



April 16, 2018

**Olsson Associates**

**Jason Davidson**

**4690 Table Mountain Drive**

**Golden**

**CO 80403**

**Project Name - Kraus Albin GW**

**Project Number - 018-0459**

Attached are your analytical results for Kraus Albin GW received by Origins Laboratory, Inc. April 09, 2018. This project is associated with Origins project number Y804171-01.

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

4690 Table Mountain Drive

Golden CO 80403

Jason Davidson

Project Number: 018-0459

Project: Kraus Albin GW

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-3	Y804171-01	Water	April 9, 2018 12:05	04/09/2018 15:00
MW-2	Y804171-02	Water	April 9, 2018 12:20	04/09/2018 15:00

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**ORIGINS** LABORATORY, INC

Client: Olsson Project Manager: Jason Davidson

Address: 1525 Raleigh St. #400 Project Name: 018-0459 Kraus Albin GW

Telephone Number: 303-596-5693 Project Number: 018-0459

Email Address: JDavidson@olssonassociates.com Samples Collected By: Tamara Mathis

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis		Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other			
AAAL-1 MW-3		1205												1
MW-2		1220												2
<i>DN 4/19/18</i>														3
														4
														5
														6
														7
														8
														9
														10

Relinquished By: [Signature] Date: 4/19/18 Time: 1500

Relinquished By: [Signature] Date: 4/19/18 Time: 1500

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☒ Standard

Temp Received: 4.3 Date Results Needed: 4/18

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Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y804171

Client: Olsson

Client Project ID: Kraus Albin GW

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 4/10/14

Airbill #: N/A

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

Cooler Number/Temperature: 1, 4.3 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		received mw-3 instead of mw-1
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any): <u>Per the phone call from Trent on 4/10/18, sample 10 mw-3 will be used in place of mw-1. JP</u>				

<sup>(1)</sup> 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

4/11/18  
Date/Time Reviewed

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Jason Davidson  
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Project: Kraus Albin GW

## MW-3

4/9/2018 12:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y804171-01 (Water)

### BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8D1303	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

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

101 % 84-121  
99.2 % 85-115  
101 % 84-114

" " "  
" " "  
" " "

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## MW-2

4/9/2018 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y804171-02 (Water)

### BTEX by EPA 8260C

Benzene	289	20.0	ug/L	20	B8D1303	04/13/2018	04/16/2018
Toluene	157	1.00	"	1	"	"	04/13/2018
Ethylbenzene	82.8	1.00	"	"	"	"	"
Xylenes, total	393	1.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	93.8 %	84-121			"	"	"
Surrogate: Toluene-d8	105 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	99.5 %	84-114			"	"	"

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**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
<b>Batch B8D1303 - EPA 5030B (Water)</b>										
<b>Blank (B8D1303-BLK1)</b>					Prepared: 04/13/2018 Analyzed: 04/13/2018					
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	64		"	62.5	102		84-121			
Surrogate: Toluene-d8	61		"	62.5	98.2		85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	102		84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8D1303 - EPA 5030B (Water)										
LCS (B8D1303-BS1)					Prepared: 04/13/2018 Analyzed: 04/13/2018					
Benzene	55.3	1.00	ug/L	50.0		111	73.3-129			
Toluene	57.3	1.00	"	50.0		115	76.2-123			
Ethylbenzene	53.0	1.00	"	50.0		106	73.6-130			
m,p-Xylene	116	2.00	"	100		116	76.1-126			
o-Xylene	54.4	1.00	"	50.0		109	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.1	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.1	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8D1303 - EPA 5030B (Water)**

Matrix Spike (B8D1303-MS1)		Source: Y804165-02			Prepared: 04/13/2018 Analyzed: 04/13/2018					
Benzene	61.9	1.00	ug/L	50.0	ND	124	74-130			
Toluene	64.2	1.00	"	50.0	ND	128	73-131			
Ethylbenzene	60.7	1.00	"	50.0	ND	121	76-132			
m,p-Xylene	131	2.00	"	100	0.290	131	69-139			
o-Xylene	60.0	1.00	"	50.0	ND	120	74-131			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.0	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.8	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8D1303 - EPA 5030B (Water)**

Matrix Spike Dup (B8D1303-MSD1)		Source: Y804165-02			Prepared: 04/13/2018 Analyzed: 04/13/2018					
Benzene	61.2	1.00	ug/L	50.0	ND	122	74-130	1.17	20	
Toluene	64.0	1.00	"	50.0	ND	128	73-131	0.312	20	
Ethylbenzene	60.9	1.00	"	50.0	ND	122	76-132	0.313	20	
m,p-Xylene	132	2.00	"	100	0.290	132	69-139	0.638	20	
o-Xylene	61.0	1.00	"	50.0	ND	122	74-131	1.64	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.8	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.3	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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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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