

**Technical Report for**

**KRW Consulting, Inc.**

297-12A

PCU

Accutest Job Number: **D25640**

Sampling Date: 07/18/11

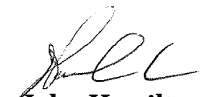
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Total number of pages in report: **75**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.



**John Hamilton**  
Laboratory Director

**Client Service contact: 303-425-6021**

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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## Sample Summary

KRW Consulting, Inc.

Job No: D25640

297-12A  
Project No: PCU

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D25640-1	07/18/11	13:30 CB	07/19/11	SO	Soil	CUTTINGS #1 STOCKPILE
D25640-1A	07/18/11	13:30 CB	07/19/11	SO	Soil	CUTTINGS #1 STOCKPILE
D25640-1B	07/18/11	13:30 CB	07/19/11	SO	Soil	CUTTINGS #1 STOCKPILE

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Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** KRW Consulting, Inc.

**Job No** D25640

**Site:** 297-12A

**Report Dat** 7/27/2011 9:13:34 AM

On 07/19/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D25640 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> SO	<b>Batch ID:</b> V5V978
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D25609-2MS, D25609-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The RPD(s) for the MS and MSD recoveries of Benzene are outside control limits for sample D25609-2MSD. Probable cause due to sample homogeneity.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP4110
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25640-1AMS, D25640-1AMSD were used as the QC samples indicated.
- The matrix spike and matrix spike duplicate (MS/MSD) recovery(s) of multiple analytes are outside control limits. Outside control limits due to dilution.
- The RPD(s) for the MS and MSD recoveries of Chrysene, Fluoranthene, Fluorene, Naphthalene, Pyrene are outside control limits for sample OP4110-MSD. Probable cause due to sample homogeneity.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGB684
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D25646-1MS, D25646-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP4105
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D25640-1MS, D25640-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

## Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP5294

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25640-1BMS, D25640-1BMSD were used as the QC samples for the metals analysis.

**Matrix** SO

**Batch ID:** MP5275

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25640-1AMS, D25640-1AMSD, D25640-1ASDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Nickel, Zinc are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike duplicate (MSD) recovery(s) of Cadmium, Chromium, Lead, Nickel, Zinc are outside control limits. Probable cause due to matrix interference.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The RPD(s) for the MS and MSD recoveries of Barium are outside control limits for sample MP5275-S2. High RPD due to possible sample nonhomogeneity.
- The serial dilution RPD(s) for Selenium, Silver are outside control limits for sample MP5275-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- The serial dilution RPD(s) for Chromium, Nickel, Zinc are outside control limits for sample MP5275-SD1. Serial dilution indicates possible matrix interference.

## Metals By Method SW846 6020

**Matrix** SO

**Batch ID:** MP5276

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25640-1AMS, D25640-1AMSD, D25640-1ASDL were used as the QC samples for the metals analysis.

## Metals By Method SW846 7471A

**Matrix** SO

**Batch ID:** MP5274

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25629-1MS, D25629-1MSD were used as the QC samples for the metals analysis.

## Wet Chemistry By Method ASTM D1498-76M

**Matrix** SO

**Batch ID:** GN10626

- Sample(s) D25640-1ADUP were used as the QC samples for the Redox Potential Vs H2 analysis.

## Wet Chemistry By Method SM19 2540B M

**Matrix** SO

**Batch ID:** GN10614

- The data for SM19 2540B M meets quality control requirements.

## Wet Chemistry By Method SW846 3060/7196A M

**Matrix** SO

**Batch ID:** R8625

- The data for SW846 3060/7196A M meets quality control requirements.
- D25640-1A for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

## Wet Chemistry By Method SW846 3060A/7196A

**Matrix** SO

**Batch ID:** M:GP13276

- The data for SW846 3060A/7196A meets quality control requirements.
- D25640-1A for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Accutest Mountain States

**Job No** D25640

**Site:** KRWCCOL: 297-12A

**Report Date** 7/26/2011 5:07:02 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 07/18/2011 and were received at Accutest on 07/19/2011 properly preserved, at 1.2 Deg. C and intact. These Samples received an Accutest job number of D25640. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Wet Chemistry By Method SW846 3060A/7196A

**Matrix** SO

**Batch ID:** GP13276

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25741-1DUP, D25741-1MS were used as the QC samples for Chromium, Hexavalent.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D25640).

Sample Results

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Report of Analysis

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## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
<b>Method:</b> SW846 8015B	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB11894.D	1	07/20/11	SK	n/a	n/a	GGB684
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	17	8.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	76%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
<b>Method:</b> SW846-8015B SW846 3546	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD07993.D	1	07/21/11	CS	07/20/11	OP4105	GFD354
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	164	18	12	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	65%		61-142%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

32  
3

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1A	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V16609.D	1	07/19/11	BR	n/a	n/a	V5V978
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

**Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	85	37	ug/kg	
108-88-3	Toluene	ND	170	85	ug/kg	
100-41-4	Ethylbenzene	ND	170	42	ug/kg	
1330-20-7	Xylene (total)	ND	340	170	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	93%		61-130%
460-00-4	4-Bromofluorobenzene	94%		53-131%
17060-07-0	1,2-Dichloroethane-D4	110%		62-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

32  
3

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1A	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
<b>Method:</b> SW846 8270C BY SIM SW846 3546	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G05147.D	10	07/20/11	TMB	07/20/11	OP4110	E3G189
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

**COGCC Table 910-1 PAH List**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	90	72	ug/kg	
120-12-7	Anthracene	ND	90	81	ug/kg	
56-55-3	Benzo(a)anthracene	ND	230	120	ug/kg	
50-32-8	Benzo(a)pyrene	ND	230	160	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	230	170	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	230	99	ug/kg	
218-01-9	Chrysene	ND	230	99	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	230	170	ug/kg	
206-44-0	Fluoranthene	ND	90	90	ug/kg	
86-73-7	Fluorene	ND	90	77	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	270	250	ug/kg	
91-20-3	Naphthalene	182	90	86	ug/kg	
129-00-0	Pyrene	ND	90	86	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	33%		10-145%
321-60-8	2-Fluorobiphenyl	34%		10-130%
1718-51-0	Terphenyl-d14	63%		22-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

32  
3

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1A	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	8.6	0.54	mg/kg	5	07/20/11	07/20/11 GJ	SW846 6020 <sup>3</sup>	SW846 3050B <sup>7</sup>
Barium	3740	6.7	mg/kg	5	07/20/11	07/21/11 JM	SW846 6010B <sup>4</sup>	SW846 3050B <sup>6</sup>
Cadmium	2.0	1.3	mg/kg	1	07/20/11	07/20/11 JY	SW846 6010B <sup>2</sup>	SW846 3050B <sup>6</sup>
Chromium	22.7	1.3	mg/kg	1	07/20/11	07/20/11 JY	SW846 6010B <sup>2</sup>	SW846 3050B <sup>6</sup>
Copper	25.1	1.3	mg/kg	1	07/20/11	07/21/11 JM	SW846 6010B <sup>4</sup>	SW846 3050B <sup>6</sup>
Lead	19.3	6.7	mg/kg	1	07/20/11	07/20/11 JY	SW846 6010B <sup>2</sup>	SW846 3050B <sup>6</sup>
Mercury	< 0.13	0.13	mg/kg	1	07/20/11	07/20/11 JY	SW846 7471A <sup>1</sup>	SW846 7471A <sup>5</sup>
Nickel	16.9	4.0	mg/kg	1	07/20/11	07/20/11 JY	SW846 6010B <sup>2</sup>	SW846 3050B <sup>6</sup>
Selenium	< 34	34	mg/kg	5	07/20/11	07/21/11 JM	SW846 6010B <sup>4</sup>	SW846 3050B <sup>6</sup>
Silver	< 4.0	4.0	mg/kg	1	07/20/11	07/20/11 JY	SW846 6010B <sup>2</sup>	SW846 3050B <sup>6</sup>
Zinc	43.2	4.0	mg/kg	1	07/20/11	07/20/11 JY	SW846 6010B <sup>2</sup>	SW846 3050B <sup>6</sup>

- (1) Instrument QC Batch: MA1689
- (2) Instrument QC Batch: MA1690
- (3) Instrument QC Batch: MA1691
- (4) Instrument QC Batch: MA1694
- (5) Prep QC Batch: MP5274
- (6) Prep QC Batch: MP5275
- (7) Prep QC Batch: MP5276

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1A	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	< 0.53	0.53	mg/kg	1	07/26/11 16:07	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	22.3	1.8	mg/kg	1	07/26/11 16:07	AMA	SW846 3060/7196A M
Redox Potential Vs H2	397		mv	1	07/20/11 11:30	JK	ASTM D1498-76M
Specific Conductivity	3250	1.0	umhos/cm	1	07/21/11	JD	DEPT. OF AG, BOOK N9
pH	9.38		su	1	07/19/11 15:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	
<b>Lab Sample ID:</b> D25640-1B	<b>Date Sampled:</b> 07/18/11
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 07/19/11
<b>Project:</b> 297-12A	<b>Percent Solids:</b> 73.7

### SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	233	2.0	mg/l	1	07/20/11	07/21/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Magnesium	29.0	1.0	mg/l	1	07/20/11	07/21/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Sodium	579	2.0	mg/l	1	07/20/11	07/21/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>

(1) Instrument QC Batch: MA1694

(2) Prep QC Batch: MP5294

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> CUTTINGS #1 STOCKPILE	<b>Date Sampled:</b> 07/18/11
<b>Lab Sample ID:</b> D25640-1B	<b>Date Received:</b> 07/19/11
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 73.7
<b>Project:</b> 297-12A	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	9.51		ratio	1	07/21/11 14:04	JM	USDA HANDBOOK 60

(a) Calculated as:  $(Na \text{ meq/L}) / \sqrt{[(Ca \text{ meq/L}) + (Mg \text{ meq/L})/2]}$

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RL = Reporting Limit

## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D25640

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 7/19/2011 12:40:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: PCU 297-12A

Airbill #'s: CO

<u>Cooler Security</u>	<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

<u>Quality Control Preservation</u>	<u>Y or N</u>		<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	Intact	

<u>Sample Integrity - Instructions</u>	<u>Y or N</u>		<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

4.1  
4

## GC/MS Volatiles

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5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V978-MB	5V16594.D	1	07/19/11	BR	n/a	n/a	V5V978

The QC reported here applies to the following samples:

Method: SW846 8260B

D25640-1A

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.44	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/kg	
108-88-3	Toluene	ND	2.0	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	4.0	2.0	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
2037-26-5	Toluene-D8	110%	61-130%
460-00-4	4-Bromofluorobenzene	105%	53-131%
17060-07-0	1,2-Dichloroethane-D4	118%	62-130%

# Blank Spike Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V978-BS	5V16595.D	1	07/19/11	BR	n/a	n/a	V5V978

The QC reported here applies to the following samples:

Method: SW846 8260B

D25640-1A

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	58.4	117	70-130
100-41-4	Ethylbenzene	50	55.2	110	70-130
108-88-3	Toluene	50	54.1	108	70-130
1330-20-7	Xylene (total)	100	113	113	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	102%	61-130%
460-00-4	4-Bromofluorobenzene	113%	53-131%
17060-07-0	1,2-Dichloroethane-D4	122%	62-130%

# Blank Spike Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V978-BS	5V16596.D	1	07/19/11	BR	n/a	n/a	V5V978

The QC reported here applies to the following samples:

Method: SW846 8260B

D25640-1A

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	102%	61-130%
460-00-4	4-Bromofluorobenzene	102%	53-131%
17060-07-0	1,2-Dichloroethane-D4	109%	62-130%

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D25609-2MS	5V16599.D	1	07/19/11	BR	n/a	n/a	V5V978
D25609-2MSD	5V16600.D	1	07/19/11	BR	n/a	n/a	V5V978
D25609-2	5V16598.D	1	07/19/11	BR	n/a	n/a	V5V978

The QC reported here applies to the following samples:

Method: SW846 8260B

D25640-1A

CAS No.	Compound	D25609-2 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	3320	3820	115	4030	121	200*	70-134/30
100-41-4	Ethylbenzene	ND	3320	3600	108	3780	114	5	70-137/30
108-88-3	Toluene	72.4	J 3320	3560	105	3740	110	5	70-130/30
1330-20-7	Xylene (total)	ND	6650	7330	110	7720	116	5	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D25609-2	Limits
2037-26-5	Toluene-D8	100%	96%	94%	61-130%
460-00-4	4-Bromofluorobenzene	111%	108%	93%	53-131%
17060-07-0	1,2-Dichloroethane-D4	113%	114%	111%	62-130%

5.3.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D25609-2MS	5V16601.D	1	07/19/11	BR	n/a	n/a	V5V978
D25609-2MSD	5V16602.D	1	07/19/11	BR	n/a	n/a	V5V978
D25609-2	5V16598.D	1	07/19/11	BR	n/a	n/a	V5V978

The QC reported here applies to the following samples:

Method: SW846 8260B

D25640-1A

CAS No.	Compound	D25609-2 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
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CAS No.	Surrogate Recoveries	MS	MSD	D25609-2	Limits
2037-26-5	Toluene-D8	96%	96%	94%	61-130%
460-00-4	4-Bromofluorobenzene	99%	100%	93%	53-131%
17060-07-0	1,2-Dichloroethane-D4	109%	108%	111%	62-130%

5.3.2  
5

## GC/MS Semi-volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4110-MB	3G05145.D	1	07/20/11	TMB	07/20/11	OP4110	E3G189

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D25640-1A

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	5.3	ug/kg	
120-12-7	Anthracene	ND	6.7	6.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	17	8.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	17	12	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	17	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	17	7.3	ug/kg	
218-01-9	Chrysene	ND	17	7.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	17	12	ug/kg	
206-44-0	Fluoranthene	ND	6.7	6.7	ug/kg	
86-73-7	Fluorene	ND	6.7	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	20	18	ug/kg	
91-20-3	Naphthalene	ND	6.7	6.3	ug/kg	
129-00-0	Pyrene	ND	6.7	6.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	87% 10-145%
321-60-8	2-Fluorobiphenyl	80% 10-130%
1718-51-0	Terphenyl-d14	119% 22-130%

# Blank Spike Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4110-BS	3G05146.D	1	07/20/11	TMB	07/20/11	OP4110	E3G189

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D25640-1A

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	64.4	77	34-130
120-12-7	Anthracene	83.3	74.1	89	35-130
56-55-3	Benzo(a)anthracene	83.3	79.1	95	36-130
50-32-8	Benzo(a)pyrene	83.3	74.0	89	36-130
205-99-2	Benzo(b)fluoranthene	83.3	80.6	97	35-130
207-08-9	Benzo(k)fluoranthene	83.3	77.3	93	37-130
218-01-9	Chrysene	83.3	75.4	90	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	75.9	91	32-130
206-44-0	Fluoranthene	83.3	83.2	100	38-130
86-73-7	Fluorene	83.3	69.5	83	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	77.0	92	28-130
91-20-3	Naphthalene	83.3	63.1	76	35-130
129-00-0	Pyrene	83.3	73.6	88	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	86%	10-145%
321-60-8	2-Fluorobiphenyl	79%	10-130%
1718-51-0	Terphenyl-d14	101%	22-130%

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4110-MS	3G05148.D	10	07/20/11	TMB	07/20/11	OP4110	E3G189
OP4110-MSD	3G05149.D	10	07/20/11	TMB	07/20/11	OP4110	E3G189
D25640-1A	3G05147.D	10	07/20/11	TMB	07/20/11	OP4110	E3G189

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D25640-1A

CAS No.	Compound	D25640-1A ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	113	ND	0* a	ND	0* a	nc	10-155/30
120-12-7	Anthracene	ND	113	ND	0* a	ND	0* a	nc	10-155/30
56-55-3	Benzo(a)anthracene	ND	113	ND	0* a	ND	0* a	nc	10-175/30
50-32-8	Benzo(a)pyrene	ND	113	ND	0* a	ND	0* a	nc	10-164/30
205-99-2	Benzo(b)fluoranthene	ND	113	ND	0* a	ND	0* a	nc	10-165/30
207-08-9	Benzo(k)fluoranthene	ND	113	ND	0* a	ND	0* a	nc	10-178/30
218-01-9	Chrysene	ND	113	ND	0* a	125	111 a	200* a	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND	113	ND	0* a	ND	0* a	nc	10-144/30
206-44-0	Fluoranthene	ND	113	ND	0* a	101	89 a	200* a	10-207/30
86-73-7	Fluorene	ND	113	ND	0* a	122	108 a	200* a	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND	113	ND	0* a	ND	0* a	nc	10-180/30
91-20-3	Naphthalene	182	113	159	-20* a	493	275* a	102* a	10-198/30
129-00-0	Pyrene	ND	113	ND	0* a	120	106 a	200* a	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D25640-1A	Limits
4165-60-0	Nitrobenzene-d5	28% a	54% a	33%	10-145%
321-60-8	2-Fluorobiphenyl	26% a	53% a	34%	10-130%
1718-51-0	Terphenyl-d14	52% a	75% a	63%	22-130%

(a) Outside control limits due to dilution.

## GC Volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB684-MB	GB11889.D	1	07/20/11	SK	n/a	n/a	GGB684

The QC reported here applies to the following samples:

Method: SW846 8015B

D25640-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	83% 60-140%

7.1.1  
7

# Blank Spike Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB684-BS	GB11890.D	1	07/20/11	SK	n/a	n/a	GGB684

The QC reported here applies to the following samples:

Method: SW846 8015B

D25640-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	114	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	96%	60-140%

7.2.1

7

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D25646-1MS	GB11892.D	1	07/20/11	SK	n/a	n/a	GGB684
D25646-1MSD	GB11893.D	1	07/20/11	SK	n/a	n/a	GGB684
D25646-1	GB11891.D	1	07/20/11	SK	n/a	n/a	GGB684

The QC reported here applies to the following samples:

Method: SW846 8015B

D25640-1

CAS No.	Compound	D25646-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	119	119	100	118	99	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D25646-1	Limits
120-82-1	1,2,4-Trichlorobenzene	82%	79%	81%	60-140%

7.3.1  
7

## GC Semi-volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4105-MB	FD07989.D	1	07/21/11	CS	07/20/11	OP4105	GFD354

The QC reported here applies to the following samples:

Method: SW846-8015B

D25640-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	85% 61-142%

# Blank Spike Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4105-BS	FD07990.D	1	07/21/11	CS	07/20/11	OP4105	GFD354

The QC reported here applies to the following samples:

Method: SW846-8015B

D25640-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	448	67	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	79%	61-142%

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** D25640  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4105-MS	FD07991.D	1	07/21/11	CS	07/20/11	OP4105	GFD354
OP4105-MSD	FD07992.D	1	07/21/11	CS	07/20/11	OP4105	GFD354
D25640-1	FD07993.D	1	07/21/11	CS	07/20/11	OP4105	GFD354

The QC reported here applies to the following samples:

Method: SW846-8015B

D25640-1

CAS No.	Compound	D25640-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	164	904	553	43	606	49	9	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D25640-1	Limits
84-15-1	o-Terphenyl	66%	71%	65%	61-142%

8.3.1  
8

## Metals Analysis

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5274  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/20/11

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.10	.0011	.013	-0.0011	<0.10

Associated samples MP5274: D25640-1A

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5274  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 07/20/11

Metal	D25629-1 Original MS	SpikeLot HGWSR1	% Rec	QC Limits
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Mercury	0.0033	0.39	0.38	101.7	85-115
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Associated samples MP5274: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5274  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 07/20/11

Metal	D25629-1 Original MSD	SpikeLot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.0033 0.40	0.395	100.5	2.5	20

Associated samples MP5274: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5274  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/20/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.42	0.4	105.0	80-120

Associated samples MP5274: D25640-1A

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5275  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/20/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	0.040	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.010	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.030	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	-0.26	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	0.050	<5.0
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099	-0.050	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	-0.33	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	-0.020	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	0.080	<3.0

Associated samples MP5275: D25640-1A

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5275  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

9.2.1

9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5275  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 07/20/11

Metal	D25640-1A Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	3740	5560	258	704.2(a)	75-125
Beryllium					
Boron					
Cadmium	2.0	54.9	64.6	81.9	75-125
Calcium					
Chromium	22.7	73.0	64.6	77.8	75-125
Cobalt					
Copper	25.1	88.5	64.6	98.1	75-125
Iron					
Lead	19.3	125	129	81.8	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	16.9	65.2	64.6	74.8N(b)	75-125
Phosphorus					
Potassium					
Selenium	12.8	173	129	124.0	75-125
Silicon					
Silver	0.081	23.2	25.8	89.5	75-125
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	43.2	89.9	64.6	72.3N(b)	75-125

Associated samples MP5275: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.2.2  
 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5275  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- (b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5275  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 07/20/11

Metal	D25640-1A Original MSD		SpikeLot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic	anr				
Barium	3740	4330	256	230.5(a) 24.9 (b)	20
Beryllium					
Boron					
Cadmium	2.0	47.7	64	71.4N(c) 14.0	20
Calcium					
Chromium	22.7	63.2	64	63.3N(c) 14.4	20
Cobalt					
Copper	25.1	76.3	64	80.0 14.8	20
Iron					
Lead	19.3	109	128	70.1N(c) 13.7	20
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	16.9	57.3	64	63.1N(c) 12.9	20
Phosphorus					
Potassium					
Selenium	12.8	158	128	113.4 9.1	20
Silicon					
Silver	0.081	20.0	25.6	77.8 14.8	20
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	43.2	81.1	64	59.2N(c) 10.3	20

Associated samples MP5275: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.2.2  
 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5275  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- (b) High RPD due to possible sample nonhomogeneity.
- (c) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5275  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 07/20/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	177	200	88.5	80-120
Beryllium				
Boron				
Cadmium	43.6	50	87.2	80-120
Calcium				
Chromium	43.8	50	87.6	80-120
Cobalt				
Copper	44.3	50	88.6	80-120
Iron				
Lead	89.0	100	89.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	42.6	50	85.2	80-120
Phosphorus				
Potassium				
Selenium	91.2	100	91.2	80-120
Silicon				
Silver	18.4	20	92.0	80-120
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	41.6	50	83.2	80-120

Associated samples MP5275: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.2.3  
 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5275  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5275  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 07/20/11

Metal	D25640-1A Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	25600	30000	7.6	0-10
Beryllium				
Boron				
Cadmium	14.9	15.5	4.0	0-10
Calcium				
Chromium	169	192	13.3*(a)	0-10
Cobalt				
Copper	181	184	0.8	0-10
Iron				
Lead	144	153	6.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	126	147	16.8*(a)	0-10
Phosphorus				
Potassium				
Selenium	53.0	0.00	100.0(b)	0-10
Silicon				
Silver	0.600	0.00	100.0(b)	0-10
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	322	403	25.2*(a)	0-10

Associated samples MP5275: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.2.4  
 9

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5275  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (anr) Analyte not requested
- (a) Serial dilution indicates possible matrix interference.
- (b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5276  
Matrix Type: SOLID

Methods: SW846 6020  
Units: mg/kg

Prep Date: 07/20/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.39	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP5276: D25640-1A

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5276  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 07/20/11

Metal	D25640-1A Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	8.6	130	129	93.9	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5276: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

9.3.2  
 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5276  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 07/20/11

Metal	D25640-1A Original MSD		SpikeLot MPICPAL % Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic	8.6	112	128	80.8	14.9	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5276: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

9.3.2  
 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5276  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 07/20/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	96.3	100	96.3	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5276: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

9.3.3  
 9

SERIAL DILUTION RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5276  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: ug/l

Prep Date: 07/20/11

Metal	D25640-1A		QC	
	Original	SDL 5:25	%DIF	Limits

Aluminum				
Antimony				
Arsenic	63.8	66.6	4.4	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5276: D25640-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

9.3.4  
 9

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5294  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date: 07/20/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	30		
Antimony	150	16	16		
Arsenic	130	30	30		
Barium	50	5.5	5.5		
Beryllium	50	2.2	2.5		
Boron	250	24	24		
Cadmium	50	1.4	1.4		
Calcium	2000	48	75	191	<2000
Chromium	50	.9	4		
Cobalt	25	1.8	1.8		
Copper	50	4.3	14		
Iron	350	17	65		
Lead	250	8	11		
Lithium	10	1.4	6		
Magnesium	1000	29	50	19.5	<1000
Manganese	25	.27	1.6		
Molybdenum	50	2.3	4.4		
Nickel	150	2.2	5		
Phosphorus	500	55	100		
Potassium	5000	280	280		
Selenium	250	19	19		
Silicon	250	19	19		
Silver	150	.9	1.6		
Sodium	2000	570	570	-410	<2000
Strontium	25		1.3		
Thallium	50	15	15		
Tin	250	28	50		
Titanium	50	.55	1.6		
Uranium	250	7.5	18		
Vanadium	50	.8	1.1		
Zinc	150	1.4	9		

Associated samples MP5294: D25640-1B

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5294  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.4.1

9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5294  
 Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
 Units: ug/l

Prep Date: 07/20/11

Metal	D25640-1B Original MS		SpikeLot MPICPAL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	233000	373000	125000	112.0	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	29000	159000	125000	104.0	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	579000	707000	125000	102.4	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5294: D25640-1B

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.4.2  
9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5294  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5294  
 Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
 Units: ug/l

Prep Date: 07/20/11

Metal	D25640-1B Original MSD		SpikeLot MPICPAL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	233000	368000	125000	108.0	1.3	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	29000	158000	125000	103.2	0.6	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	579000	691000	125000	89.6	2.3	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5294: D25640-1B

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.4.2  
9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5294  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25640  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: 297-12A

QC Batch ID: MP5294  
 Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
 Units: ug/l

Prep Date: 07/20/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	140000	125000	112.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	129000	125000	103.2	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	129000	125000	103.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5294: D25640-1B

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

9.4.3  
 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

QC Batch ID: MP5294  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

## General Chemistry

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP4983/GN10648			umhos/cm	9986	9830	98.4	90-110%
pH	GN10618			su	8.00	7.99	99.9	99.3-100.7%

Associated Samples:  
Batch GN10618: D25640-1A  
Batch GP4983: D25640-1A  
(\* ) Outside of QC limits

10.1  
10

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D25640  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: 297-12A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN10626	D25640-1A	mv	397	407	2.5	0-20%

Associated Samples:  
Batch GN10626: D25640-1A  
(\* ) Outside of QC limits

## Misc. Forms

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### Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

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Includes the following where applicable:

- Chain of Custody





# CHAIN OF CUSTODY

4036 Youngfield St., Wheat Ridge, CO 80033  
 303-425-6021 FAX: 303-425-6854

Accutest Job #:	D25640
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information							Analytical Information				
Name <b>Accutest Mountain States (AMS)</b>			Name Accutest - New England											
Address <b>4036 Youngfield St.</b>			Address 495 Technology Center West, BLDG C											
City <b>Wheat Ridge,</b>	State <b>CO</b>	Zip <b>80033</b>	City Marlborough	State MA	Zip 01752									
Send Report to: Any questions contact: <b>Tiffany Pham Shea Greiner</b>			Contact: Sample Management											
Phone/Fax #: <b>(303) 425-6021; (303)425-6854</b>			Phone: <b>(508) 481-6200</b>											
Field ID / Point of Collection <b>D25640 -1</b>			Collection				Preservation			XCRA	Comments			
			Date 7/18/11	Time 1:30 PM	Matrix Soil	# of bottles 1	HCL	NaOH	HNO3					
Turnaround Information			Data Deliverable Information				Comments / Remarks							
<input checked="" type="checkbox"/> 3 - 5 Business Day Rush <input type="checkbox"/> Other _____ (Days)			Approved By: _____ _____ 10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.				<input type="checkbox"/> Commercial "A" <input type="checkbox"/> PDF <input type="checkbox"/> Commercial "B" <input type="checkbox"/> Compact Disk Deliverable <input type="checkbox"/> Commercial "BN" <input type="checkbox"/> Electronic Delivery: <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> State Forms <input type="checkbox"/> Full Tier 1 <input type="checkbox"/> Other (Specify) _____				<b>Please use Colorado regulations and RLs.</b>  15D			
Sample Custody must be documented below each time samples change possession, including courier delivery.								For Subcontract Laboratory Use Only						
Relinquished by: 1	Date & Time: 7/20/11	Received By: 1	Date & Time: 1	Seal #:	Headspace: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>									
Relinquished by: 2	Date & Time: 7/21/11 0830	Received By: 2	Date & Time: 2	Preserved where applicable: <input type="checkbox"/>										
Relinquished by: 3	Date & Time:	Received By: 3	Date & Time: 3	Temperature °C <u>1.2</u> ° On Ice <input type="checkbox"/>										

**D25640: Chain of Custody**

**Page 1 of 2**

**Accutest Labs of New England, Inc.**

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D25640

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 7/21/2011

Delivery Method:

Client Service Action Required at Login: No

Project:

No. Coolers: 1

Airbill #'s:

<u>Cooler Security</u>	<u>Y or N</u>			<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. SmpI Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	Intact	

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

## General Chemistry

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### QC Data Summaries

(Accutest Labs of New England, Inc.)

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
 GENERAL CHEMISTRY

Login Number: D25640  
 Account: ALMS - Accutest Mountain States  
 Project: KRWCCOL: 297-12A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13276/GN35607	0.40	0.19	mg/kg	40	39.2	98.0	80-120%
Chromium, Hexavalent	GP13276/GN35607			mg/kg	1010	1040	103.0	80-120%

Associated Samples:  
 Batch GP13276: D25640-1A  
 (\*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D25640  
Account: ALMS - Accutest Mountain States  
Project: KRWCCOL: 297-12A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13276/GN35607	D25741-1	mg/kg	0.31	0.34	9.2	0-20%

Associated Samples:  
Batch GP13276: D25640-1A  
(\* ) Outside of QC limits

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MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D25640  
Account: ALMS - Accutest Mountain States  
Project: KRWCCOL: 297-12A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13276/GN35607	D25741-1	mg/kg	0.31	45.4	45.9	100.4	75-125%
Chromium, Hexavalent	GP13276/GN35607	D25741-1	mg/kg	0.31	984	1020	103.6	75-125%

Associated Samples:  
Batch GP13276: D25640-1A  
(\* ) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits

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