



AMERICAN
WEST
ANALYTICAL
LABORATORIES

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

RE: Red Butte

Dear Jim Harris:

Lab Set ID: 1011529

463 West 3600 South
Salt Lake City, UT
84115

American West Analytical Laboratories received 6 sample(s) on 11/30/2010 for the analyses presented in the following report.

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

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

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

Jose Rocha
QA Officer

Thank You,

Approved by: _____
Laboratory Director or designee



INORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h

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		12/2/2010 1200h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/1/2010 1354h	E1664A-SGT	3.00	< 3.00	

(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



INORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h

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		12/2/2010 1200h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/1/2010 1354h	E1664A-SGT	3.00	< 3.00	

(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



INORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h

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		12/2/2010 1200h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/1/2010 1354h	E1664A-SGT	3.00	4.70	

(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



INORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h

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		12/2/2010 1200h	HACH 8000	10.0	10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/1/2010 1354h	E1664A-SGT	3.00	< 3.00	

(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



INORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h

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		12/2/2010 1200h	HACH 8000	10.0	13.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/1/2010 1354h	E1664A-SGT	3.00	< 3.00	

(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



INORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h

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		12/2/2010 1200h	HACH 8000	10.0	< 10.0	
Total Recoverable Petroleum Hydrocarbons	mg/L		12/1/2010 1354h	E1664A-SGT	3.00	< 3.00	

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

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001D
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/6/2010 0057h

Extracted: 12/3/2010 0843h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0515	< 0.0515	
Surr: C36		10-200	123	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002D
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/6/2010 0115h

Extracted: 12/3/2010 0843h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	117	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003D
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/6/2010 0134h

Extracted: 12/3/2010 0843h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	121	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004D
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/6/2010 0152h

Extracted: 12/3/2010 0843h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	124	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005D
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/6/2010 0210h

Extracted: 12/3/2010 0843h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	122	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006D
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/6/2010 0228h

Extracted: 12/3/2010 0843h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Oil Range Organics (ORO) (C28-C36)		0.0500	< 0.0500	
Surr: C36		10-200	124	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR **Contact:** Jim Harris
Project: Red Butte
Lab Sample ID: 1011529-001E
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h **Analyzed:** 12/2/2010 1335h
Received Date: 11/30/2010 1538h **Extracted:** 11/30/2010 1740h
Method Used: SW8015D

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.526	< 0.526	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	77.0	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002E
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/2/2010 1439h
Extracted: 11/30/2010 1740h

Analytical Results

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT

84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	68.0	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR **Contact:** Jim Harris
Project: Red Butte
Lab Sample ID: 1011529-003E
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h **Analyzed:** 12/2/2010 1500h
Received Date: 11/30/2010 1538h **Extracted:** 11/30/2010 1740h
Method Used: SW8015D

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	54.0	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR **Contact:** Jim Harris
Project: Red Butte
Lab Sample ID: 1011529-004E
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h **Analyzed:** 12/2/2010 1521h
Received Date: 11/30/2010 1538h **Extracted:** 11/30/2010 1740h
Method Used: SW8015D

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Diesel Range Organics C10-C28	68476-34-6	0.510	< 0.510	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	48.5	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005E
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: SW8015D

Contact: Jim Harris

Analyzed: 12/2/2010 1542h
Extracted: 11/30/2010 1740h

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT
84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	41.8	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR **Contact:** Jim Harris
Project: Red Butte
Lab Sample ID: 1011529-006E
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h **Analyzed:** 12/2/2010 1603h
Received Date: 11/30/2010 1538h **Extracted:** 11/30/2010 1740h
Method Used: SW8015D

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

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
84115 Diesel Range Organics C10-C28	68476-34-6	0.500	< 0.500	
Surr: 4-Bromofluorobenzene	460-00-4	10-190	46.9	

(801) 263-8686

Toll Free (888) 263-8686

Fax (801)263-8687

email: awal@awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001F
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: SW8270D

Contact: Jim Harris

Analyzed: 12/2/2010 2232h

Extracted: 12/2/2010 0923h

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	10.5	< 10.5	
	Acenaphthylene	208-96-8	10.5	< 10.5	
	Anthracene	120-12-7	10.5	< 10.5	
	Benz(a)anthracene	56-55-3	10.5	< 10.5	
(801) 263-8686	Benzo(a)pyrene	50-32-8	10.5	< 10.5	
Toll Free (888) 263-8686	Benzo(b)fluoranthene	205-99-2	10.5	< 10.5	
Fax (801)263-8687	Benzo(g,h,i)perylene	191-24-2	10.5	< 10.5	
email: awal@awal-labs.com	Benzo(k)fluoranthene	207-08-9	10.5	< 10.5	
	Chrysene	218-01-9	10.5	< 10.5	
Kyle F. Gross	Dibenz(a,h)anthracene	53-70-3	10.5	< 10.5	
Laboratory Director	Fluoranthene	206-44-0	10.5	< 10.5	
	Fluorene	86-73-7	10.5	< 10.5	
	Indeno(1,2,3-cd)pyrene	193-39-5	10.5	< 10.5	
Jose Rocha	Phenanthrene	85-01-8	10.5	< 10.5	
QA Officer	Pyrene	129-00-0	10.5	< 10.5	
	C11-C12 Aliphatic hydrocarbons		10.5	< 10.5	
	C13-C16 Aliphatic hydrocarbons		10.5	< 10.5	
	C17-C21 Aliphatic hydrocarbons		10.5	< 10.5	
	C22-C35 Aliphatic hydrocarbons		10.5	< 10.5	
	C11-C13 Alkyl Naphthalenes		10.5	< 10.5	
	Total C12-C22 PAH**		10.5	< 10.5	
	Surr: Terphenyl-d14	1718-51-0	10-199	106	

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



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002F
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: SW8270D

Contact: Jim Harris

Analyzed: 12/2/2010 2300h

Extracted: 12/2/2010 0923h

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	108	

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



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003F
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: SW8270D

Contact: Jim Harris

Analyzed: 12/2/2010 2327h

Extracted: 12/2/2010 0923h

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	110	

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



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004F
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: SW8270D

Contact: Jim Harris

Analyzed: 12/2/2010 2355h

Extracted: 12/2/2010 0923h

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	107	

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



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005F
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: SW8270D

Contact: Jim Harris

Analyzed: 12/3/2010 0022h

Extracted: 12/2/2010 0923h

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	113	

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



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006F
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: SW8270D

Contact: Jim Harris

Analyzed: 12/3/2010 0049h

Extracted: 12/2/2010 0923h

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	107	

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



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001F
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2232h

Extracted: 12/2/2010 0923h

Analytical Results

SVOA by GC/MS Method 625/3510

Units: µg/L

Dilution Factor: 1

Compound

**CAS
Number**

**Reporting
Limit**

**Analytical
Result**

Qual

84115	1,1'-Biphenyl	92-52-4	10.5	< 10.5	
	1,2,4,5-Tetrachlorobenzene	95-94-3	10.5	< 10.5	
	1,2,4-Trichlorobenzene	120-82-1	10.5	< 10.5	
	1,2-Dichlorobenzene	95-50-1	10.5	< 10.5	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	10.5	< 10.5	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	10.5	< 10.5	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	10.5	< 10.5	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	10.5	< 10.5	
	1,4-Dichlorobenzene	106-46-7	10.5	< 10.5	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	10.5	< 10.5	
Laboratory Director	1-Chloronaphthalene	90-13-1	10.5	< 10.5	
	1-Methylnaphthalene	90-12-0	10.5	< 10.5	
Jose Rocha	1-Naphthylamine	134-32-7	10.5	< 10.5	
QA Officer	2,3,4,6-Tetrachlorophenol	58-90-2	10.5	< 10.5	
	2,4,5-Trichlorophenol	95-95-4	10.5	< 10.5	
	2,4,6-Trichlorophenol	88-06-2	10.5	< 10.5	
	2,4-Dichlorophenol	120-83-2	10.5	< 10.5	
	2,4-Dimethylphenol	105-67-9	10.5	< 10.5	
	2,4-Dinitrophenol	51-28-5	21.1	< 21.1	
	2,4-Dinitrotoluene	121-14-2	10.5	< 10.5	
	2,6-Dichlorophenol	87-65-0	10.5	< 10.5	
	2,6-Dinitrotoluene	606-20-2	10.5	< 10.5	
	2-Acetylaminofluorene	53-96-3	10.5	< 10.5	
	2-Chloronaphthalene	91-58-7	10.5	< 10.5	
	2-Chlorophenol	95-57-8	10.5	< 10.5	
	2-Methylnaphthalene	91-57-6	10.5	< 10.5	
	2-Methylphenol	95-48-7	10.5	< 10.5	
	2-Naphthylamine	91-59-8	10.5	< 10.5	
	2-Nitroaniline	88-74-4	10.5	< 10.5	

Report Date: 12/6/2010 Page 26 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001F
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2232h

Extracted: 12/2/2010 0923h

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
2-Nitrophenol	88-75-5	10.5	< 10.5	
2-Picoline	109-06-8	10.5	< 10.5	
3&4-Methylphenol		10.5	< 10.5	
3,3'-Dichlorobenzidine	91-94-1	10.5	< 10.5	
3,3'-Dimethylbenzidine	119-93-7	10.5	< 10.5	
3-Methylcholanthrene	56-49-5	10.5	< 10.5	
3-Nitroaniline	99-09-2	10.5	< 10.5	
4,6-Dinitro-2-methylphenol	534-52-1	10.5	< 10.5	
4-Aminobiphenyl	92-67-1	10.5	< 10.5	
4-Bromophenyl phenyl ether	101-55-3	10.5	< 10.5	
4-Chloro-3-methylphenol	59-50-7	10.5	< 10.5	
4-Chloroaniline	106-47-8	10.5	< 10.5	
4-Chlorophenyl phenyl ether	7005-72-3	10.5	< 10.5	
4-Nitroaniline	100-01-6	10.5	< 10.5	
4-Nitrophenol	100-02-7	10.5	< 10.5	
5-Nitro-o-toluidine	99-55-8	10.5	< 10.5	
7,12-Dimethylbenz(a)anthracene	57-97-6	10.5	< 10.5	
a,a-Dimethylphenethylamine	122-09-8	10.5	< 10.5	
Acenaphthene	83-32-9	10.5	< 10.5	
Acenaphthylene	208-96-8	10.5	< 10.5	
Acetophenone	98-86-2	10.5	< 10.5	
alpha-Terpineol	98-55-5	10.5	< 10.5	
Aniline	62-53-3	10.5	< 10.5	
Anthracene	120-12-7	10.5	< 10.5	
Aramite	140-57-8	10.5	< 10.5	
Azobenzene	103-33-3	10.5	< 10.5	
Benz(a)anthracene	56-55-3	10.5	< 10.5	
Benzidine	92-87-5	10.5	< 10.5	
Benzo(a)pyrene	50-32-8	10.5	< 10.5	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001F
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2232h

Extracted: 12/2/2010 0923h

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

Benzo(b)fluoranthene

205-99-2

10.5

< 10.5

Benzo(g,h,i)perylene

191-24-2

10.5

< 10.5

Benzo(k)fluoranthene

207-08-9

10.5

< 10.5

Benzoic acid

65-85-0

21.1

< 21.1

(801) 263-8686

Benzyl alcohol

100-51-6

10.5

< 10.5

Toll Free (888) 263-8686

Bis(2-chloroethoxy)methane

111-91-1

10.5

< 10.5

Fax (801)263-8687

Bis(2-chloroethyl) ether

111-44-4

10.5

< 10.5

email: awal@awal-labs.com

Bis(2-chloroisopropyl) ether

108-60-1

10.5

< 10.5

Bis(2-ethylhexyl) phthalate

117-81-7

10.5

< 10.5

Kyle F. Gross

bis(2-ethylhexyl)adipate

103-23-1

10.5

< 10.5

Laboratory Director

Butyl benzyl phthalate

85-68-7

10.5

< 10.5

Carbazole

86-74-8

10.5

< 10.5

Jose Rocha

Chlorobenzilate

510-15-6

10.5

< 10.5

QA Officer

Chrysene

218-01-9

10.5

< 10.5

Di-n-butyl phthalate

84-74-2

10.5

< 10.5

Di-n-octyl phthalate

117-84-0

10.5

< 10.5

Diallate (cis or trans)

2303-16-4

10.5

< 10.5

Dibenz(a,h)anthracene

53-70-3

10.5

< 10.5

Dibenzofuran

132-64-9

10.5

< 10.5

Diethyl phthalate

84-66-2

10.5

< 10.5

Dimethoate

60-51-5

10.5

< 10.5

Dimethyl phthalate

131-11-3

10.5

< 10.5

Dimethylaminoazobenzene

60-11-7

10.5

< 10.5

Dinoseb

88-85-7

10.5

< 10.5

Diphenylamine

122-39-4

10.5

< 10.5

Disulfoton

298-04-4

10.5

< 10.5

Ethyl methanesulfonate

62-50-0

10.5

< 10.5

Famphur

52-85-7

10.5

< 10.5

Fluoranthene

206-44-0

10.5

< 10.5

Report Date: 12/6/2010 Page 28 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001F
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2232h

Extracted: 12/2/2010 0923h

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	10.5	< 10.5	
Hexachlorobenzene	118-74-1	10.5	< 10.5	
Hexachlorobutadiene	87-68-3	10.5	< 10.5	
Hexachlorocyclopentadiene	77-47-4	10.5	< 10.5	
(801) 263-8686 Hexachloroethane	67-72-1	10.5	< 10.5	
Toll Free (888) 263-8686 Hexachlorophene	70-30-4	10.5	< 10.5	
Fax (801)263-8687 Hexachloropropene	1888-71-7	10.5	< 10.5	
email: awal@awal-labs.com Indene	95-13-6	10.5	< 10.5	
Indeno(1,2,3-cd)pyrene	193-39-5	10.5	< 10.5	
Kyle F. Gross Isodrin	465-73-6	10.5	< 10.5	
Laboratory Director Isophorone	78-59-1	10.5	< 10.5	
Isosafrole	120-58-1	10.5	< 10.5	
Jose Rocha Kepone	143-50-0	10.5	< 10.5	
QA Officer Methapyrilene	91-80-5	10.5	< 10.5	
Methyl methanesulfonate	66-27-3	10.5	< 10.5	
n-Decane	124-18-5	10.5	< 10.5	
N-Nitrosodi-n-butylamine	924-16-3	10.5	< 10.5	
N-Nitrosodiethylamine	55-18-5	10.5	< 10.5	
N-Nitrosodimethylamine	62-75-9	10.5	< 10.5	
N-Nitrosodiphenylamine	86-30-6	10.5	< 10.5	
N-Nitrosodi-n-propylamine	621-64-7	10.5	< 10.5	
N-Nitrosomethylethylamine	10595-95-6	10.5	< 10.5	
N-Nitrosomorpholine	59-89-2	10.5	< 10.5	
N-Nitrosopiperidine	100-75-4	10.5	< 10.5	
N-Nitrosopyrrolidine	930-55-2	10.5	< 10.5	
n-Octadecane	593-45-3	10.5	< 10.5	
Naphthalene	91-20-3	10.5	< 10.5	
Nitrobenzene	98-95-3	10.5	< 10.5	
Nitroquinoline-1-oxide	56-57-5	10.5	< 10.5	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-001F
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2232h

Extracted: 12/2/2010 0923h

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	10.5	< 10.5	
o-Toluidine	95-53-4	10.5	< 10.5	
Parathion	56-38-2	10.5	< 10.5	
Methyl parathion	298-00-0	10.5	< 10.5	
Pentachlorobenzene	608-93-5	10.5	< 10.5	
Pentachloronitrobenzene	82-68-8	10.5	< 10.5	
Pentachlorophenol	87-86-5	10.5	< 10.5	
Phenacetin	62-44-2	10.5	< 10.5	
Phenanthrene	85-01-8	10.5	< 10.5	
Phenol	108-95-2	10.5	< 10.5	
Phorate	298-02-2	10.5	< 10.5	
Pronamide	23950-58-5	10.5	< 10.5	
Pyrene	129-00-0	10.5	< 10.5	
Pyridine	110-86-1	10.5	< 10.5	
Quinoline	91-22-5	10.5	< 10.5	
Safrole	94-59-7	10.5	< 10.5	
Tetraethyl dithiopyrophosphate	3689-24-5	10.5	< 10.5	
Thionazin	297-97-2	10.5	< 10.5	
Surr: 2,4,6-Tribromophenol	118-79-6	10-159	60.4	
Surr: 2-Fluorobiphenyl	321-60-8	10-124	57.0	
Surr: 2-Fluorophenol	367-12-4	14-106	36.1	
Surr: Nitrobenzene-d5	4165-60-0	10-180	46.9	
Surr: Phenol-d6	13127-88-3	10-122	18.1	
Surr: Terphenyl-d14	1718-51-0	10-199	106	

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
Lab Sample ID: 1011529-002F
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2300h

Extracted: 12/2/2010 0923h

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	

Report Date: 12/6/2010 Page 31 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002F
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2300h

Extracted: 12/2/2010 0923h

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	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	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002F
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2300h

Extracted: 12/2/2010 0923h

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	< 10.0	
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	
Fluoranthene	206-44-0	10.0	< 10.0	

Report Date: 12/6/2010 Page 33 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002F
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2300h

Extracted: 12/2/2010 0923h

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	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	

Report Date: 12/6/2010 Page 34 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002F
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2300h

Extracted: 12/2/2010 0923h

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	55.4	
	Surr: 2-Fluorobiphenyl	321-60-8	10-124	33.4	
	Surr: 2-Fluorophenol	367-12-4	14-106	29.8	
	Surr: Nitrobenzene-d5	4165-60-0	10-180	20.7	
	Surr: Phenol-d6	13127-88-3	10-122	25.5	
	Surr: Terphenyl-d14	1718-51-0	10-199	108	

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
Lab Sample ID: 1011529-003F
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2327h

Extracted: 12/2/2010 0923h

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	

Report Date: 12/6/2010 Page 36 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003F
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2327h

Extracted: 12/2/2010 0923h

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	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	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003F
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2327h

Extracted: 12/2/2010 0923h

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

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

Jose Rocha

Chlorobenzilate

510-15-6

10.0

< 10.0

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

Fluoranthene

206-44-0

10.0

< 10.0

Report Date: 12/6/2010 Page 38 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003F
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2327h

Extracted: 12/2/2010 0923h

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	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	

Report Date: 12/6/2010 Page 39 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003F
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2327h

Extracted: 12/2/2010 0923h

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	
Pyrene	129-00-0	10.0	< 10.0	
Jose Rocha Pyridine	110-86-1	10.0	< 10.0	
QA Officer 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	62.0	
Surr: 2-Fluorobiphenyl	321-60-8	10-124	60.7	
Surr: 2-Fluorophenol	367-12-4	14-106	41.3	
Surr: Nitrobenzene-d5	4165-60-0	10-180	55.4	
Surr: Phenol-d6	13127-88-3	10-122	19.8	
Surr: Terphenyl-d14	1718-51-0	10-199	110	

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
Lab Sample ID: 1011529-004F
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2355h

Extracted: 12/2/2010 0923h

Analytical Results

SVOA by GC/MS Method 625/3510

Units: µg/L

Dilution Factor: 1

Compound

**CAS
Number**

**Reporting
Limit**

**Analytical
Result**

Qual

84115	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	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	10.0	< 10.0	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	10.0	< 10.0	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	10.0	< 10.0	
	1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	10.0	< 10.0	
Laboratory Director	1-Chloronaphthalene	90-13-1	10.0	< 10.0	
	1-Methylnaphthalene	90-12-0	10.0	< 10.0	
Jose Rocha	1-Naphthylamine	134-32-7	10.0	< 10.0	
QA Officer	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	

Report Date: 12/6/2010 Page 41 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004F
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2355h

Extracted: 12/2/2010 0923h

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 42 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004F
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2355h

Extracted: 12/2/2010 0923h

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	< 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	
Jose Rocha	Chlorobenzilate	510-15-6	10.0	< 10.0	
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	
	Fluoranthene	206-44-0	10.0	< 10.0	

Report Date: 12/6/2010 Page 43 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004F
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2355h

Extracted: 12/2/2010 0923h

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	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	

Report Date: 12/6/2010 Page 44 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004F
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/2/2010 2355h

Extracted: 12/2/2010 0923h

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	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	
	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	
	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	61.3	
	Surr: 2-Fluorobiphenyl	321-60-8	10-124	46.0	
	Surr: 2-Fluorophenol	367-12-4	14-106	28.1	
	Surr: Nitrobenzene-d5	4165-60-0	10-180	37.0	
	Surr: Phenol-d6	13127-88-3	10-122	28.7	
	Surr: Terphenyl-d14	1718-51-0	10-199	107	

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
Lab Sample ID: 1011529-005F
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0022h

Extracted: 12/2/2010 0923h

Analytical Results

SVOA by GC/MS Method 625/3510

Units: µg/L

Dilution Factor: 1

Compound

**CAS
Number**

**Reporting
Limit**

**Analytical
Result**

Qual

84115	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	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	10.0	< 10.0	
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	10.0	< 10.0	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	10.0	< 10.0	
	1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	10.0	< 10.0	
Laboratory Director	1-Chloronaphthalene	90-13-1	10.0	< 10.0	
	1-Methylnaphthalene	90-12-0	10.0	< 10.0	
Jose Rocha	1-Naphthylamine	134-32-7	10.0	< 10.0	
QA Officer	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	

Report Date: 12/6/2010 Page 46 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005F
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0022h

Extracted: 12/2/2010 0923h

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	

Report Date: 12/6/2010 Page 47 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005F
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0022h

Extracted: 12/2/2010 0923h

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	< 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	
Jose Rocha	Chlorobenzilate	510-15-6	10.0	< 10.0	
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	
	Fluoranthene	206-44-0	10.0	< 10.0	

Report Date: 12/6/2010 Page 48 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005F
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0022h

Extracted: 12/2/2010 0923h

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	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	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005F
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0022h

Extracted: 12/2/2010 0923h

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	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	
	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	
	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	57.8	
	Surr: 2-Fluorobiphenyl	321-60-8	10-124	23.0	
	Surr: 2-Fluorophenol	367-12-4	14-106	20.3	
	Surr: Nitrobenzene-d5	4165-60-0	10-180	12.0	
	Surr: Phenol-d6	13127-88-3	10-122	17.1	
	Surr: Terphenyl-d14	1718-51-0	10-199	113	

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
Lab Sample ID: 1011529-006F
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0049h

Extracted: 12/2/2010 0923h

Analytical Results

SVOA by GC/MS Method 625/3510

Units: µg/L

Dilution Factor: 1

Compound

**CAS
Number**

**Reporting
Limit**

**Analytical
Result**

Qual

84115	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	
(801) 263-8686	1,3,5-Trinitrobenzene	99-35-4	10.0	< 10.0	1
Toll Free (888) 263-8686	1,4-Naphthoquinone	130-15-4	10.0	< 10.0	
Fax (801)263-8687	1,3-Dichlorobenzene	541-73-1	10.0	< 10.0	
email: awal@awal-labs.com	1,3-Dinitrobenzene	99-65-0	10.0	< 10.0	
	1,4-Dichlorobenzene	106-46-7	10.0	< 10.0	
Kyle F. Gross	1,4-Phenylenediamine	106-50-3	10.0	< 10.0	
Laboratory Director	1-Chloronaphthalene	90-13-1	10.0	< 10.0	
	1-Methylnaphthalene	90-12-0	10.0	< 10.0	
Jose Rocha	1-Naphthylamine	134-32-7	10.0	< 10.0	
QA Officer	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	

Report Date: 12/6/2010 Page 51 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006F
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0049h

Extracted: 12/2/2010 0923h

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	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	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006F
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0049h

Extracted: 12/2/2010 0923h

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	< 10.0	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	1
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	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006F
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0049h

Extracted: 12/2/2010 0923h

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

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	
Hexachloroethane	67-72-1	10.0	< 10.0	
Hexachlorophene	70-30-4	10.0	< 10.0	
Hexachloropropene	1888-71-7	10.0	< 10.0	
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
Lab Sample ID: 1011529-006F
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA625

Contact: Jim Harris

Analyzed: 12/3/2010 0049h

Extracted: 12/2/2010 0923h

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	¹
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	¹
Pyrene	129-00-0	10.0	< 10.0	
Pyridine	110-86-1	10.0	< 10.0	
Quinoline	91-22-5	10.0	< 10.0	¹
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	52.3	
Surr: 2-Fluorobiphenyl	321-60-8	10-124	42.8	
Surr: 2-Fluorophenol	367-12-4	14-106	28.4	
Surr: Nitrobenzene-d5	4165-60-0	10-180	35.9	
Surr: Phenol-d6	13127-88-3	10-122	25.7	
Surr: Terphenyl-d14	1718-51-0	10-199	107	

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

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

The 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
Lab Sample ID: 1011529-001B
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0827h

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

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	
1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
1,1-Dichloropropene	563-58-6	2.00	< 2.00	
1,1-Dichloroethane	75-34-3	2.00	< 2.00	
1,1-Dichloroethene	75-35-4	2.00	< 2.00	
1,2,3-Trichlorobenzene	87-61-6	2.00	< 2.00	
1,2,3-Trichloropropane	96-18-4	2.00	< 2.00	
1,2,3-Trimethylbenzene	526-73-8	2.00	< 2.00	
1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
1,2,4-Trimethylbenzene	95-63-6	2.00	< 2.00	
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
Lab Sample ID: 1011529-001B
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0827h

Analytical Results

VOAs Custom List by GC/MS Method 624

Units: µg/L

Dilution Factor: 1

Compound

**CAS
Number**

**Reporting
Limit**

**Analytical
Result**

Qual

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
Lab Sample ID: 1011529-001B
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0827h

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
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	
	Ethyl methacrylate	97-63-2	2.00	< 2.00	
	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	
	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
Lab Sample ID: 1011529-001B
Client Sample ID: 4992095 Red Butte AB Garden
Collection Date: 11/30/2010 0950h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0827h

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	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	
	trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
	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	
	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	102	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	104	
	Surr: Dibromofluoromethane	1868-53-7	80-124	99.2	
	Surr: Toluene-d8	2037-26-5	80-125	98.9	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002B
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0846h

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 60 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002B
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0846h

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 61 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-002B
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0846h

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	
Jose Rocha	Isopropyltoluene	99-87-6	2.00	< 2.00	
QA Officer	m,p-Xylene	179601-23-1	2.00	< 2.00	
	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
Lab Sample ID: 1011529-002B
Client Sample ID: 4992085 Red Butte BL Garden
Collection Date: 11/30/2010 1030h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0846h

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	103	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	106	
	Surr: Dibromofluoromethane	1868-53-7	80-124	100	
	Surr: Toluene-d8	2037-26-5	80-125	99.4	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003B
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0905h

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 64 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003B
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0905h

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 65 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-003B
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0905h

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
Lab Sample ID: 1011529-003B
Client Sample ID: 4992084 Red Butte @ 1500 E.
Collection Date: 11/30/2010 1215h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0905h

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	105	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	104	
	Surr: Dibromofluoromethane	1868-53-7	80-124	101	
	Surr: Toluene-d8	2037-26-5	80-125	98.6	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004B
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0924h

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 68 of 162



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-004B
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0924h

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
Lab Sample ID: 1011529-004B
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0924h

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
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	
	Ethyl methacrylate	97-63-2	2.00	< 2.00	
	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	
	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
Lab Sample ID: 1011529-004B
Client Sample ID: 4992050 J.R. Below 900 S. Storm Sewer
Collection Date: 11/30/2010 1405h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0924h

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	108	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	103	
	Surr: Dibromofluoromethane	1868-53-7	80-124	102	
	Surr: Toluene-d8	2037-26-5	80-125	97.2	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-005B
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0944h

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

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	
1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
1,1-Dichloropropene	563-58-6	2.00	< 2.00	
1,1-Dichloroethane	75-34-3	2.00	< 2.00	
1,1-Dichloroethene	75-35-4	2.00	< 2.00	
1,2,3-Trichlorobenzene	87-61-6	2.00	< 2.00	
1,2,3-Trichloropropane	96-18-4	2.00	< 2.00	
1,2,3-Trimethylbenzene	526-73-8	2.00	< 2.00	
1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
1,2,4-Trimethylbenzene	95-63-6	2.00	< 2.00	
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
Lab Sample ID: 1011529-005B
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0944h

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	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
Lab Sample ID: 1011529-005B
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0944h

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
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	
	Ethyl methacrylate	97-63-2	2.00	< 2.00	
	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	
	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
Lab Sample ID: 1011529-005B
Client Sample ID: 4992290 J.R. @ 1700 S.
Collection Date: 11/30/2010 1430h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0944h

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	111	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	105	
	Surr: Dibromofluoromethane	1868-53-7	80-124	103	
	Surr: Toluene-d8	2037-26-5	80-125	97.9	



ORGANIC ANALYTICAL REPORT

AMERICAN
WEST
ANALYTICAL
LABORATORIES

Client: Utah DEQ DERR
Project: Red Butte
Lab Sample ID: 1011529-006B
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0809h

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
Lab Sample ID: 1011529-006B
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0809h

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
Lab Sample ID: 1011529-006B
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0809h

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
Lab Sample ID: 1011529-006B
Client Sample ID: 4992083 Red Butte @ 1100 E.
Collection Date: 11/30/2010 1315h
Received Date: 11/30/2010 1538h
Method Used: EPA624

Contact: Jim Harris

Analyzed: 12/2/2010 0809h

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	100	
	Surr: 4-Bromofluorobenzene	460-00-4	80-123	106	
	Surr: Dibromofluoromethane	1868-53-7	80-124	100	
	Surr: Toluene-d8	2037-26-5	80-125	102	

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

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



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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-9679	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.149	0.1600	0	93.4	10-200				12/6/2010 0039h
LCS-9679	Surr: C36	% REC	SW8015D	1.25	1.000		125	10-200				12/6/2010 0039h
LCS-9631	Diesel Range Organics C10-C28	mg/L	SW8015D	1.84	2.000	0	91.8	48-118				11/30/2010 2326h
LCS-9631	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.294	0.4000		73.5	18-95				11/30/2010 2326h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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-9679	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	< 0.0500				-				12/6/2010 0021h
MB-9679	Surr: C36	% REC	SW8015D	1.23	1.000		123	10-200				12/6/2010 0021h
MB-9631	Diesel Range Organics C10-C28	mg/L	SW8015D	< 0.500				-				11/30/2010 2305h
MB-9631	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.272	0.4000		68.0	18-95				11/30/2010 2305h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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
1011529-006DMS	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.178	0.1600	0	111	10-200				12/6/2010 0247h
1011529-006DMS	Surr: C36	% REC	SW8015D	1.26	1.000		126	10-200				12/6/2010 0247h
1012039-001FMS	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.174	0.1600	0	109	10-200				12/6/2010 0418h
1012039-001FMS	Surr: C36	% REC	SW8015D	1.24	1.000		124	10-200				12/6/2010 0418h
1011526-001BMS	Diesel Range Organics C10-C28	mg/L	SW8015D	4.16	4.000	0.7980	84.0	60-161				12/1/2010 0008h
1011526-001BMS	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.322	0.8000		40.3	10-190				12/1/2010 0008h
1011529-001EMS	Diesel Range Organics C10-C28	mg/L	SW8015D	4.03	4.167	0	96.7	60-161				12/2/2010 1355h
1011529-001EMS	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.688	0.8333		82.5	10-190				12/2/2010 1355h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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
1011529-006DMSD	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.169	0.1600	0	106	10-200	5.01	30		12/6/2010 0305h
1011529-006DMSD	Surr: C36	% REC	SW8015D	1.22	1.000		122	10-200				12/6/2010 0305h
1012039-001FMSD	Oil Range Organics (ORO) (C28-	mg/L	SW8015D	0.200	0.1600	0	125	10-200	13.4	30		12/6/2010 0436h
1012039-001FMSD	Surr: C36	% REC	SW8015D	1.42	1.000		142	10-200				12/6/2010 0436h
1011526-001BMSD	Diesel Range Organics C10-C28	mg/L	SW8015D	2.92	4.000	0.7980	53.0	60-161	35.2	25	³	12/1/2010 0029h
1011526-001BMSD	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.351	0.8000		43.9	10-190				12/1/2010 0029h
1011529-001EMSD	Diesel Range Organics C10-C28	mg/L	SW8015D	4.25	4.167	0	102	60-161	5.33	25		12/2/2010 1417h
1011529-001EMSD	Surr: 4-Bromofluorobenzene	% REC	SW8015D	0.696	0.8333		83.5	10-190				12/2/2010 1417h

³ - Matrix spike recoveries and high RPDs indicate suspected sample non-homogeneity. The method is in control as indicated by the LCS.



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	1,1'-Biphenyl	µg/L	EPA625	49.0	80.00	0	61.3	22-104				12/2/2010 2205h
LCS-9662	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	41.7	80.00	0	52.1	13-102				12/2/2010 2205h
LCS-9662	1,2,4-Trichlorobenzene	µg/L	EPA625	25.4	80.00	0	31.8	10-104				12/2/2010 2205h
LCS-9662	1,2-Dichlorobenzene	µg/L	EPA625	17.9	80.00	0	22.3	10-68				12/2/2010 2205h
LCS-9662	1,3,5-Trinitrobenzene	µg/L	EPA625	133	80.00	0	166	18-209				12/2/2010 2205h
LCS-9662	1,3-Dichlorobenzene	µg/L	EPA625	14.3	80.00	0	17.9	10-60				12/2/2010 2205h
LCS-9662	1,3-Dinitrobenzene	µg/L	EPA625	97.7	80.00	0	122	10-165				12/2/2010 2205h
LCS-9662	1,4-Dichlorobenzene	µg/L	EPA625	15.5	80.00	0	19.3	10-118				12/2/2010 2205h
LCS-9662	1,4-Naphthoquinone	µg/L	EPA625	< 10.0	80.00	0	12.4	10-187				12/2/2010 2205h
LCS-9662	1,4-Phenylenediamine	µg/L	EPA625	35.5	80.00	0	44.4	10-80				12/2/2010 2205h
LCS-9662	1-Chloronaphthalene	µg/L	EPA625	47.3	80.00	0	59.1	13-123				12/2/2010 2205h
LCS-9662	1-Methylnaphthalene	µg/L	EPA625	45.0	80.00	0	56.3	13-105				12/2/2010 2205h
LCS-9662	1-Naphthylamine	µg/L	EPA625	64.7	80.00	0	80.8	32-256				12/2/2010 2205h
LCS-9662	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	85.4	80.00	0	107	44-158				12/2/2010 2205h
LCS-9662	2,4,5-Trichlorophenol	µg/L	EPA625	59.0	80.00	0	73.7	46-142				12/2/2010 2205h
LCS-9662	2,4,6-Trichlorophenol	µg/L	EPA625	49.9	80.00	0	62.3	42-113				12/2/2010 2205h
LCS-9662	2,4-Dichlorophenol	µg/L	EPA625	46.9	80.00	0	58.6	37-102				12/2/2010 2205h
LCS-9662	2,4-Dimethylphenol	µg/L	EPA625	53.7	80.00	0	67.1	37-99				12/2/2010 2205h
LCS-9662	2,4-Dinitrophenol	µg/L	EPA625	68.9	80.00	0	86.2	10-200				12/2/2010 2205h
LCS-9662	2,4-Dinitrotoluene	µg/L	EPA625	96.5	80.00	0	121	15-209				12/2/2010 2205h
LCS-9662	2,6-Dichlorophenol	µg/L	EPA625	53.8	80.00	0	67.2	44-111				12/2/2010 2205h
LCS-9662	2,6-Dinitrotoluene	µg/L	EPA625	78.4	80.00	0	98.0	13-183				12/2/2010 2205h
LCS-9662	2-Acetylaminofluorene	µg/L	EPA625	77.8	80.00	0	97.2	40-131				12/2/2010 2205h
LCS-9662	2-Chloronaphthalene	µg/L	EPA625	43.7	80.00	0	54.7	16-103				12/2/2010 2205h

Report Date: 12/6/2010 Page 84 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	2-Chlorophenol	µg/L	EPA625	42.7	80.00	0	53.4	21-98				12/2/2010 2205h
LCS-9662	2-Methylnaphthalene	µg/L	EPA625	38.6	80.00	0	48.2	11-92				12/2/2010 2205h
LCS-9662	2-Methylphenol	µg/L	EPA625	44.5	80.00	0	55.6	24-92				12/2/2010 2205h
LCS-9662	2-Naphthylamine	µg/L	EPA625	59.5	80.00	0	74.4	48-193				12/2/2010 2205h
LCS-9662	2-Nitroaniline	µg/L	EPA625	76.6	80.00	0	95.7	10-216				12/2/2010 2205h
LCS-9662	2-Nitrophenol	µg/L	EPA625	63.7	80.00	0	79.6	10-173				12/2/2010 2205h
LCS-9662	2-Picoline	µg/L	EPA625	19.2	80.00	0	24.1	10-66				12/2/2010 2205h
LCS-9662	3&4-Methylphenol	µg/L	EPA625	27.8	80.00	0	34.8	10-88				12/2/2010 2205h
LCS-9662	3,3'-Dichlorobenzidine	µg/L	EPA625	73.2	80.00	0	91.4	38-131				12/2/2010 2205h
LCS-9662	3,3'-Dimethylbenzidine	µg/L	EPA625	73.3	80.00	0	91.7	10-172				12/2/2010 2205h
LCS-9662	3-Methylcholanthrene	µg/L	EPA625	77.9	80.00	0	97.3	48-206				12/2/2010 2205h
LCS-9662	3-Nitroaniline	µg/L	EPA625	74.4	80.00	0	93.0	31-172				12/2/2010 2205h
LCS-9662	4,6-Dinitro-2-methylphenol	µg/L	EPA625	102	80.00	0	128	10-190				12/2/2010 2205h
LCS-9662	4-Aminobiphenyl	µg/L	EPA625	72.5	80.00	0	90.6	10-202				12/2/2010 2205h
LCS-9662	4-Bromophenyl phenyl ether	µg/L	EPA625	61.7	80.00	0	77.2	55-136				12/2/2010 2205h
LCS-9662	4-Chloro-3-methylphenol	µg/L	EPA625	59.0	80.00	0	73.7	47-113				12/2/2010 2205h
LCS-9662	4-Chloroaniline	µg/L	EPA625	46.7	80.00	0	58.4	24-124				12/2/2010 2205h
LCS-9662	4-Chlorophenyl phenyl ether	µg/L	EPA625	60.5	80.00	0	75.6	41-119				12/2/2010 2205h
LCS-9662	4-Nitroaniline	µg/L	EPA625	70.6	80.00	0	88.3	27-159				12/2/2010 2205h
LCS-9662	4-Nitrophenol	µg/L	EPA625	115	80.00	0	143	10-157				12/2/2010 2205h
LCS-9662	5-Nitro-o-toluidine	µg/L	EPA625	87.9	80.00	0	110	60-168				12/2/2010 2205h
LCS-9662	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	101	80.00	0	126	42-277				12/2/2010 2205h
LCS-9662	a,a-Dimethylphenethylamine	µg/L	EPA625	40.5	80.00	0	50.7	10-160				12/2/2010 2205h
LCS-9662	Acenaphthene	µg/L	EPA625	55.7	80.00	0	69.6	29-112				12/2/2010 2205h

Report Date: 12/6/2010 Page 85 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	Acenaphthylene	µg/L	EPA625	56.5	80.00	0	70.6	31-116				12/2/2010 2205h
LCS-9662	Acetophenone	µg/L	EPA625	44.3	80.00	0	55.3	10-105				12/2/2010 2205h
LCS-9662	alpha-Terpineol	µg/L	EPA625	46.8	80.00	0	58.5	14-98				12/2/2010 2205h
LCS-9662	Aniline	µg/L	EPA625	29.0	80.00	0	36.3	10-94				12/2/2010 2205h
LCS-9662	Anthracene	µg/L	EPA625	74.8	80.00	0	93.5	64-145				12/2/2010 2205h
LCS-9662	Aramite	µg/L	EPA625	90.4	80.00	0	113	46-162				12/2/2010 2205h
LCS-9662	Azobenzene	µg/L	EPA625	56.2	80.00	0	70.3	32-117				12/2/2010 2205h
LCS-9662	Benz(a)anthracene	µg/L	EPA625	72.0	80.00	0	90.1	50-134				12/2/2010 2205h
LCS-9662	Benzidine	µg/L	EPA625	62.4	80.00	0	78.0	10-211				12/2/2010 2205h
LCS-9662	Benzo(a)pyrene	µg/L	EPA625	79.7	80.00	0	99.7	39-152				12/2/2010 2205h
LCS-9662	Benzo(b)fluoranthene	µg/L	EPA625	71.3	80.00	0	89.2	46-256				12/2/2010 2205h
LCS-9662	Benzo(g,h,i)perylene	µg/L	EPA625	67.5	80.00	0	84.4	21-288				12/2/2010 2205h
LCS-9662	Benzo(k)fluoranthene	µg/L	EPA625	97.6	80.00	0	122	10-254				12/2/2010 2205h
LCS-9662	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	19.0	10-64				12/2/2010 2205h
LCS-9662	Benzyl alcohol	µg/L	EPA625	23.0	80.00	0	28.8	10-88				12/2/2010 2205h
LCS-9662	Bis(2-chloroethoxy)methane	µg/L	EPA625	33.1	80.00	0	41.4	10-98				12/2/2010 2205h
LCS-9662	Bis(2-chloroethyl) ether	µg/L	EPA625	31.6	80.00	0	39.4	10-99				12/2/2010 2205h
LCS-9662	Bis(2-chloroisopropyl) ether	µg/L	EPA625	30.8	80.00	0	38.6	10-92				12/2/2010 2205h
LCS-9662	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	99.0	80.00	0	124	10-233				12/2/2010 2205h
LCS-9662	bis(2-ethylhexyl)adipate	µg/L	EPA625	90.0	80.00	0	112	10-200				12/2/2010 2205h
LCS-9662	Butyl benzyl phthalate	µg/L	EPA625	85.9	80.00	0	107	10-178				12/2/2010 2205h
LCS-9662	Carbazole	µg/L	EPA625	73.2	80.00	0	91.5	61-140				12/2/2010 2205h
LCS-9662	Chlorobenzilate	µg/L	EPA625	77.9	80.00	0	97.4	10-218				12/2/2010 2205h
LCS-9662	Chrysene	µg/L	EPA625	77.7	80.00	0	97.2	54-130				12/2/2010 2205h

Report Date: 12/6/2010 Page 86 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	Diallate (cis or trans)	µg/L	EPA625	60.8	80.00	0	76.1	41-132				12/2/2010 2205h
LCS-9662	Dibenz(a,h)anthracene	µg/L	EPA625	70.6	80.00	0	88.2	27-199				12/2/2010 2205h
LCS-9662	Dibenzofuran	µg/L	EPA625	57.9	80.00	0	72.4	38-117				12/2/2010 2205h
LCS-9662	Diethyl phthalate	µg/L	EPA625	56.8	80.00	0	71.0	20-128				12/2/2010 2205h
LCS-9662	Dimethoate	µg/L	EPA625	< 10.0	80.00	0	12.2	10-60				12/2/2010 2205h
LCS-9662	Dimethyl phthalate	µg/L	EPA625	36.3	80.00	0	45.3	10-105				12/2/2010 2205h
LCS-9662	Dimethylaminoazobenzene	µg/L	EPA625	84.0	80.00	0	105	30-151				12/2/2010 2205h
LCS-9662	Di-n-butyl phthalate	µg/L	EPA625	75.2	80.00	0	94.0	45-131				12/2/2010 2205h
LCS-9662	Di-n-octyl phthalate	µg/L	EPA625	136	80.00	0	170	10-252				12/2/2010 2205h
LCS-9662	Dinoseb	µg/L	EPA625	113	80.00	0	142	10-186				12/2/2010 2205h
LCS-9662	Diphenylamine	µg/L	EPA625	67.5	80.00	0	84.4	46-128				12/2/2010 2205h
LCS-9662	Disulfoton	µg/L	EPA625	51.9	80.00	0	64.9	10-124				12/2/2010 2205h
LCS-9662	Ethyl methanesulfonate	µg/L	EPA625	39.4	80.00	0	49.2	10-105				12/2/2010 2205h
LCS-9662	Famphur	µg/L	EPA625	140	80.00	0	175	10-298				12/2/2010 2205h
LCS-9662	Fluoranthene	µg/L	EPA625	74.0	80.00	0	92.5	61-138				12/2/2010 2205h
LCS-9662	Fluorene	µg/L	EPA625	60.3	80.00	0	75.4	45-116				12/2/2010 2205h
LCS-9662	Hexachlorobenzene	µg/L	EPA625	64.4	80.00	0	80.5	55-135				12/2/2010 2205h
LCS-9662	Hexachlorobutadiene	µg/L	EPA625	18.5	80.00	0	23.2	10-79				12/2/2010 2205h
LCS-9662	Hexachlorocyclopentadiene	µg/L	EPA625	11.1	80.00	0	13.8	10-104				12/2/2010 2205h
LCS-9662	Hexachloroethane	µg/L	EPA625	13.6	80.00	0	17.0	10-58				12/2/2010 2205h
LCS-9662	Hexachlorophene	µg/L	EPA625	82.4	80.00	0	103	10-242				12/2/2010 2205h
LCS-9662	Hexachloropropene	µg/L	EPA625	14.4	80.00	0	18.0	10-79				12/2/2010 2205h
LCS-9662	Indene	µg/L	EPA625	23.9	80.00	0	29.8	10-71				12/2/2010 2205h
LCS-9662	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	69.9	80.00	0	87.3	29-208				12/2/2010 2205h

Report Date: 12/6/2010 Page 87 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	Isodrin	µg/L	EPA625	70.1	80.00	0	87.6	58-140				12/2/2010 2205h
LCS-9662	Isophorone	µg/L	EPA625	45.6	80.00	0	57.0	10-105				12/2/2010 2205h
LCS-9662	Isosafrole	µg/L	EPA625	44.3	80.00	0	55.4	12-108				12/2/2010 2205h
LCS-9662	Kepone	µg/L	EPA625	214	80.00	0	268	10-330				12/2/2010 2205h
LCS-9662	Methapyrilene	µg/L	EPA625	85.9	80.00	0	107	17-151				12/2/2010 2205h
LCS-9662	Methyl methanesulfonate	µg/L	EPA625	25.4	80.00	0	31.7	10-107				12/2/2010 2205h
LCS-9662	Naphthalene	µg/L	EPA625	33.2	80.00	0	41.5	10-79				12/2/2010 2205h
LCS-9662	n-Decane	µg/L	EPA625	< 10.0	80.00	0	10.5	10-45				12/2/2010 2205h
LCS-9662	Nitrobenzene	µg/L	EPA625	50.4	80.00	0	63.0	10-104				12/2/2010 2205h
LCS-9662	Nitroquinoline-1-oxide	µg/L	EPA625	29.4	80.00	0	36.8	10-165				12/2/2010 2205h
LCS-9662	N-Nitrosodiethylamine	µg/L	EPA625	36.2	80.00	0	45.2	10-96				12/2/2010 2205h
LCS-9662	N-Nitrosodimethylamine	µg/L	EPA625	16.3	80.00	0	20.4	10-55				12/2/2010 2205h
LCS-9662	N-Nitrosodi-n-butylamine	µg/L	EPA625	52.5	80.00	0	65.6	21-104				12/2/2010 2205h
LCS-9662	N-Nitrosodiphenylamine	µg/L	EPA625	66.1	80.00	0	82.6	45-126				12/2/2010 2205h
LCS-9662	N-Nitrosodi-n-propylamine	µg/L	EPA625	40.9	80.00	0	51.2	10-103				12/2/2010 2205h
LCS-9662	N-Nitrosomethylethylamine	µg/L	EPA625	28.9	80.00	0	36.2	10-84				12/2/2010 2205h
LCS-9662	N-Nitrosomorpholine	µg/L	EPA625	43.4	80.00	0	54.2	15-107				12/2/2010 2205h
LCS-9662	N-Nitrosopiperidine	µg/L	EPA625	50.5	80.00	0	63.1	10-108				12/2/2010 2205h
LCS-9662	N-Nitrosopyrrolidine	µg/L	EPA625	50.8	80.00	0	63.5	19-115				12/2/2010 2205h
LCS-9662	n-Octadecane	µg/L	EPA625	55.0	80.00	0	68.8	27-134				12/2/2010 2205h
LCS-9662	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	48.4	80.00	0	60.5	10-129				12/2/2010 2205h
LCS-9662	o-Toluidine	µg/L	EPA625	84.4	80.00	0	106	21-225				12/2/2010 2205h
LCS-9662	Parathion	µg/L	EPA625	106	80.00	0	132	10-165				12/2/2010 2205h
LCS-9662	Methyl parathion	µg/L	EPA625	98.2	80.00	0	123	10-165				12/2/2010 2205h

Report Date: 12/6/2010 Page 88 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	Pentachlorobenzene	µg/L	EPA625	56.8	80.00	0	71.0	41-118				12/2/2010 2205h
LCS-9662	Pentachloronitrobenzene	µg/L	EPA625	75.6	80.00	0	94.5	35-185				12/2/2010 2205h
LCS-9662	Pentachlorophenol	µg/L	EPA625	65.4	80.00	0	81.8	14-144				12/2/2010 2205h
LCS-9662	Phenacetin	µg/L	EPA625	73.0	80.00	0	91.2	42-163				12/2/2010 2205h
LCS-9662	Phenanthrene	µg/L	EPA625	76.0	80.00	0	95.0	25-135				12/2/2010 2205h
LCS-9662	Phenol	µg/L	EPA625	26.5	80.00	0	33.1	10-53				12/2/2010 2205h
LCS-9662	Phorate	µg/L	EPA625	73.0	80.00	0	91.2	36-158				12/2/2010 2205h
LCS-9662	Pronamide	µg/L	EPA625	78.2	80.00	0	97.7	33-137				12/2/2010 2205h
LCS-9662	Pyrene	µg/L	EPA625	85.1	80.00	0	106	42-145				12/2/2010 2205h
LCS-9662	Pyridine	µg/L	EPA625	10.3	80.00	0	12.9	10-37				12/2/2010 2205h
LCS-9662	Quinoline	µg/L	EPA625	53.9	80.00	0	67.4	13-111				12/2/2010 2205h
LCS-9662	Safrole	µg/L	EPA625	49.1	80.00	0	61.4	24-111				12/2/2010 2205h
LCS-9662	Tetraethyl dithiopyrophosphate	µg/L	EPA625	65.9	80.00	0	82.4	52-138				12/2/2010 2205h
LCS-9662	Thionazin	µg/L	EPA625	62.8	80.00	0	78.4	45-123				12/2/2010 2205h
LCS-9662	Surr: 2,4,6-Tribromophenol	%REC	EPA625	66.9	80.00		83.7	64-130				12/2/2010 2205h
LCS-9662	Surr: 2-Fluorobiphenyl	%REC	EPA625	47.6	40.00		119	32-128				12/2/2010 2205h
LCS-9662	Surr: 2-Fluorophenol	%REC	EPA625	25.2	80.00		31.4	10-121				12/2/2010 2205h
LCS-9662	Surr: Nitrobenzene-d5	%REC	EPA625	47.1	40.00		118	17-133				12/2/2010 2205h
LCS-9662	Surr: Phenol-d6	%REC	EPA625	18.7	80.00		23.4	10-124				12/2/2010 2205h
LCS-9662	Surr: Terphenyl-d14	%REC	EPA625	86.5	40.00		216	51-221				12/2/2010 2205h
LCS-9662	Acenaphthene	µg/L	SW8270D	55.7	80.00	0	69.6	20-116				12/2/2010 2205h
LCS-9662	Benzo(a)pyrene	µg/L	SW8270D	79.7	80.00	0	99.7	39-152				12/2/2010 2205h
LCS-9662	Pyrene	µg/L	SW8270D	85.1	80.00	0	106	37-138				12/2/2010 2205h
LCS-9662	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	66.9	80.00		83.7	10-165				12/2/2010 2205h

Report Date: 12/6/2010 Page 89 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS-9662	Surr: 2-Fluorobiphenyl	% REC	SW8270D	47.6	40.00		119	32-128				12/2/2010 2205h
LCS-9662	Surr: 2-Fluorophenol	% REC	SW8270D	25.2	80.00		31.4	10-121				12/2/2010 2205h
LCS-9662	Surr: Nitrobenzene-d5	% REC	SW8270D	47.1	40.00		118	17-133				12/2/2010 2205h
LCS-9662	Surr: Phenol-d6	% REC	SW8270D	18.7	80.00		23.4	10-124				12/2/2010 2205h
LCS-9662	Surr: Terphenyl-d14	% REC	SW8270D	86.5	40.00		216	51-221				12/2/2010 2205h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	1,1'-Biphenyl	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,2,4-Trichlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,2-Dichlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,3,5-Trinitrobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,3-Dichlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,3-Dinitrobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,4-Dichlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,4-Naphthoquinone	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1,4-Phenylenediamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1-Chloronaphthalene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1-Methylnaphthalene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	1-Naphthylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,4,5-Trichlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,4,6-Trichlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,4-Dichlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,4-Dimethylphenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,4-Dinitrophenol	µg/L	EPA625	< 20.0				-				12/2/2010 2137h
MB-9662	2,4-Dinitrotoluene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,6-Dichlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2,6-Dinitrotoluene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Acetylaminofluorene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Chloronaphthalene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h

Report Date: 12/6/2010 Page 91 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	2-Chlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Methylnaphthalene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Methylphenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Naphthylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Nitroaniline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Nitrophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	2-Picoline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	3&4-Methylphenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	3,3'-Dichlorobenzidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	3,3'-Dimethylbenzidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	3-Methylcholanthrene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	3-Nitroaniline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4,6-Dinitro-2-methylphenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Aminobiphenyl	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Bromophenyl phenyl ether	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Chloro-3-methylphenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Chloroaniline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Chlorophenyl phenyl ether	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Nitroaniline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	4-Nitrophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	5-Nitro-o-toluidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	a,a-Dimethylphenethylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Acenaphthene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h

Report Date: 12/6/2010 Page 92 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	Acenaphthylene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Acetophenone	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	alpha-Terpineol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Aniline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Anthracene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Aramite	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Azobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benz(a)anthracene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benzidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(a)pyrene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(b)fluoranthene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(g,h,i)perylene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(k)fluoranthene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Benzoic acid	µg/L	EPA625	< 20.0				-				12/2/2010 2137h
MB-9662	Benzyl alcohol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Bis(2-chloroethoxy)methane	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Bis(2-chloroethyl) ether	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Bis(2-chloroisopropyl) ether	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	bis(2-ethylhexyl)adipate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Butyl benzyl phthalate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Carbazole	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Chlorobenzilate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Chrysene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h

Report Date: 12/6/2010 Page 93 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	Diallate (cis or trans)	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Dibenz(a,h)anthracene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Dibenzofuran	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Diethyl phthalate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Dimethoate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Dimethyl phthalate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Dimethylaminoazobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Di-n-butyl phthalate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Di-n-octyl phthalate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Dinoseb	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Diphenylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Disulfoton	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Ethyl methanesulfonate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Famphur	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Fluoranthene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Fluorene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Hexachlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Hexachlorobutadiene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Hexachlorocyclopentadiene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Hexachloroethane	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Hexachlorophene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Hexachloropropene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Indene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h

Report Date: 12/6/2010 Page 94 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	Isodrin	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Isophorone	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Isosafrole	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Kepone	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Methapyrilene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Methyl methanesulfonate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Naphthalene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	n-Decane	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Nitrobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Nitroquinoline-1-oxide	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosodiethylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosodimethylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosodi-n-butylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosodiphenylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosodi-n-propylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosomethylethylamine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosomorpholine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosopiperidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	N-Nitrosopyrrolidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	n-Octadecane	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	o-Toluidine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Parathion	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Methyl parathion	µg/L	EPA625	< 10.0				-				12/2/2010 2137h

Report Date: 12/6/2010 Page 95 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	Pentachlorobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Pentachloronitrobenzene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Pentachlorophenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Phenacetin	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Phenanthrene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Phenol	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Phorate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Pronamide	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Pyrene	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Pyridine	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Quinoline	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Safrole	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Tetraethyl dithiopyrophosphate	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Thionazin	µg/L	EPA625	< 10.0				-				12/2/2010 2137h
MB-9662	Surr: 2,4,6-Tribromophenol	% REC	EPA625	52.3	80.00		65.4	10-165				12/2/2010 2137h
MB-9662	Surr: 2-Fluorobiphenyl	% REC	EPA625	22.3	40.00		55.7	18-113				12/2/2010 2137h
MB-9662	Surr: 2-Fluorophenol	% REC	EPA625	32.2	80.00		40.2	10-121				12/2/2010 2137h
MB-9662	Surr: Nitrobenzene-d5	% REC	EPA625	19.7	40.00		49.2	17-133				12/2/2010 2137h
MB-9662	Surr: Phenol-d6	% REC	EPA625	16.0	80.00		20.0	10-124				12/2/2010 2137h
MB-9662	Surr: Terphenyl-d14	% REC	EPA625	45.7	40.00		114	28-163				12/2/2010 2137h
MB-9662	Acenaphthene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Acenaphthylene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Anthracene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Benz(a)anthracene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h

Report Date: 12/6/2010 Page 96 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB-9662	Benzo(a)pyrene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(b)fluoranthene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(g,h,i)perylene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Benzo(k)fluoranthene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	C11-C12 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	C11-C13 Alkyl Naphthalenes	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	C13-C16 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	C17-C21 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	C22-C35 Aliphatic hydrocarbons	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Chrysene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Dibenz(a,h)anthracene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Fluoranthene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Fluorene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Indeno(1,2,3-cd)pyrene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Phenanthrene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Pyrene	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Total C12-C22 PAH**	µg/L	SW8270D	< 10.0				-				12/2/2010 2137h
MB-9662	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	52.3	80.00		65.4	10-165				12/2/2010 2137h
MB-9662	Surr: 2-Fluorobiphenyl	%REC	SW8270D	22.3	40.00		55.7	18-113				12/2/2010 2137h
MB-9662	Surr: 2-Fluorophenol	%REC	SW8270D	32.2	80.00		40.2	10-121				12/2/2010 2137h
MB-9662	Surr: Nitrobenzene-d5	%REC	SW8270D	19.7	40.00		49.2	17-133				12/2/2010 2137h
MB-9662	Surr: Phenol-d6	%REC	SW8270D	16.0	80.00		20.0	10-124				12/2/2010 2137h
MB-9662	Surr: Terphenyl-d14	%REC	SW8270D	45.7	40.00		114	28-163				12/2/2010 2137h

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

Report Date: 12/6/2010 Page 97 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
101 1529-006FMS	1,1'-Biphenyl	µg/L	EPA625	48.3	80.00	0	60.4	27-99				12/3/2010 0117h
101 1529-006FMS	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	39.8	80.00	0	49.8	10-119				12/3/2010 0117h
101 1529-006FMS	1,2,4-Trichlorobenzene	µg/L	EPA625	24.1	80.00	0	30.1	10-79				12/3/2010 0117h
101 1529-006FMS	1,2-Dichlorobenzene	µg/L	EPA625	18.4	80.00	0	23.0	10-59				12/3/2010 0117h
101 1529-006FMS	1,3,5-Trinitrobenzene	µg/L	EPA625	138	80.00	0	172	10-175				12/3/2010 0117h
101 1529-006FMS	1,3-Dichlorobenzene	µg/L	EPA625	15.0	80.00	0	18.8	10-56				12/3/2010 0117h
101 1529-006FMS	1,3-Dinitrobenzene	µg/L	EPA625	96.8	80.00	0	121	10-175				12/3/2010 0117h
101 1529-006FMS	1,4-Dichlorobenzene	µg/L	EPA625	16.4	80.00	0	20.5	10-58				12/3/2010 0117h
101 1529-006FMS	1,4-Naphthoquinone	µg/L	EPA625	< 10.0	80.00	0	11.6	10-177				12/3/2010 0117h
101 1529-006FMS	1,4-Phenylenediamine	µg/L	EPA625	34.6	80.00	0	43.2	10-124				12/3/2010 0117h
101 1529-006FMS	1-Chloronaphthalene	µg/L	EPA625	46.0	80.00	0	57.5	10-106				12/3/2010 0117h
101 1529-006FMS	1-Methylnaphthalene	µg/L	EPA625	44.0	80.00	0	55.0	10-83				12/3/2010 0117h
101 1529-006FMS	1-Naphthylamine	µg/L	EPA625	63.4	80.00	0	79.2	10-122				12/3/2010 0117h
101 1529-006FMS	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	76.8	80.00	0	96.0	10-157				12/3/2010 0117h
101 1529-006FMS	2,4,5-Trichlorophenol	µg/L	EPA625	60.2	80.00	0	75.2	10-148				12/3/2010 0117h
101 1529-006FMS	2,4,6-Trichlorophenol	µg/L	EPA625	50.7	80.00	0	63.4	10-136				12/3/2010 0117h
101 1529-006FMS	2,4-Dichlorophenol	µg/L	EPA625	50.9	80.00	0	63.6	10-123				12/3/2010 0117h
101 1529-006FMS	2,4-Dimethylphenol	µg/L	EPA625	56.5	80.00	0	70.7	10-113				12/3/2010 0117h
101 1529-006FMS	2,4-Dinitrophenol	µg/L	EPA625	65.9	80.00	0	82.4	10-175				12/3/2010 0117h
101 1529-006FMS	2,4-Dinitrotoluene	µg/L	EPA625	94.7	80.00	0	118	10-175				12/3/2010 0117h
101 1529-006FMS	2,6-Dichlorophenol	µg/L	EPA625	57.5	80.00	0	71.9	10-148				12/3/2010 0117h
101 1529-006FMS	2,6-Dinitrotoluene	µg/L	EPA625	79.0	80.00	0	98.8	10-175				12/3/2010 0117h
101 1529-006FMS	2-Acetylaminofluorene	µg/L	EPA625	78.6	80.00	0	98.3	10-94			1	12/3/2010 0117h
101 1529-006FMS	2-Chloronaphthalene	µg/L	EPA625	42.1	80.00	0	52.6	10-93				12/3/2010 0117h

Report Date: 12/6/2010 Page 98 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMS	2-Chlorophenol	µg/L	EPA625	45.6	80.00	0	57.0	10-92				12/3/2010 0117h
1011529-006FMS	2-Methylnaphthalene	µg/L	EPA625	38.1	80.00	0	47.7	15-78				12/3/2010 0117h
1011529-006FMS	2-Methylphenol	µg/L	EPA625	46.6	80.00	0	58.2	10-83				12/3/2010 0117h
1011529-006FMS	2-Naphthylamine	µg/L	EPA625	59.8	80.00	0	74.8	10-154				12/3/2010 0117h
1011529-006FMS	2-Nitroaniline	µg/L	EPA625	78.5	80.00	0	98.2	10-175				12/3/2010 0117h
1011529-006FMS	2-Nitrophenol	µg/L	EPA625	68.6	80.00	0	85.8	10-175				12/3/2010 0117h
1011529-006FMS	2-Picoline	µg/L	EPA625	22.4	80.00	0	28.0	10-61				12/3/2010 0117h
1011529-006FMS	3&4-Methylphenol	µg/L	EPA625	29.4	80.00	0	36.8	10-80				12/3/2010 0117h
1011529-006FMS	3,3'-Dichlorobenzidine	µg/L	EPA625	73.2	80.00	0	91.5	10-150				12/3/2010 0117h
1011529-006FMS	3,3'-Dimethylbenzidine	µg/L	EPA625	73.3	80.00	0	91.6	10-143				12/3/2010 0117h
1011529-006FMS	3-Methylcholanthrene	µg/L	EPA625	76.8	80.00	0	96.0	32-171				12/3/2010 0117h
1011529-006FMS	3-Nitroaniline	µg/L	EPA625	73.6	80.00	0	92.0	10-175				12/3/2010 0117h
1011529-006FMS	4,6-Dinitro-2-methylphenol	µg/L	EPA625	105	80.00	0	131	10-175				12/3/2010 0117h
1011529-006FMS	4-Aminobiphenyl	µg/L	EPA625	73.7	80.00	0	92.1	10-175				12/3/2010 0117h
1011529-006FMS	4-Bromophenyl phenyl ether	µg/L	EPA625	64.1	80.00	0	80.1	16-138				12/3/2010 0117h
1011529-006FMS	4-Chloro-3-methylphenol	µg/L	EPA625	63.5	80.00	0	79.4	10-131				12/3/2010 0117h
1011529-006FMS	4-Chloroaniline	µg/L	EPA625	50.4	80.00	0	63.0	10-98				12/3/2010 0117h
1011529-006FMS	4-Chlorophenyl phenyl ether	µg/L	EPA625	60.2	80.00	0	75.3	31-108				12/3/2010 0117h
1011529-006FMS	4-Nitroaniline	µg/L	EPA625	68.7	80.00	0	85.9	10-175				12/3/2010 0117h
1011529-006FMS	4-Nitrophenol	µg/L	EPA625	110	80.00	0	137	10-97			1	12/3/2010 0117h
1011529-006FMS	5-Nitro-o-toluidine	µg/L	EPA625	86.4	80.00	0	108	10-175				12/3/2010 0117h
1011529-006FMS	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	99.1	80.00	0	124	26-174				12/3/2010 0117h
1011529-006FMS	a,a-Dimethylphenethylamine	µg/L	EPA625	38.2	80.00	0	47.8	10-175				12/3/2010 0117h
1011529-006FMS	Acenaphthene	µg/L	EPA625	54.7	80.00	0	68.4	29-97				12/3/2010 0117h

Report Date: 12/6/2010 Page 99 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMS	Acenaphthylene	µg/L	EPA625	54.6	80.00	0	68.3	37-87				12/3/2010 0117h
1011529-006FMS	Acetophenone	µg/L	EPA625	48.8	80.00	0	61.0	10-96				12/3/2010 0117h
1011529-006FMS	alpha-Terpineol	µg/L	EPA625	50.0	80.00	0	62.5	10-67				12/3/2010 0117h
1011529-006FMS	Aniline	µg/L	EPA625	33.4	80.00	0	41.8	10-71				12/3/2010 0117h
1011529-006FMS	Anthracene	µg/L	EPA625	76.0	80.00	0	95.0	53-114				12/3/2010 0117h
1011529-006FMS	Aramite	µg/L	EPA625	85.4	80.00	0	107	29-160				12/3/2010 0117h
1011529-006FMS	Azobenzene	µg/L	EPA625	56.8	80.00	0	71.0	15-114				12/3/2010 0117h
1011529-006FMS	Benz(a)anthracene	µg/L	EPA625	72.6	80.00	0	90.8	39-129				12/3/2010 0117h
1011529-006FMS	Benzidine	µg/L	EPA625	59.7	80.00	0	74.6	10-99				12/3/2010 0117h
1011529-006FMS	Benzo(a)pyrene	µg/L	EPA625	79.5	80.00	0	99.4	29-175				12/3/2010 0117h
1011529-006FMS	Benzo(b)fluoranthene	µg/L	EPA625	69.4	80.00	0	86.8	15-140				12/3/2010 0117h
1011529-006FMS	Benzo(g,h,i)perylene	µg/L	EPA625	65.0	80.00	0	81.3	10-182				12/3/2010 0117h
1011529-006FMS	Benzo(k)fluoranthene	µg/L	EPA625	97.9	80.00	0	122	21-154				12/3/2010 0117h
1011529-006FMS	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	19.4	10-71				12/3/2010 0117h
1011529-006FMS	Benzyl alcohol	µg/L	EPA625	24.1	80.00	0	30.2	10-69				12/3/2010 0117h
1011529-006FMS	Bis(2-chloroethoxy)methane	µg/L	EPA625	36.6	80.00	0	45.7	10-94				12/3/2010 0117h
1011529-006FMS	Bis(2-chloroethyl) ether	µg/L	EPA625	37.0	80.00	0	46.3	10-70				12/3/2010 0117h
1011529-006FMS	Bis(2-chloroisopropyl) ether	µg/L	EPA625	35.4	80.00	0	44.3	10-71				12/3/2010 0117h
1011529-006FMS	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	90.6	80.00	0	113	10-175				12/3/2010 0117h
1011529-006FMS	bis(2-ethylhexyl)adipate	µg/L	EPA625	90.6	80.00	0	113	10-175				12/3/2010 0117h
1011529-006FMS	Butyl benzyl phthalate	µg/L	EPA625	87.8	80.00	0	110	10-175				12/3/2010 0117h
1011529-006FMS	Carbazole	µg/L	EPA625	73.8	80.00	0	92.3	10-151				12/3/2010 0117h
1011529-006FMS	Chlorobenzilate	µg/L	EPA625	75.8	80.00	0	94.8	18-175				12/3/2010 0117h
1011529-006FMS	Chrysene	µg/L	EPA625	79.5	80.00	0	99.4	38-133				12/3/2010 0117h

Report Date: 12/6/2010 Page 100 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMS	Diallate (cis or trans)	µg/L	EPA625	62.9	80.00	0	78.6	10-157				12/3/2010 0117h
1011529-006FMS	Dibenz(a,h)anthracene	µg/L	EPA625	67.9	80.00	0	84.9	13-168				12/3/2010 0117h
1011529-006FMS	Dibenzofuran	µg/L	EPA625	56.8	80.00	0	71.0	29-103				12/3/2010 0117h
1011529-006FMS	Diethyl phthalate	µg/L	EPA625	53.9	80.00	0	67.3	10-139				12/3/2010 0117h
1011529-006FMS	Dimethoate	µg/L	EPA625	< 10.0	80.00	0	11.4	10-136				12/3/2010 0117h
1011529-006FMS	Dimethyl phthalate	µg/L	EPA625	31.4	80.00	0	39.2	10-122				12/3/2010 0117h
1011529-006FMS	Dimethylaminoazobenzene	µg/L	EPA625	85.0	80.00	0	106	34-142				12/3/2010 0117h
1011529-006FMS	Di-n-butyl phthalate	µg/L	EPA625	75.1	80.00	0	93.8	44-124				12/3/2010 0117h
1011529-006FMS	Di-n-octyl phthalate	µg/L	EPA625	134	80.00	0	167	10-175				12/3/2010 0117h
1011529-006FMS	Dinoseb	µg/L	EPA625	119	80.00	0	149	10-175				12/3/2010 0117h
1011529-006FMS	Diphenylamine	µg/L	EPA625	67.8	80.00	0	84.8	13-110				12/3/2010 0117h
1011529-006FMS	Disulfoton	µg/L	EPA625	50.6	80.00	0	63.3	10-121				12/3/2010 0117h
1011529-006FMS	Ethyl methanesulfonate	µg/L	EPA625	44.2	80.00	0	55.2	10-99				12/3/2010 0117h
1011529-006FMS	Famphur	µg/L	EPA625	140	80.00	0	174	10-71			1	12/3/2010 0117h
1011529-006FMS	Fluoranthene	µg/L	EPA625	74.9	80.00	0	93.6	23-135				12/3/2010 0117h
1011529-006FMS	Fluorene	µg/L	EPA625	60.4	80.00	0	75.5	34-108				12/3/2010 0117h
1011529-006FMS	Hexachlorobenzene	µg/L	EPA625	65.1	80.00	0	81.4	26-131				12/3/2010 0117h
1011529-006FMS	Hexachlorobutadiene	µg/L	EPA625	19.3	80.00	0	24.1	10-110				12/3/2010 0117h
1011529-006FMS	Hexachlorocyclopentadiene	µg/L	EPA625	11.2	80.00	0	14.0	10-45				12/3/2010 0117h
1011529-006FMS	Hexachloroethane	µg/L	EPA625	14.7	80.00	0	18.3	10-58				12/3/2010 0117h
1011529-006FMS	Hexachlorophene	µg/L	EPA625	81.4	80.00	0	102	10-168				12/3/2010 0117h
1011529-006FMS	Hexachloropropene	µg/L	EPA625	15.4	80.00	0	19.2	10-72				12/3/2010 0117h
1011529-006FMS	Indene	µg/L	EPA625	23.1	80.00	0	28.9	10-35				12/3/2010 0117h
1011529-006FMS	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	68.6	80.00	0	85.7	10-176				12/3/2010 0117h

Report Date: 12/6/2010 Page 101 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMS	Isodrin	µg/L	EPA625	69.6	80.00	0	87.1	15-165				12/3/2010 0117h
1011529-006FMS	Isophorone	µg/L	EPA625	50.6	80.00	0	63.2	10-99				12/3/2010 0117h
1011529-006FMS	Isosafrole	µg/L	EPA625	43.6	80.00	0	54.6	10-167				12/3/2010 0117h
1011529-006FMS	Kepone	µg/L	EPA625	217	80.00	0	272	10-175			1	12/3/2010 0117h
1011529-006FMS	Methapyrilene	µg/L	EPA625	85.0	80.00	0	106	10-149				12/3/2010 0117h
1011529-006FMS	Methyl methanesulfonate	µg/L	EPA625	29.7	80.00	0	37.2	10-132				12/3/2010 0117h
1011529-006FMS	Naphthalene	µg/L	EPA625	30.5	80.00	0	38.1	10-82				12/3/2010 0117h
1011529-006FMS	n-Decane	µg/L	EPA625	10.4	80.00	0	13.0	10-27				12/3/2010 0117h
1011529-006FMS	Nitrobenzene	µg/L	EPA625	56.0	80.00	0	70.0	10-119				12/3/2010 0117h
1011529-006FMS	Nitroquinoline-1-oxide	µg/L	EPA625	31.1	80.00	0	38.9	10-170				12/3/2010 0117h
1011529-006FMS	N-Nitrosodiethylamine	µg/L	EPA625	41.3	80.00	0	51.6	10-91				12/3/2010 0117h
1011529-006FMS	N-Nitrosodimethylamine	µg/L	EPA625	17.6	80.00	0	22.1	10-42				12/3/2010 0117h
1011529-006FMS	N-Nitrosodi-n-butylamine	µg/L	EPA625	56.1	80.00	0	70.1	10-175				12/3/2010 0117h
1011529-006FMS	N-Nitrosodiphenylamine	µg/L	EPA625	67.0	80.00	0	83.7	12-112				12/3/2010 0117h
1011529-006FMS	N-Nitrosodi-n-propylamine	µg/L	EPA625	45.4	80.00	0	56.7	10-77				12/3/2010 0117h
1011529-006FMS	N-Nitrosomethylethylamine	µg/L	EPA625	33.1	80.00	0	41.4	10-75				12/3/2010 0117h
1011529-006FMS	N-Nitrosomorpholine	µg/L	EPA625	48.0	80.00	0	60.0	10-175				12/3/2010 0117h
1011529-006FMS	N-Nitrosopiperidine	µg/L	EPA625	54.2	80.00	0	67.7	10-105				12/3/2010 0117h
1011529-006FMS	N-Nitrosopyrrolidine	µg/L	EPA625	54.4	80.00	0	68.0	10-88				12/3/2010 0117h
1011529-006FMS	n-Octadecane	µg/L	EPA625	57.6	80.00	0	72.0	10-121				12/3/2010 0117h
1011529-006FMS	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	51.3	80.00	0	64.1	10-93				12/3/2010 0117h
1011529-006FMS	o-Toluidine	µg/L	EPA625	96.4	80.00	0	120	10-107			1	12/3/2010 0117h
1011529-006FMS	Parathion	µg/L	EPA625	105	80.00	0	131	10-175				12/3/2010 0117h
1011529-006FMS	Methyl parathion	µg/L	EPA625	96.9	80.00	0	121	10-175				12/3/2010 0117h

Report Date: 12/6/2010 Page 102 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMS	Pentachlorobenzene	µg/L	EPA625	55.7	80.00	0	69.6	25-134				12/3/2010 0117h
1011529-006FMS	Pentachloronitrobenzene	µg/L	EPA625	77.6	80.00	0	97.0	10-175				12/3/2010 0117h
1011529-006FMS	Pentachlorophenol	µg/L	EPA625	49.2	80.00	0	61.5	10-163				12/3/2010 0117h
1011529-006FMS	Phenacetin	µg/L	EPA625	72.3	80.00	0	90.4	10-175				12/3/2010 0117h
1011529-006FMS	Phenanthrene	µg/L	EPA625	78.6	80.00	0	98.2	31-126				12/3/2010 0117h
1011529-006FMS	Phenol	µg/L	EPA625	28.1	80.00	0	35.1	10-175				12/3/2010 0117h
1011529-006FMS	Phorate	µg/L	EPA625	74.7	80.00	0	93.4	10-175				12/3/2010 0117h
1011529-006FMS	Pronamide	µg/L	EPA625	77.1	80.00	0	96.4	10-95			1	12/3/2010 0117h
1011529-006FMS	Pyrene	µg/L	EPA625	87.9	80.00	0	110	51-139				12/3/2010 0117h
1011529-006FMS	Pyridine	µg/L	EPA625	11.7	80.00	0	14.6	10-25				12/3/2010 0117h
1011529-006FMS	Quinoline	µg/L	EPA625	57.8	80.00	0	72.3	10-63			1	12/3/2010 0117h
1011529-006FMS	Safrole	µg/L	EPA625	48.2	80.00	0	60.3	10-120				12/3/2010 0117h
1011529-006FMS	Tetraethyl dithiopyrophosphate	µg/L	EPA625	69.1	80.00	0	86.4	13-160				12/3/2010 0117h
1011529-006FMS	Thionazin	µg/L	EPA625	61.8	80.00	0	77.3	10-139				12/3/2010 0117h
1011529-006FMS	Surr: 2,4,6-Tribromophenol	% REC	EPA625	66.3	80.00		82.9	21-154				12/3/2010 0117h
1011529-006FMS	Surr: 2-Fluorobiphenyl	% REC	EPA625	45.7	40.00		114	10-106			S	12/3/2010 0117h
1011529-006FMS	Surr: 2-Fluorophenol	% REC	EPA625	25.6	80.00		32.0	10-56				12/3/2010 0117h
1011529-006FMS	Surr: Nitrobenzene-d5	% REC	EPA625	50.7	40.00		127	10-101			S	12/3/2010 0117h
1011529-006FMS	Surr: Phenol-d6	% REC	EPA625	19.0	80.00		23.8	10-45				12/3/2010 0117h
1011529-006FMS	Surr: Terphenyl-d14	% REC	EPA625	90.9	40.00		227	10-160			S	12/3/2010 0117h
1012039-001DMS	1,1'-Biphenyl	µg/L	EPA625	64.4	81.63	0	78.8	27-99				12/3/2010 0932h
1012039-001DMS	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	59.0	81.63	0	72.2	10-119				12/3/2010 0932h
1012039-001DMS	1,2,4-Trichlorobenzene	µg/L	EPA625	46.3	81.63	0	56.7	10-79				12/3/2010 0932h
1012039-001DMS	1,2-Dichlorobenzene	µg/L	EPA625	33.9	81.63	0	41.6	10-59				12/3/2010 0932h

Report Date: 12/6/2010 Page 103 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	1,3,5-Trinitrobenzene	µg/L	EPA625	148	81.63	0	182	10-175			¹	12/3/2010 0932h
1012039-001DMS	1,3-Dichlorobenzene	µg/L	EPA625	28.5	81.63	0	34.9	10-56				12/3/2010 0932h
1012039-001DMS	1,3-Dinitrobenzene	µg/L	EPA625	94.8	81.63	0	116	10-175				12/3/2010 0932h
1012039-001DMS	1,4-Dichlorobenzene	µg/L	EPA625	30.6	81.63	0	37.5	10-58				12/3/2010 0932h
1012039-001DMS	1,4-Naphthoquinone	µg/L	EPA625	24.3	81.63	0	29.7	10-177				12/3/2010 0932h
1012039-001DMS	1,4-Phenylenediamine	µg/L	EPA625	52.0	81.63	0	63.7	10-124				12/3/2010 0932h
1012039-001DMS	1-Chloronaphthalene	µg/L	EPA625	55.2	81.63	0	67.6	10-106				12/3/2010 0932h
1012039-001DMS	1-Methylnaphthalene	µg/L	EPA625	65.7	81.63	0	80.5	10-83				12/3/2010 0932h
1012039-001DMS	1-Naphthylamine	µg/L	EPA625	70.1	81.63	0	85.9	10-122				12/3/2010 0932h
1012039-001DMS	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	77.9	81.63	0	95.4	10-157				12/3/2010 0932h
1012039-001DMS	2,4,5-Trichlorophenol	µg/L	EPA625	66.3	81.63	0	81.2	10-148				12/3/2010 0932h
1012039-001DMS	2,4,6-Trichlorophenol	µg/L	EPA625	53.5	81.63	0	65.5	10-136				12/3/2010 0932h
1012039-001DMS	2,4-Dichlorophenol	µg/L	EPA625	56.8	81.63	0	69.6	10-123				12/3/2010 0932h
1012039-001DMS	2,4-Dimethylphenol	µg/L	EPA625	63.6	81.63	0	77.9	10-113				12/3/2010 0932h
1012039-001DMS	2,4-Dinitrophenol	µg/L	EPA625	57.1	81.63	0	70.0	10-175				12/3/2010 0932h
1012039-001DMS	2,4-Dinitrotoluene	µg/L	EPA625	98.9	81.63	0	121	10-175				12/3/2010 0932h
1012039-001DMS	2,6-Dichlorophenol	µg/L	EPA625	66.1	81.63	0	81.0	10-148				12/3/2010 0932h
1012039-001DMS	2,6-Dinitrotoluene	µg/L	EPA625	88.4	81.63	0	108	10-175				12/3/2010 0932h
1012039-001DMS	2-Acetylaminofluorene	µg/L	EPA625	73.9	81.63	0	90.5	10-94				12/3/2010 0932h
1012039-001DMS	2-Chloronaphthalene	µg/L	EPA625	64.6	81.63	0	79.2	10-93				12/3/2010 0932h
1012039-001DMS	2-Chlorophenol	µg/L	EPA625	54.0	81.63	0	66.1	10-92				12/3/2010 0932h
1012039-001DMS	2-Methylnaphthalene	µg/L	EPA625	56.4	81.63	0	69.1	15-78				12/3/2010 0932h
1012039-001DMS	2-Methylphenol	µg/L	EPA625	49.9	81.63	0	61.1	10-83				12/3/2010 0932h
1012039-001DMS	2-Naphthylamine	µg/L	EPA625	64.5	81.63	0	79.0	10-154				12/3/2010 0932h

Report Date: 12/6/2010 Page 104 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	2-Nitroaniline	µg/L	EPA625	83.8	81.63	0	103	10-175				12/3/2010 0932h
1012039-001DMS	2-Nitrophenol	µg/L	EPA625	80.6	81.63	0	98.7	10-175				12/3/2010 0932h
1012039-001DMS	2-Picoline	µg/L	EPA625	37.1	81.63	0	45.5	10-61				12/3/2010 0932h
1012039-001DMS	3&4-Methylphenol	µg/L	EPA625	35.2	81.63	0	43.1	10-80				12/3/2010 0932h
1012039-001DMS	3,3'-Dichlorobenzidine	µg/L	EPA625	67.1	81.63	0	82.2	10-150				12/3/2010 0932h
1012039-001DMS	3,3'-Dimethylbenzidine	µg/L	EPA625	71.2	81.63	0	87.2	10-143				12/3/2010 0932h
1012039-001DMS	3-Methylcholanthrene	µg/L	EPA625	70.1	81.63	0	85.8	32-171				12/3/2010 0932h
1012039-001DMS	3-Nitroaniline	µg/L	EPA625	78.1	81.63	0	95.6	10-175				12/3/2010 0932h
1012039-001DMS	4,6-Dinitro-2-methylphenol	µg/L	EPA625	112	81.63	0	137	10-175				12/3/2010 0932h
1012039-001DMS	4-Aminobiphenyl	µg/L	EPA625	79.0	81.63	0	96.8	10-175				12/3/2010 0932h
1012039-001DMS	4-Bromophenyl phenyl ether	µg/L	EPA625	73.7	81.63	0	90.3	16-138				12/3/2010 0932h
1012039-001DMS	4-Chloro-3-methylphenol	µg/L	EPA625	66.9	81.63	0	82.0	10-131				12/3/2010 0932h
1012039-001DMS	4-Chloroaniline	µg/L	EPA625	56.8	81.63	0	69.6	10-98				12/3/2010 0932h
1012039-001DMS	4-Chlorophenyl phenyl ether	µg/L	EPA625	69.2	81.63	0	84.8	31-108				12/3/2010 0932h
1012039-001DMS	4-Nitroaniline	µg/L	EPA625	67.2	81.63	0	82.3	10-175				12/3/2010 0932h
1012039-001DMS	4-Nitrophenol	µg/L	EPA625	121	81.63	0	148	10-97			1	12/3/2010 0932h
1012039-001DMS	5-Nitro-o-toluidine	µg/L	EPA625	90.2	81.63	0	111	10-175				12/3/2010 0932h
1012039-001DMS	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	94.5	81.63	0	116	26-174				12/3/2010 0932h
1012039-001DMS	a,a-Dimethylphenethylamine	µg/L	EPA625	42.1	81.63	0	51.6	10-175				12/3/2010 0932h
1012039-001DMS	Acenaphthene	µg/L	EPA625	68.3	81.63	0	83.7	29-97				12/3/2010 0932h
1012039-001DMS	Acenaphthylene	µg/L	EPA625	67.4	81.63	0	82.6	37-87				12/3/2010 0932h
1012039-001DMS	Acetophenone	µg/L	EPA625	57.9	81.63	0	71.0	10-96				12/3/2010 0932h
1012039-001DMS	alpha-Terpineol	µg/L	EPA625	55.9	81.63	0	68.5	10-67			1	12/3/2010 0932h
1012039-001DMS	Aniline	µg/L	EPA625	45.7	81.63	0	55.9	10-71				12/3/2010 0932h

Report Date: 12/6/2010 Page 105 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	Anthracene	µg/L	EPA625	83.3	81.63	0	102	53-114				12/3/2010 0932h
1012039-001DMS	Aramite	µg/L	EPA625	90.6	81.63	0	111	29-160				12/3/2010 0932h
1012039-001DMS	Azobenzene	µg/L	EPA625	66.0	81.63	0	80.8	15-114				12/3/2010 0932h
1012039-001DMS	Benz(a)anthracene	µg/L	EPA625	65.8	81.63	0	80.6	39-129				12/3/2010 0932h
1012039-001DMS	Benzidine	µg/L	EPA625	59.5	81.63	0	72.9	10-99				12/3/2010 0932h
1012039-001DMS	Benzo(a)pyrene	µg/L	EPA625	73.9	81.63	0	90.5	29-175				12/3/2010 0932h
1012039-001DMS	Benzo(b)fluoranthene	µg/L	EPA625	76.4	81.63	0	93.6	15-140				12/3/2010 0932h
1012039-001DMS	Benzo(g,h,i)perylene	µg/L	EPA625	61.1	81.63	0	74.9	10-182				12/3/2010 0932h
1012039-001DMS	Benzo(k)fluoranthene	µg/L	EPA625	85.4	81.63	0	105	21-154				12/3/2010 0932h
1012039-001DMS	Benzoic acid	µg/L	EPA625	< 20.4	81.63	0	17.8	10-71				12/3/2010 0932h
1012039-001DMS	Benzyl alcohol	µg/L	EPA625	25.8	81.63	0	31.6	10-69				12/3/2010 0932h
1012039-001DMS	Bis(2-chloroethoxy)methane	µg/L	EPA625	41.2	81.63	0	50.5	10-94				12/3/2010 0932h
1012039-001DMS	Bis(2-chloroethyl) ether	µg/L	EPA625	40.9	81.63	0	50.1	10-70				12/3/2010 0932h
1012039-001DMS	Bis(2-chloroisopropyl) ether	µg/L	EPA625	43.6	81.63	0	53.4	10-71				12/3/2010 0932h
1012039-001DMS	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	85.2	81.63	0	104	10-175				12/3/2010 0932h
1012039-001DMS	bis(2-ethylhexyl)adipate	µg/L	EPA625	85.6	81.63	0	105	10-175				12/3/2010 0932h
1012039-001DMS	Butyl benzyl phthalate	µg/L	EPA625	84.9	81.63	0	104	10-175				12/3/2010 0932h
1012039-001DMS	Carbazole	µg/L	EPA625	77.0	81.63	0	94.3	10-151				12/3/2010 0932h
1012039-001DMS	Chlorobenzilate	µg/L	EPA625	81.5	81.63	0	99.8	18-175				12/3/2010 0932h
1012039-001DMS	Chrysene	µg/L	EPA625	73.5	81.63	0	90.0	38-133				12/3/2010 0932h
1012039-001DMS	Diallate (cis or trans)	µg/L	EPA625	71.1	81.63	0	87.1	10-157				12/3/2010 0932h
1012039-001DMS	Dibenz(a,h)anthracene	µg/L	EPA625	61.8	81.63	0	75.7	13-168				12/3/2010 0932h
1012039-001DMS	Dibenzofuran	µg/L	EPA625	66.6	81.63	0	81.6	29-103				12/3/2010 0932h
1012039-001DMS	Diethyl phthalate	µg/L	EPA625	72.7	81.63	0	89.1	10-139				12/3/2010 0932h

Report Date: 12/6/2010 Page 106 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	Dimethoate	µg/L	EPA625	33.8	81.63	0	41.4	10-136				12/3/2010 0932h
1012039-001DMS	Dimethyl phthalate	µg/L	EPA625	65.3	81.63	0	80.0	10-122				12/3/2010 0932h
1012039-001DMS	Dimethylaminoazobenzene	µg/L	EPA625	80.6	81.63	0	98.7	34-142				12/3/2010 0932h
1012039-001DMS	Di-n-butyl phthalate	µg/L	EPA625	82.8	81.63	0	101	44-124				12/3/2010 0932h
1012039-001DMS	Di-n-octyl phthalate	µg/L	EPA625	123	81.63	0	150	10-175				12/3/2010 0932h
1012039-001DMS	Dinoseb	µg/L	EPA625	125	81.63	0	153	10-175				12/3/2010 0932h
1012039-001DMS	Diphenylamine	µg/L	EPA625	76.8	81.63	0	94.1	13-110				12/3/2010 0932h
1012039-001DMS	Disulfoton	µg/L	EPA625	67.5	81.63	0	82.7	10-121				12/3/2010 0932h
1012039-001DMS	Ethyl methanesulfonate	µg/L	EPA625	51.5	81.63	0	63.1	10-99				12/3/2010 0932h
1012039-001DMS	Famphur	µg/L	EPA625	123	81.63	0	150	10-71			1	12/3/2010 0932h
1012039-001DMS	Fluoranthene	µg/L	EPA625	76.3	81.63	0	93.5	23-135				12/3/2010 0932h
1012039-001DMS	Fluorene	µg/L	EPA625	70.8	81.63	0	86.7	34-108				12/3/2010 0932h
1012039-001DMS	Hexachlorobenzene	µg/L	EPA625	74.8	81.63	0	91.7	26-131				12/3/2010 0932h
1012039-001DMS	Hexachlorobutadiene	µg/L	EPA625	41.6	81.63	0	51.0	10-110				12/3/2010 0932h
1012039-001DMS	Hexachlorocyclopentadiene	µg/L	EPA625	27.2	81.63	0	33.4	10-45				12/3/2010 0932h
1012039-001DMS	Hexachloroethane	µg/L	EPA625	30.2	81.63	0	37.0	10-58				12/3/2010 0932h
1012039-001DMS	Hexachlorophene	µg/L	EPA625	75.1	81.63	0	92.0	10-168				12/3/2010 0932h
1012039-001DMS	Hexachloropropene	µg/L	EPA625	38.1	81.63	0	46.7	10-72				12/3/2010 0932h
1012039-001DMS	Indene	µg/L	EPA625	40.8	81.63	0	50.0	10-35			1	12/3/2010 0932h
1012039-001DMS	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	63.4	81.63	0	77.7	10-176				12/3/2010 0932h
1012039-001DMS	Isodrin	µg/L	EPA625	76.9	81.63	0	94.2	15-165				12/3/2010 0932h
1012039-001DMS	Isophorone	µg/L	EPA625	58.2	81.63	0	71.3	10-99				12/3/2010 0932h
1012039-001DMS	Isosafrole	µg/L	EPA625	59.8	81.63	0	73.3	10-167				12/3/2010 0932h
1012039-001DMS	Kepon	µg/L	EPA625	205	81.63	0	252	10-175			1	12/3/2010 0932h

Report Date: 12/6/2010 Page 107 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	Methapyrilene	µg/L	EPA625	88.4	81.63	0	108	10-149				12/3/2010 0932h
1012039-001DMS	Methyl methanesulfonate	µg/L	EPA625	36.0	81.63	0	44.1	10-132				12/3/2010 0932h
1012039-001DMS	Naphthalene	µg/L	EPA625	53.1	81.63	0	65.0	10-82				12/3/2010 0932h
1012039-001DMS	n-Decane	µg/L	EPA625	19.2	81.63	0	23.5	10-27				12/3/2010 0932h
1012039-001DMS	Nitrobenzene	µg/L	EPA625	67.8	81.63	0	83.0	10-119				12/3/2010 0932h
1012039-001DMS	Nitroquinoline-1-oxide	µg/L	EPA625	30.3	81.63	0	37.1	10-170				12/3/2010 0932h
1012039-001DMS	N-Nitrosodiethylamine	µg/L	EPA625	50.0	81.63	0	61.2	10-91				12/3/2010 0932h
1012039-001DMS	N-Nitrosodimethylamine	µg/L	EPA625	20.1	81.63	0	24.6	10-42				12/3/2010 0932h
1012039-001DMS	N-Nitrosodi-n-butylamine	µg/L	EPA625	63.7	81.63	0	78.1	10-175				12/3/2010 0932h
1012039-001DMS	N-Nitrosodiphenylamine	µg/L	EPA625	75.6	81.63	0	92.7	12-112				12/3/2010 0932h
1012039-001DMS	N-Nitrosodi-n-propylamine	µg/L	EPA625	53.9	81.63	0	66.1	10-77				12/3/2010 0932h
1012039-001DMS	N-Nitrosomethylethylamine	µg/L	EPA625	39.8	81.63	0	48.8	10-75				12/3/2010 0932h
1012039-001DMS	N-Nitrosomorpholine	µg/L	EPA625	55.8	81.63	0	68.3	10-175				12/3/2010 0932h
1012039-001DMS	N-Nitrosopiperidine	µg/L	EPA625	61.2	81.63	0	75.0	10-105				12/3/2010 0932h
1012039-001DMS	N-Nitrosopyrrolidine	µg/L	EPA625	63.3	81.63	0	77.6	10-88				12/3/2010 0932h
1012039-001DMS	n-Octadecane	µg/L	EPA625	67.9	81.63	0	83.2	10-121				12/3/2010 0932h
1012039-001DMS	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	63.9	81.63	0	78.2	10-93				12/3/2010 0932h
1012039-001DMS	o-Toluidine	µg/L	EPA625	114	81.63	0	140	10-107			1	12/3/2010 0932h
1012039-001DMS	Parathion	µg/L	EPA625	110	81.63	0	134	10-175				12/3/2010 0932h
1012039-001DMS	Methyl parathion	µg/L	EPA625	100	81.63	0	123	10-175				12/3/2010 0932h
1012039-001DMS	Pentachlorobenzene	µg/L	EPA625	66.5	81.63	0	81.4	25-134				12/3/2010 0932h
1012039-001DMS	Pentachloronitrobenzene	µg/L	EPA625	83.7	81.63	0	103	10-175				12/3/2010 0932h
1012039-001DMS	Pentachlorophenol	µg/L	EPA625	44.1	81.63	0	54.1	10-163				12/3/2010 0932h
1012039-001DMS	Phenacetin	µg/L	EPA625	72.1	81.63	0	88.3	10-175				12/3/2010 0932h

Report Date: 12/6/2010 Page 108 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	Phenanthrene	µg/L	EPA625	88.6	81.63	0	109	31-126				12/3/2010 0932h
1012039-001DMS	Phenol	µg/L	EPA625	32.6	81.63	0	40.0	10-175				12/3/2010 0932h
1012039-001DMS	Phorate	µg/L	EPA625	83.9	81.63	0	103	10-175				12/3/2010 0932h
1012039-001DMS	Pronamide	µg/L	EPA625	78.9	81.63	0	96.6	10-95			1	12/3/2010 0932h
1012039-001DMS	Pyrene	µg/L	EPA625	84.4	81.63	0	103	51-139				12/3/2010 0932h
1012039-001DMS	Pyridine	µg/L	EPA625	20.9	81.63	0	25.6	10-25			1	12/3/2010 0932h
1012039-001DMS	Quinoline	µg/L	EPA625	65.0	81.63	0	79.6	10-63			1	12/3/2010 0932h
1012039-001DMS	Safrole	µg/L	EPA625	58.6	81.63	0	71.8	10-120				12/3/2010 0932h
1012039-001DMS	Tetraethyl dithiopyrophosphate	µg/L	EPA625	77.9	81.63	0	95.5	13-160				12/3/2010 0932h
1012039-001DMS	Thionazin	µg/L	EPA625	69.5	81.63	0	85.1	10-139				12/3/2010 0932h
1012039-001DMS	Surr: 2,4,6-Tribromophenol	% REC	EPA625	66.9	81.63		82.0	21-154				12/3/2010 0932h
1012039-001DMS	Surr: 2-Fluorobiphenyl	% REC	EPA625	61.7	40.82		151	10-106			S	12/3/2010 0932h
1012039-001DMS	Surr: 2-Fluorophenol	% REC	EPA625	29.2	81.63		35.8	10-56				12/3/2010 0932h
1012039-001DMS	Surr: Nitrobenzene-d5	% REC	EPA625	61.3	40.82		150	10-101			S	12/3/2010 0932h
1012039-001DMS	Surr: Phenol-d6	% REC	EPA625	19.8	81.63		24.2	10-45				12/3/2010 0932h
1012039-001DMS	Surr: Terphenyl-d14	% REC	EPA625	84.2	40.82		206	10-160			S	12/3/2010 0932h
1012057-001BMS	1,1'-Biphenyl	µg/L	EPA625	51.8	80.00	0	64.8	27-99				12/3/2010 1121h
1012057-001BMS	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	47.4	80.00	0	59.2	10-119				12/3/2010 1121h
1012057-001BMS	1,2,4-Trichlorobenzene	µg/L	EPA625	37.8	80.00	0	47.2	10-79				12/3/2010 1121h
1012057-001BMS	1,2-Dichlorobenzene	µg/L	EPA625	29.2	80.00	0	36.5	10-59				12/3/2010 1121h
1012057-001BMS	1,3,5-Trinitrobenzene	µg/L	EPA625	134	80.00	0	167	10-175				12/3/2010 1121h
1012057-001BMS	1,3-Dichlorobenzene	µg/L	EPA625	24.6	80.00	0	30.8	10-56				12/3/2010 1121h
1012057-001BMS	1,3-Dinitrobenzene	µg/L	EPA625	75.9	80.00	0	94.9	10-175				12/3/2010 1121h
1012057-001BMS	1,4-Dichlorobenzene	µg/L	EPA625	25.5	80.00	0	31.9	10-58				12/3/2010 1121h

Report Date: 12/6/2010 Page 109 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMS	1,4-Naphthoquinone	µg/L	EPA625	20.5	80.00	0	25.6	10-177				12/3/2010 1121h
1012057-001BMS	1,4-Phenylenediamine	µg/L	EPA625	41.7	80.00	0	52.1	10-124				12/3/2010 1121h
1012057-001BMS	1-Chloronaphthalene	µg/L	EPA625	42.7	80.00	0	53.3	10-106				12/3/2010 1121h
1012057-001BMS	1-Methylnaphthalene	µg/L	EPA625	52.8	80.00	0	66.0	10-83				12/3/2010 1121h
1012057-001BMS	1-Naphthylamine	µg/L	EPA625	59.5	80.00	0	74.4	10-122				12/3/2010 1121h
1012057-001BMS	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	79.2	80.00	0	99.0	10-157				12/3/2010 1121h
1012057-001BMS	2,4,5-Trichlorophenol	µg/L	EPA625	59.8	80.00	0	74.8	10-148				12/3/2010 1121h
1012057-001BMS	2,4,6-Trichlorophenol	µg/L	EPA625	47.0	80.00	0	58.8	10-136				12/3/2010 1121h
1012057-001BMS	2,4-Dichlorophenol	µg/L	EPA625	49.0	80.00	0	61.3	10-123				12/3/2010 1121h
1012057-001BMS	2,4-Dimethylphenol	µg/L	EPA625	55.3	80.00	0	69.1	10-113				12/3/2010 1121h
1012057-001BMS	2,4-Dinitrophenol	µg/L	EPA625	50.2	80.00	0	62.8	10-175				12/3/2010 1121h
1012057-001BMS	2,4-Dinitrotoluene	µg/L	EPA625	86.3	80.00	0	108	10-175				12/3/2010 1121h
1012057-001BMS	2,6-Dichlorophenol	µg/L	EPA625	60.4	80.00	0	75.6	10-148				12/3/2010 1121h
1012057-001BMS	2,6-Dinitrotoluene	µg/L	EPA625	74.4	80.00	0	93.0	10-175				12/3/2010 1121h
1012057-001BMS	2-Acetylaminofluorene	µg/L	EPA625	68.9	80.00	0	86.1	10-94				12/3/2010 1121h
1012057-001BMS	2-Chloronaphthalene	µg/L	EPA625	46.3	80.00	0	57.8	10-93				12/3/2010 1121h
1012057-001BMS	2-Chlorophenol	µg/L	EPA625	45.1	80.00	0	56.4	10-92				12/3/2010 1121h
1012057-001BMS	2-Methylnaphthalene	µg/L	EPA625	45.3	80.00	0	56.6	15-78				12/3/2010 1121h
1012057-001BMS	2-Methylphenol	µg/L	EPA625	36.6	80.00	0	45.7	10-83				12/3/2010 1121h
1012057-001BMS	2-Naphthylamine	µg/L	EPA625	54.0	80.00	0	67.5	10-154				12/3/2010 1121h
1012057-001BMS	2-Nitroaniline	µg/L	EPA625	72.1	80.00	0	90.2	10-175				12/3/2010 1121h
1012057-001BMS	2-Nitrophenol	µg/L	EPA625	74.9	80.00	0	93.6	10-175				12/3/2010 1121h
1012057-001BMS	2-Picoline	µg/L	EPA625	24.2	80.00	0	30.3	10-61				12/3/2010 1121h
1012057-001BMS	3&4-Methylphenol	µg/L	EPA625	19.9	80.00	0	24.9	10-80				12/3/2010 1121h

Report Date: 12/6/2010 Page 110 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT**Client:** Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte**Contact:** Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMS	3,3'-Dichlorobenzidine	µg/L	EPA625	63.0	80.00	0	78.7	10-150				12/3/2010 1121h
1012057-001BMS	3,3'-Dimethylbenzidine	µg/L	EPA625	71.7	80.00	0	89.7	10-143				12/3/2010 1121h
1012057-001BMS	3-Methylcholanthrene	µg/L	EPA625	66.4	80.00	0	83.0	32-171				12/3/2010 1121h
1012057-001BMS	3-Nitroaniline	µg/L	EPA625	67.7	80.00	0	84.7	10-175				12/3/2010 1121h
1012057-001BMS	4,6-Dinitro-2-methylphenol	µg/L	EPA625	101	80.00	0	127	10-175				12/3/2010 1121h
1012057-001BMS	4-Aminobiphenyl	µg/L	EPA625	67.1	80.00	0	83.9	10-175				12/3/2010 1121h
1012057-001BMS	4-Bromophenyl phenyl ether	µg/L	EPA625	59.5	80.00	0	74.4	16-138				12/3/2010 1121h
1012057-001BMS	4-Chloro-3-methylphenol	µg/L	EPA625	56.9	80.00	0	71.1	10-131				12/3/2010 1121h
1012057-001BMS	4-Chloroaniline	µg/L	EPA625	47.4	80.00	0	59.3	10-98				12/3/2010 1121h
1012057-001BMS	4-Chlorophenyl phenyl ether	µg/L	EPA625	57.6	80.00	0	72.1	31-108				12/3/2010 1121h
1012057-001BMS	4-Nitroaniline	µg/L	EPA625	59.8	80.00	0	74.7	10-175				12/3/2010 1121h
1012057-001BMS	4-Nitrophenol	µg/L	EPA625	101	80.00	0	126	10-97			1	12/3/2010 1121h
1012057-001BMS	5-Nitro-o-toluidine	µg/L	EPA625	78.7	80.00	0	98.4	10-175				12/3/2010 1121h
1012057-001BMS	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	89.1	80.00	0	111	26-174				12/3/2010 1121h
1012057-001BMS	a,a-Dimethylphenethylamine	µg/L	EPA625	39.1	80.00	0	48.9	10-175				12/3/2010 1121h
1012057-001BMS	Acenaphthene	µg/L	EPA625	56.0	80.00	0	70.0	29-97				12/3/2010 1121h
1012057-001BMS	Acenaphthylene	µg/L	EPA625	56.1	80.00	0	70.1	37-87				12/3/2010 1121h
1012057-001BMS	Acetophenone	µg/L	EPA625	46.5	80.00	0	58.1	10-96				12/3/2010 1121h
1012057-001BMS	alpha-Terpineol	µg/L	EPA625	46.2	80.00	0	57.8	10-67				12/3/2010 1121h
1012057-001BMS	Aniline	µg/L	EPA625	32.0	80.00	0	40.0	10-71				12/3/2010 1121h
1012057-001BMS	Anthracene	µg/L	EPA625	69.5	80.00	0	86.9	53-114				12/3/2010 1121h
1012057-001BMS	Aramite	µg/L	EPA625	76.1	80.00	0	95.2	29-160				12/3/2010 1121h
1012057-001BMS	Azobenzene	µg/L	EPA625	55.7	80.00	0	69.6	15-114				12/3/2010 1121h
1012057-001BMS	Benz(a)anthracene	µg/L	EPA625	63.0	80.00	0	78.7	39-129				12/3/2010 1121h

Report Date: 12/6/2010 Page 111 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMS	Benzidine	µg/L	EPA625	56.9	80.00	0	71.1	10-99				12/3/2010 1121h
1012057-001BMS	Benzo(a)pyrene	µg/L	EPA625	71.0	80.00	0	88.7	29-175				12/3/2010 1121h
1012057-001BMS	Benzo(b)fluoranthene	µg/L	EPA625	61.1	80.00	0	76.3	15-140				12/3/2010 1121h
1012057-001BMS	Benzo(g,h,i)perylene	µg/L	EPA625	57.9	80.00	0	72.4	10-182				12/3/2010 1121h
1012057-001BMS	Benzo(k)fluoranthene	µg/L	EPA625	86.7	80.00	0	108	21-154				12/3/2010 1121h
1012057-001BMS	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	17.5	10-71				12/3/2010 1121h
1012057-001BMS	Benzyl alcohol	µg/L	EPA625	18.5	80.00	0	23.2	10-69				12/3/2010 1121h
1012057-001BMS	Bis(2-chloroethoxy)methane	µg/L	EPA625	34.3	80.00	0	42.9	10-94				12/3/2010 1121h
1012057-001BMS	Bis(2-chloroethyl) ether	µg/L	EPA625	34.9	80.00	0	43.6	10-70				12/3/2010 1121h
1012057-001BMS	Bis(2-chloroisopropyl) ether	µg/L	EPA625	33.5	80.00	0	41.9	10-71				12/3/2010 1121h
1012057-001BMS	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	77.8	80.00	0	97.2	10-175				12/3/2010 1121h
1012057-001BMS	bis(2-ethylhexyl)adipate	µg/L	EPA625	80.9	80.00	0	101	10-175				12/3/2010 1121h
1012057-001BMS	Butyl benzyl phthalate	µg/L	EPA625	81.1	80.00	0	101	10-175				12/3/2010 1121h
1012057-001BMS	Carbazole	µg/L	EPA625	66.5	80.00	0	83.1	10-151				12/3/2010 1121h
1012057-001BMS	Chlorobenzilate	µg/L	EPA625	77.8	80.00	0	97.2	18-175				12/3/2010 1121h
1012057-001BMS	Chrysene	µg/L	EPA625	69.8	80.00	0	87.2	38-133				12/3/2010 1121h
1012057-001BMS	Diallate (cis or trans)	µg/L	EPA625	58.5	80.00	0	73.1	10-157				12/3/2010 1121h
1012057-001BMS	Dibenz(a,h)anthracene	µg/L	EPA625	59.0	80.00	0	73.8	13-168				12/3/2010 1121h
1012057-001BMS	Dibenzofuran	µg/L	EPA625	55.4	80.00	0	69.3	29-103				12/3/2010 1121h
1012057-001BMS	Diethyl phthalate	µg/L	EPA625	60.1	80.00	0	75.1	10-139				12/3/2010 1121h
1012057-001BMS	Dimethoate	µg/L	EPA625	21.6	80.00	0	27.0	10-136				12/3/2010 1121h
1012057-001BMS	Dimethyl phthalate	µg/L	EPA625	52.8	80.00	0	66.0	10-122				12/3/2010 1121h
1012057-001BMS	Dimethylaminoazobenzene	µg/L	EPA625	74.2	80.00	0	92.8	34-142				12/3/2010 1121h
1012057-001BMS	Di-n-butyl phthalate	µg/L	EPA625	70.7	80.00	0	88.4	44-124				12/3/2010 1121h

Report Date: 12/6/2010 Page 112 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMS	Di-n-octyl phthalate	µg/L	EPA625	116	80.00	0	145	10-175				12/3/2010 1121h
1012057-001BMS	Dinoseb	µg/L	EPA625	114	80.00	0	142	10-175				12/3/2010 1121h
1012057-001BMS	Diphenylamine	µg/L	EPA625	64.9	80.00	0	81.2	13-110				12/3/2010 1121h
1012057-001BMS	Disulfoton	µg/L	EPA625	48.5	80.00	0	60.7	10-121				12/3/2010 1121h
1012057-001BMS	Ethyl methanesulfonate	µg/L	EPA625	41.2	80.00	0	51.5	10-99				12/3/2010 1121h
1012057-001BMS	Famphur	µg/L	EPA625	119	80.00	0	149	10-71			1	12/3/2010 1121h
1012057-001BMS	Fluoranthene	µg/L	EPA625	66.9	80.00	0	83.6	23-135				12/3/2010 1121h
1012057-001BMS	Fluorene	µg/L	EPA625	57.6	80.00	0	72.0	34-108				12/3/2010 1121h
1012057-001BMS	Hexachlorobenzene	µg/L	EPA625	61.0	80.00	0	76.2	26-131				12/3/2010 1121h
1012057-001BMS	Hexachlorobutadiene	µg/L	EPA625	33.6	80.00	0	41.9	10-110				12/3/2010 1121h
1012057-001BMS	Hexachlorocyclopentadiene	µg/L	EPA625	21.2	80.00	0	26.4	10-45				12/3/2010 1121h
1012057-001BMS	Hexachloroethane	µg/L	EPA625	26.9	80.00	0	33.6	10-58				12/3/2010 1121h
1012057-001BMS	Hexachlorophene	µg/L	EPA625	75.1	80.00	0	93.8	10-168				12/3/2010 1121h
1012057-001BMS	Hexachloropropene	µg/L	EPA625	31.6	80.00	0	39.6	10-72				12/3/2010 1121h
1012057-001BMS	Indene	µg/L	EPA625	33.0	80.00	0	41.2	10-35			1	12/3/2010 1121h
1012057-001BMS	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	60.1	80.00	0	75.2	10-176				12/3/2010 1121h
1012057-001BMS	Isodrin	µg/L	EPA625	65.4	80.00	0	81.7	15-165				12/3/2010 1121h
1012057-001BMS	Isophorone	µg/L	EPA625	45.9	80.00	0	57.4	10-99				12/3/2010 1121h
1012057-001BMS	Isosafrole	µg/L	EPA625	46.4	80.00	0	58.0	10-167				12/3/2010 1121h
1012057-001BMS	Kepone	µg/L	EPA625	211	80.00	0	264	10-175			1	12/3/2010 1121h
1012057-001BMS	Methapyrilene	µg/L	EPA625	73.9	80.00	0	92.4	10-149				12/3/2010 1121h
1012057-001BMS	Methyl methanesulfonate	µg/L	EPA625	25.8	80.00	0	32.2	10-132				12/3/2010 1121h
1012057-001BMS	Naphthalene	µg/L	EPA625	41.3	80.00	0	51.7	10-82				12/3/2010 1121h
1012057-001BMS	n-Decane	µg/L	EPA625	17.4	80.00	0	21.8	10-27				12/3/2010 1121h

Report Date: 12/6/2010 Page 113 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMS	Nitrobenzene	µg/L	EPA625	53.9	80.00	0	67.4	10-119				12/3/2010 1121h
1012057-001BMS	Nitroquinoline-1-oxide	µg/L	EPA625	29.3	80.00	0	36.6	10-170				12/3/2010 1121h
1012057-001BMS	N-Nitrosodiethylamine	µg/L	EPA625	40.5	80.00	0	50.6	10-91				12/3/2010 1121h
1012057-001BMS	N-Nitrosodimethylamine	µg/L	EPA625	15.3	80.00	0	19.2	10-42				12/3/2010 1121h
1012057-001BMS	N-Nitrosodi-n-butylamine	µg/L	EPA625	52.5	80.00	0	65.7	10-175				12/3/2010 1121h
1012057-001BMS	N-Nitrosodiphenylamine	µg/L	EPA625	63.9	80.00	0	79.9	12-112				12/3/2010 1121h
1012057-001BMS	N-Nitrosodi-n-propylamine	µg/L	EPA625	41.3	80.00	0	51.6	10-77				12/3/2010 1121h
1012057-001BMS	N-Nitrosomethylethylamine	µg/L	EPA625	30.7	80.00	0	38.4	10-75				12/3/2010 1121h
1012057-001BMS	N-Nitrosomorpholine	µg/L	EPA625	43.8	80.00	0	54.8	10-175				12/3/2010 1121h
1012057-001BMS	N-Nitrosopiperidine	µg/L	EPA625	51.9	80.00	0	64.9	10-105				12/3/2010 1121h
1012057-001BMS	N-Nitrosopyrrolidine	µg/L	EPA625	49.6	80.00	0	62.0	10-88				12/3/2010 1121h
1012057-001BMS	n-Octadecane	µg/L	EPA625	53.7	80.00	0	67.1	10-121				12/3/2010 1121h
1012057-001BMS	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	51.2	80.00	0	64.0	10-93				12/3/2010 1121h
1012057-001BMS	o-Toluidine	µg/L	EPA625	92.1	80.00	0	115	10-107			1	12/3/2010 1121h
1012057-001BMS	Parathion	µg/L	EPA625	94.6	80.00	0	118	10-175				12/3/2010 1121h
1012057-001BMS	Methyl parathion	µg/L	EPA625	87.4	80.00	0	109	10-175				12/3/2010 1121h
1012057-001BMS	Pentachlorobenzene	µg/L	EPA625	55.0	80.00	0	68.8	25-134				12/3/2010 1121h
1012057-001BMS	Pentachloronitrobenzene	µg/L	EPA625	71.5	80.00	0	89.3	10-175				12/3/2010 1121h
1012057-001BMS	Pentachlorophenol	µg/L	EPA625	45.1	80.00	0	56.3	10-163				12/3/2010 1121h
1012057-001BMS	Phenacetin	µg/L	EPA625	63.4	80.00	0	79.2	10-175				12/3/2010 1121h
1012057-001BMS	Phenanthrene	µg/L	EPA625	69.6	80.00	0	87.0	31-126				12/3/2010 1121h
1012057-001BMS	Phenol	µg/L	EPA625	21.3	80.00	0	26.6	10-175				12/3/2010 1121h
1012057-001BMS	Phorate	µg/L	EPA625	71.4	80.00	0	89.2	10-175				12/3/2010 1121h
1012057-001BMS	Pronamide	µg/L	EPA625	71.3	80.00	0	89.1	10-95				12/3/2010 1121h

Report Date: 12/6/2010 Page 114 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMS	Pyrene	µg/L	EPA625	77.6	80.00	0	97.0	51-139				12/3/2010 1121h
1012057-001BMS	Pyridine	µg/L	EPA625	13.5	80.00	0	16.8	10-25				12/3/2010 1121h
1012057-001BMS	Quinoline	µg/L	EPA625	54.5	80.00	0	68.1	10-63			1	12/3/2010 1121h
1012057-001BMS	Safrole	µg/L	EPA625	46.6	80.00	0	58.3	10-120				12/3/2010 1121h
1012057-001BMS	Tetraethyl dithiopyrophosphate	µg/L	EPA625	62.3	80.00	0	77.9	13-160				12/3/2010 1121h
1012057-001BMS	Thionazin	µg/L	EPA625	59.2	80.00	0	74.0	10-139				12/3/2010 1121h
1012057-001BMS	Surr: 2,4,6-Tribromophenol	%REC	EPA625	63.0	80.00		78.8	21-154				12/3/2010 1121h
1012057-001BMS	Surr: 2-Fluorobiphenyl	%REC	EPA625	51.7	40.00		129	10-106			S	12/3/2010 1121h
1012057-001BMS	Surr: 2-Fluorophenol	%REC	EPA625	20.1	80.00		25.2	10-56				12/3/2010 1121h
1012057-001BMS	Surr: Nitrobenzene-d5	%REC	EPA625	49.2	40.00		123	10-101			S	12/3/2010 1121h
1012057-001BMS	Surr: Phenol-d6	%REC	EPA625	12.4	80.00		15.5	10-45				12/3/2010 1121h
1012057-001BMS	Surr: Terphenyl-d14	%REC	EPA625	80.2	40.00		200	10-160			S	12/3/2010 1121h
1011529-006FMS	Acenaphthene	µg/L	SW8270D	54.7	80.00	0	68.4	21-113				12/3/2010 0117h
1011529-006FMS	Benzo(a)pyrene	µg/L	SW8270D	79.5	80.00	0	99.4	15-169				12/3/2010 0117h
1011529-006FMS	Pyrene	µg/L	SW8270D	87.9	80.00	0	110	23-150				12/3/2010 0117h
1011529-006FMS	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	66.3	80.00		82.9	14-159				12/3/2010 0117h
1011529-006FMS	Surr: 2-Fluorobiphenyl	%REC	SW8270D	45.7	40.00		114	10-124				12/3/2010 0117h
1011529-006FMS	Surr: 2-Fluorophenol	%REC	SW8270D	25.6	80.00		32.0	10-106				12/3/2010 0117h
1011529-006FMS	Surr: Nitrobenzene-d5	%REC	SW8270D	50.7	40.00		127	10-180				12/3/2010 0117h
1011529-006FMS	Surr: Phenol-d6	%REC	SW8270D	19.0	80.00		23.8	10-122				12/3/2010 0117h
1011529-006FMS	Surr: Terphenyl-d14	%REC	SW8270D	90.9	40.00		227	10-199			S	12/3/2010 0117h
1012039-001DMS	Acenaphthene	µg/L	SW8270D	68.3	81.63	0	83.7	21-113				12/3/2010 0932h
1012039-001DMS	Benzo(a)pyrene	µg/L	SW8270D	73.9	81.63	0	90.5	15-169				12/3/2010 0932h
1012039-001DMS	Pyrene	µg/L	SW8270D	84.4	81.63	0	103	23-150				12/3/2010 0932h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMS	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	66.9	81.63		82.0	14-159				12/3/2010 0932h
1012039-001DMS	Surr: 2-Fluorobiphenyl	% REC	SW8270D	61.7	40.82		151	10-124			S	12/3/2010 0932h
1012039-001DMS	Surr: 2-Fluorophenol	% REC	SW8270D	29.2	81.63		35.8	10-106				12/3/2010 0932h
1012039-001DMS	Surr: Nitrobenzene-d5	% REC	SW8270D	61.3	40.82		150	10-180				12/3/2010 0932h
1012039-001DMS	Surr: Phenol-d6	% REC	SW8270D	19.8	81.63		24.2	10-122				12/3/2010 0932h
1012039-001DMS	Surr: Terphenyl-d14	% REC	SW8270D	84.2	40.82		206	10-199			S	12/3/2010 0932h
1012057-001BMS	Acenaphthene	µg/L	SW8270D	56.0	80.00	0	70.0	21-113				12/3/2010 1121h
1012057-001BMS	Benzo(a)pyrene	µg/L	SW8270D	71.0	80.00	0	88.7	15-169				12/3/2010 1121h
1012057-001BMS	Pyrene	µg/L	SW8270D	77.6	80.00	0	97.0	23-150				12/3/2010 1121h
1012057-001BMS	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	63.0	80.00		78.8	14-159				12/3/2010 1121h
1012057-001BMS	Surr: 2-Fluorobiphenyl	% REC	SW8270D	51.7	40.00		129	10-124			S	12/3/2010 1121h
1012057-001BMS	Surr: 2-Fluorophenol	% REC	SW8270D	20.1	80.00		25.2	10-106				12/3/2010 1121h
1012057-001BMS	Surr: Nitrobenzene-d5	% REC	SW8270D	49.2	40.00		123	10-180				12/3/2010 1121h
1012057-001BMS	Surr: Phenol-d6	% REC	SW8270D	12.4	80.00		15.5	10-122				12/3/2010 1121h
1012057-001BMS	Surr: Terphenyl-d14	% REC	SW8270D	80.2	40.00		200	10-199			S	12/3/2010 1121h

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

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



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
101 1529-006FMSD	1,1'-Biphenyl	µg/L	EPA625	51.6	80.00	0	64.5	27-99	6.64	49		12/3/2010 0144h
101 1529-006FMSD	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	45.1	80.00	0	56.3	10-119	12.4	52		12/3/2010 0144h
101 1529-006FMSD	1,2,4-Trichlorobenzene	µg/L	EPA625	28.8	80.00	0	36.0	10-79	17.9	49		12/3/2010 0144h
101 1529-006FMSD	1,2-Dichlorobenzene	µg/L	EPA625	22.0	80.00	0	27.6	10-59	17.9	46		12/3/2010 0144h
101 1529-006FMSD	1,3,5-Trinitrobenzene	µg/L	EPA625	150	80.00	0	188	10-175	8.61	33	1	12/3/2010 0144h
101 1529-006FMSD	1,3-Dichlorobenzene	µg/L	EPA625	18.2	80.00	0	22.8	10-56	19.2	49		12/3/2010 0144h
101 1529-006FMSD	1,3-Dinitrobenzene	µg/L	EPA625	96.6	80.00	0	121	10-175	0.269	29		12/3/2010 0144h
101 1529-006FMSD	1,4-Dichlorobenzene	µg/L	EPA625	19.8	80.00	0	24.7	10-58	18.6	51		12/3/2010 0144h
101 1529-006FMSD	1,4-Naphthoquinone	µg/L	EPA625	12.6	80.00	0	15.8	10-177	30.3	99		12/3/2010 0144h
101 1529-006FMSD	1,4-Phenylenediamine	µg/L	EPA625	38.8	80.00	0	48.5	10-124	11.5	48		12/3/2010 0144h
101 1529-006FMSD	1-Chloronaphthalene	µg/L	EPA625	45.1	80.00	0	56.3	10-106	2.11	47		12/3/2010 0144h
101 1529-006FMSD	1-Methylnaphthalene	µg/L	EPA625	47.6	80.00	0	59.6	10-83	7.92	44		12/3/2010 0144h
101 1529-006FMSD	1-Naphthylamine	µg/L	EPA625	67.7	80.00	0	84.7	10-122	6.62	57		12/3/2010 0144h
101 1529-006FMSD	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	90.7	80.00	0	113	10-157	16.6	39		12/3/2010 0144h
101 1529-006FMSD	2,4,5-Trichlorophenol	µg/L	EPA625	65.9	80.00	0	82.4	10-148	9.07	56		12/3/2010 0144h
101 1529-006FMSD	2,4,6-Trichlorophenol	µg/L	EPA625	53.4	80.00	0	66.7	10-136	5.11	52		12/3/2010 0144h
101 1529-006FMSD	2,4-Dichlorophenol	µg/L	EPA625	53.8	80.00	0	67.2	10-123	5.58	67		12/3/2010 0144h
101 1529-006FMSD	2,4-Dimethylphenol	µg/L	EPA625	57.2	80.00	0	71.5	10-113	1.18	32		12/3/2010 0144h
101 1529-006FMSD	2,4-Dinitrophenol	µg/L	EPA625	73.0	80.00	0	91.2	10-175	10.2	78		12/3/2010 0144h
101 1529-006FMSD	2,4-Dinitrotoluene	µg/L	EPA625	98.4	80.00	0	123	10-175	3.85	26		12/3/2010 0144h
101 1529-006FMSD	2,6-Dichlorophenol	µg/L	EPA625	60.0	80.00	0	75.0	10-148	4.31	56		12/3/2010 0144h
101 1529-006FMSD	2,6-Dinitrotoluene	µg/L	EPA625	84.2	80.00	0	105	10-175	6.33	74		12/3/2010 0144h
101 1529-006FMSD	2-Acetylaminofluorene	µg/L	EPA625	82.4	80.00	0	103	10-94	4.69	52	1	12/3/2010 0144h
101 1529-006FMSD	2-Chloronaphthalene	µg/L	EPA625	49.6	80.00	0	62.0	10-93	16.3	49		12/3/2010 0144h

Report Date: 12/6/2010 Page 117 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMSD	2-Chlorophenol	µg/L	EPA625	48.7	80.00	0	60.9	10-92	6.60	58		12/3/2010 0144h
1011529-006FMSD	2-Methylnaphthalene	µg/L	EPA625	41.6	80.00	0	52.0	15-78	8.68	39		12/3/2010 0144h
1011529-006FMSD	2-Methylphenol	µg/L	EPA625	48.3	80.00	0	60.4	10-83	3.63	49		12/3/2010 0144h
1011529-006FMSD	2-Naphthylamine	µg/L	EPA625	60.7	80.00	0	75.9	10-154	1.46	37		12/3/2010 0144h
1011529-006FMSD	2-Nitroaniline	µg/L	EPA625	80.6	80.00	0	101	10-175	2.64	87		12/3/2010 0144h
1011529-006FMSD	2-Nitrophenol	µg/L	EPA625	71.5	80.00	0	89.3	10-175	4.05	64		12/3/2010 0144h
1011529-006FMSD	2-Picoline	µg/L	EPA625	26.3	80.00	0	32.9	10-61	16.3	63		12/3/2010 0144h
1011529-006FMSD	3&4-Methylphenol	µg/L	EPA625	33.6	80.00	0	42.0	10-80	13.2	99		12/3/2010 0144h
1011529-006FMSD	3,3'-Dichlorobenzidine	µg/L	EPA625	78.5	80.00	0	98.2	10-150	6.98	63		12/3/2010 0144h
1011529-006FMSD	3,3'-Dimethylbenzidine	µg/L	EPA625	81.0	80.00	0	101	10-143	10.0	99		12/3/2010 0144h
1011529-006FMSD	3-Methylcholanthrene	µg/L	EPA625	81.8	80.00	0	102	32-171	6.34	46		12/3/2010 0144h
1011529-006FMSD	3-Nitroaniline	µg/L	EPA625	76.7	80.00	0	95.8	10-175	4.03	29		12/3/2010 0144h
1011529-006FMSD	4,6-Dinitro-2-methylphenol	µg/L	EPA625	117	80.00	0	146	10-175	10.4	70		12/3/2010 0144h
1011529-006FMSD	4-Aminobiphenyl	µg/L	EPA625	74.1	80.00	0	92.6	10-175	0.501	79		12/3/2010 0144h
1011529-006FMSD	4-Bromophenyl phenyl ether	µg/L	EPA625	67.1	80.00	0	83.9	16-138	4.65	31		12/3/2010 0144h
1011529-006FMSD	4-Chloro-3-methylphenol	µg/L	EPA625	65.1	80.00	0	81.4	10-131	2.46	37		12/3/2010 0144h
1011529-006FMSD	4-Chloroaniline	µg/L	EPA625	51.9	80.00	0	64.8	10-98	2.93	41		12/3/2010 0144h
1011529-006FMSD	4-Chlorophenyl phenyl ether	µg/L	EPA625	63.8	80.00	0	79.7	31-108	5.77	30		12/3/2010 0144h
1011529-006FMSD	4-Nitroaniline	µg/L	EPA625	71.6	80.00	0	89.5	10-175	4.15	99		12/3/2010 0144h
1011529-006FMSD	4-Nitrophenol	µg/L	EPA625	128	80.00	0	160	10-97	15.6	69	1	12/3/2010 0144h
1011529-006FMSD	5-Nitro-o-toluidine	µg/L	EPA625	90.6	80.00	0	113	10-175	4.70	26		12/3/2010 0144h
1011529-006FMSD	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	107	80.00	0	133	26-174	7.27	40		12/3/2010 0144h
1011529-006FMSD	a,a-Dimethylphenethylamine	µg/L	EPA625	41.5	80.00	0	51.8	10-175	8.18	99		12/3/2010 0144h
1011529-006FMSD	Acenaphthene	µg/L	EPA625	59.1	80.00	0	73.9	29-97	7.73	38		12/3/2010 0144h

Report Date: 12/6/2010 Page 118 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
101 1529-006FMSD	Acenaphthylene	µg/L	EPA625	57.8	80.00	0	72.3	37-87	5.62	37		12/3/2010 0144h
101 1529-006FMSD	Acetophenone	µg/L	EPA625	51.4	80.00	0	64.2	10-96	5.05	48		12/3/2010 0144h
101 1529-006FMSD	alpha-Terpineol	µg/L	EPA625	50.7	80.00	0	63.4	10-67	1.37	46		12/3/2010 0144h
101 1529-006FMSD	Aniline	µg/L	EPA625	35.8	80.00	0	44.8	10-71	6.91	48		12/3/2010 0144h
101 1529-006FMSD	Anthracene	µg/L	EPA625	81.4	80.00	0	102	53-114	6.85	26		12/3/2010 0144h
101 1529-006FMSD	Aramite	µg/L	EPA625	89.8	80.00	0	112	29-160	5.00	30		12/3/2010 0144h
101 1529-006FMSD	Azobenzene	µg/L	EPA625	61.4	80.00	0	76.7	15-114	7.67	36		12/3/2010 0144h
101 1529-006FMSD	Benz(a)anthracene	µg/L	EPA625	75.8	80.00	0	94.8	39-129	4.31	32		12/3/2010 0144h
101 1529-006FMSD	Benzidine	µg/L	EPA625	66.5	80.00	0	83.1	10-99	10.7	99		12/3/2010 0144h
101 1529-006FMSD	Benzo(a)pyrene	µg/L	EPA625	85.0	80.00	0	106	29-175	6.66	45		12/3/2010 0144h
101 1529-006FMSD	Benzo(b)fluoranthene	µg/L	EPA625	78.8	80.00	0	98.5	15-140	12.7	44		12/3/2010 0144h
101 1529-006FMSD	Benzo(g,h,i)perylene	µg/L	EPA625	69.3	80.00	0	86.7	10-182	6.36	48		12/3/2010 0144h
101 1529-006FMSD	Benzo(k)fluoranthene	µg/L	EPA625	100	80.00	0	126	21-154	2.64	52		12/3/2010 0144h
101 1529-006FMSD	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	17.8	10-71	0	78		12/3/2010 0144h
101 1529-006FMSD	Benzyl alcohol	µg/L	EPA625	24.6	80.00	0	30.7	10-69	1.68	52		12/3/2010 0144h
101 1529-006FMSD	Bis(2-chloroethoxy)methane	µg/L	EPA625	36.9	80.00	0	46.1	10-94	0.844	45		12/3/2010 0144h
101 1529-006FMSD	Bis(2-chloroethyl) ether	µg/L	EPA625	36.0	80.00	0	45.0	10-70	2.71	47		12/3/2010 0144h
101 1529-006FMSD	Bis(2-chloroisopropyl) ether	µg/L	EPA625	37.5	80.00	0	46.8	10-71	5.63	49		12/3/2010 0144h
101 1529-006FMSD	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	164	80.00	0	204	10-175	57.5	28	¹ @	12/3/2010 0144h
101 1529-006FMSD	bis(2-ethylhexyl)adipate	µg/L	EPA625	94.3	80.00	0	118	10-175	4.07	25		12/3/2010 0144h
101 1529-006FMSD	Butyl benzyl phthalate	µg/L	EPA625	90.3	80.00	0	113	10-175	2.75	99		12/3/2010 0144h
101 1529-006FMSD	Carbazole	µg/L	EPA625	78.3	80.00	0	97.9	10-151	5.93	30		12/3/2010 0144h
101 1529-006FMSD	Chlorobenzilate	µg/L	EPA625	80.8	80.00	0	101	18-175	6.31	25		12/3/2010 0144h
101 1529-006FMSD	Chrysene	µg/L	EPA625	81.6	80.00	0	102	38-133	2.53	28		12/3/2010 0144h

Report Date: 12/6/2010 Page 119 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMSD	Diallate (cis or trans)	µg/L	EPA625	66.2	80.00	0	82.7	10-157	5.16	29		12/3/2010 0144h
1011529-006FMSD	Dibenz(a,h)anthracene	µg/L	EPA625	72.4	80.00	0	90.5	13-168	6.37	51		12/3/2010 0144h
1011529-006FMSD	Dibenzofuran	µg/L	EPA625	58.8	80.00	0	73.5	29-103	3.46	34		12/3/2010 0144h
1011529-006FMSD	Diethyl phthalate	µg/L	EPA625	57.0	80.00	0	71.2	10-139	5.65	32		12/3/2010 0144h
1011529-006FMSD	Dimethoate	µg/L	EPA625	< 10.0	80.00	0	11.9	10-136	0	45		12/3/2010 0144h
1011529-006FMSD	Dimethyl phthalate	µg/L	EPA625	35.1	80.00	0	43.9	10-122	11.2	57		12/3/2010 0144h
1011529-006FMSD	Dimethylaminoazobenzene	µg/L	EPA625	89.8	80.00	0	112	34-142	5.50	26		12/3/2010 0144h
1011529-006FMSD	Di-n-butyl phthalate	µg/L	EPA625	79.7	80.00	0	99.6	44-124	5.93	25		12/3/2010 0144h
1011529-006FMSD	Di-n-octyl phthalate	µg/L	EPA625	143	80.00	0	178	10-175	6.36	50	¹	12/3/2010 0144h
1011529-006FMSD	Dinoseb	µg/L	EPA625	128	80.00	0	159	10-175	6.61	42		12/3/2010 0144h
1011529-006FMSD	Diphenylamine	µg/L	EPA625	76.5	80.00	0	95.7	13-110	12.0	34		12/3/2010 0144h
1011529-006FMSD	Disulfoton	µg/L	EPA625	56.9	80.00	0	71.1	10-121	11.7	25		12/3/2010 0144h
1011529-006FMSD	Ethyl methanesulfonate	µg/L	EPA625	46.0	80.00	0	57.4	10-99	3.99	46		12/3/2010 0144h
1011529-006FMSD	Famphur	µg/L	EPA625	139	80.00	0	173	10-71	0.546	25	¹	12/3/2010 0144h
1011529-006FMSD	Fluoranthene	µg/L	EPA625	77.3	80.00	0	96.6	23-135	3.17	25		12/3/2010 0144h
1011529-006FMSD	Fluorene	µg/L	EPA625	63.4	80.00	0	79.2	34-108	4.86	28		12/3/2010 0144h
1011529-006FMSD	Hexachlorobenzene	µg/L	EPA625	70.4	80.00	0	88.0	26-131	7.83	28		12/3/2010 0144h
1011529-006FMSD	Hexachlorobutadiene	µg/L	EPA625	23.2	80.00	0	29.0	10-110	18.5	68		12/3/2010 0144h
1011529-006FMSD	Hexachlorocyclopentadiene	µg/L	EPA625	14.7	80.00	0	18.4	10-45	27.4	79		12/3/2010 0144h
1011529-006FMSD	Hexachloroethane	µg/L	EPA625	18.8	80.00	0	23.5	10-58	24.6	42		12/3/2010 0144h
1011529-006FMSD	Hexachlorophene	µg/L	EPA625	89.6	80.00	0	112	10-168	9.60	25		12/3/2010 0144h
1011529-006FMSD	Hexachloropropene	µg/L	EPA625	19.9	80.00	0	24.9	10-72	25.7	63		12/3/2010 0144h
1011529-006FMSD	Indene	µg/L	EPA625	28.2	80.00	0	35.2	10-35	19.7	35	¹	12/3/2010 0144h
1011529-006FMSD	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	73.0	80.00	0	91.2	10-176	6.20	48		12/3/2010 0144h

Report Date: 12/6/2010 Page 120 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMSD	Isodrin	µg/L	EPA625	76.2	80.00	0	95.2	15-165	8.94	25		12/3/2010 0144h
1011529-006FMSD	Isophorone	µg/L	EPA625	50.0	80.00	0	62.6	10-99	1.01	41		12/3/2010 0144h
1011529-006FMSD	Isosafrole	µg/L	EPA625	47.8	80.00	0	59.8	10-167	9.18	50		12/3/2010 0144h
1011529-006FMSD	Kepone	µg/L	EPA625	215	80.00	0	269	10-175	1.01	46	1	12/3/2010 0144h
1011529-006FMSD	Methapyrilene	µg/L	EPA625	86.3	80.00	0	108	10-149	1.48	51		12/3/2010 0144h
1011529-006FMSD	Methyl methanesulfonate	µg/L	EPA625	30.8	80.00	0	38.6	10-132	3.70	45		12/3/2010 0144h
1011529-006FMSD	Naphthalene	µg/L	EPA625	35.3	80.00	0	44.1	10-82	14.6	43		12/3/2010 0144h
1011529-006FMSD	n-Decane	µg/L	EPA625	12.8	80.00	0	16.0	10-27	21.1	32		12/3/2010 0144h
1011529-006FMSD	Nitrobenzene	µg/L	EPA625	59.5	80.00	0	74.4	10-119	5.96	49		12/3/2010 0144h
1011529-006FMSD	Nitroquinoline-1-oxide	µg/L	EPA625	36.1	80.00	0	45.1	10-170	14.9	97		12/3/2010 0144h
1011529-006FMSD	N-Nitrosodiethylamine	µg/L	EPA625	43.4	80.00	0	54.3	10-91	5.08	54		12/3/2010 0144h
1011529-006FMSD	N-Nitrosodimethylamine	µg/L	EPA625	19.1	80.00	0	23.9	10-42	8.05	66		12/3/2010 0144h
1011529-006FMSD	N-Nitrosodi-n-butylamine	µg/L	EPA625	57.2	80.00	0	71.5	10-175	1.91	80		12/3/2010 0144h
1011529-006FMSD	N-Nitrosodiphenylamine	µg/L	EPA625	75.2	80.00	0	94.0	12-112	11.5	30		12/3/2010 0144h
1011529-006FMSD	N-Nitrosodi-n-propylamine	µg/L	EPA625	47.1	80.00	0	58.9	10-77	3.80	47		12/3/2010 0144h
1011529-006FMSD	N-Nitrosomethylethylamine	µg/L	EPA625	33.4	80.00	0	41.8	10-75	0.781	60		12/3/2010 0144h
1011529-006FMSD	N-Nitrosomorpholine	µg/L	EPA625	47.8	80.00	0	59.8	10-175	0.313	73		12/3/2010 0144h
1011529-006FMSD	N-Nitrosopiperidine	µg/L	EPA625	55.9	80.00	0	69.8	10-105	3.11	44		12/3/2010 0144h
1011529-006FMSD	N-Nitrosopyrrolidine	µg/L	EPA625	56.7	80.00	0	70.9	10-88	4.28	40		12/3/2010 0144h
1011529-006FMSD	n-Octadecane	µg/L	EPA625	59.2	80.00	0	74.0	10-121	2.81	40		12/3/2010 0144h
1011529-006FMSD	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	53.7	80.00	0	67.1	10-93	4.50	44		12/3/2010 0144h
1011529-006FMSD	o-Toluidine	µg/L	EPA625	95.2	80.00	0	119	10-107	1.22	46	1	12/3/2010 0144h
1011529-006FMSD	Parathion	µg/L	EPA625	111	80.00	0	139	10-175	5.99	28		12/3/2010 0144h
1011529-006FMSD	Methyl parathion	µg/L	EPA625	102	80.00	0	128	10-175	5.65	26		12/3/2010 0144h

Report Date: 12/6/2010 Page 121 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006FMSD	Pentachlorobenzene	µg/L	EPA625	58.5	80.00	0	73.2	25-134	4.99	35		12/3/2010 0144h
1011529-006FMSD	Pentachloronitrobenzene	µg/L	EPA625	81.0	80.00	0	101	10-175	4.27	25		12/3/2010 0144h
1011529-006FMSD	Pentachlorophenol	µg/L	EPA625	64.0	80.00	0	80.0	10-163	26.3	58		12/3/2010 0144h
1011529-006FMSD	Phenacetin	µg/L	EPA625	77.3	80.00	0	96.6	10-175	6.69	38		12/3/2010 0144h
1011529-006FMSD	Phenanthrene	µg/L	EPA625	83.0	80.00	0	104	31-126	5.53	32		12/3/2010 0144h
1011529-006FMSD	Phenol	µg/L	EPA625	29.8	80.00	0	37.3	10-175	6.08	71		12/3/2010 0144h
1011529-006FMSD	Phorate	µg/L	EPA625	81.0	80.00	0	101	10-175	8.08	42		12/3/2010 0144h
1011529-006FMSD	Pronamide	µg/L	EPA625	79.6	80.00	0	99.5	10-95	3.18	26	1	12/3/2010 0144h
1011529-006FMSD	Pyrene	µg/L	EPA625	91.5	80.00	0	114	51-139	4.01	27		12/3/2010 0144h
1011529-006FMSD	Pyridine	µg/L	EPA625	11.6	80.00	0	14.5	10-25	0.601	61		12/3/2010 0144h
1011529-006FMSD	Quinoline	µg/L	EPA625	59.5	80.00	0	74.4	10-63	2.95	99	1	12/3/2010 0144h
1011529-006FMSD	Safrole	µg/L	EPA625	51.5	80.00	0	64.4	10-120	6.59	51		12/3/2010 0144h
1011529-006FMSD	Tetraethyl dithiopyrophosphate	µg/L	EPA625	73.6	80.00	0	92.0	13-160	6.27	35		12/3/2010 0144h
1011529-006FMSD	Thionazin	µg/L	EPA625	66.2	80.00	0	82.8	10-139	6.93	25		12/3/2010 0144h
1011529-006FMSD	Surr: 2,4,6-Tribromophenol	% REC	EPA625	68.2	80.00		85.2	21-154				12/3/2010 0144h
1011529-006FMSD	Surr: 2-Fluorobiphenyl	% REC	EPA625	49.3	40.00		123	10-106			S	12/3/2010 0144h
1011529-006FMSD	Surr: 2-Fluorophenol	% REC	EPA625	26.8	80.00		33.6	10-56				12/3/2010 0144h
1011529-006FMSD	Surr: Nitrobenzene-d5	% REC	EPA625	53.9	40.00		135	10-101			S	12/3/2010 0144h
1011529-006FMSD	Surr: Phenol-d6	% REC	EPA625	19.7	80.00		24.6	10-45				12/3/2010 0144h
1011529-006FMSD	Surr: Terphenyl-d14	% REC	EPA625	92.3	40.00		231	10-160			S	12/3/2010 0144h
1012039-001DMSD	1,1'-Biphenyl	µg/L	EPA625	64.2	83.33	0	77.1	27-99	0.183	49		12/3/2010 0959h
1012039-001DMSD	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	58.8	83.33	0	70.5	10-119	0.302	52		12/3/2010 0959h
1012039-001DMSD	1,2,4-Trichlorobenzene	µg/L	EPA625	44.5	83.33	0	53.4	10-79	4.00	49		12/3/2010 0959h
1012039-001DMSD	1,2-Dichlorobenzene	µg/L	EPA625	32.6	83.33	0	39.1	10-59	4.05	46		12/3/2010 0959h

Report Date: 12/6/2010 Page 122 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	1,3,5-Trinitrobenzene	µg/L	EPA625	159	83.33	0	191	10-175	6.83	33	¹	12/3/2010 0959h
1012039-001DMSD	1,3-Dichlorobenzene	µg/L	EPA625	25.7	83.33	0	30.9	10-56	10.2	49		12/3/2010 0959h
1012039-001DMSD	1,3-Dinitrobenzene	µg/L	EPA625	108	83.33	0	130	10-175	13.1	29		12/3/2010 0959h
1012039-001DMSD	1,4-Dichlorobenzene	µg/L	EPA625	27.5	83.33	0	33.0	10-58	10.6	51		12/3/2010 0959h
1012039-001DMSD	1,4-Naphthoquinone	µg/L	EPA625	19.9	83.33	0	23.9	10-177	19.6	99		12/3/2010 0959h
1012039-001DMSD	1,4-Phenylenediamine	µg/L	EPA625	51.9	83.33	0	62.3	10-124	0.201	48		12/3/2010 0959h
1012039-001DMSD	1-Chloronaphthalene	µg/L	EPA625	67.4	83.33	0	80.9	10-106	20.0	47		12/3/2010 0959h
1012039-001DMSD	1-Methylnaphthalene	µg/L	EPA625	65.2	83.33	0	78.2	10-83	0.758	44		12/3/2010 0959h
1012039-001DMSD	1-Naphthylamine	µg/L	EPA625	71.6	83.33	0	85.9	10-122	2.11	57		12/3/2010 0959h
1012039-001DMSD	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	87.7	83.33	0	105	10-157	11.8	39		12/3/2010 0959h
1012039-001DMSD	2,4,5-Trichlorophenol	µg/L	EPA625	75.2	83.33	0	90.3	10-148	12.7	56		12/3/2010 0959h
1012039-001DMSD	2,4,6-Trichlorophenol	µg/L	EPA625	60.2	83.33	0	72.3	10-136	11.8	52		12/3/2010 0959h
1012039-001DMSD	2,4-Dichlorophenol	µg/L	EPA625	60.4	83.33	0	72.5	10-123	6.16	67		12/3/2010 0959h
1012039-001DMSD	2,4-Dimethylphenol	µg/L	EPA625	62.9	83.33	0	75.5	10-113	1.05	32		12/3/2010 0959h
1012039-001DMSD	2,4-Dinitrophenol	µg/L	EPA625	75.0	83.33	0	90.0	10-175	27.1	78		12/3/2010 0959h
1012039-001DMSD	2,4-Dinitrotoluene	µg/L	EPA625	105	83.33	0	126	10-175	5.54	26		12/3/2010 0959h
1012039-001DMSD	2,6-Dichlorophenol	µg/L	EPA625	70.2	83.33	0	84.3	10-148	6.04	56		12/3/2010 0959h
1012039-001DMSD	2,6-Dinitrotoluene	µg/L	EPA625	88.7	83.33	0	106	10-175	0.304	74		12/3/2010 0959h
1012039-001DMSD	2-Acetylaminofluorene	µg/L	EPA625	78.0	83.33	0	93.6	10-94	5.43	52		12/3/2010 0959h
1012039-001DMSD	2-Chloronaphthalene	µg/L	EPA625	56.6	83.33	0	67.9	10-93	13.3	49		12/3/2010 0959h
1012039-001DMSD	2-Chlorophenol	µg/L	EPA625	57.1	83.33	0	68.5	10-92	5.61	58		12/3/2010 0959h
1012039-001DMSD	2-Methylnaphthalene	µg/L	EPA625	55.7	83.33	0	66.8	15-78	1.25	39		12/3/2010 0959h
1012039-001DMSD	2-Methylphenol	µg/L	EPA625	53.3	83.33	0	63.9	10-83	6.62	49		12/3/2010 0959h
1012039-001DMSD	2-Naphthylamine	µg/L	EPA625	67.4	83.33	0	80.8	10-154	4.39	37		12/3/2010 0959h

Report Date: 12/6/2010 Page 123 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	2-Nitroaniline	µg/L	EPA625	89.1	83.33	0	107	10-175	6.12	87		12/3/2010 0959h
1012039-001DMSD	2-Nitrophenol	µg/L	EPA625	83.2	83.33	0	99.8	10-175	3.14	64		12/3/2010 0959h
1012039-001DMSD	2-Picoline	µg/L	EPA625	37.9	83.33	0	45.5	10-61	2.06	63		12/3/2010 0959h
1012039-001DMSD	3&4-Methylphenol	µg/L	EPA625	30.8	83.33	0	36.9	10-80	13.5	99		12/3/2010 0959h
1012039-001DMSD	3,3'-Dichlorobenzidine	µg/L	EPA625	71.2	83.33	0	85.5	10-150	5.97	63		12/3/2010 0959h
1012039-001DMSD	3,3'-Dimethylbenzidine	µg/L	EPA625	80.9	83.33	0	97.1	10-143	12.8	99		12/3/2010 0959h
1012039-001DMSD	3-Methylcholanthrene	µg/L	EPA625	72.0	83.33	0	86.4	32-171	2.77	46		12/3/2010 0959h
1012039-001DMSD	3-Nitroaniline	µg/L	EPA625	83.1	83.33	0	99.8	10-175	6.27	29		12/3/2010 0959h
1012039-001DMSD	4,6-Dinitro-2-methylphenol	µg/L	EPA625	115	83.33	0	138	10-175	2.73	70		12/3/2010 0959h
1012039-001DMSD	4-Aminobiphenyl	µg/L	EPA625	82.3	83.33	0	98.7	10-175	4.00	79		12/3/2010 0959h
1012039-001DMSD	4-Bromophenyl phenyl ether	µg/L	EPA625	74.7	83.33	0	89.7	16-138	1.40	31		12/3/2010 0959h
1012039-001DMSD	4-Chloro-3-methylphenol	µg/L	EPA625	70.9	83.33	0	85.0	10-131	5.70	37		12/3/2010 0959h
1012039-001DMSD	4-Chloroaniline	µg/L	EPA625	59.4	83.33	0	71.3	10-98	4.42	41		12/3/2010 0959h
1012039-001DMSD	4-Chlorophenyl phenyl ether	µg/L	EPA625	70.9	83.33	0	85.1	31-108	2.41	30		12/3/2010 0959h
1012039-001DMSD	4-Nitroaniline	µg/L	EPA625	73.3	83.33	0	88.0	10-175	8.71	99		12/3/2010 0959h
1012039-001DMSD	4-Nitrophenol	µg/L	EPA625	148	83.33	0	177	10-97	20.1	69	1	12/3/2010 0959h
1012039-001DMSD	5-Nitro-o-toluidine	µg/L	EPA625	93.4	83.33	0	112	10-175	3.39	26		12/3/2010 0959h
1012039-001DMSD	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	97.1	83.33	0	117	26-174	2.79	40		12/3/2010 0959h
1012039-001DMSD	a,a-Dimethylphenethylamine	µg/L	EPA625	47.2	83.33	0	56.6	10-175	11.5	99		12/3/2010 0959h
1012039-001DMSD	Acenaphthene	µg/L	EPA625	67.6	83.33	0	81.2	29-97	0.972	38		12/3/2010 0959h
1012039-001DMSD	Acenaphthylene	µg/L	EPA625	69.1	83.33	0	82.9	37-87	2.41	37		12/3/2010 0959h
1012039-001DMSD	Acetophenone	µg/L	EPA625	57.4	83.33	0	68.9	10-96	0.816	48		12/3/2010 0959h
1012039-001DMSD	alpha-Terpineol	µg/L	EPA625	57.1	83.33	0	68.5	10-67	2.03	46	1	12/3/2010 0959h
1012039-001DMSD	Aniline	µg/L	EPA625	46.6	83.33	0	55.9	10-71	1.93	48		12/3/2010 0959h

Report Date: 12/6/2010 Page 124 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	Anthracene	µg/L	EPA625	84.9	83.33	0	102	53-114	1.99	26		12/3/2010 0959h
1012039-001DMSD	Aramite	µg/L	EPA625	92.0	83.33	0	110	29-160	1.47	30		12/3/2010 0959h
1012039-001DMSD	Azobenzene	µg/L	EPA625	67.3	83.33	0	80.7	15-114	1.94	36		12/3/2010 0959h
1012039-001DMSD	Benz(a)anthracene	µg/L	EPA625	70.2	83.33	0	84.2	39-129	6.43	32		12/3/2010 0959h
1012039-001DMSD	Benzidine	µg/L	EPA625	65.9	83.33	0	79.1	10-99	10.2	99		12/3/2010 0959h
1012039-001DMSD	Benzo(a)pyrene	µg/L	EPA625	76.3	83.33	0	91.6	29-175	3.31	45		12/3/2010 0959h
1012039-001DMSD	Benzo(b)fluoranthene	µg/L	EPA625	65.8	83.33	0	79.0	15-140	14.8	44		12/3/2010 0959h
1012039-001DMSD	Benzo(g,h,i)perylene	µg/L	EPA625	61.8	83.33	0	74.2	10-182	1.12	48		12/3/2010 0959h
1012039-001DMSD	Benzo(k)fluoranthene	µg/L	EPA625	93.6	83.33	0	112	21-154	9.10	52		12/3/2010 0959h
1012039-001DMSD	Benzoic acid	µg/L	EPA625	< 20.8	83.33	0	13.5	10-71	0	78		12/3/2010 0959h
1012039-001DMSD	Benzyl alcohol	µg/L	EPA625	28.7	83.33	0	34.4	10-69	10.7	52		12/3/2010 0959h
1012039-001DMSD	Bis(2-chloroethoxy)methane	µg/L	EPA625	42.7	83.33	0	51.2	10-94	3.46	45		12/3/2010 0959h
1012039-001DMSD	Bis(2-chloroethyl) ether	µg/L	EPA625	46.5	83.33	0	55.8	10-70	12.8	47		12/3/2010 0959h
1012039-001DMSD	Bis(2-chloroisopropyl) ether	µg/L	EPA625	43.3	83.33	0	52.0	10-71	0.689	49		12/3/2010 0959h
1012039-001DMSD	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	85.3	83.33	0	102	10-175	0.187	28		12/3/2010 0959h
1012039-001DMSD	bis(2-ethylhexyl)adipate	µg/L	EPA625	88.4	83.33	0	106	10-175	3.20	25		12/3/2010 0959h
1012039-001DMSD	Butyl benzyl phthalate	µg/L	EPA625	86.8	83.33	0	104	10-175	2.15	99		12/3/2010 0959h
1012039-001DMSD	Carbazole	µg/L	EPA625	79.2	83.33	0	95.1	10-151	2.88	30		12/3/2010 0959h
1012039-001DMSD	Chlorobenzilate	µg/L	EPA625	84.3	83.33	0	101	18-175	3.44	25		12/3/2010 0959h
1012039-001DMSD	Chrysene	µg/L	EPA625	77.4	83.33	0	92.8	38-133	5.19	28		12/3/2010 0959h
1012039-001DMSD	Diallate (cis or trans)	µg/L	EPA625	71.6	83.33	0	85.9	10-157	0.703	29		12/3/2010 0959h
1012039-001DMSD	Dibenz(a,h)anthracene	µg/L	EPA625	63.5	83.33	0	76.2	13-168	2.79	51		12/3/2010 0959h
1012039-001DMSD	Dibenzofuran	µg/L	EPA625	69.3	83.33	0	83.2	29-103	3.91	34		12/3/2010 0959h
1012039-001DMSD	Diethyl phthalate	µg/L	EPA625	72.8	83.33	0	87.4	10-139	0.0783	32		12/3/2010 0959h

Report Date: 12/6/2010 Page 125 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	Dimethoate	µg/L	EPA625	32.1	83.33	0	38.6	10-136	4.94	45		12/3/2010 0959h
1012039-001DMSD	Dimethyl phthalate	µg/L	EPA625	64.5	83.33	0	77.4	10-122	1.26	57		12/3/2010 0959h
1012039-001DMSD	Dimethylaminoazobenzene	µg/L	EPA625	83.0	83.33	0	99.6	34-142	2.96	26		12/3/2010 0959h
1012039-001DMSD	Di-n-butyl phthalate	µg/L	EPA625	82.0	83.33	0	98.4	44-124	1.04	25		12/3/2010 0959h
1012039-001DMSD	Di-n-octyl phthalate	µg/L	EPA625	124	83.33	0	149	10-175	1.28	50		12/3/2010 0959h
1012039-001DMSD	Dinoseb	µg/L	EPA625	135	83.33	0	162	10-175	7.70	42		12/3/2010 0959h
1012039-001DMSD	Diphenylamine	µg/L	EPA625	78.0	83.33	0	93.6	13-110	1.53	34		12/3/2010 0959h
1012039-001DMSD	Disulfoton	µg/L	EPA625	59.1	83.33	0	71.0	10-121	13.3	25		12/3/2010 0959h
1012039-001DMSD	Ethyl methanesulfonate	µg/L	EPA625	54.1	83.33	0	64.9	10-99	4.85	46		12/3/2010 0959h
1012039-001DMSD	Famphur	µg/L	EPA625	123	83.33	0	148	10-71	0.671	25	1	12/3/2010 0959h
1012039-001DMSD	Fluoranthene	µg/L	EPA625	78.7	83.33	0	94.5	23-135	3.14	25		12/3/2010 0959h
1012039-001DMSD	Fluorene	µg/L	EPA625	70.9	83.33	0	85.0	34-108	0.140	28		12/3/2010 0959h
1012039-001DMSD	Hexachlorobenzene	µg/L	EPA625	75.2	83.33	0	90.3	26-131	0.496	28		12/3/2010 0959h
1012039-001DMSD	Hexachlorobutadiene	µg/L	EPA625	39.2	83.33	0	47.1	10-110	5.79	68		12/3/2010 0959h
1012039-001DMSD	Hexachlorocyclopentadiene	µg/L	EPA625	28.0	83.33	0	33.6	10-45	2.73	79		12/3/2010 0959h
1012039-001DMSD	Hexachloroethane	µg/L	EPA625	26.3	83.33	0	31.6	10-58	13.7	42		12/3/2010 0959h
1012039-001DMSD	Hexachlorophene	µg/L	EPA625	84.6	83.33	0	101	10-168	11.9	25		12/3/2010 0959h
1012039-001DMSD	Hexachloropropene	µg/L	EPA625	35.3	83.33	0	42.4	10-72	7.54	63		12/3/2010 0959h
1012039-001DMSD	Indene	µg/L	EPA625	38.3	83.33	0	46.0	10-35	6.28	35	1	12/3/2010 0959h
1012039-001DMSD	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	65.1	83.33	0	78.1	10-176	2.58	48		12/3/2010 0959h
1012039-001DMSD	Isodrin	µg/L	EPA625	77.3	83.33	0	92.7	15-165	0.537	25		12/3/2010 0959h
1012039-001DMSD	Isophorone	µg/L	EPA625	58.0	83.33	0	69.6	10-99	0.281	41		12/3/2010 0959h
1012039-001DMSD	Isosafrole	µg/L	EPA625	58.8	83.33	0	70.6	10-167	1.64	50		12/3/2010 0959h
1012039-001DMSD	Kepon	µg/L	EPA625	217	83.33	0	261	10-175	5.68	46	1	12/3/2010 0959h

Report Date: 12/6/2010 Page 126 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	Methapyrilene	µg/L	EPA625	90.9	83.33	0	109	10-149	2.76	51		12/3/2010 0959h
1012039-001DMSD	Methyl methanesulfonate	µg/L	EPA625	38.9	83.33	0	46.6	10-132	7.74	45		12/3/2010 0959h
1012039-001DMSD	Naphthalene	µg/L	EPA625	51.0	83.33	0	61.2	10-82	3.96	43		12/3/2010 0959h
1012039-001DMSD	n-Decane	µg/L	EPA625	15.5	83.33	0	18.6	10-27	21.4	32		12/3/2010 0959h
1012039-001DMSD	Nitrobenzene	µg/L	EPA625	68.1	83.33	0	81.8	10-119	0.530	49		12/3/2010 0959h
1012039-001DMSD	Nitroquinoline-1-oxide	µg/L	EPA625	36.8	83.33	0	44.2	10-170	19.4	97		12/3/2010 0959h
1012039-001DMSD	N-Nitrosodiethylamine	µg/L	EPA625	51.5	83.33	0	61.8	10-91	3.04	54		12/3/2010 0959h
1012039-001DMSD	N-Nitrosodimethylamine	µg/L	EPA625	21.6	83.33	0	25.9	10-42	7.11	66		12/3/2010 0959h
1012039-001DMSD	N-Nitrosodi-n-butylamine	µg/L	EPA625	64.5	83.33	0	77.4	10-175	1.24	80		12/3/2010 0959h
1012039-001DMSD	N-Nitrosodiphenylamine	µg/L	EPA625	77.1	83.33	0	92.5	12-112	1.87	30		12/3/2010 0959h
1012039-001DMSD	N-Nitrosodi-n-propylamine	µg/L	EPA625	54.2	83.33	0	65.1	10-77	0.613	47		12/3/2010 0959h
1012039-001DMSD	N-Nitrosomethylethylamine	µg/L	EPA625	43.3	83.33	0	52.0	10-75	8.36	60		12/3/2010 0959h
1012039-001DMSD	N-Nitrosomorpholine	µg/L	EPA625	58.9	83.33	0	70.6	10-175	5.41	73		12/3/2010 0959h
1012039-001DMSD	N-Nitrosopiperidine	µg/L	EPA625	63.0	83.33	0	75.6	10-105	2.81	44		12/3/2010 0959h
1012039-001DMSD	N-Nitrosopyrrolidine	µg/L	EPA625	65.7	83.33	0	78.9	10-88	3.74	40		12/3/2010 0959h
1012039-001DMSD	n-Octadecane	µg/L	EPA625	68.0	83.33	0	81.6	10-121	0.0591	40		12/3/2010 0959h
1012039-001DMSD	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	60.5	83.33	0	72.6	10-93	5.35	44		12/3/2010 0959h
1012039-001DMSD	o-Toluidine	µg/L	EPA625	121	83.33	0	145	10-107	5.43	46	1	12/3/2010 0959h
1012039-001DMSD	Parathion	µg/L	EPA625	111	83.33	0	134	10-175	1.55	28		12/3/2010 0959h
1012039-001DMSD	Methyl parathion	µg/L	EPA625	103	83.33	0	123	10-175	2.57	26		12/3/2010 0959h
1012039-001DMSD	Pentachlorobenzene	µg/L	EPA625	67.7	83.33	0	81.3	25-134	1.88	35		12/3/2010 0959h
1012039-001DMSD	Pentachloronitrobenzene	µg/L	EPA625	84.8	83.33	0	102	10-175	1.38	25		12/3/2010 0959h
1012039-001DMSD	Pentachlorophenol	µg/L	EPA625	47.5	83.33	0	57.0	10-163	7.31	58		12/3/2010 0959h
1012039-001DMSD	Phenacetin	µg/L	EPA625	78.0	83.33	0	93.6	10-175	7.89	38		12/3/2010 0959h

Report Date: 12/6/2010 Page 127 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	Phenanthrene	µg/L	EPA625	88.2	83.33	0	106	31-126	0.433	32		12/3/2010 0959h
1012039-001DMSD	Phenol	µg/L	EPA625	33.7	83.33	0	40.5	10-175	3.30	71		12/3/2010 0959h
1012039-001DMSD	Phorate	µg/L	EPA625	86.5	83.33	0	104	10-175	3.13	42		12/3/2010 0959h
1012039-001DMSD	Pronamide	µg/L	EPA625	85.7	83.33	0	103	10-95	8.30	26	1	12/3/2010 0959h
1012039-001DMSD	Pyrene	µg/L	EPA625	86.5	83.33	0	104	51-139	2.39	27		12/3/2010 0959h
1012039-001DMSD	Pyridine	µg/L	EPA625	21.9	83.33	0	26.2	10-25	4.47	61	1	12/3/2010 0959h
1012039-001DMSD	Quinoline	µg/L	EPA625	67.3	83.33	0	80.8	10-63	3.53	99	1	12/3/2010 0959h
1012039-001DMSD	Safrole	µg/L	EPA625	60.7	83.33	0	72.9	10-120	3.53	51		12/3/2010 0959h
1012039-001DMSD	Tetraethyl dithiopyrophosphate	µg/L	EPA625	77.3	83.33	0	92.8	13-160	0.833	35		12/3/2010 0959h
1012039-001DMSD	Thionazin	µg/L	EPA625	71.5	83.33	0	85.8	10-139	2.92	25		12/3/2010 0959h
1012039-001DMSD	Surr: 2,4,6-Tribromophenol	%REC	EPA625	70.6	83.33		84.7	21-154				12/3/2010 0959h
1012039-001DMSD	Surr: 2-Fluorobiphenyl	%REC	EPA625	63.1	41.67		152	10-106			S	12/3/2010 0959h
1012039-001DMSD	Surr: 2-Fluorophenol	%REC	EPA625	30.6	83.33		36.8	10-56				12/3/2010 0959h
1012039-001DMSD	Surr: Nitrobenzene-d5	%REC	EPA625	60.8	41.67		146	10-101			S	12/3/2010 0959h
1012039-001DMSD	Surr: Phenol-d6	%REC	EPA625	20.9	83.33		25.1	10-45				12/3/2010 0959h
1012039-001DMSD	Surr: Terphenyl-d14	%REC	EPA625	88.3	41.67		212	10-160			S	12/3/2010 0959h
1012057-001BMSD	1,1'-Biphenyl	µg/L	EPA625	65.5	80.00	0	81.9	27-99	23.3	49		12/3/2010 1149h
1012057-001BMSD	1,2,4,5-Tetrachlorobenzene	µg/L	EPA625	63.2	80.00	0	79.0	10-119	28.7	52		12/3/2010 1149h
1012057-001BMSD	1,2,4-Trichlorobenzene	µg/L	EPA625	47.4	80.00	0	59.2	10-79	22.5	49		12/3/2010 1149h
1012057-001BMSD	1,2-Dichlorobenzene	µg/L	EPA625	36.0	80.00	0	45.0	10-59	20.7	46		12/3/2010 1149h
1012057-001BMSD	1,3,5-Trinitrobenzene	µg/L	EPA625	155	80.00	0	193	10-175	14.4	33	1	12/3/2010 1149h
1012057-001BMSD	1,3-Dichlorobenzene	µg/L	EPA625	29.5	80.00	0	36.9	10-56	18.2	49		12/3/2010 1149h
1012057-001BMSD	1,3-Dinitrobenzene	µg/L	EPA625	107	80.00	0	134	10-175	34.0	29	@	12/3/2010 1149h
1012057-001BMSD	1,4-Dichlorobenzene	µg/L	EPA625	31.7	80.00	0	39.6	10-58	21.7	51		12/3/2010 1149h

Report Date: 12/6/2010 Page 128 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMSD	1,4-Naphthoquinone	µg/L	EPA625	17.2	80.00	0	21.5	10-177	17.4	99		12/3/2010 1149h
1012057-001BMSD	1,4-Phenylenediamine	µg/L	EPA625	54.6	80.00	0	68.3	10-124	26.9	48		12/3/2010 1149h
1012057-001BMSD	1-Chloronaphthalene	µg/L	EPA625	64.8	80.00	0	81.0	10-106	41.2	47		12/3/2010 1149h
1012057-001BMSD	1-Methylnaphthalene	µg/L	EPA625	66.8	80.00	0	83.5	10-83	23.4	44	1	12/3/2010 1149h
1012057-001BMSD	1-Naphthylamine	µg/L	EPA625	70.8	80.00	0	88.5	10-122	17.2	57		12/3/2010 1149h
1012057-001BMSD	2,3,4,6-Tetrachlorophenol	µg/L	EPA625	84.8	80.00	0	106	10-157	6.87	39		12/3/2010 1149h
1012057-001BMSD	2,4,5-Trichlorophenol	µg/L	EPA625	71.6	80.00	0	89.6	10-148	18.0	56		12/3/2010 1149h
1012057-001BMSD	2,4,6-Trichlorophenol	µg/L	EPA625	57.2	80.00	0	71.6	10-136	19.6	52		12/3/2010 1149h
1012057-001BMSD	2,4-Dichlorophenol	µg/L	EPA625	58.1	80.00	0	72.6	10-123	17.0	67		12/3/2010 1149h
1012057-001BMSD	2,4-Dimethylphenol	µg/L	EPA625	63.7	80.00	0	79.6	10-113	14.1	32		12/3/2010 1149h
1012057-001BMSD	2,4-Dinitrophenol	µg/L	EPA625	73.7	80.00	0	92.1	10-175	37.9	78		12/3/2010 1149h
1012057-001BMSD	2,4-Dinitrotoluene	µg/L	EPA625	103	80.00	0	128	10-175	17.2	26		12/3/2010 1149h
1012057-001BMSD	2,6-Dichlorophenol	µg/L	EPA625	67.8	80.00	0	84.8	10-148	11.5	56		12/3/2010 1149h
1012057-001BMSD	2,6-Dinitrotoluene	µg/L	EPA625	87.3	80.00	0	109	10-175	15.9	74		12/3/2010 1149h
1012057-001BMSD	2-Acetylaminofluorene	µg/L	EPA625	79.2	80.00	0	99.0	10-94	14.0	52	1	12/3/2010 1149h
1012057-001BMSD	2-Chloronaphthalene	µg/L	EPA625	59.3	80.00	0	74.1	10-93	24.7	49		12/3/2010 1149h
1012057-001BMSD	2-Chlorophenol	µg/L	EPA625	55.1	80.00	0	68.9	10-92	20.0	58		12/3/2010 1149h
1012057-001BMSD	2-Methylnaphthalene	µg/L	EPA625	55.8	80.00	0	69.7	15-78	20.7	39		12/3/2010 1149h
1012057-001BMSD	2-Methylphenol	µg/L	EPA625	44.7	80.00	0	55.8	10-83	19.9	49		12/3/2010 1149h
1012057-001BMSD	2-Naphthylamine	µg/L	EPA625	64.4	80.00	0	80.5	10-154	17.5	37		12/3/2010 1149h
1012057-001BMSD	2-Nitroaniline	µg/L	EPA625	87.8	80.00	0	110	10-175	19.6	87		12/3/2010 1149h
1012057-001BMSD	2-Nitrophenol	µg/L	EPA625	82.1	80.00	0	103	10-175	9.21	64		12/3/2010 1149h
1012057-001BMSD	2-Picoline	µg/L	EPA625	40.8	80.00	0	51.0	10-61	51.0	63		12/3/2010 1149h
1012057-001BMSD	3&4-Methylphenol	µg/L	EPA625	26.9	80.00	0	33.6	10-80	29.9	99		12/3/2010 1149h

Report Date: 12/6/2010 Page 129 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMSD	3,3'-Dichlorobenzidine	µg/L	EPA625	73.6	80.00	0	92.0	10-150	15.6	63		12/3/2010 1149h
1012057-001BMSD	3,3'-Dimethylbenzidine	µg/L	EPA625	82.1	80.00	0	103	10-143	13.5	99		12/3/2010 1149h
1012057-001BMSD	3-Methylcholanthrene	µg/L	EPA625	78.3	80.00	0	97.8	32-171	16.4	46		12/3/2010 1149h
1012057-001BMSD	3-Nitroaniline	µg/L	EPA625	80.6	80.00	0	101	10-175	17.4	29		12/3/2010 1149h
1012057-001BMSD	4,6-Dinitro-2-methylphenol	µg/L	EPA625	119	80.00	0	149	10-175	15.8	70		12/3/2010 1149h
1012057-001BMSD	4-Aminobiphenyl	µg/L	EPA625	78.6	80.00	0	98.3	10-175	15.9	79		12/3/2010 1149h
1012057-001BMSD	4-Bromophenyl phenyl ether	µg/L	EPA625	70.5	80.00	0	88.2	16-138	17.0	31		12/3/2010 1149h
1012057-001BMSD	4-Chloro-3-methylphenol	µg/L	EPA625	65.1	80.00	0	81.4	10-131	13.5	37		12/3/2010 1149h
1012057-001BMSD	4-Chloroaniline	µg/L	EPA625	59.3	80.00	0	74.1	10-98	22.2	41		12/3/2010 1149h
1012057-001BMSD	4-Chlorophenyl phenyl ether	µg/L	EPA625	70.9	80.00	0	88.6	31-108	20.6	30		12/3/2010 1149h
1012057-001BMSD	4-Nitroaniline	µg/L	EPA625	71.7	80.00	0	89.7	10-175	18.2	99		12/3/2010 1149h
1012057-001BMSD	4-Nitrophenol	µg/L	EPA625	139	80.00	0	174	10-97	31.7	69	¹	12/3/2010 1149h
1012057-001BMSD	5-Nitro-o-toluidine	µg/L	EPA625	92.1	80.00	0	115	10-175	15.7	26		12/3/2010 1149h
1012057-001BMSD	7,12-Dimethylbenz(a)anthracene	µg/L	EPA625	106	80.00	0	132	26-174	17.0	40		12/3/2010 1149h
1012057-001BMSD	a,a-Dimethylphenethylamine	µg/L	EPA625	43.4	80.00	0	54.2	10-175	10.4	99		12/3/2010 1149h
1012057-001BMSD	Acenaphthene	µg/L	EPA625	68.6	80.00	0	85.7	29-97	20.2	38		12/3/2010 1149h
1012057-001BMSD	Acenaphthylene	µg/L	EPA625	69.5	80.00	0	86.9	37-87	21.5	37		12/3/2010 1149h
1012057-001BMSD	Acetophenone	µg/L	EPA625	61.2	80.00	0	76.5	10-96	27.2	48		12/3/2010 1149h
1012057-001BMSD	alpha-Terpineol	µg/L	EPA625	56.7	80.00	0	70.8	10-67	20.3	46	¹	12/3/2010 1149h
1012057-001BMSD	Aniline	µg/L	EPA625	46.7	80.00	0	58.4	10-71	37.5	48		12/3/2010 1149h
1012057-001BMSD	Anthracene	µg/L	EPA625	81.8	80.00	0	102	53-114	16.2	26		12/3/2010 1149h
1012057-001BMSD	Aramite	µg/L	EPA625	89.0	80.00	0	111	29-160	15.6	30		12/3/2010 1149h
1012057-001BMSD	Azobenzene	µg/L	EPA625	65.8	80.00	0	82.2	15-114	16.6	36		12/3/2010 1149h
1012057-001BMSD	Benz(a)anthracene	µg/L	EPA625	73.2	80.00	0	91.5	39-129	15.0	32		12/3/2010 1149h

Report Date: 12/6/2010 Page 130 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMSD	Benzidine	µg/L	EPA625	66.6	80.00	0	83.2	10-99	15.7	99		12/3/2010 1149h
1012057-001BMSD	Benzo(a)pyrene	µg/L	EPA625	84.4	80.00	0	105	29-175	17.2	45		12/3/2010 1149h
1012057-001BMSD	Benzo(b)fluoranthene	µg/L	EPA625	73.3	80.00	0	91.7	15-140	18.2	44		12/3/2010 1149h
1012057-001BMSD	Benzo(g,h,i)perylene	µg/L	EPA625	68.3	80.00	0	85.4	10-182	16.6	48		12/3/2010 1149h
1012057-001BMSD	Benzo(k)fluoranthene	µg/L	EPA625	101	80.00	0	127	21-154	15.6	52		12/3/2010 1149h
1012057-001BMSD	Benzoic acid	µg/L	EPA625	< 20.0	80.00	0	18.2	10-71	0	78		12/3/2010 1149h
1012057-001BMSD	Benzyl alcohol	µg/L	EPA625	26.0	80.00	0	32.5	10-69	33.4	52		12/3/2010 1149h
1012057-001BMSD	Bis(2-chloroethoxy)methane	µg/L	EPA625	44.0	80.00	0	54.9	10-94	24.7	45		12/3/2010 1149h
1012057-001BMSD	Bis(2-chloroethyl) ether	µg/L	EPA625	50.5	80.00	0	63.1	10-70	36.5	47		12/3/2010 1149h
1012057-001BMSD	Bis(2-chloroisopropyl) ether	µg/L	EPA625	47.3	80.00	0	59.2	10-71	34.2	49		12/3/2010 1149h
1012057-001BMSD	Bis(2-ethylhexyl) phthalate	µg/L	EPA625	88.0	80.00	0	110	10-175	12.3	28		12/3/2010 1149h
1012057-001BMSD	bis(2-ethylhexyl)adipate	µg/L	EPA625	89.9	80.00	0	112	10-175	10.5	25		12/3/2010 1149h
1012057-001BMSD	Butyl benzyl phthalate	µg/L	EPA625	89.7	80.00	0	112	10-175	10.0	99		12/3/2010 1149h
1012057-001BMSD	Carbazole	µg/L	EPA625	77.4	80.00	0	96.8	10-151	15.2	30		12/3/2010 1149h
1012057-001BMSD	Chlorobenzilate	µg/L	EPA625	87.0	80.00	0	109	18-175	11.2	25		12/3/2010 1149h
1012057-001BMSD	Chrysene	µg/L	EPA625	80.0	80.00	0	100	38-133	13.6	28		12/3/2010 1149h
1012057-001BMSD	Diallate (cis or trans)	µg/L	EPA625	69.2	80.00	0	86.5	10-157	16.8	29		12/3/2010 1149h
1012057-001BMSD	Dibenz(a,h)anthracene	µg/L	EPA625	70.3	80.00	0	87.9	13-168	17.4	51		12/3/2010 1149h
1012057-001BMSD	Dibenzofuran	µg/L	EPA625	69.1	80.00	0	86.4	29-103	22.0	34		12/3/2010 1149h
1012057-001BMSD	Diethyl phthalate	µg/L	EPA625	69.6	80.00	0	87.0	10-139	14.7	32		12/3/2010 1149h
1012057-001BMSD	Dimethoate	µg/L	EPA625	26.7	80.00	0	33.3	10-136	21.2	45		12/3/2010 1149h
1012057-001BMSD	Dimethyl phthalate	µg/L	EPA625	61.8	80.00	0	77.3	10-122	15.8	57		12/3/2010 1149h
1012057-001BMSD	Dimethylaminoazobenzene	µg/L	EPA625	87.7	80.00	0	110	34-142	16.7	26		12/3/2010 1149h
1012057-001BMSD	Di-n-butyl phthalate	µg/L	EPA625	79.0	80.00	0	98.8	44-124	11.1	25		12/3/2010 1149h

Report Date: 12/6/2010 Page 131 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSSV

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMSD	Di-n-octyl phthalate	µg/L	EPA625	137	80.00	0	172	10-175	16.5	50		12/3/2010 1149h
1012057-001BMSD	Dinoseb	µg/L	EPA625	128	80.00	0	160	10-175	11.6	42		12/3/2010 1149h
1012057-001BMSD	Diphenylamine	µg/L	EPA625	76.0	80.00	0	95.0	13-110	15.7	34		12/3/2010 1149h
1012057-001BMSD	Disulfoton	µg/L	EPA625	56.3	80.00	0	70.4	10-121	14.9	25		12/3/2010 1149h
1012057-001BMSD	Ethyl methanesulfonate	µg/L	EPA625	55.8	80.00	0	69.8	10-99	30.1	46		12/3/2010 1149h
1012057-001BMSD	Famphur	µg/L	EPA625	126	80.00	0	158	10-71	5.66	25	1	12/3/2010 1149h
1012057-001BMSD	Fluoranthene	µg/L	EPA625	77.3	80.00	0	96.6	23-135	14.4	25		12/3/2010 1149h
1012057-001BMSD	Fluorene	µg/L	EPA625	69.7	80.00	0	87.1	34-108	19.0	28		12/3/2010 1149h
1012057-001BMSD	Hexachlorobenzene	µg/L	EPA625	72.0	80.00	0	90.1	26-131	16.7	28		12/3/2010 1149h
1012057-001BMSD	Hexachlorobutadiene	µg/L	EPA625	41.9	80.00	0	52.4	10-110	22.2	68		12/3/2010 1149h
1012057-001BMSD	Hexachlorocyclopentadiene	µg/L	EPA625	31.7	80.00	0	39.6	10-45	39.8	79		12/3/2010 1149h
1012057-001BMSD	Hexachloroethane	µg/L	EPA625	30.4	80.00	0	38.0	10-58	12.1	42		12/3/2010 1149h
1012057-001BMSD	Hexachlorophene	µg/L	EPA625	84.3	80.00	0	105	10-168	11.6	25		12/3/2010 1149h
1012057-001BMSD	Hexachloropropene	µg/L	EPA625	40.2	80.00	0	50.3	10-72	23.9	63		12/3/2010 1149h
1012057-001BMSD	Indene	µg/L	EPA625	41.9	80.00	0	52.4	10-35	23.8	35	1	12/3/2010 1149h
1012057-001BMSD	Indeno(1,2,3-cd)pyrene	µg/L	EPA625	71.3	80.00	0	89.2	10-176	17.1	48		12/3/2010 1149h
1012057-001BMSD	Isodrin	µg/L	EPA625	76.2	80.00	0	95.2	15-165	15.3	25		12/3/2010 1149h
1012057-001BMSD	Isophorone	µg/L	EPA625	58.2	80.00	0	72.8	10-99	23.6	41		12/3/2010 1149h
1012057-001BMSD	Isosafrole	µg/L	EPA625	60.5	80.00	0	75.6	10-167	26.4	50		12/3/2010 1149h
1012057-001BMSD	Kepon	µg/L	EPA625	212	80.00	0	265	10-175	0.383	46	1	12/3/2010 1149h
1012057-001BMSD	Methapyrilene	µg/L	EPA625	84.3	80.00	0	105	10-149	13.1	51		12/3/2010 1149h
1012057-001BMSD	Methyl methanesulfonate	µg/L	EPA625	35.2	80.00	0	44.0	10-132	31.1	45		12/3/2010 1149h
1012057-001BMSD	Naphthalene	µg/L	EPA625	53.0	80.00	0	66.3	10-82	24.8	43		12/3/2010 1149h
1012057-001BMSD	n-Decane	µg/L	EPA625	17.0	80.00	0	21.2	10-27	2.67	32		12/3/2010 1149h

Report Date: 12/6/2010 Page 132 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMSD	Nitrobenzene	µg/L	EPA625	72.7	80.00	0	90.9	10-119	29.7	49		12/3/2010 1149h
1012057-001BMSD	Nitroquinoline-1-oxide	µg/L	EPA625	36.9	80.00	0	46.1	10-170	22.9	97		12/3/2010 1149h
1012057-001BMSD	N-Nitrosodiethylamine	µg/L	EPA625	56.2	80.00	0	70.2	10-91	32.4	54		12/3/2010 1149h
1012057-001BMSD	N-Nitrosodimethylamine	µg/L	EPA625	21.8	80.00	0	27.2	10-42	34.8	66		12/3/2010 1149h
1012057-001BMSD	N-Nitrosodi-n-butylamine	µg/L	EPA625	63.8	80.00	0	79.8	10-175	19.4	80		12/3/2010 1149h
1012057-001BMSD	N-Nitrosodiphenylamine	µg/L	EPA625	75.1	80.00	0	93.8	12-112	16.1	30		12/3/2010 1149h
1012057-001BMSD	N-Nitrosodi-n-propylamine	µg/L	EPA625	54.4	80.00	0	68.0	10-77	27.4	47		12/3/2010 1149h
1012057-001BMSD	N-Nitrosomethylethylamine	µg/L	EPA625	44.0	80.00	0	55.0	10-75	35.5	60		12/3/2010 1149h
1012057-001BMSD	N-Nitrosomorpholine	µg/L	EPA625	56.8	80.00	0	71.0	10-175	25.7	73		12/3/2010 1149h
1012057-001BMSD	N-Nitrosopiperidine	µg/L	EPA625	64.5	80.00	0	80.6	10-105	21.7	44		12/3/2010 1149h
1012057-001BMSD	N-Nitrosopyrrolidine	µg/L	EPA625	61.2	80.00	0	76.5	10-88	21.0	40		12/3/2010 1149h
1012057-001BMSD	n-Octadecane	µg/L	EPA625	65.2	80.00	0	81.5	10-121	19.4	40		12/3/2010 1149h
1012057-001BMSD	O,O,O-Triethyl phosphorothioate	µg/L	EPA625	64.1	80.00	0	80.1	10-93	22.3	44		12/3/2010 1149h
1012057-001BMSD	o-Toluidine	µg/L	EPA625	125	80.00	0	157	10-107	30.7	46	¹	12/3/2010 1149h
1012057-001BMSD	Parathion	µg/L	EPA625	110	80.00	0	138	10-175	15.5	28		12/3/2010 1149h
1012057-001BMSD	Methyl parathion	µg/L	EPA625	101	80.00	0	126	10-175	14.0	26		12/3/2010 1149h
1012057-001BMSD	Pentachlorobenzene	µg/L	EPA625	68.0	80.00	0	85.1	25-134	21.1	35		12/3/2010 1149h
1012057-001BMSD	Pentachloronitrobenzene	µg/L	EPA625	82.9	80.00	0	104	10-175	14.8	25		12/3/2010 1149h
1012057-001BMSD	Pentachlorophenol	µg/L	EPA625	45.7	80.00	0	57.2	10-163	1.45	58		12/3/2010 1149h
1012057-001BMSD	Phenacetin	µg/L	EPA625	75.2	80.00	0	94.0	10-175	17.1	38		12/3/2010 1149h
1012057-001BMSD	Phenanthrene	µg/L	EPA625	84.6	80.00	0	106	31-126	19.4	32		12/3/2010 1149h
1012057-001BMSD	Phenol	µg/L	EPA625	27.3	80.00	0	34.2	10-175	25.0	71		12/3/2010 1149h
1012057-001BMSD	Phorate	µg/L	EPA625	82.6	80.00	0	103	10-175	14.7	42		12/3/2010 1149h
1012057-001BMSD	Pronamide	µg/L	EPA625	81.6	80.00	0	102	10-95	13.5	26	¹	12/3/2010 1149h

Report Date: 12/6/2010 Page 133 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012057-001BMSD	Pyrene	µg/L	EPA625	89.0	80.00	0	111	51-139	13.7	27		12/3/2010 1149h
1012057-001BMSD	Pyridine	µg/L	EPA625	23.1	80.00	0	28.9	10-25	52.6	61	1	12/3/2010 1149h
1012057-001BMSD	Quinoline	µg/L	EPA625	67.0	80.00	0	83.7	10-63	20.5	99	1	12/3/2010 1149h
1012057-001BMSD	Safrole	µg/L	EPA625	61.5	80.00	0	76.9	10-120	27.6	51		12/3/2010 1149h
1012057-001BMSD	Tetraethyl dithiopyrophosphate	µg/L	EPA625	74.2	80.00	0	92.8	13-160	17.4	35		12/3/2010 1149h
1012057-001BMSD	Thionazin	µg/L	EPA625	68.5	80.00	0	85.6	10-139	14.5	25		12/3/2010 1149h
1012057-001BMSD	Surr: 2,4,6-Tribromophenol	%REC	EPA625	67.9	80.00		84.8	21-154				12/3/2010 1149h
1012057-001BMSD	Surr: 2-Fluorobiphenyl	%REC	EPA625	64.6	40.00		161	10-106			S	12/3/2010 1149h
1012057-001BMSD	Surr: 2-Fluorophenol	%REC	EPA625	25.0	80.00		31.3	10-56				12/3/2010 1149h
1012057-001BMSD	Surr: Nitrobenzene-d5	%REC	EPA625	64.0	40.00		160	10-101			S	12/3/2010 1149h
1012057-001BMSD	Surr: Phenol-d6	%REC	EPA625	15.0	80.00		18.8	10-45				12/3/2010 1149h
1012057-001BMSD	Surr: Terphenyl-d14	%REC	EPA625	89.1	40.00		223	10-160			S	12/3/2010 1149h
1011529-006FMSD	Acenaphthene	µg/L	SW8270D	59.1	80.00	0	73.9	21-113	7.73	25		12/3/2010 0144h
1011529-006FMSD	Benzo(a)pyrene	µg/L	SW8270D	85.0	80.00	0	106	15-169	6.66	25		12/3/2010 0144h
1011529-006FMSD	Pyrene	µg/L	SW8270D	91.5	80.00	0	114	23-150	4.01	25		12/3/2010 0144h
1011529-006FMSD	Surr: 2,4,6-Tribromophenol	%REC	SW8270D	68.2	80.00		85.2	14-159				12/3/2010 0144h
1011529-006FMSD	Surr: 2-Fluorobiphenyl	%REC	SW8270D	49.3	40.00		123	10-124				12/3/2010 0144h
1011529-006FMSD	Surr: 2-Fluorophenol	%REC	SW8270D	26.8	80.00		33.6	10-106				12/3/2010 0144h
1011529-006FMSD	Surr: Nitrobenzene-d5	%REC	SW8270D	53.9	40.00		135	10-180				12/3/2010 0144h
1011529-006FMSD	Surr: Phenol-d6	%REC	SW8270D	19.7	80.00		24.6	10-122				12/3/2010 0144h
1011529-006FMSD	Surr: Terphenyl-d14	%REC	SW8270D	92.3	40.00		231	10-199			S	12/3/2010 0144h
1012039-001DMSD	Acenaphthene	µg/L	SW8270D	67.6	83.33	0	81.2	21-113	0.972	25		12/3/2010 0959h
1012039-001DMSD	Benzo(a)pyrene	µg/L	SW8270D	76.3	83.33	0	91.6	15-169	3.31	25		12/3/2010 0959h
1012039-001DMSD	Pyrene	µg/L	SW8270D	86.5	83.33	0	104	23-150	2.39	25		12/3/2010 0959h

Report Date: 12/6/2010 Page 134 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSSV
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012039-001DMSD	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	70.6	83.33		84.7	14-159				12/3/2010 0959h
1012039-001DMSD	Surr: 2-Fluorobiphenyl	% REC	SW8270D	63.1	41.67		152	10-124			S	12/3/2010 0959h
1012039-001DMSD	Surr: 2-Fluorophenol	% REC	SW8270D	30.6	83.33		36.8	10-106				12/3/2010 0959h
1012039-001DMSD	Surr: Nitrobenzene-d5	% REC	SW8270D	60.8	41.67		146	10-180				12/3/2010 0959h
1012039-001DMSD	Surr: Phenol-d6	% REC	SW8270D	20.9	83.33		25.1	10-122				12/3/2010 0959h
1012039-001DMSD	Surr: Terphenyl-d14	% REC	SW8270D	88.3	41.67		212	10-199			S	12/3/2010 0959h
1012057-001BMSD	Acenaphthene	µg/L	SW8270D	68.6	80.00	0	85.7	21-113	20.2	25		12/3/2010 1149h
1012057-001BMSD	Benzo(a)pyrene	µg/L	SW8270D	84.4	80.00	0	105	15-169	17.2	25		12/3/2010 1149h
1012057-001BMSD	Pyrene	µg/L	SW8270D	89.0	80.00	0	111	23-150	13.7	25		12/3/2010 1149h
1012057-001BMSD	Surr: 2,4,6-Tribromophenol	% REC	SW8270D	67.9	80.00		84.8	14-159				12/3/2010 1149h
1012057-001BMSD	Surr: 2-Fluorobiphenyl	% REC	SW8270D	64.6	40.00		161	10-124			S	12/3/2010 1149h
1012057-001BMSD	Surr: 2-Fluorophenol	% REC	SW8270D	25.0	80.00		31.3	10-106				12/3/2010 1149h
1012057-001BMSD	Surr: Nitrobenzene-d5	% REC	SW8270D	64.0	40.00		160	10-180				12/3/2010 1149h
1012057-001BMSD	Surr: Phenol-d6	% REC	SW8270D	15.0	80.00		18.8	10-122				12/3/2010 1149h
1012057-001BMSD	Surr: Terphenyl-d14	% REC	SW8270D	89.1	40.00		223	10-199			S	12/3/2010 1149h

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

¹ - 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.



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT**Client:** Utah DEQ DERR**Lab Set ID:** 1011529**Project:** Red Butte**Contact:** Jim Harris**Dept:** MSVOA**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120210A	1,1,1,2-Tetrachloroethane	µg/L	EPA624	20.0	20.00	0	99.8	74-117				12/2/2010 0711h
LCS VOC 120210A	1,1,1-Trichloroethane	µg/L	EPA624	20.0	20.00	0	100	49-140				12/2/2010 0711h
LCS VOC 120210A	1,1,2,2-Tetrachloroethane	µg/L	EPA624	15.8	20.00	0	79.0	67-119				12/2/2010 0711h
LCS VOC 120210A	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/L	EPA624	19.2	20.00	0	96.2	21-206				12/2/2010 0711h
LCS VOC 120210A	1,1,2-Trichloroethane	µg/L	EPA624	18.5	20.00	0	92.6	80-123				12/2/2010 0711h
LCS VOC 120210A	1,1-Dichloropropene	µg/L	EPA624	41.8	40.00	0	105	10-140				12/2/2010 0711h
LCS VOC 120210A	1,1-Dichloroethane	µg/L	EPA624	21.2	20.00	0	106	70-130				12/2/2010 0711h
LCS VOC 120210A	1,1-Dichloroethene	µg/L	EPA624	23.7	20.00	0	119	52-171				12/2/2010 0711h
LCS VOC 120210A	1,2,3-Trichlorobenzene	µg/L	EPA624	19.9	20.00	0	99.6	67-131				12/2/2010 0711h
LCS VOC 120210A	1,2,3-Trichloropropane	µg/L	EPA624	16.3	20.00	0	81.6	62-116				12/2/2010 0711h
LCS VOC 120210A	1,2,3-Trimethylbenzene	µg/L	EPA624	21.2	20.00	0	106	76-140				12/2/2010 0711h
LCS VOC 120210A	1,2,4-Trichlorobenzene	µg/L	EPA624	19.9	20.00	0	99.4	58-133				12/2/2010 0711h
LCS VOC 120210A	1,2,4-Trimethylbenzene	µg/L	EPA624	20.3	20.00	0	102	79-151				12/2/2010 0711h
LCS VOC 120210A	1,2-Dibromo-3-chloropropane	µg/L	EPA624	15.8	20.00	0	79.1	64-129				12/2/2010 0711h
LCS VOC 120210A	1,2-Dibromoethane	µg/L	EPA624	18.6	20.00	0	92.9	70-126				12/2/2010 0711h
LCS VOC 120210A	1,2-Dichlorobenzene	µg/L	EPA624	20.8	20.00	0	104	67-135				12/2/2010 0711h
LCS VOC 120210A	1,2-Dichloroethane	µg/L	EPA624	19.1	20.00	0	95.3	60-137				12/2/2010 0711h
LCS VOC 120210A	1,2-Dichloropropane	µg/L	EPA624	20.5	20.00	0	103	59-135				12/2/2010 0711h
LCS VOC 120210A	1,3,5-Trimethylbenzene	µg/L	EPA624	20.3	20.00	0	101	77-151				12/2/2010 0711h
LCS VOC 120210A	1,3-Dichlorobenzene	µg/L	EPA624	21.0	20.00	0	105	78-134				12/2/2010 0711h
LCS VOC 120210A	1,3-Dichloropropane	µg/L	EPA624	18.4	20.00	0	91.9	78-116				12/2/2010 0711h
LCS VOC 120210A	1,4-Dichlorobenzene	µg/L	EPA624	20.8	20.00	0	104	72-139				12/2/2010 0711h
LCS VOC 120210A	1,4-Dioxane	µg/L	EPA624	184	200.0	0	92.1	33-149				12/2/2010 0711h
LCS VOC 120210A	2,2-Dichloropropane	µg/L	EPA624	20.1	30.00	0	67.1	13-180				12/2/2010 0711h

Report Date: 12/6/2010 Page 136 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120210A	2-Butanone	µg/L	EPA624	24.1	20.00	0	120	10-217				12/2/2010 0711h
LCS VOC 120210A	2-Chloroethyl vinyl ether	µg/L	EPA624	41.0	40.00	0	102	32-163				12/2/2010 0711h
LCS VOC 120210A	2-Chlorotoluene	µg/L	EPA624	20.2	20.00	0	101	79-142				12/2/2010 0711h
LCS VOC 120210A	2-Hexanone	µg/L	EPA624	15.9	20.00	0	79.7	50-156				12/2/2010 0711h
LCS VOC 120210A	2-Nitropropane	µg/L	EPA624	16.6	20.00	0	82.8	10-243				12/2/2010 0711h
LCS VOC 120210A	4-Chlorotoluene	µg/L	EPA624	21.2	20.00	0	106	68-128				12/2/2010 0711h
LCS VOC 120210A	4-Isopropyltoluene	µg/L	EPA624	18.8	20.00	0	93.9	73-156				12/2/2010 0711h
LCS VOC 120210A	4-Methyl-2-pentanone	µg/L	EPA624	15.6	20.00	0	77.8	10-214				12/2/2010 0711h
LCS VOC 120210A	Acetone	µg/L	EPA624	18.5	20.00	0	92.4	10-313				12/2/2010 0711h
LCS VOC 120210A	Acetonitrile	µg/L	EPA624	33.1	40.00	0	82.8	37-159				12/2/2010 0711h
LCS VOC 120210A	Acrolein	µg/L	EPA624	44.9	40.00	0	112	10-325				12/2/2010 0711h
LCS VOC 120210A	Acrylonitrile	µg/L	EPA624	15.3	20.00	0	76.7	53-134				12/2/2010 0711h
LCS VOC 120210A	Allyl chloride	µg/L	EPA624	20.3	20.00	0	102	10-243				12/2/2010 0711h
LCS VOC 120210A	Benzene	µg/L	EPA624	24.0	20.00	0	120	62-127				12/2/2010 0711h
LCS VOC 120210A	Benzyl chloride	µg/L	EPA624	17.5	20.00	0	87.7	40-146				12/2/2010 0711h
LCS VOC 120210A	Bis(2-chloroisopropyl) ether	µg/L	EPA624	15.8	20.00	0	79.0	54-146				12/2/2010 0711h
LCS VOC 120210A	Bromobenzene	µg/L	EPA624	19.2	20.00	0	95.9	78-148				12/2/2010 0711h
LCS VOC 120210A	Bromochloromethane	µg/L	EPA624	21.2	20.00	0	106	75-134				12/2/2010 0711h
LCS VOC 120210A	Bromodichloromethane	µg/L	EPA624	19.8	20.00	0	99.0	74-121				12/2/2010 0711h
LCS VOC 120210A	Bromoform	µg/L	EPA624	17.7	20.00	0	88.5	68-131				12/2/2010 0711h
LCS VOC 120210A	Bromomethane	µg/L	EPA624	14.2	20.00	0	71.0	10-185				12/2/2010 0711h
LCS VOC 120210A	Butyl acetate	µg/L	EPA624	18.5	20.00	0	92.3	46-178				12/2/2010 0711h
LCS VOC 120210A	Carbon disulfide	µg/L	EPA624	32.5	20.00	0	163	21-224				12/2/2010 0711h
LCS VOC 120210A	Carbon tetrachloride	µg/L	EPA624	20.2	20.00	0	101	60-157				12/2/2010 0711h

Report Date: 12/6/2010 Page 137 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120210A	Chlorobenzene	µg/L	EPA624	20.8	20.00	0	104	63-140				12/2/2010 0711h
LCS VOC 120210A	Chloroethane	µg/L	EPA624	20.6	20.00	0	103	41-173				12/2/2010 0711h
LCS VOC 120210A	Chloroform	µg/L	EPA624	20.4	20.00	0	102	67-132				12/2/2010 0711h
LCS VOC 120210A	Chloromethane	µg/L	EPA624	16.0	20.00	0	79.8	10-138				12/2/2010 0711h
LCS VOC 120210A	Chloroprene	µg/L	EPA624	19.7	20.00	0	98.5	10-161				12/2/2010 0711h
LCS VOC 120210A	cis-1,2-Dichloroethene	µg/L	EPA624	21.8	20.00	0	109	72-137				12/2/2010 0711h
LCS VOC 120210A	cis-1,3-Dichloropropene	µg/L	EPA624	21.5	40.00	0	53.8	10-134				12/2/2010 0711h
LCS VOC 120210A	Cyclohexane	µg/L	EPA624	22.6	20.00	0	113	35-230				12/2/2010 0711h
LCS VOC 120210A	Cyclohexanone	µg/L	EPA624	< 50.0	40.00	0	60.4	10-374				12/2/2010 0711h
LCS VOC 120210A	Dibromochloromethane	µg/L	EPA624	19.3	20.00	0	96.5	68-135				12/2/2010 0711h
LCS VOC 120210A	Dibromomethane	µg/L	EPA624	18.8	20.00	0	93.8	74-120				12/2/2010 0711h
LCS VOC 120210A	Dichlorodifluoromethane	µg/L	EPA624	11.9	20.00	0	59.4	10-150				12/2/2010 0711h
LCS VOC 120210A	Ethyl acetate	µg/L	EPA624	35.3	40.00	0	88.3	50-155				12/2/2010 0711h
LCS VOC 120210A	Ethyl ether	µg/L	EPA624	21.5	20.00	0	108	45-146				12/2/2010 0711h
LCS VOC 120210A	Ethyl methacrylate	µg/L	EPA624	17.7	20.00	0	88.4	64-113				12/2/2010 0711h
LCS VOC 120210A	Ethylbenzene	µg/L	EPA624	20.7	20.00	0	104	55-133				12/2/2010 0711h
LCS VOC 120210A	Hexachlorobutadiene	µg/L	EPA624	16.8	20.00	0	84.0	35-213				12/2/2010 0711h
LCS VOC 120210A	Iodomethane	µg/L	EPA624	16.4	20.00	0	81.8	10-233				12/2/2010 0711h
LCS VOC 120210A	Isobutyl alcohol	µg/L	EPA624	< 100	80.00	0	89.4	12-202				12/2/2010 0711h
LCS VOC 120210A	Isopropyl acetate	µg/L	EPA624	17.8	20.00	0	89.2	55-145				12/2/2010 0711h
LCS VOC 120210A	Isopropyl alcohol	µg/L	EPA624	73.6	80.00	0	91.9	12-250				12/2/2010 0711h
LCS VOC 120210A	Isopropylbenzene	µg/L	EPA624	19.6	20.00	0	98.1	60-147				12/2/2010 0711h
LCS VOC 120210A	Isopropyltoluene	µg/L	EPA624	18.8	20.00	0	93.9	73-156				12/2/2010 0711h
LCS VOC 120210A	m,p-Xylene	µg/L	EPA624	43.6	40.00	0	109	70-130				12/2/2010 0711h

Report Date: 12/6/2010 Page 138 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120210A	Methacrylonitrile	µg/L	EPA624	16.2	20.00	0	81.0	79-123				12/2/2010 0711h
LCS VOC 120210A	Methyl Acetate	µg/L	EPA624	34.8	20.00	0	174	5-398				12/2/2010 0711h
LCS VOC 120210A	Methyl methacrylate	µg/L	EPA624	16.8	20.00	0	84.1	55-128				12/2/2010 0711h
LCS VOC 120210A	Methyl tert-butyl ether	µg/L	EPA624	19.4	20.00	0	96.8	37-189				12/2/2010 0711h
LCS VOC 120210A	Methylcyclohexane	µg/L	EPA624	20.7	20.00	0	103	65-175				12/2/2010 0711h
LCS VOC 120210A	Methylene chloride	µg/L	EPA624	23.3	20.00	0	117	55-138				12/2/2010 0711h
LCS VOC 120210A	n-Amyl acetate	µg/L	EPA624	12.9	20.00	0	64.6	10-187				12/2/2010 0711h
LCS VOC 120210A	Naphthalene	µg/L	EPA624	19.1	20.00	0	95.7	41-131				12/2/2010 0711h
LCS VOC 120210A	n-Butyl alcohol	µg/L	EPA624	68.6	80.00	0	85.8	10-226				12/2/2010 0711h
LCS VOC 120210A	n-Butylbenzene	µg/L	EPA624	18.6	20.00	0	93.1	40-158				12/2/2010 0711h
LCS VOC 120210A	n-Hexane	µg/L	EPA624	22.9	20.00	0	114	10-277				12/2/2010 0711h
LCS VOC 120210A	n-Octane	µg/L	EPA624	16.0	20.00	0	80.0	45-158				12/2/2010 0711h
LCS VOC 120210A	n-Propylbenzene	µg/L	EPA624	19.8	20.00	0	99.0	67-131				12/2/2010 0711h
LCS VOC 120210A	o-Xylene	µg/L	EPA624	20.8	20.00	0	104	70-130				12/2/2010 0711h
LCS VOC 120210A	Pentachloroethane	µg/L	EPA624	15.5	20.00	0	77.4	10-314				12/2/2010 0711h
LCS VOC 120210A	Propionitrile	µg/L	EPA624	< 25.0	20.00	0	77.5	60-132				12/2/2010 0711h
LCS VOC 120210A	Propyl acetate	µg/L	EPA624	18.2	20.00	0	90.8	48-143				12/2/2010 0711h
LCS VOC 120210A	sec-Butylbenzene	µg/L	EPA624	19.1	20.00	0	95.4	72-157				12/2/2010 0711h
LCS VOC 120210A	Styrene	µg/L	EPA624	20.9	20.00	0	104	81-125				12/2/2010 0711h
LCS VOC 120210A	tert-Butyl alcohol	µg/L	EPA624	32.8	40.00	0	82.0	50-286				12/2/2010 0711h
LCS VOC 120210A	tert-Butylbenzene	µg/L	EPA624	18.6	20.00	0	92.8	75-157				12/2/2010 0711h
LCS VOC 120210A	Tetrachloroethene	µg/L	EPA624	24.7	20.00	0	124	49-163				12/2/2010 0711h
LCS VOC 120210A	Tetrahydrofuran	µg/L	EPA624	14.8	20.00	0	74.0	43-146				12/2/2010 0711h
LCS VOC 120210A	Toluene	µg/L	EPA624	21.3	20.00	0	107	67-128				12/2/2010 0711h

Report Date: 12/6/2010 Page 139 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 120210A	trans-1,2-Dichloroethene	µg/L	EPA624	24.7	20.00	0	123	47-146				12/2/2010 0711h
LCS VOC 120210A	trans-1,3-Dichloropropene	µg/L	EPA624	20.4	20.00	0	102	29-143				12/2/2010 0711h
LCS VOC 120210A	trans-1,4-Dichloro-2-butene	µg/L	EPA624	21.2	20.00	0	106	20-214				12/2/2010 0711h
LCS VOC 120210A	Trichloroethene	µg/L	EPA624	21.5	20.00	0	108	54-152				12/2/2010 0711h
LCS VOC 120210A	Trichlorofluoromethane	µg/L	EPA624	16.2	20.00	0	80.9	56-166				12/2/2010 0711h
LCS VOC 120210A	Vinyl acetate	µg/L	EPA624	27.5	40.00	0	68.7	38-121				12/2/2010 0711h
LCS VOC 120210A	Vinyl chloride	µg/L	EPA624	17.7	20.00	0	88.4	13-155				12/2/2010 0711h
LCS VOC 120210A	Xylenes, Total	µg/L	EPA624	64.4	60.00	0	107	52-130				12/2/2010 0711h
LCS VOC 120210A	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	47.0	50.00		94.1	69-132				12/2/2010 0711h
LCS VOC 120210A	Surr: 4-Bromofluorobenzene	%REC	EPA624	49.5	50.00		99.0	85-118				12/2/2010 0711h
LCS VOC 120210A	Surr: Dibromofluoromethane	%REC	EPA624	49.3	50.00		98.7	80-120				12/2/2010 0711h
LCS VOC 120210A	Surr: Toluene-d8	%REC	EPA624	49.5	50.00		99.0	81-120				12/2/2010 0711h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120210A	1,1,1,2-Tetrachloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1,1-Trichloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1,2,2-Tetrachloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1,2-Trichloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1-Dichloropropene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1-Dichloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,1-Dichloroethene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2,3-Trichlorobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2,3-Trichloropropane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2,3-Trimethylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2,4-Trichlorobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2,4-Trimethylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2-Dibromo-3-chloropropane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2-Dibromoethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2-Dichlorobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2-Dichloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,2-Dichloropropane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,3,5-Trimethylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,3-Dichlorobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,3-Dichloropropane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,4-Dichlorobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	1,4-Dioxane	µg/L	EPA624	< 40.0				-				12/2/2010 0750h
MB VOC 120210A	2,2-Dichloropropane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h

Report Date: 12/6/2010 Page 141 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120210A	2-Butanone	µg/L	EPA624	< 10.0				-				12/2/2010 0750h
MB VOC 120210A	2-Chloroethyl vinyl ether	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	2-Chlorotoluene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	2-Hexanone	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	2-Nitropropane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	4-Chlorotoluene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	4-Isopropyltoluene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	4-Methyl-2-pentanone	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Acetone	µg/L	EPA624	< 10.0				-				12/2/2010 0750h
MB VOC 120210A	Acetonitrile	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Acrolein	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Acrylonitrile	µg/L	EPA624	< 10.0				-				12/2/2010 0750h
MB VOC 120210A	Allyl chloride	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Benzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Benzyl chloride	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Bis(2-chloroisopropyl) ether	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Bromobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Bromochloromethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Bromodichloromethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Bromoform	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Bromomethane	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Butyl acetate	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Carbon disulfide	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Carbon tetrachloride	µg/L	EPA624	< 2.00				-				12/2/2010 0750h

Report Date: 12/6/2010 Page 142 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120210A	Chlorobenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Chloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Chloroform	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Chloromethane	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Chloroprene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	cis-1,2-Dichloroethene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	cis-1,3-Dichloropropene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Cyclohexane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Cyclohexanone	µg/L	EPA624	< 50.0				-				12/2/2010 0750h
MB VOC 120210A	Dibromochloromethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Dibromomethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Dichlorodifluoromethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Ethyl acetate	µg/L	EPA624	< 10.0				-				12/2/2010 0750h
MB VOC 120210A	Ethyl ether	µg/L	EPA624	< 10.0				-				12/2/2010 0750h
MB VOC 120210A	Ethyl methacrylate	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Ethylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Hexachlorobutadiene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Iodomethane	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Isobutyl alcohol	µg/L	EPA624	< 100				-				12/2/2010 0750h
MB VOC 120210A	Isopropyl acetate	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Isopropyl alcohol	µg/L	EPA624	< 25.0				-				12/2/2010 0750h
MB VOC 120210A	Isopropylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Isopropyltoluene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	m,p-Xylene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h

Report Date: 12/6/2010 Page 143 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120210A	Methacrylonitrile	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Methyl Acetate	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Methyl methacrylate	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Methyl tert-butyl ether	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Methylcyclohexane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Methylene chloride	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	n-Amyl acetate	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Naphthalene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	n-Butyl alcohol	µg/L	EPA624	< 25.0				-				12/2/2010 0750h
MB VOC 120210A	n-Butylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	n-Hexane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	n-Octane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	n-Propylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	o-Xylene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Pentachloroethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Propionitrile	µg/L	EPA624	< 25.0				-				12/2/2010 0750h
MB VOC 120210A	Propyl acetate	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	sec-Butylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Styrene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	tert-Butyl alcohol	µg/L	EPA624	< 20.0				-				12/2/2010 0750h
MB VOC 120210A	tert-Butylbenzene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Tetrachloroethene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Tetrahydrofuran	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Toluene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h

Report Date: 12/6/2010 Page 144 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
MB VOC 120210A	TPH C11-C15 (DRO)	µg/L	EPA624	< 20.0				-				12/2/2010 0750h
MB VOC 120210A	TPH C6-C10 (GRO)	µg/L	EPA624	< 20.0				-				12/2/2010 0750h
MB VOC 120210A	trans-1,2-Dichloroethene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	trans-1,3-Dichloropropene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	trans-1,4-Dichloro-2-butene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Trichloroethene	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Trichlorofluoromethane	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Vinyl acetate	µg/L	EPA624	< 5.00				-				12/2/2010 0750h
MB VOC 120210A	Vinyl chloride	µg/L	EPA624	< 1.00				-				12/2/2010 0750h
MB VOC 120210A	Xylenes, Total	µg/L	EPA624	< 2.00				-				12/2/2010 0750h
MB VOC 120210A	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	49.2	50.00		98.5	69-132				12/2/2010 0750h
MB VOC 120210A	Surr: 4-Bromofluorobenzene	%REC	EPA624	52.2	50.00		104	85-118				12/2/2010 0750h
MB VOC 120210A	Surr: Dibromofluoromethane	%REC	EPA624	49.0	50.00		97.9	80-120				12/2/2010 0750h
MB VOC 120210A	Surr: Toluene-d8	%REC	EPA624	50.4	50.00		101	81-120				12/2/2010 0750h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
101 1529-006BMS	1,1,1,2-Tetrachloroethane	µg/L	EPA624	17.2	20.00	0	86.2	74-117				12/2/2010 1021h
101 1529-006BMS	1,1,1-Trichloroethane	µg/L	EPA624	21.8	20.00	0	109	67-147				12/2/2010 1021h
101 1529-006BMS	1,1,2,2-Tetrachloroethane	µg/L	EPA624	16.0	20.00	0	80.2	67-119				12/2/2010 1021h
101 1529-006BMS	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/L	EPA624	24.2	20.00	0	121	21-206				12/2/2010 1021h
101 1529-006BMS	1,1,2-Trichloroethane	µg/L	EPA624	17.3	20.00	0	86.3	80-123				12/2/2010 1021h
101 1529-006BMS	1,1-Dichloropropene	µg/L	EPA624	46.1	40.00	0	115	10-140				12/2/2010 1021h
101 1529-006BMS	1,1-Dichloroethane	µg/L	EPA624	20.3	20.00	0	101	70-130				12/2/2010 1021h
101 1529-006BMS	1,1-Dichloroethene	µg/L	EPA624	24.8	20.00	0	124	62-152				12/2/2010 1021h
101 1529-006BMS	1,2,3-Trichlorobenzene	µg/L	EPA624	15.8	20.00	0	78.9	67-131				12/2/2010 1021h
101 1529-006BMS	1,2,3-Trichloropropane	µg/L	EPA624	17.1	20.00	0	85.4	62-116				12/2/2010 1021h
101 1529-006BMS	1,2,3-Trimethylbenzene	µg/L	EPA624	18.7	20.00	0	93.5	76-140				12/2/2010 1021h
101 1529-006BMS	1,2,4-Trichlorobenzene	µg/L	EPA624	15.3	20.00	0	76.4	58-133				12/2/2010 1021h
101 1529-006BMS	1,2,4-Trimethylbenzene	µg/L	EPA624	17.6	20.00	0	87.8	79-151				12/2/2010 1021h
101 1529-006BMS	1,2-Dibromo-3-chloropropane	µg/L	EPA624	15.8	20.00	0	79.2	64-129				12/2/2010 1021h
101 1529-006BMS	1,2-Dibromoethane	µg/L	EPA624	17.3	20.00	0	86.4	70-126				12/2/2010 1021h
101 1529-006BMS	1,2-Dichlorobenzene	µg/L	EPA624	17.5	20.00	0	87.4	70-130				12/2/2010 1021h
101 1529-006BMS	1,2-Dichloroethane	µg/L	EPA624	20.5	20.00	0	102	39-162				12/2/2010 1021h
101 1529-006BMS	1,2-Dichloropropane	µg/L	EPA624	18.6	20.00	0	93.0	59-135				12/2/2010 1021h
101 1529-006BMS	1,3,5-Trimethylbenzene	µg/L	EPA624	17.9	20.00	0	89.6	77-151				12/2/2010 1021h
101 1529-006BMS	1,3-Dichlorobenzene	µg/L	EPA624	17.3	20.00	0	86.7	78-134				12/2/2010 1021h
101 1529-006BMS	1,3-Dichloropropane	µg/L	EPA624	17.1	20.00	0	85.7	78-116				12/2/2010 1021h
101 1529-006BMS	1,4-Dichlorobenzene	µg/L	EPA624	16.6	20.00	0	83.1	72-139				12/2/2010 1021h
101 1529-006BMS	1,4-Dioxane	µg/L	EPA624	179	200.0	0	89.5	33-149				12/2/2010 1021h
101 1529-006BMS	2,2-Dichloropropane	µg/L	EPA624	21.2	30.00	0	70.5	13-180				12/2/2010 1021h

Report Date: 12/6/2010 Page 146 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMS	2-Butanone	µg/L	EPA624	26.4	20.00	0	132	10-217				12/2/2010 1021h
1011529-006BMS	2-Chloroethyl vinyl ether	µg/L	EPA624	< 5.00	40.00	0	0	32-163			¹	12/2/2010 1021h
1011529-006BMS	2-Chlorotoluene	µg/L	EPA624	17.2	20.00	0	86.0	79-142				12/2/2010 1021h
1011529-006BMS	2-Hexanone	µg/L	EPA624	16.0	20.00	0	79.8	50-156				12/2/2010 1021h
1011529-006BMS	2-Nitropropane	µg/L	EPA624	18.3	20.00	0	91.4	10-243				12/2/2010 1021h
1011529-006BMS	4-Chlorotoluene	µg/L	EPA624	17.5	20.00	0	87.4	68-128				12/2/2010 1021h
1011529-006BMS	4-Isopropyltoluene	µg/L	EPA624	17.2	20.00	0	85.9	73-156				12/2/2010 1021h
1011529-006BMS	4-Methyl-2-pentanone	µg/L	EPA624	17.2	20.00	0	86.1	10-214				12/2/2010 1021h
1011529-006BMS	Acetone	µg/L	EPA624	12.8	20.00	0	64.1	10-313				12/2/2010 1021h
1011529-006BMS	Acetonitrile	µg/L	EPA624	38.1	40.00	0	95.2	37-159				12/2/2010 1021h
1011529-006BMS	Acrolein	µg/L	EPA624	63.8	40.00	0	160	10-325				12/2/2010 1021h
1011529-006BMS	Acrylonitrile	µg/L	EPA624	17.4	20.00	0	86.9	53-134				12/2/2010 1021h
1011529-006BMS	Allyl chloride	µg/L	EPA624	19.4	20.00	0	97.2	10-243				12/2/2010 1021h
1011529-006BMS	Benzene	µg/L	EPA624	21.2	20.00	0	106	66-145				12/2/2010 1021h
1011529-006BMS	Benzyl chloride	µg/L	EPA624	16.8	20.00	0	84.0	40-146				12/2/2010 1021h
1011529-006BMS	Bis(2-chloroisopropyl) ether	µg/L	EPA624	16.9	20.00	0	84.5	54-146				12/2/2010 1021h
1011529-006BMS	Bromobenzene	µg/L	EPA624	16.7	20.00	0	83.6	78-148				12/2/2010 1021h
1011529-006BMS	Bromochloromethane	µg/L	EPA624	19.5	20.00	0	97.3	75-134				12/2/2010 1021h
1011529-006BMS	Bromodichloromethane	µg/L	EPA624	19.3	20.00	0	96.6	74-121				12/2/2010 1021h
1011529-006BMS	Bromoform	µg/L	EPA624	16.6	20.00	0	82.8	68-131				12/2/2010 1021h
1011529-006BMS	Bromomethane	µg/L	EPA624	13.5	20.00	0	67.4	10-185				12/2/2010 1021h
1011529-006BMS	Butyl acetate	µg/L	EPA624	17.6	20.00	0	87.8	46-178				12/2/2010 1021h
1011529-006BMS	Carbon disulfide	µg/L	EPA624	32.9	20.00	0	164	21-224				12/2/2010 1021h
1011529-006BMS	Carbon tetrachloride	µg/L	EPA624	23.0	20.00	0	115	60-157				12/2/2010 1021h

Report Date: 12/6/2010 Page 147 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMS	Chlorobenzene	µg/L	EPA624	17.6	20.00	0	88.2	63-140				12/2/2010 1021h
1011529-006BMS	Chloroethane	µg/L	EPA624	19.3	20.00	0	96.4	41-173				12/2/2010 1021h
1011529-006BMS	Chloroform	µg/L	EPA624	19.9	20.00	0	99.4	50-146				12/2/2010 1021h
1011529-006BMS	Chloromethane	µg/L	EPA624	16.0	20.00	0	80.2	10-138				12/2/2010 1021h
1011529-006BMS	Chloroprene	µg/L	EPA624	21.3	20.00	0	107	10-161				12/2/2010 1021h
1011529-006BMS	cis-1,2-Dichloroethene	µg/L	EPA624	19.7	20.00	0	98.3	72-137				12/2/2010 1021h
1011529-006BMS	cis-1,3-Dichloropropene	µg/L	EPA624	19.0	40.00	0	47.4	10-134				12/2/2010 1021h
1011529-006BMS	Cyclohexane	µg/L	EPA624	25.3	20.00	0	127	35-230				12/2/2010 1021h
1011529-006BMS	Cyclohexanone	µg/L	EPA624	< 50.0	40.00	0	50.9	10-374				12/2/2010 1021h
1011529-006BMS	Dibromochloromethane	µg/L	EPA624	17.0	20.00	0	85.0	68-135				12/2/2010 1021h
1011529-006BMS	Dibromomethane	µg/L	EPA624	18.6	20.00	0	93.0	74-120				12/2/2010 1021h
1011529-006BMS	Dichlorodifluoromethane	µg/L	EPA624	15.2	20.00	0	76.1	10-150				12/2/2010 1021h
1011529-006BMS	Ethyl acetate	µg/L	EPA624	39.6	40.00	0	99.0	50-155				12/2/2010 1021h
1011529-006BMS	Ethyl ether	µg/L	EPA624	20.2	20.00	0	101	45-146				12/2/2010 1021h
1011529-006BMS	Ethyl methacrylate	µg/L	EPA624	16.4	20.00	0	82.2	77-151				12/2/2010 1021h
1011529-006BMS	Ethylbenzene	µg/L	EPA624	18.2	20.00	0	90.8	69-133				12/2/2010 1021h
1011529-006BMS	Hexachlorobutadiene	µg/L	EPA624	15.8	20.00	0	79.0	35-213				12/2/2010 1021h
1011529-006BMS	Iodomethane	µg/L	EPA624	17.5	20.00	0	87.7	10-233				12/2/2010 1021h
1011529-006BMS	Isobutyl alcohol	µg/L	EPA624	< 100	80.00	0	97.6	12-202				12/2/2010 1021h
1011529-006BMS	Isopropyl acetate	µg/L	EPA624	19.2	20.00	0	96.1	55-145				12/2/2010 1021h
1011529-006BMS	Isopropyl alcohol	µg/L	EPA624	62.1	80.00	0	77.6	12-250				12/2/2010 1021h
1011529-006BMS	Isopropylbenzene	µg/L	EPA624	18.0	20.00	0	90.2	60-147				12/2/2010 1021h
1011529-006BMS	Isopropyltoluene	µg/L	EPA624	17.2	20.00	0	85.9	73-156				12/2/2010 1021h
1011529-006BMS	m,p-Xylene	µg/L	EPA624	37.4	40.00	0	93.5	70-130				12/2/2010 1021h

Report Date: 12/6/2010 Page 148 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMS	Methacrylonitrile	µg/L	EPA624	16.8	20.00	0	83.8	79-123				12/2/2010 1021h
1011529-006BMS	Methyl Acetate	µg/L	EPA624	28.9	20.00	0	145	5-398				12/2/2010 1021h
1011529-006BMS	Methyl methacrylate	µg/L	EPA624	16.7	20.00	0	83.6	55-128				12/2/2010 1021h
1011529-006BMS	Methyl tert-butyl ether	µg/L	EPA624	18.6	20.00	0	93.0	37-189				12/2/2010 1021h
1011529-006BMS	Methylcyclohexane	µg/L	EPA624	25.0	20.00	0	125	65-175				12/2/2010 1021h
1011529-006BMS	Methylene chloride	µg/L	EPA624	14.2	20.00	0	71.1	55-138				12/2/2010 1021h
1011529-006BMS	n-Amyl acetate	µg/L	EPA624	11.3	20.00	0	56.6	10-187				12/2/2010 1021h
1011529-006BMS	Naphthalene	µg/L	EPA624	16.1	20.00	0	80.5	41-131				12/2/2010 1021h
1011529-006BMS	n-Butyl alcohol	µg/L	EPA624	60.3	80.00	0	75.4	10-226				12/2/2010 1021h
1011529-006BMS	n-Butylbenzene	µg/L	EPA624	16.8	20.00	0	83.8	40-158				12/2/2010 1021h
1011529-006BMS	n-Hexane	µg/L	EPA624	24.5	20.00	0	122	10-277				12/2/2010 1021h
1011529-006BMS	n-Octane	µg/L	EPA624	16.8	20.00	0	84.1	45-158				12/2/2010 1021h
1011529-006BMS	n-Propylbenzene	µg/L	EPA624	17.7	20.00	0	88.3	67-131				12/2/2010 1021h
1011529-006BMS	o-Xylene	µg/L	EPA624	17.8	20.00	0	89.0	70-130				12/2/2010 1021h
1011529-006BMS	Pentachloroethane	µg/L	EPA624	12.2	20.00	0	60.8	10-314				12/2/2010 1021h
1011529-006BMS	Propionitrile	µg/L	EPA624	< 25.0	20.00	0	81.3	60-132				12/2/2010 1021h
1011529-006BMS	Propyl acetate	µg/L	EPA624	18.5	20.00	0	92.4	48-143				12/2/2010 1021h
1011529-006BMS	sec-Butylbenzene	µg/L	EPA624	18.2	20.00	0	91.2	72-157				12/2/2010 1021h
1011529-006BMS	Styrene	µg/L	EPA624	17.2	20.00	0	85.8	81-125				12/2/2010 1021h
1011529-006BMS	tert-Butyl alcohol	µg/L	EPA624	37.6	40.00	0	94.0	50-286				12/2/2010 1021h
1011529-006BMS	tert-Butylbenzene	µg/L	EPA624	17.5	20.00	0	87.3	75-157				12/2/2010 1021h
1011529-006BMS	Tetrachloroethene	µg/L	EPA624	22.3	20.00	0	111	49-163				12/2/2010 1021h
1011529-006BMS	Tetrahydrofuran	µg/L	EPA624	16.6	20.00	0	83.2	43-146				12/2/2010 1021h
1011529-006BMS	Toluene	µg/L	EPA624	18.6	20.00	0	92.9	18-192				12/2/2010 1021h

Report Date: 12/6/2010 Page 149 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMS	trans-1,2-Dichloroethene	µg/L	EPA624	19.6	20.00	0	98.0	47-146				12/2/2010 1021h
1011529-006BMS	trans-1,3-Dichloropropene	µg/L	EPA624	19.1	20.00	0	95.6	29-143				12/2/2010 1021h
1011529-006BMS	trans-1,4-Dichloro-2-butene	µg/L	EPA624	19.0	20.00	0	95.1	20-214				12/2/2010 1021h
1011529-006BMS	Trichloroethene	µg/L	EPA624	21.0	20.00	0	105	61-153				12/2/2010 1021h
1011529-006BMS	Trichlorofluoromethane	µg/L	EPA624	20.2	20.00	0	101	56-166				12/2/2010 1021h
1011529-006BMS	Vinyl acetate	µg/L	EPA624	26.8	40.00	0	67.0	38-121				12/2/2010 1021h
1011529-006BMS	Vinyl chloride	µg/L	EPA624	18.1	20.00	0	90.6	13-155				12/2/2010 1021h
1011529-006BMS	Xylenes, Total	µg/L	EPA624	55.2	60.00	0	92.0	42-167				12/2/2010 1021h
1011529-006BMS	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	56.2	50.00		112	77-144				12/2/2010 1021h
1011529-006BMS	Surr: 4-Bromofluorobenzene	%REC	EPA624	47.8	50.00		95.7	80-123				12/2/2010 1021h
1011529-006BMS	Surr: Dibromofluoromethane	%REC	EPA624	52.4	50.00		105	80-124				12/2/2010 1021h
1011529-006BMS	Surr: Toluene-d8	%REC	EPA624	47.0	50.00		94.0	80-125				12/2/2010 1021h

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



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
101 1529-006BMSD	1,1,1,2-Tetrachloroethane	µg/L	EPA624	18.5	20.00	0	92.5	74-117	6.94	25		12/2/2010 1040h
101 1529-006BMSD	1,1,1-Trichloroethane	µg/L	EPA624	23.3	20.00	0	116	67-147	6.65	25		12/2/2010 1040h
101 1529-006BMSD	1,1,2,2-Tetrachloroethane	µg/L	EPA624	17.0	20.00	0	85.0	67-119	5.81	25		12/2/2010 1040h
101 1529-006BMSD	1,1,2-Trichloro-1,2,2-trifluoroetha	µg/L	EPA624	24.5	20.00	0	123	21-206	1.27	25		12/2/2010 1040h
101 1529-006BMSD	1,1,2-Trichloroethane	µg/L	EPA624	18.0	20.00	0	90.2	80-123	4.36	25		12/2/2010 1040h
101 1529-006BMSD	1,1-Dichloropropene	µg/L	EPA624	48.1	40.00	0	120	10-140	4.18	25		12/2/2010 1040h
101 1529-006BMSD	1,1-Dichloroethane	µg/L	EPA624	21.5	20.00	0	108	70-130	5.98	25		12/2/2010 1040h
101 1529-006BMSD	1,1-Dichloroethene	µg/L	EPA624	26.1	20.00	0	131	62-152	5.27	25		12/2/2010 1040h
101 1529-006BMSD	1,2,3-Trichlorobenzene	µg/L	EPA624	16.7	20.00	0	83.7	67-131	5.90	25		12/2/2010 1040h
101 1529-006BMSD	1,2,3-Trichloropropane	µg/L	EPA624	18.0	20.00	0	89.8	62-116	4.97	25		12/2/2010 1040h
101 1529-006BMSD	1,2,3-Trimethylbenzene	µg/L	EPA624	19.3	20.00	0	96.5	76-140	3.21	25		12/2/2010 1040h
101 1529-006BMSD	1,2,4-Trichlorobenzene	µg/L	EPA624	15.5	20.00	0	77.3	58-133	1.24	25		12/2/2010 1040h
101 1529-006BMSD	1,2,4-Trimethylbenzene	µg/L	EPA624	18.6	20.00	0	93.0	79-151	5.81	25		12/2/2010 1040h
101 1529-006BMSD	1,2-Dibromo-3-chloropropane	µg/L	EPA624	16.5	20.00	0	82.4	64-129	3.90	25		12/2/2010 1040h
101 1529-006BMSD	1,2-Dibromoethane	µg/L	EPA624	18.6	20.00	0	93.3	70-126	7.63	25		12/2/2010 1040h
101 1529-006BMSD	1,2-Dichlorobenzene	µg/L	EPA624	18.1	20.00	0	90.7	70-130	3.76	25		12/2/2010 1040h
101 1529-006BMSD	1,2-Dichloroethane	µg/L	EPA624	21.5	20.00	0	107	39-162	4.72	25		12/2/2010 1040h
101 1529-006BMSD	1,2-Dichloropropane	µg/L	EPA624	19.1	20.00	0	95.7	59-135	2.86	25		12/2/2010 1040h
101 1529-006BMSD	1,3,5-Trimethylbenzene	µg/L	EPA624	18.7	20.00	0	93.6	77-151	4.42	25		12/2/2010 1040h
101 1529-006BMSD	1,3-Dichlorobenzene	µg/L	EPA624	18.0	20.00	0	90.0	78-134	3.79	25		12/2/2010 1040h
101 1529-006BMSD	1,3-Dichloropropane	µg/L	EPA624	18.5	20.00	0	92.5	78-116	7.64	25		12/2/2010 1040h
101 1529-006BMSD	1,4-Dichlorobenzene	µg/L	EPA624	17.5	20.00	0	87.5	72-139	5.10	25		12/2/2010 1040h
101 1529-006BMSD	1,4-Dioxane	µg/L	EPA624	156	200.0	0	78.2	33-149	13.4	25		12/2/2010 1040h
101 1529-006BMSD	2,2-Dichloropropane	µg/L	EPA624	22.4	30.00	0	74.5	13-180	5.56	25		12/2/2010 1040h

Report Date: 12/6/2010 Page 151 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT**Client:** Utah DEQ DERR**Lab Set ID:** 1011529**Project:** Red Butte**Contact:** Jim Harris**Dept:** MSVOA**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMSD	2-Butanone	µg/L	EPA624	27.3	20.00	0	137	10-217	3.65	25		12/2/2010 1040h
1011529-006BMSD	2-Chloroethyl vinyl ether	µg/L	EPA624	< 5.00	40.00	0	0	32-163	0	25	¹	12/2/2010 1040h
1011529-006BMSD	2-Chlorotoluene	µg/L	EPA624	18.5	20.00	0	92.6	79-142	7.45	25		12/2/2010 1040h
1011529-006BMSD	2-Hexanone	µg/L	EPA624	17.0	20.00	0	85.0	50-156	6.37	25		12/2/2010 1040h
1011529-006BMSD	2-Nitropropane	µg/L	EPA624	19.8	20.00	0	99.0	10-243	8.09	25		12/2/2010 1040h
1011529-006BMSD	4-Chlorotoluene	µg/L	EPA624	18.3	20.00	0	91.7	68-128	4.80	25		12/2/2010 1040h
1011529-006BMSD	4-Isopropyltoluene	µg/L	EPA624	17.6	20.00	0	88.1	73-156	2.59	25		12/2/2010 1040h
1011529-006BMSD	4-Methyl-2-pentanone	µg/L	EPA624	18.1	20.00	0	90.4	10-214	4.82	25		12/2/2010 1040h
1011529-006BMSD	Acetone	µg/L	EPA624	13.2	20.00	0	66.2	10-313	3.30	25		12/2/2010 1040h
1011529-006BMSD	Acetonitrile	µg/L	EPA624	37.9	40.00	0	94.7	37-159	0.474	25		12/2/2010 1040h
1011529-006BMSD	Acrolein	µg/L	EPA624	68.0	40.00	0	170	10-325	6.36	25		12/2/2010 1040h
1011529-006BMSD	Acrylonitrile	µg/L	EPA624	19.5	20.00	0	97.5	53-134	11.4	25		12/2/2010 1040h
1011529-006BMSD	Allyl chloride	µg/L	EPA624	20.3	20.00	0	101	10-243	4.23	25		12/2/2010 1040h
1011529-006BMSD	Benzene	µg/L	EPA624	22.0	20.00	0	110	66-145	3.65	25		12/2/2010 1040h
1011529-006BMSD	Benzyl chloride	µg/L	EPA624	17.3	20.00	0	86.7	40-146	3.22	25		12/2/2010 1040h
1011529-006BMSD	Bis(2-chloroisopropyl) ether	µg/L	EPA624	17.7	20.00	0	88.6	54-146	4.79	25		12/2/2010 1040h
1011529-006BMSD	Bromobenzene	µg/L	EPA624	17.5	20.00	0	87.7	78-148	4.73	25		12/2/2010 1040h
1011529-006BMSD	Bromochloromethane	µg/L	EPA624	20.4	20.00	0	102	75-134	4.72	25		12/2/2010 1040h
1011529-006BMSD	Bromodichloromethane	µg/L	EPA624	19.6	20.00	0	98.2	74-121	1.64	25		12/2/2010 1040h
1011529-006BMSD	Bromoform	µg/L	EPA624	17.5	20.00	0	87.4	68-131	5.41	25		12/2/2010 1040h
1011529-006BMSD	Bromomethane	µg/L	EPA624	15.6	20.00	0	77.8	10-185	14.3	25		12/2/2010 1040h
1011529-006BMSD	Butyl acetate	µg/L	EPA624	18.5	20.00	0	92.4	46-178	5.11	25		12/2/2010 1040h
1011529-006BMSD	Carbon disulfide	µg/L	EPA624	34.6	20.00	0	173	21-224	5.10	25		12/2/2010 1040h
1011529-006BMSD	Carbon tetrachloride	µg/L	EPA624	23.8	20.00	0	119	60-157	3.59	25		12/2/2010 1040h

Report Date: 12/6/2010 Page 152 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

Contact: Jim Harris
Dept: MSVOA
QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMSD	Chlorobenzene	µg/L	EPA624	18.3	20.00	0	91.5	63-140	3.67	25		12/2/2010 1040h
1011529-006BMSD	Chloroethane	µg/L	EPA624	20.1	20.00	0	100	41-173	4.02	25		12/2/2010 1040h
1011529-006BMSD	Chloroform	µg/L	EPA624	20.8	20.00	0	104	50-146	4.38	25		12/2/2010 1040h
1011529-006BMSD	Chloromethane	µg/L	EPA624	16.3	20.00	0	81.7	10-138	1.79	25		12/2/2010 1040h
1011529-006BMSD	Chloroprene	µg/L	EPA624	22.0	20.00	0	110	10-161	3.00	25		12/2/2010 1040h
1011529-006BMSD	cis-1,2-Dichloroethene	µg/L	EPA624	21.0	20.00	0	105	72-137	6.50	25		12/2/2010 1040h
1011529-006BMSD	cis-1,3-Dichloropropene	µg/L	EPA624	19.8	40.00	0	49.6	10-134	4.59	25		12/2/2010 1040h
1011529-006BMSD	Cyclohexane	µg/L	EPA624	25.7	20.00	0	129	35-230	1.72	25		12/2/2010 1040h
1011529-006BMSD	Cyclohexanone	µg/L	EPA624	< 50.0	40.00	0	45.4	10-374	0	25		12/2/2010 1040h
1011529-006BMSD	Dibromochloromethane	µg/L	EPA624	18.5	20.00	0	92.5	68-135	8.40	25		12/2/2010 1040h
1011529-006BMSD	Dibromomethane	µg/L	EPA624	19.5	20.00	0	97.6	74-120	4.83	25		12/2/2010 1040h
1011529-006BMSD	Dichlorodifluoromethane	µg/L	EPA624	15.7	20.00	0	78.7	10-150	3.36	25		12/2/2010 1040h
1011529-006BMSD	Ethyl acetate	µg/L	EPA624	41.1	40.00	0	103	50-155	3.74	25		12/2/2010 1040h
1011529-006BMSD	Ethyl ether	µg/L	EPA624	21.3	20.00	0	107	45-146	5.59	25		12/2/2010 1040h
1011529-006BMSD	Ethyl methacrylate	µg/L	EPA624	17.1	20.00	0	85.4	77-151	3.88	25		12/2/2010 1040h
1011529-006BMSD	Ethylbenzene	µg/L	EPA624	19.1	20.00	0	95.4	69-133	5.05	25		12/2/2010 1040h
1011529-006BMSD	Hexachlorobutadiene	µg/L	EPA624	15.9	20.00	0	79.6	35-213	0.631	25		12/2/2010 1040h
1011529-006BMSD	Iodomethane	µg/L	EPA624	18.2	20.00	0	91.0	10-233	3.69	25		12/2/2010 1040h
1011529-006BMSD	Isobutyl alcohol	µg/L	EPA624	< 100	80.00	0	73.4	12-202	0	25		12/2/2010 1040h
1011529-006BMSD	Isopropyl acetate	µg/L	EPA624	20.0	20.00	0	100	55-145	4.08	25		12/2/2010 1040h
1011529-006BMSD	Isopropyl alcohol	µg/L	EPA624	52.6	80.00	0	65.8	12-250	16.5	25		12/2/2010 1040h
1011529-006BMSD	Isopropylbenzene	µg/L	EPA624	18.9	20.00	0	94.6	60-147	4.76	25		12/2/2010 1040h
1011529-006BMSD	Isopropyltoluene	µg/L	EPA624	17.6	20.00	0	88.1	73-156	2.59	25		12/2/2010 1040h
1011529-006BMSD	m,p-Xylene	µg/L	EPA624	38.9	40.00	0	97.2	70-130	3.85	25		12/2/2010 1040h

Report Date: 12/6/2010 Page 153 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMSD	Methacrylonitrile	µg/L	EPA624	18.9	20.00	0	94.4	79-123	12.0	25		12/2/2010 1040h
1011529-006BMSD	Methyl Acetate	µg/L	EPA624	25.4	20.00	0	127	5-398	13.0	25		12/2/2010 1040h
1011529-006BMSD	Methyl methacrylate	µg/L	EPA624	17.4	20.00	0	87.1	55-128	3.98	25		12/2/2010 1040h
1011529-006BMSD	Methyl tert-butyl ether	µg/L	EPA624	15.7	20.00	0	78.5	37-189	16.9	25		12/2/2010 1040h
1011529-006BMSD	Methylcyclohexane	µg/L	EPA624	24.2	20.00	0	121	65-175	3.26	25		12/2/2010 1040h
1011529-006BMSD	Methylene chloride	µg/L	EPA624	14.6	20.00	0	73.0	55-138	2.64	25		12/2/2010 1040h
1011529-006BMSD	n-Amyl acetate	µg/L	EPA624	11.8	20.00	0	59.1	10-187	4.41	25		12/2/2010 1040h
1011529-006BMSD	Naphthalene	µg/L	EPA624	17.0	20.00	0	85.2	41-131	5.61	25		12/2/2010 1040h
1011529-006BMSD	n-Butyl alcohol	µg/L	EPA624	61.3	80.00	0	76.6	10-226	1.69	25		12/2/2010 1040h
1011529-006BMSD	n-Butylbenzene	µg/L	EPA624	17.3	20.00	0	86.3	40-158	2.94	25		12/2/2010 1040h
1011529-006BMSD	n-Hexane	µg/L	EPA624	18.1	20.00	0	90.7	10-277	29.8	25	@	12/2/2010 1040h
1011529-006BMSD	n-Octane	µg/L	EPA624	16.2	20.00	0	81.0	45-158	3.82	25		12/2/2010 1040h
1011529-006BMSD	n-Propylbenzene	µg/L	EPA624	18.4	20.00	0	91.8	67-131	3.89	25		12/2/2010 1040h
1011529-006BMSD	o-Xylene	µg/L	EPA624	18.5	20.00	0	92.3	70-130	3.64	25		12/2/2010 1040h
1011529-006BMSD	Pentachloroethane	µg/L	EPA624	13.4	20.00	0	66.8	10-314	9.25	25		12/2/2010 1040h
1011529-006BMSD	Propionitrile	µg/L	EPA624	< 25.0	20.00	0	85.7	60-132	0	25		12/2/2010 1040h
1011529-006BMSD	Propyl acetate	µg/L	EPA624	19.2	20.00	0	96.1	48-143	3.98	25		12/2/2010 1040h
1011529-006BMSD	sec-Butylbenzene	µg/L	EPA624	18.7	20.00	0	93.6	72-157	2.60	25		12/2/2010 1040h
1011529-006BMSD	Styrene	µg/L	EPA624	17.7	20.00	0	88.5	81-125	3.16	25		12/2/2010 1040h
1011529-006BMSD	tert-Butyl alcohol	µg/L	EPA624	35.8	40.00	0	89.5	50-286	4.85	25		12/2/2010 1040h
1011529-006BMSD	tert-Butylbenzene	µg/L	EPA624	18.0	20.00	0	90.0	75-157	2.99	25		12/2/2010 1040h
1011529-006BMSD	Tetrachloroethene	µg/L	EPA624	23.2	20.00	0	116	49-163	3.87	25		12/2/2010 1040h
1011529-006BMSD	Tetrahydrofuran	µg/L	EPA624	18.6	20.00	0	93.1	43-146	11.2	25		12/2/2010 1040h
1011529-006BMSD	Toluene	µg/L	EPA624	19.4	20.00	0	96.9	18-192	4.16	25		12/2/2010 1040h

Report Date: 12/6/2010 Page 154 of 162



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: MSVOA

QC Type: MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1011529-006BMSD	trans-1,2-Dichloroethene	µg/L	EPA624	20.8	20.00	0	104	47-146	6.14	25		12/2/2010 1040h
1011529-006BMSD	trans-1,3-Dichloropropene	µg/L	EPA624	20.0	20.00	0	100	29-143	4.60	25		12/2/2010 1040h
1011529-006BMSD	trans-1,4-Dichloro-2-butene	µg/L	EPA624	19.7	20.00	0	98.6	20-214	3.62	25		12/2/2010 1040h
1011529-006BMSD	Trichloroethene	µg/L	EPA624	21.7	20.00	0	108	61-153	2.95	25		12/2/2010 1040h
1011529-006BMSD	Trichlorofluoromethane	µg/L	EPA624	21.5	20.00	0	107	56-166	5.85	25		12/2/2010 1040h
1011529-006BMSD	Vinyl acetate	µg/L	EPA624	27.8	40.00	0	69.4	38-121	3.63	25		12/2/2010 1040h
1011529-006BMSD	Vinyl chloride	µg/L	EPA624	19.4	20.00	0	96.8	13-155	6.62	25		12/2/2010 1040h
1011529-006BMSD	Xylenes, Total	µg/L	EPA624	57.3	60.00	0	95.6	42-167	3.79	25		12/2/2010 1040h
1011529-006BMSD	Surr: 1,2-Dichloroethane-d4	%REC	EPA624	56.7	50.00		113	77-144				12/2/2010 1040h
1011529-006BMSD	Surr: 4-Bromofluorobenzene	%REC	EPA624	48.9	50.00		97.7	80-123				12/2/2010 1040h
1011529-006BMSD	Surr: Dibromofluoromethane	%REC	EPA624	52.6	50.00		105	80-124				12/2/2010 1040h
1011529-006BMSD	Surr: Toluene-d8	%REC	EPA624	48.0	50.00		95.9	80-125				12/2/2010 1040h

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

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



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

Contact: Jim Harris

Dept: WC

QC Type: DUP

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	% REC	Limits	% RPD	RPD Limit	Qual	Date Analyzed
1012041-001BDUP	Chemical Oxygen Demand	mg/L	HACH 8000	419		449.0		-	6.91	20		12/2/2010 1200h
1012042-001BDUP	Chemical Oxygen Demand	mg/L	HACH 8000	482		477.0		-	1.04	20		12/2/2010 1200h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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-R21077	Chemical Oxygen Demand	mg/L	HACH 8000	306	300.0	0	102	85-115				12/2/2010 1200h
LCS1-R21077	Chemical Oxygen Demand	mg/L	HACH 8000	108	100.0	0	108	85-115				12/2/2010 1200h
LCS2-R21077	Chemical Oxygen Demand	mg/L	HACH 8000	1,050	1,000	0	105	85-115				12/2/2010 1200h
LCS3-R21077	Chemical Oxygen Demand	mg/L	HACH 8000	< 10.0	10.00	0	90.0	85-115				12/2/2010 1200h
LCS-R21036	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	19.1	20.00	2.400	83.5	64-132				12/1/2010 1354h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR
Lab Set ID: 1011529
Project: Red Butte

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-R21077	Chemical Oxygen Demand	mg/L	HACH 8000	< 10.0				-				12/2/2010 1200h
MB-R21036	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	< 3.00				-				12/1/2010 1354h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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
1011529-006CMS	Chemical Oxygen Demand	mg/L	HACH 8000	53.0	50.00	0	106	85-115				12/2/2010 1200h
1012039-003AMS	Chemical Oxygen Demand	mg/L	HACH 8000	55.0	50.00	6.000	98.0	85-115				12/2/2010 1200h
1011529-006AMS	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	20.4	20.00	0	102	64-132				12/1/2010 1354h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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
1011529-006CMSD	Chemical Oxygen Demand	mg/L	HACH 8000	53.0	50.00	0	106	85-115	0	10		12/2/2010 1200h
1012039-003AMSD	Chemical Oxygen Demand	mg/L	HACH 8000	52.0	50.00	6.000	92.0	85-115	5.61	10		12/2/2010 1200h
1011529-006AMSD	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	21.0	20.00	0	105	64-132	2.91	34		12/1/2010 1354h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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-R21036	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	19.5	20.00	2.400	85.5	64-132				12/1/2010 1354h



AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South

Salt Lake City, UT 84115

(801) 263-8686, Toll Free (888) 263-8686, Fax (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

QC SUMMARY REPORT

Client: Utah DEQ DERR

Lab Set ID: 1011529

Project: Red Butte

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-R21036	Total Recoverable Petroleum Hydr	mg/L	E1664A-SG	19.9	20.00	2.400	87.5	64-132	2.03	34		12/1/2010 1354h

REVISED *changed to a RUSH*
 12-2-10

RUSH

WORK ORDER Summary

Work Order: **1011529**

Client: Utah DEQ DERR

Page 1 of 3

Client ID: UTD100

Contact: Jim Harris

12/2/2010

Project: Red Butte

QC Level: LEVEL II+

WO Type: Standard

Comments: No Hard Copies. QC 2+ / Report out TIC's for Semi's - Changed to a RUSH, due tomorrow, except for the ORO. Do the best we can for the ORO.;

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011529-001A	4992095 Red Butte AB Garden	11/30/2010 9:50:00 AM	11/30/2010 3:38:00 PM	12/3/2010	Aqueous	OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-001B				12/3/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-001C				12/3/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-001D				12/3/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-001E				12/3/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/3/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-001F				12/3/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/3/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/3/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-002A	4992085 Red Butte BL Garden	11/30/2010 10:30:00 AM		12/3/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-002B				12/3/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-002C				12/3/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-002D				12/3/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-002E				12/3/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/3/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-002F				12/3/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/3/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/3/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-003A	4992084 Red Butte @ 1500 E.	11/30/2010 12:15:00 PM		12/3/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-003B				12/3/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-003C				12/3/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-003D				12/3/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	

el

WORK ORDER Summary

Work Order: **1011529**

Client: Utah DEQ DERR

Page 2 of 3

Client ID: UTD100

Contact: Jim Harris

12/2/2010

Project: Red Butte

QC Level: LEVEL II+

WO Type: Standard

Comments: No Hard Copies. QC 2+ / Report out TIC's for Semi's - Changed to a RUSH, due tomorrow, except for the ORO. Do the best we can for the ORO.;

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011529-003E	4992084 Red Butte @ 1500 E.	11/30/2010 12:15:00 PM	11/30/2010 3:38:00 PM	12/3/2010	Aqueous	3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-003F				12/3/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/3/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/3/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-004A	4992050 J.R. Below 900 S. Storm Sewer	11/30/2010 2:05:00 PM		12/3/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-004B				12/3/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-004C				12/3/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-004D				12/3/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-004E				12/3/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/3/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-004F				12/3/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/3/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/3/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-005A	4992290 J.R. @ 1700 S.	11/30/2010 2:30:00 PM		12/3/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-005B				12/3/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-005C				12/3/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-005D				12/3/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-005E				12/3/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/3/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-005F				12/3/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/3/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/3/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	

WORK ORDER Summary

Work Order: **1011529**

Client: Utah DEQ DERR

Page 3 of 3

Client ID: UTD100

Contact: Jim Harris

12/2/2010

Project: Red Butte

QC Level: LEVEL II+

WO Type: Standard

Comments: No Hard Copies. QC 2+ / Report out TIC's for Semi's - Changed to a RUSH, due tomorrow, except for the ORO. Do the best we can for the ORO.;

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011529-006A	4992083 Red Butte @ 1100 E.	11/30/2010 1:15:00 PM	11/30/2010 3:38:00 PM	12/3/2010	Aqueous	OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	3
1011529-006B				12/3/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	6
1011529-006C				12/3/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-006D				12/3/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	3
				12/3/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-006E				12/3/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	2
				12/3/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-006F				12/3/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	4
				12/3/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/3/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	

American West Analytical Laboratories

WORK ORDER Summary

Client: Utah DEQ DERR
 Client ID: UTD100
 Project: Red Butte
 Comments: No Hard Copies. QC 2+ / Report out TIC's for Semi's;

Contact: Jim Harris
 QC Level: LEVEL II+

HOKSP
HOL-DB

Work Order: **1011529**
 Page 1 of 3
 11/30/2010
 WO Type: Standard

eh

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011529-001A	4992095 Red Butte AB Garden	11/30/2010 9:50:00 AM	11/30/2010 3:38:00 PM	12/14/2010	Aqueous	OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-001B				12/14/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-001C				12/14/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-001D				12/14/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-001E				12/14/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/14/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-001F				12/14/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/14/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/14/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-002A	4992085 Red Butte BL Garden	11/30/2010 10:30:00 AM		12/14/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-002B				12/14/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-002C				12/14/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-002D				12/14/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-002E				12/14/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/14/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-002F				12/14/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/14/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/14/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-003A	4992084 Red Butte @ 1500 E.	11/30/2010 12:15:00 PM		12/14/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-003B				12/14/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-003C				12/14/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-003D				12/14/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	

WORK ORDER Summary

Client: Utah DEQ DERR
Client ID: UTD100
Project: Red Butte
Comments: No Hard Copies. QC 2+ / Report out TIC's for Semi's;

Contact: Jim Harris
QC Level: LEVEL II+

Work Order: 1011529
 Page 2 of 3
 11/30/2010
WO Type: Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011529-003E	4992084 Red Butte @ 1500 E.	11/30/2010 12:15:00 PM	11/30/2010 3:38:00 PM	12/14/2010	Aqueous	3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-003F				12/14/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/14/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/14/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-004A	4992050 J.R. Below 900 S. Storm Sewer	11/30/2010 2:05:00 PM		12/14/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-004B				12/14/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-004C				12/14/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-004D				12/14/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-004E				12/14/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/14/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-004F				12/14/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/14/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/14/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	
1011529-005A	4992290 J.R. @ 1700 S.	11/30/2010 2:30:00 PM		12/14/2010		OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	1
1011529-005B				12/14/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	3
1011529-005C				12/14/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-005D				12/14/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-005E				12/14/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	
				12/14/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-005F				12/14/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	3
				12/14/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/14/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	

WORK ORDER Summary

Client: Utah DEQ DERR
Client ID: UTD100
Project: Red Butte
Comments: No Hard Copies. QC 2+ / Report out TIC's for Semi's;

Contact: Jim Harris
QC Level: LEVEL II+

Work Order: 1011529
Page 3 of 3
11/30/2010
WO Type: Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1011529-006A	4992083 Red Butte @ 1100 E.	11/30/2010 1:15:00 PM	11/30/2010 3:38:00 PM	12/14/2010	Aqueous	OGF-W-1664SGT	<input type="checkbox"/>	OGFFridge	3
1011529-006B				12/14/2010		624-W	<input checked="" type="checkbox"/>	VOCFridge	6
1011529-006C				12/14/2010		COD-HACH8000	<input type="checkbox"/>	ww - cod	1
1011529-006D				12/14/2010		3510-ORO-PR	<input type="checkbox"/>	Hall-TPH	3
				12/14/2010		8015-W-ORO(1L)	<input type="checkbox"/>	Hall-TPH	
1011529-006E				12/14/2010		3510-TPH-PR	<input type="checkbox"/>	Hall-TPH	2
				12/14/2010		8015-W-TPH(1L)	<input checked="" type="checkbox"/>	Hall-TPH	
1011529-006F				12/14/2010		3510-SVOA-PR	<input type="checkbox"/>	Walkin-Semi	4
				12/14/2010		625-W	<input checked="" type="checkbox"/>	Walkin-Semi	
				12/14/2010		8270-W	<input checked="" type="checkbox"/>	Walkin-Semi	

Client Div. of Water Quality
 Address 195 N 1950 W
SLC UT 84102
City State Zip

Phone 801 536-9360 Fax _____

Contact J. HARRIS

E-mail james.harris@utah.gov

Project Name RED BUTTE

Project Number/P.O.# _____

Sampler Name JAMES HARRIS



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

CHAIN OF CUSTODY
 (801) 263-8686
 (888) 263-8686
 Fax (801) 263-8687
 Email: awal@awal-labs.com

Lab Sample Set # 1011529

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	
				TRPH	VOCs	SVOCs	TICS	OROX	NRGX	GDGX	FRAC	1	2	3		3+
4992095 RED BUTTE AS GARDEN	11/30 0950			X	X	X									1.65 cfs	
4992085 RED BUTTE BL GARDEN	11/30 1030														1.88 cfs	
4992084 Red Butte @ 1500 E	11/30 12:15														1.76 cfs	
4992050 J.R. below 900S. Storm Sewer	11/30 1405														-	
4992290 J.R. at 1700 S.	11/30 1430														-	
4992083 RED BUTTE @ 1100 E	11/30 13:15														1.75 cfs	

LABORATORY USE ONLY	
SAMPLES WERE:	
1 Shipped or hand delivered	Notes: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
2 Ambient or Chilled	Notes: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
3 Temperature <u>0.8</u>	Notes: <input type="checkbox"/> Y <input type="checkbox"/> N
4 Received Broken/Leaking (Improperly Sealed)	Notes: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
5 Properly Preserved	Notes: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
6 Checked at Bench	Notes: <input type="checkbox"/> Y <input type="checkbox"/> N
6 Received Within Holding Times	Notes: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished By: Signature <i>[Signature]</i>	Date 11/30/10	Received By: Signature <i>[Signature]</i>	Date 11/30/10
PRINT NAME JAMES HARRIS	Time 1538	PRINT NAME Elma Hayden	Time 1535
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:
 12-2-10 changed to a
 priority next day due
 12-3-10 except for the
 ORO, client would like
 partial reports
eh

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		<input checked="" type="checkbox"/> N
Notes:		

Sample Set: 1611529

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 ₂ SO ₄																
COD	pH <2 H ₂ SO ₄	✓															
Cyanide	PH >12 NaOH																
Metals	pH <2 HNO ₃																
NO ₂ & NO ₃	pH <2 H ₂ SO ₄																
Nutrients	pH <2 H ₂ SO ₄																
O & G	pH <2 HCL	✓															
Phenols	pH <2 H ₂ SO ₄																
Sulfide	pH > 9NaOH, Zn Acetate																
TKN	pH <2 H ₂ SO ₄																
TOC	pH <2 H ₃ PO ₄																
TOX	pH <2 H ₂ SO ₄																
T PO ₄	pH <2 H ₂ SO ₄																
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