



Mull Drilling

September 25, 2024

Trisha Fanning

1700 N Waterfront Pkway Bldg #1200

Wichita

KS

67206

Project Name - Braukmann Farms

Project Number - [none]

Attached are your analytical results for Braukmann Farms received by Origins Laboratory September 11, 2024. This project is associated with Origins project number E409313-01.

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

303.433.1322

projectmanager@originslab.com



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

Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita

KS

67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
240910-BF-SB01@3-5	E409313-01	Soil	September 10, 2024 9:05	09/11/2024 13:14
240910-BF-SB01@8-10	E409313-02	Soil	September 10, 2024 9:10	09/11/2024 13:14
240910-BF-SB02@3-5	E409313-03	Soil	September 10, 2024 10:00	09/11/2024 13:14
240910-BF-SB02@4-6	E409313-04	Soil	September 10, 2024 10:05	09/11/2024 13:14
240910-BF-SB04@3-5	E409313-06	Soil	September 10, 2024 8:50	09/11/2024 13:14
240910-BF-SB04@8-10	E409313-07	Soil	September 10, 2024 8:55	09/11/2024 13:14
240910-BF-SL-2@0.5	E409313-08	Soil	September 10, 2024 10:25	09/11/2024 13:14
240910-BF-BGN01@3-5	E409313-13	Soil	September 10, 2024 8:35	09/11/2024 13:14
240910-BF-BGN01@8-10	E409313-14	Soil	September 10, 2024 8:40	09/11/2024 13:14

Origins Laboratory



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.

Mull Drilling
1700 N Waterfront Pkwy Bldg #1200
Wichita KS 67206

Trisha Fanning
Project Number: [none]
Project: Braukmann Farms

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: E4043B

Client: Mull

Client Project ID: BRAUKMANN

Checklist Completed by: JHD WS

Shipped Via: HO

Date/Time Completed: 9/12/24

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): ✓ Soil/Solid

Water

Other:

Cooler Number/Temperature: 119.4 °C / °C / °C (Describe) °C

Thermometer ID: TD05

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?				
Is there ice present (document if blue ice is used)	✓			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		✓		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			✓	
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)			✓	
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)

9/13/24
Date/Time Reviewed

Origins Laboratory

J. Bynon

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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-SB01@3-5

9/10/2024 9:05:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.452	0.101	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	38.1	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	19.5	0.823	"	"	"	"	"
Sodium	48.5	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.97		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	9.04	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	10.5	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-SB01@8-10

9/10/2024 9:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.794	0.101	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.73	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	1.22	0.823	"	"	"	"	"
Sodium	0.853	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.21		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	0.703	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.459	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-SB02@3-5

9/10/2024 10:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-03 (Soil)

Boron (DTPA Sorbitol)

Boron	1.15	0.0999	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	27.0	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	12.9	0.823	"	"	"	"	"
Sodium	22.2	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.94		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	4.98	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	6.37	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkwy Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-SB02@4-6

9/10/2024 10:05:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-04 (Soil)

Boron (DTPA Sorbitol)

Boron	1.07	0.101	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.82	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	0.945	0.823	"	"	"	"	"
Sodium	2.11	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.35		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	1.79	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.540	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling
1700 N Waterfront Pkway Bldg #1200
Wichita KS 67206

Trisha Fanning
Project Number: [none]
Project: Braukmann Farms

240910-BF-SB04@3-5

9/10/2024 8:50:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory E409313-06 (Soil)

Boron (DTPA Sorbitol)

Boron	0.292	0.0987	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	3.39	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	2.52	0.823	"	"	"	"	"
Sodium	0.649	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.30		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	0.378	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.839	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-SB04@8-10

9/10/2024 8:55:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-07 (Soil)

Boron (DTPA Sorbitol)

Boron	1.89	0.102	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	0.781	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	1.48	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.31		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	1.81	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.303	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-SL-2@0.5

9/10/2024 10:25:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-08 (Soil)

Boron (DTPA Sorbitol)

Boron	0.952	0.0993	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	7.05	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	1.65	0.823	"	"	"	"	"
Sodium	21.3	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.37		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	10.2	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	3.60	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkwy Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-BGN01@3-5

9/10/2024 8:35:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-13 (Soil)

Boron (DTPA Sorbitol)

Boron	1.93	0.102	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.12	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	0.901	0.823	"	"	"	"	"
Sodium	2.61	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.46		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	2.59	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.525	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

240910-BF-BGN01@8-10

9/10/2024 8:40:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E409313-14 (Soil)

Boron (DTPA Sorbitol)

Boron	2.76	0.0983	mg/L	1	B4I1607	09/16/2024	09/17/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.09	0.499	meq/L	10	[CALC]	09/16/2024	09/17/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	3.03	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.30		pH Units	1	B4I1625	09/16/2024	09/19/2024
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SAR by 20B Saturated Paste

SAR	3.24	0.0100	SAR	1	B4I1617	09/16/2024	09/17/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.541	0.00500	mmhos/cm	1	B4I1625	09/16/2024	09/19/2024
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Mull Drilling
1700 N Waterfront Pkwy Bldg #1200
Wichita KS 67206

Trisha Fanning
Project Number: [none]
Project: Braukmann Farms

Classical Chemistry Parameters - Quality Control Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I1607 - DTPA Sorbitol Preparation

Blank (B4I1607-BLK1)

Prepared: 09/16/2024 Analyzed: 09/17/2024

Boron ND 0.100 mg/L

Duplicate (B4I1607-DUP1)

Source: E409262-08

Prepared: 09/16/2024 Analyzed: 09/17/2024

Boron 0.115 0.101 mg/L 0.173 40.1 50

Batch B4I1617 - Saturated Paste Metals

Blank (B4I1617-BLK1)

Prepared: 09/16/2024 Analyzed: 09/17/2024

SAR ND 0.0100 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

Duplicate (B4I1617-DUP1)

Source: E409313-01

Prepared: 09/16/2024 Analyzed: 09/17/2024

SAR ND 0.0100 SAR 9.04 200

Calcium PPM 738 10.0 mg/L 764 3.46 50

Magnesium PPM 230 10.0 " 237 3.37 50

Sodium PPM 1080 10.0 " 1120 3.63 50

Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkwy Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

Saturated Paste - Quality Control

Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I1625 - Saturated Paste pH/EC

Blank (B4I1625-BLK1)

Prepared: 09/16/2024 Analyzed: 09/19/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B4I1625-DUP1)

Source: E409313-01

Prepared: 09/16/2024 Analyzed: 09/19/2024

Specific Conductance (EC)	10.1	0.00500	mmhos/cm	10.5	3.69	25
pH	7.94		pH Units	7.97	0.377	25

Origins Laboratory



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Mull Drilling

1700 N Waterfront Pkway Bldg #1200

Wichita KS 67206

Trisha Fanning

Project Number: [none]

Project: Braukmann Farms

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory



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