



REM #4301
RECEIVED
10/31/2013

October 31, 2013

John Axelson
East Environmental Supervisor
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**Re: Status Report
Church #2 Pit Landfarm
COGCC Remediation Project # 4301
Washington County, Colorado**

Mr. Axelson,

On behalf of Caerus Washco LLC (Caerus), Kleinfelder West, Inc. (Kleinfelder) respectfully submits this report summarizing activities to reclaim oil-impacted soils at the Church #2 site (Facility ID 117560, Remediation Project #4301) in Washington County, Colorado. Caerus acquired the property in an acquisition of Teton Energy Corporation (Teton) holdings through a bankruptcy reorganization proceeding of Teton. Teton DJCO LLC became Caerus Washco LLC on January 22, 2010.

At the time of the acquisition, the Church #2 site consisted of three pits and numerous soil piles. On April 12, 2010 Kleinfelder collected soil samples to support closure of the site. Analytical results showed soil at five areas (i.e., two pits and three soil piles) within the Church #2 site exceeded the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 standard (i.e., 500 mg/kg) for Total Petroleum Hydrocarbons (TPH). Based on the results of the soil sampling, approximately 200 cubic yards of oil impacted soil were removed and disposed at the Clean Harbors landfill near Deer Trail, Colorado between April 12, 2010 and June 17, 2010.

On June 17, 2010, Kleinfelder resampled the five areas with impacted soils to evaluate whether all the soils above the Table 910-1 standard for TPH were removed. Analytical results showed one pit and one soil pile remained above the Table 910-1 TPH standard.

Between July 2010 and September 2012, the remaining impacted soil was spread on site to create a landfarm.

On September 4, 2012, Kleinfelder began sampling the landfarm to determine compliance with COGCC Table 910-1, with the eventual goal of properly closing the site. Soil samples were collected in accordance with a COGCC approved Sampling and Analysis Plan (SAP) dated August 24, 2012. The landfarm was divided into four quadrants, SP-1, SP-2, SP-3 and SP-4 as shown on Figure 1. Four aliquots of soil were collected from two different depths (0 to 6 inches

and 7 to 12 inches) in each of the four quadrants. The four samples collected at each depth within each quadrant were then composited into one sample, for a total of eight (8) samples. The composite samples were submitted under chain-of-custody documentation to ESC Lab Sciences in Mt. Juliet, Tennessee for analysis by EPA Method 8260B for BTEX and EPA Method 8015 for Gasoline Range Organics (TPH-GRO) and Diesel Range Organics (TPH-DRO). Soil from three of four quadrants exceeded the Table 910-1 standard for TPH. A report summarizing the sampling event was submitted to COGCC on November 9, 2012.

On November 29, 2012, COGCC issued an email to Caerus discussing their review of the sampling report for the land treatment of oily waste at the Church #2. COGCC discussed how pit closure and remediation activities have been ongoing since 2008. The Form 27 Remediation Workplan was updated in July 2010, to allow on site land treatment of the remaining oily waste. When E&P waste is treated at a location for more than three years, a Centralized Waste Management Facility permit is required. As a result, Caerus was permitted to continue on site land treatment of the oily waste until July 15, 2013. If the waste was not adequately treated to meet the Table 910-1 standards by that time, Caerus had to exercise one of the following options:

- Properly dispose of the material off site in accordance with Rule 907.e. and provide disposal documentation, finish pit closure and properly reclaim the surface;
- At least 30-days prior to July 15, 2013, submit a completed Form 28 with appropriate financial assurance in accordance with Rule 908 for ongoing land treatment of oily waste.

In subsequent correspondence, Mr. Axelson suggested Caerus request a variance from Rule 908. Caerus applied for the Rule 908 variance on June 14, 2013 and received verbal approval on August 5, 2013, with written approval provided on August 12, 2013. A condition of approval required Caerus collect confirmation samples and provide a remediation status update report to COGCC no later than October 31, 2013.

To promote remediation, the landfarm was watered and tilled sporadically throughout the summer of 2013. Kleinfelder performed additional soil sampling events on August 9, 2013, September 13, 2013, and October 24, 2013 to track the progress of the landfarm following the methodology established during the initial sampling event conducted on September 4, 2012. The results of these sampling events are summarized in Table 1. In addition, all of the analytical reports are attached to this letter.

Analytical results from the September 13 and October 24, 2013 sampling events show the landfarmed soil has remediated below the Table 910-1 standard for TPH.

Therefore, Caerus requests an end to landfarming activities at the Church #2 site and the beginning of surface reclamation. A Form 4 Sundry is attached.

If you have any questions, please contact me at (303) 781-8211 or by email at bbaum@kleinfelder.com.

Sincerely,

Kleinfelder West, Inc.

A handwritten signature in black ink, appearing to read "Brad Baum". The signature is fluid and cursive, with the first name "Brad" and last name "Baum" clearly distinguishable.

Bradley M. Baum, MS
Project Manager/Regulatory Specialist

Attachments

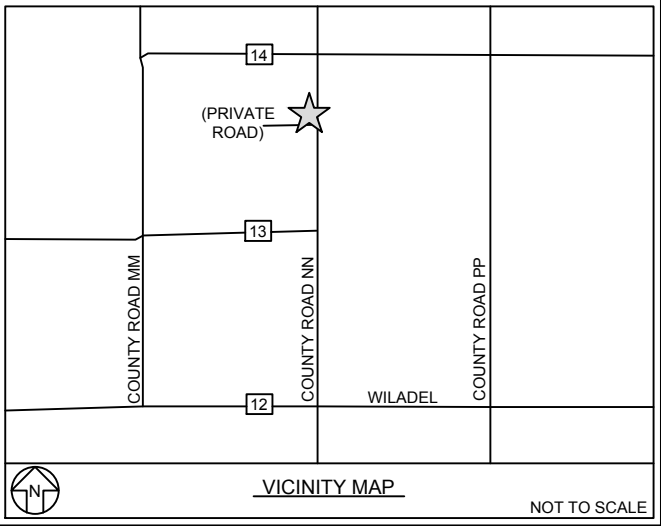
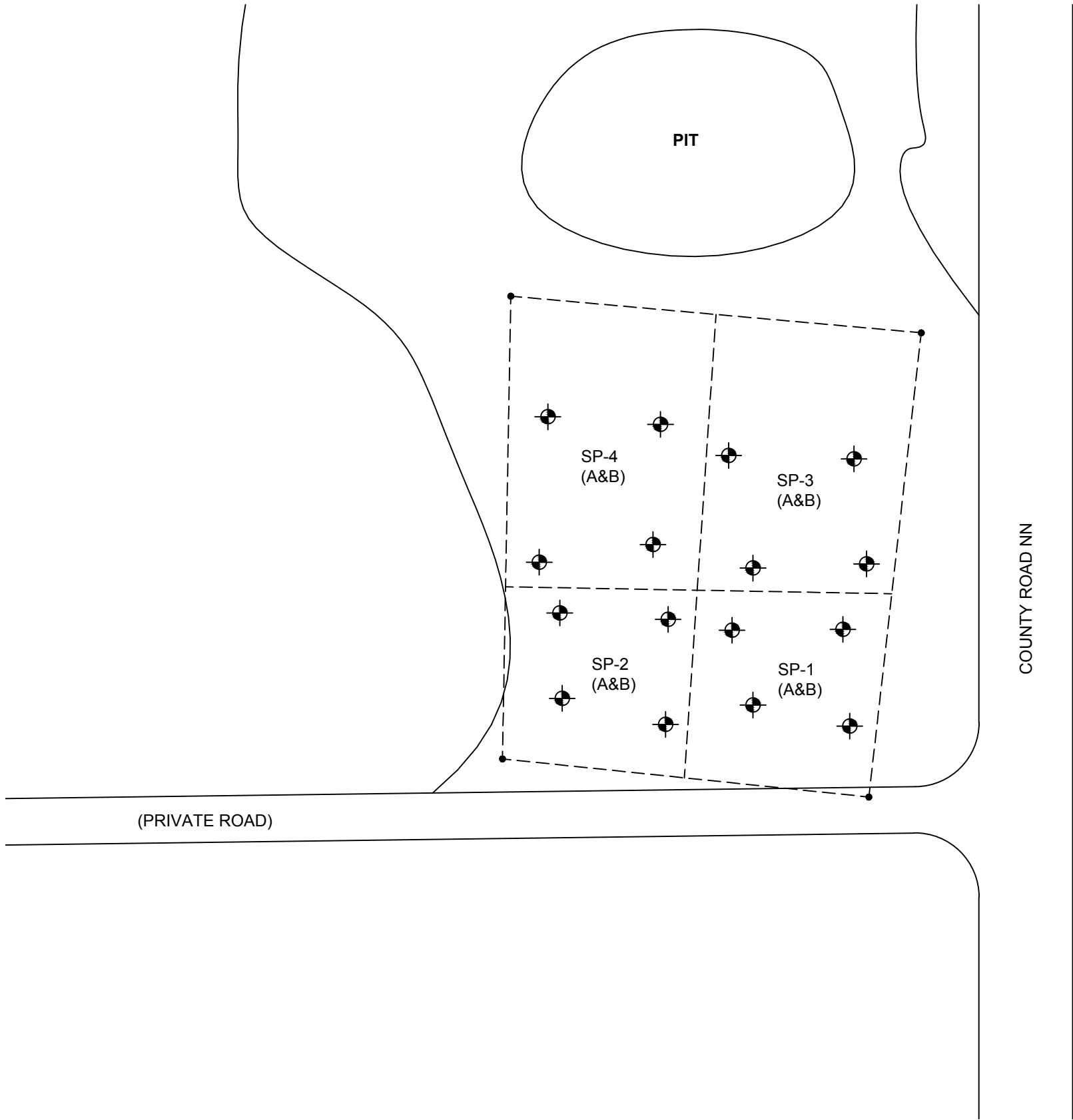
TABLES

Table 1. Summary of Analytical Results, Church #2 Landfarm

Sample ID	Sample Interval (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)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	450
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	220
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	92
		10/24/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	400
	7"-12" (BC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	330
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	370
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	540
		10/24/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	280
SP-2	0"-6" (AC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1300
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	240
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	260
		10/24/2013	NM	NM	NM	NM	NM	NM
	7"-12" (BC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1100
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	260
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	200
		10/24/2013	NM	NM	NM	NM	NM	NM
SP-3	0"-6" (AC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1400
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1000
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	380
		10/24/2013	NM	NM	NM	NM	NM	NM
	7"-12" (BC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	710
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1900
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	310
		10/24/2013	NM	NM	NM	NM	NM	NM
SP-4	0"-6" (AC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	1200
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	590
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	350
		10/24/2013	NM	NM	NM	NM	NM	NM
	7"-12" (BC)	9/4/2012	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	840
		8/9/2013	< 0.0050	< 0.025	< 0.0050	< 0.015	<0.50	530
		9/13/2013	<0.0050	<0.025	<0.0050	<0.015	<0.50	310
		10/24/2013	NM	NM	NM	NM	NM	NM
COGCC Table 910-1 Values			0.17	85	100	175	500 Total	

NM = Not measured

FIGURES



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

COGCC FORM 4

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



DE	ET	OE	ES
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Document Number:

SUNDRY NOTICE

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number: _____	Contact Name _____
Name of Operator: _____	Phone: () _____
Address: _____	Fax: () _____
City: _____	State: _____ Zip: _____ Email: _____

Complete the Attachment
Checklist

OP OGCC

API Number : 05- _____	OGCC Facility ID Number: _____
Well/Facility Name: _____	Well/Facility Number: _____
Location QtrQtr: _____	Section: _____ Township: _____ Range: _____ Meridian: _____
County: _____	Field Name: _____
Federal, Indian or State Lease Number: _____	

Survey Plat		
Directional Survey		
Srvc Eqpmt Diagram		
Technical Info Page		
Other		

CHANGE OF LOCATION OR AS BUILT GPS REPORT

☐ Change of Location * ☐ As-Built GPS Location Report ☐ As-Built GPS Location Report with Survey

* Well location change requires new plat. A substantive surface location change may require new Form 2A.

SURFACE LOCATION GPS DATA Data must be provided for Change of Surface Location and As Built Reports.

Latitude _____ PDOP Reading _____ Date of Measurement _____
Longitude _____ GPS Instrument Operator's Name _____

LOCATION CHANGE (all measurements in Feet)

Well will be: _____ (Vertical, Directional, Horizontal)

Change of **Surface** Footage **From** Exterior Section Lines:

Change of **Surface** Footage **To** Exterior Section Lines:

Current **Surface** Location **From** QtrQtr _____ Sec _____

New **Surface** Location **To** QtrQtr _____ Sec _____

Change of **Top of Productive Zone** Footage **From** Exterior Section Lines:

Change of **Top of Productive Zone** Footage **To** Exterior Section Lines:

Current **Top of Productive Zone** Location **From** Sec _____

New **Top of Productive Zone** Location **To** Sec _____

Change of **Bottomhole** Footage **From** Exterior Section Lines:

Change of **Bottomhole** Footage **To** Exterior Section Lines:

Current **Bottomhole** Location Sec _____ Twp _____

New **Bottomhole** Location Sec _____ Twp _____

Is location in High Density Area? _____

Distance, in feet, to nearest building _____, public road: _____, above ground utility: _____, railroad: _____,

property line: _____, lease line: _____, well in same formation: _____

Ground Elevation _____ feet Surface owner consultation date _____

FNL/FSL		FEL/FWL	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Twp <input type="text"/>	Range <input type="text"/>	Meridian <input type="text"/>	
Twp <input type="text"/>	Range <input type="text"/>	Meridian <input type="text"/>	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Twp <input type="text"/>	Range <input type="text"/>		
Twp <input type="text"/>	Range <input type="text"/>		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Range <input type="text"/>		** attach deviated drilling plan	
Range <input type="text"/>			

CHANGE OR ADD OBJECTIVE FORMATION AND/OR SPACING UNIT

<u>Objective Formation</u>	<u>Formation Code</u>	<u>Spacing Order Number</u>	<u>Unit Acreage</u>	<u>Unit Configuration</u>

OTHER CHANGES

☐ **REMOVE FROM SURFACE BOND** Signed surface use agreement is a required attachment

☐ **CHANGE OF WELL, FACILITY OR OIL & GAS LOCATION NAME OR NUMBER**

From: Name _____ Number _____ Effective Date: _____

To: Name _____ Number _____

☐ **ABANDON PERMIT: Permit can only be abandoned if the permitted operation has NOT been conducted. Field inspection will be conducted to verify site status.**

☐ WELL: Abandon Application for Permit-to-Drill (Form2) – Well API Number _____ has not been drilled.

☐ PIT: Abandon Earthen Pit Permit (Form 15) – COGCC Pit Facility ID Number _____ has not been constructed (Permitted and constructed pit requires closure per Rule 905)

☐ CENTRALIZED E&P WASTE MANAGEMENT FACILITY: Abandon Centralized E&P Waste Management Facility Permit (Form 28) – Facility ID Number _____ has not been constructed (Constructed facility requires closure per Rule 908)

OIL & GAS LOCATION ID Number: _____

☐ Abandon Oil & Gas Location Assessment (Form 2A) – Location has not been constructed and site will not be used in the future.

☐ Keep Oil & Gas Location Assessment (Form 2A) active until expiration date. This site will be used in the future.

Surface disturbance from Oil and Gas Operations must be reclaimed per Rule 1003 and Rule 1004.

☐ **REQUEST FOR CONFIDENTIAL STATUS**

☐ **DIGITAL WELL LOG UPLOAD**

☐ **DOCUMENTS SUBMITTED** Purpose of Submission: _____

RECLAMATION**INTERIM RECLAMATION**

☐ Interim Reclamation will commence approximately _____

Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Interim reclamation complete, site ready for inspection.

Per Rule 1003.e(3) describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.

Field inspection will be conducted to document Rule 1003.e. compliance

FINAL RECLAMATION

☐ Final Reclamation will commence approximately _____

Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Final reclamation complete, site ready for inspection. Per Rule 1004.c(4) describe final reclamation procedure in Comments below or provide as an attachment.

Field inspection will be conducted to document Rule 1004.c. compliance

Comments:

ENGINEERING AND ENVIRONMENTAL WORK

☐ NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below or provide as an attachment, as required by Rule 319.b.(3).

Date well temporarily abandoned _____ Has Production Equipment been removed from site? _____

Mechanical Integrity Test (MIT) required if shut in longer than 2 years. Date of last MIT _____

☐ SPUD DATE: _____

TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK

Details of work must be described in full in the COMMENTS below or provided as an attachment.

☐ NOTICE OF INTENT Approximate Start Date _____

☐ REPORT OF WORK DONE Date Work Completed _____

- ☐ Intent to Recomplete (Form 2 also required)☐ Request to Vent or Flare☐ E&P Waste Mangement Plan
- ☐ Change Drilling Plan☐ Repair Well☐ Beneficial Reuse of E&P Waste
- ☐ Gross Interval Change☐ Rule 502 variance requested. Must provide detailed info regarding request.
- ☐ Other _____☐ Status Update/Change of Remediation Plans for Spills and Releases

COMMENTS:

CASING AND CEMENTING CHANGES

Casing Type	Size	Of	/	Hole	Size	Of	/	Casing	Wt/Ft	Csg/LinTop	Setting Depth	Sacks of Cement	Cement Bottom	Cement Top

H2S REPORTING

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: _____ in ppm (parts per million) Date of Measurement or Sample Collection _____

Description of Sample Point:

Absolute Open Flow Potential _____ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: _____

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: _____

COMMENTS:

BMP

<u>Type</u>	<u>Comment</u>

GROUND WATER SAMPLING

Uses of Ground Water Sampling Section

Request an Exception to Ground Water Sampling Requirements in Greater Wattenberg Area Rule 318A.e(4) or in Statewide Rule 609.c. Request a Previously Sampled Water Source in the COGIS database be used to meet sampling requirements as described in Rule 609.d.(3).

NOTE: If this Sundry Notice is being submitted to request a Ground Water Sampling Exception it cannot be used for any other purpose except requesting the use of a Previously Sampled Water Source in the COGIS database.

- ☐ Request an Exception to Ground Water Sampling Requirements per Greater Wattenberg Area Rule 318A.e(4):There are no Available Water Sources located within the governmental quarter section or within a previously unsampled governmental quarter section within a ½-mile radius of this proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.
- ☐ Request an Exception to Ground Water Sampling Requirements per Statewide Rule 609.c.
- _____ Number of Water Sources located within one-half (1/2) mile of a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.
- _____ Number of Water Source Exceptions requested per Rule 609.c.
- _____ Number of Water Sources determined to be unsuitable. **The condition of these Water Sources MUST be documented in the comments below or in an attachment.**
- _____ Number of Water Sources suitable for testing whose owners refused to grant access despite an operator's reasonable good faith efforts to obtain consent to conduct sampling.
The reasonable good faith efforts used to obtain access from the owners of these Water Sources MUST be documented in the comments below or in an attachment.
- ☐ Request a Previously Sampled Water Source in the COGIS database be used to meet sampling requirements as described in Rule 609.d(3)

_____ Type of Sample Substitution Request

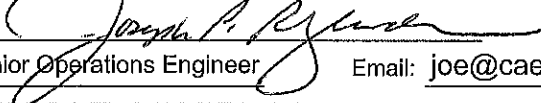
Enter Sample ID Number from COGIS Maps for each Previous Water Sample:

Sample ID	Facility ID	Sample Date	Sample Purpose

COMMENTS

Operator Comments:

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed:  Print Name: Joe Rezendes
 Title: Senior Operations Engineer Email: joe@caerusoilandgas.com Date: 10/31/13

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: _____ Date: _____

ANALYTICAL REPORTS



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.

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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.

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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:

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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)

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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:

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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:

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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:

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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.'



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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

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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.



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Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Report Summary

Thursday August 15, 2013

Report Number: L651107

Samples Received: 08/10/13

Client Project: 116228

Description: Church Pit

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:

Mark W. Beasley , 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, IA Lab #364

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.

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REPORT OF ANALYSIS

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-1 A 0-6 IN
Collected By : James Ford
Collection Date : 08/09/13 08:25

ESC Sample # : L651107-01

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	103.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	93.6		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	220	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	99.8		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Brad Baum
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August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-1 B 7-21 IN
Collected By : James Ford
Collection Date : 08/09/13 08:30

ESC Sample # : L651107-02

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	103.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	96.3		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	370	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	111.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-2 A 0-6 IN
Collected By : James Ford
Collection Date : 08/09/13 08:35

ESC Sample # : L651107-03

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	104.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	95.8		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	240	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	112.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Brad Baum
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300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-2 B 7-12 IN
Collected By : James Ford
Collection Date : 08/09/13 08:40

ESC Sample # : L651107-04

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	98.9		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	105.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	98.5		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	94.0		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	260	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	103.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

August 15, 2013

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Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-3 A 0-6 IN
Collected By : James Ford
Collection Date : 08/09/13 08:50

ESC Sample # : L651107-05

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	101.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	99.5		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	94.5		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	1000	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	107.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-3 B 7-12 IN
Collected By : James Ford
Collection Date : 08/09/13 09:00

ESC Sample # : L651107-06

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	106.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	99.7		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	94.3		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	1900	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	250.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-4 A 0-6 IN
Collected By : James Ford
Collection Date : 08/09/13 09:05

ESC Sample # : L651107-07

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	104.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	94.9		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	590	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	120.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

August 15, 2013

Date Received : August 10, 2013
Description : Church Pit
Sample ID : SP-4 B 7-12 IN
Collected By : James Ford
Collection Date : 08/09/13 09:15

ESC Sample # : L651107-08

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/12/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	08/12/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/11/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/11/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/11/13	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/11/13	5
Dibromofluoromethane	102.		% Rec.	8260B	08/11/13	5
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	08/11/13	5
4-Bromofluorobenzene	94.0		% Rec.	8260B	08/11/13	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	530	80.	mg/kg	8015	08/12/13	20
Surrogate Recovery						
o-Terphenyl	114.		% Rec.	8015	08/12/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L651107-01	WG676241	SAMP	o-Terphenyl	R2776664	J7
L651107-02	WG676241	SAMP	o-Terphenyl	R2776664	J7
L651107-03	WG676241	SAMP	o-Terphenyl	R2776664	J7
L651107-04	WG676241	SAMP	o-Terphenyl	R2778386	J7
L651107-05	WG676241	SAMP	o-Terphenyl	R2778386	J7
L651107-06	WG676241	SAMP	o-Terphenyl	R2778386	J7
L651107-07	WG676241	SAMP	o-Terphenyl	R2778386	J7
L651107-08	WG676241	SAMP	o-Terphenyl	R2778386	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.



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Brad Baum
300 E. Mineral Avenue, Suite 7

Littleton, CO 80122

Quality Assurance Report
Level II

L651107

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Est. 1970

August 15, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
C10-C28 Diesel Range	< 4	mg/kg			WG676241	08/11/13 15:48
o-Terphenyl		% Rec.	104.0	50-150	WG676241	08/11/13 15:48
Benzene	< .001	mg/kg			WG676370	08/11/13 15:36
Ethylbenzene	< .001	mg/kg			WG676370	08/11/13 15:36
Toluene	< .005	mg/kg			WG676370	08/11/13 15:36
Total Xylenes	< .003	mg/kg			WG676370	08/11/13 15:36
4-Bromofluorobenzene		% Rec.	96.27	67-133	WG676370	08/11/13 15:36
Dibromofluoromethane		% Rec.	104.6	72-135	WG676370	08/11/13 15:36
Toluene-d8		% Rec.	100.8	90-113	WG676370	08/11/13 15:36
a,a,a-Trifluorotoluene		% Rec.	102.4	89-115	WG676370	08/11/13 15:36
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG676380	08/12/13 12:43
a,a,a-Trifluorotoluene(FID)		% Rec.	102.2	59-128	WG676380	08/12/13 12:43

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.025	0.0280	112.	72-120	WG676370
Ethylbenzene	mg/kg	.025	0.0277	111.	76-126	WG676370
Toluene	mg/kg	.025	0.0271	108.	74-155	WG676370
Total Xylenes	mg/kg	.075	0.0834	111.	76-126	WG676370
4-Bromofluorobenzene				94.95	67-133	WG676370
Dibromofluoromethane				100.8	72-135	WG676370
Toluene-d8				101.8	90-113	WG676370
a,a,a-Trifluorotoluene				99.98	89-115	WG676370
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.16	93.8	63.5-137	WG676380
a,a,a-Trifluorotoluene(FID)				102.5	59-128	WG676380

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0275	0.0280	110.	72-120	2.04	20	WG676370
Ethylbenzene	mg/kg	0.0269	0.0277	108.	76-126	3.00	20	WG676370
Toluene	mg/kg	0.0265	0.0271	106.	74-155	2.44	20	WG676370
Total Xylenes	mg/kg	0.0801	0.0834	107.	76-126	4.08	20	WG676370
4-Bromofluorobenzene				95.17	67-133			WG676370
Dibromofluoromethane				101.3	72-135			WG676370
Toluene-d8				101.1	90-113			WG676370
a,a,a-Trifluorotoluene				100.8	89-115			WG676370
TPH (GC/FID) Low Fraction	mg/kg	5.29	5.16	96.0	63.5-137	2.42	20	WG676380
a,a,a-Trifluorotoluene(FID)				103.0	59-128			WG676380

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.132	0	.025	106.	44-131	L651107-01	WG676370
Ethylbenzene	mg/kg	0.128	0	.025	102.	38-139	L651107-01	WG676370
Toluene	mg/kg	0.125	0	.025	99.7	43-127	L651107-01	WG676370
Total Xylenes	mg/kg	0.380	0	.075	101.	38-137	L651107-01	WG676370
4-Bromofluorobenzene					97.40	67-133		WG676370
Dibromofluoromethane					102.5	72-135		WG676370
Toluene-d8					101.2	90-113		WG676370

* Performance of this Analyte is outside of established criteria.

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



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Level II

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August 15, 2013

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
a,a,a-Trifluorotoluene					98.30	89-115		
TPH (GC/FID) Low Fraction	mg/kg	21.2	0.0786	5.5	76.7	28.5-138	L651107-01	WG676380
a,a,a-Trifluorotoluene(FID)					100.9	59-128		WG676380

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.139	0.132	111.	44-131	4.94	21	L651107-01	WG676370
Ethylbenzene	mg/kg	0.125	0.128	99.9	38-139	2.47	27	L651107-01	WG676370
Toluene	mg/kg	0.129	0.125	103.	43-127	3.54	21	L651107-01	WG676370
Total Xylenes	mg/kg	0.371	0.380	99.0	38-137	2.18	26	L651107-01	WG676370
4-Bromofluorobenzene				93.21	67-133				WG676370
Dibromofluoromethane				102.4	72-135				WG676370
Toluene-d8				101.0	90-113				WG676370
a,a,a-Trifluorotoluene				97.42	89-115				WG676370
TPH (GC/FID) Low Fraction	mg/kg	20.0	21.2	72.3	28.5-138	5.91	23.6	L651107-01	WG676380
a,a,a-Trifluorotoluene(FID)				100.3	59-128				WG676380

Batch number /Run number / Sample number cross reference

WG676241: R2776664 R2778386: L651107-01 02 03 04 05 06 07 08
WG676370: R2776961: L651107-01 02 03 04 05 06 07 08
WG676380: R2778082: L651107-01 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

Kleinfelder - Littleton, CO
Brad Baum
300 E. Mineral Avenue, Suite 7

Littleton, CO 80122

Quality Assurance Report
Level II

L651107

12065 Lebanon Rd.
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August 15, 2013

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.



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Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Report Summary

Wednesday September 18, 2013

Report Number: L657464

Samples Received: 09/14/13

Client Project:

Description: Church Pit

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:

Mark W. Beasley , 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, IA Lab #364

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.

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-1A 0-6IN
Collected By : James Ford
Collection Date : 09/13/13 12:25

ESC Sample # : L657464-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/18/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	602/8015	09/18/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	98.5		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	91.4		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	93.7		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	92.	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	83.0		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-1B 7-12IN
Collected By : James Ford
Collection Date : 09/13/13 12:30

ESC Sample # : L657464-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	98.3		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	87.7		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	96.6		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	540	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	120.		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-2A 0-6IN
Collected By : James Ford
Collection Date : 09/13/13 12:40

ESC Sample # : L657464-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	98.3		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	88.4		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	96.1		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	260	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	96.0		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-2B 7-12IN
Collected By : James Ford
Collection Date : 09/13/13 12:45

ESC Sample # : L657464-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	98.9		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	91.8		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	96.9		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	200	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	103.		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-3A 0-6IN
Collected By : James Ford
Collection Date : 09/13/13 12:50

ESC Sample # : L657464-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	97.7		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	90.3		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	95.1		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	380	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	105.		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-3B 7-12IN
Collected By : James Ford
Collection Date : 09/13/13 13:00

ESC Sample # : L657464-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	96.3		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	89.1		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	92.3		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	310	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	129.		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-4A 0-6IN
Collected By : James Ford
Collection Date : 09/13/13 13:03

ESC Sample # : L657464-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	97.1		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	91.2		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	93.4		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	350	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	110.		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/18/13 16:26 Printed: 09/18/13 17:03



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REPORT OF ANALYSIS

September 18, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : September 14, 2013
Description : Church Pit
Sample ID : SP-4B 7-12IN
Collected By : James Ford
Collection Date : 09/13/13 13:07

ESC Sample # : L657464-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/17/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	602/8015	09/17/13	5
Benzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Toluene	BDL	0.025	mg/kg	8260B	09/15/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/15/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/15/13	5
Surrogate Recovery						
Toluene-d8	97.7		% Rec.	8260B	09/15/13	5
Dibromofluoromethane	89.0		% Rec.	8260B	09/15/13	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	09/15/13	5
4-Bromofluorobenzene	95.0		% Rec.	8260B	09/15/13	5
TPH (GC/FID) High Fraction	310	80.	mg/kg	3546/DRO	09/18/13	20
Surrogate recovery(%)						
o-Terphenyl	120.		% Rec.	3546/DRO	09/18/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/18/13 16:26 Printed: 09/18/13 17:03

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L657464-01	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-02	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-03	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-04	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-05	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-06	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-07	WG682022	SAMP	o-Terphenyl	R2819024	J7
L657464-08	WG682022	SAMP	o-Terphenyl	R2819024	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
09/18/13 at 17:03:24

TSR Signing Reports: 134
R4 - Rush: Three Day

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, Tl, & Zn GW by 6020 Log all PAHs by 8270-SIM, Log
BTEX 8260 unless noted otherwise

Sample: L657464-01 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-02 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-03 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-04 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-05 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-06 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-07 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26
Sample: L657464-08 Account: BUYSLCO Received: 09/14/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 16:26



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Quality Assurance Report
Level II

L657464

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Tax I.D. 62-0814289

Est. 1970

September 18, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .001	mg/kg			WG681971	09/15/13 11:31
Ethylbenzene	< .001	mg/kg			WG681971	09/15/13 11:31
Toluene	< .005	mg/kg			WG681971	09/15/13 11:31
Total Xylenes	< .003	mg/kg			WG681971	09/15/13 11:31
4-Bromofluorobenzene		% Rec.	97.20	71-126	WG681971	09/15/13 11:31
Dibromofluoromethane		% Rec.	92.10	78.3-121	WG681971	09/15/13 11:31
Toluene-d8		% Rec.	98.50	88.5-111	WG681971	09/15/13 11:31
a,a,a-Trifluorotoluene		% Rec.	102.0	85-114	WG681971	09/15/13 11:31
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG681980	09/17/13 14:56
a,a,a-Trifluorotoluene(FID)		% Rec.	97.70	59-128	WG681980	09/17/13 14:56
TPH (GC/FID) High Fraction	< 4	mg/kg			WG682022	09/17/13 21:57
o-Terphenyl		% Rec.	81.60	50-150	WG682022	09/17/13 21:57

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.025	0.0225	90.2	77.1-121	WG681971
Ethylbenzene	mg/kg	.025	0.0271	108.	79.7-122	WG681971
Toluene	mg/kg	.025	0.0216	86.5	79.7-118	WG681971
Total Xylenes	mg/kg	.075	0.0799	107.	78.8-121	WG681971
4-Bromofluorobenzene				95.90	71-126	WG681971
Dibromofluoromethane				93.80	78.3-121	WG681971
Toluene-d8				95.90	88.5-111	WG681971
a,a,a-Trifluorotoluene				103.0	85-114	WG681971
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.38	116.	63.5-137	WG681980
a,a,a-Trifluorotoluene(FID)				103.0	59-128	WG681980
TPH (GC/FID) High Fraction	mg/kg	60	56.6	94.3	50-150	WG682022
o-Terphenyl				98.10	50-150	WG682022

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0217	0.0225	87.0	77.1-121	3.80	20	WG681971
Ethylbenzene	mg/kg	0.0266	0.0271	106.	79.7-122	1.88	20	WG681971
Toluene	mg/kg	0.0223	0.0216	89.0	79.7-118	3.26	20	WG681971
Total Xylenes	mg/kg	0.0795	0.0799	106.	78.8-121	0.520	20	WG681971
4-Bromofluorobenzene				95.80	71-126			WG681971
Dibromofluoromethane				91.30	78.3-121			WG681971
Toluene-d8				98.70	88.5-111			WG681971
a,a,a-Trifluorotoluene				103.0	85-114			WG681971
TPH (GC/FID) Low Fraction	mg/kg	6.45	6.38	117.	63.5-137	1.24	20	WG681980
a,a,a-Trifluorotoluene(FID)				103.0	59-128			WG681980
TPH (GC/FID) High Fraction	mg/kg	56.8	56.6	95.0	50-150	0.370	20	WG682022
o-Terphenyl				92.90	50-150			WG682022

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



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September 18, 2013

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.108	0.0	.025	87.0	54.3-133	L657464-01	WG681971
Ethylbenzene	mg/kg	0.129	0.0	.025	100.	61.4-133	L657464-01	WG681971
Toluene	mg/kg	0.109	0.0	.025	87.0	61.4-130	L657464-01	WG681971
Total Xylenes	mg/kg	0.379	0.000358	.075	100.	63.3-131	L657464-01	WG681971
4-Bromofluorobenzene					94.90	71-126		WG681971
Dibromofluoromethane					90.90	78.3-121		WG681971
Toluene-d8					96.90	88.5-111		WG681971
a,a,a-Trifluorotoluene					102.0	85-114		WG681971
TPH (GC/FID) Low Fraction	mg/kg	24.1	0.0	5.5	88.0	28.5-138	L657464-01	WG681980
a,a,a-Trifluorotoluene(FID)					100.0	59-128		WG681980

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.104	0.108	83.0	54.3-133	4.38	20	L657464-01	WG681971
Ethylbenzene	mg/kg	0.109	0.129	86.9	61.4-133	17.5	20	L657464-01	WG681971
Toluene	mg/kg	0.101	0.109	80.8	61.4-130	7.37	20	L657464-01	WG681971
Total Xylenes	mg/kg	0.314	0.379	83.6	63.3-131	19.0	20	L657464-01	WG681971
4-Bromofluorobenzene				93.00	71-126				WG681971
Dibromofluoromethane				92.20	78.3-121				WG681971
Toluene-d8				99.60	88.5-111				WG681971
a,a,a-Trifluorotoluene				103.0	85-114				WG681971
TPH (GC/FID) Low Fraction	mg/kg	23.9	24.1	87.0	28.5-138	0.860	23.6	L657464-01	WG681980
a,a,a-Trifluorotoluene(FID)				100.0	59-128				WG681980

Batch number /Run number / Sample number cross reference

WG681971: R2817746: L657464-01 02 03 04 05 06 07 08
WG681980: R2818920: L657464-01 02 03 04 05 06 07 08
WG682022: R2819024: L657464-01 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.
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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.



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Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Report Summary

Monday October 28, 2013

Report Number: L665023

Samples Received: 10/25/13

Client Project: 116228

Description: Church Pit Land Farm

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:

Mark W. Beasley , 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, IA Lab #364

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.

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REPORT OF ANALYSIS

October 28, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : October 25, 2013
Description : Church Pit Land Farm
Sample ID : SP-1 A 0-6 IN
Collected By : James Ford
Collection Date : 10/24/13 08:45

ESC Sample # : L665023-01

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	10/25/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	602/8015	10/25/13	5
Benzene	BDL	0.0050	mg/kg	8260B	10/26/13	5
Toluene	BDL	0.025	mg/kg	8260B	10/26/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	10/26/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	10/26/13	5
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	10/26/13	5
Dibromofluoromethane	112.		% Rec.	8260B	10/26/13	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	10/26/13	5
4-Bromofluorobenzene	88.8		% Rec.	8260B	10/26/13	5
TPH (GC/FID) High Fraction	400	40.	mg/kg	3546/DRO	10/26/13	10
Surrogate recovery(%)						
o-Terphenyl	123.		% Rec.	3546/DRO	10/26/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 10/28/13 11:07 Revised: 10/28/13 15:22



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REPORT OF ANALYSIS

October 28, 2013

Brad Baum
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Date Received : October 25, 2013
Description : Church Pit Land Farm

Sample ID : SP-1 B 7-12 IN

Collected By : James Ford
Collection Date : 10/24/13 08:55

ESC Sample # : L665023-02

Site ID :

Project # : 116228

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	10/25/13	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	602/8015	10/25/13	5
Benzene	BDL	0.0050	mg/kg	8260B	10/26/13	5
Toluene	BDL	0.025	mg/kg	8260B	10/26/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	10/26/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	10/26/13	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	10/26/13	5
Dibromofluoromethane	116.		% Rec.	8260B	10/26/13	5
a,a,a-Trifluorotoluene	110.		% Rec.	8260B	10/26/13	5
4-Bromofluorobenzene	85.5		% Rec.	8260B	10/26/13	5
TPH (GC/FID) High Fraction	280	40.	mg/kg	3546/DRO	10/26/13	10
Surrogate recovery(%)						
o-Terphenyl	96.1		% Rec.	3546/DRO	10/26/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 10/28/13 11:07 Revised: 10/28/13 15:22

Summary of Remarks For Samples Printed
10/28/13 at 15:22:30

TSR Signing Reports: 134
R2 - Rush: Next Day

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, Tl, & Zn GW by 6020 Log all PAHs by 8270-SIM, Log
BTEX 8260 unless noted otherwise

Sample: L665023-01 Account: BUYSLCO Received: 10/25/13 09:30 Due Date: 10/28/13 00:00 RPT Date: 10/28/13 11:07

Sample: L665023-02 Account: BUYSLCO Received: 10/25/13 09:30 Due Date: 10/28/13 00:00 RPT Date: 10/28/13 11:07



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October 28, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG688983	10/25/13 15:30
a,a,a-Trifluorotoluene(FID)		% Rec.	103.0	59-128	WG688983	10/25/13 15:30
Benzene	< .001	mg/kg			WG689081	10/26/13 16:03
Ethylbenzene	< .001	mg/kg			WG689081	10/26/13 16:03
Toluene	< .005	mg/kg			WG689081	10/26/13 16:03
Total Xylenes	< .003	mg/kg			WG689081	10/26/13 16:03
4-Bromofluorobenzene		% Rec.	90.50	71-126	WG689081	10/26/13 16:03
Dibromofluoromethane		% Rec.	102.0	78.3-121	WG689081	10/26/13 16:03
Toluene-d8		% Rec.	101.0	88.5-111	WG689081	10/26/13 16:03
a,a,a-Trifluorotoluene		% Rec.	104.0	85-114	WG689081	10/26/13 16:03
TPH (GC/FID) High Fraction	< 4	mg/kg			WG689046	10/26/13 11:20
o-Terphenyl		% Rec.	83.80	50-150	WG689046	10/26/13 11:20

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.93	89.6	63.5-137	WG688983
a,a,a-Trifluorotoluene(FID)				103.0	59-128	WG688983
Benzene	mg/kg	.025	0.0256	102.	77.1-121	WG689081
Ethylbenzene	mg/kg	.025	0.0278	111.	79.7-122	WG689081
Toluene	mg/kg	.025	0.0257	103.	79.7-118	WG689081
Total Xylenes	mg/kg	.075	0.0849	113.	78.8-121	WG689081
4-Bromofluorobenzene				98.90	71-126	WG689081
Dibromofluoromethane				99.90	78.3-121	WG689081
Toluene-d8				102.0	88.5-111	WG689081
a,a,a-Trifluorotoluene				103.0	85-114	WG689081
TPH (GC/FID) High Fraction	mg/kg	60	43.4	72.3	50-150	WG689046
o-Terphenyl				84.60	50-150	WG689046

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.91	4.93	107.	63.5-137	18.0	20	WG688983
a,a,a-Trifluorotoluene(FID)				99.40	59-128			WG688983
Benzene	mg/kg	0.0245	0.0256	98.0	77.1-121	4.07	20	WG689081
Ethylbenzene	mg/kg	0.0273	0.0278	109.	79.7-122	1.71	20	WG689081
Toluene	mg/kg	0.0250	0.0257	100.	79.7-118	2.67	20	WG689081
Total Xylenes	mg/kg	0.0818	0.0849	109.	78.8-121	3.70	20	WG689081
4-Bromofluorobenzene				100.0	71-126			WG689081
Dibromofluoromethane				97.00	78.3-121			WG689081
Toluene-d8				102.0	88.5-111			WG689081
a,a,a-Trifluorotoluene				101.0	85-114			WG689081
TPH (GC/FID) High Fraction	mg/kg	47.5	43.4	79.0	50-150	8.97	20	WG689046
o-Terphenyl				87.50	50-150			WG689046

* Performance of this Analyte is outside of established criteria.
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October 28, 2013

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	13.1	0.133	5.5	47.0	28.5-138	L665023-01	WG688983
a,a,a-Trifluorotoluene(FID)					100.0	59-128		WG688983
Benzene	mg/kg	0.110	0.0	.025	88.0	54.3-133	L665046-08	WG689081
Ethylbenzene	mg/kg	0.120	0.0	.025	96.0	61.4-133	L665046-08	WG689081
Toluene	mg/kg	0.111	0.0	.025	88.0	61.4-130	L665046-08	WG689081
Total Xylenes	mg/kg	0.355	0.0	.075	95.0	63.3-131	L665046-08	WG689081
4-Bromofluorobenzene					99.70	71-126		WG689081
Dibromofluoromethane					93.00	78.3-121		WG689081
Toluene-d8					102.0	88.5-111		WG689081
a,a,a-Trifluorotoluene					102.0	85-114		WG689081
TPH (GC/FID) High Fraction	mg/kg	41.3	0.221	60	68.0	50-150	L664443-31	WG689046
o-Terphenyl					73.50	50-150		WG689046

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	12.4	13.1	44.8	28.5-138	4.97	23.6	L665023-01	WG688983
a,a,a-Trifluorotoluene(FID)				101.0	59-128				WG688983
Benzene	mg/kg	0.118	0.110	94.0	54.3-133	7.04	20	L665046-08	WG689081
Ethylbenzene	mg/kg	0.126	0.120	100.	61.4-133	4.44	20	L665046-08	WG689081
Toluene	mg/kg	0.117	0.111	93.7	61.4-130	5.70	20	L665046-08	WG689081
Total Xylenes	mg/kg	0.370	0.355	98.7	63.3-131	4.07	20	L665046-08	WG689081
4-Bromofluorobenzene				98.60	71-126				WG689081
Dibromofluoromethane				98.30	78.3-121				WG689081
Toluene-d8				102.0	88.5-111				WG689081
a,a,a-Trifluorotoluene				100.0	85-114				WG689081
TPH (GC/FID) High Fraction	mg/kg	44.0	41.3	73.0	50-150	6.37	20	L664443-31	WG689046
o-Terphenyl				77.40	50-150				WG689046

Batch number /Run number / Sample number cross reference

WG688983: R2845460: L665023-01
WG689081: R2845669: L665023-01
WG689046: R2845768 R2846071: L665023-01 02

* * 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

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Est. 1970

October 28, 2013

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.