



September 19, 2012

Project No. 116228

Mr. John Rager
Caerus Oil and Gas, LLC
600 17th Street, Suite 1600N
Denver, Colorado

**Subject: Landfarm Soil Sampling
Church #2 Pit Closure
Washington County, Colorado**

Dear Mr. Rager:

Enclosed is one electronic copy of the landfarm soil sampling report for the Caerus Oil and Gas, LLC, Church #2 Pit.

We appreciate the opportunity to provide this service Caerus Oil and Gas, LLC. Should you require additional information, have any questions regarding this report, or wish to discuss the recommendations provided, please contact Mr. Derek Bowman (303) 781-8211.

Respectfully submitted,

KLEINFELDER WEST, INC.

A handwritten signature in blue ink, reading "Steven W. Baur", with a stylized flourish at the end.

Steven W. Baur
Environmental Scientist

Cc : Mr. John Axelson, COGCC

**LANDFARM SOIL SAMPLING
CAERUS OIL AND GAS, LLC
CHURCH #2 PIT CLOSURE
WASHINGTON COUNTY, COLORADO**

September 19, 2012

Copyright 2012 Kleinfelder
All Rights Reserved

ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS
DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS REPORT
WAS PREPARED.

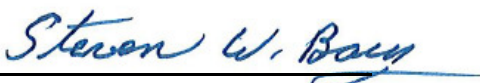
A Report Prepared for:

Mr. John Rager
Caerus Oil and Gas, LLC
600 17th Street, Suite 1600N
Denver, Colorado

**LANDFARM SOIL SAMPLING
CAERUS OIL AND GAS, LLC
CHURCH #2 PIT CLOSURE
WASHINGTON COUNTY, COLORADO**

Kleinfelder Job No. 116228

Prepared by:



Steven W. Baur
Environmental Scientist

Reviewed by:



Derek Bowman, CHMM
Project Manager II

KLEINFELDER WEST, INC.
4815 List Drive Unit 115
Colorado Springs, Colorado
(719) 632-3593
FAX:(719) 623-2648

September 19, 2012

<u>SECTION</u>	<u>PAGE</u>
1 EXECUTIVE SUMMARY	1
2 LANDFARM SOIL INVESTIGATION.....	2
2.1 PURPOSE	2
2.2 DETAILED SCOPE-OF-SERVICES.....	2
2.3 DECONTAMINATION PROCEDURES	2
2.4 RECORD KEEPING	3
2.5 SAMPLE CONTROL/SHIPPING	3
3 QUANTITATIVE CHEMISTRY ANALYSES.....	4
3.1 GENERAL ANALYTICAL PROCEDURES	4
3.2 ANALYTICAL RESULTS.....	4
4 CONCLUSIONS AND RECOMMENDATIONS.....	6
4.1 CONCLUSIONS	6
4.2 RECOMMENDATIONS.....	6
5 LIMITATIONS	7

PLATES

1. Boring Location Plan

APPENDICES

- A Analytical Test Result and Chain of Custody
- B Site Photographs

1 EXECUTIVE SUMMARY

Kleinfelder was retained by Caerus Oil and Gas, LLC (Caerus) to collect additional soil samples from the Church #2 landfarm in preparation for site closure. The site is located in Washington County, Colorado. The soil samples were collected on September 4, 2012 in accordance with the Colorado Oil and Gas Conservation Commission (COGCC) approved Sampling and Analysis Plan (SAP) dated August 24, 2012.

Kleinfelder understands that the purpose for conducting the landfarm soil analysis is to determine if the landfarm soils are below the COGCC Table 910-1 standards for benzene, toluene, ethylbenzene and total xylenes (BTEX) and total petroleum hydrocarbon (TPH), to obtain final closure for the landfarm and to use the landfarm soil to backfill the remaining open pit located just to the north of the landfarm.

Subsurface conditions were explored for this assessment by first dividing the landfarm into four quadrants; SP-1, SP-2, SP-3 and SP-4 as shown on Plate 1 - Boring location Plan. Four soil samples SP-1 through SP-4 from two different depths (0-6" and 7"-12") were collected from each of the four quadrants. The four samples collected at each depth within each quadrant were composited into one sample for a total of eight (8) samples. Composite samples were submitted under chain-of-custody documentation to ESC Lab Sciences, 12065 Lebanon Road, Mt. Juliet, Tennessee, for quantification by EPA Method 8260B for BTEX and EPA Method 8015 soil analysis for Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO) and Total Petroleum Hydrocarbons-Gasoline Range Organics (TPH-GRO).

The analytical test results indicate that BTEX concentration levels for the eight (8) composite soil samples collected from each of the four quadrants at two different depths were below the laboratory detection limits and COGCC Table 910-1 concentration levels.

The analytical test results indicate that total TPH concentration levels for six (6) of the eight (8) composite soil samples were reported above the COGCC Table 910-1 standard of 500 milligrams per kilogram (mg/kg). The laboratory results of the soil samples collected at both depths within quadrants SP-2, SP-3 and SP-4 exceed the COGCC Table 910-1 standard for total TPH (ranging from 710 mg/kg to 1400 mg/kg). The laboratory results of the two (2) soil samples collected from SP-1 were reported below the COGCC Table 910-1 standard for total TPH.

2 LANDFARM SOIL INVESTIGATION

Kleinfelder was retained by Caerus Oil and Gas, LLC (Caerus) to collect additional soil samples from the Church #2 landfarm in preparation for site closure. The site is located in Washington County, Colorado.

2.1 PURPOSE

The purpose for conducting the landfarm soil analysis is to determine if the landfarm soils are below the COGCC Table 910-1 standards for benzene, toluene, ethylbenzene and total xylenes (BTEX) and total petroleum hydrocarbon (TPH), to obtain final closure for the landfarm, and to use the landfarm soil to backfill the remaining open pit located just to the north of the landfarm.

2.2 DETAILED SCOPE-OF-SERVICES

This soil analysis report presents the results of our additional soil sampling for the Church #2 landfarm site, located in Washington County, Colorado.

On September 4, 2012, subsurface conditions were explored for this assessment by first dividing the landfarm into four quadrants; SP-1, SP-2, SP-3 and SP-4 as shown on Plate 1 - Boring location Plan. Four soil samples SP-1 through SP-4 from two different depths (0-6" and 7"-12") were collected from each of the four quadrants. The four samples collected at each depth within each quadrant were composited into one sample for a total of eight (8) samples. Field observations and client consultations were utilized to support field decisions related to the assessment and samples selected for laboratory analysis.

The eight (8) composite samples were submitted under chain-of-custody documentation to ESC Lab Sciences, 12065 Lebanon Road, Mt. Juliet, Tennessee, for quantification by EPA Method 8260B for BTEX and EPA Method 8015 soil analysis for TPH-DRO and TPH-GRO.

2.3 DECONTAMINATION PROCEDURES

A decontamination area was established on site during the field exploration. Sampling equipment and materials which came in contact with sampled soil was decontaminated prior to the start. The equipment was also decontaminated between each location and after each use.

2.4 RECORD KEEPING

Field personnel maintained a detailed log of each soil sampling event. In addition, site visitors, and general site activities were recorded.

2.5 SAMPLE CONTROL/SHIPPING

After collection, each sample container was labeled with the following information:

- Project name
- Project number
- Sample identification number
- Date and time of collection
- Initials of person collecting the sample

All samples were delivered to the analytical laboratory in insulated coolers chilled with ice. Chain-of-custody forms accompanied the shipment. Copies of the chain-of-custody forms are provided with the laboratory reports in Appendix A of this report, and color photographs are included in Appendix B.

3 QUANTITATIVE CHEMISTRY ANALYSES

3.1 GENERAL ANALYTICAL PROCEDURES

The samples were placed in laboratory-supplied glassware and preserved in accordance with the selected analytical methods in a cooler with ice. Soil samples were submitted under chain-of-custody documentation to ESC Lab Sciences, 12065 Lebanon Road, Mt. Juliet, Tennessee, for chemical analysis. Chemistry results have been reviewed by Kleinfelder staff for completeness and data quality.

3.2 ANALYTICAL RESULTS

The following sections discuss the results of chemical analyses for BTEX, TPH-DRO and TPH-GRO constituents in the soil samples collected from SP-1 through SP-4 from two different depths (0-6" and 7"-12") at the Church #2 landfarm site. COGCC table 910-1 values for each parameter are also presented in table 3-1.

TABLE 3-1 SOIL SAMPLE RESULTS (0.5 ACRE SOURCE AREA)

Sample ID	Sample Interval (ft bgs)	Date Collected	BTEX by EPA Method 8260B				Method 8015	Method 8015
			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
SP-1	0"-6" (AC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	450
SP-1	7"-12" (BC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	330
SP-2	0"-6" (AC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1300
SP-2	7"-12" (BC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1100
SP-3	0"-6" (AC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1400
SP-3	7"-12" (BC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	710
SP-4	0"-6" (AC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1200
SP-4	7"-12" (BC)	09/04/12	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	840
COGCC Table 910-1 Values			0.17	85	100	175	500 Total	

The analytical test results indicate that BTEX concentration levels for the eight (8) composite soil samples collected from each of the four quadrants at two different depths were below the laboratory detection limits and COGCC Table 910-1 concentration levels.

The analytical test results indicate that total TPH concentration levels for six (6) of the eight (8) composite soil samples were reported above the COGCC Table 910-1 standard of 500

milligrams per kilogram (mg/kg). The laboratory results of the soil samples collected at both depths within quadrants SP-2, SP-3 and SP-4 exceed the COGCC Table 910-1 standard for total TPH (ranging from 710 mg/kg to 1400 mg/kg). The laboratory results of the two (2) soil samples collected from SP-1 were reported below the COGCC Table 910-1 standard for total TPH.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The findings of Kleinfelder's additional soil sampling conducted for the Church #2 landfarm indicate that TPH concentration levels for six (6) of the eight (8) composite soil samples were reported above the COGCC Table 910-1 standard. Based on the results of the assessment, it appears that the landfarm soil exceeds applicable cleanup standards.

4.2 RECOMMENDATIONS

Kleinfelder recommends that Caerus continues to landfarm the soil; however the landfarm soil will need to be mechanically turned over quarterly at a minimum. Applying water to moisten the soil during the summer months may also expedite the biodegradation process.

It is recommended that additional soil sampling and analysis be conducted in the spring of 2013 to assess the soil conditions.

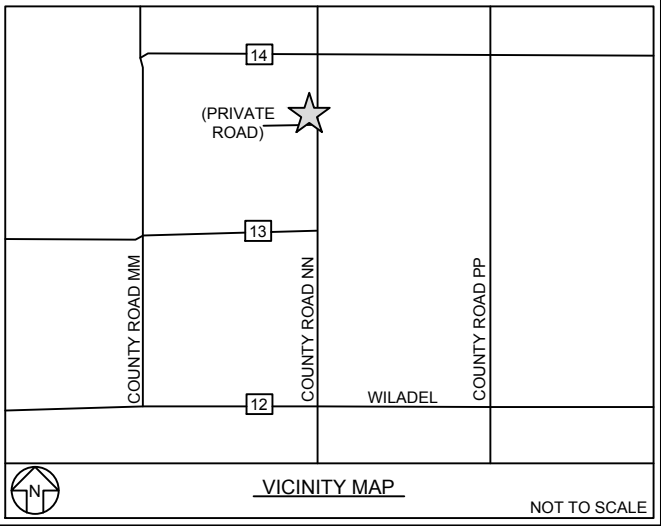
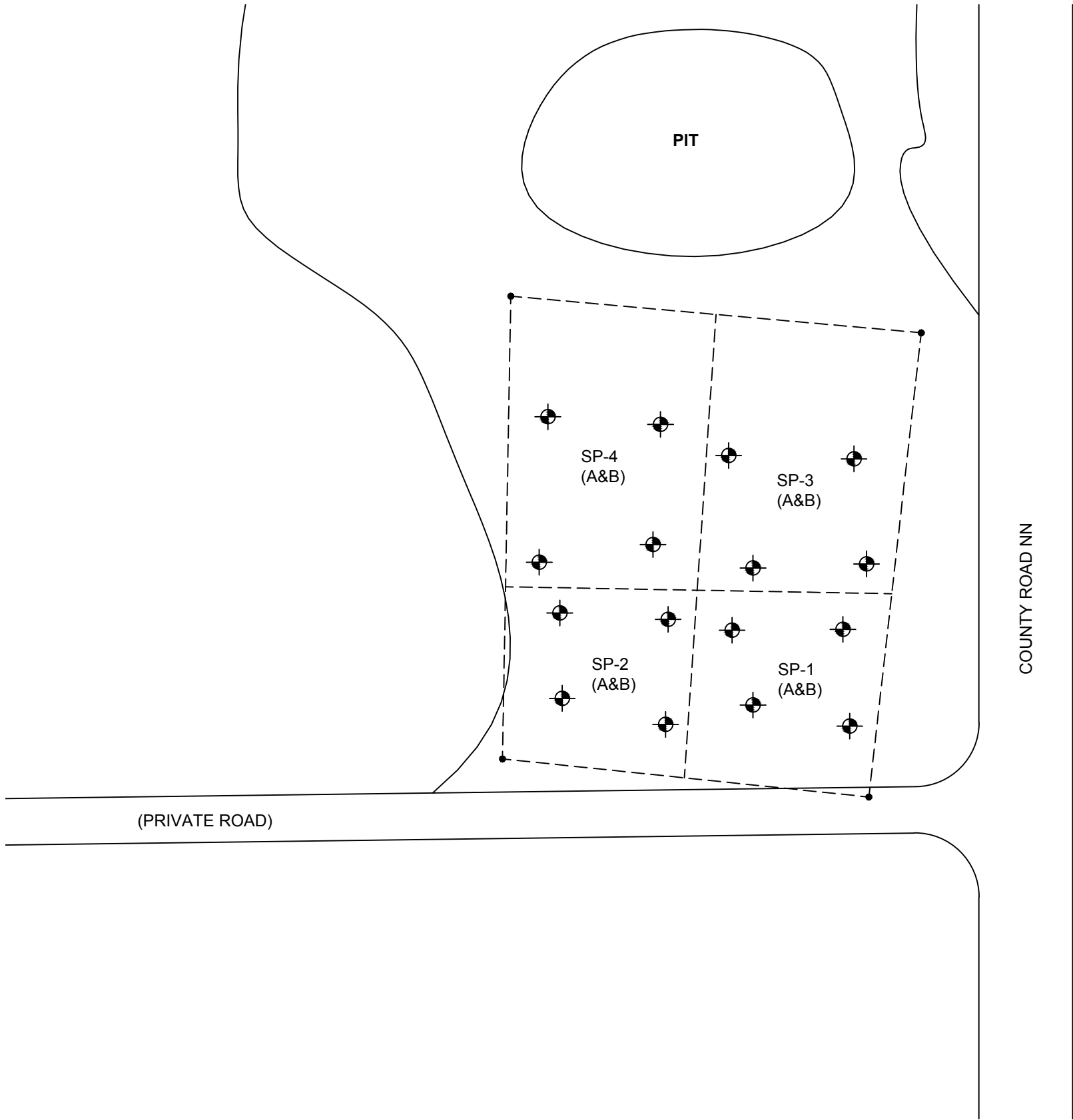
5 LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions, and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee, or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.


This report may be used only by the Client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

The work performed was based on project information provided by Client. If Client does not retain Kleinfelder to review any plans and specifications, including any revisions or modifications to the plans and specifications, Kleinfelder assumes no responsibility for the suitability of our recommendations. In addition, if there are any changes in the field to the plans and specifications, Client must obtain written approval from Kleinfelder's engineer that such changes do not affect our recommendations. Failure to do so will vitiate Kleinfelder's recommendations.

PLATES



LEGEND

 SAMPLE LOCATIONS

NOTES:

BASE MAPPING COURTESY OF USGS WEBSITE,
THE NATIONAL MAPVIEWER.
DOWNLOADED SEPTEMBER 6, 2012, AT
A SCALE OF 1"=40'

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



PROJECT NO.	116228
DRAWN BY	PAF
CHECKED BY	SB
DATE:	9-6-12
REVISED:	9-6-12

SITE LOCATION PLAN	
Landfarm Soil Sampling Caerus Oil and Gas, LLC Church #2 Pit Closure Washington County, Colorado	

PLATE
1
PAGE: 1 of 1

APPENDIX A

ANALYTICAL TEST RESULT AND CHAIN OF CUSTODY



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Steve Baur
GSC/Kleinfelder - Colorado Springs, CO
4815 List Drive Unit 115
Colorado Springs, CO 80919

Report Summary

Monday September 10, 2012

Report Number: L593443

Samples Received: 09/06/12

Client Project: 116228

Description: Church 2 Pit Closure

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Darren Reeder , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-1-AC 0-6 IN

Collected By : SWB
Collection Date : 09/04/12 10:30

ESC Sample # : L593443-01

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	96.2		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	104.		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	95.4		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	87.9		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	450	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	73.8		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-1-BC 7-12 IN

Collected By : SWB
Collection Date : 09/04/12 10:30

ESC Sample # : L593443-02

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	99.5		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	99.4		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	99.9		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	330	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-2-AC 0-6 IN

Collected By : SWB
Collection Date : 09/04/12 11:30

ESC Sample # : L593443-03

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	94.6		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	99.1		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	100.		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	98.9		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	93.0		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-2-BC 7-12 IN

Collected By : SWB
Collection Date : 09/04/12 11:30

ESC Sample # : L593443-04

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	99.1		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	99.7		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	99.7		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	91.4		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	1100	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-3-AC 0-6 IN

Collected By : SWB
Collection Date : 09/04/12 12:30

ESC Sample # : L593443-05

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	90.3		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	98.8		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	102.		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	90.3		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	1400	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-3-BC 7-12 IN

Collected By : SWB
Collection Date : 09/04/12 12:30

ESC Sample # : L593443-06

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	94.0		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	101.		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	94.9		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	710	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-4-AC 0-6 IN

Collected By : SWB
Collection Date : 09/04/12 13:30

ESC Sample # : L593443-07

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	91.5		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	99.7		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	101.		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	94.5		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	1200	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

REPORT OF ANALYSIS

Steve Baur
GSC/Kleinfelder - Colorado Springs,
4815 List Drive Unit 115
Colorado Springs, CO 80919

September 10, 2012

Date Received : September 06, 2012
Description : Church 2 Pit Closure

Sample ID : SP-4-BC 7-12 IN

Collected By : SWB
Collection Date : 09/04/12 13:30

ESC Sample # : L593443-08

Site ID : CHURCH 2

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/06/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	94.8		% Rec.	602/8015	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	99.2		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	99.9		% Rec.	8260B	09/06/12	5
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	95.2		% Rec.	8260B	09/06/12	5
TPH (GC/FID) High Fraction	840	80.	mg/kg	3546/DRO	09/10/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/10/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

.

Reported: 09/10/12 16:31 Printed: 09/10/12 16:32

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L593443-01	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-02	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-03	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-04	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-05	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-06	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-07	WG611283	SAMP	o-Terphenyl	R2337453	J7
L593443-08	WG611283	SAMP	o-Terphenyl	R2337453	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/10/12 at 16:32:16

TSR Signing Reports: 296
R3 - Rush: Two Day

Sample: L593443-01 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-02 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-03 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-04 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-05 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-06 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-07 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31
Sample: L593443-08 Account: KLEINCCO Received: 09/06/12 09:00 Due Date: 09/10/12 00:00 RPT Date: 09/10/12 16:31



YOUR LAB OF CHOICE

GSC/Kleinfelder - Colorado Springs, CO
Steve Baur
4815 List Drive Unit 115
Colorado Springs, CO 80919

Quality Assurance Report
Level II

L593443

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 10, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG611231	09/06/12 14:09
a,a,a-Trifluorotoluene(FID)		% Rec.	105.2	59-128	WG611231	09/06/12 14:09
Benzene	< .001	mg/kg			WG611225	09/06/12 12:49
Ethylbenzene	< .001	mg/kg			WG611225	09/06/12 12:49
Toluene	< .005	mg/kg			WG611225	09/06/12 12:49
Total Xylenes	< .003	mg/kg			WG611225	09/06/12 12:49
4-Bromofluorobenzene		% Rec.	106.2	67-133	WG611225	09/06/12 12:49
Dibromofluoromethane		% Rec.	98.39	72-135	WG611225	09/06/12 12:49
Toluene-d8		% Rec.	102.0	90-113	WG611225	09/06/12 12:49
a,a,a-Trifluorotoluene		% Rec.	103.6	89-115	WG611225	09/06/12 12:49
TPH (GC/FID) High Fraction	< 4	ppm			WG611283	09/10/12 13:30
o-Terphenyl		% Rec.	65.07	50-150	WG611283	09/10/12 13:30

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.37	116.	67-135	WG611231
a,a,a-Trifluorotoluene(FID)				110.8	59-128	WG611231
Benzene	mg/kg	.025	0.0257	103.	72-120	WG611225
Ethylbenzene	mg/kg	.025	0.0271	108.	76-126	WG611225
Toluene	mg/kg	.025	0.0265	106.	74-155	WG611225
Total Xylenes	mg/kg	.075	0.0801	107.	76-126	WG611225
4-Bromofluorobenzene				100.8	67-133	WG611225
Dibromofluoromethane				101.8	72-135	WG611225
Toluene-d8				101.5	90-113	WG611225
a,a,a-Trifluorotoluene				101.1	89-115	WG611225
TPH (GC/FID) High Fraction	ppm	60	40.7	67.8	50-150	WG611283
o-Terphenyl				56.34	50-150	WG611283

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.42	6.37	117.	67-135	0.780	20	WG611231
a,a,a-Trifluorotoluene(FID)				112.5	59-128			WG611231
Benzene	mg/kg	0.0251	0.0257	100.	72-120	2.45	20	WG611225
Ethylbenzene	mg/kg	0.0268	0.0271	107.	76-126	1.14	20	WG611225
Toluene	mg/kg	0.0262	0.0265	105.	74-155	1.17	20	WG611225
Total Xylenes	mg/kg	0.0787	0.0801	105.	76-126	1.73	20	WG611225
4-Bromofluorobenzene				102.6	67-133			WG611225
Dibromofluoromethane				100.1	72-135			WG611225
Toluene-d8				102.1	90-113			WG611225
a,a,a-Trifluorotoluene				104.3	89-115			WG611225
TPH (GC/FID) High Fraction	ppm	42.3	40.7	70.0	50-150	3.96	25	WG611283
o-Terphenyl				58.18	50-150			WG611283

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

GSC/Kleinfelder - Colorado Springs, CO
Steve Baur
4815 List Drive Unit 115

Quality Assurance Report
Level II

Colorado Springs, CO 80919

September 10, 2012

L593443

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	19.7	0	5.5	71.8	55-109	L593443-01	WG611231
a,a,a-Trifluorotoluene(FID)					99.96	59-128		WG611231
Benzene	mg/kg	0.0273	0	.025	109.	44-131	L593144-01	WG611225
Ethylbenzene	mg/kg	0.0125	0	.025	50.2	38-139	L593144-01	WG611225
Toluene	mg/kg	0.0179	0	.025	71.7	43-127	L593144-01	WG611225
Total Xylenes	mg/kg	0.0359	0	.075	47.8	38-137	L593144-01	WG611225
4-Bromofluorobenzene					54.72*	67-133		WG611225
Dibromofluoromethane					150.8*	72-135		WG611225
Toluene-d8					76.90*	90-113		WG611225
a,a,a-Trifluorotoluene					65.42*	89-115		WG611225

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	20.3	19.7	73.9	55-109	2.88	20	L593443-01	WG611231
a,a,a-Trifluorotoluene(FID)				100.6	59-128				WG611231
Benzene	mg/kg	0.0212	0.0273	84.7	44-131	25.1*	21	L593144-01	WG611225
Ethylbenzene	mg/kg	0.0103	0.0125	41.0	38-139	20.1	27	L593144-01	WG611225
Toluene	mg/kg	0.0156	0.0179	62.4	43-127	13.9	21	L593144-01	WG611225
Total Xylenes	mg/kg	0.0282	0.0359	37.6*	38-137	24.1	26	L593144-01	WG611225
4-Bromofluorobenzene				49.10*	67-133				WG611225
Dibromofluoromethane				131.7	72-135				WG611225
Toluene-d8				77.72*	90-113				WG611225
a,a,a-Trifluorotoluene				75.07*	89-115				WG611225

Batch number /Run number / Sample number cross reference

WG611231: R2332113: L593443-01 02 03 04 05 06 07 08
WG611225: R2332493: L593443-01 02 03 04 05 06 07 08
WG611283: R2337453: L593443-01 02 03 04 05 06 07 08

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

GSC/Kleinfelder - Colorado Springs, CO
Steve Baur
4815 List Drive Unit 115

Colorado Springs, CO 80919

Quality Assurance Report
Level II

L593443

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 10, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Company Name/Address Kleinfelder 4815 List Drive, Unit 115 Colorado Springs, CO 80919				Alternate Billing Report to: Steven Baur Email to: SBaur@kleinfelder.com				Analysis/Container/Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX8260 - 4oz jar</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPHGRO / TPHDRO 8015 - 4oz jar</div> </div>								Chain of Custody Page ___ of ___ A037 Prepared by: ENVIRONMENTAL SCIENCE CORP 12065 Lebanon Road Mt. Juliet TN 37122 Phone (615)758-5858 Phone (800) 767-5859 FAX (615)758-5859	
Project Description: Church #2 Pit Closure																	
PHONE: 719.546.1150		Client Project No. 116228		Lab Project #													
FAX: 719.546.1152																	
Collected by: <i>SCB</i>		Site/Facility: <i>Church #2</i>		P.O.#													
Collected by (signature): <i>Steven W. Baur</i>		Rush? (Lab MUST be Notified) <input type="checkbox"/> Same Day.....200% <input type="checkbox"/> Next Day.....100% <input type="checkbox"/> Two Day.....50%		Date Results Needed		No. of Cans											
				7-9-7-10-12 Email? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes													
Packed on Ice N ___ Y ___																	
Sample ID	Comp/Grab	Matrix	Depth	Date	Time							Remarks/contaminant	Sample # (lab only)				
<i>SP-1-AC 0'-6"</i>	<i>Comp</i>	SS	<i>0'-6"</i>	<i>9-4-12</i>	<i>10:30</i>	2	X	X					<i>1593 443 01</i>				
<i>SP-1-BC 7'-12"</i>		SS	<i>7'-12"</i>		<i>10:30</i>	2	X	X					<i>02</i>				
<i>SP-2-AC 0'-6"</i>		SS	<i>0'-6"</i>		<i>11:30</i>	2	X	X					<i>03</i>				
<i>SP-2-BC 7'-12"</i>		SS	<i>7'-12"</i>		<i>11:30</i>	2	X	X					<i>04</i>				
<i>SP-3-AC 0'-6"</i>		SS	<i>0'-6"</i>		<i>12:30</i>	2	X	X					<i>05</i>				
<i>SP-3-BC 7'-12"</i>		SS	<i>7'-12"</i>		<i>12:30</i>	2	X	X					<i>06</i>				
<i>SP-4-AC 0'-6"</i>		SS	<i>0'-6"</i>		<i>1:30</i>	2	X	X					<i>07</i>				
<i>SP-4-BC 7'-12"</i>		SS	<i>7'-12"</i>		<i>1:30</i>	2	X	X					<i>08</i>				
Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other _____ pH _____ Temp _____ Remarks: _____ Flow _____ Other _____																	
Relinquisher by (Signature): <i>Steven W. Baur</i>	Date:	Time:	Received by (Signature):	Samples returned via: FedEx <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Other _____		Condition: <i>JP</i> (lab use only) <i>OK</i>											
Relinquisher by (Signature):	Date:	Time:	Received by (Signature):	Temp: <i>3.1</i>		Bottles Received: <i>16-402</i>											
Relinquisher by (Signature):	Date:	Time:	Received for lab by (Signature): <i>Kim W...</i>	Date: <i>9/6/12</i>		Time: <i>0900</i>		pH Checked: _____ NCF: _____									

APPENDIX B

SITE PHOTOGRAPHS



Photograph 1 – Looking north, along east boundary of landfarm.



Photograph 2 – Looking west, along south boundary of landfarm.



Photograph 3– Looking northwest, across the landfarm from southeast corner.



Photograph 4– Looking south, along east boundary of landfarm from the north.



Photograph 5 – Looking southwest, from northeast corner across the landfarm.



Photograph 6 – Looking north at open pit from north end of landfarm.



Photograph 7 – Looking north at open pit from north end of landfarm.



Photograph 8 – Looking north, along east boundary of landfarm.