00	< 2.00	
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	5.00	< 5.00	
Chloroprene	126-99-8	2.00	< 2.00	
cis-1,2-Dichloroethene	156-59-2	2.00	< 2.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
Cyclohexane	110-82-7	2.00	< 2.00	
Cyclohexanone	108-94-1	50.0	< 50.0	
Dibromochloromethane	124-48-1	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001D  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 1955h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**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  
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Kyle F. Gross  
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Jose Rocha  
QA Officer

84115	Dibromomethane	74-95-3	2.00	< 2.00	
	Dichlorodifluoromethane	75-71-8	2.00	< 2.00	
	Ethyl acetate	141-78-6	10.0	< 10.0	
	Ethyl ether	60-29-7	10.0	< 10.0	
	Ethyl methacrylate	97-63-2	2.00	< 2.00	1
	Ethylbenzene	100-41-4	2.00	< 2.00	
	Hexachlorobutadiene	87-68-3	2.00	< 2.00	
	Iodomethane	74-88-4	5.00	< 5.00	
	Isobutyl alcohol	78-83-1	100	< 100	
	Isopropyl acetate	108-21-4	2.00	< 2.00	
	Isopropyl alcohol	67-63-0	25.0	< 25.0	
	Isopropylbenzene	98-82-8	2.00	< 2.00	
	Isopropyltoluene	99-87-6	2.00	< 2.00	
	m,p-Xylene	179601-23-1	2.00	< 2.00	
	Methacrylonitrile	126-98-7	5.00	< 5.00	1
	Methyl Acetate	79-20-9	5.00	< 5.00	
	Methyl methacrylate	80-62-6	5.00	< 5.00	
	Methyl tert-butyl ether	1634-04-4	2.00	< 2.00	
	Methylcyclohexane	108-87-2	2.00	< 2.00	
	Methylene chloride	75-09-2	2.00	< 2.00	
	n-Amyl acetate	628-63-7	2.00	< 2.00	
	n-Butyl alcohol	71-36-3	25.0	< 25.0	
	n-Butylbenzene	104-51-8	2.00	< 2.00	
	n-Hexane	110-54-3	2.00	< 2.00	
	n-Octane	111-65-9	2.00	< 2.00	
	n-Propylbenzene	103-65-1	2.00	< 2.00	
	Naphthalene	91-20-3	2.00	< 2.00	
	o-Xylene	95-47-6	2.00	< 2.00	
	Pentachloroethane	76-01-7	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-001D  
**Client Sample ID:** 4992095 Red Butte AB Gardens  
**Collection Date:** 12/3/2010 0935h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 1955h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Propionitrile	107-12-0	25.0	< 25.0	
	Propyl acetate	109-60-4	2.00	< 2.00	
	sec-Butylbenzene	135-98-8	2.00	< 2.00	
	Styrene	100-42-5	2.00	< 2.00	
(801) 263-8686	tert-Butyl alcohol	76-65-0	20.0	< 20.0	
Toll Free (888) 263-8686	tert-Butylbenzene	98-06-6	2.00	< 2.00	
Fax (801)263-8687	Tetrachloroethene	127-18-4	2.00	< 2.00	
email: awal@awal-labs.com	Tetrahydrofuran	109-99-9	2.00	< 2.00	
	Toluene	108-88-3	2.00	< 2.00	
Kyle F. Gross	trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
Laboratory Director	trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
	trans-1,4-Dichloro-2-butene	110-57-6	2.00	< 2.00	
	Trichloroethene	79-01-6	2.00	< 2.00	
Jose Rocha	Trichlorofluoromethane	75-69-4	2.00	< 2.00	
QA Officer	Vinyl acetate	108-05-4	5.00	< 5.00	
	Vinyl chloride	75-01-4	1.00	< 1.00	
	Xylenes, Total	1330-20-7	2.00	< 2.00	
	TPH C11-C15 (DRO)		20.0	< 20.0	
	TPH C6-C10 (GRO)		20.0	< 20.0	
	Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>113</b>	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>105</b>	
	Surr: Dibromofluoromethane	1868-53-7	80-124	<b>104</b>	
	Surr: Toluene-d8	2037-26-5	80-125	<b>95.4</b>	

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





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002D  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2052h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.00	< 2.00	
	1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
	1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.00	< 2.00	
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.00	< 2.00	
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.00	< 2.00	
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.00	< 2.00	
	1,2,3-Trichlorobenzene	87-61-6	2.00	< 2.00	
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.00	< 2.00	
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.00	< 2.00	
	1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.00	< 2.00	
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	2.00	< 2.00	
	1,2-Dibromoethane	106-93-4	2.00	< 2.00	
	1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
	1,2-Dichloroethane	107-06-2	2.00	< 2.00	
	1,2-Dichloropropane	78-87-5	2.00	< 2.00	
	1,3,5-Trimethylbenzene	108-67-8	2.00	< 2.00	
	1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
	1,3-Dichloropropane	142-28-9	2.00	< 2.00	
	1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
	1,4-Dioxane	123-91-1	40.0	< 40.0	
	2,2-Dichloropropane	594-20-7	2.00	< 2.00	
	2-Butanone	78-93-3	10.0	< 10.0	
	2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	
	2-Chlorotoluene	95-49-8	2.00	< 2.00	
	2-Hexanone	591-78-6	5.00	< 5.00	
	2-Nitropropane	79-46-9	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002D  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2052h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 4-Chlorotoluene	106-43-4	2.00	< 2.00	
4-Isopropyltoluene	99-87-6	2.00	< 2.00	
4-Methyl-2-pentanone	108-10-1	5.00	< 5.00	
Acetone	67-64-1	10.0	< 10.0	
(801) 263-8686 Acetonitrile	75-05-8	5.00	< 5.00	
Toll Free (888) 263-8686 Acrolein	107-02-8	5.00	< 5.00	
Fax (801)263-8687 Acrylonitrile	107-13-1	10.0	< 10.0	
email: awal@awal-labs.com Allyl chloride	107-05-1	5.00	< 5.00	
Benzene	71-43-2	2.00	< 2.00	
Kyle F. Gross Benzyl chloride	100-44-7	5.00	< 5.00	
Laboratory Director Bis(2-chloroisopropyl) ether	108-60-1	5.00	< 5.00	
Bromobenzene	108-86-1	2.00	< 2.00	
Jose Rocha Bromochloromethane	74-97-5	2.00	< 2.00	
QA Officer Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	
Butyl acetate	123-86-4	5.00	< 5.00	
Carbon disulfide	75-15-0	2.00	< 2.00	
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	5.00	< 5.00	
Chloroprene	126-99-8	2.00	< 2.00	
cis-1,2-Dichloroethene	156-59-2	2.00	< 2.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
Cyclohexane	110-82-7	2.00	< 2.00	
Cyclohexanone	108-94-1	50.0	< 50.0	
Dibromochloromethane	124-48-1	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002D  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2052h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**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	Dibromomethane	74-95-3	2.00	< 2.00	
	Dichlorodifluoromethane	75-71-8	2.00	< 2.00	
	Ethyl acetate	141-78-6	10.0	< 10.0	
	Ethyl ether	60-29-7	10.0	< 10.0	
(801) 263-8686	Ethyl methacrylate	97-63-2	2.00	< 2.00	
Toll Free (888) 263-8686	Ethylbenzene	100-41-4	2.00	< 2.00	
Fax (801)263-8687	Hexachlorobutadiene	87-68-3	2.00	< 2.00	
email: awal@awal-labs.com	Iodomethane	74-88-4	5.00	< 5.00	
	Isobutyl alcohol	78-83-1	100	< 100	
Kyle F. Gross	Isopropyl acetate	108-21-4	2.00	< 2.00	
Laboratory Director	Isopropyl alcohol	67-63-0	25.0	< 25.0	
	Isopropylbenzene	98-82-8	2.00	< 2.00	
	Isopropyltoluene	99-87-6	2.00	< 2.00	
Jose Rocha	m,p-Xylene	179601-23-1	2.00	< 2.00	
QA Officer	Methacrylonitrile	126-98-7	5.00	< 5.00	
	Methyl Acetate	79-20-9	5.00	< 5.00	
	Methyl methacrylate	80-62-6	5.00	< 5.00	
	Methyl tert-butyl ether	1634-04-4	2.00	< 2.00	
	Methylcyclohexane	108-87-2	2.00	< 2.00	
	Methylene chloride	75-09-2	2.00	< 2.00	
	n-Amyl acetate	628-63-7	2.00	< 2.00	
	n-Butyl alcohol	71-36-3	25.0	< 25.0	
	n-Butylbenzene	104-51-8	2.00	< 2.00	
	n-Hexane	110-54-3	2.00	< 2.00	
	n-Octane	111-65-9	2.00	< 2.00	
	n-Propylbenzene	103-65-1	2.00	< 2.00	
	Naphthalene	91-20-3	2.00	< 2.00	
	o-Xylene	95-47-6	2.00	< 2.00	
	Pentachloroethane	76-01-7	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-002D  
**Client Sample ID:** Red Butte NR Greenhouse  
**Collection Date:** 12/3/2010 0900h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2052h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Propionitrile	107-12-0	25.0	< 25.0	
	Propyl acetate	109-60-4	2.00	< 2.00	
	sec-Butylbenzene	135-98-8	2.00	< 2.00	
	Styrene	100-42-5	2.00	< 2.00	
(801) 263-8686	tert-Butyl alcohol	76-65-0	20.0	< 20.0	
Toll Free (888) 263-8686	tert-Butylbenzene	98-06-6	2.00	< 2.00	
Fax (801)263-8687	Tetrachloroethene	127-18-4	2.00	< 2.00	
email: awal@awal-labs.com	Tetrahydrofuran	109-99-9	2.00	< 2.00	
	Toluene	108-88-3	2.00	< 2.00	
Kyle F. Gross	trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
Laboratory Director	trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
	trans-1,4-Dichloro-2-butene	110-57-6	2.00	< 2.00	
	Trichloroethene	79-01-6	2.00	< 2.00	
Jose Rocha	Trichlorofluoromethane	75-69-4	2.00	< 2.00	
QA Officer	Vinyl acetate	108-05-4	5.00	< 5.00	
	Vinyl chloride	75-01-4	1.00	< 1.00	
	Xylenes, Total	1330-20-7	2.00	< 2.00	
	TPH C11-C15 (DRO)		20.0	< 20.0	
	TPH C6-C10 (GRO)		20.0	< 20.0	
	Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>114</b>	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>104</b>	
	Surr: Dibromofluoromethane	1868-53-7	80-124	<b>104</b>	
	Surr: Toluene-d8	2037-26-5	80-125	<b>98.3</b>	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003D  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2111h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.00	< 2.00	
	1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
	1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.00	< 2.00	
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.00	< 2.00	
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.00	< 2.00	
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.00	< 2.00	
	1,2,3-Trichlorobenzene	87-61-6	2.00	< 2.00	
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.00	< 2.00	
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.00	< 2.00	
	1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.00	< 2.00	
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	2.00	< 2.00	
	1,2-Dibromoethane	106-93-4	2.00	< 2.00	
	1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
	1,2-Dichloroethane	107-06-2	2.00	< 2.00	
	1,2-Dichloropropane	78-87-5	2.00	< 2.00	
	1,3,5-Trimethylbenzene	108-67-8	2.00	< 2.00	
	1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
	1,3-Dichloropropane	142-28-9	2.00	< 2.00	
	1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
	1,4-Dioxane	123-91-1	40.0	< 40.0	
	2,2-Dichloropropane	594-20-7	2.00	< 2.00	
	2-Butanone	78-93-3	10.0	< 10.0	
	2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	
	2-Chlorotoluene	95-49-8	2.00	< 2.00	
	2-Hexanone	591-78-6	5.00	< 5.00	
	2-Nitropropane	79-46-9	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003D  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2111h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 4-Chlorotoluene	106-43-4	2.00	< 2.00	
4-Isopropyltoluene	99-87-6	2.00	< 2.00	
4-Methyl-2-pentanone	108-10-1	5.00	< 5.00	
Acetone	67-64-1	10.0	< 10.0	
(801) 263-8686 Acetonitrile	75-05-8	5.00	< 5.00	
Toll Free (888) 263-8686 Acrolein	107-02-8	5.00	< 5.00	
Fax (801)263-8687 Acrylonitrile	107-13-1	10.0	< 10.0	
email: awal@awal-labs.com Allyl chloride	107-05-1	5.00	< 5.00	
Benzene	71-43-2	2.00	< 2.00	
Kyle F. Gross Benzyl chloride	100-44-7	5.00	< 5.00	
Laboratory Director Bis(2-chloroisopropyl) ether	108-60-1	5.00	< 5.00	
Bromobenzene	108-86-1	2.00	< 2.00	
Jose Rocha Bromochloromethane	74-97-5	2.00	< 2.00	
QA Officer Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	
Butyl acetate	123-86-4	5.00	< 5.00	
Carbon disulfide	75-15-0	2.00	< 2.00	
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	5.00	< 5.00	
Chloroprene	126-99-8	2.00	< 2.00	
cis-1,2-Dichloroethene	156-59-2	2.00	< 2.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
Cyclohexane	110-82-7	2.00	< 2.00	
Cyclohexanone	108-94-1	50.0	< 50.0	
Dibromochloromethane	124-48-1	2.00	< 2.00	

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# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003D  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2111h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**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	Dibromomethane	74-95-3	2.00	< 2.00	
	Dichlorodifluoromethane	75-71-8	2.00	< 2.00	
	Ethyl acetate	141-78-6	10.0	< 10.0	
	Ethyl ether	60-29-7	10.0	< 10.0	
(801) 263-8686	Ethyl methacrylate	97-63-2	2.00	< 2.00	
Toll Free (888) 263-8686	Ethylbenzene	100-41-4	2.00	< 2.00	
Fax (801)263-8687	Hexachlorobutadiene	87-68-3	2.00	< 2.00	
email: awal@awal-labs.com	Iodomethane	74-88-4	5.00	< 5.00	
	Isobutyl alcohol	78-83-1	100	< 100	
Kyle F. Gross	Isopropyl acetate	108-21-4	2.00	< 2.00	
Laboratory Director	Isopropyl alcohol	67-63-0	25.0	< 25.0	
	Isopropylbenzene	98-82-8	2.00	< 2.00	
	Isopropyltoluene	99-87-6	2.00	< 2.00	
Jose Rocha	m,p-Xylene	179601-23-1	2.00	< 2.00	
QA Officer	Methacrylonitrile	126-98-7	5.00	< 5.00	
	Methyl Acetate	79-20-9	5.00	< 5.00	
	Methyl methacrylate	80-62-6	5.00	< 5.00	
	Methyl tert-butyl ether	1634-04-4	2.00	< 2.00	
	Methylcyclohexane	108-87-2	2.00	< 2.00	
	Methylene chloride	75-09-2	2.00	< 2.00	
	n-Amyl acetate	628-63-7	2.00	< 2.00	
	n-Butyl alcohol	71-36-3	25.0	< 25.0	
	n-Butylbenzene	104-51-8	2.00	< 2.00	
	n-Hexane	110-54-3	2.00	< 2.00	
	n-Octane	111-65-9	2.00	< 2.00	
	n-Propylbenzene	103-65-1	2.00	< 2.00	
	Naphthalene	91-20-3	2.00	< 2.00	
	o-Xylene	95-47-6	2.00	< 2.00	
	Pentachloroethane	76-01-7	2.00	< 2.00	

Report Date: 12/6/2010 Page 39 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-003D  
**Client Sample ID:** 4992083 Red Butte @ 1100  
**Collection Date:** 12/3/2010 1050h  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2111h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Propionitrile	107-12-0	25.0	< 25.0	
	Propyl acetate	109-60-4	2.00	< 2.00	
	sec-Butylbenzene	135-98-8	2.00	< 2.00	
	Styrene	100-42-5	2.00	< 2.00	
(801) 263-8686	tert-Butyl alcohol	76-65-0	20.0	< 20.0	
Toll Free (888) 263-8686	tert-Butylbenzene	98-06-6	2.00	< 2.00	
Fax (801)263-8687	Tetrachloroethene	127-18-4	2.00	< 2.00	
email: awal@awal-labs.com	Tetrahydrofuran	109-99-9	2.00	< 2.00	
	Toluene	108-88-3	2.00	< 2.00	
Kyle F. Gross	trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
Laboratory Director	trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
	trans-1,4-Dichloro-2-butene	110-57-6	2.00	< 2.00	
	Trichloroethene	79-01-6	2.00	< 2.00	
Jose Rocha	Trichlorofluoromethane	75-69-4	2.00	< 2.00	
QA Officer	Vinyl acetate	108-05-4	5.00	< 5.00	
	Vinyl chloride	75-01-4	1.00	< 1.00	
	Xylenes, Total	1330-20-7	2.00	< 2.00	
	TPH C11-C15 (DRO)		20.0	< 20.0	
	TPH C6-C10 (GRO)		20.0	< 20.0	
	Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>112</b>	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>104</b>	
	Surr: Dibromofluoromethane	1868-53-7	80-124	<b>104</b>	
	Surr: Toluene-d8	2037-26-5	80-125	<b>96.7</b>	





# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-004A  
**Client Sample ID:** Trip Blank  
**Collection Date:** 12/3/2010  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2130h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	1,1,1,2-Tetrachloroethane	630-20-6	2.00	< 2.00	
	1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
	1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.00	< 2.00	
(801) 263-8686	1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
Toll Free (888) 263-8686	1,1-Dichloropropene	563-58-6	2.00	< 2.00	
Fax (801)263-8687	1,1-Dichloroethane	75-34-3	2.00	< 2.00	
email: awal@awal-labs.com	1,1-Dichloroethene	75-35-4	2.00	< 2.00	
	1,2,3-Trichlorobenzene	87-61-6	2.00	< 2.00	
Kyle F. Gross	1,2,3-Trichloropropane	96-18-4	2.00	< 2.00	
Laboratory Director	1,2,3-Trimethylbenzene	526-73-8	2.00	< 2.00	
	1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
Jose Rocha	1,2,4-Trimethylbenzene	95-63-6	2.00	< 2.00	
QA Officer	1,2-Dibromo-3-chloropropane	96-12-8	2.00	< 2.00	
	1,2-Dibromoethane	106-93-4	2.00	< 2.00	
	1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
	1,2-Dichloroethane	107-06-2	2.00	< 2.00	
	1,2-Dichloropropane	78-87-5	2.00	< 2.00	
	1,3,5-Trimethylbenzene	108-67-8	2.00	< 2.00	
	1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
	1,3-Dichloropropane	142-28-9	2.00	< 2.00	
	1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
	1,4-Dioxane	123-91-1	40.0	< 40.0	
	2,2-Dichloropropane	594-20-7	2.00	< 2.00	
	2-Butanone	78-93-3	10.0	< 10.0	
	2-Chloroethyl vinyl ether	110-75-8	5.00	< 5.00	
	2-Chlorotoluene	95-49-8	2.00	< 2.00	
	2-Hexanone	591-78-6	5.00	< 5.00	
	2-Nitropropane	79-46-9	2.00	< 2.00	

Report Date: 12/6/2010 Page 41 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-004A  
**Client Sample ID:** Trip Blank  
**Collection Date:** 12/3/2010  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2130h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	4-Chlorotoluene	106-43-4	2.00	< 2.00	
	4-Isopropyltoluene	99-87-6	2.00	< 2.00	
	4-Methyl-2-pentanone	108-10-1	5.00	< 5.00	
	Acetone	67-64-1	10.0	< 10.0	
(801) 263-8686	Acetonitrile	75-05-8	5.00	< 5.00	
Toll Free (888) 263-8686	Acrolein	107-02-8	5.00	< 5.00	
Fax (801)263-8687	Acrylonitrile	107-13-1	10.0	< 10.0	
email: awal@awal-labs.com	Allyl chloride	107-05-1	5.00	< 5.00	
	Benzene	71-43-2	2.00	< 2.00	
Kyle F. Gross	Benzyl chloride	100-44-7	5.00	< 5.00	
Laboratory Director	Bis(2-chloroisopropyl) ether	108-60-1	5.00	< 5.00	
	Bromobenzene	108-86-1	2.00	< 2.00	
Jose Rocha	Bromochloromethane	74-97-5	2.00	< 2.00	
QA Officer	Bromodichloromethane	75-27-4	2.00	< 2.00	
	Bromoform	75-25-2	2.00	< 2.00	
	Bromomethane	74-83-9	5.00	< 5.00	
	Butyl acetate	123-86-4	5.00	< 5.00	
	Carbon disulfide	75-15-0	2.00	< 2.00	
	Carbon tetrachloride	56-23-5	2.00	< 2.00	
	Chlorobenzene	108-90-7	2.00	< 2.00	
	Chloroethane	75-00-3	2.00	< 2.00	
	Chloroform	67-66-3	2.00	< 2.00	
	Chloromethane	74-87-3	5.00	< 5.00	
	Chloroprene	126-99-8	2.00	< 2.00	
	cis-1,2-Dichloroethene	156-59-2	2.00	< 2.00	
	cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	
	Cyclohexane	110-82-7	2.00	< 2.00	
	Cyclohexanone	108-94-1	50.0	< 50.0	
	Dibromochloromethane	124-48-1	2.00	< 2.00	

Report Date: 12/6/2010 Page 42 of 102



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-004A  
**Client Sample ID:** Trip Blank  
**Collection Date:** 12/3/2010  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2130h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**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	Dibromomethane	74-95-3	2.00	< 2.00	
	Dichlorodifluoromethane	75-71-8	2.00	< 2.00	
	Ethyl acetate	141-78-6	10.0	< 10.0	
	Ethyl ether	60-29-7	10.0	< 10.0	
(801) 263-8686	Ethyl methacrylate	97-63-2	2.00	< 2.00	
Toll Free (888) 263-8686	Ethylbenzene	100-41-4	2.00	< 2.00	
Fax (801)263-8687	Hexachlorobutadiene	87-68-3	2.00	< 2.00	
email: awal@awal-labs.com	Iodomethane	74-88-4	5.00	< 5.00	
	Isobutyl alcohol	78-83-1	100	< 100	
Kyle F. Gross	Isopropyl acetate	108-21-4	2.00	< 2.00	
Laboratory Director	Isopropyl alcohol	67-63-0	25.0	< 25.0	
	Isopropylbenzene	98-82-8	2.00	< 2.00	
	Isopropyltoluene	99-87-6	2.00	< 2.00	
Jose Rocha	m,p-Xylene	179601-23-1	2.00	< 2.00	
QA Officer	Methacrylonitrile	126-98-7	5.00	< 5.00	
	Methyl Acetate	79-20-9	5.00	< 5.00	
	Methyl methacrylate	80-62-6	5.00	< 5.00	
	Methyl tert-butyl ether	1634-04-4	2.00	< 2.00	
	Methylcyclohexane	108-87-2	2.00	< 2.00	
	Methylene chloride	75-09-2	2.00	< 2.00	
	n-Amyl acetate	628-63-7	2.00	< 2.00	
	n-Butyl alcohol	71-36-3	25.0	< 25.0	
	n-Butylbenzene	104-51-8	2.00	< 2.00	
	n-Hexane	110-54-3	2.00	< 2.00	
	n-Octane	111-65-9	2.00	< 2.00	
	n-Propylbenzene	103-65-1	2.00	< 2.00	
	Naphthalene	91-20-3	2.00	< 2.00	
	o-Xylene	95-47-6	2.00	< 2.00	
	Pentachloroethane	76-01-7	2.00	< 2.00	



# ORGANIC ANALYTICAL REPORT

AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES

**Client:** Utah DEQ DERR  
**Project:** Red Butte Spill  
**Lab Sample ID:** 1012071-004A  
**Client Sample ID:** Trip Blank  
**Collection Date:** 12/3/2010  
**Received Date:** 12/3/2010 1447h  
**Method Used:** EPA624

**Contact:** Jim Harris

**Analyzed:** 12/3/2010 2130h

## Analytical Results

## VOAs Custom List by GC/MS Method 624

**Units:** µg/L

**Dilution Factor:** 1

### Compound

**CAS  
Number**

**Reporting  
Limit**

**Analytical  
Result**

**Qual**

84115	Propionitrile	107-12-0	25.0	< 25.0	
	Propyl acetate	109-60-4	2.00	< 2.00	
	sec-Butylbenzene	135-98-8	2.00	< 2.00	
	Styrene	100-42-5	2.00	< 2.00	
(801) 263-8686	tert-Butyl alcohol	76-65-0	20.0	< 20.0	
Toll Free (888) 263-8686	tert-Butylbenzene	98-06-6	2.00	< 2.00	
Fax (801)263-8687	Tetrachloroethene	127-18-4	2.00	< 2.00	
email: awal@awal-labs.com	Tetrahydrofuran	109-99-9	2.00	< 2.00	
	Toluene	108-88-3	2.00	< 2.00	
Kyle F. Gross	trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
Laboratory Director	trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
	trans-1,4-Dichloro-2-butene	110-57-6	2.00	< 2.00	
Jose Rocha	Trichloroethene	79-01-6	2.00	< 2.00	
QA Officer	Trichlorofluoromethane	75-69-4	2.00	< 2.00	
	Vinyl acetate	108-05-4	5.00	< 5.00	
	Vinyl chloride	75-01-4	1.00	< 1.00	
	Xylenes, Total	1330-20-7	2.00	< 2.00	
	TPH C11-C15 (DRO)		20.0	< 20.0	
	TPH C6-C10 (GRO)		20.0	< 20.0	
	Surr: 1,2-Dichloroethane-d4	17060-07-0	77-144	<b>114</b>	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	<b>107</b>	
	Surr: Dibromofluoromethane	1868-53-7	80-124	<b>105</b>	
	Surr: Toluene-d8	2037-26-5	80-125	<b>97.2</b>	



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** GC

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9711	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.157	0.1600	0	98.0	10-200				12/6/2010 0721h
LCS-9711	Surr: C36	% REC	SW8015D	1.29	1.000		129	10-200				12/6/2010 0721h
LCS-9693	Diesel Range Organics C10-C28	mg/L	SW8015D	1.98	2.000	0	98.9	48-118				12/3/2010 2236h
LCS-9693	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.256	0.4000		64.0	18-95				12/3/2010 2236h



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** GC

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9711	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	< 0.0500				-				12/6/2010 0702h
MB-9711	Surr: C36	% REC	SW8015D	1.23	1.000		123	10-200				12/6/2010 0702h
MB-9693	Diesel Range Organics C10-C28	mg/L	SW8015D	< 0.500				-				12/3/2010 2215h
MB-9693	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.208	0.4000		52.0	18-95				12/3/2010 2215h



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** GC

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002CMS	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.162	0.1600	0	101	10-200				12/6/2010 0816h
1012071-002CMS	Surr: C36	% REC	SW8015D	1.28	1.000		128	10-200				12/6/2010 0816h
1012083-001DMS	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.174	0.1600	0	109	10-200				12/6/2010 0929h
1012083-001DMS	Surr: C36	% REC	SW8015D	1.38	1.000		138	10-200				12/6/2010 0929h
1012084-002DMS	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.172	0.1600	0	108	10-200				12/6/2010 1234h
1012084-002DMS	Surr: C36	% REC	SW8015D	1.40	1.000		140	10-200				12/6/2010 1234h
1012071-002BMS	Diesel Range Organics C10-C28	mg/L	SW8015D	2.00	2.000	0	99.8	60-161				12/4/2010 0146h
1012071-002BMS	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.358	0.4000		89.5	10-190				12/4/2010 0146h



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** GC

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002CMSD	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.160	0.1600	0	100	10-200	0.764	30		12/6/2010 0834h
1012071-002CMSD	Surr: C36	% REC	SW8015D	1.29	1.000		129	10-200				12/6/2010 0834h
1012083-001DMSD	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.164	0.1600	0	102	10-200	6.08	30		12/6/2010 0947h
1012083-001DMSD	Surr: C36	% REC	SW8015D	1.32	1.000		132	10-200				12/6/2010 0947h
1012084-002DMSD	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.167	0.1600	0	105	10-200	2.93	30		12/6/2010 1252h
1012084-002DMSD	Surr: C36	% REC	SW8015D	1.34	1.000		134	10-200				12/6/2010 1252h
1012071-002BMSD	Diesel Range Organics C10-C28	mg/L	SW8015D	2.06	2.000	0	103	60-161	3.16	25		12/4/2010 0208h
1012071-002BMSD	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.384	0.4000		96.0	10-190				12/4/2010 0208h





# 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:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	1,1'-Biphenyl	µg/L	EPA625	49.5	80.00	0	61.9	22-104				12/4/2010 2113h
LCS-9698	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	44.4	80.00	0	55.5	13-102				12/4/2010 2113h
LCS-9698	1,2,4-Trichlorobenzene	µg/L	EPA625	33.8	80.00	0	42.3	10-104				12/4/2010 2113h
LCS-9698	1,2-Dichlorobenzene	µg/L	EPA625	22.5	80.00	0	28.1	10-68				12/4/2010 2113h
LCS-9698	1,3,5-Trinitrobenzene	µg/L	EPA625	121	80.00	0	152	18-209				12/4/2010 2113h
LCS-9698	1,3-Dichlorobenzene	µg/L	EPA625	17.6	80.00	0	22.0	10-60				12/4/2010 2113h
LCS-9698	1,3-Dinitrobenzene	µg/L	EPA625	73.9	80.00	0	92.3	10-165				12/4/2010 2113h
LCS-9698	1,4-Dichlorobenzene	µg/L	EPA625	19.9	80.00	0	24.9	10-118				12/4/2010 2113h
LCS-9698	1,4-Naphthoquinone	µg/L	EPA625	12.2	80.00	0	15.3	10-187				12/4/2010 2113h
LCS-9698	1,4-Phenylenediamine	µg/L	EPA625	39.0	80.00	0	48.8	10-80				12/4/2010 2113h
LCS-9698	1-Chloronaphthalene	µg/L	EPA625	41.5	80.00	0	51.9	13-123				12/4/2010 2113h
LCS-9698	1-Methylnaphthalene	µg/L	EPA625	50.1	80.00	0	62.6	13-105				12/4/2010 2113h
LCS-9698	1-Naphthylamine	µg/L	EPA625	58.2	80.00	0	72.8	32-256				12/4/2010 2113h
LCS-9698	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	75.4	80.00	0	94.3	44-158				12/4/2010 2113h
LCS-9698	2,4,5-Trichlorophenol	µg/L	EPA625	38.3	80.00	0	47.9	46-142				12/4/2010 2113h
LCS-9698	2,4,6-Trichlorophenol	µg/L	EPA625	46.1	80.00	0	57.7	42-113				12/4/2010 2113h
LCS-9698	2,4-Dichlorophenol	µg/L	EPA625	46.4	80.00	0	58.0	37-102				12/4/2010 2113h
LCS-9698	2,4-Dimethylphenol	µg/L	EPA625	50.2	80.00	0	62.8	37-99				12/4/2010 2113h
LCS-9698	2,4-Dinitrophenol	µg/L	EPA625	57.5	80.00	0	71.9	10-200				12/4/2010 2113h
LCS-9698	2,4-Dinitrotoluene	µg/L	EPA625	84.5	80.00	0	106	15-209				12/4/2010 2113h
LCS-9698	2,6-Dichlorophenol	µg/L	EPA625	52.0	80.00	0	65.1	44-111				12/4/2010 2113h
LCS-9698	2,6-Dinitrotoluene	µg/L	EPA625	71.1	80.00	0	88.9	13-183				12/4/2010 2113h
LCS-9698	2-Acetylaminofluorene	µg/L	EPA625	73.2	80.00	0	91.5	40-131				12/4/2010 2113h
LCS-9698	2-Chloronaphthalene	µg/L	EPA625	48.0	80.00	0	60.0	16-103				12/4/2010 2113h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	2-Chlorophenol	µg/L	EPA625	39.1	80.00	0	48.8	21-98				12/4/2010 2113h
LCS-9698	2-Methylnaphthalene	µg/L	EPA625	44.0	80.00	0	54.9	11-92				12/4/2010 2113h
LCS-9698	2-Methylphenol	µg/L	EPA625	38.6	80.00	0	48.2	24-92				12/4/2010 2113h
LCS-9698	2-Naphthylamine	µg/L	EPA625	52.1	80.00	0	65.1	48-193				12/4/2010 2113h
LCS-9698	2-Nitroaniline	µg/L	EPA625	68.8	80.00	0	86.0	10-216				12/4/2010 2113h
LCS-9698	2-Nitrophenol	µg/L	EPA625	60.6	80.00	0	75.7	10-173				12/4/2010 2113h
LCS-9698	2-Picoline	µg/L	EPA625	20.3	80.00	0	25.4	10-66				12/4/2010 2113h
LCS-9698	3&4-Methylphenol	µg/L	EPA625	19.3	80.00	0	24.2	10-88				12/4/2010 2113h
LCS-9698	3,3'-Dichlorobenzidine	µg/L	EPA625	69.3	80.00	0	86.7	38-131				12/4/2010 2113h
LCS-9698	3,3'-Dimethylbenzidine	µg/L	EPA625	61.0	80.00	0	76.2	10-172				12/4/2010 2113h
LCS-9698	3-Methylcholanthrene	µg/L	EPA625	64.4	80.00	0	80.6	48-206				12/4/2010 2113h
LCS-9698	3-Nitroaniline	µg/L	EPA625	65.4	80.00	0	81.7	31-172				12/4/2010 2113h
LCS-9698	4,6-Dinitro-2-methylphenol	µg/L	EPA625	94.5	80.00	0	118	10-190				12/4/2010 2113h
LCS-9698	4-Aminobiphenyl	µg/L	EPA625	65.3	80.00	0	81.6	10-202				12/4/2010 2113h
LCS-9698	4-Bromophenyl phenyl ether	µg/L	EPA625	55.9	80.00	0	69.9	55-136				12/4/2010 2113h
LCS-9698	4-Chloro-3-methylphenol	µg/L	EPA625	54.8	80.00	0	68.6	47-113				12/4/2010 2113h
LCS-9698	4-Chloroaniline	µg/L	EPA625	44.9	80.00	0	56.1	24-124				12/4/2010 2113h
LCS-9698	4-Chlorophenyl phenyl ether	µg/L	EPA625	55.4	80.00	0	69.3	41-119				12/4/2010 2113h
LCS-9698	4-Nitroaniline	µg/L	EPA625	60.2	80.00	0	75.2	27-159				12/4/2010 2113h
LCS-9698	4-Nitrophenol	µg/L	EPA625	90.7	80.00	0	113	10-157				12/4/2010 2113h
LCS-9698	5-Nitro-o-toluidine	µg/L	EPA625	76.8	80.00	0	96.0	60-168				12/4/2010 2113h
LCS-9698	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	74.2	80.00	0	92.8	42-277				12/4/2010 2113h
LCS-9698	a,a-Dimethylphenethylamine	µg/L	EPA625	51.1	80.00	0	63.9	10-160				12/4/2010 2113h
LCS-9698	Acenaphthene	µg/L	EPA625	53.1	80.00	0	66.4	29-112				12/4/2010 2113h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	Acenaphthylene	µg/L	EPA625	52.8	80.00	0	65.9	31-116				12/4/2010 2113h
LCS-9698	Acetophenone	µg/L	EPA625	45.2	80.00	0	56.5	10-105				12/4/2010 2113h
LCS-9698	alpha-Terpineol	µg/L	EPA625	44.2	80.00	0	55.2	14-98				12/4/2010 2113h
LCS-9698	Aniline	µg/L	EPA625	30.9	80.00	0	38.6	10-94				12/4/2010 2113h
LCS-9698	Anthracene	µg/L	EPA625	63.9	80.00	0	79.8	64-145				12/4/2010 2113h
LCS-9698	Aramite	µg/L	EPA625	76.9	80.00	0	96.2	46-162				12/4/2010 2113h
LCS-9698	Azobenzene	µg/L	EPA625	51.4	80.00	0	64.2	32-117				12/4/2010 2113h
LCS-9698	Benz(a)anthracene	µg/L	EPA625	63.2	80.00	0	79.0	50-134				12/4/2010 2113h
LCS-9698	Benzidine	µg/L	EPA625	55.7	80.00	0	69.6	10-211				12/4/2010 2113h
LCS-9698	Benzo(a)pyrene	µg/L	EPA625	67.4	80.00	0	84.2	39-152				12/4/2010 2113h
LCS-9698	Benzo(b)fluoranthene	µg/L	EPA625	62.9	80.00	0	78.7	46-256				12/4/2010 2113h
LCS-9698	Benzo(g,h,i)perylene	µg/L	EPA625	49.4	80.00	0	61.7	21-288				12/4/2010 2113h
LCS-9698	Benzo(k)fluoranthene	µg/L	EPA625	79.3	80.00	0	99.1	10-254				12/4/2010 2113h
LCS-9698	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	16.9	10-64				12/4/2010 2113h
LCS-9698	Benzyl alcohol	µg/L	EPA625	16.7	80.00	0	20.8	10-88				12/4/2010 2113h
LCS-9698	Bis(2-chloroethoxy)methane	µg/L	EPA625	32.4	80.00	0	40.5	10-98				12/4/2010 2113h
LCS-9698	Bis(2-chloroethyl) ether	µg/L	EPA625	32.0	80.00	0	40.0	10-99				12/4/2010 2113h
LCS-9698	Bis(2-chloroisopropyl) ether	µg/L	EPA625	32.6	80.00	0	40.7	10-92				12/4/2010 2113h
LCS-9698	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	156	80.00	0	195	10-233				12/4/2010 2113h
LCS-9698	bis(2-ethylhexyl)adipate	µg/L	EPA625	73.1	80.00	0	91.3	10-200				12/4/2010 2113h
LCS-9698	Butyl benzyl phthalate	µg/L	EPA625	70.4	80.00	0	88.0	10-178				12/4/2010 2113h
LCS-9698	Carbazole	µg/L	EPA625	65.2	80.00	0	81.5	61-140				12/4/2010 2113h
LCS-9698	Chlorobenzilate	µg/L	EPA625	69.0	80.00	0	86.3	10-218				12/4/2010 2113h
LCS-9698	Chrysene	µg/L	EPA625	68.1	80.00	0	85.2	54-130				12/4/2010 2113h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	Diallate (cis or trans)	µg/L	EPA625	54.5	80.00	0	68.2	41-132				12/4/2010 2113h
LCS-9698	Dibenz(a,h)anthracene	µg/L	EPA625	53.4	80.00	0	66.8	27-199				12/4/2010 2113h
LCS-9698	Dibenzofuran	µg/L	EPA625	53.0	80.00	0	66.3	38-117				12/4/2010 2113h
LCS-9698	Diethyl phthalate	µg/L	EPA625	56.3	80.00	0	70.4	20-128				12/4/2010 2113h
LCS-9698	Dimethoate	µg/L	EPA625	19.7	80.00	0	24.6	10-60				12/4/2010 2113h
LCS-9698	Dimethyl phthalate	µg/L	EPA625	47.1	80.00	0	58.9	10-105				12/4/2010 2113h
LCS-9698	Dimethylaminoazobenzene	µg/L	EPA625	68.6	80.00	0	85.8	30-151				12/4/2010 2113h
LCS-9698	Di-n-butyl phthalate	µg/L	EPA625	66.9	80.00	0	83.6	45-131				12/4/2010 2113h
LCS-9698	Di-n-octyl phthalate	µg/L	EPA625	89.5	80.00	0	112	10-252				12/4/2010 2113h
LCS-9698	Dinoseb	µg/L	EPA625	102	80.00	0	127	10-186				12/4/2010 2113h
LCS-9698	Diphenylamine	µg/L	EPA625	61.3	80.00	0	76.6	46-128				12/4/2010 2113h
LCS-9698	Disulfoton	µg/L	EPA625	47.0	80.00	0	58.8	10-124				12/4/2010 2113h
LCS-9698	Ethyl methanesulfonate	µg/L	EPA625	38.1	80.00	0	47.6	10-105				12/4/2010 2113h
LCS-9698	Famphur	µg/L	EPA625	94.2	80.00	0	118	10-298				12/4/2010 2113h
LCS-9698	Fluoranthene	µg/L	EPA625	64.8	80.00	0	81.0	61-138				12/4/2010 2113h
LCS-9698	Fluorene	µg/L	EPA625	55.6	80.00	0	69.5	45-116				12/4/2010 2113h
LCS-9698	Hexachlorobenzene	µg/L	EPA625	58.5	80.00	0	73.1	55-135				12/4/2010 2113h
LCS-9698	Hexachlorobutadiene	µg/L	EPA625	29.2	80.00	0	36.5	10-79				12/4/2010 2113h
LCS-9698	Hexachlorocyclopentadiene	µg/L	EPA625	19.1	80.00	0	23.9	10-104				12/4/2010 2113h
LCS-9698	Hexachloroethane	µg/L	EPA625	19.8	80.00	0	24.7	10-58				12/4/2010 2113h
LCS-9698	Hexachlorophene	µg/L	EPA625	67.4	80.00	0	84.2	10-242				12/4/2010 2113h
LCS-9698	Hexachloropropene	µg/L	EPA625	27.8	80.00	0	34.8	10-79				12/4/2010 2113h
LCS-9698	Indene	µg/L	EPA625	28.7	80.00	0	35.9	10-71				12/4/2010 2113h
LCS-9698	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	52.6	80.00	0	65.8	29-208				12/4/2010 2113h

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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:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	Isodrin	µg/L	EPA625	63.0	80.00	0	78.8	58-140				12/4/2010 2113h
LCS-9698	Isophorone	µg/L	EPA625	44.6	80.00	0	55.7	10-105				12/4/2010 2113h
LCS-9698	Isosafrole	µg/L	EPA625	44.9	80.00	0	56.1	12-108				12/4/2010 2113h
LCS-9698	Kepone	µg/L	EPA625	138	80.00	0	172	10-330				12/4/2010 2113h
LCS-9698	Methapyrilene	µg/L	EPA625	68.9	80.00	0	86.1	17-151				12/4/2010 2113h
LCS-9698	Methyl methanesulfonate	µg/L	EPA625	23.8	80.00	0	29.8	10-107				12/4/2010 2113h
LCS-9698	Naphthalene	µg/L	EPA625	38.6	80.00	0	48.3	10-79				12/4/2010 2113h
LCS-9698	n-Decane	µg/L	EPA625	11.8	80.00	0	14.8	10-45				12/4/2010 2113h
LCS-9698	Nitrobenzene	µg/L	EPA625	50.8	80.00	0	63.5	10-104				12/4/2010 2113h
LCS-9698	Nitroquinoline-1-oxide	µg/L	EPA625	38.1	80.00	0	47.6	10-165				12/4/2010 2113h
LCS-9698	N-Nitrosodiethylamine	µg/L	EPA625	35.7	80.00	0	44.7	10-96				12/4/2010 2113h
LCS-9698	N-Nitrosodimethylamine	µg/L	EPA625	11.8	80.00	0	14.8	10-55				12/4/2010 2113h
LCS-9698	N-Nitrosodi-n-butylamine	µg/L	EPA625	49.7	80.00	0	62.1	21-104				12/4/2010 2113h
LCS-9698	N-Nitrosodiphenylamine	µg/L	EPA625	59.9	80.00	0	74.9	45-126				12/4/2010 2113h
LCS-9698	N-Nitrosodi-n-propylamine	µg/L	EPA625	40.9	80.00	0	51.2	10-103				12/4/2010 2113h
LCS-9698	N-Nitrosomethylethylamine	µg/L	EPA625	26.9	80.00	0	33.7	10-84				12/4/2010 2113h
LCS-9698	N-Nitrosomorpholine	µg/L	EPA625	41.3	80.00	0	51.7	15-107				12/4/2010 2113h
LCS-9698	N-Nitrosopiperidine	µg/L	EPA625	48.2	80.00	0	60.2	10-108				12/4/2010 2113h
LCS-9698	N-Nitrosopyrrolidine	µg/L	EPA625	47.0	80.00	0	58.8	19-115				12/4/2010 2113h
LCS-9698	n-Octadecane	µg/L	EPA625	51.4	80.00	0	64.2	27-134				12/4/2010 2113h
LCS-9698	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	49.4	80.00	0	61.8	10-129				12/4/2010 2113h
LCS-9698	o-Toluidine	µg/L	EPA625	84.0	80.00	0	105	21-225				12/4/2010 2113h
LCS-9698	Parathion	µg/L	EPA625	92.6	80.00	0	116	10-165				12/4/2010 2113h
LCS-9698	Methyl parathion	µg/L	EPA625	86.4	80.00	0	108	10-165				12/4/2010 2113h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	Pentachlorobenzene	µg/L	EPA625	52.6	80.00	0	65.8	41-118				12/4/2010 2113h
LCS-9698	Pentachloronitrobenzene	µg/L	EPA625	67.5	80.00	0	84.4	35-185				12/4/2010 2113h
LCS-9698	Pentachlorophenol	µg/L	EPA625	60.2	80.00	0	75.2	14-144				12/4/2010 2113h
LCS-9698	Phenacetin	µg/L	EPA625	61.5	80.00	0	76.9	42-163				12/4/2010 2113h
LCS-9698	Phenanthrene	µg/L	EPA625	64.9	80.00	0	81.1	25-135				12/4/2010 2113h
LCS-9698	Phenol	µg/L	EPA625	22.7	80.00	0	28.4	10-53				12/4/2010 2113h
LCS-9698	Phorate	µg/L	EPA625	65.0	80.00	0	81.3	36-158				12/4/2010 2113h
LCS-9698	Pronamide	µg/L	EPA625	64.6	80.00	0	80.8	33-137				12/4/2010 2113h
LCS-9698	Pyrene	µg/L	EPA625	70.2	80.00	0	87.7	42-145				12/4/2010 2113h
LCS-9698	Pyridine	µg/L	EPA625	10.7	80.00	0	13.4	10-37				12/4/2010 2113h
LCS-9698	Quinoline	µg/L	EPA625	52.2	80.00	0	65.3	13-111				12/4/2010 2113h
LCS-9698	Safrole	µg/L	EPA625	46.7	80.00	0	58.4	24-111				12/4/2010 2113h
LCS-9698	Tetraethyl dithiopyrophosphate	µg/L	EPA625	62.8	80.00	0	78.6	52-138				12/4/2010 2113h
LCS-9698	Thionazin	µg/L	EPA625	58.3	80.00	0	72.9	45-123				12/4/2010 2113h
LCS-9698	Surr: 2,4,6-Tribromophenol	% REC	EPA625	62.2	80.00		77.7	64-130				12/4/2010 2113h
LCS-9698	Surr: 2-Fluorobiphenyl	% REC	EPA625	47.7	40.00		119	32-128				12/4/2010 2113h
LCS-9698	Surr: 2-Fluorophenol	% REC	EPA625	20.2	80.00		25.2	10-121				12/4/2010 2113h
LCS-9698	Surr: Nitrobenzene-d5	% REC	EPA625	46.3	40.00		116	17-133				12/4/2010 2113h
LCS-9698	Surr: Phenol-d6	% REC	EPA625	14.3	80.00		17.9	10-124				12/4/2010 2113h
LCS-9698	Surr: Terphenyl-d14	% REC	EPA625	73.1	40.00		183	51-221				12/4/2010 2113h
LCS-9698	Acenaphthene	µg/L	SW8270D	53.1	80.00	0	66.4	20-116				12/4/2010 2113h
LCS-9698	Benzo(a)pyrene	µg/L	SW8270D	67.4	80.00	0	84.2	39-152				12/4/2010 2113h
LCS-9698	Pyrene	µg/L	SW8270D	70.2	80.00	0	87.7	37-138				12/4/2010 2113h
LCS-9698	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	62.2	80.00		77.7	10-165				12/4/2010 2113h

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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:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9698	Surr: 2-Fluorobiphenyl	% REC	SW8270D	47.7	40.00		119	32-128				12/4/2010 2113h
LCS-9698	Surr: 2-Fluorophenol	% REC	SW8270D	20.2	80.00		25.2	10-121				12/4/2010 2113h
LCS-9698	Surr: Nitrobenzene-d5	% REC	SW8270D	46.3	40.00		116	17-133				12/4/2010 2113h
LCS-9698	Surr: Phenol-d6	% REC	SW8270D	14.3	80.00		17.9	10-124				12/4/2010 2113h
LCS-9698	Surr: Terphenyl-d14	% REC	SW8270D	73.1	40.00		183	51-221				12/4/2010 2113h



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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:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	1,1'-Biphenyl	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,2,4-Trichlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,2-Dichlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,3,5-Trinitrobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,3-Dichlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,3-Dinitrobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,4-Dichlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,4-Naphthoquinone	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1,4-Phenylenediamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1-Chloronaphthalene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1-Methylnaphthalene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	1-Naphthylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,4,5-Trichlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,4,6-Trichlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,4-Dichlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,4-Dimethylphenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,4-Dinitrophenol	µg/L	EPA625	< 20.0				-				12/4/2010 2046h
MB-9698	2,4-Dinitrotoluene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,6-Dichlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2,6-Dinitrotoluene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Acetylaminofluorene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Chloronaphthalene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	2-Chlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Methylnaphthalene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Methylphenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Naphthylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Nitroaniline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Nitrophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	2-Picoline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	3&4-Methylphenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	3,3'-Dichlorobenzidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	3,3'-Dimethylbenzidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	3-Methylcholanthrene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	3-Nitroaniline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4,6-Dinitro-2-methylphenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Aminobiphenyl	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Bromophenyl phenyl ether	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Chloro-3-methylphenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Chloroaniline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Chlorophenyl phenyl ether	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Nitroaniline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	4-Nitrophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	5-Nitro-o-toluidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	a,a-Dimethylphenethylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Acenaphthene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h

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**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	Acenaphthylene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Acetophenone	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	alpha-Terpineol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Aniline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Anthracene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Aramite	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Azobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benz(a)anthracene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benzidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(a)pyrene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(b)fluoranthene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(g,h,i)perylene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(k)fluoranthene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Benzoic acid	µg/L	EPA625	< 20.0				-				12/4/2010 2046h
MB-9698	Benzyl alcohol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Bis(2-chloroethoxy)methane	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Bis(2-chloroethyl) ether	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Bis(2-chloroisopropyl) ether	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	bis(2-ethylhexyl)adipate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Butyl benzyl phthalate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Carbazole	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Chlorobenzilate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Chrysene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	Diallate (cis or trans)	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Dibenz(a,h)anthracene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Dibenzofuran	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Diethyl phthalate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Dimethoate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Dimethyl phthalate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Dimethylaminoazobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Di-n-butyl phthalate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Di-n-octyl phthalate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Dinoseb	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Diphenylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Disulfoton	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Ethyl methanesulfonate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Famphur	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Fluoranthene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Fluorene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Hexachlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Hexachlorobutadiene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Hexachlorocyclopentadiene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Hexachloroethane	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Hexachlorophene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Hexachloropropene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Indene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	Isodrin	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Isophorone	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Isosafrole	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Kepone	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Methapyrilene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Methyl methanesulfonate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Naphthalene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	n-Decane	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Nitrobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Nitroquinoline-1-oxide	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosodiethylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosodimethylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosodi-n-butylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosodiphenylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosodi-n-propylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosomethylethylamine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosomorpholine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosopiperidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	N-Nitrosopyrrolidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	n-Octadecane	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	o-Toluidine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Parathion	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Methyl parathion	µg/L	EPA625	< 10.0				-				12/4/2010 2046h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	Pentachlorobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Pentachloronitrobenzene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Pentachlorophenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Phenacetin	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Phenanthrene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Phenol	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Phorate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Pronamide	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Pyrene	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Pyridine	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Quinoline	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Safrole	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Tetraethyl dithiopyrophosphate	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Thionazin	µg/L	EPA625	< 10.0				-				12/4/2010 2046h
MB-9698	Surr: 2,4,6-Tribromophenol	% REC	EPA625	52.4	80.00		65.6	10-165				12/4/2010 2046h
MB-9698	Surr: 2-Fluorobiphenyl	% REC	EPA625	23.7	40.00		59.4	18-113				12/4/2010 2046h
MB-9698	Surr: 2-Fluorophenol	% REC	EPA625	24.5	80.00		30.6	10-121				12/4/2010 2046h
MB-9698	Surr: Nitrobenzene-d5	% REC	EPA625	18.6	40.00		46.4	17-133				12/4/2010 2046h
MB-9698	Surr: Phenol-d6	% REC	EPA625	19.1	80.00		23.9	10-124				12/4/2010 2046h
MB-9698	Surr: Terphenyl-d14	% REC	EPA625	38.2	40.00		95.6	28-163				12/4/2010 2046h
MB-9698	Acenaphthene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Acenaphthylene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Anthracene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Benz(a)anthracene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h

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**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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**Dept:** MSSV  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9698	Benzo(a)pyrene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(b)fluoranthene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(g,h,i)perylene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Benzo(k)fluoranthene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	C11-C12 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	C11-C13 Alkyl Naphthalenes	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	C13-C16 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	C17-C21 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	C22-C35 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Chrysene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Dibenz(a,h)anthracene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Fluoranthene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Fluorene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Indeno(1,2,3-cd)pyrene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Phenanthrene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Pyrene	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Total C12-C22 PAH**	µg/L	SW8270D	< 10.0				-				12/4/2010 2046h
MB-9698	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	52.4	80.00		65.6	10-165				12/4/2010 2046h
MB-9698	Surr: 2-Fluorobiphenyl	%REC	SW8270D	23.7	40.00		59.4	18-113				12/4/2010 2046h
MB-9698	Surr: 2-Fluorophenol	%REC	SW8270D	24.5	80.00		30.6	10-121				12/4/2010 2046h
MB-9698	Surr: Nitrobenzene-d5	%REC	SW8270D	18.6	40.00		46.4	17-133				12/4/2010 2046h
MB-9698	Surr: Phenol-d6	%REC	SW8270D	19.1	80.00		23.9	10-124				12/4/2010 2046h
MB-9698	Surr: Terphenyl-d14	%REC	SW8270D	38.2	40.00		95.6	28-163				12/4/2010 2046h

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



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	1,1'-Biphenyl	µg/L	EPA625	54.3	80.00	0	67.9	27-99				12/5/2010 1619h
1012071-002EMS	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	49.4	80.00	0	61.8	10-119				12/5/2010 1619h
1012071-002EMS	1,2,4-Trichlorobenzene	µg/L	EPA625	36.2	80.00	0	45.2	10-79				12/5/2010 1619h
1012071-002EMS	1,2-Dichlorobenzene	µg/L	EPA625	26.3	80.00	0	32.9	10-59				12/5/2010 1619h
1012071-002EMS	1,3,5-Trinitrobenzene	µg/L	EPA625	157	80.00	0	196	10-175			1	12/5/2010 1619h
1012071-002EMS	1,3-Dichlorobenzene	µg/L	EPA625	22.0	80.00	0	27.4	10-56				12/5/2010 1619h
1012071-002EMS	1,3-Dinitrobenzene	µg/L	EPA625	93.8	80.00	0	117	10-175				12/5/2010 1619h
1012071-002EMS	1,4-Dichlorobenzene	µg/L	EPA625	23.4	80.00	0	29.2	10-58				12/5/2010 1619h
1012071-002EMS	1,4-Naphthoquinone	µg/L	EPA625	16.8	80.00	0	21.0	10-177				12/5/2010 1619h
1012071-002EMS	1,4-Phenylenediamine	µg/L	EPA625	43.7	80.00	0	54.6	10-124				12/5/2010 1619h
1012071-002EMS	1-Chloronaphthalene	µg/L	EPA625	42.0	80.00	0	52.5	10-106				12/5/2010 1619h
1012071-002EMS	1-Methylnaphthalene	µg/L	EPA625	55.0	80.00	0	68.8	10-83				12/5/2010 1619h
1012071-002EMS	1-Naphthylamine	µg/L	EPA625	61.4	80.00	0	76.7	10-122				12/5/2010 1619h
1012071-002EMS	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	80.6	80.00	0	101	10-157				12/5/2010 1619h
1012071-002EMS	2,4,5-Trichlorophenol	µg/L	EPA625	47.6	80.00	0	59.5	10-148				12/5/2010 1619h
1012071-002EMS	2,4,6-Trichlorophenol	µg/L	EPA625	56.3	80.00	0	70.4	10-136				12/5/2010 1619h
1012071-002EMS	2,4-Dichlorophenol	µg/L	EPA625	63.6	80.00	0	79.5	10-123				12/5/2010 1619h
1012071-002EMS	2,4-Dimethylphenol	µg/L	EPA625	63.0	80.00	0	78.8	10-113				12/5/2010 1619h
1012071-002EMS	2,4-Dinitrophenol	µg/L	EPA625	90.3	80.00	0	113	10-175				12/5/2010 1619h
1012071-002EMS	2,4-Dinitrotoluene	µg/L	EPA625	97.4	80.00	0	122	10-175				12/5/2010 1619h
1012071-002EMS	2,6-Dichlorophenol	µg/L	EPA625	66.8	80.00	0	83.5	10-148				12/5/2010 1619h
1012071-002EMS	2,6-Dinitrotoluene	µg/L	EPA625	85.4	80.00	0	107	10-175				12/5/2010 1619h
1012071-002EMS	2-Acetylaminofluorene	µg/L	EPA625	85.1	80.00	0	106	10-94			1	12/5/2010 1619h
1012071-002EMS	2-Chloronaphthalene	µg/L	EPA625	55.3	80.00	0	69.1	10-93				12/5/2010 1619h

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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:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	2-Chlorophenol	µg/L	EPA625	51.6	80.00	0	64.5	10-92				12/5/2010 1619h
1012071-002EMS	2-Methylnaphthalene	µg/L	EPA625	48.2	80.00	0	60.3	15-78				12/5/2010 1619h
1012071-002EMS	2-Methylphenol	µg/L	EPA625	47.6	80.00	0	59.5	10-83				12/5/2010 1619h
1012071-002EMS	2-Naphthylamine	µg/L	EPA625	63.2	80.00	0	79.0	10-154				12/5/2010 1619h
1012071-002EMS	2-Nitroaniline	µg/L	EPA625	85.5	80.00	0	107	10-175				12/5/2010 1619h
1012071-002EMS	2-Nitrophenol	µg/L	EPA625	79.4	80.00	0	99.3	10-175				12/5/2010 1619h
1012071-002EMS	2-Picoline	µg/L	EPA625	35.9	80.00	0	44.9	10-61				12/5/2010 1619h
1012071-002EMS	3&4-Methylphenol	µg/L	EPA625	21.4	80.00	0	26.8	10-80				12/5/2010 1619h
1012071-002EMS	3,3'-Dichlorobenzidine	µg/L	EPA625	78.6	80.00	0	98.2	10-150				12/5/2010 1619h
1012071-002EMS	3,3'-Dimethylbenzidine	µg/L	EPA625	68.0	80.00	0	85.0	10-143				12/5/2010 1619h
1012071-002EMS	3-Methylcholanthrene	µg/L	EPA625	71.0	80.00	0	88.7	32-171				12/5/2010 1619h
1012071-002EMS	3-Nitroaniline	µg/L	EPA625	81.5	80.00	0	102	10-175				12/5/2010 1619h
1012071-002EMS	4,6-Dinitro-2-methylphenol	µg/L	EPA625	114	80.00	0	143	10-175				12/5/2010 1619h
1012071-002EMS	4-Aminobiphenyl	µg/L	EPA625	70.0	80.00	0	87.5	10-175				12/5/2010 1619h
1012071-002EMS	4-Bromophenyl phenyl ether	µg/L	EPA625	66.7	80.00	0	83.4	16-138				12/5/2010 1619h
1012071-002EMS	4-Chloro-3-methylphenol	µg/L	EPA625	69.8	80.00	0	87.3	10-131				12/5/2010 1619h
1012071-002EMS	4-Chloroaniline	µg/L	EPA625	57.9	80.00	0	72.3	10-98				12/5/2010 1619h
1012071-002EMS	4-Chlorophenyl phenyl ether	µg/L	EPA625	64.4	80.00	0	80.5	31-108				12/5/2010 1619h
1012071-002EMS	4-Nitroaniline	µg/L	EPA625	76.2	80.00	0	95.2	10-175				12/5/2010 1619h
1012071-002EMS	4-Nitrophenol	µg/L	EPA625	95.2	80.00	0	119	10-97			1	12/5/2010 1619h
1012071-002EMS	5-Nitro-o-toluidine	µg/L	EPA625	93.0	80.00	0	116	10-175				12/5/2010 1619h
1012071-002EMS	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	85.7	80.00	0	107	26-174				12/5/2010 1619h
1012071-002EMS	a,a-Dimethylphenethylamine	µg/L	EPA625	55.7	80.00	0	69.6	10-175				12/5/2010 1619h
1012071-002EMS	Acenaphthene	µg/L	EPA625	60.8	80.00	0	76.0	29-97				12/5/2010 1619h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	Acenaphthylene	µg/L	EPA625	60.9	80.00	0	76.1	37-87				12/5/2010 1619h
1012071-002EMS	Acetophenone	µg/L	EPA625	49.6	80.00	0	62.0	10-96				12/5/2010 1619h
1012071-002EMS	alpha-Terpineol	µg/L	EPA625	52.7	80.00	0	65.9	10-67				12/5/2010 1619h
1012071-002EMS	Aniline	µg/L	EPA625	44.9	80.00	0	56.1	10-71				12/5/2010 1619h
1012071-002EMS	Anthracene	µg/L	EPA625	75.8	80.00	0	94.7	53-114				12/5/2010 1619h
1012071-002EMS	Aramite	µg/L	EPA625	87.6	80.00	0	110	29-160				12/5/2010 1619h
1012071-002EMS	Azobenzene	µg/L	EPA625	69.4	80.00	0	86.8	15-114				12/5/2010 1619h
1012071-002EMS	Benz(a)anthracene	µg/L	EPA625	75.6	80.00	0	94.4	39-129				12/5/2010 1619h
1012071-002EMS	Benzidine	µg/L	EPA625	62.8	80.00	0	78.5	10-99				12/5/2010 1619h
1012071-002EMS	Benzo(a)pyrene	µg/L	EPA625	76.9	80.00	0	96.1	29-175				12/5/2010 1619h
1012071-002EMS	Benzo(b)fluoranthene	µg/L	EPA625	78.0	80.00	0	97.5	15-140				12/5/2010 1619h
1012071-002EMS	Benzo(g,h,i)perylene	µg/L	EPA625	54.9	80.00	0	68.6	10-182				12/5/2010 1619h
1012071-002EMS	Benzo(k)fluoranthene	µg/L	EPA625	84.3	80.00	0	105	21-154				12/5/2010 1619h
1012071-002EMS	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	13.5	10-71				12/5/2010 1619h
1012071-002EMS	Benzyl alcohol	µg/L	EPA625	31.9	80.00	0	39.9	10-69				12/5/2010 1619h
1012071-002EMS	Bis(2-chloroethoxy)methane	µg/L	EPA625	51.4	80.00	0	64.3	10-94				12/5/2010 1619h
1012071-002EMS	Bis(2-chloroethyl) ether	µg/L	EPA625	47.2	80.00	0	59.0	10-70				12/5/2010 1619h
1012071-002EMS	Bis(2-chloroisopropyl) ether	µg/L	EPA625	36.7	80.00	0	45.9	10-71				12/5/2010 1619h
1012071-002EMS	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	130	80.00	0	162	10-175				12/5/2010 1619h
1012071-002EMS	bis(2-ethylhexyl)adipate	µg/L	EPA625	91.4	80.00	0	114	10-175				12/5/2010 1619h
1012071-002EMS	Butyl benzyl phthalate	µg/L	EPA625	87.4	80.00	0	109	10-175				12/5/2010 1619h
1012071-002EMS	Carbazole	µg/L	EPA625	75.7	80.00	0	94.6	10-151				12/5/2010 1619h
1012071-002EMS	Chlorobenzilate	µg/L	EPA625	85.0	80.00	0	106	18-175				12/5/2010 1619h
1012071-002EMS	Chrysene	µg/L	EPA625	78.8	80.00	0	98.5	38-133				12/5/2010 1619h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	Diallate (cis or trans)	µg/L	EPA625	65.7	80.00	0	82.1	10-157				12/5/2010 1619h
1012071-002EMS	Dibenz(a,h)anthracene	µg/L	EPA625	58.4	80.00	0	73.0	13-168				12/5/2010 1619h
1012071-002EMS	Dibenzofuran	µg/L	EPA625	59.6	80.00	0	74.4	29-103				12/5/2010 1619h
1012071-002EMS	Diethyl phthalate	µg/L	EPA625	65.2	80.00	0	81.5	10-139				12/5/2010 1619h
1012071-002EMS	Dimethoate	µg/L	EPA625	24.6	80.00	0	30.8	10-136				12/5/2010 1619h
1012071-002EMS	Dimethyl phthalate	µg/L	EPA625	52.5	80.00	0	65.6	10-122				12/5/2010 1619h
1012071-002EMS	Dimethylaminoazobenzene	µg/L	EPA625	86.3	80.00	0	108	34-142				12/5/2010 1619h
1012071-002EMS	Di-n-butyl phthalate	µg/L	EPA625	78.7	80.00	0	98.4	44-124				12/5/2010 1619h
1012071-002EMS	Di-n-octyl phthalate	µg/L	EPA625	107	80.00	0	134	10-175				12/5/2010 1619h
1012071-002EMS	Dinoseb	µg/L	EPA625	124	80.00	0	156	10-175				12/5/2010 1619h
1012071-002EMS	Diphenylamine	µg/L	EPA625	64.2	80.00	0	80.2	13-110				12/5/2010 1619h
1012071-002EMS	Disulfoton	µg/L	EPA625	53.8	80.00	0	67.2	10-121				12/5/2010 1619h
1012071-002EMS	Ethyl methanesulfonate	µg/L	EPA625	55.7	80.00	0	69.6	10-99				12/5/2010 1619h
1012071-002EMS	Famphur	µg/L	EPA625	82.0	80.00	0	103	10-71			1	12/5/2010 1619h
1012071-002EMS	Fluoranthene	µg/L	EPA625	76.4	80.00	0	95.4	23-135				12/5/2010 1619h
1012071-002EMS	Fluorene	µg/L	EPA625	62.8	80.00	0	78.5	34-108				12/5/2010 1619h
1012071-002EMS	Hexachlorobenzene	µg/L	EPA625	69.6	80.00	0	87.0	26-131				12/5/2010 1619h
1012071-002EMS	Hexachlorobutadiene	µg/L	EPA625	30.0	80.00	0	37.5	10-110				12/5/2010 1619h
1012071-002EMS	Hexachlorocyclopentadiene	µg/L	EPA625	22.9	80.00	0	28.6	10-45				12/5/2010 1619h
1012071-002EMS	Hexachloroethane	µg/L	EPA625	20.9	80.00	0	26.2	10-58				12/5/2010 1619h
1012071-002EMS	Hexachlorophene	µg/L	EPA625	79.2	80.00	0	99.0	10-168				12/5/2010 1619h
1012071-002EMS	Hexachloropropene	µg/L	EPA625	30.2	80.00	0	37.7	10-72				12/5/2010 1619h
1012071-002EMS	Indene	µg/L	EPA625	31.7	80.00	0	39.7	10-35			1	12/5/2010 1619h
1012071-002EMS	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	58.4	80.00	0	73.0	10-176				12/5/2010 1619h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	Isodrin	µg/L	EPA625	74.2	80.00	0	92.7	15-165				12/5/2010 1619h
1012071-002EMS	Isophorone	µg/L	EPA625	54.3	80.00	0	67.8	10-99				12/5/2010 1619h
1012071-002EMS	Isosafrole	µg/L	EPA625	51.1	80.00	0	63.9	10-167				12/5/2010 1619h
1012071-002EMS	Kepone	µg/L	EPA625	166	80.00	0	208	10-175			1	12/5/2010 1619h
1012071-002EMS	Methapyrilene	µg/L	EPA625	72.6	80.00	0	90.8	10-149				12/5/2010 1619h
1012071-002EMS	Methyl methanesulfonate	µg/L	EPA625	40.0	80.00	0	50.0	10-132				12/5/2010 1619h
1012071-002EMS	Naphthalene	µg/L	EPA625	41.7	80.00	0	52.1	10-82				12/5/2010 1619h
1012071-002EMS	n-Decane	µg/L	EPA625	11.9	80.00	0	14.8	10-27				12/5/2010 1619h
1012071-002EMS	Nitrobenzene	µg/L	EPA625	62.7	80.00	0	78.4	10-119				12/5/2010 1619h
1012071-002EMS	Nitroquinoline-1-oxide	µg/L	EPA625	58.5	80.00	0	73.2	10-170				12/5/2010 1619h
1012071-002EMS	N-Nitrosodiethylamine	µg/L	EPA625	48.6	80.00	0	60.8	10-91				12/5/2010 1619h
1012071-002EMS	N-Nitrosodimethylamine	µg/L	EPA625	25.0	80.00	0	31.3	10-42				12/5/2010 1619h
1012071-002EMS	N-Nitrosodi-n-butylamine	µg/L	EPA625	59.5	80.00	0	74.4	10-175				12/5/2010 1619h
1012071-002EMS	N-Nitrosodiphenylamine	µg/L	EPA625	70.4	80.00	0	88.0	12-112				12/5/2010 1619h
1012071-002EMS	N-Nitrosodi-n-propylamine	µg/L	EPA625	50.0	80.00	0	62.5	10-77				12/5/2010 1619h
1012071-002EMS	N-Nitrosomethylethylamine	µg/L	EPA625	44.4	80.00	0	55.5	10-75				12/5/2010 1619h
1012071-002EMS	N-Nitrosomorpholine	µg/L	EPA625	60.0	80.00	0	75.0	10-175				12/5/2010 1619h
1012071-002EMS	N-Nitrosopiperidine	µg/L	EPA625	61.9	80.00	0	77.4	10-105				12/5/2010 1619h
1012071-002EMS	N-Nitrosopyrrolidine	µg/L	EPA625	67.8	80.00	0	84.8	10-88				12/5/2010 1619h
1012071-002EMS	n-Octadecane	µg/L	EPA625	52.1	80.00	0	65.1	10-121				12/5/2010 1619h
1012071-002EMS	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	54.0	80.00	0	67.4	10-93				12/5/2010 1619h
1012071-002EMS	o-Toluidine	µg/L	EPA625	106	80.00	0	133	10-107			1	12/5/2010 1619h
1012071-002EMS	Parathion	µg/L	EPA625	111	80.00	0	139	10-175				12/5/2010 1619h
1012071-002EMS	Methyl parathion	µg/L	EPA625	101	80.00	0	126	10-175				12/5/2010 1619h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	Pentachlorobenzene	µg/L	EPA625	62.0	80.00	0	77.5	25-134				12/5/2010 1619h
1012071-002EMS	Pentachloronitrobenzene	µg/L	EPA625	82.5	80.00	0	103	10-175				12/5/2010 1619h
1012071-002EMS	Pentachlorophenol	µg/L	EPA625	41.4	80.00	0	51.8	10-163				12/5/2010 1619h
1012071-002EMS	Phenacetin	µg/L	EPA625	76.8	80.00	0	96.0	10-175				12/5/2010 1619h
1012071-002EMS	Phenanthrene	µg/L	EPA625	72.5	80.00	0	90.7	31-126				12/5/2010 1619h
1012071-002EMS	Phenol	µg/L	EPA625	28.3	80.00	0	35.4	10-175				12/5/2010 1619h
1012071-002EMS	Phorate	µg/L	EPA625	79.0	80.00	0	98.8	10-175				12/5/2010 1619h
1012071-002EMS	Pronamide	µg/L	EPA625	74.7	80.00	0	93.4	10-95				12/5/2010 1619h
1012071-002EMS	Pyrene	µg/L	EPA625	88.4	80.00	0	111	51-139				12/5/2010 1619h
1012071-002EMS	Pyridine	µg/L	EPA625	19.8	80.00	0	24.8	10-25				12/5/2010 1619h
1012071-002EMS	Quinoline	µg/L	EPA625	63.7	80.00	0	79.7	10-63			1	12/5/2010 1619h
1012071-002EMS	Safrole	µg/L	EPA625	54.9	80.00	0	68.7	10-120				12/5/2010 1619h
1012071-002EMS	Tetraethyl dithiopyrophosphate	µg/L	EPA625	73.7	80.00	0	92.2	13-160				12/5/2010 1619h
1012071-002EMS	Thionazin	µg/L	EPA625	68.2	80.00	0	85.3	10-139				12/5/2010 1619h
1012071-002EMS	Surr: 2,4,6-Tribromophenol	%REC	EPA625	71.6	80.00		89.6	21-154				12/5/2010 1619h
1012071-002EMS	Surr: 2-Fluorobiphenyl	%REC	EPA625	54.4	40.00		136	10-106			S <sup>1</sup>	12/5/2010 1619h
1012071-002EMS	Surr: 2-Fluorophenol	%REC	EPA625	27.2	80.00		33.9	10-56				12/5/2010 1619h
1012071-002EMS	Surr: Nitrobenzene-d5	%REC	EPA625	57.9	40.00		145	10-101			S <sup>1</sup>	12/5/2010 1619h
1012071-002EMS	Surr: Phenol-d6	%REC	EPA625	18.1	80.00		22.6	10-45				12/5/2010 1619h
1012071-002EMS	Surr: Terphenyl-d14	%REC	EPA625	88.2	40.00		220	10-160			S <sup>1</sup>	12/5/2010 1619h
1012071-002EMS	Acenaphthene	µg/L	SW8270D	60.8	80.00	0	76.0	21-113				12/5/2010 1619h
1012071-002EMS	Benzo(a)pyrene	µg/L	SW8270D	76.9	80.00	0	96.1	15-169				12/5/2010 1619h
1012071-002EMS	Pyrene	µg/L	SW8270D	88.4	80.00	0	111	23-150				12/5/2010 1619h
1012071-002EMS	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	71.6	80.00		89.6	14-159				12/5/2010 1619h

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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:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMS	Surr: 2-Fluorobiphenyl	% REC	SW8270D	54.4	40.00		136	10-124			S	12/5/2010 1619h
1012071-002EMS	Surr: 2-Fluorophenol	% REC	SW8270D	27.2	80.00		33.9	10-106				12/5/2010 1619h
1012071-002EMS	Surr: Nitrobenzene-d5	% REC	SW8270D	57.9	40.00		145	10-180				12/5/2010 1619h
1012071-002EMS	Surr: Phenol-d6	% REC	SW8270D	18.1	80.00		22.6	10-122				12/5/2010 1619h
1012071-002EMS	Surr: Terphenyl-d14	% REC	SW8270D	88.2	40.00		220	10-199			S	12/5/2010 1619h

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

S - Surrogate recoveries outside the control limits. Repreparation and reanalysis and/or MS samples yielded similar results indicating matrix interference.



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## QC SUMMARY REPORT

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**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	1,1'-Biphenyl	µg/L	EPA625	53.0	80.00	0	66.3	27-99	2.37	49		12/5/2010 1647h
1012071-002EMSD	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	47.5	80.00	0	59.4	10-119	4.06	52		12/5/2010 1647h
1012071-002EMSD	1,2,4-Trichlorobenzene	µg/L	EPA625	37.3	80.00	0	46.7	10-79	3.10	49		12/5/2010 1647h
1012071-002EMSD	1,2-Dichlorobenzene	µg/L	EPA625	27.2	80.00	0	34.0	10-59	3.25	46		12/5/2010 1647h
1012071-002EMSD	1,3,5-Trinitrobenzene	µg/L	EPA625	145	80.00	0	181	10-175	8.03	33	1	12/5/2010 1647h
1012071-002EMSD	1,3-Dichlorobenzene	µg/L	EPA625	23.0	80.00	0	28.7	10-56	4.58	49		12/5/2010 1647h
1012071-002EMSD	1,3-Dinitrobenzene	µg/L	EPA625	89.2	80.00	0	111	10-175	5.07	29		12/5/2010 1647h
1012071-002EMSD	1,4-Dichlorobenzene	µg/L	EPA625	24.2	80.00	0	30.2	10-58	3.49	51		12/5/2010 1647h
1012071-002EMSD	1,4-Naphthoquinone	µg/L	EPA625	11.5	80.00	0	14.4	10-177	37.3	99		12/5/2010 1647h
1012071-002EMSD	1,4-Phenylenediamine	µg/L	EPA625	42.2	80.00	0	52.8	10-124	3.37	48		12/5/2010 1647h
1012071-002EMSD	1-Chloronaphthalene	µg/L	EPA625	35.4	80.00	0	44.3	10-106	17.1	47		12/5/2010 1647h
1012071-002EMSD	1-Methylnaphthalene	µg/L	EPA625	51.9	80.00	0	64.9	10-83	5.76	44		12/5/2010 1647h
1012071-002EMSD	1-Naphthylamine	µg/L	EPA625	61.6	80.00	0	77.0	10-122	0.407	57		12/5/2010 1647h
1012071-002EMSD	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	81.8	80.00	0	102	10-157	1.50	39		12/5/2010 1647h
1012071-002EMSD	2,4,5-Trichlorophenol	µg/L	EPA625	69.6	80.00	0	87.0	10-148	37.5	56		12/5/2010 1647h
1012071-002EMSD	2,4,6-Trichlorophenol	µg/L	EPA625	56.0	80.00	0	70.1	10-136	0.516	52		12/5/2010 1647h
1012071-002EMSD	2,4-Dichlorophenol	µg/L	EPA625	60.7	80.00	0	75.8	10-123	4.65	67		12/5/2010 1647h
1012071-002EMSD	2,4-Dimethylphenol	µg/L	EPA625	59.8	80.00	0	74.8	10-113	5.23	32		12/5/2010 1647h
1012071-002EMSD	2,4-Dinitrophenol	µg/L	EPA625	83.6	80.00	0	105	10-175	7.65	78		12/5/2010 1647h
1012071-002EMSD	2,4-Dinitrotoluene	µg/L	EPA625	91.7	80.00	0	115	10-175	6.01	26		12/5/2010 1647h
1012071-002EMSD	2,6-Dichlorophenol	µg/L	EPA625	65.2	80.00	0	81.5	10-148	2.42	56		12/5/2010 1647h
1012071-002EMSD	2,6-Dinitrotoluene	µg/L	EPA625	79.2	80.00	0	98.9	10-175	7.58	74		12/5/2010 1647h
1012071-002EMSD	2-Acetylaminofluorene	µg/L	EPA625	79.4	80.00	0	99.3	10-94	6.93	52	1	12/5/2010 1647h
1012071-002EMSD	2-Chloronaphthalene	µg/L	EPA625	56.7	80.00	0	70.9	10-93	2.48	49		12/5/2010 1647h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	2-Chlorophenol	µg/L	EPA625	50.0	80.00	0	62.5	10-92	3.17	58		12/5/2010 1647h
1012071-002EMSD	2-Methylnaphthalene	µg/L	EPA625	47.1	80.00	0	58.9	15-78	2.37	39		12/5/2010 1647h
1012071-002EMSD	2-Methylphenol	µg/L	EPA625	47.4	80.00	0	59.2	10-83	0.400	49		12/5/2010 1647h
1012071-002EMSD	2-Naphthylamine	µg/L	EPA625	57.2	80.00	0	71.5	10-154	10.1	37		12/5/2010 1647h
1012071-002EMSD	2-Nitroaniline	µg/L	EPA625	78.0	80.00	0	97.5	10-175	9.19	87		12/5/2010 1647h
1012071-002EMSD	2-Nitrophenol	µg/L	EPA625	80.2	80.00	0	100	10-175	0.940	64		12/5/2010 1647h
1012071-002EMSD	2-Picoline	µg/L	EPA625	25.8	80.00	0	32.3	10-61	32.7	63		12/5/2010 1647h
1012071-002EMSD	3&4-Methylphenol	µg/L	EPA625	24.2	80.00	0	30.2	10-80	12.0	99		12/5/2010 1647h
1012071-002EMSD	3,3'-Dichlorobenzidine	µg/L	EPA625	74.2	80.00	0	92.8	10-150	5.66	63		12/5/2010 1647h
1012071-002EMSD	3,3'-Dimethylbenzidine	µg/L	EPA625	66.4	80.00	0	83.0	10-143	2.49	99		12/5/2010 1647h
1012071-002EMSD	3-Methylcholanthrene	µg/L	EPA625	66.5	80.00	0	83.2	32-171	6.47	46		12/5/2010 1647h
1012071-002EMSD	3-Nitroaniline	µg/L	EPA625	71.5	80.00	0	89.4	10-175	13.1	29		12/5/2010 1647h
1012071-002EMSD	4,6-Dinitro-2-methylphenol	µg/L	EPA625	121	80.00	0	151	10-175	5.82	70		12/5/2010 1647h
1012071-002EMSD	4-Aminobiphenyl	µg/L	EPA625	69.0	80.00	0	86.2	10-175	1.41	79		12/5/2010 1647h
1012071-002EMSD	4-Bromophenyl phenyl ether	µg/L	EPA625	61.0	80.00	0	76.2	16-138	9.07	31		12/5/2010 1647h
1012071-002EMSD	4-Chloro-3-methylphenol	µg/L	EPA625	68.4	80.00	0	85.5	10-131	2.07	37		12/5/2010 1647h
1012071-002EMSD	4-Chloroaniline	µg/L	EPA625	51.4	80.00	0	64.2	10-98	11.9	41		12/5/2010 1647h
1012071-002EMSD	4-Chlorophenyl phenyl ether	µg/L	EPA625	58.2	80.00	0	72.7	31-108	10.2	30		12/5/2010 1647h
1012071-002EMSD	4-Nitroaniline	µg/L	EPA625	64.7	80.00	0	80.9	10-175	16.3	99		12/5/2010 1647h
1012071-002EMSD	4-Nitrophenol	µg/L	EPA625	110	80.00	0	137	10-97	14.1	69	1	12/5/2010 1647h
1012071-002EMSD	5-Nitro-o-toluidine	µg/L	EPA625	83.4	80.00	0	104	10-175	10.9	26		12/5/2010 1647h
1012071-002EMSD	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	78.8	80.00	0	98.5	26-174	8.37	40		12/5/2010 1647h
1012071-002EMSD	a,a-Dimethylphenethylamine	µg/L	EPA625	50.8	80.00	0	63.5	10-175	9.16	99		12/5/2010 1647h
1012071-002EMSD	Acenaphthene	µg/L	EPA625	56.4	80.00	0	70.5	29-97	7.44	38		12/5/2010 1647h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	Acenaphthylene	µg/L	EPA625	55.1	80.00	0	68.8	37-87	10.1	37		12/5/2010 1647h
1012071-002EMSD	Acetophenone	µg/L	EPA625	49.9	80.00	0	62.4	10-96	0.683	48		12/5/2010 1647h
1012071-002EMSD	alpha-Terpineol	µg/L	EPA625	48.2	80.00	0	60.2	10-67	8.98	46		12/5/2010 1647h
1012071-002EMSD	Aniline	µg/L	EPA625	32.7	80.00	0	40.9	10-71	31.5	48		12/5/2010 1647h
1012071-002EMSD	Anthracene	µg/L	EPA625	68.4	80.00	0	85.4	53-114	10.3	26		12/5/2010 1647h
1012071-002EMSD	Aramite	µg/L	EPA625	77.9	80.00	0	97.4	29-160	11.7	30		12/5/2010 1647h
1012071-002EMSD	Azobenzene	µg/L	EPA625	52.1	80.00	0	65.1	15-114	28.6	36		12/5/2010 1647h
1012071-002EMSD	Benz(a)anthracene	µg/L	EPA625	66.6	80.00	0	83.3	39-129	12.6	32		12/5/2010 1647h
1012071-002EMSD	Benzidine	µg/L	EPA625	57.8	80.00	0	72.2	10-99	8.39	99		12/5/2010 1647h
1012071-002EMSD	Benzo(a)pyrene	µg/L	EPA625	70.9	80.00	0	88.6	29-175	8.07	45		12/5/2010 1647h
1012071-002EMSD	Benzo(b)fluoranthene	µg/L	EPA625	68.8	80.00	0	86.0	15-140	12.5	44		12/5/2010 1647h
1012071-002EMSD	Benzo(g,h,i)perylene	µg/L	EPA625	50.3	80.00	0	62.9	10-182	8.71	48		12/5/2010 1647h
1012071-002EMSD	Benzo(k)fluoranthene	µg/L	EPA625	80.3	80.00	0	100	21-154	4.82	52		12/5/2010 1647h
1012071-002EMSD	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	13.7	10-71	0	78		12/5/2010 1647h
1012071-002EMSD	Benzyl alcohol	µg/L	EPA625	18.8	80.00	0	23.5	10-69	51.5	52		12/5/2010 1647h
1012071-002EMSD	Bis(2-chloroethoxy)methane	µg/L	EPA625	35.9	80.00	0	44.9	10-94	35.6	45		12/5/2010 1647h
1012071-002EMSD	Bis(2-chloroethyl) ether	µg/L	EPA625	42.1	80.00	0	52.6	10-70	11.4	47		12/5/2010 1647h
1012071-002EMSD	Bis(2-chloroisopropyl) ether	µg/L	EPA625	36.2	80.00	0	45.2	10-71	1.48	49		12/5/2010 1647h
1012071-002EMSD	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	146	80.00	0	183	10-175	11.8	28	1	12/5/2010 1647h
1012071-002EMSD	bis(2-ethylhexyl)adipate	µg/L	EPA625	77.0	80.00	0	96.2	10-175	17.2	25		12/5/2010 1647h
1012071-002EMSD	Butyl benzyl phthalate	µg/L	EPA625	75.6	80.00	0	94.6	10-175	14.4	99		12/5/2010 1647h
1012071-002EMSD	Carbazole	µg/L	EPA625	69.4	80.00	0	86.8	10-151	8.67	30		12/5/2010 1647h
1012071-002EMSD	Chlorobenzilate	µg/L	EPA625	74.1	80.00	0	92.6	18-175	13.7	25		12/5/2010 1647h
1012071-002EMSD	Chrysene	µg/L	EPA625	70.8	80.00	0	88.5	38-133	10.7	28		12/5/2010 1647h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
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**Contact:** Jim Harris  
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**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	Diallate (cis or trans)	µg/L	EPA625	56.8	80.00	0	71.0	10-157	14.4	29		12/5/2010 1647h
1012071-002EMSD	Dibenz(a,h)anthracene	µg/L	EPA625	53.7	80.00	0	67.1	13-168	8.44	51		12/5/2010 1647h
1012071-002EMSD	Dibenzofuran	µg/L	EPA625	56.4	80.00	0	70.5	29-103	5.50	34		12/5/2010 1647h
1012071-002EMSD	Diethyl phthalate	µg/L	EPA625	59.2	80.00	0	74.1	10-139	9.53	32		12/5/2010 1647h
1012071-002EMSD	Dimethoate	µg/L	EPA625	20.6	80.00	0	25.7	10-136	18.0	45		12/5/2010 1647h
1012071-002EMSD	Dimethyl phthalate	µg/L	EPA625	46.5	80.00	0	58.2	10-122	12.1	57		12/5/2010 1647h
1012071-002EMSD	Dimethylaminoazobenzene	µg/L	EPA625	75.3	80.00	0	94.2	34-142	13.6	26		12/5/2010 1647h
1012071-002EMSD	Di-n-butyl phthalate	µg/L	EPA625	69.3	80.00	0	86.6	44-124	12.8	25		12/5/2010 1647h
1012071-002EMSD	Di-n-octyl phthalate	µg/L	EPA625	97.0	80.00	0	121	10-175	9.99	50		12/5/2010 1647h
1012071-002EMSD	Dinoseb	µg/L	EPA625	123	80.00	0	154	10-175	0.831	42		12/5/2010 1647h
1012071-002EMSD	Diphenylamine	µg/L	EPA625	64.4	80.00	0	80.5	13-110	0.327	34		12/5/2010 1647h
1012071-002EMSD	Disulfoton	µg/L	EPA625	52.1	80.00	0	65.1	10-121	3.17	25		12/5/2010 1647h
1012071-002EMSD	Ethyl methanesulfonate	µg/L	EPA625	40.6	80.00	0	50.8	10-99	31.2	46		12/5/2010 1647h
1012071-002EMSD	Famphur	µg/L	EPA625	68.4	80.00	0	85.6	10-71	18.1	25	1	12/5/2010 1647h
1012071-002EMSD	Fluoranthene	µg/L	EPA625	66.9	80.00	0	83.6	23-135	13.3	25		12/5/2010 1647h
1012071-002EMSD	Fluorene	µg/L	EPA625	60.2	80.00	0	75.3	34-108	4.21	28		12/5/2010 1647h
1012071-002EMSD	Hexachlorobenzene	µg/L	EPA625	62.6	80.00	0	78.2	26-131	10.6	28		12/5/2010 1647h
1012071-002EMSD	Hexachlorobutadiene	µg/L	EPA625	33.0	80.00	0	41.2	10-110	9.37	68		12/5/2010 1647h
1012071-002EMSD	Hexachlorocyclopentadiene	µg/L	EPA625	21.4	80.00	0	26.7	10-45	6.74	79		12/5/2010 1647h
1012071-002EMSD	Hexachloroethane	µg/L	EPA625	22.6	80.00	0	28.2	10-58	7.50	42		12/5/2010 1647h
1012071-002EMSD	Hexachlorophene	µg/L	EPA625	75.9	80.00	0	94.9	10-168	4.17	25		12/5/2010 1647h
1012071-002EMSD	Hexachloropropene	µg/L	EPA625	32.8	80.00	0	41.1	10-72	8.51	63		12/5/2010 1647h
1012071-002EMSD	Indene	µg/L	EPA625	33.2	80.00	0	41.5	10-35	4.53	35	1	12/5/2010 1647h
1012071-002EMSD	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	54.0	80.00	0	67.5	10-176	7.83	48		12/5/2010 1647h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	Isodrin	µg/L	EPA625	64.3	80.00	0	80.4	15-165	14.2	25		12/5/2010 1647h
1012071-002EMSD	Isophorone	µg/L	EPA625	49.7	80.00	0	62.1	10-99	8.83	41		12/5/2010 1647h
1012071-002EMSD	Isosafrole	µg/L	EPA625	49.1	80.00	0	61.4	10-167	4.05	50		12/5/2010 1647h
1012071-002EMSD	Kepone	µg/L	EPA625	144	80.00	0	180	10-175	14.0	46	1	12/5/2010 1647h
1012071-002EMSD	Methapyrilene	µg/L	EPA625	68.7	80.00	0	85.9	10-149	5.55	51		12/5/2010 1647h
1012071-002EMSD	Methyl methanesulfonate	µg/L	EPA625	27.1	80.00	0	33.9	10-132	38.4	45		12/5/2010 1647h
1012071-002EMSD	Naphthalene	µg/L	EPA625	42.3	80.00	0	52.9	10-82	1.60	43		12/5/2010 1647h
1012071-002EMSD	n-Decane	µg/L	EPA625	11.9	80.00	0	14.9	10-27	0.505	32		12/5/2010 1647h
1012071-002EMSD	Nitrobenzene	µg/L	EPA625	61.7	80.00	0	77.1	10-119	1.69	49		12/5/2010 1647h
1012071-002EMSD	Nitroquinoline-1-oxide	µg/L	EPA625	47.1	80.00	0	58.8	10-170	21.7	97		12/5/2010 1647h
1012071-002EMSD	N-Nitrosodiethylamine	µg/L	EPA625	41.1	80.00	0	51.3	10-91	16.9	54		12/5/2010 1647h
1012071-002EMSD	N-Nitrosodimethylamine	µg/L	EPA625	15.6	80.00	0	19.4	10-42	46.6	66		12/5/2010 1647h
1012071-002EMSD	N-Nitrosodi-n-butylamine	µg/L	EPA625	54.2	80.00	0	67.7	10-175	9.39	80		12/5/2010 1647h
1012071-002EMSD	N-Nitrosodiphenylamine	µg/L	EPA625	66.0	80.00	0	82.4	12-112	6.56	30		12/5/2010 1647h
1012071-002EMSD	N-Nitrosodi-n-propylamine	µg/L	EPA625	44.5	80.00	0	55.6	10-77	11.7	47		12/5/2010 1647h
1012071-002EMSD	N-Nitrosomethylethylamine	µg/L	EPA625	30.2	80.00	0	37.7	10-75	38.2	60		12/5/2010 1647h
1012071-002EMSD	N-Nitrosomorpholine	µg/L	EPA625	41.9	80.00	0	52.4	10-175	35.5	73		12/5/2010 1647h
1012071-002EMSD	N-Nitrosopiperidine	µg/L	EPA625	53.7	80.00	0	67.1	10-105	14.3	44		12/5/2010 1647h
1012071-002EMSD	N-Nitrosopyrrolidine	µg/L	EPA625	47.9	80.00	0	59.9	10-88	34.4	40		12/5/2010 1647h
1012071-002EMSD	n-Octadecane	µg/L	EPA625	51.3	80.00	0	64.2	10-121	1.47	40		12/5/2010 1647h
1012071-002EMSD	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	53.0	80.00	0	66.2	10-93	1.85	44		12/5/2010 1647h
1012071-002EMSD	o-Toluidine	µg/L	EPA625	92.5	80.00	0	116	10-107	13.7	46	1	12/5/2010 1647h
1012071-002EMSD	Parathion	µg/L	EPA625	98.3	80.00	0	123	10-175	11.9	28		12/5/2010 1647h
1012071-002EMSD	Methyl parathion	µg/L	EPA625	89.2	80.00	0	112	10-175	12.4	26		12/5/2010 1647h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	Pentachlorobenzene	µg/L	EPA625	56.0	80.00	0	70.0	25-134	10.2	35		12/5/2010 1647h
1012071-002EMSD	Pentachloronitrobenzene	µg/L	EPA625	72.5	80.00	0	90.7	10-175	12.9	25		12/5/2010 1647h
1012071-002EMSD	Pentachlorophenol	µg/L	EPA625	46.2	80.00	0	57.8	10-163	10.9	58		12/5/2010 1647h
1012071-002EMSD	Phenacetin	µg/L	EPA625	62.1	80.00	0	77.7	10-175	21.1	38		12/5/2010 1647h
1012071-002EMSD	Phenanthrene	µg/L	EPA625	69.8	80.00	0	87.3	31-126	3.81	32		12/5/2010 1647h
1012071-002EMSD	Phenol	µg/L	EPA625	26.4	80.00	0	33.0	10-175	7.17	71		12/5/2010 1647h
1012071-002EMSD	Phorate	µg/L	EPA625	70.2	80.00	0	87.7	10-175	11.9	42		12/5/2010 1647h
1012071-002EMSD	Pronamide	µg/L	EPA625	66.6	80.00	0	83.3	10-95	11.5	26		12/5/2010 1647h
1012071-002EMSD	Pyrene	µg/L	EPA625	77.6	80.00	0	97.0	51-139	13.0	27		12/5/2010 1647h
1012071-002EMSD	Pyridine	µg/L	EPA625	13.2	80.00	0	16.6	10-25	39.7	61		12/5/2010 1647h
1012071-002EMSD	Quinoline	µg/L	EPA625	58.6	80.00	0	73.2	10-63	8.46	99	1	12/5/2010 1647h
1012071-002EMSD	Safrole	µg/L	EPA625	50.8	80.00	0	63.5	10-120	7.85	51		12/5/2010 1647h
1012071-002EMSD	Tetraethyl dithiopyrophosphate	µg/L	EPA625	65.7	80.00	0	82.2	13-160	11.5	35		12/5/2010 1647h
1012071-002EMSD	Thionazin	µg/L	EPA625	61.2	80.00	0	76.5	10-139	10.8	25		12/5/2010 1647h
1012071-002EMSD	Surr: 2,4,6-Tribromophenol	%REC	EPA625	67.0	80.00		83.8	21-154				12/5/2010 1647h
1012071-002EMSD	Surr: 2-Fluorobiphenyl	%REC	EPA625	50.7	40.00		127	10-106			S <sup>1</sup>	12/5/2010 1647h
1012071-002EMSD	Surr: 2-Fluorophenol	%REC	EPA625	26.0	80.00		32.4	10-56				12/5/2010 1647h
1012071-002EMSD	Surr: Nitrobenzene-d5	%REC	EPA625	54.8	40.00		137	10-101			S <sup>1</sup>	12/5/2010 1647h
1012071-002EMSD	Surr: Phenol-d6	%REC	EPA625	17.2	80.00		21.4	10-45				12/5/2010 1647h
1012071-002EMSD	Surr: Terphenyl-d14	%REC	EPA625	75.9	40.00		190	10-160			S <sup>1</sup>	12/5/2010 1647h
1012071-002EMSD	Acenaphthene	µg/L	SW8270D	56.4	80.00	0	70.5	21-113	7.44	25		12/5/2010 1647h
1012071-002EMSD	Benzo(a)pyrene	µg/L	SW8270D	70.9	80.00	0	88.6	15-169	8.07	25		12/5/2010 1647h
1012071-002EMSD	Pyrene	µg/L	SW8270D	77.6	80.00	0	97.0	23-150	13.0	25		12/5/2010 1647h
1012071-002EMSD	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	67.0	80.00		83.8	14-159				12/5/2010 1647h

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Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002EMSD	Surr: 2-Fluorobiphenyl	% REC	SW8270D	50.7	40.00		127	10-124			S	12/5/2010 1647h
1012071-002EMSD	Surr: 2-Fluorophenol	% REC	SW8270D	26.0	80.00		32.4	10-106				12/5/2010 1647h
1012071-002EMSD	Surr: Nitrobenzene-d5	% REC	SW8270D	54.8	40.00		137	10-180				12/5/2010 1647h
1012071-002EMSD	Surr: Phenol-d6	% REC	SW8270D	17.2	80.00		21.4	10-122				12/5/2010 1647h
1012071-002EMSD	Surr: Terphenyl-d14	% REC	SW8270D	75.9	40.00		190	10-199				12/5/2010 1647h

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

S - Surrogate recoveries outside the control limits. Repreparation and reanalysis and/or MS samples yielded similar results indicating matrix interference.



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**Dept:** MSVOA

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120310B	1,1,1,2-Tetrachloroethane	µg/L	EPA624	16.2	20.00	0	81.0	74-117				12/3/2010 1834h
LCS VOC 120310B	1,1,1-Trichloroethane	µg/L	EPA624	18.1	20.00	0	90.4	49-140				12/3/2010 1834h
LCS VOC 120310B	1,1,2,2-Tetrachloroethane	µg/L	EPA624	14.3	20.00	0	71.4	67-119				12/3/2010 1834h
LCS VOC 120310B	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	EPA624	22.8	20.00	0	114	21-206				12/3/2010 1834h
LCS VOC 120310B	1,1,2-Trichloroethane	µg/L	EPA624	18.9	20.00	0	94.6	80-123				12/3/2010 1834h
LCS VOC 120310B	1,1-Dichloropropene	µg/L	EPA624	39.6	40.00	0	98.9	10-140				12/3/2010 1834h
LCS VOC 120310B	1,1-Dichloroethane	µg/L	EPA624	17.2	20.00	0	85.9	70-130				12/3/2010 1834h
LCS VOC 120310B	1,1-Dichloroethene	µg/L	EPA624	21.3	20.00	0	106	52-171				12/3/2010 1834h
LCS VOC 120310B	1,2,3-Trichlorobenzene	µg/L	EPA624	14.1	20.00	0	70.6	67-131				12/3/2010 1834h
LCS VOC 120310B	1,2,3-Trichloropropane	µg/L	EPA624	15.6	20.00	0	77.8	62-116				12/3/2010 1834h
LCS VOC 120310B	1,2,3-Trimethylbenzene	µg/L	EPA624	18.9	20.00	0	94.4	76-140				12/3/2010 1834h
LCS VOC 120310B	1,2,4-Trichlorobenzene	µg/L	EPA624	13.7	20.00	0	68.4	58-133				12/3/2010 1834h
LCS VOC 120310B	1,2,4-Trimethylbenzene	µg/L	EPA624	18.7	20.00	0	93.5	79-151				12/3/2010 1834h
LCS VOC 120310B	1,2-Dibromo-3-chloropropane	µg/L	EPA624	14.4	20.00	0	72.2	64-129				12/3/2010 1834h
LCS VOC 120310B	1,2-Dibromoethane	µg/L	EPA624	16.1	20.00	0	80.4	70-126				12/3/2010 1834h
LCS VOC 120310B	1,2-Dichlorobenzene	µg/L	EPA624	16.2	20.00	0	81.0	67-135				12/3/2010 1834h
LCS VOC 120310B	1,2-Dichloroethane	µg/L	EPA624	18.1	20.00	0	90.5	60-137				12/3/2010 1834h
LCS VOC 120310B	1,2-Dichloropropane	µg/L	EPA624	16.6	20.00	0	82.8	59-135				12/3/2010 1834h
LCS VOC 120310B	1,3,5-Trimethylbenzene	µg/L	EPA624	15.9	20.00	0	79.4	77-151				12/3/2010 1834h
LCS VOC 120310B	1,3-Dichlorobenzene	µg/L	EPA624	15.8	20.00	0	78.8	78-134				12/3/2010 1834h
LCS VOC 120310B	1,3-Dichloropropane	µg/L	EPA624	15.8	20.00	0	79.2	78-116				12/3/2010 1834h
LCS VOC 120310B	1,4-Dichlorobenzene	µg/L	EPA624	15.6	20.00	0	78.2	72-139				12/3/2010 1834h
LCS VOC 120310B	1,4-Dioxane	µg/L	EPA624	181	200.0	0	90.7	33-149				12/3/2010 1834h
LCS VOC 120310B	2,2-Dichloropropane	µg/L	EPA624	17.6	30.00	0	58.8	13-180				12/3/2010 1834h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSVOA

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120310B	2-Butanone	µg/L	EPA624	23.6	20.00	0	118	10-217				12/3/2010 1834h
LCS VOC 120310B	2-Chloroethyl vinyl ether	µg/L	EPA624	38.1	40.00	0	95.3	32-163				12/3/2010 1834h
LCS VOC 120310B	2-Chlorotoluene	µg/L	EPA624	16.0	20.00	0	79.8	79-142				12/3/2010 1834h
LCS VOC 120310B	2-Hexanone	µg/L	EPA624	15.4	20.00	0	77.0	50-156				12/3/2010 1834h
LCS VOC 120310B	2-Nitropropane	µg/L	EPA624	17.2	20.00	0	86.2	10-243				12/3/2010 1834h
LCS VOC 120310B	4-Chlorotoluene	µg/L	EPA624	15.6	20.00	0	78.2	68-128				12/3/2010 1834h
LCS VOC 120310B	4-Isopropyltoluene	µg/L	EPA624	14.7	20.00	0	73.3	73-156				12/3/2010 1834h
LCS VOC 120310B	4-Methyl-2-pentanone	µg/L	EPA624	15.7	20.00	0	78.7	10-214				12/3/2010 1834h
LCS VOC 120310B	Acetone	µg/L	EPA624	12.6	20.00	0	62.9	10-313				12/3/2010 1834h
LCS VOC 120310B	Acetonitrile	µg/L	EPA624	36.9	40.00	0	92.3	37-159				12/3/2010 1834h
LCS VOC 120310B	Acrolein	µg/L	EPA624	66.8	40.00	0	167	10-325				12/3/2010 1834h
LCS VOC 120310B	Acrylonitrile	µg/L	EPA624	15.2	20.00	0	76.2	53-134				12/3/2010 1834h
LCS VOC 120310B	Allyl chloride	µg/L	EPA624	17.7	20.00	0	88.4	10-243				12/3/2010 1834h
LCS VOC 120310B	Benzene	µg/L	EPA624	17.8	20.00	0	89.2	62-127				12/3/2010 1834h
LCS VOC 120310B	Benzyl chloride	µg/L	EPA624	16.2	20.00	0	81.2	40-146				12/3/2010 1834h
LCS VOC 120310B	Bis(2-chloroisopropyl) ether	µg/L	EPA624	16.0	20.00	0	79.8	54-146				12/3/2010 1834h
LCS VOC 120310B	Bromobenzene	µg/L	EPA624	18.2	20.00	0	91.1	78-148				12/3/2010 1834h
LCS VOC 120310B	Bromochloromethane	µg/L	EPA624	17.3	20.00	0	86.3	75-134				12/3/2010 1834h
LCS VOC 120310B	Bromodichloromethane	µg/L	EPA624	17.0	20.00	0	85.2	74-121				12/3/2010 1834h
LCS VOC 120310B	Bromoform	µg/L	EPA624	15.2	20.00	0	76.1	68-131				12/3/2010 1834h
LCS VOC 120310B	Bromomethane	µg/L	EPA624	16.0	20.00	0	80.1	10-185				12/3/2010 1834h
LCS VOC 120310B	Butyl acetate	µg/L	EPA624	17.6	20.00	0	87.9	46-178				12/3/2010 1834h
LCS VOC 120310B	Carbon disulfide	µg/L	EPA624	27.9	20.00	0	139	21-224				12/3/2010 1834h
LCS VOC 120310B	Carbon tetrachloride	µg/L	EPA624	18.6	20.00	0	93.1	60-157				12/3/2010 1834h

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**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120310B	Chlorobenzene	µg/L	EPA624	16.0	20.00	0	80.1	63-140				12/3/2010 1834h
LCS VOC 120310B	Chloroethane	µg/L	EPA624	18.9	20.00	0	94.7	41-173				12/3/2010 1834h
LCS VOC 120310B	Chloroform	µg/L	EPA624	17.4	20.00	0	86.8	67-132				12/3/2010 1834h
LCS VOC 120310B	Chloromethane	µg/L	EPA624	15.5	20.00	0	77.4	10-138				12/3/2010 1834h
LCS VOC 120310B	Chloroprene	µg/L	EPA624	13.8	20.00	0	69.0	10-161				12/3/2010 1834h
LCS VOC 120310B	cis-1,2-Dichloroethene	µg/L	EPA624	17.2	20.00	0	86.1	72-137				12/3/2010 1834h
LCS VOC 120310B	cis-1,3-Dichloropropene	µg/L	EPA624	17.8	40.00	0	44.4	10-134				12/3/2010 1834h
LCS VOC 120310B	Cyclohexane	µg/L	EPA624	22.6	20.00	0	113	35-230				12/3/2010 1834h
LCS VOC 120310B	Cyclohexanone	µg/L	EPA624	< 50.0	40.00	0	60.4	10-374				12/3/2010 1834h
LCS VOC 120310B	Dibromochloromethane	µg/L	EPA624	16.0	20.00	0	80.2	68-135				12/3/2010 1834h
LCS VOC 120310B	Dibromomethane	µg/L	EPA624	16.4	20.00	0	81.9	74-120				12/3/2010 1834h
LCS VOC 120310B	Dichlorodifluoromethane	µg/L	EPA624	13.4	20.00	0	67.1	10-150				12/3/2010 1834h
LCS VOC 120310B	Ethyl acetate	µg/L	EPA624	38.2	40.00	0	95.6	50-155				12/3/2010 1834h
LCS VOC 120310B	Ethyl ether	µg/L	EPA624	20.2	20.00	0	101	45-146				12/3/2010 1834h
LCS VOC 120310B	Ethyl methacrylate	µg/L	EPA624	15.5	20.00	0	77.4	64-113				12/3/2010 1834h
LCS VOC 120310B	Ethylbenzene	µg/L	EPA624	16.1	20.00	0	80.4	55-133				12/3/2010 1834h
LCS VOC 120310B	Hexachlorobutadiene	µg/L	EPA624	12.0	20.00	0	60.2	35-213				12/3/2010 1834h
LCS VOC 120310B	Iodomethane	µg/L	EPA624	16.2	20.00	0	81.2	10-233				12/3/2010 1834h
LCS VOC 120310B	Isobutyl alcohol	µg/L	EPA624	< 100	80.00	0	86.7	12-202				12/3/2010 1834h
LCS VOC 120310B	Isopropyl acetate	µg/L	EPA624	18.6	20.00	0	92.8	55-145				12/3/2010 1834h
LCS VOC 120310B	Isopropyl alcohol	µg/L	EPA624	59.2	80.00	0	74.0	12-250				12/3/2010 1834h
LCS VOC 120310B	Isopropylbenzene	µg/L	EPA624	15.6	20.00	0	78.2	60-147				12/3/2010 1834h
LCS VOC 120310B	Isopropyltoluene	µg/L	EPA624	14.7	20.00	0	73.3	73-156				12/3/2010 1834h
LCS VOC 120310B	m,p-Xylene	µg/L	EPA624	32.8	40.00	0	82.0	70-130				12/3/2010 1834h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120310B	Methacrylonitrile	µg/L	EPA624	16.3	20.00	0	81.6	79-123				12/3/2010 1834h
LCS VOC 120310B	Methyl Acetate	µg/L	EPA624	27.2	20.00	0	136	5-398				12/3/2010 1834h
LCS VOC 120310B	Methyl methacrylate	µg/L	EPA624	15.4	20.00	0	76.8	55-128				12/3/2010 1834h
LCS VOC 120310B	Methyl tert-butyl ether	µg/L	EPA624	17.6	20.00	0	87.9	37-189				12/3/2010 1834h
LCS VOC 120310B	Methylcyclohexane	µg/L	EPA624	21.7	20.00	0	109	65-175				12/3/2010 1834h
LCS VOC 120310B	Methylene chloride	µg/L	EPA624	12.2	20.00	0	60.8	55-138				12/3/2010 1834h
LCS VOC 120310B	n-Amyl acetate	µg/L	EPA624	11.4	20.00	0	56.8	10-187				12/3/2010 1834h
LCS VOC 120310B	Naphthalene	µg/L	EPA624	14.4	20.00	0	72.0	41-131				12/3/2010 1834h
LCS VOC 120310B	n-Butyl alcohol	µg/L	EPA624	63.2	80.00	0	79.0	10-226				12/3/2010 1834h
LCS VOC 120310B	n-Butylbenzene	µg/L	EPA624	14.1	20.00	0	70.6	40-158				12/3/2010 1834h
LCS VOC 120310B	n-Hexane	µg/L	EPA624	20.4	20.00	0	102	10-277				12/3/2010 1834h
LCS VOC 120310B	n-Octane	µg/L	EPA624	14.0	20.00	0	70.0	45-158				12/3/2010 1834h
LCS VOC 120310B	n-Propylbenzene	µg/L	EPA624	15.4	20.00	0	77.0	67-131				12/3/2010 1834h
LCS VOC 120310B	o-Xylene	µg/L	EPA624	16.0	20.00	0	80.0	70-130				12/3/2010 1834h
LCS VOC 120310B	Pentachloroethane	µg/L	EPA624	11.6	20.00	0	58.2	10-314				12/3/2010 1834h
LCS VOC 120310B	Propionitrile	µg/L	EPA624	< 25.0	20.00	0	76.0	60-132				12/3/2010 1834h
LCS VOC 120310B	Propyl acetate	µg/L	EPA624	18.4	20.00	0	91.8	48-143				12/3/2010 1834h
LCS VOC 120310B	sec-Butylbenzene	µg/L	EPA624	15.1	20.00	0	75.6	72-157				12/3/2010 1834h
LCS VOC 120310B	Styrene	µg/L	EPA624	18.6	20.00	0	93.3	81-125				12/3/2010 1834h
LCS VOC 120310B	tert-Butyl alcohol	µg/L	EPA624	38.2	40.00	0	95.4	50-286				12/3/2010 1834h
LCS VOC 120310B	tert-Butylbenzene	µg/L	EPA624	16.8	20.00	0	83.9	75-157				12/3/2010 1834h
LCS VOC 120310B	Tetrachloroethene	µg/L	EPA624	20.2	20.00	0	101	49-163				12/3/2010 1834h
LCS VOC 120310B	Tetrahydrofuran	µg/L	EPA624	14.6	20.00	0	72.8	43-146				12/3/2010 1834h
LCS VOC 120310B	Toluene	µg/L	EPA624	16.1	20.00	0	80.6	67-128				12/3/2010 1834h

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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:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120310B	trans-1,2-Dichloroethene	µg/L	EPA624	16.8	20.00	0	84.0	47-146				12/3/2010 1834h
LCS VOC 120310B	trans-1,3-Dichloropropene	µg/L	EPA624	17.5	20.00	0	87.6	29-143				12/3/2010 1834h
LCS VOC 120310B	trans-1,4-Dichloro-2-butene	µg/L	EPA624	16.9	20.00	0	84.4	20-214				12/3/2010 1834h
LCS VOC 120310B	Trichloroethene	µg/L	EPA624	17.7	20.00	0	88.6	54-152				12/3/2010 1834h
LCS VOC 120310B	Trichlorofluoromethane	µg/L	EPA624	18.3	20.00	0	91.6	56-166				12/3/2010 1834h
LCS VOC 120310B	Vinyl acetate	µg/L	EPA624	25.5	40.00	0	63.8	38-121				12/3/2010 1834h
LCS VOC 120310B	Vinyl chloride	µg/L	EPA624	17.3	20.00	0	86.6	13-155				12/3/2010 1834h
LCS VOC 120310B	Xylenes, Total	µg/L	EPA624	48.8	60.00	0	81.3	52-130				12/3/2010 1834h
LCS VOC 120310B	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	53.2	50.00		106	69-132				12/3/2010 1834h
LCS VOC 120310B	Surr: 4-Bromofluorobenzene	%REC	EPA624	49.2	50.00		98.3	85-118				12/3/2010 1834h
LCS VOC 120310B	Surr: Dibromofluoromethane	%REC	EPA624	51.4	50.00		103	80-120				12/3/2010 1834h
LCS VOC 120310B	Surr: Toluene-d8	%REC	EPA624	48.1	50.00		96.2	81-120				12/3/2010 1834h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120310B	1,1,1,2-Tetrachloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1,1-Trichloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1,2,2-Tetrachloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1,2-Trichloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1-Dichloropropene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1-Dichloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,1-Dichloroethene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2,3-Trichlorobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2,3-Trichloropropane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2,3-Trimethylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2,4-Trichlorobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2,4-Trimethylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2-Dibromo-3-chloropropane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2-Dibromoethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2-Dichlorobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2-Dichloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,2-Dichloropropane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,3,5-Trimethylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,3-Dichlorobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,3-Dichloropropane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,4-Dichlorobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	1,4-Dioxane	µg/L	EPA624	< 40.0				-				12/3/2010 1917h
MB VOC 120310B	2,2-Dichloropropane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h

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Jose Rocha

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120310B	2-Butanone	µg/L	EPA624	< 10.0				-				12/3/2010 1917h
MB VOC 120310B	2-Chloroethyl vinyl ether	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	2-Chlorotoluene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	2-Hexanone	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	2-Nitropropane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	4-Chlorotoluene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	4-Isopropyltoluene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	4-Methyl-2-pentanone	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Acetone	µg/L	EPA624	< 10.0				-				12/3/2010 1917h
MB VOC 120310B	Acetonitrile	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Acrolein	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Acrylonitrile	µg/L	EPA624	< 10.0				-				12/3/2010 1917h
MB VOC 120310B	Allyl chloride	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Benzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Benzyl chloride	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Bis(2-chloroisopropyl) ether	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Bromobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Bromochloromethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Bromodichloromethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Bromoform	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Bromomethane	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Butyl acetate	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Carbon disulfide	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Carbon tetrachloride	µg/L	EPA624	< 2.00				-				12/3/2010 1917h

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120310B	Chlorobenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Chloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Chloroform	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Chloromethane	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Chloroprene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	cis-1,2-Dichloroethene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	cis-1,3-Dichloropropene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Cyclohexane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Cyclohexanone	µg/L	EPA624	< 50.0				-				12/3/2010 1917h
MB VOC 120310B	Dibromochloromethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Dibromomethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Dichlorodifluoromethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Ethyl acetate	µg/L	EPA624	< 10.0				-				12/3/2010 1917h
MB VOC 120310B	Ethyl ether	µg/L	EPA624	< 10.0				-				12/3/2010 1917h
MB VOC 120310B	Ethyl methacrylate	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Ethylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Hexachlorobutadiene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Iodomethane	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Isobutyl alcohol	µg/L	EPA624	< 100				-				12/3/2010 1917h
MB VOC 120310B	Isopropyl acetate	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Isopropyl alcohol	µg/L	EPA624	< 25.0				-				12/3/2010 1917h
MB VOC 120310B	Isopropylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Isopropyltoluene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	m,p-Xylene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h

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**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120310B	Methacrylonitrile	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Methyl Acetate	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Methyl methacrylate	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Methyl tert-butyl ether	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Methylcyclohexane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Methylene chloride	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	n-Amyl acetate	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Naphthalene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	n-Butyl alcohol	µg/L	EPA624	< 25.0				-				12/3/2010 1917h
MB VOC 120310B	n-Butylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	n-Hexane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	n-Octane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	n-Propylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	o-Xylene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Pentachloroethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Propionitrile	µg/L	EPA624	< 25.0				-				12/3/2010 1917h
MB VOC 120310B	Propyl acetate	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	sec-Butylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Styrene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	tert-Butyl alcohol	µg/L	EPA624	< 20.0				-				12/3/2010 1917h
MB VOC 120310B	tert-Butylbenzene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Tetrachloroethene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Tetrahydrofuran	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Toluene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120310B	TPH C11-C15 (DRO)	µg/L	EPA624	< 20.0				-				12/3/2010 1917h
MB VOC 120310B	TPH C6-C10 (GRO)	µg/L	EPA624	< 20.0				-				12/3/2010 1917h
MB VOC 120310B	trans-1,2-Dichloroethene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	trans-1,3-Dichloropropene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	trans-1,4-Dichloro-2-butene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Trichloroethene	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Trichlorofluoromethane	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Vinyl acetate	µg/L	EPA624	< 5.00				-				12/3/2010 1917h
MB VOC 120310B	Vinyl chloride	µg/L	EPA624	< 1.00				-				12/3/2010 1917h
MB VOC 120310B	Xylenes, Total	µg/L	EPA624	< 2.00				-				12/3/2010 1917h
MB VOC 120310B	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	56.8	50.00		114	69-132				12/3/2010 1917h
MB VOC 120310B	Surr: 4-Bromofluorobenzene	%REC	EPA624	53.2	50.00		106	85-118				12/3/2010 1917h
MB VOC 120310B	Surr: Dibromofluoromethane	%REC	EPA624	52.0	50.00		104	80-120				12/3/2010 1917h
MB VOC 120310B	Surr: Toluene-d8	%REC	EPA624	49.1	50.00		98.1	81-120				12/3/2010 1917h



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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMS	1,1,1,2-Tetrachloroethane	µg/L	EPA624	17.6	20.00	0	88.0	74-117				12/3/2010 2014h
1012071-001DMS	1,1,1-Trichloroethane	µg/L	EPA624	22.2	20.00	0	111	67-147				12/3/2010 2014h
1012071-001DMS	1,1,2,2-Tetrachloroethane	µg/L	EPA624	15.6	20.00	0	77.8	67-119				12/3/2010 2014h
1012071-001DMS	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/L	EPA624	25.6	20.00	0	128	21-206				12/3/2010 2014h
1012071-001DMS	1,1,2-Trichloroethane	µg/L	EPA624	17.1	20.00	0	85.5	80-123				12/3/2010 2014h
1012071-001DMS	1,1-Dichloropropene	µg/L	EPA624	44.5	40.00	0	111	10-140				12/3/2010 2014h
1012071-001DMS	1,1-Dichloroethane	µg/L	EPA624	20.1	20.00	0	100	70-130				12/3/2010 2014h
1012071-001DMS	1,1-Dichloroethene	µg/L	EPA624	25.2	20.00	0	126	62-152				12/3/2010 2014h
1012071-001DMS	1,2,3-Trichlorobenzene	µg/L	EPA624	15.2	20.00	0	75.9	67-131				12/3/2010 2014h
1012071-001DMS	1,2,3-Trichloropropane	µg/L	EPA624	17.0	20.00	0	85.2	62-116				12/3/2010 2014h
1012071-001DMS	1,2,3-Trimethylbenzene	µg/L	EPA624	18.5	20.00	0	92.6	76-140				12/3/2010 2014h
1012071-001DMS	1,2,4-Trichlorobenzene	µg/L	EPA624	14.3	20.00	0	71.5	58-133				12/3/2010 2014h
1012071-001DMS	1,2,4-Trimethylbenzene	µg/L	EPA624	17.8	20.00	0	88.8	79-151				12/3/2010 2014h
1012071-001DMS	1,2-Dibromo-3-chloropropane	µg/L	EPA624	15.7	20.00	0	78.7	64-129				12/3/2010 2014h
1012071-001DMS	1,2-Dibromoethane	µg/L	EPA624	17.0	20.00	0	85.2	70-126				12/3/2010 2014h
1012071-001DMS	1,2-Dichlorobenzene	µg/L	EPA624	17.1	20.00	0	85.3	70-130				12/3/2010 2014h
1012071-001DMS	1,2-Dichloroethane	µg/L	EPA624	20.5	20.00	0	103	39-162				12/3/2010 2014h
1012071-001DMS	1,2-Dichloropropane	µg/L	EPA624	17.9	20.00	0	89.6	59-135				12/3/2010 2014h
1012071-001DMS	1,3,5-Trimethylbenzene	µg/L	EPA624	17.7	20.00	0	88.7	77-151				12/3/2010 2014h
1012071-001DMS	1,3-Dichlorobenzene	µg/L	EPA624	17.2	20.00	0	86.1	78-134				12/3/2010 2014h
1012071-001DMS	1,3-Dichloropropane	µg/L	EPA624	17.0	20.00	0	84.9	78-116				12/3/2010 2014h
1012071-001DMS	1,4-Dichlorobenzene	µg/L	EPA624	16.7	20.00	0	83.5	72-139				12/3/2010 2014h
1012071-001DMS	1,4-Dioxane	µg/L	EPA624	193	200.0	0	96.4	33-149				12/3/2010 2014h
1012071-001DMS	2,2-Dichloropropane	µg/L	EPA624	21.1	30.00	0	70.3	13-180				12/3/2010 2014h

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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:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMS	2-Butanone	µg/L	EPA624	24.8	20.00	0	124	10-217				12/3/2010 2014h
1012071-001DMS	2-Chloroethyl vinyl ether	µg/L	EPA624	< 5.00	40.00	0	0	32-163			<sup>1</sup>	12/3/2010 2014h
1012071-001DMS	2-Chlorotoluene	µg/L	EPA624	17.6	20.00	0	88.1	79-142				12/3/2010 2014h
1012071-001DMS	2-Hexanone	µg/L	EPA624	14.7	20.00	0	73.5	50-156				12/3/2010 2014h
1012071-001DMS	2-Nitropropane	µg/L	EPA624	18.0	20.00	0	90.0	10-243				12/3/2010 2014h
1012071-001DMS	4-Chlorotoluene	µg/L	EPA624	17.2	20.00	0	85.8	68-128				12/3/2010 2014h
1012071-001DMS	4-Isopropyltoluene	µg/L	EPA624	17.0	20.00	0	84.8	73-156				12/3/2010 2014h
1012071-001DMS	4-Methyl-2-pentanone	µg/L	EPA624	15.8	20.00	0	78.9	10-214				12/3/2010 2014h
1012071-001DMS	Acetone	µg/L	EPA624	12.1	20.00	0	60.4	10-313				12/3/2010 2014h
1012071-001DMS	Acetonitrile	µg/L	EPA624	37.4	40.00	0	93.5	37-159				12/3/2010 2014h
1012071-001DMS	Acrolein	µg/L	EPA624	70.2	40.00	0	175	10-325				12/3/2010 2014h
1012071-001DMS	Acrylonitrile	µg/L	EPA624	17.1	20.00	0	85.7	53-134				12/3/2010 2014h
1012071-001DMS	Allyl chloride	µg/L	EPA624	18.7	20.00	0	93.6	10-243				12/3/2010 2014h
1012071-001DMS	Benzene	µg/L	EPA624	20.3	20.00	0	102	66-145				12/3/2010 2014h
1012071-001DMS	Benzyl chloride	µg/L	EPA624	16.1	20.00	0	80.4	40-146				12/3/2010 2014h
1012071-001DMS	Bis(2-chloroisopropyl) ether	µg/L	EPA624	17.2	20.00	0	86.2	54-146				12/3/2010 2014h
1012071-001DMS	Bromobenzene	µg/L	EPA624	16.7	20.00	0	83.4	78-148				12/3/2010 2014h
1012071-001DMS	Bromochloromethane	µg/L	EPA624	19.0	20.00	0	95.1	75-134				12/3/2010 2014h
1012071-001DMS	Bromodichloromethane	µg/L	EPA624	19.0	20.00	0	95.0	74-121				12/3/2010 2014h
1012071-001DMS	Bromoform	µg/L	EPA624	16.7	20.00	0	83.3	68-131				12/3/2010 2014h
1012071-001DMS	Bromomethane	µg/L	EPA624	14.0	20.00	0	70.0	10-185				12/3/2010 2014h
1012071-001DMS	Butyl acetate	µg/L	EPA624	16.6	20.00	0	82.9	46-178				12/3/2010 2014h
1012071-001DMS	Carbon disulfide	µg/L	EPA624	30.0	20.00	0	150	21-224				12/3/2010 2014h
1012071-001DMS	Carbon tetrachloride	µg/L	EPA624	23.2	20.00	0	116	60-157				12/3/2010 2014h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMS	Chlorobenzene	µg/L	EPA624	17.2	20.00	0	86.1	63-140				12/3/2010 2014h
1012071-001DMS	Chloroethane	µg/L	EPA624	17.5	20.00	0	87.6	41-173				12/3/2010 2014h
1012071-001DMS	Chloroform	µg/L	EPA624	19.5	20.00	0	97.4	50-146				12/3/2010 2014h
1012071-001DMS	Chloromethane	µg/L	EPA624	14.0	20.00	0	70.2	10-138				12/3/2010 2014h
1012071-001DMS	Chloroprene	µg/L	EPA624	19.8	20.00	0	99.0	10-161				12/3/2010 2014h
1012071-001DMS	cis-1,2-Dichloroethene	µg/L	EPA624	19.1	20.00	0	95.4	72-137				12/3/2010 2014h
1012071-001DMS	cis-1,3-Dichloropropene	µg/L	EPA624	18.5	40.00	0	46.3	10-134				12/3/2010 2014h
1012071-001DMS	Cyclohexane	µg/L	EPA624	24.6	20.00	0	123	35-230				12/3/2010 2014h
1012071-001DMS	Cyclohexanone	µg/L	EPA624	< 50.0	40.00	0	52.7	10-374				12/3/2010 2014h
1012071-001DMS	Dibromochloromethane	µg/L	EPA624	17.4	20.00	0	87.2	68-135				12/3/2010 2014h
1012071-001DMS	Dibromomethane	µg/L	EPA624	18.3	20.00	0	91.4	74-120				12/3/2010 2014h
1012071-001DMS	Dichlorodifluoromethane	µg/L	EPA624	14.0	20.00	0	69.8	10-150				12/3/2010 2014h
1012071-001DMS	Ethyl acetate	µg/L	EPA624	38.6	40.00	0	96.4	50-155				12/3/2010 2014h
1012071-001DMS	Ethyl ether	µg/L	EPA624	19.0	20.00	0	95.1	45-146				12/3/2010 2014h
1012071-001DMS	Ethyl methacrylate	µg/L	EPA624	15.4	20.00	0	76.8	77-151			1	12/3/2010 2014h
1012071-001DMS	Ethylbenzene	µg/L	EPA624	17.8	20.00	0	88.8	69-133				12/3/2010 2014h
1012071-001DMS	Hexachlorobutadiene	µg/L	EPA624	15.5	20.00	0	77.6	35-213				12/3/2010 2014h
1012071-001DMS	Iodomethane	µg/L	EPA624	17.4	20.00	0	87.2	10-233				12/3/2010 2014h
1012071-001DMS	Isobutyl alcohol	µg/L	EPA624	< 100	80.00	0	75.7	12-202				12/3/2010 2014h
1012071-001DMS	Isopropyl acetate	µg/L	EPA624	18.4	20.00	0	92.2	55-145				12/3/2010 2014h
1012071-001DMS	Isopropyl alcohol	µg/L	EPA624	64.4	80.00	0	80.4	12-250				12/3/2010 2014h
1012071-001DMS	Isopropylbenzene	µg/L	EPA624	18.0	20.00	0	90.3	60-147				12/3/2010 2014h
1012071-001DMS	Isopropyltoluene	µg/L	EPA624	17.0	20.00	0	84.8	73-156				12/3/2010 2014h
1012071-001DMS	m,p-Xylene	µg/L	EPA624	36.2	40.00	0	90.4	70-130				12/3/2010 2014h



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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMS	Methacrylonitrile	µg/L	EPA624	15.8	20.00	0	78.8	79-123			<sup>1</sup>	12/3/2010 2014h
1012071-001DMS	Methyl Acetate	µg/L	EPA624	25.1	20.00	0	125	5-398				12/3/2010 2014h
1012071-001DMS	Methyl methacrylate	µg/L	EPA624	15.3	20.00	0	76.6	55-128				12/3/2010 2014h
1012071-001DMS	Methyl tert-butyl ether	µg/L	EPA624	15.2	20.00	0	75.8	37-189				12/3/2010 2014h
1012071-001DMS	Methylcyclohexane	µg/L	EPA624	24.4	20.00	0	122	65-175				12/3/2010 2014h
1012071-001DMS	Methylene chloride	µg/L	EPA624	13.9	20.00	0	69.7	55-138				12/3/2010 2014h
1012071-001DMS	n-Amyl acetate	µg/L	EPA624	10.7	20.00	0	53.6	10-187				12/3/2010 2014h
1012071-001DMS	Naphthalene	µg/L	EPA624	15.0	20.00	0	75.0	41-131				12/3/2010 2014h
1012071-001DMS	n-Butyl alcohol	µg/L	EPA624	63.7	80.00	0	79.6	10-226				12/3/2010 2014h
1012071-001DMS	n-Butylbenzene	µg/L	EPA624	16.5	20.00	0	82.6	40-158				12/3/2010 2014h
1012071-001DMS	n-Hexane	µg/L	EPA624	19.0	20.00	0	95.2	10-277				12/3/2010 2014h
1012071-001DMS	n-Octane	µg/L	EPA624	15.8	20.00	0	78.8	45-158				12/3/2010 2014h
1012071-001DMS	n-Propylbenzene	µg/L	EPA624	17.4	20.00	0	87.0	67-131				12/3/2010 2014h
1012071-001DMS	o-Xylene	µg/L	EPA624	17.5	20.00	0	87.6	70-130				12/3/2010 2014h
1012071-001DMS	Pentachloroethane	µg/L	EPA624	11.2	20.00	0	56.0	10-314				12/3/2010 2014h
1012071-001DMS	Propionitrile	µg/L	EPA624	< 25.0	20.00	0	83.3	60-132				12/3/2010 2014h
1012071-001DMS	Propyl acetate	µg/L	EPA624	17.7	20.00	0	88.5	48-143				12/3/2010 2014h
1012071-001DMS	sec-Butylbenzene	µg/L	EPA624	18.0	20.00	0	89.8	72-157				12/3/2010 2014h
1012071-001DMS	Styrene	µg/L	EPA624	16.8	20.00	0	84.0	81-125				12/3/2010 2014h
1012071-001DMS	tert-Butyl alcohol	µg/L	EPA624	38.6	40.00	0	96.4	50-286				12/3/2010 2014h
1012071-001DMS	tert-Butylbenzene	µg/L	EPA624	16.8	20.00	0	84.2	75-157				12/3/2010 2014h
1012071-001DMS	Tetrachloroethene	µg/L	EPA624	22.7	20.00	0	113	49-163				12/3/2010 2014h
1012071-001DMS	Tetrahydrofuran	µg/L	EPA624	15.3	20.00	0	76.5	43-146				12/3/2010 2014h
1012071-001DMS	Toluene	µg/L	EPA624	17.8	20.00	0	88.9	18-192				12/3/2010 2014h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSVOA

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMS	trans-1,2-Dichloroethene	µg/L	EPA624	19.9	20.00	0	99.6	47-146				12/3/2010 2014h
1012071-001DMS	trans-1,3-Dichloropropene	µg/L	EPA624	19.0	20.00	0	95.2	29-143				12/3/2010 2014h
1012071-001DMS	trans-1,4-Dichloro-2-butene	µg/L	EPA624	19.2	20.00	0	96.1	20-214				12/3/2010 2014h
1012071-001DMS	Trichloroethene	µg/L	EPA624	20.8	20.00	0	104	61-153				12/3/2010 2014h
1012071-001DMS	Trichlorofluoromethane	µg/L	EPA624	19.9	20.00	0	99.4	56-166				12/3/2010 2014h
1012071-001DMS	Vinyl acetate	µg/L	EPA624	23.9	40.00	0	59.8	38-121				12/3/2010 2014h
1012071-001DMS	Vinyl chloride	µg/L	EPA624	16.8	20.00	0	83.9	13-155				12/3/2010 2014h
1012071-001DMS	Xylenes, Total	µg/L	EPA624	53.7	60.00	0	89.5	42-167				12/3/2010 2014h
1012071-001DMS	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	57.2	50.00		114	77-144				12/3/2010 2014h
1012071-001DMS	Surr: 4-Bromofluorobenzene	%REC	EPA624	48.6	50.00		97.3	80-123				12/3/2010 2014h
1012071-001DMS	Surr: Dibromofluoromethane	%REC	EPA624	52.4	50.00		105	80-124				12/3/2010 2014h
1012071-001DMS	Surr: Toluene-d8	%REC	EPA624	47.4	50.00		94.7	80-125				12/3/2010 2014h

<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:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMSD	1,1,1,2-Tetrachloroethane	µg/L	EPA624	17.3	20.00	0	86.5	74-117	1.66	25		12/3/2010 2033h
1012071-001DMSD	1,1,1-Trichloroethane	µg/L	EPA624	21.4	20.00	0	107	67-147	3.49	25		12/3/2010 2033h
1012071-001DMSD	1,1,2,2-Tetrachloroethane	µg/L	EPA624	15.8	20.00	0	79.1	67-119	1.72	25		12/3/2010 2033h
1012071-001DMSD	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/L	EPA624	24.2	20.00	0	121	21-206	5.62	25		12/3/2010 2033h
1012071-001DMSD	1,1,2-Trichloroethane	µg/L	EPA624	17.0	20.00	0	85.2	80-123	0.293	25		12/3/2010 2033h
1012071-001DMSD	1,1-Dichloropropene	µg/L	EPA624	43.1	40.00	0	108	10-140	3.13	25		12/3/2010 2033h
1012071-001DMSD	1,1-Dichloroethane	µg/L	EPA624	19.4	20.00	0	96.8	70-130	3.65	25		12/3/2010 2033h
1012071-001DMSD	1,1-Dichloroethene	µg/L	EPA624	24.8	20.00	0	124	62-152	1.56	25		12/3/2010 2033h
1012071-001DMSD	1,2,3-Trichlorobenzene	µg/L	EPA624	14.9	20.00	0	74.6	67-131	1.73	25		12/3/2010 2033h
1012071-001DMSD	1,2,3-Trichloropropane	µg/L	EPA624	17.5	20.00	0	87.5	62-116	2.72	25		12/3/2010 2033h
1012071-001DMSD	1,2,3-Trimethylbenzene	µg/L	EPA624	18.1	20.00	0	90.6	76-140	2.24	25		12/3/2010 2033h
1012071-001DMSD	1,2,4-Trichlorobenzene	µg/L	EPA624	14.1	20.00	0	70.6	58-133	1.13	25		12/3/2010 2033h
1012071-001DMSD	1,2,4-Trimethylbenzene	µg/L	EPA624	16.9	20.00	0	84.7	79-151	4.73	25		12/3/2010 2033h
1012071-001DMSD	1,2-Dibromo-3-chloropropane	µg/L	EPA624	16.3	20.00	0	81.4	64-129	3.50	25		12/3/2010 2033h
1012071-001DMSD	1,2-Dibromoethane	µg/L	EPA624	17.1	20.00	0	85.5	70-126	0.410	25		12/3/2010 2033h
1012071-001DMSD	1,2-Dichlorobenzene	µg/L	EPA624	17.1	20.00	0	85.4	70-130	0.0586	25		12/3/2010 2033h
1012071-001DMSD	1,2-Dichloroethane	µg/L	EPA624	20.5	20.00	0	102	39-162	0.0976	25		12/3/2010 2033h
1012071-001DMSD	1,2-Dichloropropane	µg/L	EPA624	17.7	20.00	0	88.6	59-135	1.12	25		12/3/2010 2033h
1012071-001DMSD	1,3,5-Trimethylbenzene	µg/L	EPA624	17.2	20.00	0	86.2	77-151	2.80	25		12/3/2010 2033h
1012071-001DMSD	1,3-Dichlorobenzene	µg/L	EPA624	16.5	20.00	0	82.5	78-134	4.21	25		12/3/2010 2033h
1012071-001DMSD	1,3-Dichloropropane	µg/L	EPA624	16.8	20.00	0	84.2	78-116	0.769	25		12/3/2010 2033h
1012071-001DMSD	1,4-Dichlorobenzene	µg/L	EPA624	16.5	20.00	0	82.6	72-139	1.08	25		12/3/2010 2033h
1012071-001DMSD	1,4-Dioxane	µg/L	EPA624	190	200.0	0	94.8	33-149	1.63	25		12/3/2010 2033h
1012071-001DMSD	2,2-Dichloropropane	µg/L	EPA624	20.1	30.00	0	67.1	13-180	4.71	25		12/3/2010 2033h

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMSD	2-Butanone	µg/L	EPA624	26.1	20.00	0	131	10-217	5.06	25		12/3/2010 2033h
1012071-001DMSD	2-Chloroethyl vinyl ether	µg/L	EPA624	< 5.00	40.00	0	0	32-163	0	25	<sup>1</sup>	12/3/2010 2033h
1012071-001DMSD	2-Chlorotoluene	µg/L	EPA624	17.1	20.00	0	85.5	79-142	3.00	25		12/3/2010 2033h
1012071-001DMSD	2-Hexanone	µg/L	EPA624	15.1	20.00	0	75.5	50-156	2.62	25		12/3/2010 2033h
1012071-001DMSD	2-Nitropropane	µg/L	EPA624	18.2	20.00	0	91.2	10-243	1.38	25		12/3/2010 2033h
1012071-001DMSD	4-Chlorotoluene	µg/L	EPA624	17.1	20.00	0	85.5	68-128	0.292	25		12/3/2010 2033h
1012071-001DMSD	4-Isopropyltoluene	µg/L	EPA624	16.6	20.00	0	82.8	73-156	2.27	25		12/3/2010 2033h
1012071-001DMSD	4-Methyl-2-pentanone	µg/L	EPA624	16.0	20.00	0	80.2	10-214	1.57	25		12/3/2010 2033h
1012071-001DMSD	Acetone	µg/L	EPA624	12.3	20.00	0	61.7	10-313	2.13	25		12/3/2010 2033h
1012071-001DMSD	Acetonitrile	µg/L	EPA624	38.3	40.00	0	95.7	37-159	2.25	25		12/3/2010 2033h
1012071-001DMSD	Acrolein	µg/L	EPA624	69.5	40.00	0	174	10-325	0.931	25		12/3/2010 2033h
1012071-001DMSD	Acrylonitrile	µg/L	EPA624	17.3	20.00	0	86.6	53-134	1.04	25		12/3/2010 2033h
1012071-001DMSD	Allyl chloride	µg/L	EPA624	18.0	20.00	0	90.1	10-243	3.81	25		12/3/2010 2033h
1012071-001DMSD	Benzene	µg/L	EPA624	19.8	20.00	0	99.0	66-145	2.69	25		12/3/2010 2033h
1012071-001DMSD	Benzyl chloride	µg/L	EPA624	16.2	20.00	0	81.0	40-146	0.682	25		12/3/2010 2033h
1012071-001DMSD	Bis(2-chloroisopropyl) ether	µg/L	EPA624	17.4	20.00	0	87.1	54-146	0.981	25		12/3/2010 2033h
1012071-001DMSD	Bromobenzene	µg/L	EPA624	16.2	20.00	0	80.8	78-148	3.17	25		12/3/2010 2033h
1012071-001DMSD	Bromochloromethane	µg/L	EPA624	18.9	20.00	0	94.5	75-134	0.633	25		12/3/2010 2033h
1012071-001DMSD	Bromodichloromethane	µg/L	EPA624	18.8	20.00	0	94.3	74-121	0.740	25		12/3/2010 2033h
1012071-001DMSD	Bromoform	µg/L	EPA624	16.6	20.00	0	83.2	68-131	0.180	25		12/3/2010 2033h
1012071-001DMSD	Bromomethane	µg/L	EPA624	15.2	20.00	0	76.0	10-185	8.22	25		12/3/2010 2033h
1012071-001DMSD	Butyl acetate	µg/L	EPA624	16.7	20.00	0	83.5	46-178	0.721	25		12/3/2010 2033h
1012071-001DMSD	Carbon disulfide	µg/L	EPA624	29.2	20.00	0	146	21-224	2.64	25		12/3/2010 2033h
1012071-001DMSD	Carbon tetrachloride	µg/L	EPA624	22.8	20.00	0	114	60-157	2.09	25		12/3/2010 2033h

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Kyle F. Gross

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSVOA

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMSD	Chlorobenzene	µg/L	EPA624	17.0	20.00	0	84.8	63-140	1.58	25		12/3/2010 2033h
1012071-001DMSD	Chloroethane	µg/L	EPA624	17.6	20.00	0	88.0	41-173	0.342	25		12/3/2010 2033h
1012071-001DMSD	Chloroform	µg/L	EPA624	19.1	20.00	0	95.6	50-146	1.92	25		12/3/2010 2033h
1012071-001DMSD	Chloromethane	µg/L	EPA624	14.4	20.00	0	72.0	10-138	2.39	25		12/3/2010 2033h
1012071-001DMSD	Chloroprene	µg/L	EPA624	19.6	20.00	0	98.0	10-161	1.01	25		12/3/2010 2033h
1012071-001DMSD	cis-1,2-Dichloroethene	µg/L	EPA624	19.0	20.00	0	95.1	72-137	0.420	25		12/3/2010 2033h
1012071-001DMSD	cis-1,3-Dichloropropene	µg/L	EPA624	18.4	40.00	0	46.0	10-134	0.650	25		12/3/2010 2033h
1012071-001DMSD	Cyclohexane	µg/L	EPA624	23.9	20.00	0	119	35-230	3.13	25		12/3/2010 2033h
1012071-001DMSD	Cyclohexanone	µg/L	EPA624	< 50.0	40.00	0	54.3	10-374	0	25		12/3/2010 2033h
1012071-001DMSD	Dibromochloromethane	µg/L	EPA624	17.1	20.00	0	85.3	68-135	2.15	25		12/3/2010 2033h
1012071-001DMSD	Dibromomethane	µg/L	EPA624	18.1	20.00	0	90.4	74-120	1.16	25		12/3/2010 2033h
1012071-001DMSD	Dichlorodifluoromethane	µg/L	EPA624	14.0	20.00	0	70.2	10-150	0.500	25		12/3/2010 2033h
1012071-001DMSD	Ethyl acetate	µg/L	EPA624	38.5	40.00	0	96.2	50-155	0.130	25		12/3/2010 2033h
1012071-001DMSD	Ethyl ether	µg/L	EPA624	19.7	20.00	0	98.7	45-146	3.72	25		12/3/2010 2033h
1012071-001DMSD	Ethyl methacrylate	µg/L	EPA624	15.3	20.00	0	76.6	77-151	0.326	25	1	12/3/2010 2033h
1012071-001DMSD	Ethylbenzene	µg/L	EPA624	17.4	20.00	0	87.2	69-133	1.76	25		12/3/2010 2033h
1012071-001DMSD	Hexachlorobutadiene	µg/L	EPA624	15.4	20.00	0	77.0	35-213	0.711	25		12/3/2010 2033h
1012071-001DMSD	Iodomethane	µg/L	EPA624	17.5	20.00	0	87.6	10-233	0.515	25		12/3/2010 2033h
1012071-001DMSD	Isobutyl alcohol	µg/L	EPA624	< 100	80.00	0	70.9	12-202	0	25		12/3/2010 2033h
1012071-001DMSD	Isopropyl acetate	µg/L	EPA624	18.9	20.00	0	94.5	55-145	2.46	25		12/3/2010 2033h
1012071-001DMSD	Isopropyl alcohol	µg/L	EPA624	67.8	80.00	0	84.7	12-250	5.19	25		12/3/2010 2033h
1012071-001DMSD	Isopropylbenzene	µg/L	EPA624	17.5	20.00	0	87.5	60-147	3.09	25		12/3/2010 2033h
1012071-001DMSD	Isopropyltoluene	µg/L	EPA624	16.6	20.00	0	82.8	73-156	2.27	25		12/3/2010 2033h
1012071-001DMSD	m,p-Xylene	µg/L	EPA624	35.3	40.00	0	88.3	70-130	2.43	25		12/3/2010 2033h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

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

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMSD	Methacrylonitrile	µg/L	EPA624	16.2	20.00	0	81.0	79-123	2.75	25		12/3/2010 2033h
1012071-001DMSD	Methyl Acetate	µg/L	EPA624	25.4	20.00	0	127	5-398	1.39	25		12/3/2010 2033h
1012071-001DMSD	Methyl methacrylate	µg/L	EPA624	15.8	20.00	0	79.2	55-128	3.40	25		12/3/2010 2033h
1012071-001DMSD	Methyl tert-butyl ether	µg/L	EPA624	14.8	20.00	0	73.8	37-189	2.74	25		12/3/2010 2033h
1012071-001DMSD	Methylcyclohexane	µg/L	EPA624	23.8	20.00	0	119	65-175	2.62	25		12/3/2010 2033h
1012071-001DMSD	Methylene chloride	µg/L	EPA624	13.9	20.00	0	69.4	55-138	0.359	25		12/3/2010 2033h
1012071-001DMSD	n-Amyl acetate	µg/L	EPA624	10.8	20.00	0	54.1	10-187	0.929	25		12/3/2010 2033h
1012071-001DMSD	Naphthalene	µg/L	EPA624	15.4	20.00	0	76.8	41-131	2.31	25		12/3/2010 2033h
1012071-001DMSD	n-Butyl alcohol	µg/L	EPA624	70.0	80.00	0	87.4	10-226	9.40	25		12/3/2010 2033h
1012071-001DMSD	n-Butylbenzene	µg/L	EPA624	16.2	20.00	0	80.9	40-158	2.02	25		12/3/2010 2033h
1012071-001DMSD	n-Hexane	µg/L	EPA624	18.6	20.00	0	93.0	10-277	2.29	25		12/3/2010 2033h
1012071-001DMSD	n-Octane	µg/L	EPA624	15.6	20.00	0	78.0	45-158	1.15	25		12/3/2010 2033h
1012071-001DMSD	n-Propylbenzene	µg/L	EPA624	17.0	20.00	0	85.0	67-131	2.33	25		12/3/2010 2033h
1012071-001DMSD	o-Xylene	µg/L	EPA624	16.9	20.00	0	84.5	70-130	3.66	25		12/3/2010 2033h
1012071-001DMSD	Pentachloroethane	µg/L	EPA624	11.2	20.00	0	56.2	10-314	0.356	25		12/3/2010 2033h
1012071-001DMSD	Propionitrile	µg/L	EPA624	< 25.0	20.00	0	83.4	60-132	0	25		12/3/2010 2033h
1012071-001DMSD	Propyl acetate	µg/L	EPA624	17.8	20.00	0	89.2	48-143	0.844	25		12/3/2010 2033h
1012071-001DMSD	sec-Butylbenzene	µg/L	EPA624	17.3	20.00	0	86.7	72-157	3.57	25		12/3/2010 2033h
1012071-001DMSD	Styrene	µg/L	EPA624	16.4	20.00	0	82.0	81-125	2.41	25		12/3/2010 2033h
1012071-001DMSD	tert-Butyl alcohol	µg/L	EPA624	40.0	40.00	0	100	50-286	3.79	25		12/3/2010 2033h
1012071-001DMSD	tert-Butylbenzene	µg/L	EPA624	16.6	20.00	0	83.2	75-157	1.25	25		12/3/2010 2033h
1012071-001DMSD	Tetrachloroethene	µg/L	EPA624	21.7	20.00	0	109	49-163	4.37	25		12/3/2010 2033h
1012071-001DMSD	Tetrahydrofuran	µg/L	EPA624	16.0	20.00	0	80.0	43-146	4.41	25		12/3/2010 2033h
1012071-001DMSD	Toluene	µg/L	EPA624	17.4	20.00	0	86.9	18-192	2.33	25		12/3/2010 2033h

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## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** MSVOA

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-001DMSD	trans-1,2-Dichloroethene	µg/L	EPA624	19.6	20.00	0	98.2	47-146	1.47	25		12/3/2010 2033h
1012071-001DMSD	trans-1,3-Dichloropropene	µg/L	EPA624	18.7	20.00	0	93.3	29-143	1.96	25		12/3/2010 2033h
1012071-001DMSD	trans-1,4-Dichloro-2-butene	µg/L	EPA624	17.6	20.00	0	87.9	20-214	8.97	25		12/3/2010 2033h
1012071-001DMSD	Trichloroethene	µg/L	EPA624	19.9	20.00	0	99.3	61-153	4.53	25		12/3/2010 2033h
1012071-001DMSD	Trichlorofluoromethane	µg/L	EPA624	19.4	20.00	0	96.9	56-166	2.55	25		12/3/2010 2033h
1012071-001DMSD	Vinyl acetate	µg/L	EPA624	23.8	40.00	0	59.5	38-121	0.629	25		12/3/2010 2033h
1012071-001DMSD	Vinyl chloride	µg/L	EPA624	17.4	20.00	0	86.9	13-155	3.57	25		12/3/2010 2033h
1012071-001DMSD	Xylenes, Total	µg/L	EPA624	52.2	60.00	0	87.0	42-167	2.83	25		12/3/2010 2033h
1012071-001DMSD	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	57.2	50.00		114	77-144				12/3/2010 2033h
1012071-001DMSD	Surr: 4-Bromofluorobenzene	%REC	EPA624	48.4	50.00		96.8	80-123				12/3/2010 2033h
1012071-001DMSD	Surr: Dibromofluoromethane	%REC	EPA624	52.6	50.00		105	80-124				12/3/2010 2033h
1012071-001DMSD	Surr: Toluene-d8	%REC	EPA624	47.2	50.00		94.4	80-125				12/3/2010 2033h

<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:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** WC

**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-R21127	Chemical Oxygen Demand	mg/L	HACH 8000	1,030	1,000	0	103	85-115				12/3/2010 1530h
LCS-2	Chemical Oxygen Demand	mg/L	HACH 8000	284	300.0	0	94.7	85-115				12/3/2010 1530h
LCS-3	Chemical Oxygen Demand	mg/L	HACH 8000	107	100.0	0	107	85-115				12/3/2010 1530h
LCS-4	Chemical Oxygen Demand	mg/L	HACH 8000	< 10.0	10.00	0	90.0	85-115				12/3/2010 1530h
LCS-R21124	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	18.1	20.00	2.600	77.5	64-132				12/3/2010 1702h



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**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** WC

**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-R21127	Chemical Oxygen Demand	mg/L	HACH 8000	< 10.0				-				12/3/2010 1530h
MB-R21124	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	< 3.00				-				12/3/2010 1702h



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**Contact:** Jim Harris

**Dept:** WC

**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002FMS	Chemical Oxygen Demand	mg/L	HACH 8000	45.0	50.00	0	90.0	85-115				12/3/2010 1530h



# 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:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** WC

**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012071-002FMMSD	Chemical Oxygen Demand	mg/L	HACH 8000	47.0	50.00	0	94.0	85-115	4.35	10		12/3/2010 1530h



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QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR

**Lab Set ID:** 1012071

**Project:** Red Butte Spill

**Contact:** Jim Harris

**Dept:** WC

**QC Type:** QCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
QCS-R21124	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	16.9	20.00	2.600	71.5	64-132				12/3/2010 1702h



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah DEQ DERR  
**Lab Set ID:** 1012071  
**Project:** Red Butte Spill

**Contact:** Jim Harris  
**Dept:** WC  
**QC Type:** QCSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
QCSD-R21124	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	16.8	20.00	2.600	71.0	64-132	0.593	34		12/3/2010 1702h

# RUSH

## American West Analytical Laboratories

### WORK ORDER Summary

Client: Utah DEQ DERR

Client ID: UTD100

Project: Red Butte Spill

Comments: No Hard Copies. QC 2+ / Next Day Rush / Report out TIC's for Semi's -(Use #2 as MS/MSD) / client was notified that ORO would take longer, he said to send partial reports and do the best we can;

Contact: Jim Harris

QC Level: LEVEL II+

Work Order: 1012071

Page 1 of 2

12/3/2010

WO Type: Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1012071-001A	4992095 Red Butte AB Gardens	12/3/2010 9:35:00 AM	12/3/2010 2:47:00 PM	12/6/2010	Aqueous	OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1012071-001B				12/6/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH (liters)	2
				12/6/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH (liters)	
1012071-001C				12/6/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH (liters)	
				12/6/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH (liters)	
1012071-001D				12/6/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1012071-001E				12/6/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	
				12/6/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/6/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1012071-001F				12/6/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1012071-002A	Red Butte NR Greenhouse	12/3/2010 9:00:00 AM		12/6/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	2
1012071-002B				12/6/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH (liters)	3
				12/6/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH (liters)	
1012071-002C				12/6/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH (liters)	
				12/6/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH (liters)	
1012071-002D				12/6/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	
1012071-002E				12/6/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	
				12/6/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/6/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1012071-002F				12/6/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1

# WORK ORDER Summary

Work Order: **1012071**

Client: Utah DEQ DERR

Page 2 of 2

Client ID: UTD100

Contact: Jim Harris

12/3/2010

Project: Red Butte Spill

QC Level: LEVEL II+

WO Type: Standard

Comments: No Hard Copies. QC 2+ / Next Day Rush / Report out TIC's for Semi's -(Use #2 as MS/MSD) / client was notified that ORO would take longer, he said to send partial reports and do the best we can;

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel Storage	
1012071-003A	4992083 Red Butte @ 1100	12/3/2010 10:50:00 AM	12/3/2010 2:47:00 PM	12/6/2010	Aqueous	OGF-W-1664SGT	<input type="checkbox"/> OGFFridge	1
1012071-003B				12/6/2010		3510-TPH-PR	<input type="checkbox"/> Hall-TPH (liters)	2
				12/6/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/> Hall-TPH (liters)	
1012071-003C				12/6/2010		3510-ORO-PR	<input type="checkbox"/> Hall-TPH (liters)	
				12/6/2010		8015-W-ORO(1L)	<input type="checkbox"/> Hall-TPH (liters)	
1012071-003D				12/6/2010		624-W	<input checked="" type="checkbox"/> VOCFridge	3
1012071-003E				12/6/2010		3510-SVOA-PR	<input type="checkbox"/> Walkin-Semi	
				12/6/2010		625-W	<input checked="" type="checkbox"/> Walkin-Semi	
				12/6/2010		8270-W	<input checked="" type="checkbox"/> Walkin-Semi	
1012071-003F				12/6/2010		COD-HACH8000	<input type="checkbox"/> ww - cod	1
1012071-004A	Trip Blank	12/3/2010		12/6/2010		624-W	<input checked="" type="checkbox"/> VOCFridge	2



Client DIV. OF WATER QUALITY  
 Address 195 N 1950 W  
SLC UT 84102  
CITY STATE ZIP  
 Phone 541-3069 Fax \_\_\_\_\_  
 Contact JAMES HARRIS  
 E-mail jamesharris@utah.gov  
 Project Name RED BUTTE SPILL  
 Project Number/P.O.# \_\_\_\_\_  
 Sampler Name J. HARRIS



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Lab Sample Set # 1012071  
 Page \_\_\_\_\_ of \_\_\_\_\_

Turn Around Time (Circle One)

1 day 2 day 3 day 4 day 5 day Standard

Sample ID

Date/Time Collected	Matrix	Number of Containers (Total)	TESTS REQUIRED					QC LEVEL				COMMENTS	
			TPH Fract	TPH 0.0-1.0% VOCs	SVOCs	COD							
12/3 0935			—	—	—	—							0.2 cfs est.
12/3 0900		X	—	—	—	—							0.57 cfs
12/3 1050			—	—	—	—							
12/3/04				X									

LABORATORY USE ONLY

SAMPLES WERE:

1 Shipped or hand delivered  
Notes:

2 Ambient or Chilled  
Notes:

3 Temperature 1.8

4 Received Broken/Leaking (Improperly Sealed)  
Y N  
Notes:

5 Properly Preserved  
Y N  
Checked at Bench  
Y N  
Notes:

6 Received Within Holding Times  
Y N  
Notes:

Relinquished By: Signature <u>[Signature]</u>	Date <u>12/3</u>	Received By: Signature <u>[Signature]</u>	Date <u>12/3/04</u>
PRINT NAME <u>JAMES HARRIS</u>	Time <u>4:47</u>	PRINT NAME <u>Elaine Hays</u>	Time <u>147</u>
Relinquished By: Signature	Date	Received By: Signature	Date
PRINT NAME	Time	PRINT NAME	Time
Relinquished By: Signature	Date	Received By: Signature	Date
PRINT NAME	Time	PRINT NAME	Time
Relinquished By: Signature	Date	Received By: Signature	Date
PRINT NAME	Time	PRINT NAME	Time

Special Instructions:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

COC Tape Was:

1 Present on Outer Package  
Y N NA

2 Unbroken on Outer Package  
Y N NA

3 Present on Sample  
Y N NA

4 Unbroken on Sample  
Y N NA

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

Sample Set: 1012071

Preservation Check Sheet

Sample Set Extension and pH

Bottle Type	Preservative	All OK	Except	Except	Except	Except	Except	Except	Except	Except	Except	Except	Except	Except	Except	Except	Except
Ammonia	pH <2 H <sub>2</sub> SO <sub>4</sub>																
COD	pH <2 H <sub>2</sub> SO <sub>4</sub>	✓															
Cyanide	PH >12 NaOH																
Metals	pH <2 HNO <sub>3</sub>																
NO <sub>2</sub> & NO <sub>3</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>																
Nutrients	pH <2 H <sub>2</sub> SO <sub>4</sub>																
O & G	pH <2 HCL	✓															
Phenols	pH <2 H <sub>2</sub> SO <sub>4</sub>																
Sulfide	pH > 9NaOH, Zn Acetate																
TKN	pH <2 H <sub>2</sub> SO <sub>4</sub>																
TOC	pH <2 H <sub>3</sub> PO <sub>4</sub>																
TOX	pH <2 H <sub>2</sub> SO <sub>4</sub>																
T PO <sub>4</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>																
TPH	pH <2 HCL																

- Procedure:
- 1) Pour a small amount of sample in the sample lid
  - 2) Pour sample from Lid gently over wide range pH paper
  - 3) **Do Not** dip the pH paper in the sample bottle or lid
  - 4) If sample is not preserved properly list its extension and receiving pH in the appropriate column above
  - 5) Flag COC, notify client if requested
  - 6) Place client conversation on COC
  - 7) Samples may be adjusted

Frequency: All samples requiring preservation