

Aristocrat Angus 12-3 & 12-3C Flowline

SWNW Sec. 3-T3N-R65W

Facility ID: 473099

Remediation Project #: 28374

Form 19 Data Package

June 2023

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



PHOTO LOG



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			



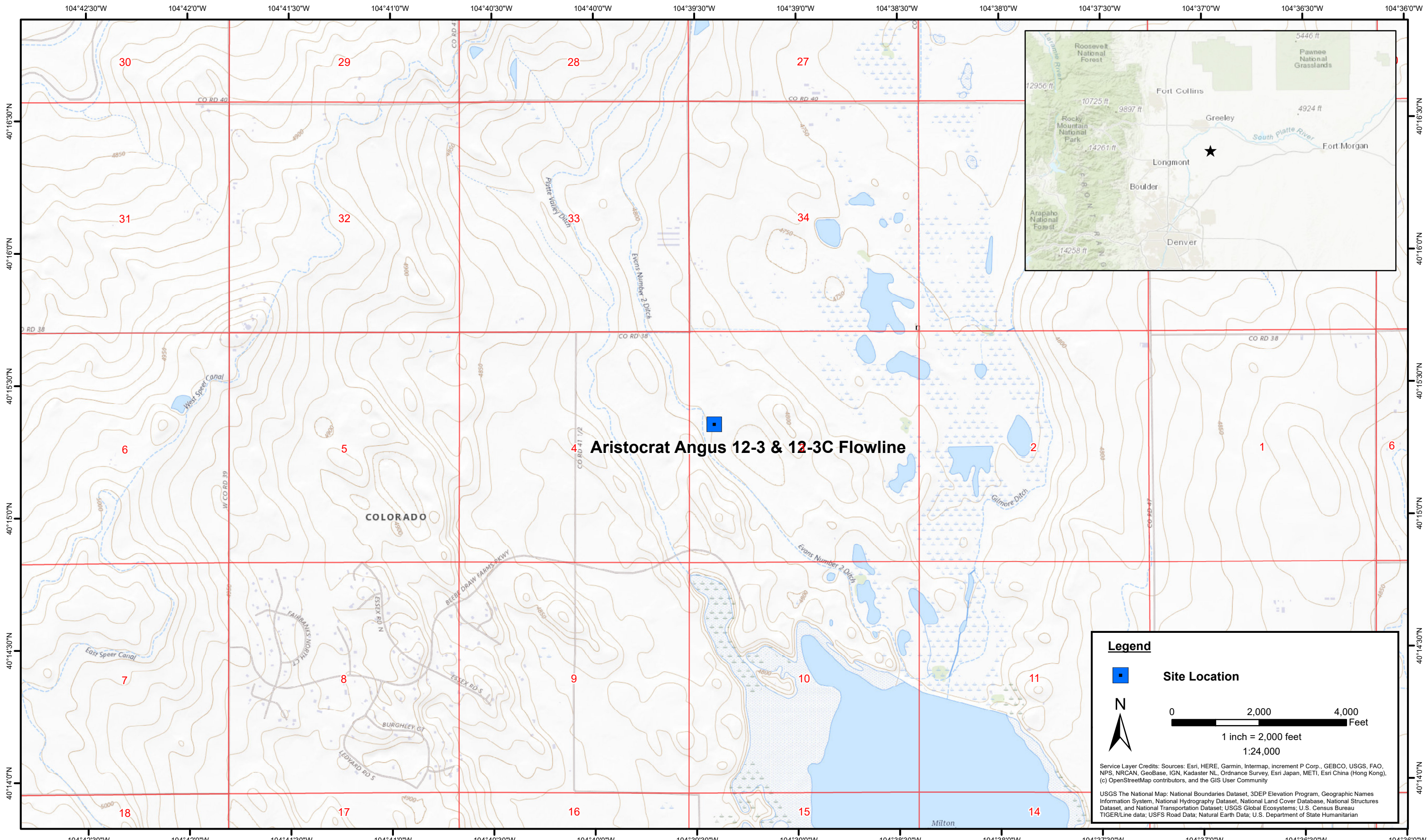
Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			



Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

FIGURES



DATE:	July 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed

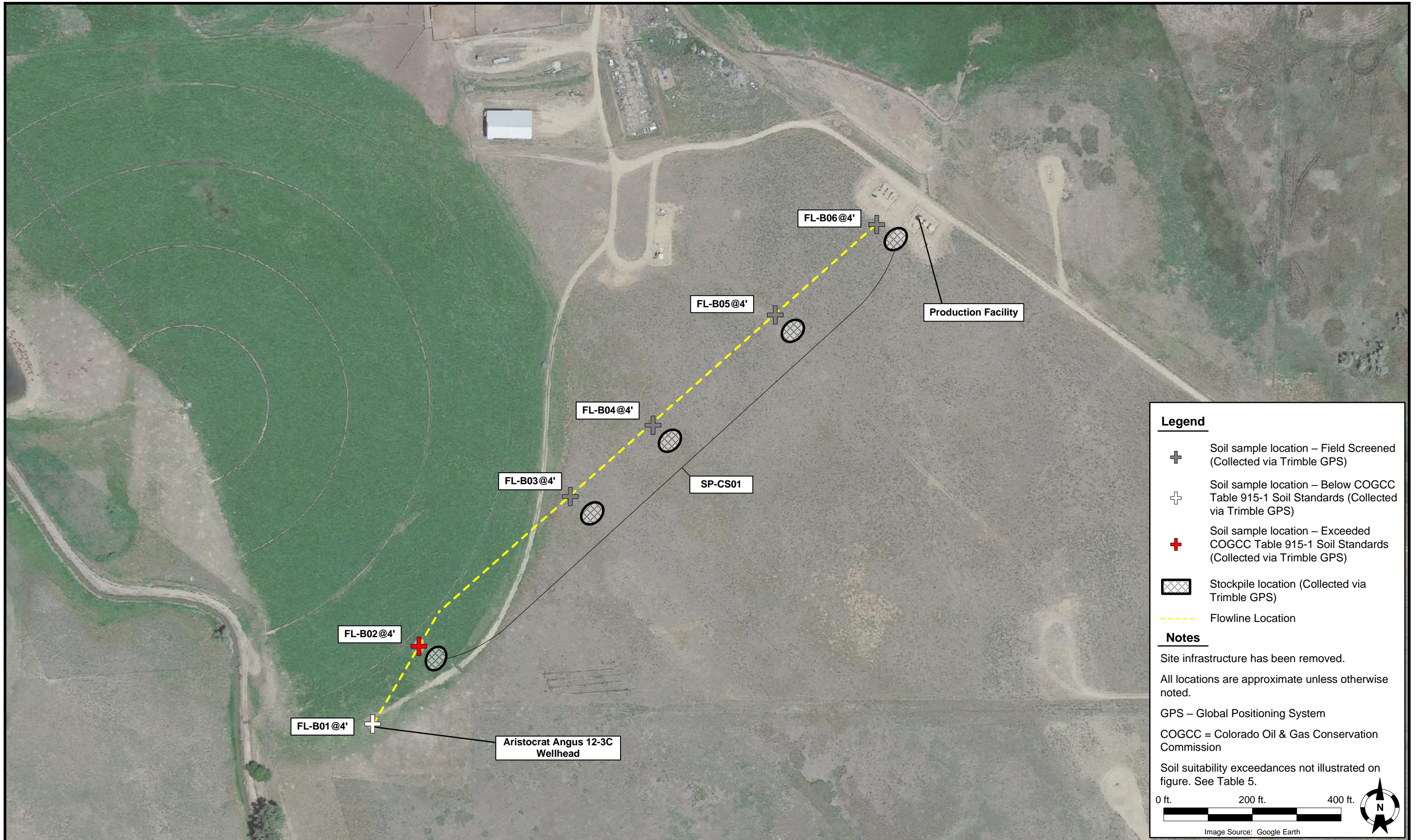


Tasman, Inc.
 6855 W. 119th Ave
 Broomfield, CO 80020

Crestone Peak Resources Operating, LLC
Aristocrat Angus 12-3 & 12-3C Flowline
 SWNW Sec. 3-T3N-R65W
 Weld County, Colorado

Site Location Map

Figure
1



Legend

- Soil sample location – Field Screened (Collected via Trimble GPS)
- Soil sample location – Below COGCC Table 915-1 Soil Standards (Collected via Trimble GPS)
- Soil sample location – Exceeded COGCC Table 915-1 Soil Standards (Collected via Trimble GPS)
- Stockpile location (Collected via Trimble GPS)
- Flowline Location

Notes

Site infrastructure has been removed.

All locations are approximate unless otherwise noted.

GPS – Global Positioning System


COGCC = Colorado Oil & Gas Conservation Commission

Soil suitability exceedances not illustrated on figure. See Table 5.

0 ft. 200 ft. 400 ft.

Image Source: Google Earth

DATE:	July 7, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	S. Vogt



Tasman, Inc.
6855 W. 119th Avenue
Broomfield, Colorado 80020

Crestone Peak Resources Operating, LLC
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 Weld County, Colorado

Soil Sample Location Map

FIGURE
2

TABLES

TABLE 1
ARISTOCRAT ANGUS 12-3 & 12-3C FLOWLINE
SOIL SAMPLE LOCATIONS
CRESTONE PEAK RESOURCES OPERATING, LLC



Soil Sample Location	Depth	Date	PID Reading (ppm)	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
FL-B01@4'	4'	06/23/2023	0.3	40.255790	-104.656800	1.1	Y
FL-B02@4'	4'	06/23/2023	3.4	40.256276	-104.656428	1	Y
FL-B03@4'	4'	06/23/2023	1.8	40.257192	-104.655195	1	N
FL-B04@4'	4'	06/23/2023	0.7	40.257632	-104.654527	1	N
FL-B05@4'	4'	06/23/2023	1.5	40.258318	-104.653539	1	N
FL-B06@4'	4'	06/23/2023	1.1	40.258877	-104.652719	1.1	N
SP-CS01	-	06/23/2023	0.1	40.255800	-104.656837	1.1	Y

Notes:

PID = Photoionization Detector

ppm = parts per million

HC = Hydrocarbon

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable

TABLE 2
ARISTOCRAT ANGUS 12-3 & 12-3C FLOWLINE
SOIL ANALYTICAL DATA - VOCs
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	1,2,4-TMB (mg/kg)	1,3,5-TMB (mg/kg)
COGCC Organic Compounds in Soils ⁽¹⁾			0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
COGCC Organic Compounds in Soils ⁽²⁾			1.2	490	5.8	58	2	500			30	27
FL-B01@4'	4'	06/23/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
FL-B02@4'	4'	06/23/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	130	84	<0.0050	<0.0050
SP-CS01	-	06/23/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050

Notes:

VOCs = Volatile Organic Compounds

(1) Standards for soil are taken from COGCC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from COGCC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = milligrams per kilogram

TVPH - GRO = Total Volatile Petroleum Hydrocarbons - Gasoline Range Organics

TEPH - DRO = Total Extractable Petroleum Hydrocarbons - Diesel Range Organics

TEPH - ORO = Total Extractable Petroleum Hydrocarbons - Oil Range Organics

1,2,4 - TMB = 1,2,4 - Trimethylbenzene

1,3,5 - TMB = 1,3,5 - Trimethylbenzene

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

TABLE 3
ARISTOCRAT ANGUS 12-3 & 12-3C FLOWLINE
SOIL ANALYTICAL DATA - PAHs
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	Date	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)A (mg/kg)	Benzo(b)F (mg/kg)	Benzo(k)F (mg/kg)	Benzo(a)P (mg/kg)	Chrysene (mg/kg)	D (a,h) A (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Pyrene (mg/kg)
COGCC Organic Compounds in Soils ⁽¹⁾			0.55	5.8	0.011	0.3	2.9	0.24	9	0.96	8.9	0.54	0.98	0.006	0.019	1.3
COGCC Organic Compounds in Soils ⁽²⁾			360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
FL-B01@4'	4'	06/23/2023	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0052	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0100
FL-B02@4'	4'	06/23/2023	<0.00500	0.014	0.101	0.0925	0.0567	0.109	0.120	<0.00500	0.143	<0.00500	<0.00500	<0.00500	<0.00500	0.618
SP-CS01	-	06/23/2023	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Notes:

PAHs = Polycyclic Aromatic Hydrocarbons

(1) Standards for soil are taken from COGCC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from COGCC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = milligrams per kilogram

Benzo(a)A = Benzo(a)Anthracene

Benzo(b)F = Benzo(b)Fluoranthene

Benzo(k)F = Benzo(k)Fluoranthene

Benzo(a)P = Benzo(a)Pyrene

D (a,h) A = Dibenz(a,h)Anthracene

1,2,3-CD = Indeno(1,2,3-cd)Pyrene

1-M = 1-Methylnaphthalene

2-M = 2-Methylnaphthalene

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

TABLE 4
ARISTOCRAT ANGUS 12-3 & 12-3C FLOWLINE
SOIL ANALYTICAL DATA - METALS
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
COGCC Metals in Soils ⁽¹⁾			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
COGCC Metals in Soils ⁽²⁾			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
FL-B02@4'	4'	06/23/2023	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

Notes:

(1) Standards for soil are taken from COGCC Table 915-1: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from COGCC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory minimum detection limit

mg/kg = milligrams per kilogram

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations

Average background concentration x1.25

Italics = Laboratory minimum detection limit exceeds the COGCC Table 915-1 Standard

* Result exceeded the COGCC Table 915-1 standard, but was within site-specific 1.25x background multiplier levels

TABLE 5
ARISTOCRAT ANGUS 12-3 & 12-3C FLOWLINE
SOIL ANALYTICAL DATA - SOIL RECLAMATION
CRESTONE PEAK RESOURCES OPERATING, LLC



Soil Sample Location	Depth	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
COGCC Soil Suitability for Reclamation⁽¹⁾			6 - 8.3	< 6	< 4	2
FL-B01@4'	4'	06/23/2023	6.93	0.687	0.448	0.226
FL-B02@4'	4'	06/23/2023	7.65	1.91	0.740	0.365
SP-CS01	-	06/23/2023	5.56	0.0303	0.204	0.233

Notes:

(1) Standards for soil are taken from COGCC Table 915-1: Soil Suitability for Reclamation (Effective January 15, 2021)

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mmhos/cm = millimhos per centimeter

mg/L = milligrams per liter

pH = Potential of Hydrogen

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

BOLD = Analytical result is in exceedance of COGCC Table 915-1: Soil Suitability for Reclamation Concentrations

Average background concentration

* Result exceeded the COGCC Table 915-1 standard, but was within site-specific background concentrations

LABORATORY ANALYTICAL DATA

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 06, 2023

Sam Vogt

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Civitas - Aristocrat Angus 12-3 & 12-3C

Work Order #2306502

Enclosed are the results of analyses for samples received by Summit Scientific on 06/23/23 18:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL-B01@4'	2306502-01	Soil	06/23/23 11:45	06/23/23 18:38
FL-B02@4'	2306502-02	Soil	06/23/23 11:48	06/23/23 18:38
SP-CS01	2306502-03	Soil	06/23/23 12:21	06/23/23 18:38

Summit Scientific

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.

SUMMIT SCIENTIFIC

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

Lab ID	Page	of
2306502		

Client: Civitas/Tasman	Project Manager: Sam Vogt/Jacob Evans	Company:
Address: 6855 W. 119th Ave	E-Mail: svgot@tasman-geo.com; jevans@civiresources.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#:
Phone: PM (610) 405-9078	Project Name: <u>Anderer + 12-3 & 12-3C</u>	PO/Billing Codes:
Sampler Name: <u>Brandon LaNasseur</u>	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4 + 1,3,5 TMBs	TPH (GRO, DRO, ORO)	PAHs	pH, EC, SAR	Boron		Metals	
1	FL-B0181 4'	6-23-23	1149	2			X			X			X	X	X	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	
2	FL-B0181 4'	↓	1148	↓			↓		↓				↓	↓	↓	↓	↓	↓			
3	SP-CS01	↓	1221	↓			↓		↓				↓	↓	↓	↓	↓	↓			
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>BL</u>	Date/Time: <u>6/23/23 1535</u>	Received by: Tasman Lockbox	Date/Time: <u>6/23/23 1535</u>	TAT Business Days	Field DO	Notes:
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>6/23/23 1838</u>	Received by: <u>[Signature]</u>	Date/Time: <u>6/23/23 1838</u>	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: <u>9.9</u>	Corrected Temperature: <u>0</u>	IR gun #:	HNO3 lot #:	Standard	X	Field Turb.

S₂

Sample Receipt Checklist

S2 Work Order# 2306502

Client: Cortas/Casman Client Project ID: Amstocrat 12-3+12-3C

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

-

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	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 ice
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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"/>	
<u>Additional Comments (if any):</u>				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

8/23/23
Date/Time



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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

FL-B01@4'
2306502-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGF0963	06/27/23	06/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0431	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGF0965	06/27/23	06/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.6	109 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

FL-B01@4'
2306502-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0949	06/27/23	06/28/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.00521	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0100	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.226	0.0100	mg/L	1	BGF0971	06/27/23	07/02/23	EPA 6020B	

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

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

FL-B01@4'
2306502-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	103	0.0554	mg/L dry	1	BGF1120	06/30/23	07/04/23	EPA 6020B	
Magnesium	20.0	0.0554	"	"	"	"	"	"	
Sodium	29.1	0.0554	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.687	0.00100	units	1	BGG0095	07/05/23	07/05/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	BGF0919	06/26/23	06/26/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.448	0.0100	mmhos/cm	1	BGG0036	07/03/23	07/03/23	EPA 120.1	

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

Date Sampled: **06/23/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.93		pH Units	1	BGG0035	07/03/23	07/03/23	EPA 9045D	

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

FL-B02@4'
2306502-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGF0963	06/27/23	06/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0460	115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0417	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0434	109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	130	50		mg/kg	1	BGF0965	06/27/23	06/28/23	EPA 8015M	
C28-C36 (ORO)	84	50		"	"	"	"	"	"	

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	15.6	125 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

FL-B02@4'
2306502-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0949	06/27/23	06/28/23	EPA 8270D SIM	
Anthracene	0.0135	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.101	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.109	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0925	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0567	0.00500	"	"	"	"	"	"	
Chrysene	0.120	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.143	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.618	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0180	54.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0140	42.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.365	0.0100	mg/L	1	BGF0971	06/27/23	07/02/23	EPA 6020B	

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

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

FL-B02@4'
2306502-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.1	0.0585	mg/L dry	1	BGF1120	06/30/23	07/04/23	EPA 6020B	
Magnesium	6.53	0.0585	"	"	"	"	"	"	
Sodium	39.7	0.0585	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.91	0.00100	units	1	BGG0095	07/05/23	07/05/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.5		%	1	BGF0919	06/26/23	06/26/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.740	0.0100	mmhos/cm	1	BGG0036	07/03/23	07/03/23	EPA 120.1	

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

Date Sampled: **06/23/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.65		pH Units	1	BGG0035	07/03/23	07/03/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

SP-CS01
2306502-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGF0963	06/27/23	06/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0427	107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0421	105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGF0965	06/27/23	06/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	15.8	126 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

SP-CS01
2306502-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0949	06/27/23	06/28/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0214	64.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0191	57.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.233	0.0100	mg/L	1	BGF0918	06/26/23	07/02/23	EPA 6020B	

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

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

SP-CS01
2306502-03 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	152	0.0532	mg/L dry	1	BGF1120	06/30/23	07/04/23	EPA 6020B	
Magnesium	34.5	0.0532	"	"	"	"	"	"	
Sodium	1.59	0.0532	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0303	0.00100	units	1	BGG0095	07/05/23	07/05/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.0		%	1	BGF0919	06/26/23	06/26/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.204	0.0100	mmhos/cm	1	BGG0036	07/03/23	07/03/23	EPA 120.1	

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

Date Sampled: **06/23/23 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.56		pH Units	1	BGG0035	07/03/23	07/03/23	EPA 9045D	

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGF0963 - EPA 5030 Soil MS

Blank (BGF0963-BLK1)

Prepared & Analyzed: 06/27/23

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0458		"	0.0400		114	50-150				
<i>Surrogate: Toluene-d8</i>	0.0412		"	0.0400		103	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0426		"	0.0400		106	50-150				

LCS (BGF0963-BS1)

Prepared & Analyzed: 06/27/23

Benzene	0.121	0.0020	mg/kg	0.150		80.6	70-130				
Toluene	0.125	0.0050	"	0.150		83.2	70-130				
Ethylbenzene	0.155	0.0050	"	0.150		103	70-130				
m,p-Xylene	0.311	0.010	"	0.300		104	70-130				
o-Xylene	0.146	0.0050	"	0.150		97.6	70-130				
1,2,4-Trimethylbenzene	0.143	0.0050	"	0.150		95.6	70-130				
1,3,5-Trimethylbenzene	0.145	0.0050	"	0.150		96.6	70-130				
Naphthalene	0.161	0.0038	"	0.150		107	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0488		"	0.0400		122	50-150				
<i>Surrogate: Toluene-d8</i>	0.0414		"	0.0400		104	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0417		"	0.0400		104	50-150				

Matrix Spike (BGF0963-MS1)

Source: 2306494-03

Prepared & Analyzed: 06/27/23

Benzene	0.119	0.0020	mg/kg	0.150	ND	79.2	70-130				
Toluene	0.125	0.0050	"	0.150	ND	83.2	70-130				
Ethylbenzene	0.150	0.0050	"	0.150	ND	99.8	70-130				
m,p-Xylene	0.304	0.010	"	0.300	ND	101	70-130				
o-Xylene	0.146	0.0050	"	0.150	ND	97.1	70-130				
1,2,4-Trimethylbenzene	0.143	0.0050	"	0.150	ND	95.2	70-130				
1,3,5-Trimethylbenzene	0.140	0.0050	"	0.150	ND	93.3	70-130				
Naphthalene	0.145	0.0038	"	0.150	ND	96.9	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0478		"	0.0400		119	50-150				
<i>Surrogate: Toluene-d8</i>	0.0427		"	0.0400		107	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0409		"	0.0400		102	50-150				

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGF0963 - EPA 5030 Soil MS

Matrix Spike Dup (BGF0963-MSD1)	Source: 2306494-03			Prepared & Analyzed: 06/27/23						
Benzene	0.121	0.0020	mg/kg	0.150	ND	80.6	70-130	1.75	30	
Toluene	0.127	0.0050	"	0.150	ND	84.4	70-130	1.48	30	
Ethylbenzene	0.156	0.0050	"	0.150	ND	104	70-130	3.79	30	
m,p-Xylene	0.316	0.010	"	0.300	ND	105	70-130	3.93	30	
o-Xylene	0.149	0.0050	"	0.150	ND	99.2	70-130	2.12	30	
1,2,4-Trimethylbenzene	0.148	0.0050	"	0.150	ND	98.5	70-130	3.35	30	
1,3,5-Trimethylbenzene	0.147	0.0050	"	0.150	ND	98.2	70-130	5.10	30	
Naphthalene	0.144	0.0038	"	0.150	ND	96.0	70-130	0.912	30	
Surrogate: 1,2-Dichloroethane-d4	0.0478		"	0.0400		119	50-150			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0426		"	0.0400		106	50-150			

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGF0965 - EPA 3550A

Blank (BGF0965-BLK1)

Prepared & Analyzed: 06/27/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5		105		30-150			

LCS (BGF0965-BS1)

Prepared & Analyzed: 06/27/23

C10-C28 (DRO)	535	50	mg/kg	500		107		70-130			
Surrogate: <i>o</i> -Terphenyl	15.3		"	12.5		122		30-150			

Matrix Spike (BGF0965-MS1)

Source: 2306494-03

Prepared & Analyzed: 06/27/23

C10-C28 (DRO)	492	50	mg/kg	500	8.90	96.6		70-130			
Surrogate: <i>o</i> -Terphenyl	15.0		"	12.5		120		30-150			

Matrix Spike Dup (BGF0965-MSD1)

Source: 2306494-03

Prepared & Analyzed: 06/27/23

C10-C28 (DRO)	554	50	mg/kg	500	8.90	109		70-130	11.9	20	
Surrogate: <i>o</i> -Terphenyl	15.2		"	12.5		121		30-150			

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGF0949 - EPA 5030 Soil MS

Blank (BGF0949-BLK1)

Prepared: 06/27/23 Analyzed: 06/28/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0384</i>		"	<i>0.0333</i>		<i>115</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0371</i>		"	<i>0.0333</i>		<i>111</i>	<i>40-150</i>			

LCS (BGF0949-BS1)

Prepared: 06/27/23 Analyzed: 06/28/23

Acenaphthene	0.0265	0.00500	mg/kg	0.0333	79.6	31-137
Anthracene	0.0348	0.00500	"	0.0333	104	30-120
Benzo (a) anthracene	0.0315	0.00500	"	0.0333	94.4	30-120
Benzo (a) pyrene	0.0299	0.00500	"	0.0333	89.8	30-120
Benzo (b) fluoranthene	0.0360	0.00500	"	0.0333	108	30-120
Benzo (k) fluoranthene	0.0364	0.00500	"	0.0333	109	30-120
Chrysene	0.0341	0.00500	"	0.0333	102	30-120
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	41.5	30-120
Fluoranthene	0.0373	0.00500	"	0.0333	112	30-120
Fluorene	0.0397	0.00500	"	0.0333	119	30-120
Indeno (1,2,3-cd) pyrene	0.0183	0.00500	"	0.0333	54.8	30-120
Pyrene	0.0364	0.00500	"	0.0333	109	35-142
1-Methylnaphthalene	0.0331	0.00500	"	0.0333	99.4	35-142
2-Methylnaphthalene	0.0342	0.00500	"	0.0333	103	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0340</i>		"	<i>0.0333</i>	<i>102</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0377</i>		"	<i>0.0333</i>	<i>113</i>	<i>40-150</i>

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGF0949 - EPA 5030 Soil MS

Matrix Spike (BGF0949-MS1)	Source: 2306501-01			Prepared: 06/27/23 Analyzed: 06/28/23						
Acenaphthene	0.0290	0.00500	mg/kg	0.0333	ND	86.9	31-137			
Anthracene	0.0280	0.00500	"	0.0333	ND	84.0	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333	ND	83.0	30-120			
Benzo (a) pyrene	0.0248	0.00500	"	0.0333	ND	74.5	30-120			
Benzo (b) fluoranthene	0.0299	0.00500	"	0.0333	ND	89.8	30-120			
Benzo (k) fluoranthene	0.0304	0.00500	"	0.0333	ND	91.3	30-120			
Chrysene	0.0257	0.00500	"	0.0333	ND	77.1	30-120			
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.3	30-120			
Fluoranthene	0.0293	0.00500	"	0.0333	ND	87.8	30-120			
Fluorene	0.0284	0.00500	"	0.0333	ND	85.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0144	0.00500	"	0.0333	ND	43.1	30-120			
Pyrene	0.0287	0.00500	"	0.0333	ND	86.1	35-142			
1-Methylnaphthalene	0.0265	0.00500	"	0.0333	ND	79.4	15-130			
2-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.2	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0284</i>		<i>"</i>	<i>0.0333</i>		<i>85.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0303</i>		<i>"</i>	<i>0.0333</i>		<i>90.9</i>	<i>40-150</i>			

Matrix Spike Dup (BGF0949-MSD1)	Source: 2306501-01			Prepared: 06/27/23 Analyzed: 06/28/23						
Acenaphthene	0.0323	0.00500	mg/kg	0.0333	ND	96.8	31-137	10.7	30	
Anthracene	0.0268	0.00500	"	0.0333	ND	80.3	30-120	4.45	30	
Benzo (a) anthracene	0.0263	0.00500	"	0.0333	ND	79.0	30-120	5.04	30	
Benzo (a) pyrene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	6.08	30	
Benzo (b) fluoranthene	0.0279	0.00500	"	0.0333	ND	83.6	30-120	7.13	30	
Benzo (k) fluoranthene	0.0299	0.00500	"	0.0333	ND	89.7	30-120	1.69	30	
Chrysene	0.0255	0.00500	"	0.0333	ND	76.5	30-120	0.796	30	
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.7	30-120	0.941	30	
Fluoranthene	0.0282	0.00500	"	0.0333	ND	84.5	30-120	3.84	30	
Fluorene	0.0261	0.00500	"	0.0333	ND	78.4	30-120	8.45	30	
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	6.96	30	
Pyrene	0.0295	0.00500	"	0.0333	ND	88.6	35-142	2.90	30	
1-Methylnaphthalene	0.0267	0.00500	"	0.0333	ND	80.0	15-130	0.806	50	
2-Methylnaphthalene	0.0281	0.00500	"	0.0333	ND	84.4	15-130	1.00	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0265</i>		<i>"</i>	<i>0.0333</i>		<i>79.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0293</i>		<i>"</i>	<i>0.0333</i>		<i>88.0</i>	<i>40-150</i>			

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

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

Summit Scientific

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

Batch BGF0918 - EPA 3050B

Blank (BGF0918-BLK1)

Prepared: 06/26/23 Analyzed: 07/02/23

Boron ND 0.0100 mg/L

LCS (BGF0918-BS1)

Prepared: 06/26/23 Analyzed: 07/02/23

Boron 4.82 0.0100 mg/L 5.00 96.4 80-120

Duplicate (BGF0918-DUP1)

Source: 2306501-01

Prepared: 06/26/23 Analyzed: 07/02/23

Boron 0.253 0.0100 mg/L 0.295 15.1 20

Matrix Spike (BGF0918-MS1)

Source: 2306501-01

Prepared: 06/26/23 Analyzed: 07/02/23

Boron 4.90 0.0100 mg/L 5.00 0.295 92.0 75-125

Matrix Spike Dup (BGF0918-MSD1)

Source: 2306501-01

Prepared: 06/26/23 Analyzed: 07/02/23

Boron 4.91 0.0100 mg/L 5.00 0.295 92.3 75-125 0.310 25

Batch BGF0971 - EPA 3050B

Blank (BGF0971-BLK1)

Prepared: 06/27/23 Analyzed: 07/02/23

Boron ND 0.0100 mg/L

LCS (BGF0971-BS1)

Prepared: 06/27/23 Analyzed: 07/02/23

Boron 4.69 0.0100 mg/L 5.00 93.8 80-120

Duplicate (BGF0971-DUP1)

Source: 2306482-01

Prepared: 06/27/23 Analyzed: 07/02/23

Boron 0.222 0.0100 mg/L 0.250 11.5 20

Matrix Spike (BGF0971-MS1)

Source: 2306482-01

Prepared: 06/27/23 Analyzed: 07/02/23

Boron 5.17 0.0100 mg/L 5.00 0.250 98.5 75-125

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

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

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

Batch BGF0971 - EPA 3050B

Matrix Spike Dup (BGF0971-MSD1)

Source: 2306482-01

Prepared: 06/27/23 Analyzed: 07/02/23

Boron	5.30	0.0100	mg/L	5.00	0.250	101	75-125	2.38	25	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

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

Summit Scientific

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

Batch BGF1120 - General Preparation

Blank (BGF1120-BLK1)

Prepared: 06/30/23 Analyzed: 07/04/23

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

LCS (BGF1120-BS1)

Prepared: 06/30/23 Analyzed: 07/04/23

Calcium	5.06	0.0500	mg/L wet	5.00	101	70-130				
Magnesium	4.77	0.0500	"	5.00	95.5	70-130				
Sodium	4.97	0.0500	"	5.00	99.5	70-130				

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
 Project Manager: Sam Vogt

Reported:
 07/06/23 12:22

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

Summit Scientific

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

Batch BGF0919 - General Preparation

Duplicate (BGF0919-DUP1)

Source: 2306459-01

Prepared & Analyzed: 06/26/23

% Solids	95.5		%		97.1			1.64		20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

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

Summit Scientific

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

Batch BGG0036 - General Preparation

Blank (BGG0036-BLK1)

Prepared & Analyzed: 07/03/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0036-BS1)

Prepared & Analyzed: 07/03/23

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BGG0036-DUP1)

Source: 2306497-01

Prepared & Analyzed: 07/03/23

Specific Conductance (EC) 0.437 0.0100 mmhos/cm 0.446 2.13 20

Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

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

Summit Scientific

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

Batch BGG0035 - General Preparation

LCS (BGG0035-BS1)

Prepared & Analyzed: 07/03/23

pH	9.20	pH Units	9.18	100	95-105
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Duplicate (BGG0035-DUP1)

Source: 2306497-01

Prepared & Analyzed: 07/03/23

pH	7.74	pH Units	7.71	0.388	20
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Summit Scientific

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

Project: Civitas - Aristocrat Angus 12-3 & 12-3C

Project Number: [none]
Project Manager: Sam Vogt

Reported:
07/06/23 12:22

Notes and Definitions

- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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