

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 05, 2024

Sam Vogt

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Civitas - HSR Ackard 5-2

Work Order #2410620

Enclosed are the results of analyses for samples received by Summit Scientific on 10/31/24 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is fluid and cursive, with the first name being more prominent.

Natalie Tessier For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST-B01R@6"	2410620-01	Soil	10/31/24 15:40	10/31/24 18:00
SP-CS02@4'	2410620-02	Soil	10/31/24 15:50	10/31/24 18:00
BG06@6"	2410620-03	Soil	10/31/24 16:00	10/31/24 18:00
BG06@4'	2410620-04	Soil	10/31/24 16:05	10/31/24 18:00
BG06@6'	2410620-05	Soil	10/31/24 16:10	10/31/24 18:00
BG07@6"	2410620-06	Soil	10/31/24 16:15	10/31/24 18:00
BG07@4'	2410620-07	Soil	10/31/24 16:20	10/31/24 18:00
BG07@6'	2410620-08	Soil	10/31/24 16:25	10/31/24 18:00

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4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page	of
2410620		

Client: Civitas/Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave		Project Manager: Sam Vogt/Jacob Evans		Company:	
City/State/Zip: Broomfield, CO 80020		E-Mail: svgot@tasman-geo.com; jevans@civiresources.com		Project Name/Location:	
Phone: PM (610) 405-9078		Project Name: HSR-ACKARD 5-2		AFE#: 24459	
Sampler Name: Sean Clarke, Ben Long		Project Number:		PO/Billing Codes: 8523-198	
				Contact:	

Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
				HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	STEEL Lead	1,2,4 + 1,3,5 TMBs	TPH (GRO, DRO, ORO)	PAHs pH	pH, EC, SAR	Boron	Metals	
AST-BØ1R@6"	10/31/24	15:40	2			X			X					X				pH, EC, SAR by Saturated paste preparation method Boron by Hot Water Soluble preparation Method Table 915 Metals - As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn, Cr VI	
SP-CSØ2@4'		15:50	1							X									
BG-Ø6@6"		16:00													X	X	X		
BG-Ø6@4'		16:05																	
BG-Ø6@6'		16:10																	
BG-Ø7@6"		16:15																	
BG-Ø7@4'		16:20																	
BG-Ø7@6'	↓	16:25	↓			↓			↓					↓	↓	↓			

Relinquished by: <i>Sam Clarke</i>	Date/Time: 10/31/24 17:45	Received by: Tasman Lockbox	Date/Time:	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by: <i>Tasman Lockbox</i>	Date/Time: 10/31/24 1800	Received by: <i>RAC</i>	Date/Time: 10/31/24 1800	Standard	Field Turb.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	IR gun #:	HNO3 lot #:	
Signature Upon Receipt: <i>1.4</i>	Corrected Temperature: <i>9</i>					

S₂

Sample Receipt Checklist

S2 Work Order# 2410620Client: Cumtast Company Client Project ID: HSR-ACKARD 5-2Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.6Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on site
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<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"/>	
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"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
AS
Custodian Printed Name

10/31/24
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

AST-B01R@6"
2410620-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 15:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.40			pH Units	1	BHK0133	11/04/24	11/04/24	EPA 9045D	

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Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

SP-CS02@4'
2410620-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/31/24 15:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Lead	13.0	0.200		mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 15:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.6			%	1	BHK0003	11/01/24	11/01/24	Calculation	

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Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG06@6"
2410620-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHK0006	11/01/24	11/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	3.08	0.200		mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	78.4	0.400		"	"	"	"	"	"	
Cadmium	0.211	0.200		"	"	"	"	"	"	
Copper	4.79	0.400		"	"	"	"	"	"	
Lead	8.02	0.200		"	"	"	"	"	"	
Nickel	5.09	0.400		"	"	"	"	"	"	
Silver	0.0437	0.0200		"	"	"	"	"	"	
Zinc	21.7	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BHK0004	11/01/24	11/01/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	41.3	0.0500		mg/L dry	1	BHJ1443	10/31/24	11/02/24	EPA 6020B	
Magnesium	9.09	0.0500		"	"	"	"	"	"	
Sodium	0.545	0.0500		"	"	"	"	"	"	

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Project Number: 24459
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Reported:
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BG06@6"
2410620-03 (Soil)

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Calculated Analysis

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0200	0.00100	units	1	BHK0094	11/03/24	11/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	BHK0003	11/01/24	11/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0681	0.0100	mmhos/cm	1	BHJ1447	10/31/24	11/04/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.93		pH Units	1	BHJ1448	10/31/24	11/04/24	EPA 9045D	

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Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG06@4'
2410620-04 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHK0006	11/01/24	11/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	2.97	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	76.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.41	0.400	"	"	"	"	"	"	
Lead	6.18	0.200	"	"	"	"	"	"	
Nickel	4.16	0.400	"	"	"	"	"	"	
Silver	0.0285	0.0200	"	"	"	"	"	"	
Zinc	16.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0004	11/01/24	11/01/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	23.5	0.0500	mg/L dry	1	BHJ1443	10/31/24	11/02/24	EPA 6020B	
Magnesium	5.30	0.0500	"	"	"	"	"	"	
Sodium	1.71	0.0500	"	"	"	"	"	"	

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11/05/24 08:19

BG06@4'
2410620-04 (Soil)

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Calculated Analysis

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0829	0.00100	units	1	BHK0094	11/03/24	11/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.4		%	1	BHK0003	11/01/24	11/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.167	0.0100	mmhos/cm	1	BHJ1447	10/31/24	11/04/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51		pH Units	1	BHJ1448	10/31/24	11/04/24	EPA 9045D	

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BG06@6'
2410620-05 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHK0006	11/01/24	11/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	2.63	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	73.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.54	0.400	"	"	"	"	"	"	
Lead	5.92	0.200	"	"	"	"	"	"	
Nickel	4.37	0.400	"	"	"	"	"	"	
Silver	0.0288	0.0200	"	"	"	"	"	"	
Zinc	16.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0004	11/01/24	11/01/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	33.6	0.0500	mg/L dry	1	BHJ1443	10/31/24	11/02/24	EPA 6020B	
Magnesium	5.34	0.0500	"	"	"	"	"	"	
Sodium	1.61	0.0500	"	"	"	"	"	"	

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Project Number: 24459
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11/05/24 08:19

BG06@6'
2410620-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0681	0.00100	units	1	BHK0094	11/03/24	11/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.7		%	1	BHK0003	11/01/24	11/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.146	0.0100	mmhos/cm	1	BHJ1447	10/31/24	11/04/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.65		pH Units	1	BHJ1448	10/31/24	11/04/24	EPA 9045D	

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Project Number: 24459
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11/05/24 08:19

BG07@6"
2410620-06 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHK0006	11/01/24	11/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.98	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	36.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.82	0.400	"	"	"	"	"	"	
Lead	6.46	0.200	"	"	"	"	"	"	
Nickel	2.80	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0004	11/01/24	11/01/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	14.9	0.0500	mg/L dry	1	BHJ1443	10/31/24	11/02/24	EPA 6020B	
Magnesium	3.52	0.0500	"	"	"	"	"	"	
Sodium	0.303	0.0500	"	"	"	"	"	"	

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Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG07@6"
2410620-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0183	0.00100	units	1	BHK0094	11/03/24	11/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.6		%	1	BHK0003	11/01/24	11/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.114	0.0100	mmhos/cm	1	BHJ1447	10/31/24	11/04/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.98		pH Units	1	BHJ1448	10/31/24	11/04/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG07@4'
2410620-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHK0006	11/01/24	11/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	2.55	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	71.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.44	0.400	"	"	"	"	"	"	
Lead	6.49	0.200	"	"	"	"	"	"	
Nickel	4.33	0.400	"	"	"	"	"	"	
Silver	0.0304	0.0200	"	"	"	"	"	"	
Zinc	17.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0004	11/01/24	11/01/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	11.5	0.0500	mg/L dry	1	BHJ1443	10/31/24	11/02/24	EPA 6020B	
Magnesium	4.30	0.0500	"	"	"	"	"	"	
Sodium	10.7	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG07@4'
2410620-07 (Soil)

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Calculated Analysis

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.683	0.00100	units	1	BHK0094	11/03/24	11/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.3		%	1	BHK0003	11/01/24	11/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.191	0.0100	mmhos/cm	1	BHJ1447	10/31/24	11/04/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 16:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.76		pH Units	1	BHJ1448	10/31/24	11/04/24	EPA 9045D	

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Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG07@6'
2410620-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHK0006	11/01/24	11/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.58	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	101	0.400	"	"	"	"	"	"	
Cadmium	0.268	0.200	"	"	"	"	"	"	
Copper	5.29	0.400	"	"	"	"	"	"	
Lead	8.63	0.200	"	"	"	"	"	"	
Nickel	5.60	0.400	"	"	"	"	"	"	
Silver	0.0491	0.0200	"	"	"	"	"	"	
Zinc	20.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0004	11/01/24	11/01/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	34.0	0.0500	mg/L dry	1	BHJ1443	10/31/24	11/02/24	EPA 6020B	
Magnesium	4.69	0.0500	"	"	"	"	"	"	
Sodium	14.6	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

BG07@6'
2410620-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.622	0.00100	units	1	BHK0094	11/03/24	11/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.0		%	1	BHK0003	11/01/24	11/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.217	0.0100	mmhos/cm	1	BHJ1447	10/31/24	11/04/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **10/31/24 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.87		pH Units	1	BHJ1448	10/31/24	11/04/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control

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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHK0006 - EPA 3050B

Blank (BHK0006-BLK1)

Prepared & Analyzed: 11/01/24

Boron ND 2.00 mg/L

LCS (BHK0006-BS1)

Prepared & Analyzed: 11/01/24

Boron 4.85 2.00 mg/L 5.00 97.1 80-120

Duplicate (BHK0006-DUP1)

Source: 2410148-01

Prepared & Analyzed: 11/01/24

Boron 0.457 2.00 mg/L 0.467 2.14 20

Matrix Spike (BHK0006-MS1)

Source: 2410148-01

Prepared & Analyzed: 11/01/24

Boron 5.46 2.00 mg/L 5.00 0.467 99.8 75-125

Matrix Spike Dup (BHK0006-MSD1)

Source: 2410148-01

Prepared & Analyzed: 11/01/24

Boron 5.04 2.00 mg/L 5.00 0.467 91.6 75-125 7.88 25

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHK0007 - EPA 3050B

Blank (BHK0007-BLK1)

Prepared & Analyzed: 11/01/24

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHK0007-BS1)

Prepared & Analyzed: 11/01/24

Arsenic	35.7	0.200	mg/kg wet	40.7	87.8	80-120
Barium	36.7	0.400	"	40.7	90.3	80-120
Cadmium	1.85	0.200	"	2.03	91.0	80-120
Copper	39.1	0.400	"	40.7	96.2	80-120
Lead	18.3	0.200	"	20.3	89.8	80-120
Nickel	38.6	0.400	"	40.7	95.0	80-120
Silver	1.85	0.0200	"	2.03	90.9	80-120
Zinc	38.8	0.400	"	40.7	95.5	80-120
Selenium	3.75	0.260	"	4.07	92.3	80-120

Duplicate (BHK0007-DUP1)

Source: 2410467-01

Prepared & Analyzed: 11/01/24

Arsenic	2.24	0.200	mg/kg dry	2.26	0.755	20
Barium	90.4	0.400	"	85.9	5.08	20
Cadmium	0.173	0.200	"	0.188	7.98	20
Copper	6.76	0.400	"	6.13	9.88	20
Lead	9.02	0.200	"	7.91	13.1	20
Nickel	4.05	0.400	"	3.93	3.13	20
Silver	0.0253	0.0200	"	0.0279	9.84	20
Zinc	67.8	0.400	"	62.0	8.88	20
Selenium	ND	0.260	"	ND		20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHK0007 - EPA 3050B

Matrix Spike (BHK0007-MS1)			Source: 2410467-01		Prepared & Analyzed: 11/01/24					
Arsenic	39.2	0.200	mg/kg dry	44.4	2.26	83.3	75-125			
Barium	123	0.400	"	44.4	85.9	82.8	75-125			
Cadmium	2.20	0.200	"	2.22	0.188	90.8	75-125			
Copper	34.4	0.400	"	44.4	6.13	63.7	75-125			QM-05
Lead	26.2	0.200	"	22.2	7.91	82.7	75-125			
Nickel	32.0	0.400	"	44.4	3.93	63.4	75-125			QM-05
Silver	2.00	0.0200	"	2.22	0.0279	89.0	75-125			
Zinc	109	0.400	"	44.4	62.0	105	75-125			
Selenium	3.45	0.260	"	4.44	ND	77.8	75-125			

Matrix Spike Dup (BHK0007-MSD1)			Source: 2410467-01		Prepared & Analyzed: 11/01/24					
Arsenic	40.6	0.200	mg/kg dry	44.0	2.26	87.1	75-125	3.48	25	
Barium	124	0.400	"	44.0	85.9	87.2	75-125	1.32	25	
Cadmium	2.21	0.200	"	2.20	0.188	91.9	75-125	0.352	25	
Copper	32.4	0.400	"	44.0	6.13	59.8	75-125	5.82	25	QM-05
Lead	26.7	0.200	"	22.0	7.91	85.3	75-125	1.61	25	
Nickel	30.1	0.400	"	44.0	3.93	59.5	75-125	6.19	25	QM-05
Silver	1.98	0.0200	"	2.20	0.0279	88.8	75-125	1.05	25	
Zinc	76.3	0.400	"	44.0	62.0	32.4	75-125	35.1	25	QM-05
Selenium	3.41	0.260	"	4.40	ND	77.5	75-125	1.20	25	

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Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHK0004 - 3060A Mod

Blank (BHK0004-BLK1)

Prepared & Analyzed: 11/01/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHK0004-BS1)

Prepared & Analyzed: 11/01/24

Chromium, Hexavalent 26.1 0.30 mg/kg wet 25.0 104 80-120

Duplicate (BHK0004-DUP1)

Source: 2410148-01

Prepared & Analyzed: 11/01/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHK0004-MS1)

Source: 2410148-01

Prepared & Analyzed: 11/01/24

Chromium, Hexavalent 29.9 0.30 mg/kg dry 27.9 ND 107 75-125

Matrix Spike Dup (BHK0004-MSD1)

Source: 2410148-01

Prepared & Analyzed: 11/01/24

Chromium, Hexavalent 29.9 0.30 mg/kg dry 27.9 ND 107 75-125 0.00 20

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Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHJ1443 - General Preparation

Blank (BHJ1443-BLK1)

Prepared: 10/31/24 Analyzed: 11/01/24

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BHJ1443-BS1)

Prepared: 10/31/24 Analyzed: 11/01/24

Calcium	5.72	0.0500	mg/L wet	5.00	114	70-130
Magnesium	4.86	0.0500	"	5.00	97.3	70-130
Sodium	4.80	0.0500	"	5.00	95.9	70-130

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHK0003 - General Preparation

Duplicate (BHK0003-DUP1)

Source: 2410346-01

Prepared & Analyzed: 11/01/24

% Solids	96.4	%	95.6	0.822	20
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHJ1447 - General Preparation

Blank (BHJ1447-BLK1)

Prepared: 10/31/24 Analyzed: 11/04/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHJ1447-BS1)

Prepared: 10/31/24 Analyzed: 11/04/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHJ1447-DUP1)

Source: 2410480-01

Prepared: 10/31/24 Analyzed: 11/04/24

Specific Conductance (EC) 0.787 0.0100 mmhos/cm 0.791 0.520 20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHJ1448 - General Preparation

LCS (BHJ1448-BS1)

Prepared: 10/31/24 Analyzed: 11/04/24

pH	9.11		pH Units	9.18		99.2	95-105		
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Duplicate (BHJ1448-DUP1)

Source: 2410480-01

Prepared: 10/31/24 Analyzed: 11/04/24

pH	7.59		pH Units		7.58			0.132	20
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Batch BHK0133 - General Preparation

LCS (BHK0133-BS1)

Prepared & Analyzed: 11/04/24

pH	9.03		pH Units	9.18		98.4	95-105		
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Duplicate (BHK0133-DUP1)

Source: 2410620-01

Prepared & Analyzed: 11/04/24

pH	6.38		pH Units		6.40			0.313	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - HSR Ackard 5-2

Project Number: 24459
Project Manager: Sam Vogt

Reported:
11/05/24 08:19

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference