Mountain States ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

02/16/10

Technical Report for

KRW Consulting, Inc.

1001-05

Accutest Job Number: D10497

Sampling Dates: 01/15/10 - 01/18/10

Report to:

KRW Consulting, Inc.
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ATTN: Greg Knell

Total number of pages in report: **115**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

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.

Gary K. Ward
Laboratory Director

Client Service contact: 303-425-6021

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

Test results relate only to samples analyzed.

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Accutest Laboratories

Sample Summary

KRW Consulting, Inc.

1001-05

Job No: D10497

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D10497-1	01/15/10	14:00		01/21/10	SO	Soil	297-15 B1A
D10497-1A	01/15/10	14:00		01/21/10	SO	Soil	297-15 B1A
D10497-2	01/15/10	15:00		01/21/10	SO	Soil	297-15 B1B
D10497-2A	01/15/10	15:00		01/21/10	SO	Soil	297-15 B1B
D10497-3	01/18/10	09:00		01/21/10	SO	Soil	297-15 B2A
D10497-3A	01/18/10	09:00		01/21/10	SO	Soil	297-15 B2A
D10497-4	01/18/10	11:40		01/21/10	SO	Soil	297-15 B2B
D10497-4A	01/18/10	11:40		01/21/10	SO	Soil	297-15 B2B
D10497-5	01/18/10	13:00		01/21/10	SO	Soil	297-15 B3A
D10497-5A	01/18/10	13:00		01/21/10	SO	Soil	297-15 B3A
D10497-6	01/18/10	13:30		01/21/10	SO	Soil	297-15 B3B
D10497-6A	01/18/10	13:30		01/21/10	SO	Soil	297-15 B3B
D10497-7	01/18/10	12:20		01/21/10	SO	Soil	297-15 CPS

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

Sample Summary
(continued)

KRW Consulting, Inc.

Job No: D10497

1001-05

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D10497-7A	01/18/10	12:20		01/21/10	SO	Soil	297-15 CPS

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	KRW Consulting, Inc.	**Job No**	D10497
Site:	1001-05	**Report Dat**	2/16/2010 1:36:25 PM

On 01/21/2010, seven (7) samples were received at Accutest Mountain States Laboratories at a temperature of 4.0°C. The samples were intact and properly preserved, unless noted below. An Accutest Job Number of D10497 was assigned to the project. The laboratory sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary Section.

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.

Extractables by GCMS By Method SW846 8270C

Matrix SO **Batch ID:** OP1332

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Samples D10497-7AMS and D10497-7AMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Samples OP1332-MS and OP1332-MSD have surrogates outside control limits. Probable cause due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGA250

- All samples were analyzed within the recommended method holding time.
- Samples D10522-4MS and D10522-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8021B

Matrix SO **Batch ID:** GTA250

- All samples were analyzed within the recommended method holding time.
- Samples D10522-4MS and D10522-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP1330

- All samples were extracted 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.
- Samples D10496-7AMS and D10496-7AMSD were used as the QC samples indicated.

Metals By Method SW846 6010B

Matrix	AQ	Batch ID:	MP1183

- All samples were digested 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.

Matrix	SO	Batch ID:	MP1186

- All samples were digested 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.
- Samples D10503-1MS, D10503-1MSD, and D10503-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery of Silver and the matrix spike duplicate (MSD) recovery of Selenium are outside control limits. The laboratory control spike (LCS) recoveries of these analytes are within QC limits, proving the analysis is in control.
- The serial dilution RPDs for Copper, Selenium, Silver, and Barium are outside control limits for sample MP1186-SD1. The percent differences are acceptable due to low initial sample concentration (< 50 times IDL).

Matrix	SO	Batch ID:	MP1258

- All samples were digested 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.
- Samples D10498-9AMS, D10498-9AMSD, and D10498-9ASDL were used as the QC samples for the metals analysis.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of Zinc and Nickel are outside control limits. The laboratory control spike (LCS) recoveries of these analytes are within QC limits, proving the analysis is in control.
- The serial dilution RPDs for Lead, Nickel, Cadmium, and Zinc are outside control limits for sample MP1258-SD1. The percent differences are acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 6020

Matrix	SO	Batch ID:	MP1187

- All samples were digested 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.
- Samples D10503-1DUP, D10503-1MS, D10503-1MSD, and D10503-1SDL were used as the QC samples for the metals analsysis.

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP1196

- All samples were digested 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.
- Samples D10496-7AMS and D10496-7AMSD were used as the QC samples for metals.
- The matrix spike duplicate (MSD) recovery of Mercury is outside control limits. The laboratory control spike (LCS) recovery of Mercury is within QC limits, proving the analysis is in control.

Wet Chemistry By Method ASTM E1498-76M

Matrix	SO	Batch ID:	M:GN30950

- The data for ASTM E1498-76M meets quality control requirements.
- The following samples were run outside of holding time for method ASTM E1498-76M: D10497-7A
- Redox Potential Vs H2: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method LADNR29B

Matrix	SO	Batch ID:	R1165

- The data for LADNR29B meets quality control requirements.
- Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

Wet Chemistry By Method SM19 2540B M

Matrix	SO	Batch ID:	GN2953

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix	SO	Batch ID:	R1108

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

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	Batch ID:	M:GP11222

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

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN2957

- The following samples were run outside of holding time for method SW846 9045C: D10497-1, D10497-2, D10497-3, D10497-4, D10497-5, D10497-6

Matrix	SO	Batch ID:	GN2958

- The following samples were run outside of holding time for method SW846 9045C: D10497-7

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest'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.

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Accutest Mountain States	**Job No**	D10497
Site:	KRWCCOL: 1001-05	**Report Date**	1/29/2010 12:04:27 PM

1 Sample was collected on 01/15/2010 and were received at Accutest on 01/21/2010 properly preserved, at 2.3 Deg. C and intact. These Samples received an Accutest job number of D10497. 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 ASTM E1498-76M

Matrix SO **Batch ID:** GN30950

- Sample(s) M88649-1RDUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO **Batch ID:** GP11222

- 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) M88649-1RDUP, M88649-1RMS 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(D10497).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	297-15 B1A		
Lab Sample ID:	D10497-1	**Date Sampled:**	01/15/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	20.7	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [3]
Magnesium	4.17	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]
Sodium	91.0	2.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Prep QC Batch: MP1183

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B1A		
Lab Sample ID:	D10497-1	**Date Sampled:**	01/15/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	4.77		ratio	1	02/08/10 14:33	JM	LADNR29B
Specific Conductivity	517	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	9.36		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B1A		
Lab Sample ID:	D10497-1A	**Date Sampled:**	01/15/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	91.3
Project:	1001-05		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.1	0.32	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA367
(2) Prep QC Batch: MP1187

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B1B		
Lab Sample ID:	D10497-2	**Date Sampled:**	01/15/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	348	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [4]
Magnesium	259	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [4]
Sodium	2720	40	mg/l	20	01/29/10	02/10/10	AMA	SW846 6010B [3]	SW846 3005A [4]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Instrument QC Batch: MA391
(4) Prep QC Batch: MP1183

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B1B		
Lab Sample ID:	D10497-2	**Date Sampled:**	01/15/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	26.9		ratio	1	02/10/10 11:57	AMA	LADNR29B
Specific Conductivity	12600	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	9.64		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B1B		
Lab Sample ID:	D10497-2A	**Date Sampled:**	01/15/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	92.4
Project:	1001-05		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	12.2	0.35	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA367
(2) Prep QC Batch: MP1187

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B2A		
Lab Sample ID:	D10497-3	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	9.21	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [3]
Magnesium	2.79	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]
Sodium	122	2.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Prep QC Batch: MP1183

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B2A		
Lab Sample ID:	D10497-3	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	9.04		ratio	1	02/08/10 14:48	JM	LADNR29B
Specific Conductivity	664	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	9.96		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B2A		
Lab Sample ID:	D10497-3A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	88.0
Project:	1001-05		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.9	0.33	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA367
(2) Prep QC Batch: MP1187

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B2B		
Lab Sample ID:	D10497-4	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	24.6	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [3]
Magnesium	34.0	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]
Sodium	1290	2.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Prep QC Batch: MP1183

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B2B		
Lab Sample ID:	D10497-4	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	39.6		ratio	1	02/08/10 14:54	JM	LADNR29B
Specific Conductivity	5930	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	9.95		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B2B		
Lab Sample ID:	D10497-4A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	88.4
Project:	1001-05		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	8.7	0.35	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA367
(2) Prep QC Batch: MP1187

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B3A		
Lab Sample ID:	D10497-5	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	20.4	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [3]
Magnesium	6.17	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]
Sodium	133	2.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Prep QC Batch: MP1183

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B3A		
Lab Sample ID:	D10497-5	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	6.62		ratio	1	02/08/10 15:04	JM	LADNR29B
Specific Conductivity	675	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	9.75		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B3A		
Lab Sample ID:	D10497-5A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	89.6
Project:	1001-05		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.9	0.33	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA367
(2) Prep QC Batch: MP1187

RL = Reporting Limit

Report of Analysis

Client Sample ID: 297-15 B3B
Lab Sample ID: D10497-6
Matrix: SO - Soil
Project: 1001-05

Date Sampled: 01/18/10
Date Received: 01/21/10
Percent Solids: n/a

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	6.50	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [3]
Magnesium	1.43	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]
Sodium	49.2	2.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Prep QC Batch: MP1183

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B3B		
Lab Sample ID:	D10497-6	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	4.55		ratio	1	02/08/10 15:10	JM	LADNR29B
Specific Conductivity	261	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	9.61		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 B3B		
Lab Sample ID:	D10497-6A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	86.8
Project:	1001-05		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.4	0.34	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA367
(2) Prep QC Batch: MP1187

RL = Reporting Limit

Report of Analysis

Client Sample ID: 297-15 CPS
Lab Sample ID: D10497-7
Matrix: SO - Soil
Project: 1001-05

Date Sampled: 01/18/10
Date Received: 01/21/10
Percent Solids: n/a

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	14.8	2.0	mg/l	1	01/29/10	02/03/10	JM	SW846 6010B [1]	SW846 3005A [3]
Magnesium	< 1.0	1.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]
Sodium	792	2.0	mg/l	1	01/29/10	02/08/10	JM	SW846 6010B [2]	SW846 3005A [3]

(1) Instrument QC Batch: MA370
(2) Instrument QC Batch: MA380
(3) Prep QC Batch: MP1183

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	297-15 CPS		
Lab Sample ID:	D10497-7	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	n/a
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	55.2		ratio	1	02/08/10 15:16	JM	LADNR29B
Specific Conductivity	4120	1.0	umhos/cm	1	02/01/10	JK	DEPT.OF AG, BOOK N9
pH	11.45		su	1	01/21/10 12:45	JK	SW846 9045C

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	297-15 CPS		
Lab Sample ID:	D10497-7A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
Method:	SW846 8270C SW846 3540C	**Percent Solids:**	78.1
Project:	1001-05		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G05402.D	10	01/29/10	TMB	01/25/10	OP1332	E1G163
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	470	370	ug/kg	
208-96-8	Acenaphthylene	ND	470	430	ug/kg	
120-12-7	Anthracene	ND	470	320	ug/kg	
56-55-3	Benzo(a)anthracene	ND	470	370	ug/kg	
50-32-8	Benzo(a)pyrene	ND	470	320	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	510	470	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	470	320	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	600	510	ug/kg	
218-01-9	Chrysene	ND	600	510	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	510	380	ug/kg	
206-44-0	Fluoranthene	ND	900	470	ug/kg	
86-73-7	Fluorene	ND	510	430	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	470	350	ug/kg	
90-12-0	1-Methylnaphthalene	ND	600	470	ug/kg	
91-57-6	2-Methylnaphthalene	729	470	360	ug/kg	
91-20-3	Naphthalene	ND	900	430	ug/kg	
85-01-8	Phenanthrene	ND	900	470	ug/kg	
129-00-0	Pyrene	ND	510	470	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	76%		33-130%
321-60-8	2-Fluorobiphenyl	88%		37-130%
1718-51-0	Terphenyl-d14	108%		48-130%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	297-15 CPS		
Lab Sample ID:	D10497-7A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
Method:	SW846 8015B	**Percent Solids:**	78.1
Project:	1001-05		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA4604.D	1	01/27/10	SD	n/a	n/a	GGA250
Run #2							

	Initial Weight
Run #1	1.0 g
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	1.3	1.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	90%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	297-15 CPS		
Lab Sample ID:	D10497-7A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
Method:	SW846 8021B	**Percent Solids:**	78.1
Project:	1001-05		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA4604.D	1	01/27/10	SD	n/a	n/a	GTA250
Run #2							

	Initial Weight
Run #1	1.0 g
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	6.4	ug/kg	
108-88-3	Toluene	61.5	13	ug/kg	
100-41-4	Ethylbenzene	22.5	13	ug/kg	
	m,p-Xylene	110	13	ug/kg	
95-47-6	o-Xylene	16.1	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	81%		60-140%

ND = Not detected
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

Accutest Laboratories

Report of Analysis

Client Sample ID:	297-15 CPS		
Lab Sample ID:	D10497-7A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
Method:	SW846-8015B SW846 3550B	**Percent Solids:**	78.1
Project:	1001-05		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FC1609.D	10	01/23/10	LAC	01/22/10	OP1330	GFC93
Run #2							

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

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	526	170	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-06-6	t-Butylbenzene	58%		39-130%

ND = Not detected
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

Client Sample ID: 297-15 CPS
Lab Sample ID: D10497-7A
Matrix: SO - Soil
Project: 1001-05

Date Sampled: 01/18/10
Date Received: 01/21/10
Percent Solids: 78.1

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	9.6	0.41	mg/kg	1	02/01/10	02/02/10	SES	SW846 6020 [1]	SW846 3050B [8]
Barium	6060	20	mg/kg	20	02/04/10	02/08/10	JM	SW846 6010B [4]	SW846 3050B [7]
Boron	17.5	5.1	mg/kg	1	02/01/10	02/03/10	JM	SW846 6010B [2]	SW846 3050B [7]
Cadmium	1.0	1.0	mg/kg	1	02/10/10	02/11/10	JM	SW846 6010B [5]	SW846 3050B [10]
Chromium	17.2	1.0	mg/kg	1	02/01/10	02/03/10	JM	SW846 6010B [2]	SW846 3050B [7]
Copper	25.5	1.0	mg/kg	1	02/01/10	02/03/10	JM	SW846 6010B [2]	SW846 3050B [7]
Lead	34.9	5.2	mg/kg	1	02/10/10	02/11/10	JM	SW846 6010B [5]	SW846 3050B [10]
Mercury	< 0.11	0.11	mg/kg	1	02/02/10	02/03/10	CM	SW846 7471A [3]	SW846 7471A [9]
Nickel	14.6	3.1	mg/kg	1	02/10/10	02/11/10	JM	SW846 6010B [5]	SW846 3050B [10]
Selenium	6.7	5.1	mg/kg	1	02/01/10	02/03/10	JM	SW846 6010B [2]	SW846 3050B [7]
Silver	< 3.1	3.1	mg/kg	1	02/01/10	02/03/10	JM	SW846 6010B [2]	SW846 3050B [7]
Zinc	55.9	4.0	mg/kg	1	02/10/10	02/15/10	JM	SW846 6010B [6]	SW846 3050B [10]

(1) Instrument QC Batch: MA367
(2) Instrument QC Batch: MA373
(3) Instrument QC Batch: MA374
(4) Instrument QC Batch: MA380
(5) Instrument QC Batch: MA397
(6) Instrument QC Batch: MA403
(7) Prep QC Batch: MP1186
(8) Prep QC Batch: MP1187
(9) Prep QC Batch: MP1196
(10) Prep QC Batch: MP1258

RL = Reporting Limit

Report of Analysis

Client Sample ID:	297-15 CPS		
Lab Sample ID:	D10497-7A	**Date Sampled:**	01/18/10
Matrix:	SO - Soil	**Date Received:**	01/21/10
		Percent Solids:	78.1
Project:	1001-05		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 2.5	2.5	mg/kg	1	01/27/10 17:55	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	15.8	3.5	mg/kg	1	02/03/10 18:39	JM	SW846 3060/7196A M
Redox Potential Vs H2 [a]	92.7		mv	1	01/22/10	AMA	ASTM E1498-76M
Solids, Percent	78.1		%	1	01/21/10	SWT	SM19 2540B M

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

D 10497

CHAIN OF CUSTODY RECORD / ANALYTICAL SERVICES AGREEMENT **

Accutest Mountain States

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CLIENT INFORMATION

Mail **Original** Report to: KRW Consulting INC
Attn: Joe Hess
Address: 8000 W. 14th Ave St# 200
City: Lakewood State: Co Zip: 80214
Tel #: (303) 239-9011 Fax #: (303) 239-0746 E-mail: JHess@krwconsulting.com

ACCUTEST LABORATORIES
4036 Youngfield St.
Wheat Ridge, Colorado 80033
(303) 425-6021
FAX (303) 425-6854
(877) 737-4521
e-mail info@accutest.com

Report Results by:____________________ (Date)*
Standard 2 working weeks ❑
UST Analyses per Fee Schedule ❑
* Rush: ❑ less than 24 hrs, 150% ❑ 1 - 2 work days, 100%
❑ 3 - 5 work days, 50% ❑ 6 - 9 work days, 25%
*Subject to surcharge & exceptions noted in fee schedule.

REPORT ALSO BY ☑ FAX ☑ PDF ❑ EDD   FAXED CONFIRMATION OF SAMPLE RECEIPT REQUIRED? ❑ YES

REPORT CHROMATOGRAMS ☑ YES

Mail Invoice to: Same as Above
Attn: Joe Hess
Address ____
City____ State____ Zip____
Tel #____ Fax #____
Project ID# ~~297-15~~ 1001-05
P.O. ____ Quote____
Sampler____

NOTE: *Identify Known Hazards Below*

MATRIX: No. of Containers; 1)Drinking Water or 2)Discharge Water or 3) Ground Water (circle one); Soil (circled); Solid / Air / Gas; Oil / Sludge / Wipe

ANALYSES (check anaylsis): SAR, EC, PH; CL; Metals; Volatile Organics; Semi-Vol. Org.; Arsenic

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME	No. of Containers	Water	Soil	Solid / Air / Gas	Oil / Sludge / Wipe	SAR, EC, PH	CL	Metals	Volatile Organics	Semi-Vol. Org.	Arsenic	Notes	For Laboratory Use Only
297-15 B1A	1/15/10	1410	2					✓					✓	At 1.0' Depth	01
297-15 B1B	1/15/10	1500	2					✓					✓	At 9.5' Depth	02
297-15 B2A	1/18/10	0900	2					✓					✓	At 1.0' Depth	03
297-15 B2B	1/18/10	1140	2					✓					✓	At 6.0' Depth	04
297-15 B3A	1/18/10	1300	2					✓					✓		05
297-15 B3B	1/18/10	1330	2					✓					✓		06
29715 CPS	1/18/10	1220	5					✓	✓	✓	✓	✓			07

For Laboratory Use Only:
W.O. # D10497
B.O.F. # 3709
C/S (O) 21 H1 / PL
C/S (I) 21 H1 / HP
Temp. °C 4.0 / Ice ✓
Seals Present Y / N / NA
Samples Pres. Y / N / NA
Headspace Y / N / NA
By JV

Does this analysis involve property transfer? ❑Yes or ❑No   Sample Fraction

Instructions: 297-15 B1, B2, B3 all with A & B. A = 1' Depth and B = 6" or greater. Complete Tab 910-1 Parameters for 297-15 CPS sample.

** Important Note: See reverse side hereof for terms and conditions.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signatures]	Jan 20, 2010 16:00 / 1-20-2010	[signature]	1/20/2010 1600	[signature]	1/21/10 9:05	[signature]	1/21/10 9:15

4.1
4

D10497: Chain of Custody
Page 1 of 1

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1332-MB	1G05398.D	1	01/29/10	TMB	01/25/10	OP1332	E1G163

The QC reported here applies to the following samples: **Method:** SW846 8270C

D10497-7A

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	37	29	ug/kg	
208-96-8	Acenaphthylene	ND	37	33	ug/kg	
120-12-7	Anthracene	ND	37	25	ug/kg	
56-55-3	Benzo(a)anthracene	ND	37	29	ug/kg	
50-32-8	Benzo(a)pyrene	ND	37	25	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	40	37	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	37	25	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	47	40	ug/kg	
218-01-9	Chrysene	ND	47	40	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	40	30	ug/kg	
206-44-0	Fluoranthene	ND	70	37	ug/kg	
86-73-7	Fluorene	ND	40	33	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	37	27	ug/kg	
90-12-0	1-Methylnaphthalene	ND	47	37	ug/kg	
91-57-6	2-Methylnaphthalene	ND	37	28	ug/kg	
91-20-3	Naphthalene	ND	70	33	ug/kg	
85-01-8	Phenanthrene	ND	70	37	ug/kg	
129-00-0	Pyrene	ND	40	37	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	73%	26-130%
4165-62-2	Phenol-d5	79%	47-130%
118-79-6	2,4,6-Tribromophenol	82%	50-130%
4165-60-0	Nitrobenzene-d5	66%	33-130%
321-60-8	2-Fluorobiphenyl	67%	37-130%
1718-51-0	Terphenyl-d14	92%	48-130%

Blank Spike Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1332-BS	1G05437.D	1	02/01/10	TMB	01/25/10	OP1332	E1G164

The QC reported here applies to the following samples: **Method:** SW846 8270C

D10497-7A

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	3330	3080	92	54-130
208-96-8	Acenaphthylene	3330	3190	96	53-130
120-12-7	Anthracene	3330	3160	95	54-130
56-55-3	Benzo(a)anthracene	3330	3270	98	52-130
50-32-8	Benzo(a)pyrene	3330	3330	100	56-130
205-99-2	Benzo(b)fluoranthene	3330	3450	104	58-130
191-24-2	Benzo(g,h,i)perylene	3330	3290	99	46-130
207-08-9	Benzo(k)fluoranthene	3330	3430	103	53-130
218-01-9	Chrysene	3330	3010	90	51-130
53-70-3	Dibenzo(a,h)anthracene	3330	3380	101	48-130
206-44-0	Fluoranthene	3330	2890	87	50-130
86-73-7	Fluorene	3330	3220	97	59-130
193-39-5	Indeno(1,2,3-cd)pyrene	3330	3410	102	48-134
90-12-0	1-Methylnaphthalene	3330	2520	76	43-130
91-57-6	2-Methylnaphthalene	3330	2690	81	40-130
91-20-3	Naphthalene	3330	2540	76	37-130
85-01-8	Phenanthrene	3330	3040	91	57-130
129-00-0	Pyrene	3330	3170	95	54-130

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	64%	26-130%
4165-62-2	Phenol-d5	68%	47-130%
118-79-6	2,4,6-Tribromophenol	99%	50-130%
4165-60-0	Nitrobenzene-d5	68%	33-130%
321-60-8	2-Fluorobiphenyl	70%	37-130%
1718-51-0	Terphenyl-d14	85%	48-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1332-MS	1G05448.D	10	02/02/10	TMB	01/25/10	OP1332	E1G164
OP1332-MSD	1G05449.D	10	02/02/10	TMB	01/25/10	OP1332	E1G164
D10497-7A	1G05402.D	10	01/29/10	TMB	01/25/10	OP1332	E1G163

The QC reported here applies to the following samples: **Method:** SW846 8270C

D10497-7A

CAS No.	Compound	D10497-7A ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		4270	4040	95	4280	100	6	54-130/30
208-96-8	Acenaphthylene	ND		4270	4160	97	4450	104	7	53-130/30
120-12-7	Anthracene	ND		4270	4280	100	4270	100	0	54-130/30
56-55-3	Benzo(a)anthracene	ND		4270	4450	104	4520	106	2	52-130/30
50-32-8	Benzo(a)pyrene	ND		4270	4450	104	4590	108	3	56-130/30
205-99-2	Benzo(b)fluoranthene	ND		4270	4700	110	4480	105	5	58-130/30
191-24-2	Benzo(g,h,i)perylene	ND		4270	4090	96	4330	101	6	46-130/30
207-08-9	Benzo(k)fluoranthene	ND		4270	4650	109	4360	102	6	53-130/30
218-01-9	Chrysene	ND		4270	3930	92	4170	98	6	51-130/30
53-70-3	Dibenzo(a,h)anthracene	ND		4270	3600	84	4560	107	24	48-130/30
206-44-0	Fluoranthene	ND		4270	3730	87	3880	91	4	50-130/30
86-73-7	Fluorene	ND		4270	4260	100	4340	102	2	59-130/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		4270	3970	93	4580	107	14	48-134/30
90-12-0	1-Methylnaphthalene	ND		4270	3730	87	3710	87	1	43-140/30
91-57-6	2-Methylnaphthalene	729		4270	4290	83	4410	86	3	40-140/30
91-20-3	Naphthalene	ND		4270	4060	95	4070	95	0	37-140/30
85-01-8	Phenanthrene	ND		4270	4120	97	4220	99	2	57-130/30
129-00-0	Pyrene	ND		4270	4740	111	5310	124	11	54-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D10497-7A	Limits
367-12-4	2-Fluorophenol	71%	74%		26-130%
4165-62-2	Phenol-d5	90%	91%		47-130%
118-79-6	2,4,6-Tribromophenol	28%* [a]	35%* [a]		50-130%
4165-60-0	Nitrobenzene-d5	79%	83%	76%	33-130%
321-60-8	2-Fluorobiphenyl	80%	85%	88%	37-130%
1718-51-0	Terphenyl-d14	100%	107%	108%	48-130%

(a) Outside control limits due to dilution.

GC/MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\012910\1G05402.D Vial: 16
Acq On : 29 Jan 2010 6:50 pm Operator: TAMIB
Sample : D10497-7 Inst : GCMS1
Misc : OP1332,E1G164,30,,,1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 01 08:52:04 2010 Quant Results File: BNAE1G156.RES

Quant Method : C:\MSDCHEM\1\METHODS\BNAE1G156.M (RTE Integrator)
Title : 8270C Calibration
Last Update : Mon Jan 25 12:27:27 2010
Response via : Initial Calibration
DataAcq Meth : 827BASE

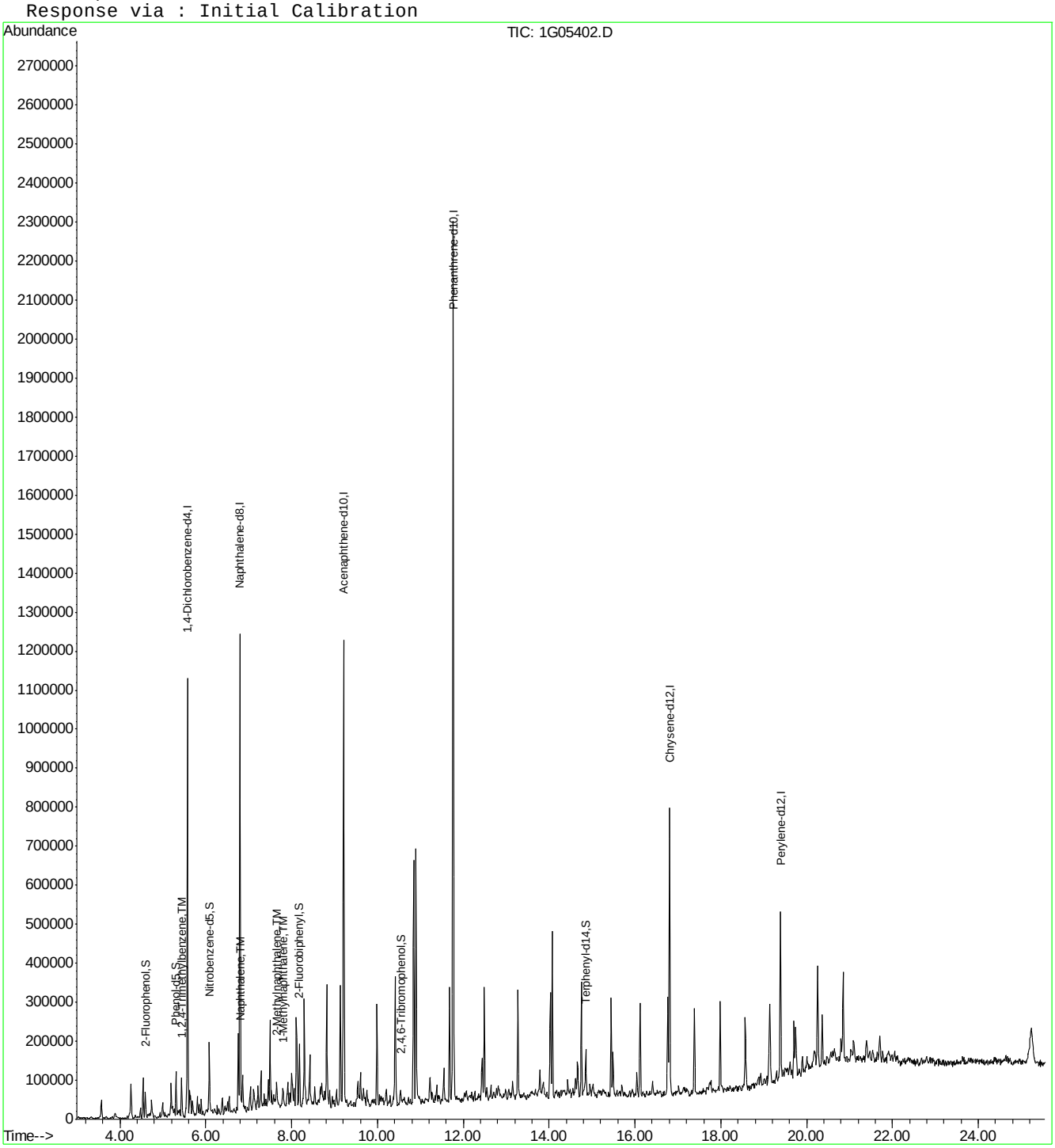
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	5.57	150	275280	40.00	ug/mL	0.00
22) Naphthalene-d8	6.80	136	667999	40.00	ug/mL	0.00
39) Acenaphthene-d10	9.21	164	373895	40.00	ug/mL	0.00
62) Phenanthrene-d10	11.76	188	636708	40.00	ug/mL	0.00
74) Chrysene-d12	16.81	240	419999	40.00	ug/mL	0.00
83) Perylene-d12	19.39	264	265826	40.00	ug/mL	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	4.59	112	17438	3.28	ug/mL	0.02
Spiked Amount 50.000	Range 1 - 250		Recovery = 6.56%			
8) Phenol-d5	5.30	99	31100	4.23	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 8.46%			
23) Nitrobenzene-d5	6.09	82	31778	3.80	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 7.60%			
44) 2-Fluorobiphenyl	8.18	172	62425	4.39	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 8.78%			
61) 2,4,6-Tribromophenol	10.56	330	1354	0.95	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 1.90%			
77) Terphenyl-d14	14.85	244	50852	5.41	ug/mL	-0.02
Spiked Amount 50.000	Range 1 - 250		Recovery = 10.82%			
Target Compounds						Qvalue
7) 1,2,4-Trimethylbenzene	5.44	120	4497	0.90	ug/mL#	77
32) Naphthalene	6.82	128	15702	0.95	ug/mL	90
37) 2-Methylnaphthalene	7.65	142	19248	1.71	ug/mL	83
38) 1-Methylnaphthalene	7.79	142	9182	0.79	ug/mL#	71

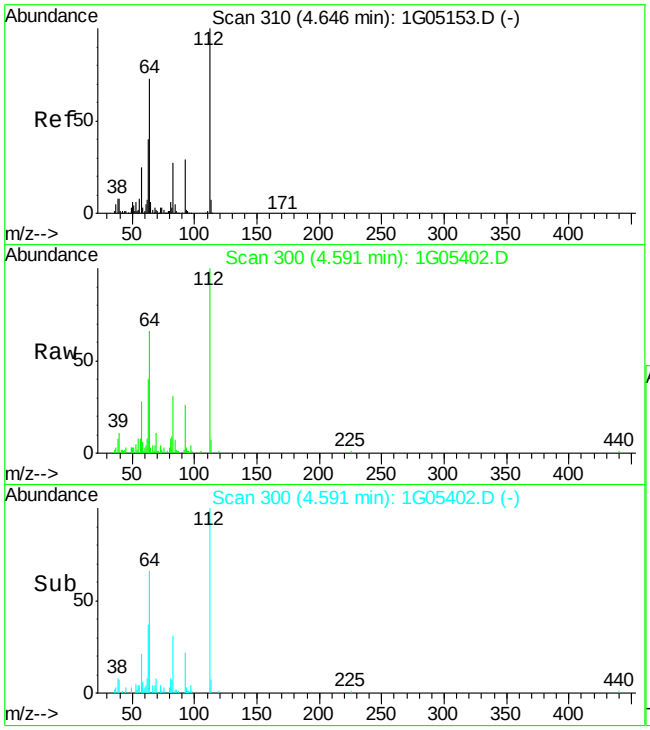
(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\012910\1G05402.D Vial: 16
Acq On : 29 Jan 2010 6:50 pm Operator: TAMIB
Sample : D10497-7 Inst : GCMS1
Misc : OP1332,E1G164,30,,,1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 1 10:52 2010 Quant Results File: BNAE1G156.RES

Method : C:\MSDCHEM\1\METHODS\BNAE1G156.M (RTE Integrator)
Title : 8270C Calibration
Last Update : Mon Jan 25 12:27:27 2010
Response via : Initial Calibration

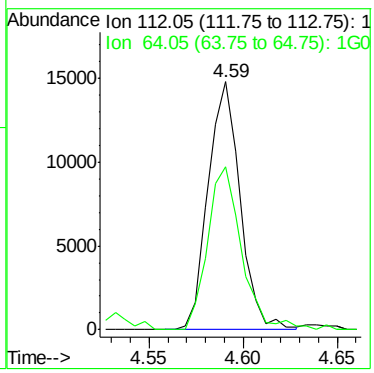


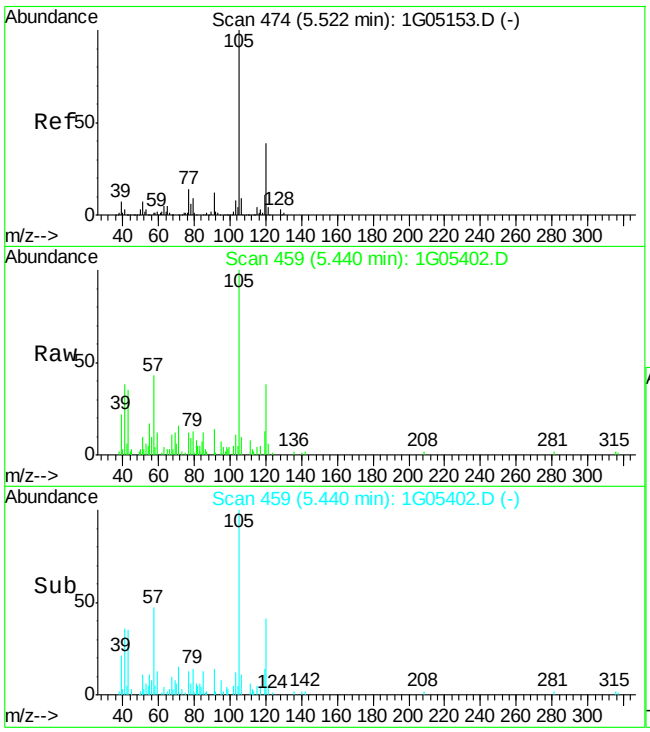


#4
2-Fluorophenol
Concen: 3.28 ug/mL
RT: 4.59 min Scan# 300
Delta R.T. 0.02 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:112 Resp: 17438

Ion	Ratio	Lower	Upper
112	100		
64	69.6	50.1	90.1

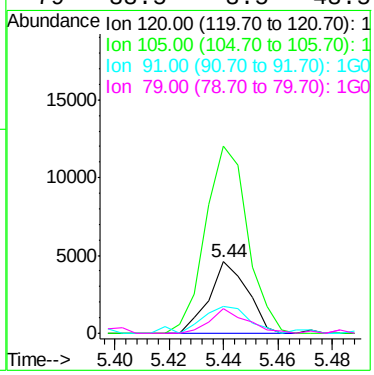


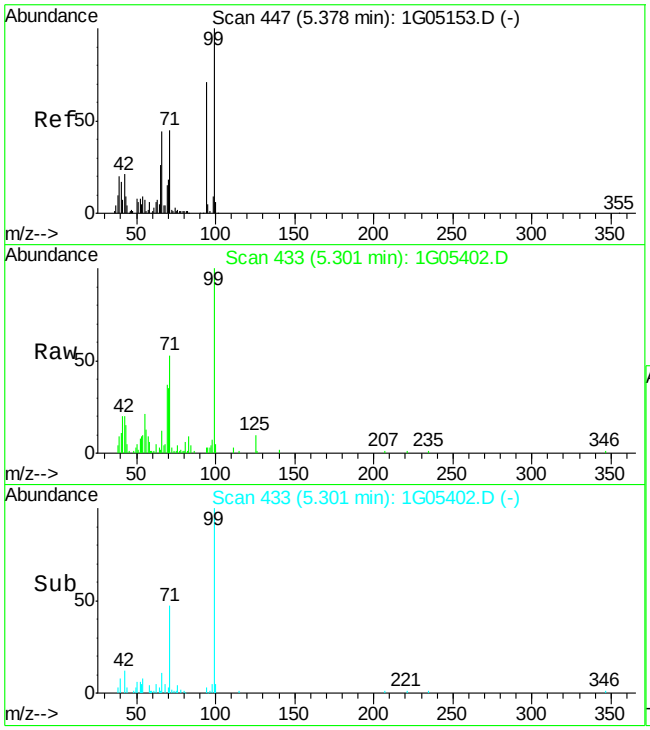


#7
1,2,4-Trimethylbenzene
Concen: 0.90 ug/mL
RT: 5.44 min Scan# 459
Delta R.T. 0.00 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:120 Resp: 4497

Ion	Ratio	Lower	Upper
120	100		
105	288.3	231.2	271.2#
91	50.8	10.9	50.9
79	33.5	3.5	43.5

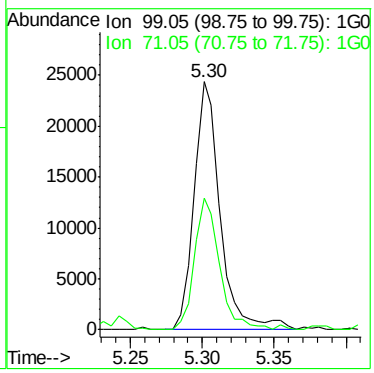


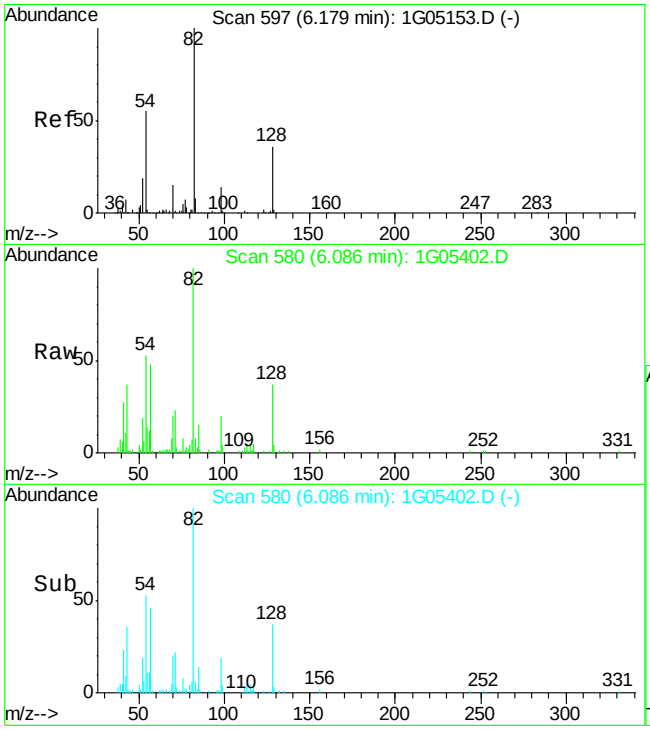


#8
Phenol-d5
Concen: 4.23 ug/mL
RT: 5.30 min Scan# 433
Delta R.T. 0.01 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion: 99 Resp: 31100

Ion	Ratio	Lower	Upper
99	100		
71	50.8	24.9	64.9

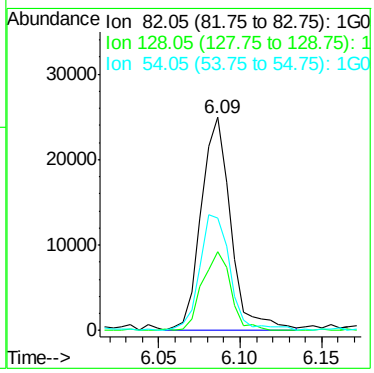


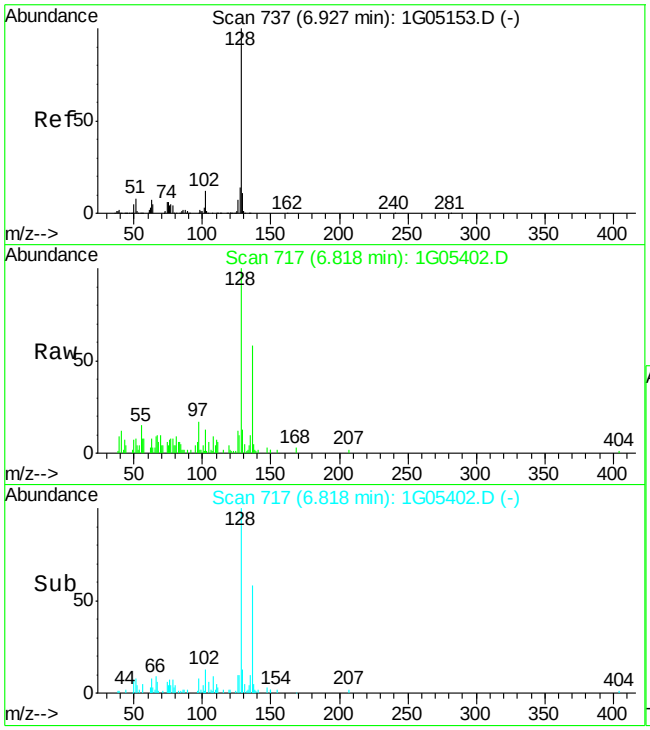


#23
Nitrobenzene-d5
Concen: 3.80 ug/mL
RT: 6.09 min Scan# 580
Delta R.T. 0.01 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion: 82 Resp: 31778

Ion	Ratio	Lower	Upper
82	100		
128	35.5	16.6	56.6
54	55.7	33.9	73.9

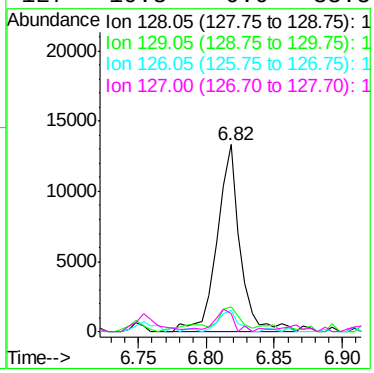


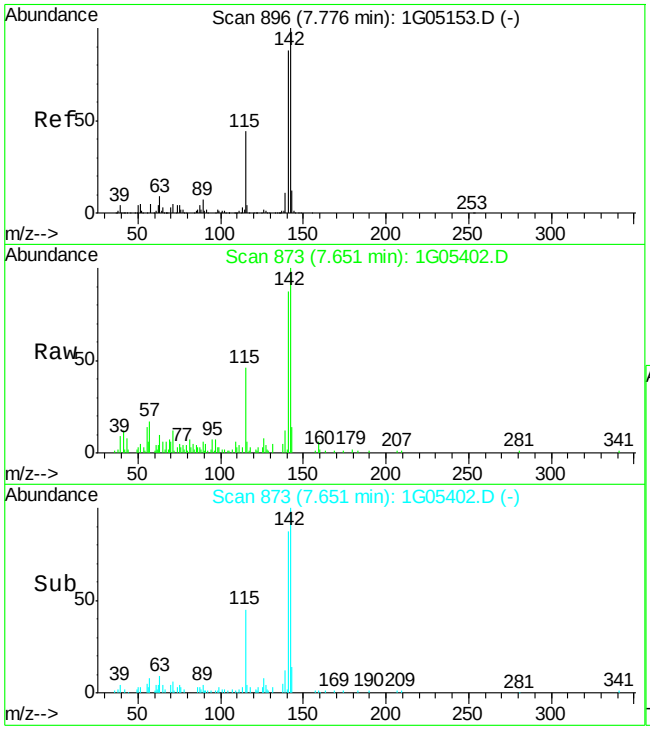


#32
Naphthalene
Concen: 0.95 ug/mL
RT: 6.82 min Scan# 717
Delta R.T. 0.00 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:128 Resp: 15702

Ion	Ratio	Lower	Upper
128	100		
129	16.9	0.0	30.9
126	9.4	0.0	27.7
127	10.3	0.0	33.5

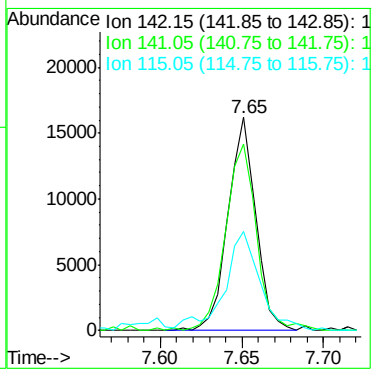


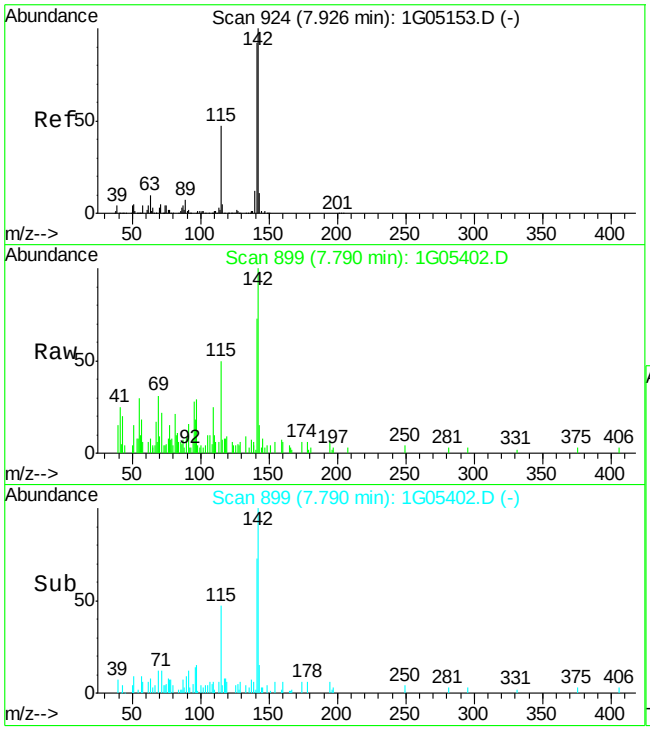


#37
2-Methylnaphthalene
Concen: 1.71 ug/mL
RT: 7.65 min Scan# 873
Delta R.T. -0.00 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:142 Resp: 19248

Ion	Ratio	Lower	Upper
142	100		
141	98.1	66.5	106.5
115	59.6	23.8	63.8

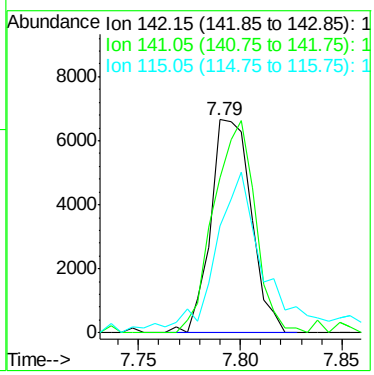


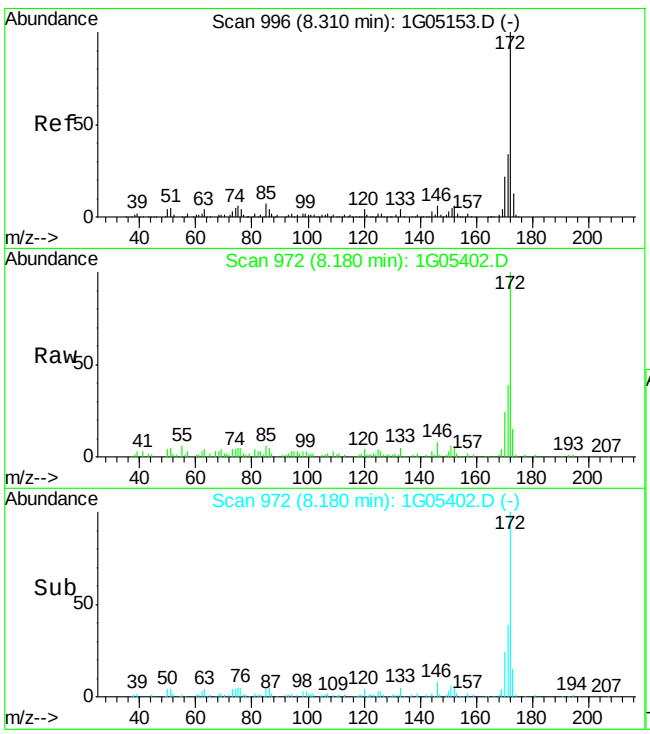


#38
1-Methylnaphthalene
Concen: 0.79 ug/mL
RT: 7.79 min Scan# 899
Delta R.T. -0.01 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:142 Resp: 9182

Ion	Ratio	Lower	Upper
142	100		
141	101.7	71.1	111.1
115	89.8	27.0	67.0#

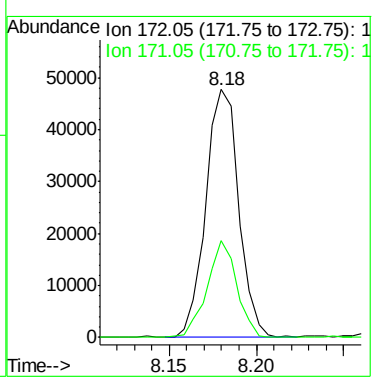


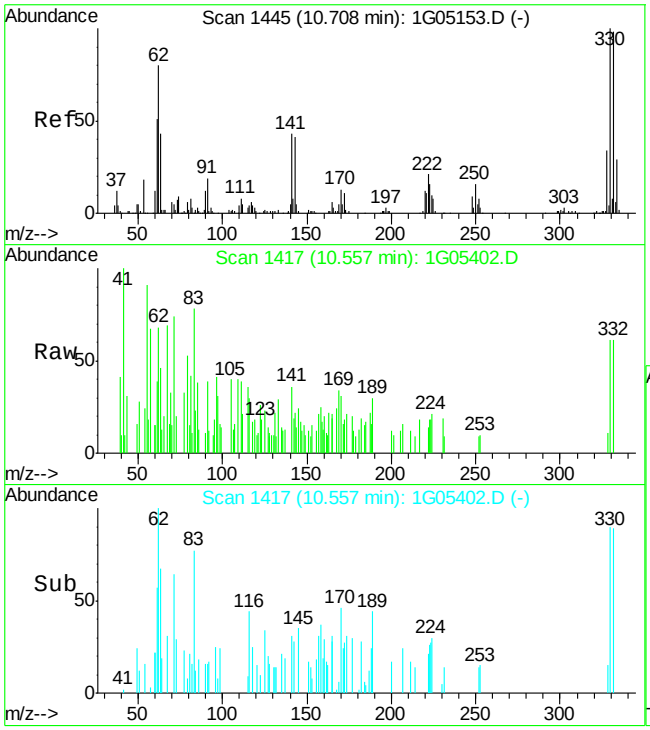


#44
2-Fluorobiphenyl
Concen: 4.39 ug/mL
RT: 8.18 min Scan# 972
Delta R.T. -0.01 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:172 Resp: 62425

Ion	Ratio	Lower	Upper
172	100		
171	35.2	14.3	54.3

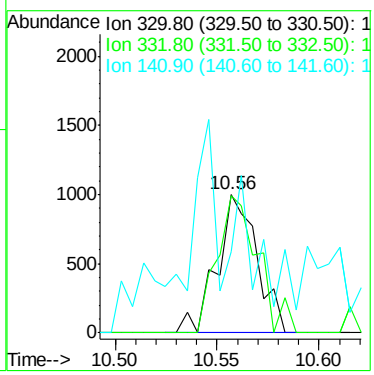


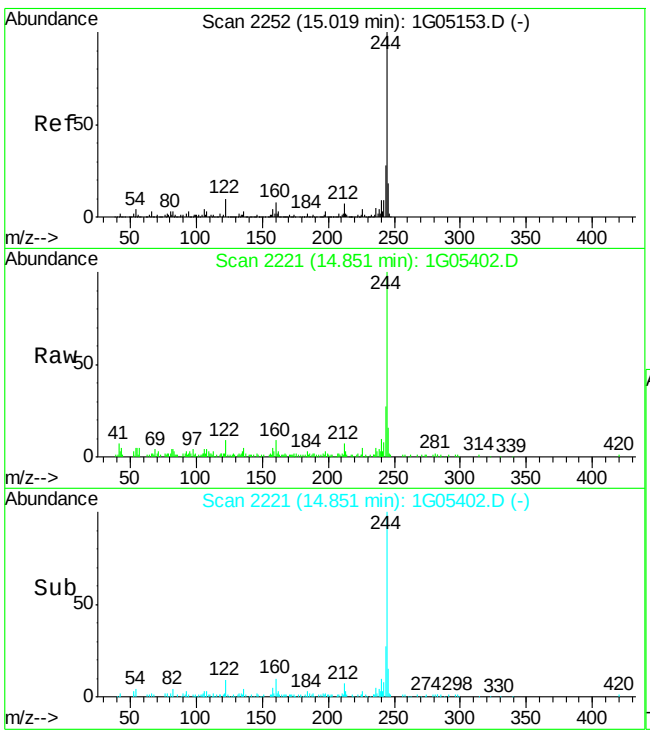


#61
2,4,6-Tribromophenol
Concen: 0.95 ug/mL
RT: 10.56 min Scan# 1417
Delta R.T. 0.00 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:330 Resp: 1354

Ion	Ratio	Lower	Upper
330	100		
332	101.8	77.4	117.4
141	0.0	26.5	66.5#

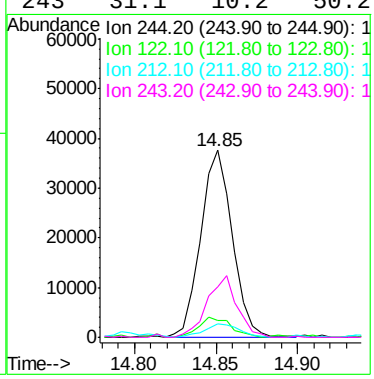




#77
Terphenyl-d14
Concen: 5.41 ug/mL
RT: 14.85 min Scan# 2221
Delta R.T. -0.02 min
Lab File: 1G05402.D
Acq: 29 Jan 2010 6:50 pm

Tgt Ion:244 Resp: 50852

Ion	Ratio	Lower	Upper
244	100		
122	11.1	0.0	30.0
212	8.1	0.0	27.2
243	31.1	10.2	50.2



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\012910\1G05398.D Vial: 12
Acq On : 29 Jan 2010 4:15 pm Operator: TAMIB
Sample : OP1332-MB Inst : GCMS1
Misc : OP1332,E1G164,30,,,1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 01 08:51:21 2010 Quant Results File: BNAE1G156.RES

Quant Method : C:\MSDCHEM\1\METHODS\BNAE1G156.M (RTE Integrator)
Title : 8270C Calibration
Last Update : Mon Jan 25 12:27:27 2010
Response via : Initial Calibration
DataAcq Meth : 827BASE

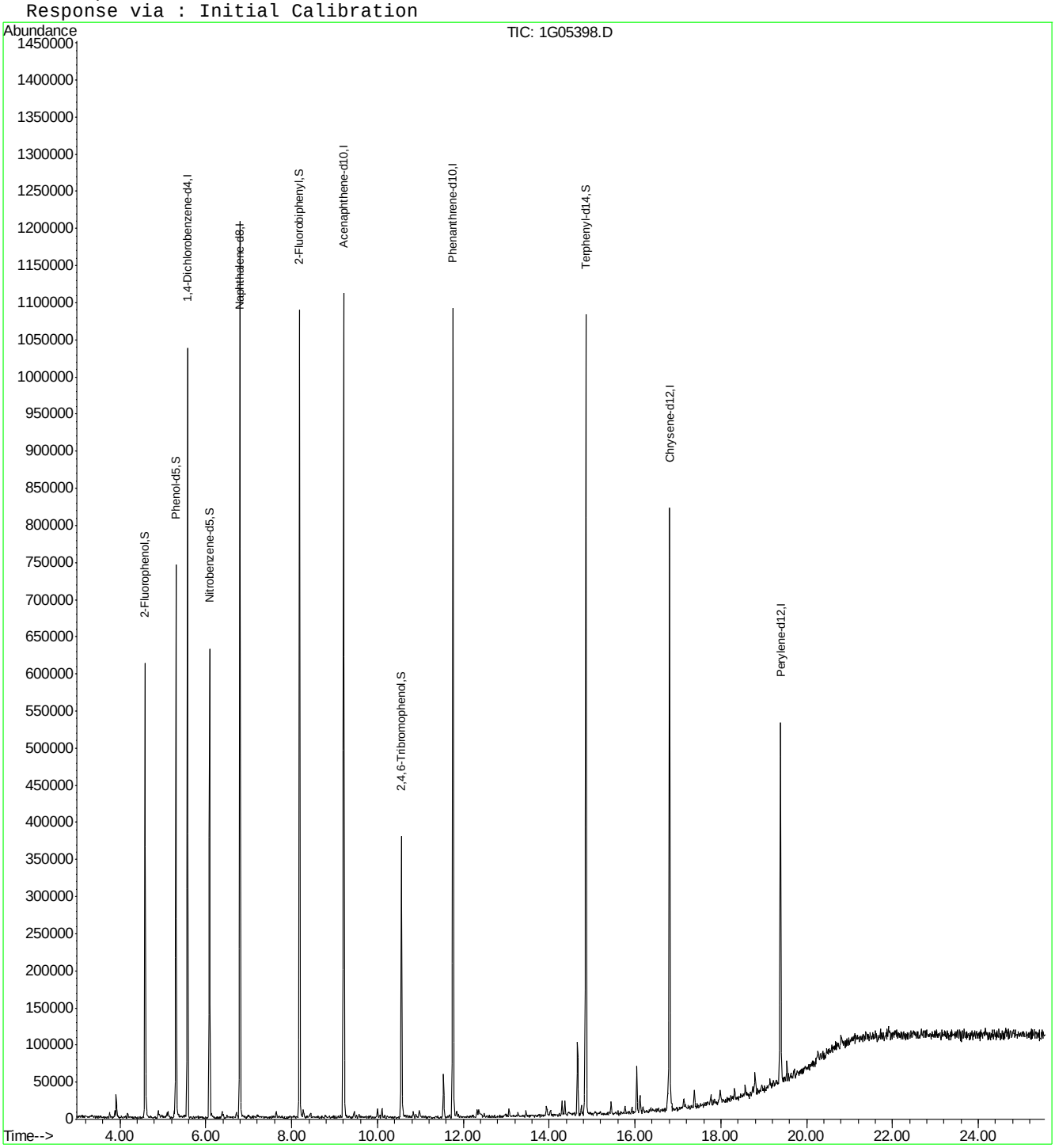
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	5.57	150	254173	40.00	ug/mL	0.00
22) Naphthalene-d8	6.80	136	622603	40.00	ug/mL	0.00
39) Acenaphthene-d10	9.21	164	344852	40.00	ug/mL	0.00
62) Phenanthrene-d10	11.76	188	609036	40.00	ug/mL	0.00
74) Chrysene-d12	16.81	240	450966	40.00	ug/mL	0.00
83) Perylene-d12	19.39	264	293311	40.00	ug/mL	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	4.59	112	179199	36.54	ug/mL	0.01
Spiked Amount 50.000	Range 1 - 250		Recovery = 73.08%			
8) Phenol-d5	5.30	99	268231	39.54	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 79.08%			
23) Nitrobenzene-d5	6.09	82	256917	33.00	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 66.00%			
44) 2-Fluorobiphenyl	8.18	172	441972	33.67	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 67.34%			
61) 2,4,6-Tribromophenol	10.56	330	53693	40.76	ug/mL	0.00
Spiked Amount 50.000	Range 1 - 250		Recovery = 81.52%			
77) Terphenyl-d14	14.86	244	466482	46.25	ug/mL	-0.01
Spiked Amount 50.000	Range 1 - 250		Recovery = 92.50%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
1G05398.D BNAE1G156.M Mon Feb 01 10:17:00 2010 EG1 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\012910\1G05398.D Vial: 12
Acq On : 29 Jan 2010 4:15 pm Operator: TAMIB
Sample : OP1332-MB Inst : GCMS1
Misc : OP1332,E1G164,30,,,1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 1 10:16 2010 Quant Results File: BNAE1G156.RES

Method : C:\MSDCHEM\1\METHODS\BNAE1G156.M (RTE Integrator)
Title : 8270C Calibration
Last Update : Mon Jan 25 12:27:27 2010
Response via : Initial Calibration



GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA250-MB	GA4594.D	1	01/27/10	SD	n/a	n/a	GGA250

The QC reported here applies to the following samples: **Method:** SW846 8015B

D10497-7A

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	1.0	1.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	104%	60-140%

Method Blank Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA250-MB	TA4594.D	1	01/27/10	SD	n/a	n/a	GTA250

The QC reported here applies to the following samples: **Method:** SW846 8021B

D10497-7A

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.0	ug/kg	
100-41-4	Ethylbenzene	ND	10	ug/kg	
108-88-3	Toluene	ND	10	ug/kg	
95-47-6	o-Xylene	ND	10	ug/kg	
	m,p-Xylene	ND	10	ug/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	108%	60-140%

Blank Spike Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA250-BS	GA4595.D	1	01/27/10	SD	n/a	n/a	GGA250

The QC reported here applies to the following samples: **Method:** SW846 8015B

D10497-7A

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	11	9.66	88	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	131%	60-140%

Blank Spike Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA250-BS	TA4595.D	1	01/27/10	SD	n/a	n/a	GTA250

The QC reported here applies to the following samples: **Method:** SW846 8021B

D10497-7A

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	136	126	93	70-130
100-41-4	Ethylbenzene	228	217	95	70-130
108-88-3	Toluene	1060	935	88	70-130
95-47-6	o-Xylene	330	323	98	70-130
	m,p-Xylene	750	724	97	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	128%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D10522-4MS	GA4597.D	1	01/27/10	SD	n/a	n/a	GGA250
D10522-4MSD	GA4598.D	1	01/27/10	SD	n/a	n/a	GGA250
D10522-4	GA4596.D	1	01/27/10	SD	n/a	n/a	GGA250

The QC reported here applies to the following samples: **Method:** SW846 8015B

D10497-7A

CAS No.	Compound	D10522-4 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		12.8	11.4	89	11.0	86	4	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D10522-4	Limits
120-82-1	1,2,4-Trichlorobenzene	133%	122%	112%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D10522-4MS	TA4597.D	1	01/27/10	SD	n/a	n/a	GTA250
D10522-4MSD	TA4598.D	1	01/27/10	SD	n/a	n/a	GTA250
D10522-4	TA4596.D	1	01/27/10	SD	n/a	n/a	GTA250

The QC reported here applies to the following samples: **Method:** SW846 8021B

D10497-7A

CAS No.	Compound	D10522-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		158	154	97	148	93	4	70-130/30
100-41-4	Ethylbenzene	ND		265	254	96	258	97	2	62-130/30
108-88-3	Toluene	ND		1230	1110	90	1120	91	1	70-130/30
95-47-6	o-Xylene	ND		384	375	98	376	98	0	65-135/30
	m,p-Xylene	ND		873	832	95	845	97	2	60-140/30

CAS No.	Surrogate Recoveries	MS	MSD	D10522-4	Limits
120-82-1	1,2,4-Trichlorobenzene	122%	119%	110%	60-140%

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson
01/29/10 11:38

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\GGA\GA4604.D\FID1A.CH Vial: 14
Signal #2 : Z:\012710\GGA\GA4604.D\FID2B.CH
Acq On : 27 Jan 2010 5:45 pm Operator: sarahd
Sample : D10497-7 Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 08:31:11 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.38	2591933	90.364	%	
10) S	1,2,4-Trichlorobenzene (P)	14.38	4157777	80.795	%	m
	Target Compounds					
1) T	TVH-Gasoline	0.00	0	N.D.	mg/L	d
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	7.76	1935235	9.604	ug/L	
7) T	Ethylbenzene	10.37	574782	3.517	ug/L	m
8) T	m,p-Xylene	10.53	3515979	17.146	ug/L	m
9) T	o-Xylene	11.03	416518	2.513	ug/L	
11) T	Naphthalene	0.00	0	N.D.	ug/L	d

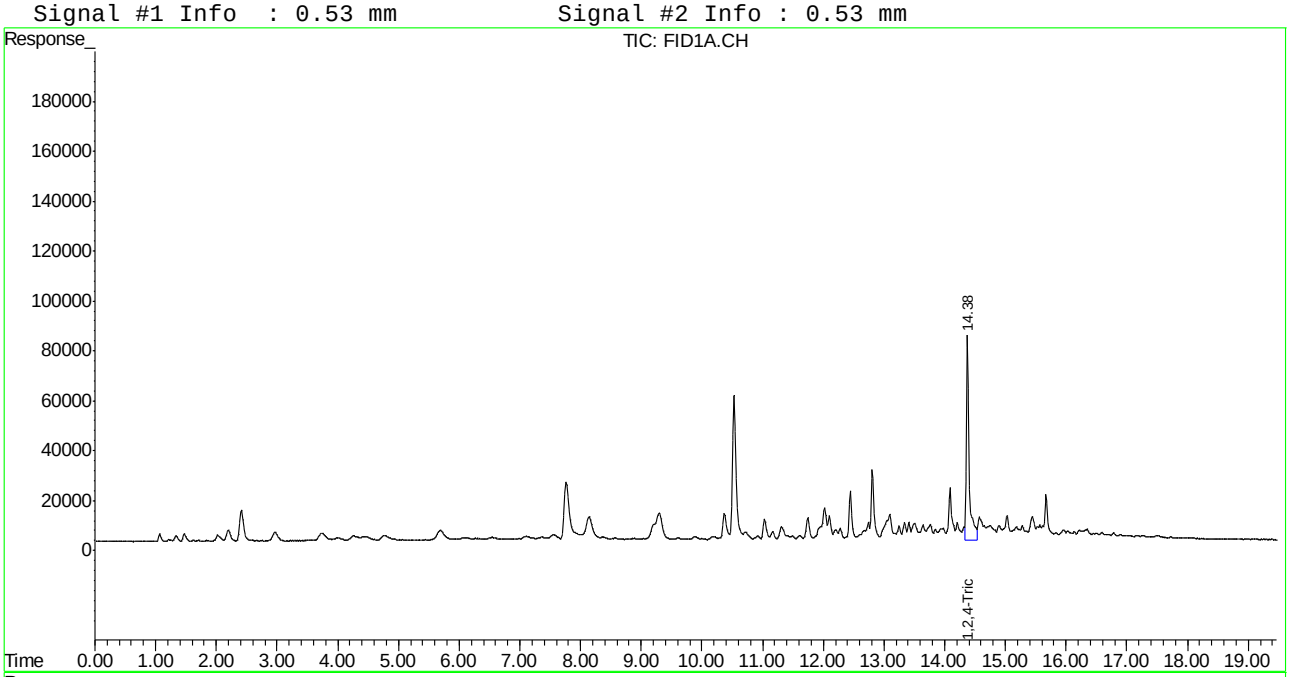
(f)=RT Delta > 1/2 Window (m)=manual int.
GA4604.D TA249GA249.M Thu Jan 28 11:18:24 2010 GC

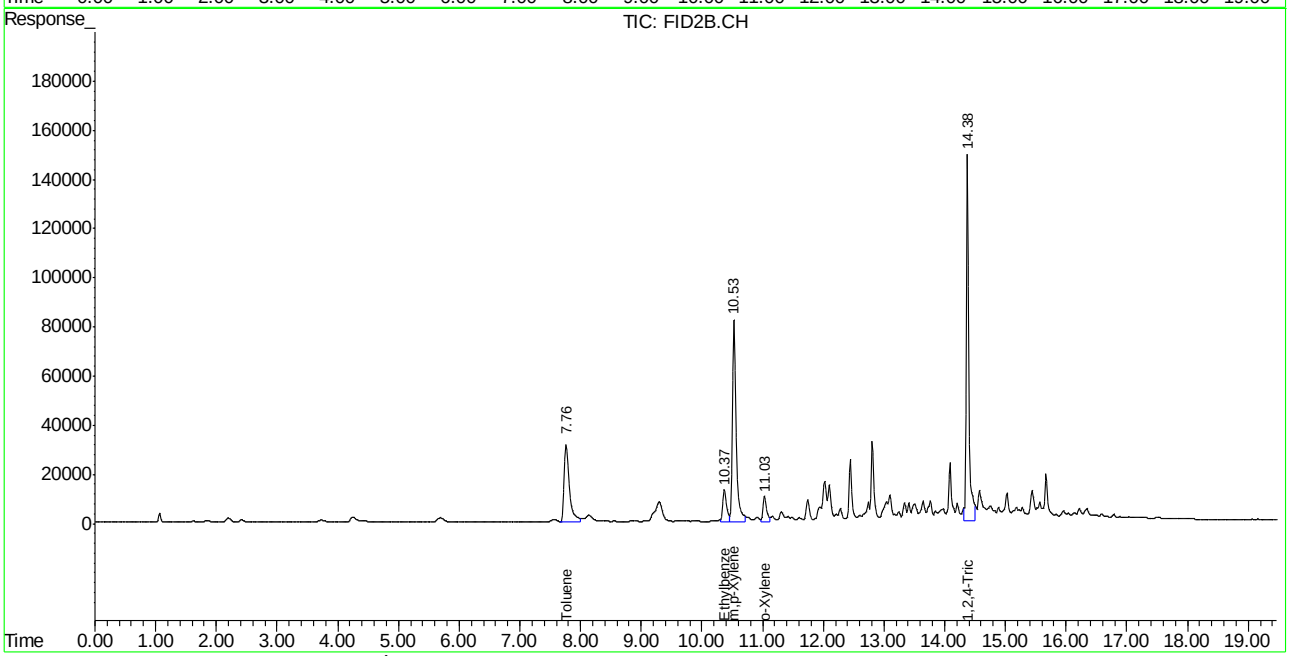
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\GGA\GA4604.D\FID1A.CH Vial: 14
Signal #2 : Z:\012710\GGA\GA4604.D\FID2B.CH
Acq On : 27 Jan 2010 5:45 pm Operator: sarahd
Sample : D10497-7 Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 8:48 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





GA4604.D TA249GA249.M Thu Jan 28 11:18:24 2010 GC Page 2

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson
01/29/10 11:36

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\TA4604.D\FID1A.CH Vial: 14
Signal #2 : Z:\012710\TA4604.D\FID2B.CH
Acq On : 27 Jan 2010 5:45 pm Operator: sarahd
Sample : D10497-7 Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 08:31:11 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.38	2591933	90.364	%	
10) S	1,2,4-Trichlorobenzene (P)	14.38	4157777	80.795	%	m
	Target Compounds					
1) T	TVH-Gasoline	0.00	0	N.D.	mg/L	d
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	7.76	1935235	9.604	ug/L	
7) T	Ethylbenzene	10.37	574782	3.517	ug/L	m
8) T	m,p-Xylene	10.53	3515979	17.146	ug/L	m
9) T	o-Xylene	11.03	416518	2.513	ug/L	
11) T	Naphthalene	0.00	0	N.D.	ug/L	d

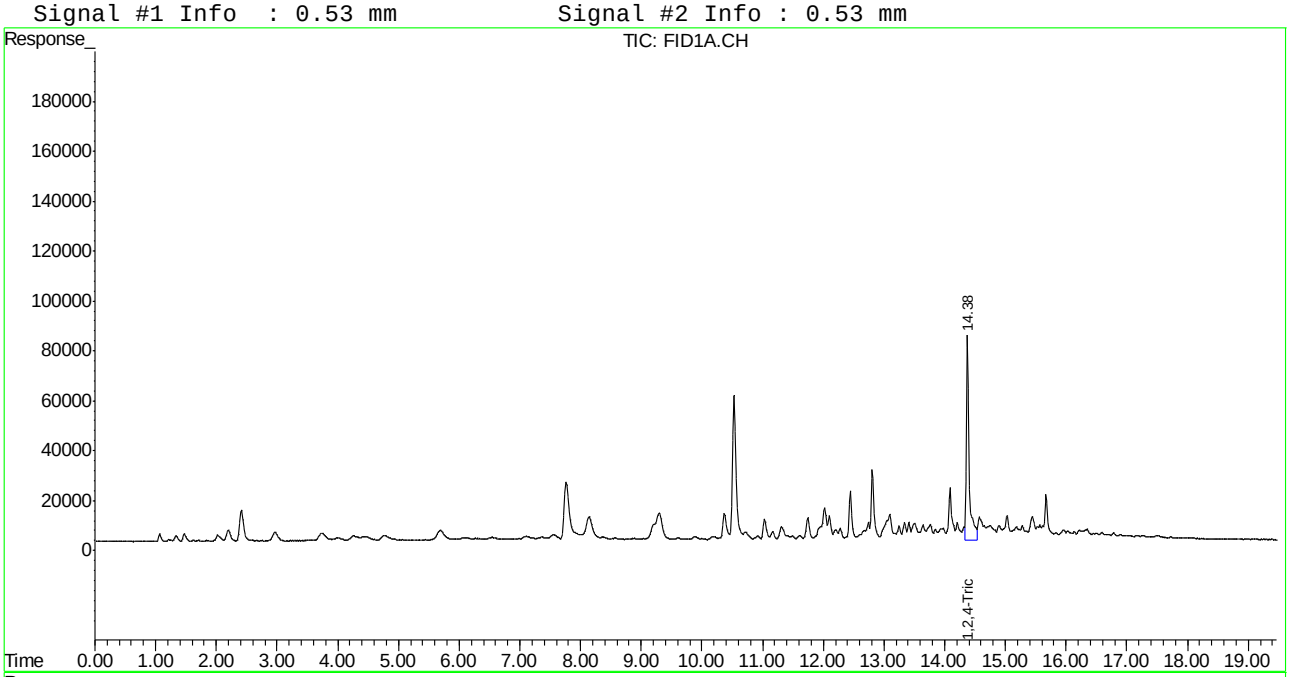
(f)=RT Delta > 1/2 Window (m)=manual int.
TA4604.D TA249GA249.M Thu Jan 28 09:05:06 2010 GC

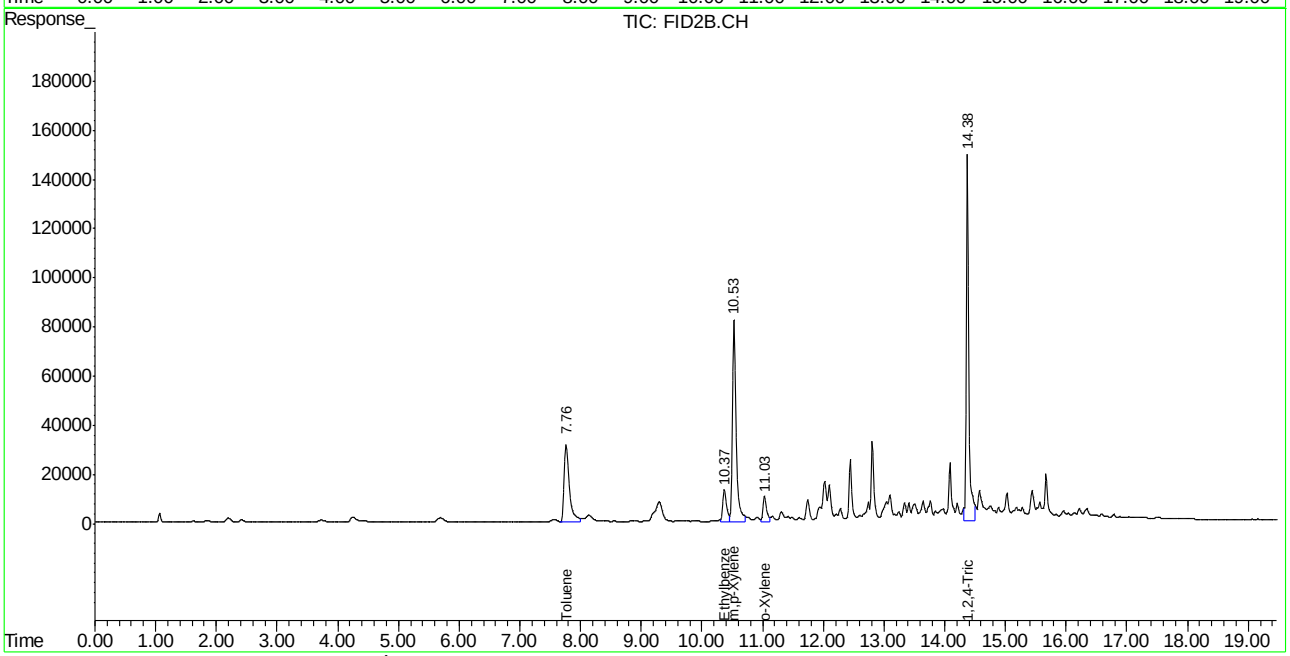
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\TA4604.D\FID1A.CH Vial: 14
Signal #2 : Z:\012710\TA4604.D\FID2B.CH
Acq On : 27 Jan 2010 5:45 pm Operator: sarahd
Sample : D10497-7 Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 8:48 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson
01/29/10 11:38

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\GGA\GA4594.D\FID1A.CH Vial: 4
Signal #2 : Z:\012710\GGA\GA4594.D\FID2B.CH
Acq On : 27 Jan 2010 11:33 am Operator: sarahd
Sample : MB 012710 S Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 08:30:41 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.37	3019635	103.921	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.36	5691168	107.754	%	m
	Target Compounds					
1) T	TVH-Gasoline	0.00	0	N.D.	mg/L	d
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	0.00	0	N.D.	ug/L	d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9) T	o-Xylene	0.00	0	N.D.	ug/L	d
11) T	Naphthalene	0.00	0	N.D.	ug/L	d

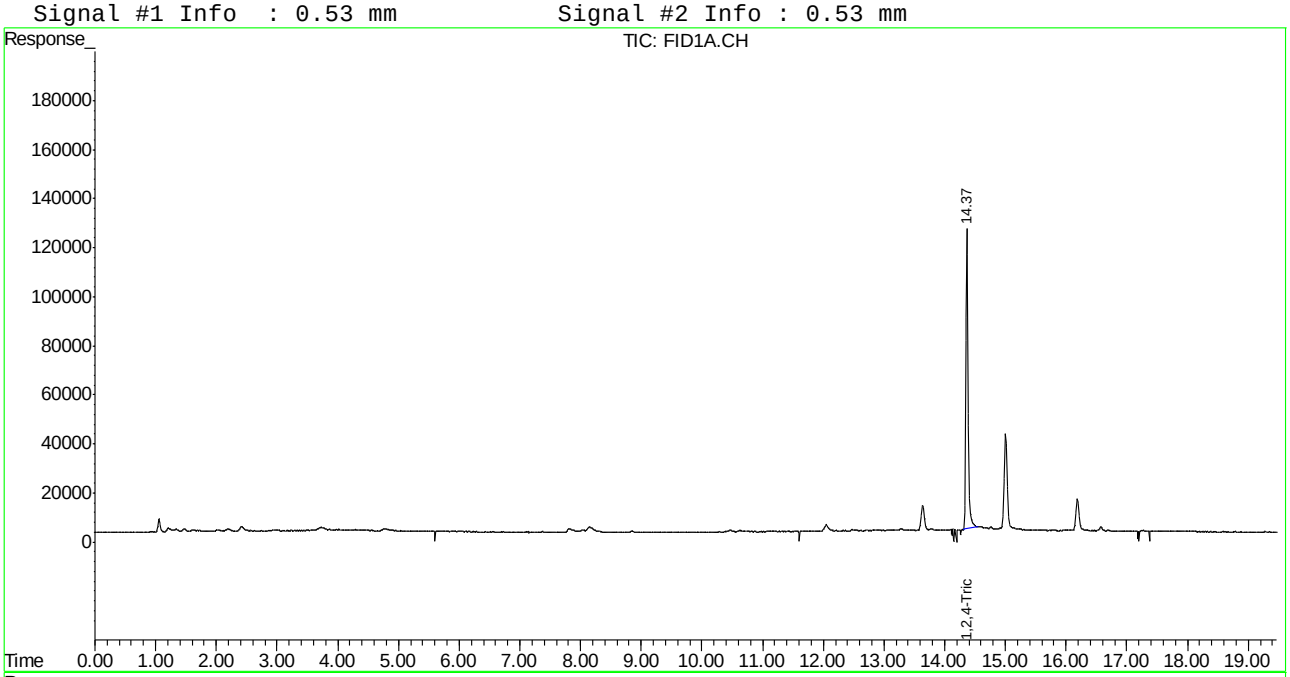
(f)=RT Delta > 1/2 Window (m)=manual int.
GA4594.D TA249GA249.M Thu Jan 28 15:59:32 2010 GC

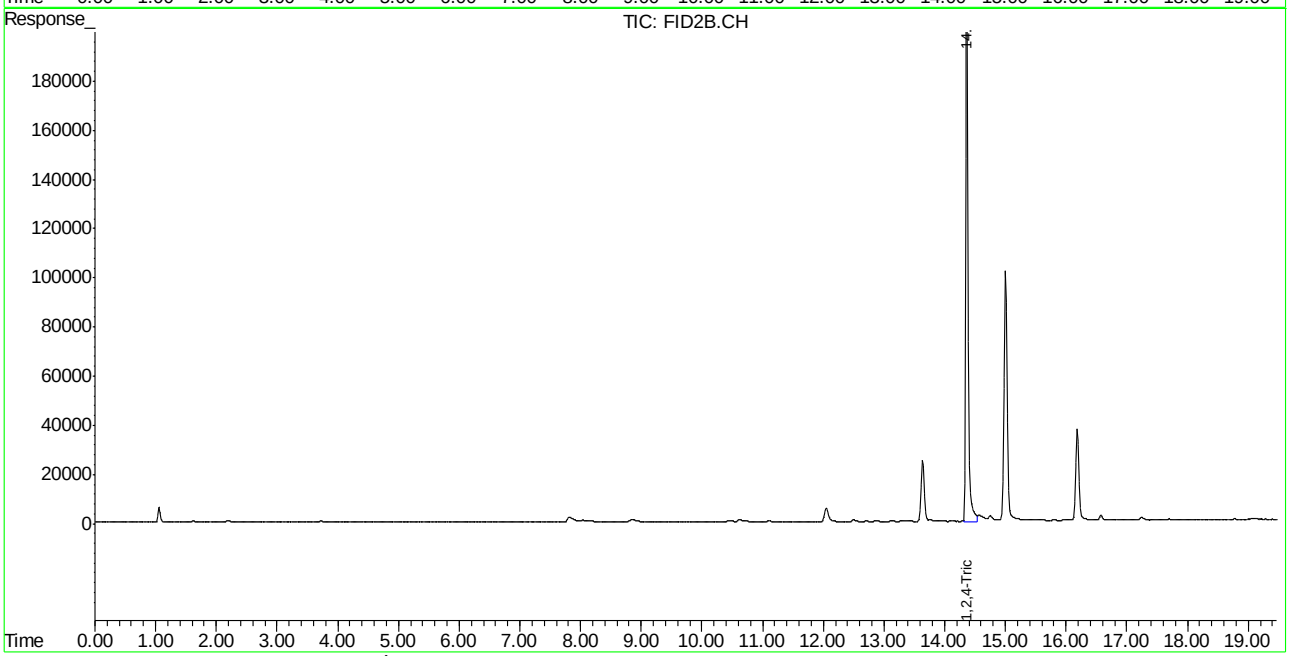
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\GGA\GA4594.D\FID1A.CH Vial: 4
Signal #2 : Z:\012710\GGA\GA4594.D\FID2B.CH
Acq On : 27 Jan 2010 11:33 am Operator: sarahd
Sample : MB 012710 S Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 15:42 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson
01/29/10 11:36

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\TA4594.D\FID1A.CH Vial: 4
Signal #2 : Z:\012710\TA4594.D\FID2B.CH
Acq On : 27 Jan 2010 11:33 am Operator: sarahd
Sample : MB 012710 S Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 08:30:41 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.37	3019068	103.904	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.36	5691168	107.754	%	m
	Target Compounds					
1) T	TVH-Gasoline	0.00	0	N.D.	mg/L	d
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	0.00	0	N.D.	ug/L	d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9) T	o-Xylene	0.00	0	N.D.	ug/L	d
11) T	Naphthalene	0.00	0	N.D.	ug/L	d

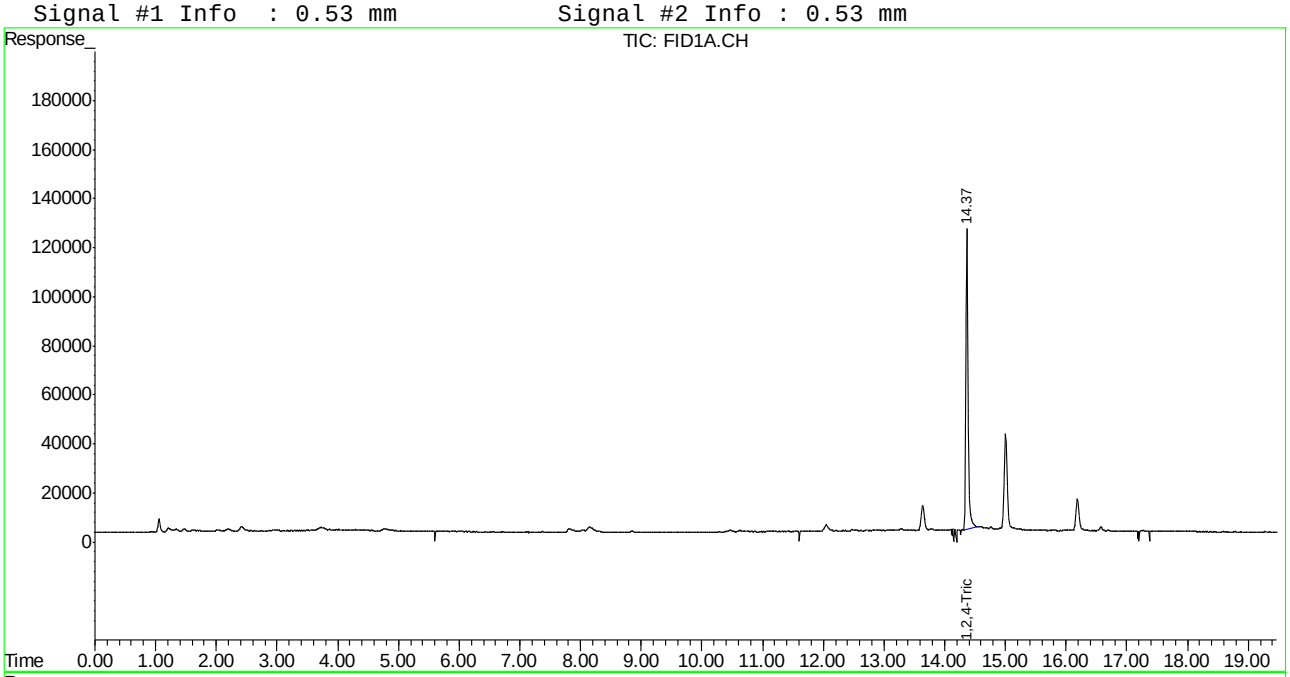
(f)=RT Delta > 1/2 Window (m)=manual int.
TA4594.D TA249GA249.M Thu Jan 28 16:03:05 2010 GC

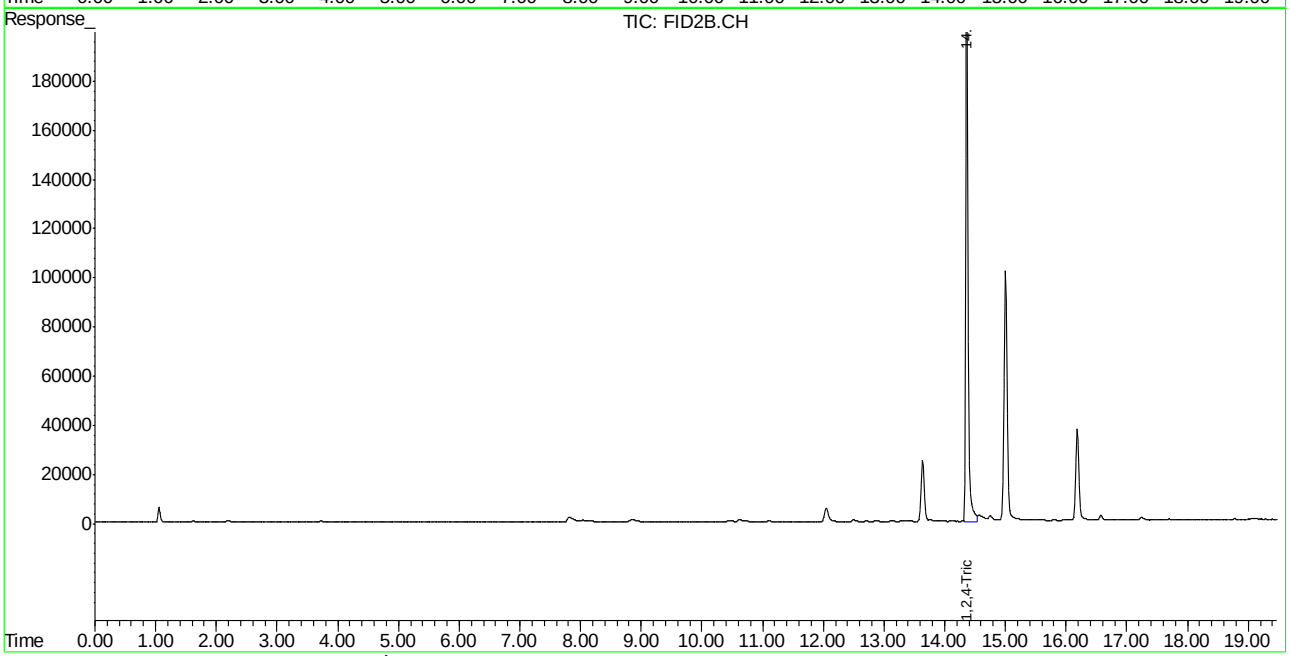
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012710\TA4594.D\FID1A.CH Vial: 4
Signal #2 : Z:\012710\TA4594.D\FID2B.CH
Acq On : 27 Jan 2010 11:33 am Operator: sarahd
Sample : MB 012710 S Inst : TVHBTEX2
Misc : GC536,GTA250,1,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 28 15:46 2010 Quant Results File: TA249GA249.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA249GA249.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jan 26 14:53:25 2010
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1330-MB	FC1591.D	1	01/22/10	LAC	01/22/10	OP1330	GFC93

The QC reported here applies to the following samples: **Method:** SW846-8015B

D10497-7A

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

CAS No.	Surrogate Recoveries		Limits
98-06-6	t-Butylbenzene	57%	39-130%

Blank Spike Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1330-BS	FC1592.D	1	01/22/10	LAC	01/22/10	OP1330	GFC93

The QC reported here applies to the following samples: **Method:** SW846-8015B

D10497-7A

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	571	86	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
98-06-6	t-Butylbenzene	72%	39-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D10497
Account: KRWCCOL KRW Consulting, Inc.
Project: 1001-05

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1330-MS	FC1594.D	2	01/22/10	LAC	01/22/10	OP1330	GFC93
OP1330-MSD	FC1595.D	2	01/22/10	LAC	01/22/10	OP1330	GFC93
D10496-7A	FC1593.D	2	01/22/10	LAC	01/22/10	OP1330	GFC93

The QC reported here applies to the following samples: **Method:** SW846-8015B

D10497-7A

CAS No.	Compound	D10496-7A mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	455		831	1120	80	1230	93	9	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D10496-7A	Limits
98-06-6	t-Butylbenzene	72%	79%	52%	39-130%

GC Semi-volatiles

Raw Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\GFC93\FC1609.D Vial: 25
Acq On : 23 Jan 2010 11:17 am Operator: laurac
Sample : D10497-7A Inst : FID5
Misc : OP1330,GFC93,30.11,,,2,10 Multiplr: 1.00
IntFile : DF-GFC86.E
Quant Time: Jan 25 10:03:01 2010 Quant Results File: DF-GFC86.RES

Quant Method : C:\MSDCHEM\2\METHODS\DF-GFC86.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Jan 06 11:54:20 2010
Response via : Initial Calibration
DataAcq Meth : FR_BASE.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
1)	S TBB	2.92	5517758	58.433 mg/L
	Target Compounds			
2)	T Diesel Fuel (No. 2)	7.86	31489420	618.514 mg/L

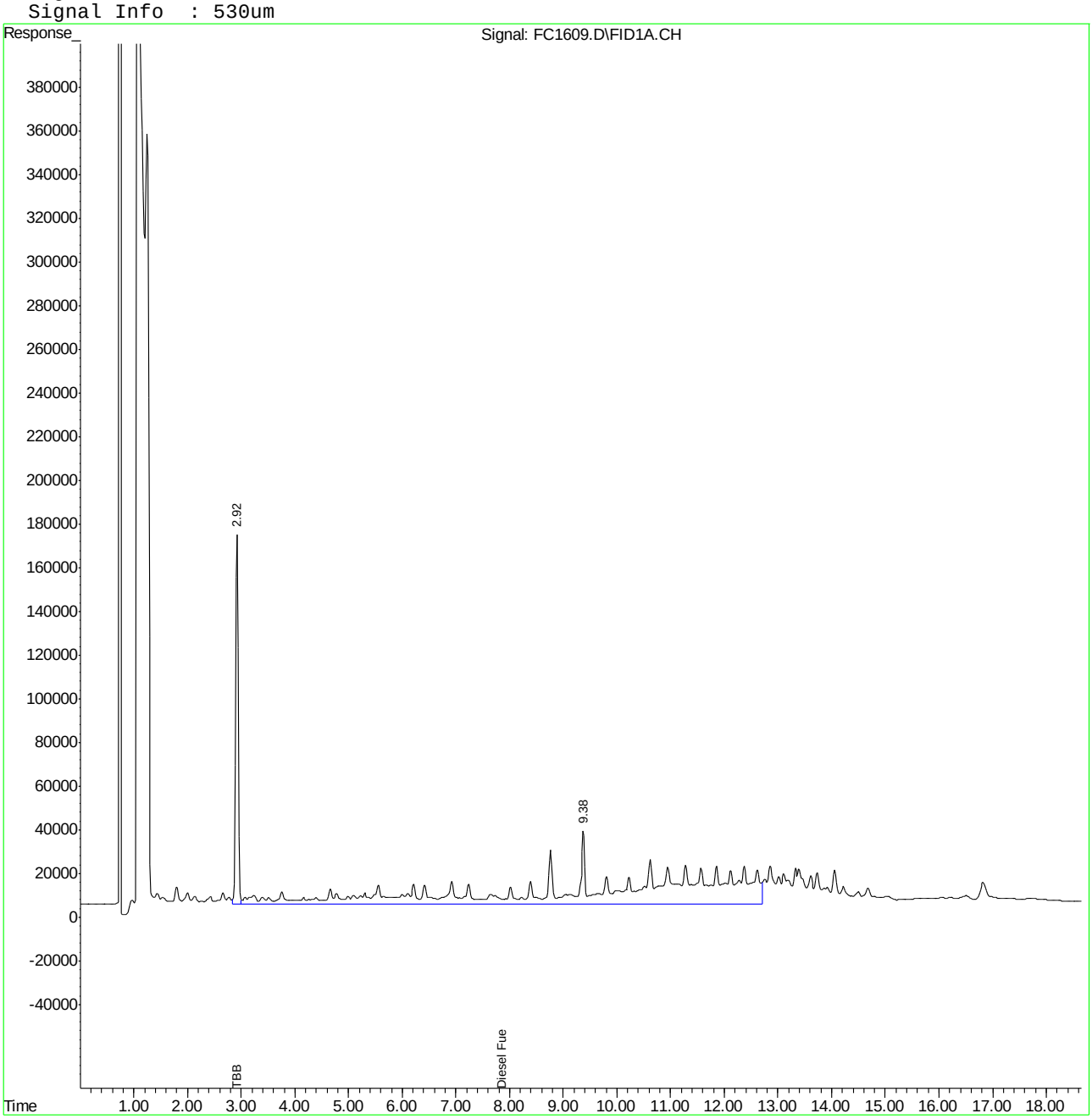
(f)=RT Delta > 1/2 Window (m)=manual int.
FC1609.D DF-GFC86.M Mon Jan 25 10:03:01 2010 GC

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\GFC93\FC1609.D Vial: 25
Acq On : 23 Jan 2010 11:17 am Operator: laurac
Sample : D10497-7A Inst : FID5
Misc : OP1330,GFC93,30.11,,,2,10 Multiplr: 1.00
IntFile : DF-GFC86.E
Quant Time: Jan 25 10:03 2010 Quant Results File: DF-GFC86.RES

Quant Method : C:\MSDCHEM\2\METHODS\DF-GFC86.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Jan 06 11:54:20 2010
Response via : Multiple Level Calibration
DataAcq Meth : FR_BASE.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\GFC93\FC1591.D Vial: 7
Acq On : 1-22-2010 04:16:11 PM Operator: laurac
Sample : OP1330-MB Inst : FID5
Misc : OP1330,GFC93,30,,,2,1 Multiplr: 1.00
IntFile : DF-GFC86.E
Quant Time: Jan 25 09:35:55 2010 Quant Results File: DF-GFC86.RES

Quant Method : C:\MSDCHEM\2\METHODS\DF-GFC86.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Jan 06 11:54:20 2010
Response via : Initial Calibration
DataAcq Meth : FR_BASE.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
1) S	TBB	2.93	53283790	565.559	mg/L
	Target Compounds				
2) T	Diesel Fuel (No. 2)	0.00	0	N.D.	mg/L d

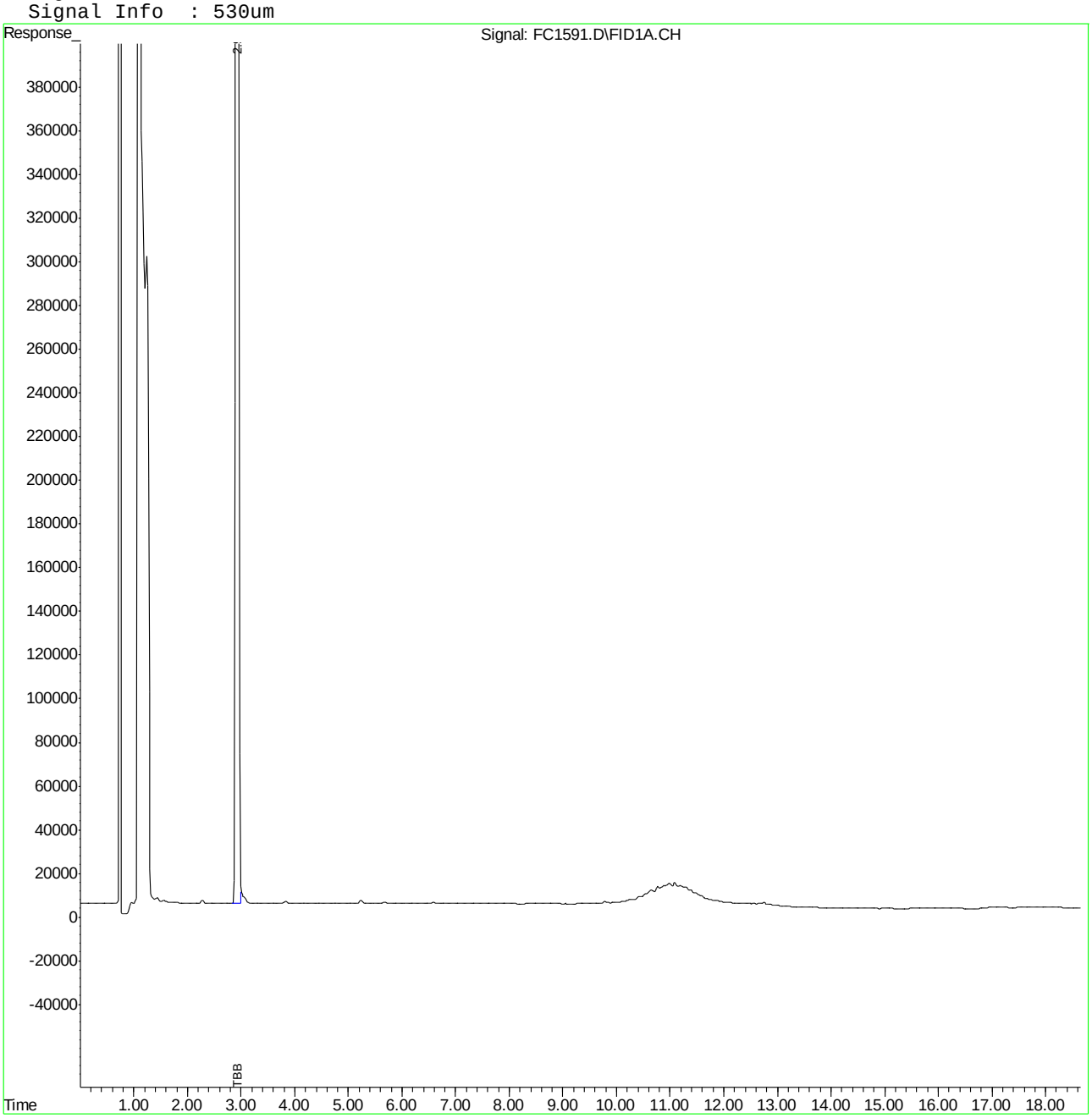
(f)=RT Delta > 1/2 Window (m)=manual int.
FC1591.D DF-GFC86.M Mon Jan 25 09:51:17 2010 GC

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\GFC93\FC1591.D Vial: 7
Acq On : 1-22-2010 04:16:11 PM Operator: laurac
Sample : OP1330-MB Inst : FID5
Misc : OP1330,GFC93,30,,,2,1 Multiplr: 1.00
IntFile : DF-GFC86.E
Quant Time: Jan 25 9:51 2010 Quant Results File: DF-GFC86.RES

Quant Method : C:\MSDCHEM\2\METHODS\DF-GFC86.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Jan 06 11:54:20 2010
Response via : Multiple Level Calibration
DataAcq Meth : FR_BASE.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um



Metals Analysis

QC Data Summaries

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1183
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 01/29/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	160	250		
Antimony	150	68	65		
Arsenic	130	35	33		
Barium	50	1	12		
Beryllium	50	17	22		
Boron	250	17	93		
Cadmium	50	3.7	6		
Calcium	2000	9	46	322	<2000
Chromium	50	3	8		
Cobalt	25	3	1.5		
Copper	25	9	14		
Iron	350	28	50		
Lead	250	17	16		
Lithium	10		8		
Magnesium	1000	3.1	62	41.0	<1000
Manganese	25	.5	3.5		
Molybdenum	50	7.5	6		
Nickel	150	4.1	3		
Phosphorus	500	230	270		
Potassium	5000	57	2700		
Selenium	250	25	36		
Silicon	250	48	100		
Silver	150	1.5	1.5		
Sodium	2000	17	110	-310	<2000
Strontium	25		17		
Thallium	50	7	11		
Tin	250	13	22		
Titanium	50	.65	3.5		
Uranium	250	22	20		
Vanadium	50	3.4	1.5		
Zinc	150	2.6	8.5		

Associated samples MP1183: D10497-1, D10497-2, D10497-3, D10497-4, D10497-5, D10497-6, D10497-7

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1183
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1183
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:			01/29/10					01/29/10	
Metal	BSP Result	Spikelot MPICPR1	% Rec	QC Limits	BSD Result	Spikelot MPICPR1	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium	49300	50000	98.6	80-120	49900	50000	99.8	1.2	
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Magnesium	46600	50000	93.2	80-120	46500	50000	93.0	0.2	
Manganese									
Molybdenum									
Nickel									
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	48800	50000	97.6	80-120	48600	50000	97.2	0.4	
Strontium									
Thallium									
Tin									
Titanium									
Uranium									
Vanadium									
Zinc									

Associated samples MP1183: D10497-1, D10497-2, D10497-3, D10497-4, D10497-5, D10497-6, D10497-7

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1183
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1186
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/01/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	3.3	2		
Antimony	3.0	1.4	.5		
Arsenic	2.5	.7	.72		
Barium	1.0	.02	.05	0.82	<1.0
Beryllium	1.0	.33	.21		
Boron	5.0	.33	.91	-0.020	<5.0
Calcium	40	.18	2.7		
Chromium	1.0	.06	.18	0.070	<1.0
Cobalt	0.50	.059	.058		
Copper	1.0	.18	.38	0.59	<1.0
Iron	7.0	.55	.91		
Lithium	0.20		.09		
Magnesium	20	.061	.93		
Manganese	0.50	.01	.028		
Molybdenum	1.0	.15	.16		
Phosphorus	10	4.7	3.5		
Potassium	200	1.1	130		
Selenium	5.0	.5	.54	-0.40	<5.0
Silicon	5.0	.96	.68		
Silver	3.0	.03	.068	0.10	<3.0
Sodium	40	.34	6.3		
Strontium	5.0		.02		
Thallium	1.0	.14	.21		
Tin	5.0	.26	.56		
Titanium	1.0	.013	.041		
Uranium	5.0	.43	.53		
Vanadium	1.0	.067	.034		

Associated samples MP1186: D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1186
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/01/10

Metal	D10503-1 Original	MS	Spikelot MPICPR1	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	68.7	465	415	95.6	75-125
Beryllium					
Boron	4.6	141	166	82.2	75-125
Calcium					
Chromium	6.9	141	166	80.8	75-125
Cobalt					
Copper	7.6	157	166	90.1	75-125
Iron					
Lithium					
Magnesium					
Manganese					
Molybdenum					
Phosphorus					
Potassium					
Selenium	1.3	126	166	75.2	75-125
Silicon					
Silver	0.23	12.6	16.6	74.6N(a)	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					

Associated samples MP1186: D10497-7A

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
(a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1186
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/01/10

Metal	D10503-1 Original	MSD	Spikelot MPICPR1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	68.7	514	466	95.6	10.0	20
Beryllium						
Boron	4.6	162	186	84.5	13.9	20
Calcium						
Chromium	6.9	160	186	82.2	12.6	20
Cobalt						
Copper	7.6	180	186	92.5	13.6	20
Iron						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Phosphorus						
Potassium						
Selenium	1.3	138	186	73.4N(a)	9.1	20
Silicon						
Silver	0.23	14.9	18.6	78.7	16.7	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						

Associated samples MP1186: D10497-7A

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
(a) Spike recovery indicates possible matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1186
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/01/10

Metal	LCS Result	Spikelot MPLCD064	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	321	348	92.2	81-119
Beryllium				
Boron	115	136	84.6	73-126
Calcium				
Chromium	73.5	89.5	82.1	79-121
Cobalt				
Copper	116	129	89.9	84-117
Iron				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Phosphorus				
Potassium				
Selenium	117	148	79.1	78-121
Silicon				
Silver	56.5	66	85.6	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				

Associated samples MP1186: D10497-7A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1186
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/01/10

Metal	D10503-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	768	873	13.6*(a)	0-10
Beryllium				
Boron	51.0	55.0	7.8	0-10
Calcium				
Chromium	76.9	84.5	9.9	0-10
Cobalt				
Copper	85.3	69.5	18.5 (b)	0-10
Iron				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Phosphorus				
Potassium				
Selenium	15.0	0.00	100.0(b)	0-10
Silicon				
Silver	2.60	6.00	130.8(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				

Associated samples MP1186: D10497-7A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1187
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 02/01/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.24	.89		
Arsenic	0.40	.058	.26	-0.051	<0.40
Calcium	200	2.6	6.1		
Copper	1.0	.0045	.14		
Iron	20	2.1	6.1		
Lead	0.25	.0013	.18		
Magnesium	50	.096	1.3		
Potassium	100	4.3	9.1		
Sodium	250	.25	1.8		
Uranium	0.25	.0005	.12		

Associated samples MP1187: D10497-1A, D10497-2A, D10497-3A, D10497-4A, D10497-5A, D10497-6A, D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1187
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 02/01/10 02/01/10

Metal	D10503-1 Original	DUP	RPD	QC Limits	D10503-1 Original	MS	Spikelot MPICPR1	% Rec	QC Limits
Aluminum									
Arsenic	4.3	4.0	7.2	0-20	4.3	147	166	86.0	60-119
Calcium									
Copper									
Iron									
Lead									
Magnesium									
Potassium									
Sodium									
Uranium									

Associated samples MP1187: D10497-1A, D10497-2A, D10497-3A, D10497-4A, D10497-5A, D10497-6A, D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1187
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 02/01/10

Metal	D10503-1 Original	MSD	Spikelot MPICPR1	% Rec	MSD RPD	QC Limit
Aluminum						
Arsenic	4.3	163	186	85.2	10.3	20
Calcium						
Copper						
Iron						
Lead						
Magnesium						
Potassium						
Sodium						
Uranium						

Associated samples MP1187: D10497-1A, D10497-2A, D10497-3A, D10497-4A, D10497-5A, D10497-6A, D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1187
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 02/01/10

Metal	LCS Result	Spikelot MPLCD064	% Rec	QC Limits
Aluminum				
Arsenic	136	158	86.1	82-118
Calcium				
Copper				
Iron				
Lead				
Magnesium				
Potassium				
Sodium				
Uranium				

Associated samples MP1187: D10497-1A, D10497-2A, D10497-3A, D10497-4A, D10497-5A, D10497-6A, D10497-7A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1187
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 02/01/10

Metal	D10503-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Arsenic	9.57	8.64	9.7	0-10
Calcium				
Copper				
Iron				
Lead				
Magnesium				
Potassium				
Sodium				
Uranium				

Associated samples MP1187: D10497-1A, D10497-2A, D10497-3A, D10497-4A, D10497-5A, D10497-6A, D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1196
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 02/02/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.086	.00091	.0011	0.0038	<0.086

Associated samples MP1196: D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1196 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 02/02/10

Metal	D10496-7A Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.038	0.48	0.454	97.4	85-115

Associated samples MP1196: D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1196 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 02/02/10

Metal	D10496-7A Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.038	0.41	0.446	83.4N	15.7	20

Associated samples MP1196: D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1196
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 02/02/10

Metal	LCS Result	Spikelot HGLCD064	% Rec	QC Limits
Mercury	7.8	7.34	106.3	72-128

Associated samples MP1196: D10497-7A

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/10/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	3.3	2		
Antimony	3.0	1.4	.5		
Arsenic	2.5	.7	.72		
Barium	1.0	.02	.05		
Beryllium	1.0	.33	.21		
Boron	5.0	.33	.91		
Cadmium	1.0	.073	.12	0.020	<1.0
Calcium	40	.18	2.7		
Chromium	1.0	.06	.18		
Cobalt	0.50	.059	.058		
Copper	0.50	.18	.38		
Iron	7.0	.55	.91		
Lead	5.0	.33	.24	0.010	<5.0
Lithium	0.20		.09		
Magnesium	20	.061	.93		
Manganese	0.50	.01	.028		
Molybdenum	1.0	.15	.16		
Nickel	3.0	.081	.075	0.030	<3.0
Phosphorus	10	4.7	3.5		
Potassium	200	1.1	130		
Selenium	5.0	.5	.54		
Silicon	5.0	.96	.68		
Silver	3.0	.03	.068		
Sodium	40	.34	6.3		
Strontium	5.0		.02		
Thallium	1.0	.14	.21		
Tin	5.0	.26	.56		
Titanium	1.0	.013	.041		
Uranium	5.0	.43	.53		
Vanadium	1.0	.067	.034		
Zinc	4.0	.051	.49	3.2	<4.0

Associated samples MP1258: D10497-7A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/10/10

Metal	D10498-9A Original	MS	Spikelot MPICPR1	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium	1.7	17.7	20.8	76.8	75-125
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	25.9	186	208	76.8	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	13.6	164	208	72.2N(a)	75-125
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	40.7	185	208	69.2N(b)	75-125

Associated samples MP1258: D10497-7A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
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 recovery indicates possible matrix interference.
(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/10/10

Metal	D10498-9A Original	MSD	Spikelot MPICPR1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium	1.7	18.1	21.8	75.1	2.2	20
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	25.9	195	218	77.4	4.7	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	13.6	171	218	72.1N(a)	4.2	20
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	40.7	192	218	69.3N(b)	3.7	20

Associated samples MP1258: D10497-7A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
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 recovery indicates possible matrix interference.
(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/10/10

Metal	BSP Result	Spikelot MPICPR1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	18.0	19.6	91.8	80-120
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	192	196	97.9	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	188	196	95.9	80-120
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	167	196	85.2	80-120

Associated samples MP1258: D10497-7A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/10/10

Metal	D10498-9A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	15.4	17.0	10.4 (a)	0-10
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	232	270	16.2*	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	121	146	20.0*	0-10
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	364	435	19.5*(b)	0-10

Associated samples MP1258: D10497-7A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

QC Batch ID: MP1258 Methods: SW846 6010B
Matrix Type: SOLID Units: ug/l

Prep Date:

Metal

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

General Chemistry

QC Data Summaries

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: D10497
Account: KRWCCOL - KRW Consulting, Inc.
Project: 1001-05

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP1389/GN3060			umhos/cm	9985	10000	100.6	90-110%
pH	GN2957			su	8.00	7.99	99.9	99.3-100.7%
pH	GN2958			su	8.00	8.02	100.3	99.3-100.7%

Associated Samples:
Batch GN2957: D10497-1, D10497-2, D10497-3, D10497-4, D10497-5, D10497-6
Batch GN2958: D10497-7
Batch GP1389: D10497-1, D10497-2, D10497-3, D10497-4, D10497-5, D10497-6, D10497-7
(*) Outside of QC limits

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

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

Accutest Job #:	D10497
Accutest Quote #:	
AMS P.O. #:	
Project No.:	1001-05

Client Information			Subcontract Laboratory Information			Analytical Information
Name: Accutest Mountain States (AMS)			Name: Accutest - New England			
Address: 4036 Youngfield St.			Address: 495 Technology Center West, BLDG O			
City: Wheat Ridge,	State: CO	Zip: 80033	City: Marlborough	State: MA	Zip: 01752	
Send Report to: Carl Smits			Contact: Sample Management			
Any questions contact: Andrea Engelbrecht						
Phone/Fax #: (303) 425-6021; (303)425-6854			Phone: (508) 481-6200			

Field ID / Point of Collection	Collection Date	Collection Time		Matrix	# of bottles	Preservation HCL	NaOH	HNO3	H2SO4	None	Hexavalent Chromium					Comments
D10497 -7	1/15/10	12:20 PM		Soil	1						X					
-																
-																
-																
-																
-																
-																
-																
-																

Turnaround Information

- [X] 10 Business Day Standard — Approved By:
- [ ] Other _____ (Days)

10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] Other (Specify)
- [ ] PDF
- [ ] Compact Disk Deliverable
- [ ] Electronic Delivery: _____
- [ ] State Forms

Comments / Remarks

Please use Colorado regulations and RLs.

12F

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date & Time:	Received By:	Date & Time:
1	1/21/10	1 UPS	1
2 UPS	1/22/10 10:15	2	2 1/22/10 10:15
3		3	3

For Subcontract Laborartory Use Only

Seal #: Headspace: Yes [ ] No [ ] NA [ ]

Preserved where applicable: [ ]

Temperature °C _____ On Ice [X] 2.3

13.1 13

D10497: Chain of Custody
Page 1 of 1
Accutest Labs of New England, Inc.

General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

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: D10497
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 1001-05

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP11222/GN30967	2.0	0.77	mg/kg	40	39.0	97.5	80-120%
Chromium, Hexavalent	GP11222/GN30967			mg/kg	985	1000	101.5	80-120%
Chromium, Hexavalent	GP11222/GN30967			mg/kg	120	101	84.2	80-120%

Associated Samples:
Batch GP11222: D10497-7A
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D10497
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 1001-05

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Chromium, Hexavalent	GP11222/GN30967	mg/kg	40	39.7	184.7	

Associated Samples:
Batch GP11222: D10497-7A
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D10497
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 1001-05

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP11222/GN30967	M88649-1R	mg/kg	0.90	1.0	10.5	0-20%
Redox Potential Vs H2	GN30950	M88649-1R	mv	360	354	1.7	0-20%

Associated Samples:
Batch GN30950: D10497-7A
Batch GP11222: D10497-7A
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D10497
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 1001-05

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP11222/GN30967	M88649-1R	mg/kg	0.90	41.7	38.6	90.4	75-125%
Chromium, Hexavalent	GP11222/GN30967	M88649-1R	mg/kg	0.90	904	924	102.2	75-125%

Associated Samples:
Batch GP11222: D10497-7A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits