

Prepared For

**K.P. KAUFFMAN COMPANY, INC.  
10137 WELD COUNTY ROAD 19  
FORT LUPTON, CO 80621**

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**PHASE II ENVIRONMENTAL SITE ASSESSMENT  
UPPR 23 M 1 & 2 FACILITY  
25<sup>th</sup> NORTH ROAD  
ADAMS COUNTY, COLORADO**

**Date Issued: December 16, 2013  
APEX Project Number 1-0025.003.14**

Prepared By  
**APEX CONSULTING SERVICES, INC.  
P.O. Box 369  
LOUISVILLE, CO 80027-0369**

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**APEX CONSULTING SERVICES, INC.**

566 West Willow Court  
Reply to: P.O. Box 369  
Louisville, CO 80027-0369  
Phone: 303-665-1400  
Fax: 303-665-0620

December 16, 2013

Mr. Denny Kuhn  
K.P. Kauffman Company, Inc.  
10137 Weld County Road 19  
Fort Lupton, CO 80621

**RE: PHASE II ENVIRONMENTAL SITE ASSESSMENT, UPPR M 1 & 2 FACILITY, ADAMS COUNTY, COLORADO**

Dear Mr. Kuhn:

Apex Consulting Services, Inc. is pleased to provide the results of our Phase II Environmental Site Assessment at the UPPR 23 M 1 & 2 Facility in Adams County, Colorado. The following report details the field methods and findings of the investigation.

We appreciate the opportunity to provide environmental services for this project. If you have any questions concerning this report, or if we can assist you in any other matter, please call.

Sincerely,

APEX CONSULTING SERVICES, INC.



Michael D. Hattel, P.G., R.E.A.  
Principal

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## **1.0 INTRODUCTION**

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Apex Consulting Services, Inc. (APEX) was retained by K.P. Kauffman Company, Inc. (KPK) to perform a Phase II Environmental Site Assessment (ESA) at the UPPR 23 M 1 & 2 in Adams County, Colorado (Facility). The Facility is located just west of 25<sup>th</sup> North Road and south of Imboden Road. The work was requested by Colorado Oil and Gas Conservation Commission (COGCC).

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## **2.0 FIELD ACTIVITIES**

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### **2.1 Soil Sampling**

Two (2) soil samples (UPPR-23-M-1-2-S and UPPR-23-M-1-2-N) were collected from an excavation located beneath the pit previously located at the Facility on November 25, 2013. The samples were collected at depths of approximately 10 feet BGS. Soil sample locations are illustrated on Figure 1 which is included in Appendix A. The soil samples were field screened for the presence of VOC's with a PID and for staining and/or discoloration. VOC concentrations were less than 1 parts per million (ppm) in sample UPPR-23-M-1-2-N and were 15 ppm in sample UPPR-23-M-1-2-S. The samples did not exhibit any staining or discoloration.

Top soil was present in the excavation from the surface to a depth of 1.5 feet BGS. The top soil was underlain by clayey sand. Groundwater was not encountered in the excavation.

### **2.2 Analytical Results**

The soil samples were handled with clean, new, nitrile gloves and placed in laboratory supplied sample containers and labeled. The samples were placed in a cooler on ice and were delivered to Accutest Laboratories (ACCUTEST) under chain-of-custody documentation. Each sample was analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), and Total Petroleum Hydrocarbons (TPH) – Diesel (DRO) and Gasoline Range Organics (GRO).

The laboratory results indicate that BTEX or GRO compounds were not present above the laboratory reporting limit in the samples collected from the excavation. However, DRO compounds were detected in the sample UPPR-23-M-1-2-N at a concentration of 8.16 and in sample UPPR-23-M-1-2-S at a concentration of 419 mg/kg. The laboratory results are summarized on Table 1 in Appendix B. The laboratory analytical reports and chain-of-custody forms provided by ACCUTEST are also included in Appendix B.

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### **3.0 CONCLUSIONS AND RECOMMENDATIONS**

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Two soil samples were collected from the excavation located beneath the pit previously located at the Facility. The soil samples were analyzed for BTEX and TPH (GRO and DRO) compounds. No staining or discoloration was observed in any of the soils or samples collected from the excavation. VOC's were detected in sample UPPR-23-M-1-2-S at a concentration of 15 ppm. The laboratory results indicate that BTEX or GRO compounds were not present in any of the samples collected from the borings. However, DRO compounds were detected in the samples at concentrations of 8.16 and 419 mg/kg. The detected concentrations are below COGCC cleanup standards of 500 mg/kg.

Based on the analytical results, additional work at the Property is not warranted at this time.

## **APPENDIX A**

### **FIGURE**

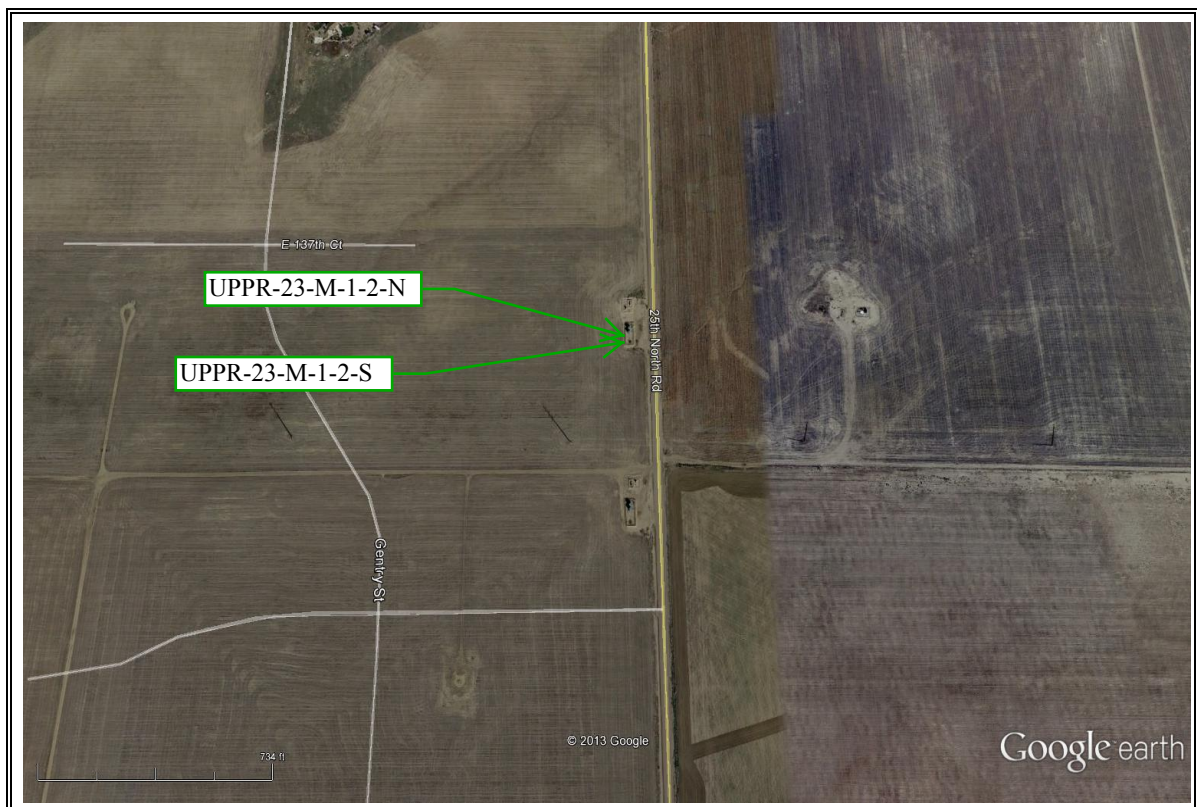


Figure 1

**APPENDIX B**

**ANALYTICAL TABLE & REPORTS**



**TABLE 1**  
**PETROLEUM COMPOUND ANALYTICAL RESULTS**  
**FOR SOIL SAMPLES COLLECTED FROM**  
**UPPR 23 M FACILITY, ADAMS COUNTY, COLORADO**

**Project No. 1-0025.003.09**

<b>Sample</b>	<b>Depth (ft)</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>Total Xylenes</b>	<b>TPH (GRO)</b>	<b>TPH (DRO)</b>
UPPR-23-M-1-2-N	10	ND	ND	ND	ND	ND	8.16
UPPR-23-M-1-2-S	10	ND	ND	ND	ND	ND	419
Standard		.26	140	190	260	500	500

Concentrations in micrograms per kilogram (mg/kg)

Samples collected on November 25, 2013

Standard from Colorado Oil and Gas Conservation Commission

GRO – Gasoline Range Organics

DRO – Diesel Rang Organics

ND – Not Detected Above Reporting Limit

TPH – Total Petroleum Hydrocarbons



12/05/13

## Technical Report for

Apex Consulting Services

Uppr 23 M 1 & 2

Accutest Job Number: D52901

Sampling Date: 11/25/13

Report to:

Apex Consulting Services  
P.O. Box 369  
Louisville, CO 80027-0369  
mhattel@msn.com

ATTN: Mike Hattel

Total number of pages in report: **29**



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

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman  
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

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Sample Summary

Apex Consulting Services

Job No: D52901

Uppr 23 M 1 & 2

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D52901-1	11/25/13	10:20 MH	11/25/13	SO	Soil	UPPR-23-M-1-2-N
D52901-2	11/25/13	10:30 MH	11/25/13	SO	Soil	UPPR-23-M-1-2-S

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

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Apex Consulting Services

**Job No** D52901

**Site:** Uppr 23 M 1 & 2

**Report Date** 12/5/2013 4:46:36 PM

On 11/25/2013, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D52901 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

**Matrix:** SO

**Batch ID:** V5V1805

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D52901-1MS, D52901-2DUP were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8015B

**Matrix:** SO

**Batch ID:** GGB1266

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D52443-1RMS, D52443-1RMSD were used as the QC samples indicated.

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

**Matrix:** SO

**Batch ID:** OP9027

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D52901-1MS, D52901-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM2540G-2011 M

**Matrix:** SO

**Batch ID:** GN22835

- The data for SM2540G-2011 M meets quality control requirements.

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.

Summary of Hits

Job Number: D52901  
Account: Apex Consulting Services  
Project: Uppr 23 M 1 & 2  
Collected: 11/25/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
D52901-1	UPPR-23-M-1-2-N					
TPH-DRO (C10-C28)		8.16	7.8	5.9	mg/kg	SW846-8015B
D52901-2	UPPR-23-M-1-2-S					
TPH-DRO (C10-C28)		419	7.1	5.3	mg/kg	SW846-8015B

Sample Results

Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	UPPR-23-M-1-2-N	<b>Date Sampled:</b>	11/25/13
<b>Lab Sample ID:</b>	D52901-1	<b>Date Received:</b>	11/25/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.4
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Uppr 23 M 1 & 2		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V30016.D	1	11/27/13	JL	n/a	n/a	V5V1805
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	67	33	ug/kg	
108-88-3	Toluene	ND	130	67	ug/kg	
100-41-4	Ethylbenzene	ND	130	25	ug/kg	
1330-20-7	Xylene (total)	ND	270	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		64-130%
460-00-4	4-Bromofluorobenzene	101%		62-131%
17060-07-0	1,2-Dichloroethane-D4	105%		70-130%

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

Page 1 of 1

<b>Client Sample ID:</b>	UPPR-23-M-1-2-N	<b>Date Sampled:</b>	11/25/13
<b>Lab Sample ID:</b>	D52901-1	<b>Date Received:</b>	11/25/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.4
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	Uppr 23 M 1 & 2		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB22933.D	1	11/26/13	EV	n/a	n/a	GGB1266
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	94%		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

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<b>Client Sample ID:</b>	UPPR-23-M-1-2-N	<b>Date Sampled:</b>	11/25/13
<b>Lab Sample ID:</b>	D52901-1	<b>Date Received:</b>	11/25/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.4
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	Uppr 23 M 1 & 2		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH015777.D	1	12/02/13	JS	12/02/13	OP9027	GFH800
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	8.16	7.8	5.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	56%		20-130%		

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

<b>Client Sample ID:</b>	UPPR-23-M-1-2-S	<b>Date Sampled:</b>	11/25/13
<b>Lab Sample ID:</b>	D52901-2	<b>Date Received:</b>	11/25/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	93.8
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Uppr 23 M 1 & 2		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V30017.D	1	11/27/13	JL	n/a	n/a	V5V1805
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	56	28	ug/kg	
108-88-3	Toluene	ND	110	56	ug/kg	
100-41-4	Ethylbenzene	ND	110	21	ug/kg	
1330-20-7	Xylene (total)	ND	220	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	95%		64-130%
460-00-4	4-Bromofluorobenzene	101%		62-131%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%

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

Page 1 of 1

<b>Client Sample ID:</b>	UPPR-23-M-1-2-S	<b>Date Sampled:</b>	11/25/13
<b>Lab Sample ID:</b>	D52901-2	<b>Date Received:</b>	11/25/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	93.8
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	Uppr 23 M 1 & 2		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB22934.D	1	11/26/13	EV	n/a	n/a	GGB1266
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	91%		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

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<b>Client Sample ID:</b>	UPPR-23-M-1-2-S	<b>Date Sampled:</b>	11/25/13
<b>Lab Sample ID:</b>	D52901-2	<b>Date Received:</b>	11/25/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	93.8
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	Uppr 23 M 1 & 2		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH015779.D	1	12/02/13	JS	12/02/13	OP9027	GFH800
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	419	7.1	5.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	47%		20-130%		

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

## Misc. Forms

5

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

**Shea Greiner**

**From:** Shea Greiner  
**Sent:** Thursday, December 05, 2013 8:52 AM  
**To:** Scott Heldeman; Judy Nelson  
**Subject:** FW: Accutest e-Hardcopy 2.0 Report D52901: Uppr 23 M 192, sampled on 11/25/2013

Client Project ID corrected per email below to Uppr 23 M 1 & 2.

Please reissue email report only.

Shea Greiner

Accutest Laboratories

Office | (303) 425-6021, ext. 3113

---

**From:** Michael Hattel [mailto:mhattel@msn.com]  
**Sent:** Wednesday, December 04, 2013 8:38 PM  
**To:** Shea Greiner  
**Subject:** Re: Accutest e-Hardcopy 2.0 Report D52901: Uppr 23 M 192, sampled on 11/25/2013

Shea: The report should be Uppr 23 M 1 & 2 instead of Uppr 23 M 192. My had writing is not too good at times. Thanks.

---

Michael D. Hattel, P.G., R.E.P.A.  
Apex Consulting Services, Inc.  
P.O. Box 369  
Louisville, CO 80027-0369  
303-665-1400 (office)  
303-517-6551 (Cell)  
303-665-0620 (Fax)  
mhattel@msn.com

---

----- Original Message -----  
**From:** Accutest LabLink Mountain States  
**To:** mhattel@msn.com  
**Sent:** Tuesday, December 03, 2013 1:41 PM  
**Subject:** Accutest e-Hardcopy 2.0 Report D52901: Uppr 23 M 192, sampled on 11/25/2013

Enclosed is the e-Hardcopy 2.0 report for the following Accutest job:

D52901: Uppr 23 M 192  
Received: 11/25/2013 5 day TAT  
Apex Consulting Services

The attached PDF file contains your report; 29 pages.  
Report includes QC summaries.

12/5/2013

**D52901: Chain of Custody**  
**Page 1 of 1**

## GC/MS Volatiles

### 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

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1805-MB	5V30011.D	1	11/27/13	JL	n/a	n/a	V5V1805

The QC reported here applies to the following samples:

Method: SW846 8260B

D52901-1, D52901-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	96% 64-130%
460-00-4	4-Bromofluorobenzene	102% 62-131%
17060-07-0	1,2-Dichloroethane-D4	105% 70-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1805-BS	5V30012.D	1	11/27/13	JL	n/a	n/a	V5V1805

The QC reported here applies to the following samples:

Method: SW846 8260B

D52901-1, D52901-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2720	109	70-130
100-41-4	Ethylbenzene	2500	2920	117	70-130
108-88-3	Toluene	2500	2730	109	70-130
1330-20-7	Xylene (total)	7500	8900	119	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	100%	64-130%
460-00-4	4-Bromofluorobenzene	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	101%	70-130%

\* = Outside of Control Limits.

## Blank Spike Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1805-BS	5V30013.D	1	11/27/13	JL	n/a	n/a	V5V1805

The QC reported here applies to the following samples:

Method: SW846 8260B

D52901-1, D52901-2

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	101%	64-130%
460-00-4	4-Bromofluorobenzene	95%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%

\* = Outside of Control Limits.

## Matrix Spike Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D52901-1MS	5V30014.D	1	11/27/13	JL	n/a	n/a	V5V1805
D52901-1	5V30016.D	1	11/27/13	JL	n/a	n/a	V5V1805

The QC reported here applies to the following samples:

Method: SW846 8260B

D52901-1, D52901-2

CAS No.	Compound	D52901-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
71-43-2	Benzene	ND		3330	3450	104	64-139
100-41-4	Ethylbenzene	ND		3330	3630	109	68-136
108-88-3	Toluene	ND		3330	3290	99	60-130
1330-20-7	Xylene (total)	ND		9990	11000	110	58-142

CAS No.	Surrogate Recoveries	MS	D52901-1	Limits
2037-26-5	Toluene-D8	96%	96%	64-130%
460-00-4	4-Bromofluorobenzene	110%	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	103%	105%	70-130%

\* = Outside of Control Limits.

## Matrix Spike Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D52901-1MS	5V30015.D	1	11/27/13	JL	n/a	n/a	V5V1805
D52901-1	5V30016.D	1	11/27/13	JL	n/a	n/a	V5V1805

The QC reported here applies to the following samples:

Method: SW846 8260B

D52901-1, D52901-2

CAS No.	Compound	D52901-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
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CAS No.	Surrogate Recoveries	MS	D52901-1	Limits
2037-26-5	Toluene-D8	97%	96%	64-130%
460-00-4	4-Bromofluorobenzene	106%	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	96%	105%	70-130%

\* = Outside of Control Limits.

## Duplicate Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D52901-2DUP	5V30018.D	1	11/27/13	JL	n/a	n/a	V5V1805
D52901-2	5V30017.D	1	11/27/13	JL	n/a	n/a	V5V1805

The QC reported here applies to the following samples:

Method: SW846 8260B

D52901-1, D52901-2

CAS No.	Compound	D52901-2 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
108-88-3	Toluene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	30

CAS No.	Surrogate Recoveries	DUP	D52901-2	Limits
2037-26-5	Toluene-D8	96%	95%	64-130%
460-00-4	4-Bromofluorobenzene	102%	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	102%	102%	70-130%

\* = Outside of Control Limits.

## GC Volatiles

### 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

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Upr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1266-MB	GB22921.D	1	11/26/13	EV	n/a	n/a	GGB1266

The QC reported here applies to the following samples:

Method: SW846 8015B

D52901-1, D52901-2

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	93% 60-140%



## Blank Spike Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCOL Apex Consulting Services  
**Project:** Upr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1266-BS	GB22922.D	1	11/26/13	EV	n/a	n/a	GGB1266

The QC reported here applies to the following samples:

Method: SW846 8015B

D52901-1, D52901-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	104	95	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	60-140%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Upr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D52443-1RMS	GB22924.D	1	11/26/13	EV	n/a	n/a	GGB1266
D52443-1RMSD	GB22925.D	1	11/26/13	EV	n/a	n/a	GGB1266
D52443-1R	GB22923.D	1	11/26/13	EV	n/a	n/a	GGB1266

The QC reported here applies to the following samples:

Method: SW846 8015B

D52901-1, D52901-2

CAS No.	Compound	D52443-1R mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	128	129	101	131	102	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D52443-1R	Limits
120-82-1	1,2,4-Trichlorobenzene	99%	97%	91%	60-140%

\* = Outside of Control Limits.

## GC Semi-volatiles

### 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

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9027-MB	FH015769.D	1	12/02/13	JS	12/02/13	OP9027	GFH800

The QC reported here applies to the following samples:

Method: SW846-8015B

D52901-1, D52901-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	60% 20-130%

8.1.1

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## Blank Spike Summary

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**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Uppr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9027-BS	FH015771.D	1	12/02/13	JS	12/02/13	OP9027	GFH800

The QC reported here applies to the following samples:

Method: SW846-8015B

D52901-1, D52901-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	356	53	42-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	58%	20-130%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D52901  
**Account:** APEXCCOL Apex Consulting Services  
**Project:** Upr 23 M 1 & 2

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9027-MS	FH015773.D	1	12/02/13	JS	12/02/13	OP9027	GFH800
OP9027-MSD	FH015775.D	1	12/02/13	JS	12/02/13	OP9027	GFH800
D52901-1	FH015777.D	1	12/02/13	JS	12/02/13	OP9027	GFH800

The QC reported here applies to the following samples:

Method: SW846-8015B

D52901-1, D52901-2

CAS No.	Compound	D52901-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	8.16		780	395	50	390	49	1	20-150/30

CAS No.	Surrogate Recoveries	MS	MSD	D52901-1	Limits
84-15-1	o-Terphenyl	55%	53%	56%	20-130%

\* = Outside of Control Limits.