



March 19, 2020

Olsson Associates

Trent Watne

1525 Raleigh St, Suite 400

Denver

CO 80204

Project Name - Grein #1

Project Number - 019-0896

Attached are your analytical results for Grein #1 received by Origins Laboratory, Inc. March 12, 2020. This project is associated with Origins project number Y003228-01.

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
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Olsson Associates

1525 Raleigh St, Suite 400

Denver CO 80204

Trent Watne

Project Number: 019-0896

Project: Grein #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4	Y003228-01	Water	March 12, 2020 14:40	03/12/2020 15:56
MW-2	Y003228-02	Water	March 12, 2020 15:00	03/12/2020 15:56

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Trent Watne
Project Number: 019-0896
Project: Grein #1

[illegible]

Origins Laboratory, Inc.

Jeff Pellgrini

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1525 Raleigh St, Suite 400
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Trent Watne
Project Number: 019-0896
Project: Grein #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y003228 Client: Olsson
Client Project ID: Grein #1

Checklist Completed by: JG Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Date/time completed: 3.12.2020 Airbill #: N/A

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

Cooler Number/Temperature: 1 17.3 °C °C °C (Describe) °C

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>Same Day</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.

Reviewed by (Project Manager) Jm Date/Time Reviewed 3-13-20

Origins Laboratory, Inc.

Jefe Pellegrini

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Denver CO 80204

Trent Watne
Project Number: 019-0896
Project: Grein #1

MW-4

3/12/2020 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y003228-01 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0C1222	ZZZ	03/12/2020	03/18/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	93.8 %	70-130	"	"	"
Surrogate: Toluene-d8	97.8 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	92.0 %	70-130	"	"	"

Origins Laboratory, Inc.



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Project Number: 019-0896
Project: Grein #1

MW-2

3/12/2020 3:00:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

Origins Laboratory, Inc.
Y003228-02 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0C1222	ZZZ	03/12/2020	03/18/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	92.4 %	70-130	"	"	"
Surrogate: Toluene-d8	97.1 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	91.1 %	70-130	"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

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Project Number: 019-0896
Project: Grein #1

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 B0C1222 - EPA 5030B (Water)										
Blank (B0C1222-BLK1)					Prepared: 03/12/2020 Analyzed: 03/15/2020					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.6	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	70-130			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0C1222 - EPA 5030B (Water)										
LCS (B0C1222-BS1)					Prepared: 03/12/2020 Analyzed: 03/15/2020					
Benzene	55.4	1.00	ug/L	50.0		111	70-130			
Toluene	53.9	1.00	"	50.0		108	70-130			
Ethylbenzene	58.3	1.00	"	50.0		117	70-130			
m,p-Xylene	114	2.00	"	100		114	70-130			
o-Xylene	54.2	1.00	"	50.0		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	52		"	62.5		83.6	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.5	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.4	70-130			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0C1222 - EPA 5030B (Water)

Matrix Spike (B0C1222-MS1)		Source: Y003210-01			Prepared: 03/12/2020 Analyzed: 03/15/2020					
Benzene	54.7	1.00	ug/L	50.0	0.250	109	70-130			
Toluene	63.1	1.00	"	50.0	1.26	124	70-130			
Ethylbenzene	59.7	1.00	"	50.0	0.390	119	70-130			
m,p-Xylene	117	2.00	"	100	2.11	115	70-130			
o-Xylene	61.8	1.00	"	50.0	1.21	121	70-130			
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		87.5	70-130			
Surrogate: Toluene-d8	68		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.0	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0C1222 - EPA 5030B (Water)										
Matrix Spike Dup (B0C1222-MSD1)		Source: Y003210-01			Prepared: 03/12/2020 Analyzed: 03/15/2020					
Benzene	55.4	1.00	ug/L	50.0	0.250	110	70-130	1.36	20	
Toluene	61.7	1.00	"	50.0	1.26	121	70-130	2.29	20	
Ethylbenzene	59.9	1.00	"	50.0	0.390	119	70-130	0.401	20	
m,p-Xylene	117	2.00	"	100	2.11	115	70-130	0.333	20	
o-Xylene	62.0	1.00	"	50.0	1.21	122	70-130	0.274	20	
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		103	70-130			
Surrogate: Toluene-d8	68		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.0	70-130			

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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.

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