

# Wardell 7A-1

NESE Sec. 7-T3N-R65W

API #: 123-17602

Facility ID: 473301

Remediation Project #: 27027

Form 19 Data Package

April 2023

Prepared by Tasman, Inc.





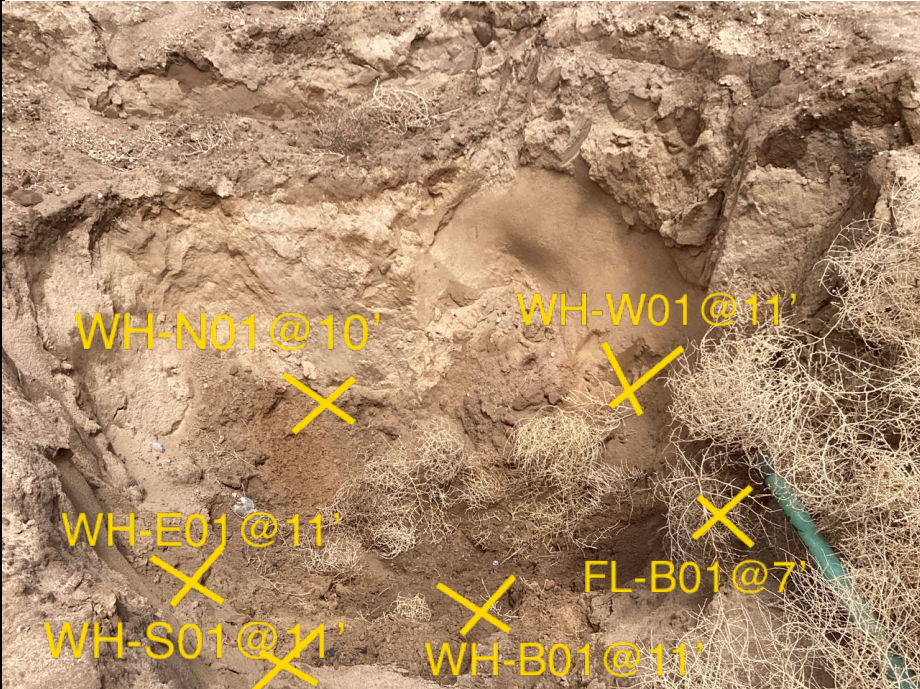

On behalf of Crestone Peak Resources



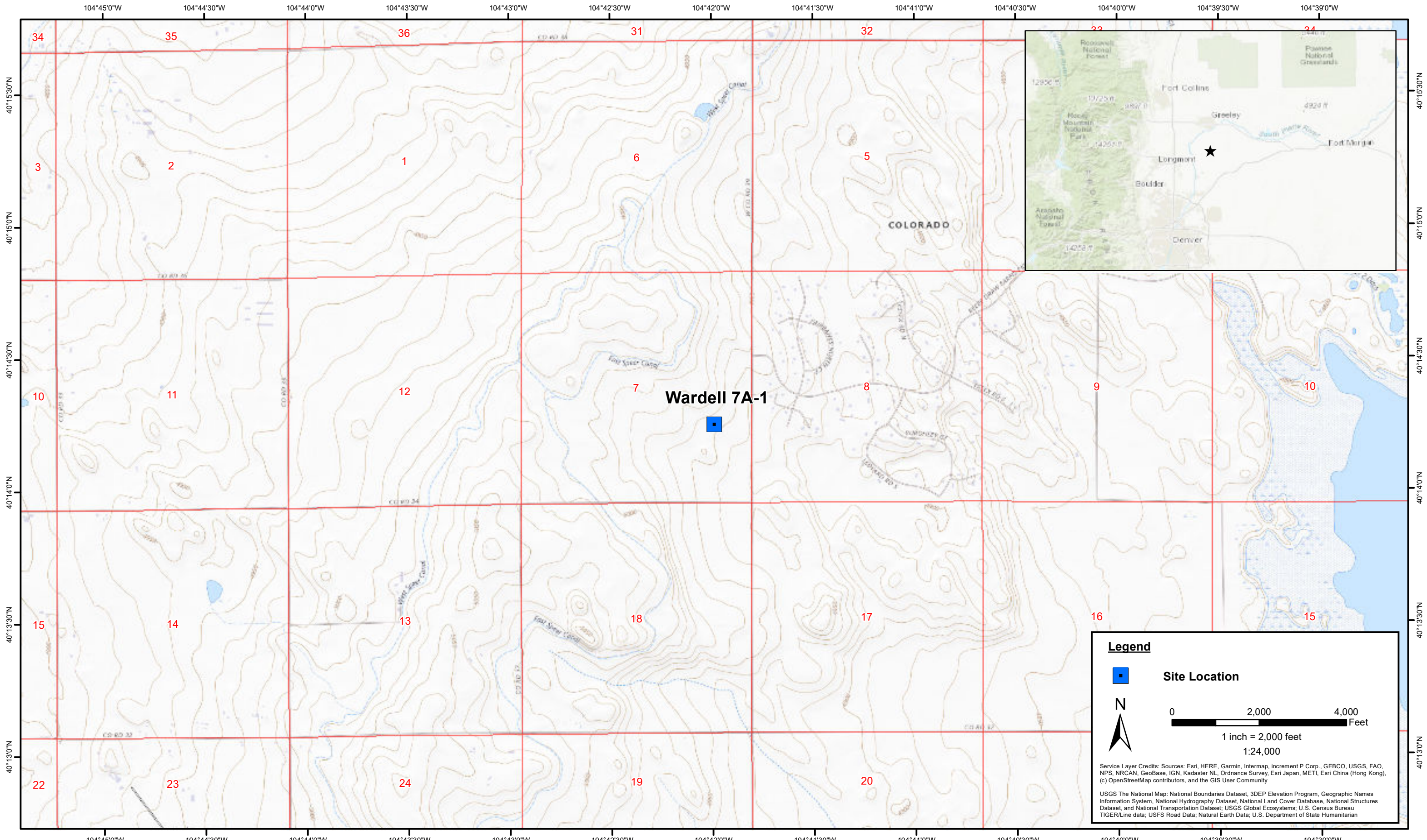
# PHOTO LOG

					
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Equipment ID:</b>	<b>Equipment Type:</b>	
<b>Notes/Conditions:</b> Surrounding land use, facing N			<b>Notes/Conditions:</b> Surrounding land use, facing S		

					
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>
<b>Notes/Conditions:</b> Surrounding land use, facing E			<b>Notes/Conditions:</b> Surrounding land use, facing W		

					
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions: Soil screening and sampling locations, facing N			Notes/Conditions:		

# FIGURES



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



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

**Crestone Peak Resources Operating, LLC**  
**Wardell 7A-1**  
 NESE Sec. 7-T3N-R65W  
 Weld County, Colorado

Site Location Map

Figure  
1



**Legend**

⊕ Soil sample location – Below COGCC Table 915-1 Soil Standards (Collected via Trimble GPS)

--- Flowline location

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

COGCC = Colorado Oil & Gas Conservation Commission

0 ft. 100 ft. 200 ft.



Image Source: Google Earth

DATE: May 9, 2023

DESIGNED BY: S. Vogt

DRAWN BY: B. LeVasseur



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Broomfield, Colorado 80020

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**Wardell 7A-1**

NESE Sec. 7-T3N-R65W  
Weld County, Colorado

Flowline Soil Sample Location Map

FIGURE  
2A



**Legend**

- + Soil sample location – Above COGCC Table 915-1 Soil Standards (Collected via Trimble GPS)
- ⊕ Soil sample location – Field Screened (Collected via Trimble GPS)
- Flowline location
- ⊕ Stockpile location
- ⊔ Excavation extents (Collected via Trimble GPS)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System  
 COGCC = Colorado Oil & Gas Conservation Commission

0 ft.      10 ft.      20 ft.

Image Source: Google Earth

DATE:	May 9, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	B. LeVasseur

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

**Crestone Peak Resources Operating, LLC**  
 Wardell 7A-1  
 NESE Sec. 7-T3N-R65W  
 Weld County, Colorado

Wellhead Soil Sample Location Map

FIGURE 2B

# TABLES

**TABLE 1  
WARDELL 7A-1**



**SOIL SAMPLE LOCATIONS  
CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Depth	Date	PID Reading (ppm)	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
WH-B01@11'	11'	04/26/2023	13.4	40.204603	-104.793236	1.5	Y
WH-N01@10'	10'	04/26/2023	0.0	40.204620	-104.793221	1.5	N
WH-S01@10'	10'	04/26/2023	0.5	40.204588	-104.793233	1.3	N
WH-E01@10'	10'	04/26/2023	0.1	40.204598	-104.793215	1.6	N
WH-W01@10'	10'	04/26/2023	0.00	40.204625	-104.793241	1.5	N
FL-B01@7'	7'	04/26/2023	0.00	40.237486	-104.699861	1.3	Y
FL-B02@3"	3"	04/26/2023	0.00	40.235275	-104.700070	1.2	Y
SP-CS01	-	04/26/2023	0.00	-	-	-	Y
SP-CS01	-	04/26/2023	0.00	-	-	-	Y

**Notes:**

PID = Photoionization Detector

ppm = parts per million

HC = Hydrocarbon

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable

**TABLE 2**  
**WARDELL 7A-1**  
**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)
<b>COGCC Organic Compounds in Soils <sup>(1)</sup></b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0038</b>	<b>500</b>			<b>0.0081</b>	<b>0.0087</b>
<b>COGCC Organic Compounds in Soils <sup>(2)</sup></b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>2</b>	<b>500</b>			<b>30</b>	<b>27</b>
FL-B01@7'	7'	04/26/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
FL-B02@3"	3"	04/26/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
SP-CS01	-	04/26/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
SP-CS02	-	04/26/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
WH-B01@11'	11'	04/26/2023	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	260	<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**  
**WARDELL 7A-1**  
**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 <sup>(1)</sup>			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 <sup>(2)</sup>			360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
FL-B01@7'	7'	04/26/2023	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201	<0.00067
FL-B02@3"	3"	04/26/2023	<0.00067	<0.00067	0.00172	0.0012	<0.00067	<0.00067	0.00207	<0.00067	<0.00067	<0.00067	0.00127	<0.00201	<0.00201	0.00108
SP-CS01	-	04/26/2023	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201	<0.00067
SP-CS02	-	04/26/2023	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201	<0.00067
WH-B01@11'	11'	04/26/2023	0.00315	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.00194	<0.00067	<b>0.0166</b>	<b>0.0224</b>	0.00105

**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  
WARDELL 7A-1



SOIL ANALYTICAL DATA - SOIL RECLAMATION  
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
<b>COGCC Soil Suitability for Reclamation<sup>(1)</sup></b>			<b>6 - 8.3</b>	<b>&lt; 6</b>	<b>&lt; 4</b>	<b>2</b>
FL-B01@7'	7'	04/26/2023	<b>8.49</b>	<b>0.360</b>	0.135	<b>&lt;0.0998</b>
FL-B02@3"	3"	04/26/2023	<b>8.41</b>	<b>0.161</b>	<b>0.180</b>	<b>&lt;0.102</b>
SP-CS01	-	04/26/2023	<b>8.52</b>	<b>0.218</b>	<b>0.262</b>	<b>&lt;0.0991</b>
SP-CS02	-	04/26/2023	<b>8.58</b>	<b>0.717</b>	<b>0.266</b>	<b>&lt;0.101</b>
WH-B01@11'	11'	04/26/2023	<b>12.2</b>	<b>1.73</b>	<b>6.29</b>	<b>0.474</b>

**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**

May 09, 2023

Tasman Geosciences

Sam Vogt

6855 West 119th Avenue

Broomfield CO 80020

Project Name - Civitas - Wardell 7A-1 WH & FL

Project Number - AFE: 33623

Attached are your analytical results for Civitas - Wardell 7A-1 WH & FL received by Origins Laboratory, Inc. April 26, 2023. This project is associated with Origins project number Y304633-01.

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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: AFE: 33623  
Project: Civitas - Wardell 7A-1 WH & FL

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@11'	Y304633-01	Soil	April 26, 2023 13:12	04/26/2023 16:57
FL-B01@7'	Y304633-02	Soil	April 26, 2023 13:22	04/26/2023 16:57
SP-CS01	Y304633-03	Soil	April 26, 2023 13:36	04/26/2023 16:57
SP-CS02	Y304633-04	Soil	April 26, 2023 13:38	04/26/2023 16:57
FL-B02@3"	Y304633-05	Soil	April 26, 2023 14:00	04/26/2023 16:57

Origins Laboratory, Inc.



*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.*



Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y2014023

Client: Tasman  
 Client Project ID: Wardell 7A-1 WH+FL

Checklist Completed by: JS

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

Date/time completed: 4/27/13

Airbill #: na

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

Cooler Number/Temperature: L / 10 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		/		SD
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			/	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			/	
Were all samples received intact <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		/		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked <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 NaAsO2+NaOH, ZnAc+NaOH)			/	
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 to in the additional comments (above) and the case narrative.

Reviewed by: [Signature] Date/Time Reviewed: 4/26/13

Origins Laboratory, Inc.  
[Signature]

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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**WH-B01@11'**  
**4/26/2023 1:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-01 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	0.474	0.101	mg/L	1	B3D2811	KAP	04/28/2023	05/01/2023	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3D2729	ZZZ	04/27/2023	05/01/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	77.9 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3D2727	JSM	04/27/2023	04/29/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.7 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**WH-B01@11'**  
**4/26/2023 1:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

**Y304633-01 (Soil)**  
**Origins Laboratory, Inc.**

**Metals by Saturated Paste by EPA 6010**

Calcium	21.7	0.499	meq/L	10	[CALC]	KAP	04/28/2023	05/01/2023	
Magnesium	ND	0.823	"	"	"	KAP	"	"	
Sodium	5.72	0.435	"	"	"	KAP	"	"	

**pH in Soil by 9045D**

pH	12.2		pH Units	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**SAR by 20B Saturated Paste**

SAR	1.73		SAR	1	B3D2815	KAP	04/28/2023	05/01/2023	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	6.29	0.00500	mmhos/cm	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

1-Methylnaphthalene	0.0166	0.00201	mg/Kg	1	L679149		05/01/2023	05/02/2023	
2-Methylnaphthalene	0.0224	0.00201	"	"	"		"	"	
Acenaphthene	0.00315	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)anthracene	ND	0.00067	"	"	"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**WH-B01@11'**  
**4/26/2023 1:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-01 (Soil)**  
**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

Benzo(a)pyrene	ND	0.00067	mg/Kg	1	L679149		05/01/2023	05/02/2023	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	<b>0.00194</b>	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	<b>0.00237</b>	0.00201	"	"	"		"	"	
Pyrene	<b>0.00105</b>	0.00067	"	"	"		"	"	
Surrogate: 2-Fluorobiphenyl	58.2 %		33-115		"		"	"	
Surrogate: 4-Terphenyl-d14	61.8 %		33-122		"		"	"	
Surrogate: Nitrobenzene-d5	62.7 %		29-110		"		"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**FL-B01@7'**

**4/26/2023 1:22:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-02 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	ND	0.0998	mg/L	1	B3D2811	KAP	04/28/2023	05/01/2023	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3D2729	ZZZ	04/27/2023	05/01/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: *o*-Terphenyl 88.6 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3D2727	JSM	04/27/2023	04/29/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "  
 Surrogate: Toluene-d8 97.5 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 96.2 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**FL-B01@7'**

**4/26/2023 1:22:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-02 (Soil)**

**Origins Laboratory, Inc.**

**Metals by Saturated Paste by EPA 6010**

Calcium	ND	0.499	meq/L	10	[CALC]	KAP	04/28/2023	05/01/2023	
Magnesium	ND	0.823	"	"	"	KAP	"	"	
Sodium	ND	0.435	"	"	"	KAP	"	"	

**pH in Soil by 9045D**

pH	<b>8.49</b>		pH Units	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**SAR by 20B Saturated Paste**

SAR	<b>0.360</b>		SAR	1	B3D2815	KAP	04/28/2023	05/01/2023	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	<b>0.135</b>	0.00500	mmhos/cm	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L679149		05/01/2023	05/02/2023	
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

FL-B01@7'

4/26/2023 1:22:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-02 (Soil)**  
**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

Benzo(a)anthracene	ND	0.00067	mg/Kg	1	L679149		05/01/2023	05/02/2023	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl	63.1 %	33-115			"		"	"	
Surrogate: 4-Terphenyl-d14	65.6 %	33-122			"		"	"	
Surrogate: Nitrobenzene-d5	62.5 %	29-110			"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**SP-CS01**

**4/26/2023 1:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-03 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	ND	0.0991	mg/L	1	B3D2811	KAP	04/28/2023	05/01/2023	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3D2729	ZZZ	04/27/2023	05/01/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: *o*-Terphenyl 86.4 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3D2727	JSM	04/27/2023	04/29/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "  
 Surrogate: Toluene-d8 98.9 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 96.8 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**SP-CS01**

**4/26/2023 1:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-03 (Soil)**  
**Origins Laboratory, Inc.**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.22	0.499	meq/L	10	[CALC]	KAP	04/28/2023	05/01/2023	
Magnesium	ND	0.823	"	"	"	KAP	"	"	
Sodium	ND	0.435	"	"	"	KAP	"	"	

**pH in Soil by 9045D**

pH	8.52		pH Units	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**SAR by 20B Saturated Paste**

SAR	0.218		SAR	1	B3D2815	KAP	04/28/2023	05/01/2023	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.262	0.00500	mmhos/cm	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L679149		05/01/2023	05/02/2023	
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**SP-CS01**

**4/26/2023 1:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-03 (Soil)**

**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

Benzo(a)anthracene	ND	0.00067	mg/Kg	1	L679149		05/01/2023	05/02/2023	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl	55.4 %	33-115			"		"	"	
Surrogate: 4-Terphenyl-d14	61.2 %	33-122			"		"	"	
Surrogate: Nitrobenzene-d5	55.4 %	29-110			"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**SP-CS02**

**4/26/2023 1:38:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-04 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	ND	0.101	mg/L	1	B3D2811	KAP	04/28/2023	05/01/2023	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3D2729	ZZZ	04/27/2023	05/01/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: *o*-Terphenyl 99.9 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	0.00260	0.00200	mg/kg	1	B3D2727	ZZZ	04/27/2023	05/01/2023	
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "  
 Surrogate: Toluene-d8 93.0 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 94.3 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**SP-CS02**

**4/26/2023 1:38:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-04 (Soil)**

**Origins Laboratory, Inc.**

**Metals by Saturated Paste by EPA 6010**

Calcium	0.820	0.499	meq/L	10	[CALC]	KAP	04/28/2023	05/01/2023	
Magnesium	ND	0.823	"	"	"	KAP	"	"	
Sodium	0.536	0.435	"	"	"	KAP	"	"	

**pH in Soil by 9045D**

pH	8.58		pH Units	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**SAR by 20B Saturated Paste**

SAR	0.717		SAR	1	B3D2815	KAP	04/28/2023	05/01/2023	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.266	0.00500	mmhos/cm	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L679149		05/01/2023	05/02/2023	
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**SP-CS02**

**4/26/2023 1:38:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-04 (Soil)**

**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

Benzo(a)anthracene	ND	0.00067	mg/Kg	1	L679149		05/01/2023	05/02/2023	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl	58.5 %	33-115			"		"	"	
Surrogate: 4-Terphenyl-d14	63.1 %	33-122			"		"	"	
Surrogate: Nitrobenzene-d5	60.3 %	29-110			"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**FL-B02@3"**

**4/26/2023 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-05 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	ND	0.102	mg/L	1	B3D2811	KAP	04/28/2023	05/01/2023	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3D2729	ZZZ	04/27/2023	05/02/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: *o*-Terphenyl 94.8 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3D2727	JSM	04/27/2023	04/29/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "  
 Surrogate: Toluene-d8 100 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 94.7 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**FL-B02@3"**

**4/26/2023 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-05 (Soil)**  
**Origins Laboratory, Inc.**

**Metals by Saturated Paste by EPA 6010**

Calcium	0.614	0.499	meq/L	10	[CALC]	KAP	04/28/2023	05/01/2023	
Magnesium	ND	0.823	"	"	"	KAP	"	"	
Sodium	ND	0.435	"	"	"	KAP	"	"	

**pH in Soil by 9045D**

pH	8.41		pH Units	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**SAR by 20B Saturated Paste**

SAR	0.161		SAR	1	B3D2815	KAP	04/28/2023	05/01/2023	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.180	0.00500	mmhos/cm	1	B3D2819	HJD	04/28/2023	04/29/2023	
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**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L679149		05/01/2023	05/02/2023	
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**FL-B02@3"**

**4/26/2023 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y304633-05 (Soil)**

**Waypoint Analytical, LLC.**

**PAH by 8270D SIM**

Benzo(a)anthracene	0.00172	0.00067	mg/Kg	1	L679149		05/01/2023	05/02/2023	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	0.0012	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	0.00207	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	0.00127	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	0.00108	0.00067	"	"	"		"	"	
Surrogate: 2-Fluorobiphenyl	59.4 %		33-115		"		"	"	
Surrogate: 4-Terphenyl-d14	60 %		33-122		"		"	"	
Surrogate: Nitrobenzene-d5	66.4 %		29-110		"		"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B3D2727 - EPA 5030 (soil)**

**Blank (B3D2727-BLK1)**

Prepared: 04/27/2023 Analyzed: 04/28/2023

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	100		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	99.9		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	95.2		70-130			

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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3D2727 - EPA 5030 (soil)

**LCS (B3D2727-BS1)**

Prepared: 04/27/2023 Analyzed: 04/28/2023

1,2,4-Trimethylbenzene	0.0971	0.00200	mg/kg	0.100		97.1	70-130			
1,3,5-Trimethylbenzene	0.0973	0.00200	"	0.100		97.3	70-130			
Benzene	0.108	0.00200	"	0.100		108	70-130			
Ethylbenzene	0.0989	0.00200	"	0.100		98.9	70-130			
Naphthalene	0.0870	0.00380	"	0.100		87.0	70-130			
Toluene	0.106	0.00200	"	0.100		106	70-130			
o-Xylene	0.0968	0.00200	"	0.100		96.8	70-130			
m,p-Xylene	0.204	0.00400	"	0.200		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3D2727 - EPA 5030 (soil)

Matrix Spike (B3D2727-MS1)	Source: Y304583-01			Prepared: 04/27/2023 Analyzed: 04/28/2023						
1,2,4-Trimethylbenzene	0.0871	0.00200	mg/kg	0.100	ND	87.1	70-130			
1,3,5-Trimethylbenzene	0.0854	0.00200	"	0.100	ND	85.4	70-130			
Benzene	0.0970	0.00200	"	0.100	ND	97.0	70-130			
Ethylbenzene	0.0879	0.00200	"	0.100	ND	87.9	70-130			
Naphthalene	0.0787	0.00380	"	0.100	ND	78.7	70-130			
Toluene	0.0952	0.00200	"	0.100	ND	95.2	70-130			
o-Xylene	0.0877	0.00200	"	0.100	ND	87.7	70-130			
m,p-Xylene	0.183	0.00400	"	0.200	ND	91.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3D2727 - EPA 5030 (soil)

Matrix Spike Dup (B3D2727-MSD1)	Source: Y304583-01			Prepared: 04/27/2023 Analyzed: 04/28/2023						
1,2,4-Trimethylbenzene	0.0892	0.00200	mg/kg	0.100	ND	89.2	70-130	2.38	20	
1,3,5-Trimethylbenzene	0.0887	0.00200	"	0.100	ND	88.7	70-130	3.84	20	
Benzene	0.0993	0.00200	"	0.100	ND	99.3	70-130	2.32	20	
Ethylbenzene	0.0908	0.00200	"	0.100	ND	90.8	70-130	3.18	20	
Naphthalene	0.0852	0.00380	"	0.100	ND	85.2	70-130	7.93	20	
Toluene	0.0960	0.00200	"	0.100	ND	96.0	70-130	0.795	20	
o-Xylene	0.0899	0.00200	"	0.100	ND	89.9	70-130	2.52	20	
m,p-Xylene	0.189	0.00400	"	0.200	ND	94.3	70-130	3.05	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

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 Project: Civitas - Wardell 7A-1 WH & FL

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B3D2729 - EPA 3550B</b>										
<b>Blank (B3D2729-BLK1)</b>										
					Prepared: 04/27/2023 Analyzed: 05/01/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	22		"	24.9		89.9	50-150			

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 Project: Civitas - Wardell 7A-1 WH & FL

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B3D2729 - EPA 3550B**

**LCS (B3D2729-BS1)**

Prepared: 04/27/2023 Analyzed: 05/01/2023

Diesel (C10-C28)	810	50.0	mg/kg	1000		81.0	70-130			
Residual Range Organics (C28-C40)	934	200	"	1000		93.4	70-130			
Surrogate: o-Terphenyl	44		"	49.8		87.9	50-150			

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Sam Vogt  
 Project Number: AFE: 33623  
 Project: Civitas - Wardell 7A-1 WH & FL

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B3D2729 - EPA 3550B**

<b>Matrix Spike (B3D2729-MS1)</b>	<b>Source: Y304583-01</b>			<b>Prepared: 04/27/2023 Analyzed: 05/01/2023</b>						
Diesel (C10-C28)	902	50.0	mg/kg	1000	ND	90.2	70-130			
Residual Range Organics (C28-C40)	1090	200	"	1000	ND	109	70-130			
Surrogate: o-Terphenyl	58		"	49.8		117	50-150			

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 Project: Civitas - Wardell 7A-1 WH & FL

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B3D2729 - EPA 3550B**

<b>Matrix Spike Dup (B3D2729-MSD1)</b>	<b>Source: Y304583-01</b>		<b>Prepared: 04/27/2023 Analyzed: 05/01/2023</b>							
Diesel (C10-C28)	789	50.0	mg/kg	1000	ND	78.9	70-130	13.4	35	
Residual Range Organics (C28-C40)	948	200	"	1000	ND	94.8	70-130	13.8	35	
Surrogate: o-Terphenyl	49		"	49.8		99.3	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B3D2811 - DTPA Sorbitol Preparation**

**Blank (B3D2811-BLK1)**

Prepared: 04/28/2023 Analyzed: 05/01/2023

Boron ND 0.100 mg/L

**Duplicate (B3D2811-DUP1)**

Source: Y304623-04

Prepared: 04/28/2023 Analyzed: 05/01/2023

Boron 0.138 0.0981 mg/L 0.141 2.30 50

**Batch B3D2815 - Saturated Paste Metals**

**Blank (B3D2815-BLK1)**

Prepared: 04/28/2023 Analyzed: 05/01/2023

Calcium PPM ND 10.0 mg/L

SAR 0.00 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

**Duplicate (B3D2815-DUP1)**

Source: Y304626-01

Prepared: 04/28/2023 Analyzed: 05/01/2023

Calcium PPM 96.1 10.0 mg/L 95.7 0.431 50

SAR 0.00 SAR 0.546 200 200

Magnesium PPM 27.7 10.0 mg/L 27.0 2.59 50

Sodium PPM 22.3 10.0 " 23.5 5.00 50

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 Project: Civitas - Wardell 7A-1 WH & FL

**Saturated Paste - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B3D2819 - Saturated Paste pH/EC</b>										
<b>Blank (B3D2819-BLK1)</b>					Prepared: 04/28/2023 Analyzed: 05/04/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
<b>Duplicate (B3D2819-DUP1)</b>		<b>Source: Y304626-01</b>			Prepared: 04/28/2023 Analyzed: 04/29/2023					
pH	8.07		pH Units		8.17			1.23	25	
Specific Conductance (EC)	0.982	0.00500	mmhos/cm		0.940			4.32	25	

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 Project: Civitas - Wardell 7A-1 WH & FL

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L679149 - 3550B**

<b>MSD (L 84722-MSD-L679149)</b>		<b>Source: 84722</b>			Prepared: 05/01/2023 Analyzed: 05/02/2023					
2-Methylnaphthalene	0.0962	0.00201	mg/Kg	0.167	<0.00194	57.6	30-130	3.4	30	
Fluorene	0.104	0.00067	"	0.167	0.000436	62	30-130	5.3	30	
Pyrene	0.104	0.00067	"	0.167	<0.000643	62.2	30-130	3.9	30	
Indeno(1,2,3-cd)pyrene	0.0797	0.00067	"	0.167	<0.000627	47.7	30-130	7.4	30	
Fluoranthene	0.107	0.00067	"	0.167	<0.000394	64	30-130	4.7	30	
Dibenz(a,h)anthracene	0.0905	0.00067	"	0.167	<0.000614	54.1	30-130	3.5	30	
Chrysene	0.106	0.00067	"	0.167	<0.000624	63.4	30-130	2.8	30	
Naphthalene	0.0963	0.00201	"	0.167	<0.00145	57.6	30-130	5.2	30	
1-Methylnaphthalene	0.0979	0.00201	"	0.167	<0.00109	58.6	30-130	2.9	30	
Benzo(k)fluoranthene	0.0795	0.00067	"	0.167	<0.000437	47.6	30-130	1.6	30	
Acenaphthene	0.101	0.00067	"	0.167	<0.000304	60.4	30-130	6.8	30	
Anthracene	0.107	0.00067	"	0.167	<0.000334	64	30-130	5.7	30	
Benzo(a)anthracene	0.114	0.00067	"	0.167	<0.000493	68.2	30-130	3.5	30	
Benzo(a)pyrene	0.108	0.00067	"	0.167	<0.000468	64.6	30-130	5.7	30	
Benzo(b)fluoranthene	0.0882	0.00067	"	0.167	<0.000585	52.8	30-130	5.2	30	
Surrogate: 2-Fluorobiphenyl	57		"	0.333	198	57	33-115			
Surrogate: Nitrobenzene-d5	61.8		"	0.333	200	61.8	29-110			
Surrogate: 4-Terphenyl-d14	62.1		"	0.333	213	62.1	33-122			

<b>MS (L 84722-MS-L679149)</b>		<b>Source: 84722</b>			Prepared: 05/01/2023 Analyzed: 05/02/2023					
Benzo(k)fluoranthene	0.0782	0.00067	mg/Kg	0.166	<0.000437	47.1	30-130			
Acenaphthene	0.0943	0.00067	"	0.166	<0.000304	56.8	30-130			
Naphthalene	0.0914	0.00201	"	0.166	<0.00145	55	30-130			
Indeno(1,2,3-cd)pyrene	0.0859	0.00067	"	0.166	<0.000627	51.7	30-130			
Fluorene	0.0986	0.00067	"	0.166	0.000436	59.1	30-130			
Fluoranthene	0.102	0.00067	"	0.166	<0.000394	61.4	30-130			
Dibenz(a,h)anthracene	0.0938	0.00067	"	0.166	<0.000614	56.5	30-130			

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Sam Vogt  
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 Project: Civitas - Wardell 7A-1 WH & FL

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L679149 - 3550B**

<b>MS (L 84722-MS-L679149)</b>	<b>Source: 84722</b>			<b>Prepared: 05/01/2023 Analyzed: 05/02/2023</b>						
Chrysene	0.103	0.00067	mg/Kg	0.166	<0.000624	62	30-130			
1-Methylnaphthalene	0.0951	0.00201	"	0.166	<0.00109	57.2	30-130			
Benzo(a)pyrene	0.102	0.00067	"	0.166	<0.000468	61.4	30-130			
Anthracene	0.101	0.00067	"	0.166	<0.000334	60.8	30-130			
Pyrene	0.1	0.00067	"	0.166	<0.000643	60.2	30-130			
2-Methylnaphthalene	0.0929	0.00201	"	0.166	<0.00194	55.9	30-130			
Benzo(b)fluoranthene	0.093	0.00067	"	0.166	<0.000585	56	30-130			
Benzo(a)anthracene	0.11	0.00067	"	0.166	<0.000493	66.2	30-130			
Surrogate: Nitrobenzene-d5	57.2		"	0.332	200	57.2	29-110			
Surrogate: 4-Terphenyl-d14	61.1		"	0.332	213	61.1	33-122			
Surrogate: 2-Fluorobiphenyl	53.9		"	0.332	198	53.9	33-115			

<b>LCS (LCS-L679149)</b>	<b>Prepared: 05/01/2023 Analyzed: 05/02/2023</b>									
Chrysene	0.113	0.00067	mg/Kg	0.167		67.6	30-130			
Dibenz(a,h)anthracene	0.104	0.00067	"	0.167		62.2	30-130			
Fluoranthene	0.117	0.00067	"	0.167		70	30-130			
Fluorene	0.109	0.00067	"	0.167		65.2	30-130			
Indeno(1,2,3-cd)pyrene	0.1	0.00067	"	0.167		59.8	30-130			
Naphthalene	0.105	0.00201	"	0.167		62.8	30-130			
Benzo(k)fluoranthene	0.0946	0.00067	"	0.167		56.6	30-130			
Pyrene	0.116	0.00067	"	0.167		69.4	30-130			
Benzo(a)pyrene	0.115	0.00067	"	0.167		68.8	30-130			
Benzo(a)anthracene	0.118	0.00067	"	0.167		70.6	30-130			
Anthracene	0.116	0.00067	"	0.167		69.4	30-130			
Acenaphthene	0.106	0.00067	"	0.167		63.4	30-130			
2-Methylnaphthalene	0.102	0.00201	"	0.167		61	30-130			
1-Methylnaphthalene	0.106	0.00201	"	0.167		63.4	30-130			

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**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L679149 - 3550B**

**LCS (LCS-L679149)**

Prepared: 05/01/2023 Analyzed: 05/02/2023

Benzo(b)fluoranthene	0.0946	0.00067	mg/Kg	0.167		56.6	30-130			
Surrogate: Nitrobenzene-d5	66.9		"	0.333		66.9	29-110			
Surrogate: 4-Terphenyl-d14	72.9		"	0.333		72.9	33-122			
Surrogate: 2-Fluorobiphenyl	64.5		"	0.333		64.5	33-115			

**LRB (LRB-L679149)**

Prepared: 05/01/2023 Analyzed: 05/02/2023

Chrysene	ND	0.00067	mg/Kg				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Naphthalene	ND	0.00201	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00201	"				-			
1-Methylnaphthalene	ND	0.00201	"				-			
Pyrene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	67.8		"	0.333		67.8	29-110			
Surrogate: 4-Terphenyl-d14	73.5		"	0.333		73.5	33-122			
Surrogate: 2-Fluorobiphenyl	63.9		"	0.333		63.9	33-115			

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Sam Vogt  
Project Number: AFE: 33623  
Project: Civitas - Wardell 7A-1 WH & FL

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### Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

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