

March 30, 2020

Olsson Associates

Trent Watne

1525 Raleigh St, Suite 400

Denver CO 80204

Project Name - Sharp 24-3-11HC

Project Number - [none]

Attached are your analytical results for Sharp 24-3-11HC received by Origins Laboratory, Inc. March 23, 2020. This project is associated with Origins project number Y003464-01.

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
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: [none]
Project: Sharp 24-3-11HC

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sharp-01	Y003464-01	Soil	March 23, 2020 13:15	03/23/2020 16:05
Sharp-02	Y003464-02	Soil	March 23, 2020 13:20	03/23/2020 16:05
SharpDitch-01	Y003464-03	Soil	March 23, 2020 13:30	03/23/2020 16:05
SharpDitch-02	Y003464-04	Soil	March 23, 2020 13:40	03/23/2020 16:05

Origins Laboratory, Inc.



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Olsson Associates
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 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

10035464

Chain of Custody



PROJECT NAME SHARP 24-3-11HC	PROJECT NUMBER 303-237-2072	DISPOSAL	By Lab	PAGE	1	of	1
COMPANY NAME Olsson Associates	PHONE NUMBER 303-237-2072	LAB USE ONLY: Temperature upon receipt: 21.8 Custody seals intact: Yes No N/A					
ADDRESS 1525 Raleigh St., Suite 400	CITY/STATE/ZIP Denver, CO 80204	Turn Around Time (check)					
PROJECT MANAGER Trent Watne	PI EMAIL twatne@olsson.com	Standard	x				
SAMPLER Trent Watne		72hr					
		48hr					
		24hr					
		Same Day					
DIRECT BILL CLIENT? YES: <input type="checkbox"/> NO: <input type="checkbox"/> CLIENT COMPANY: _____ CLIENT NAME: _____ SEND COPY OF ANALYTICAL TO CLIENT? YES: <input type="checkbox"/> NO: <input type="checkbox"/> CLIENT PROJECT #: _____		Notes: Box TPH GNO TPH DKO TPH DKO					
Lab ID	Field ID	Matrix	Sample Date	Sample Time	Sample #	Bottles	
	SHARP-01	Soil	3/23/20	1315	1	1	
	SHARP-02	Soil	3/23/20	1320	1	1	
	SHARP-DTK-01	Soil	3/23/20	1330	1	1	
	SHARP-DTK-02	Soil	3/23/20	1340	1	1	
Comments: Send Results to Jason Davison j.davison@ollegapp.com							
QC PACKAGE (check below) X LEVEL I (Standard CC) LEVEL III (SM-CC + forms) LEVEL IV (SM-CC + forms + raw data)		RELINQUISHED BY	PRINTED NAME	SIGNATURE	DATE	TIME	
			Jason Davison	[Signature]	3/23/20	1605	
		RECEIVED BY			3/23/20	1605	
		RELINQUISHED BY					
		RECEIVED BY					
		RELINQUISHED BY					

Origins Laboratory, Inc.

Jefe Pellegrini

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Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y003464

Client: Olsson

Client Project ID: Sharp 24-3-11HC

Checklist Completed by: JG

Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

Date/time completed: 3/24/2020

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 1 / 21.8 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: T003

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"/>		<u>Some Dry</u>
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):				

⁽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.

Jm
 Reviewed by (Project Manager)

3-25-20
 Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

Sharp-01
3/23/2020 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y003464-01 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.0500	mg/kg	25	BOC2402	KDK	03/24/2020	03/26/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	"	

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	BOC2403	KDK	03/24/2020	03/24/2020	U
Surrogate: o-Terphenyl	71.9 %	50-150			"	"	"	"	

Origins Laboratory, Inc.



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Olsson Associates
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 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

Sharp-02
3/23/2020 1:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y003464-02 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.0500	mg/kg	25	BOC2402	KDK	03/24/2020	03/26/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	"	

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	BOC2403	KDK	03/24/2020	03/24/2020	U
Surrogate: o-Terphenyl	79.9 %	50-150			"	"	"	"	

Origins Laboratory, Inc.



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Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

SharpDitch-01
3/23/2020 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y003464-03 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.0500	mg/kg	25	B0C2402	KDK	03/24/2020	03/25/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	9.93	5.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B0C2403	KDK	03/24/2020	03/24/2020	U
Surrogate: o-Terphenyl	67.6 %	50-150			"	"	"	"	

Origins Laboratory, Inc.



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Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

SharpDitch-02
3/23/2020 1:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y003464-04 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.0500	mg/kg	25	BOC2402	KDK	03/24/2020	03/26/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	110 %	70-130			"	"	"	"	

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	BOC2403	KDK	03/24/2020	03/24/2020	U
Surrogate: o-Terphenyl	70.2 %	50-150			"	"	"	"	

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 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2402 - EPA 5030 (soil)

Blank (B0C2402-BLK1)

Prepared: 03/24/2020 Analyzed: 03/25/2020

Benzene	ND	0.00200	mg/kg							U
Toluene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		108	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2402 - EPA 5030 (soil)

LCS (B0C2402-BS1)

Prepared: 03/24/2020 Analyzed: 03/25/2020

Benzene	0.110	0.00200	mg/kg	0.100		110	70-130			
Toluene	0.115	0.00200	"	0.100		115	70-130			
Ethylbenzene	0.111	0.00200	"	0.100		111	70-130			
m,p-Xylene	0.225	0.00400	"	0.200		113	70-130			
o-Xylene	0.108	0.00200	"	0.100		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		110	70-130			

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 Denver CO 80204

Trent Watne
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 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2402 - EPA 5030 (soil)

Matrix Spike (B0C2402-MS1)	Source: Y003464-03			Prepared: 03/24/2020 Analyzed: 03/25/2020						
Benzene	0.111	0.00200	mg/kg	0.100	ND	111	70-130			
Toluene	0.118	0.00200	"	0.100	ND	118	70-130			
Ethylbenzene	0.112	0.00200	"	0.100	ND	112	70-130			
m,p-Xylene	0.226	0.00400	"	0.200	ND	113	70-130			
o-Xylene	0.110	0.00200	"	0.100	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		110	70-130			

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Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2402 - EPA 5030 (soil)

Matrix Spike Dup (B0C2402-MSD1)	Source: Y003464-03			Prepared: 03/24/2020 Analyzed: 03/25/2020						
Benzene	0.105	0.00200	mg/kg	0.100	ND	105	70-130	5.67	20	
Toluene	0.111	0.00200	"	0.100	ND	111	70-130	6.13	20	
Ethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130	4.80	20	
m,p-Xylene	0.215	0.00400	"	0.200	ND	108	70-130	4.83	20	
o-Xylene	0.106	0.00200	"	0.100	ND	106	70-130	4.34	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	70-130			

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 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0C2403 - EPA 3580										
Blank (B0C2403-BLK1)										
					Prepared: 03/24/2020 Analyzed: 03/24/2020					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	18		"	25.0		72.3	50-150			

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Jen Pellegrini, Project Manager

Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2403 - EPA 3580

LCS (B0C2403-BS1)

Prepared: 03/24/2020 Analyzed: 03/24/2020

Diesel (C10-C28)	990	50.0	mg/kg	1000		99.0	70-130			
Surrogate: o-Terphenyl	58		"	50.0		116	50-150			

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Jen Pellegrini, Project Manager

Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2403 - EPA 3580

Matrix Spike (B0C2403-MS1)	Source: Y003465-02			Prepared: 03/24/2020 Analyzed: 03/24/2020						
Diesel (C10-C28)	809	50.0	mg/kg	1000	15.6	79.3	70-130			
Surrogate: o-Terphenyl	43		"	50.0		86.6	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Olsson Associates
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 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Sharp 24-3-11HC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C2403 - EPA 3580

Matrix Spike Dup (B0C2403-MSD1)	Source: Y003465-02			Prepared: 03/24/2020 Analyzed: 03/24/2020						
Diesel (C10-C28)	945	50.0	mg/kg	1000	15.6	93.0	70-130	15.6	35	
Surrogate: o-Terphenyl	52		"	50.0		105	50-150			

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Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: [none]
Project: Sharp 24-3-11HC

Notes and Definitions

U Sample is Non-Detect.

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.



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Jen Pellegrini, Project Manager