



June 11, 2019

Olsson Associates

Jason Davidson

1525 Raleigh St, Suite 400

Denver

CO 80204

Project Name - Grein #1 TB

Project Number - 019-0896

Attached are your analytical results for Grein #1 TB received by Origins Laboratory, Inc. June 06, 2019. This project is associated with Origins project number Y906118-01.

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

Jason Davidson

Project Number: 019-0896

Project: Grein #1 TB

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	Y906118-01	Water	June 4, 2019 12:30	06/06/2019 14:30
MW-2	Y906118-02	Water	June 4, 2019 12:41	06/06/2019 14:30
MW-3	Y906118-03	Water	June 4, 2019 12:49	06/06/2019 14:30
MW-4	Y906118-04	Water	June 4, 2019 12:58	06/06/2019 14:30

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Page 3 of 13

Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Jason Davidson
Project Number: 019-0896
Project: Grein #1 TB

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y906116

Client: Olsson

Client Project ID: Grein #1

Checklist Completed by: JG

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 6 / 7 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.9 °C 1 / 1 °C 1 / 1 °C 1 / 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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

Date/Time Reviewed 6/10/19

Origins Laboratory, Inc.

Jefe Pellegrini

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Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Jason Davidson
Project Number: 019-0896
Project: Grein #1 TB

MW-1

6/4/2019 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y906118-01 (Water)

BTEX by EPA 8260D

Benzene	368	4.00	ug/L	4	B9F0701	JTD	06/07/2019	06/07/2019	
Toluene	ND	4.00	"	"	"	JTD	"	"	U
Ethylbenzene	393	4.00	"	"	"	JTD	"	"	
Xylenes, total	4110	20.0	"	20	"	KDK	"	06/10/2019	

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	06/07/2019
Surrogate: Toluene-d8	103 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"

Origins Laboratory, Inc.



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Jason Davidson
Project Number: 019-0896
Project: Grein #1 TB

MW-2

6/4/2019 12:41:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y906118-02 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9F0701	JTD	06/07/2019	06/07/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	70-130	"	"	"
Surrogate: Toluene-d8	101 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	70-130	"	"	"

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Project Number: 019-0896
Project: Grein #1 TB

MW-3

6/4/2019 12:49:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906118-03 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9F0701	JTD	06/07/2019	06/07/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	70-130	"	"	"
Surrogate: Toluene-d8	103 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	70-130	"	"	"

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MW-4

6/4/2019 12:58:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y906118-04 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9F0701	JTD	06/07/2019	06/07/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	112 %	70-130	"	"	"
Surrogate: Toluene-d8	104 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	70-130	"	"	"

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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 B9F0701 - EPA 5030B (Water)

Blank (B9F0701-BLK1)

Prepared: 06/07/2019 Analyzed: 06/07/2019

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	71		"	62.5	114		70-130			
Surrogate: Toluene-d8	66		"	62.5	105		70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102		70-130			

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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 B9F0701 - EPA 5030B (Water)

LCS (B9F0701-BS1)

Prepared: 06/07/2019 Analyzed: 06/07/2019

Benzene	41.2	1.00	ug/L	50.0		82.3	70-130			
Toluene	41.8	1.00	"	50.0		83.7	70-130			
Ethylbenzene	43.7	1.00	"	50.0		87.3	70-130			
m,p-Xylene	85.9	2.00	"	100		85.9	70-130			
o-Xylene	43.6	1.00	"	50.0		87.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		106	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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 B9F0701 - EPA 5030B (Water)

Matrix Spike (B9F0701-MS1)		Source: Y906101-04			Prepared: 06/07/2019 Analyzed: 06/07/2019					
Benzene	125	1.00	ug/L	50.0	72.5	105	70-130			
Toluene	134	1.00	"	50.0	69.4	129	70-130			
Ethylbenzene	62.4	1.00	"	50.0	6.97	111	70-130			
m,p-Xylene	130	2.00	"	100	18.3	111	70-130			
o-Xylene	68.3	1.00	"	50.0	12.4	112	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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 B9F0701 - EPA 5030B (Water)

Matrix Spike Dup (B9F0701-MSD1)		Source: Y906101-04			Prepared: 06/07/2019 Analyzed: 06/07/2019					
Benzene	125	1.00	ug/L	50.0	72.5	105	70-130	0.104	20	
Toluene	132	1.00	"	50.0	69.4	125	70-130	1.30	20	
Ethylbenzene	61.6	1.00	"	50.0	6.97	109	70-130	1.18	20	
m,p-Xylene	129	2.00	"	100	18.3	111	70-130	0.270	20	
o-Xylene	68.4	1.00	"	50.0	12.4	112	70-130	0.102	20	
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		107	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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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