



October 07, 2019

Olsson Associates

Trent Watne

1525 Raleigh St, Suite 400

Denver

CO 80204

Project Name - Grein #1

Project Number - 019-0898

Attached are your analytical results for Grein #1 received by Origins Laboratory, Inc. October 01, 2019. This project is associated with Origins project number Y910013-01.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Olsson Associates

1525 Raleigh St, Suite 400

Denver CO 80204

Trent Watne

Project Number: 019-0898

Project: Grein #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4	Y910013-01	Water	September 30, 2019 17:30	10/01/2019 14:45
MW-2	Y910013-02	Water	September 30, 2019 17:45	10/01/2019 14:45

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.

Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
Project: Grein #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y910013

Client: Olsson

Client Project ID: Grein #1

Checklist Completed by: JG

Shipped Via: HD

Date/time completed: 10/01/2019

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: N/A

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

Cooler Number/Temperature: 1 5.1 °C 1 °C 1 °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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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) JG

10/21/19
Date/Time Reviewed

Origins Laboratory, Inc.

Jen 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
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
Project: Grein #1

MW-4

9/30/2019 5:30:00PM

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

Origins Laboratory, Inc. Y910013-01 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J0202	KDK	10/02/2019	10/02/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"
Surrogate: Toluene-d8	93.0 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	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.

Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
Project: Grein #1

MW-2

9/30/2019 5:45:00PM

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

Origins Laboratory, Inc. Y910013-02 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J0202	KDK	10/02/2019	10/02/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4
Surrogate: Toluene-d8
Surrogate: 4-Bromofluorobenzene

101 % 70-130
95.4 % 70-130
100 % 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.

Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
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 B9J0202 - EPA 5030B (Water)										
Blank (B9J0202-BLK1)					Prepared: 10/02/2019 Analyzed: 10/02/2019					
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	63		"	62.5		101	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	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.

Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
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 B9J0202 - EPA 5030B (Water)

LCS (B9J0202-BS1)

Prepared: 10/02/2019 Analyzed: 10/02/2019

Benzene	56.4	1.00	ug/L	50.0		113	70-130			
Toluene	51.7	1.00	"	50.0		103	70-130			
Ethylbenzene	50.3	1.00	"	50.0		101	70-130			
m,p-Xylene	98.8	2.00	"	100		98.8	70-130			
o-Xylene	48.8	1.00	"	50.0		97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.4	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.3	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.

Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
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 B9J0202 - EPA 5030B (Water)

Matrix Spike (B9J0202-MS1)		Source: Y909518-01			Prepared: 10/02/2019 Analyzed: 10/02/2019					
Benzene	184	1.00	ug/L	50.0	131	105	70-130			
Toluene	47.8	1.00	"	50.0	ND	95.6	70-130			
Ethylbenzene	51.8	1.00	"	50.0	6.40	90.8	70-130			
m,p-Xylene	125	2.00	"	100	34.4	90.7	70-130			
o-Xylene	46.8	1.00	"	50.0	0.300	93.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.7	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.2	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	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.

Jen Pellegrini, Project Manager

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: 019-0898
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 B9J0202 - EPA 5030B (Water)

Matrix Spike Dup (B9J0202-MSD1)		Source: Y909518-01			Prepared: 10/02/2019 Analyzed: 10/02/2019					
Benzene	183	1.00	ug/L	50.0	131	103	70-130	0.594	20	
Toluene	48.9	1.00	"	50.0	ND	97.8	70-130	2.21	20	
Ethylbenzene	52.7	1.00	"	50.0	6.40	92.5	70-130	1.63	20	
m,p-Xylene	127	2.00	"	100	34.4	92.4	70-130	1.40	20	
o-Xylene	47.9	1.00	"	50.0	0.300	95.1	70-130	2.24	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.5	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	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.

Jen Pellegrini, Project Manager

Olsson Associates

1525 Raleigh St, Suite 400

Denver CO 80204

Trent Watne

Project Number: 019-0898

Project: Grein #1

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.



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.

Jen Pellegrini, Project Manager