

September 04, 2024

## Environmental Works

Adam Kubat

AP@environmentalworks.com

Briggsdale CO 80204

**Project Name - Taproot - Pintail Release**

**Project Number - 223274**

Attached are your analytical results for Taproot - Pintail Release received by Origins Laboratory, Inc. August 23, 2024. This project is associated with Origins project number Y408652-01.

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



Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B S3-3	Y408652-01	Soil	August 22, 2024 10:05	08/23/2024 10:50
BS3-10	Y408652-02	Soil	August 22, 2024 10:10	08/23/2024 10:50
BS4-5	Y408652-03	Soil	August 22, 2024 10:50	08/23/2024 10:50
BS4-10	Y408652-04	Soil	August 22, 2024 10:40	08/23/2024 10:50
BS5-3	Y408652-05	Soil	August 22, 2024 11:10	08/23/2024 10:50
BS5-8	Y408652-06	Soil	August 22, 2024 11:05	08/23/2024 10:50
BS2-4	Y408652-07	Soil	August 22, 2024 11:20	08/23/2024 10:50
BS2-8	Y408652-08	Soil	August 22, 2024 11:30	08/23/2024 10:50
SB11-5	Y408652-09	Soil	August 22, 2024 11:50	08/23/2024 10:50
SB11-9	Y408652-10	Soil	August 22, 2024 11:55	08/23/2024 10:50
SB12-5	Y408652-11	Soil	August 22, 2024 11:55	08/23/2024 10:50
SB12-9	Y408652-12	Soil	August 22, 2024 12:00	08/23/2024 10:50
SB13-5	Y408652-13	Soil	August 22, 2024 12:10	08/23/2024 10:50
SB13-9	Y408652-14	Soil	August 22, 2024 12:15	08/23/2024 10:50

Origins Laboratory



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB14-9	Y408652-15	Soil	August 22, 2024 12:45	08/23/2024 10:50
SB14-5	Y408652-16	Soil	August 22, 2024 12:50	08/23/2024 10:50
SB15-5	Y408652-17	Soil	August 22, 2024 12:50	08/23/2024 10:50
SB15-9	Y408652-18	Soil	August 22, 2024 12:55	08/23/2024 10:50
SB16-5	Y408652-19	Soil	August 22, 2024 13:00	08/23/2024 10:50
SB16-9	Y408652-20	Soil	August 22, 2024 13:05	08/23/2024 10:50

Origins Laboratory



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Jen Pellegrini, Project Manager

Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**Environmental Works, Inc.**

44085502  
652

page 1 of 2

Client: TA Environmental Works, Inc. Project Manager: Adam Kubat  
 Address: 2770 Industrial Ln Project Name: Taproot - Pintail Release  
Briggsdale, CO 80220 Project Number: 223274.01 - A5  
 Telephone Number: 507-475-2825 Samples Collected By: AKK  
 Email Address: AKK@environmentalworks.com

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 Container #	Other	Arsenic	Barium		EC	SAR
B53-3	8/27	10:05	2 X					X								1
B53-10		10:10	2 X					X								2
B54-5		10:50	2 X					X								3
B54-10		10:40	2 X					X								4
B55-3		11:10	2 X					X								5
B55-8		11:05	2 X					X								6
B52-4		11:20	2 X					X								7
B52-8		11:30	2 X					X								8
S811-5		11:50	2 X					X								9
S811-9		11:55	2 X					X								10
Relinquished By: <u>AKK</u>	Date: <u>8/23</u>	Time: <u>10:56</u>	Received By: <u>AKK</u>	Date: <u>8/28</u>	Time: <u>10:50</u>	Turnaround Time: <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr		Standard: <input checked="" type="checkbox"/>								

Temp Received: 1.5 Data Results Needed

Origins Laboratory

*Jen Pellegrini*

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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

Origins Laboratory

**Sample Receipt Checklist**

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

Origins Work Order: y408052

Client: Environmental Works

Checklist Completed by: JK

Client Project ID: Taproot

Date/time completed: 8/23/24

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

Airbill #: \_\_\_\_\_

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

Cooler Number/Temperature: 1 / 1.5 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T005

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"/>			
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 HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with Na2CO3+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<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 in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JK

Date/Time Reviewed 8/27/24

Origins Laboratory



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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**B S3-3**

**8/22/2024 10:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-01 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.55	0.101	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.48	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024
Magnesium	ND	0.823	"	"	"	KRM	"	"
Sodium	2.43	0.435	"	"	"	KRM	"	"

**pH in Soil by 9045D**

pH	8.39		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024
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**SAR by 20B Saturated Paste**

SAR	2.53	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.443	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024
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**Table 915 metals by EPA 6020B**

Arsenic	4.53	0.276	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024
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Origins Laboratory



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**BS3-10**

**8/22/2024 10:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-02 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.118	0.0992	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	4.30	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	1.19	0.823	"	"	"	KRM	"	"	
Sodium	3.93	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.94		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.37	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.17	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.30	0.249	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**BS4-5**

**8/22/2024 10:50:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-03 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.700	0.0993	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.22	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	ND	0.823	"	"	"	KRM	"	"	
Sodium	2.85	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.34		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	3.23	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.546	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.42	0.288	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**BS4-10**

**8/22/2024 10:40:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**Y408652-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.128	0.101	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.57	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024
Magnesium	ND	0.823	"	"	"	KRM	"	"
Sodium	4.66	0.435	"	"	"	KRM	"	"

**pH in Soil by 9045D**

pH	7.97		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024
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**SAR by 20B Saturated Paste**

SAR	3.62	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.04	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024
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**Table 915 metals by EPA 6020B**

Arsenic	4.75	0.277	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**BS5-3**

**8/22/2024 11:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-05 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.504	0.0991	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.34	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	ND	0.823	"	"	"	KRM	"	"	
Sodium	2.86	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.23		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.29	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.739	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.13	0.250	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Project Number: 223274

Project: Taproot - Pintail Release

**BS5-8**

**8/22/2024 11:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-06 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.00	0.0990	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	3.46	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	1.00	0.823	"	"	"	KRM	"	"	
Sodium	4.54	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.19		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	3.04	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.12	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.86	0.249	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Project Number: 223274

Project: Taproot - Pintail Release

**BS2-4**

**8/22/2024 11:20:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-07 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.687	0.100	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.99	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	ND	0.823	"	"	"	KRM	"	"	
Sodium	3.30	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.29		pH Units	1	B4H2730	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.87	0.0100	SAR	1	B4H2711	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.729	0.00500	mmhos/cm	1	B4H2730	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.63	0.255	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**BS2-8**

**8/22/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-08 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.15	0.100	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.56	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	ND	0.823	"	"	"	KRM	"	"	
Sodium	3.54	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.23		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	3.54	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.703	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.00	0.286	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB11-5**

**8/22/2024 11:50:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-09 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.74	0.100	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	14.3	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	3.76	0.823	"	"	"	KRM	"	"	
Sodium	8.71	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.88		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.90	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.84	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.33	0.244	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Origins Laboratory



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB11-9**

**8/22/2024 11:55:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-10 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.160	0.0990	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	11.8	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	3.24	0.823	"	"	"	KRM	"	"	
Sodium	7.93	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.85		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.89	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.58	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.98	0.274	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB12-5**

**8/22/2024 11:55:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-11 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.35	0.0999	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	10.9	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	3.07	0.823	"	"	"	KRM	"	"	
Sodium	7.94	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.08		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	3.00	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.36	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.20	0.255	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB12-9**

**8/22/2024 12:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-12 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.745	0.0995	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	9.73	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	2.66	0.823	"	"	"	KRM	"	"	
Sodium	7.94	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.96		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	3.19	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.27	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.39	0.272	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB13-5**

**8/22/2024 12:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-13 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.50	0.0990	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	12.4	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	3.12	0.823	"	"	"	KRM	"	"	
Sodium	11.9	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.04		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	4.27	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	3.01	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.86	0.284	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB13-9**

**8/22/2024 12:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-14 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.676	0.100	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	10.5	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024
Magnesium	2.66	0.823	"	"	"	KRM	"	"
Sodium	7.80	0.435	"	"	"	KRM	"	"

**pH in Soil by 9045D**

pH	8.04		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024
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**SAR by 20B Saturated Paste**

SAR	3.04	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.33	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024
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**Table 915 metals by EPA 6020B**

Arsenic	4.14	0.267	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024
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Project Number: 223274

Project: Taproot - Pintail Release

**SB14-9**

**8/22/2024 12:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-15 (Soil)

**Boron (DTPA Sorbitol)**

Boron	1.57	0.0986	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	19.0	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	4.93	0.823	"	"	"	KRM	"	"	
Sodium	8.36	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.00		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.42	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	3.84	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.15	0.288	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB14-5**

**8/22/2024 12:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-16 (Soil)

**Boron (DTPA Sorbitol)**

Boron	2.03	0.0993	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	23.9	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	6.12	0.823	"	"	"	KRM	"	"	
Sodium	9.46	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.96		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.44	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	4.56	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.74	0.259	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB15-5**

**8/22/2024 12:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-17 (Soil)

**Boron (DTPA Sorbitol)**

Boron	2.77	0.100	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	11.3	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	2.93	0.823	"	"	"	KRM	"	"	
Sodium	7.63	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	8.12		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.86	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.60	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.09	0.282	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB15-9**

**8/22/2024 12:55:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-18 (Soil)

**Boron (DTPA Sorbitol)**

Boron	2.20	0.0983	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	13.2	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	3.41	0.823	"	"	"	KRM	"	"	
Sodium	8.01	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.93		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.78	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.94	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.30	0.277	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Project Number: 223274

Project: Taproot - Pintail Release

**SB16-5**

**8/22/2024 1:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory**  
Y408652-19 (Soil)

**Boron (DTPA Sorbitol)**

Boron	2.10	0.0996	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	10.2	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	2.96	0.823	"	"	"	KRM	"	"	
Sodium	7.19	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.99		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.80	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.23	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.76	0.263	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**SB16-9**

**8/22/2024 1:05:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory  
Y408652-20 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	2.80	0.101	mg/L	1	B4H2621	KRM	08/26/2024	08/27/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	11.1	0.499	meq/L	10	[CALC]	KRM	08/27/2024	08/28/2024	
Magnesium	2.81	0.823	"	"	"	KRM	"	"	
Sodium	7.08	0.435	"	"	"	KRM	"	"	

**pH in Soil by 9045D**

pH	7.93		pH Units	1	B4H2731	ACC	08/27/2024	08/28/2024	
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**SAR by 20B Saturated Paste**

SAR	2.69	0.0100	SAR	1	B4H2712	KRM	08/27/2024	08/28/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.25	0.00500	mmhos/cm	1	B4H2731	ACC	08/27/2024	08/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.38	0.246	mg/kg	10	B4H2345	JAH	08/23/2024	08/27/2024	
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Project Number: 223274

Project: Taproot - Pintail Release

**Metals by EPA 6000/7000 Series Methods - 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 B4H2345 - EPA 3050B**

**Blank (B4H2345-BLK1)**

Prepared: 08/23/2024 Analyzed: 08/27/2024

Arsenic	ND	0.290	mg/kg							U
Barium	ND	10.0	"							U
Cadmium	ND	0.100	"							U
Copper	ND	10.0	"							U
Lead	ND	1.00	"							U
Nickel	ND	1.00	"							U
Selenium	ND	0.260	"							U
Silver	ND	0.100	"							U
Zinc	ND	37.0	"							U

**LCS (B4H2345-BS1)**

Prepared: 08/23/2024 Analyzed: 08/27/2024

Arsenic	5.38	0.290	mg/kg	5.00		108	80-120			
Barium	526	10.0	"	500		105	80-120			
Cadmium	5.48	0.100	"	5.00		110	80-120			
Copper	55.5	10.0	"	50.0		111	80-120			
Lead	5.30	1.00	"	5.00		106	80-120			
Nickel	5.61	1.00	"	5.00		112	80-120			
Selenium	5.13	0.260	"	5.00		103	80-120			
Silver	5.33	0.100	"	5.00		107	80-120			
Zinc	54.0	37.0	"	50.0		108	80-120			

**Matrix Spike (B4H2345-MS1)**

Source: Y408652-07

Prepared: 08/23/2024 Analyzed: 08/27/2024

Arsenic	9.99	0.273	mg/kg	4.70	4.63	114	75-125			
Barium	764	9.40	"	470	238	112	75-125			
Cadmium	5.41	0.0940	"	4.70	0.141	112	75-125			
Copper	65.8	9.40	"	47.0	14.1	110	75-125			
Lead	21.2	0.940	"	4.70	16.9	91.1	75-125			

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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**Metals by EPA 6000/7000 Series Methods - 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 B4H2345 - EPA 3050B**

<b>Matrix Spike (B4H2345-MS1)</b>		<b>Source: Y408652-07</b>			<b>Prepared: 08/23/2024 Analyzed: 08/27/2024</b>					
Nickel	14.0	0.940	mg/kg	4.70	8.99	107	75-125			
Selenium	5.15	0.244	"	4.70	0.0907	108	75-125			
Silver	5.15	0.0940	"	4.70	0.0202	109	75-125			
Zinc	102	34.8	"	47.0	52.1	107	75-125			
<b>Matrix Spike Dup (B4H2345-MSD1)</b>		<b>Source: Y408652-07</b>			<b>Prepared: 08/23/2024 Analyzed: 08/27/2024</b>					
Arsenic	8.83	0.254	mg/kg	4.38	4.63	96.0	75-125	12.3	20	
Barium	674	8.76	"	438	238	99.6	75-125	12.5	20	
Cadmium	4.89	0.0876	"	4.38	0.141	108	75-125	10.1	20	
Copper	58.2	8.76	"	43.8	14.1	101	75-125	12.2	20	
Lead	19.1	0.876	"	4.38	16.9	48.6	75-125	10.7	20	QM-07
Nickel	13.3	0.876	"	4.38	8.99	97.9	75-125	5.42	20	
Selenium	4.57	0.228	"	4.38	0.0907	102	75-125	12.0	20	
Silver	4.60	0.0876	"	4.38	0.0202	105	75-125	11.4	20	
Zinc	94.3	32.4	"	43.8	52.1	96.4	75-125	8.17	20	

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Adam Kubat

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Project: Taproot - Pintail Release

**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 B4H2621 - DTPA Sorbitol Preparation**

**Blank (B4H2621-BLK1)**

Prepared: 08/26/2024 Analyzed: 08/27/2024

Boron	ND	0.100	mg/L							U
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**Duplicate (B4H2621-DUP1)**

Source: Y408652-01

Prepared: 08/26/2024 Analyzed: 08/27/2024

Boron	1.43	0.101	mg/L		1.55			8.43	50	
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**Batch B4H2711 - Saturated Paste Metals**

**Blank (B4H2711-BLK1)**

Prepared: 08/27/2024 Analyzed: 08/28/2024

Calcium PPM	ND	10.0	mg/L							U
SAR	ND	0.0100	SAR							U
Magnesium PPM	ND	10.0	mg/L							U
Sodium PPM	ND	10.0	"							U

**Duplicate (B4H2711-DUP1)**

Source: Y408643-01

Prepared: 08/27/2024 Analyzed: 08/28/2024

SAR	ND	0.0100	SAR		3.70				200	U
Calcium PPM	460	10.0	mg/L		460			0.0478	50	
Magnesium PPM	142	10.0	"		142			0.274	50	
Sodium PPM	358	10.0	"		354			1.05	50	

**Batch B4H2712 - Saturated Paste Metals**

**Blank (B4H2712-BLK1)**

Prepared: 08/27/2024 Analyzed: 08/28/2024

Calcium PPM	ND	10.0	mg/L							U
SAR	ND	0.0100	SAR							U
Magnesium PPM	ND	10.0	mg/L							U
Sodium PPM	ND	10.0	"							U

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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

**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 B4H2712 - Saturated Paste Metals**

Duplicate (B4H2712-DUP1)	Source: Y408652-08			Prepared: 08/27/2024 Analyzed: 08/28/2024						
Calcium PPM	34.0	10.0	mg/L	31.2				8.58	50	
SAR	ND	0.0100	SAR	3.54					200	U
Magnesium PPM	5.90	10.0	mg/L	5.39				9.03	50	U
Sodium PPM	83.9	10.0	"	81.4				3.05	50	

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Project: Taproot - Pintail Release

**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 B4H2730 - Saturated Paste pH/EC**

**Blank (B4H2730-BLK1)**

Prepared: 08/27/2024 Analyzed: 08/29/2024

Specific Conductance (EC)	ND	0.00500	mmhos/cm							U
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**Duplicate (B4H2730-DUP1)**

**Source: Y408643-01**

Prepared: 08/27/2024 Analyzed: 08/29/2024

Specific Conductance (EC)	4.10	0.00500	mmhos/cm		4.05			1.31	25	
pH	7.87		pH Units		7.90			0.380	25	

**Batch B4H2731 - Saturated Paste pH/EC**

**Blank (B4H2731-BLK1)**

Prepared: 08/27/2024 Analyzed: 08/29/2024

Specific Conductance (EC)	ND	0.00500	mmhos/cm							U
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**Duplicate (B4H2731-DUP1)**

**Source: Y408652-08**

Prepared: 08/27/2024 Analyzed: 08/28/2024

pH	8.25		pH Units		8.23			0.243	25	
Specific Conductance (EC)	0.740	0.00500	mmhos/cm		0.703			5.19	25	

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Adam Kubat

Project Number: 223274

Project: Taproot - Pintail Release

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### Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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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Jen Pellegrini, Project Manager