

March 08, 2018

Olsson Associates

Jason Davidson

4690 Table Mountain Drive

Golden CO 80403

Project Name - GWOC Cudney Sandsted TB

Project Number - 018-0775

Attached are your analytical results for GWOC Cudney Sandsted TB received by Origins Laboratory, Inc. March 01, 2018. This project is associated with Origins project number Y803016-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 018-0775
Project: GWOC Cudney Sandsted TB

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Base-01	Y803016-01	Soil	March 1, 2018 9:50	03/01/2018 13:20
SWNorth-01	Y803016-02	Soil	March 1, 2018 9:55	03/01/2018 13:20
SWSouth-01	Y803016-03	Soil	March 1, 2018 10:00	03/01/2018 13:20
SWEast-01	Y803016-04	Soil	March 1, 2018 10:05	03/01/2018 13:20
SWWest-01	Y803016-05	Soil	March 1, 2018 10:10	03/01/2018 13:20

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Chain of Custody
 183016



PROJECT NAME: GWOC Cudney Sandsted TB		PROJECT NUMBER: 018-0775	DISPOSAL: By Lab	PAGE: / of /	
COMPANY NAME: Olsson Associates		PHONE NUMBER: 303-596-5693	LAB USE ONLY: Temperature upon receipt: 28 Custody seals intact: Yes No N/A		
ADDRESS: 1525 Raleigh St Suite 400		CITY/STATE/ZIP: Denver, CO 80204	Turn Around Time (check): Standard <input checked="" type="checkbox"/> 72hr <input type="checkbox"/> 48hr <input type="checkbox"/> 24hr <input type="checkbox"/> Same Day <input type="checkbox"/>		
PROJECT MANAGER: Jason Davidson		PM EMAIL: jason@olssonassociates.com	Notes: How BTEX		
SAMPLER: Trent Wainne			BTEX 8260		
DIRECT BILL CLIENT? YES: <input type="checkbox"/> NO: <input checked="" type="checkbox"/>		CLIENT COMPANY: GWOC			
SEND COPY OF ANALYTICAL TO CLIENT? YES: <input type="checkbox"/> NO: <input checked="" type="checkbox"/>		CLIENT NAME:			
		CLIENT EMAIL:			
		CLIENT PROJECT #:			
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles
	BASE-01	Soil	3/1/18	0950	2
	SUNWHL-01	Soil	3/1/18	0955	2
	SUNSWHL-01	Soil	3/1/18	1000	2
	SUNWES-01	Soil	3/1/18	1005	2
	SUNWVST-01	Soil	3/1/18	1010	2
<p>3/1/18</p>					
Comments:		Call Jason Davidson w/ 48hr rush on methamphetamine Dredged Results Hold ISO/IEC cert. methamphetamine results return & Hold BTEX ANALYSIS until Dredged is analyzed			
IOC PACKAGE (check below)		x LEVEL I (Standard OC) LEVEL II (Std OC + Ions) LEVEL IV (Std OC + Ions + raw data)			
RELINQUISHED BY: Trent Wainne	PRINTED NAME: Trent Wainne	SIGNATURE: [Signature]	DATE: 3/1/18	TIME: 1310	
RECEIVED BY: Jason Guerrin	RELINQUISHED BY: Jason Guerrin	SIGNATURE: [Signature]	DATE: 3/1/18	TIME: 1320	

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 1903016 Client: Olsson Associates
 Client Project ID: GWOC Cudney Sandsted TB
 Checklist Completed by: Dan Lee Shipped Via: HD
 Date/time completed: 3-1-12 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: MP
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 12.6 °C _____ °C _____ °C _____ °C (Describe)
 Thermometer ID: 1005

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any): <u>Per the phone call from Trent on 3/1/18 we will go ahead with the analysis for BTEX on all samples. JD 3/1/18</u>				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JD Date/Time Reviewed 3/5/18

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Base-01
3/1/2018 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y803016-01 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.050	mg/kg	25	B8C0503	03/05/2018	03/06/2018	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.3 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	92.3 %	70-130			"	"	"	

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B8C0504	03/05/2018	03/05/2018	U
Diesel (C10-C28)	145	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	87.3 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

SWNorth-01
3/1/2018 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y803016-02 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	B8C0503	03/05/2018	03/06/2018	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130			"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B8C0504	03/05/2018	03/05/2018	U
Diesel (C10-C28)	89.4	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	82.3 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

SWSouth-01
3/1/2018 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y803016-03 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	B8C0503	03/05/2018	03/06/2018	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	70-130			"	"	"	

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B8C0504	03/05/2018	03/05/2018	U
Diesel (C10-C28)	156	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	84.4 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

SWEast-01
3/1/2018 10:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y803016-04 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	B8C0503	03/05/2018	03/06/2018	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.5 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	70-130			"	"	"	

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B8C0504	03/05/2018	03/05/2018	U
Diesel (C10-C28)	75.8	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	84.7 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

SWWest-01
3/1/2018 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y803016-05 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	B8C0503	03/05/2018	03/06/2018	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	0.003	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.8 %	70-130			"	"	"	

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B8C0504	03/05/2018	03/05/2018	U
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	U

Surrogate: o-Terphenyl	79.3 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8C0503 - EPA 5030 (soil)

Blank (B8C0503-BLK1)

Prepared: 03/05/2018 Analyzed: 03/05/2018

Benzene	ND	0.002	mg/kg							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.3	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.5	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8C0503 - EPA 5030 (soil)

LCS (B8C0503-BS1)

Prepared: 03/05/2018 Analyzed: 03/05/2018

Benzene	0.099	0.002	mg/kg	0.100		99.4	77.1-124			
Toluene	0.099	0.002	"	0.100		98.5	74.5-128			
Ethylbenzene	0.089	0.002	"	0.100		89.1	66.4-127			
m,p-Xylene	0.185	0.004	"	0.200		92.5	76.6-124			
o-Xylene	0.091	0.002	"	0.100		91.2	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	54		ug/kg	62.5		87.0	70-130			
Surrogate: Toluene-d8	63		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.1	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8C0503 - EPA 5030 (soil)

Matrix Spike (B8C0503-MS1)	Source: Y802358-01			Prepared: 03/05/2018 Analyzed: 03/05/2018						
Benzene	0.092	0.002	mg/kg	0.100	ND	92.1	71.8-126			
Toluene	0.089	0.002	"	0.100	0.0007	88.9	65.1-130			
Ethylbenzene	0.078	0.002	"	0.100	ND	77.9	62.2-130			
m,p-Xylene	0.159	0.004	"	0.200	ND	79.5	46.5-137			
o-Xylene	0.080	0.002	"	0.100	ND	79.9	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.2	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8C0503 - EPA 5030 (soil)

Matrix Spike Dup (B8C0503-MSD1)	Source: Y802358-01			Prepared: 03/05/2018 Analyzed: 03/05/2018						
Benzene	0.074	0.002	mg/kg	0.100	ND	73.9	71.8-126	21.9	11.3	QR-02
Toluene	0.070	0.002	"	0.100	0.0007	70.3	65.1-130	23.4	15.4	QR-02
Ethylbenzene	0.062	0.002	"	0.100	ND	61.8	62.2-130	23.0	19.6	QM-07, QR-03
m,p-Xylene	0.123	0.004	"	0.200	ND	61.3	46.5-137	25.9	19.2	QR-02
o-Xylene	0.063	0.002	"	0.100	ND	62.7	54.2-134	24.2	17.9	QR-02
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		93.9	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8C0504 - EPA 3550B

Blank (B8C0504-BLK1)

Prepared: 03/05/2018 Analyzed: 03/05/2018

Gasoline (C6-C10)	ND	50.0	mg/kg							U
Diesel (C10-C28)	ND	50.0	"							U
Surrogate: o-Terphenyl	47		"	50.0		94.9	59-131			

Blank (B8C0504-BLK2)

Prepared: 03/05/2018 Analyzed: 03/05/2018

Gasoline (C6-C10)	ND	50.0	mg/kg							U
Diesel (C10-C28)	ND	50.0	"							U
Surrogate: o-Terphenyl	46		"	50.0		91.5	59-131			

LCS (B8C0504-BS1)

Prepared: 03/05/2018 Analyzed: 03/05/2018

Gasoline (C6-C10)	891	50.0	mg/kg	1000		89.1	59-133			
Diesel (C10-C28)	1020	50.0	"	1000		102	64-121			
Surrogate: o-Terphenyl	49		"	50.0		98.0	59-131			

LCS (B8C0504-BS2)

Prepared: 03/05/2018 Analyzed: 03/05/2018

Gasoline (C6-C10)	991	50.0	mg/kg	1000		99.1	59-133			
Diesel (C10-C28)	1050	50.0	"	1000		105	64-121			
Surrogate: o-Terphenyl	51		"	50.0		102	59-131			

Matrix Spike (B8C0504-MS1)

Source: Y802375-01

Prepared: 03/05/2018 Analyzed: 03/05/2018

Gasoline (C6-C10)	957	50.0	mg/kg	1000	17.3	94.0	57-139			
Diesel (C10-C28)	1070	50.0	"	1000	ND	107	53-125			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
 4690 Table Mountain Drive
 Golden CO 80403

Jason Davidson
 Project Number: 018-0775
 Project: GWOC Cudney Sandsted TB

Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8C0504 - EPA 3550B										
Matrix Spike (B8C0504-MS1)			Source: Y802375-01		Prepared: 03/05/2018 Analyzed: 03/05/2018					
Surrogate: o-Terphenyl	50		mg/kg	50.0		99.6	59-131			
Matrix Spike (B8C0504-MS2)			Source: Y802376-01		Prepared: 03/05/2018 Analyzed: 03/05/2018					
Gasoline (C6-C10)	1020	50.0	mg/kg	1000	19.3	100	57-139			
Diesel (C10-C28)	1120	50.0	"	1000	ND	112	53-125			
Surrogate: o-Terphenyl	53		"	50.0		106	59-131			
Matrix Spike Dup (B8C0504-MSD1)			Source: Y802375-01		Prepared: 03/05/2018 Analyzed: 03/05/2018					
Gasoline (C6-C10)	949	50.0	mg/kg	1000	17.3	93.1	57-139	0.928	20	
Diesel (C10-C28)	1030	50.0	"	1000	ND	103	53-125	3.05	20	
Surrogate: o-Terphenyl	49		"	50.0		98.6	59-131			
Matrix Spike Dup (B8C0504-MSD2)			Source: Y802376-01		Prepared: 03/05/2018 Analyzed: 03/05/2018					
Gasoline (C6-C10)	1010	50.0	mg/kg	1000	19.3	98.6	57-139	1.38	20	
Diesel (C10-C28)	1080	50.0	"	1000	ND	108	53-125	3.47	20	
Surrogate: o-Terphenyl	52		"	50.0		103	59-131			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 018-0775
Project: GWOC Cudney Sandsted TB

Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.