

December 29, 2021

St. Croix Operating, Inc.

Ryan Dornbos

P.O. Box 13799

Denver CO 80201

Project Name - HeimermanPit

Project Number - [none]

Attached are your analytical results for HeimermanPit received by Origins Laboratory, Inc. December 14, 2021. This project is associated with Origins project number Y112350-01.

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



St. Croix Operating, Inc.

P.O. Box 13799

Denver CO 80201

Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Heimerman	Y112350-01	Water	December 14, 2021 15:45	12/14/2021 17:50

Origins Laboratory, Inc.



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St. Croix Operating, Inc.
 P.O. Box 13799
 Denver CO 80201

Ryan Dornbos
 Project Number: [none]
 Project: HeimermanPit

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y112350

Client: St. Croix
 Client Project ID: Heimerman Pit

Checklist Completed by: JB
 Date/time completed: 12/15/21

Shipped Via: HS
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

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

Cooler Number/Temperature: 1, 5.5 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" 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"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽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"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) / (pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Not Checked
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JM

Date/Time Reviewed 12-14-21

Origins Laboratory, Inc.



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St. Croix Operating, Inc.
 P.O. Box 13799
 Denver CO 80201

Ryan Dornbos
 Project Number: [none]
 Project: HeimermanPit

Heimerman
12/14/2021 3:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y112350-01 (Water)

Alkalinity by SM 2320B

Alkalinity, Total as CaCO ₃	903	4.00	mg/L	1	2209197	RXB5	12/14/2021	12/23/2021	
Bicarbonate alkalinity (CaCO ₃)	893	4.00	"	"	"	RXB5	"	"	
Carbonate alkalinity (CaCO ₃)	10.0	4.00	"	"	"	RXB5	"	"	

Anions by IC 300.0

Chloride	208	2.50	mg/L	10	B1L1515	AHK	12/15/2021	12/16/2021	
Fluoride	4.94	1.00	"	"	"	AHK	"	"	
Bromide	1.14	1.00	"	"	"	AHK	"	"	
Sulfate	220	31.2	"	125	"	AHK	"	12/16/2021	
Nitrate	ND	1.00	"	10	"	AHK	"	12/16/2021	
Nitrite	ND	1.00	"	"	"	AHK	"	"	

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	5.00	mg/L	1	B1L1608	ZZZ	12/16/2021	12/20/2021	Ua
Residual Range Organics (C28-C40)	ND	10.0	"	"	"	ZZZ	"	"	Ua

Surrogate: o-Terphenyl 117% 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Benzene	ND	2.00	ug/L	1	B1L2012	ZZZ	12/20/2021	12/24/2021	Ua
Ethylbenzene	6.43	2.00	"	"	"	ZZZ	"	"	

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 P.O. Box 13799
 Denver CO 80201

Ryan Dornbos
 Project Number: [none]
 Project: HeimermanPit

Heimerman

12/14/2021 3:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112350-01 (Water)

GBTEX + Naphthalene by EPA 8260D

Toluene	ND	2.00	ug/L	1	B1L2012	ZZZ	12/20/2021	12/24/2021	Ua
Naphthalene	ND	10.0	"	"	"	ZZZ	"	"	Ua
Naphthalenes - Total	ND	7.00	"	"	"	ZZZ	"	"	Ua
Gasoline Range Hydrocarbons	5440	200	"	"	"	ZZZ	"	"	
Xylenes, total	3.33	2.00	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4	95.9 %	70-130			"	"		12/21/2021	
Surrogate: Toluene-d8	103 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	94.8 %	70-130			"	"		"	

pH in Water by EPA 9040C

pH	8.09		pH Units	1	B1L1506	ACC	12/15/2021	12/15/2021	
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Radium 226 by EPA 903.1

Radium-226	0.635	1.00	pCi/L	1	2210107	LXP1	12/14/2021	12/29/2021	
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Radium 228 by EPA 904.0

Radium-228	2.06	3.00	pCi/L	1	2210106	LXB3	"	12/27/2021	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2540	5.00	uS/cm	1	B1L1507	ACC	12/15/2021	12/15/2021	
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Ryan Dornbos
Project Number: [none]
Project: HeimermanPit

Heimerman
12/14/2021 3:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112350-01 (Water)

Total Dissolved Solids by 2540C

Total Dissolved Solids	1760	5.00	mg/L	"	B1L2009	SCL	12/20/2021	12/21/2021	
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Total Metals by 200.8

Barium	0.114	0.00400	mg/L	1	2209145	BCD1	12/16/2021	12/21/2021	
Boron	1.10	0.150	"	10	"	SKJ	"	12/22/2021	
Calcium	2.46	0.200	"	1	"	BCD1	"	12/21/2021	
Iron	3.22	0.100	"	"	"	BCD1	"	"	
Magnesium	0.355	0.0300	"	"	"	BCD1	"	"	
Manganese	0.0406	0.00500	"	"	"	BCD1	"	"	
Potassium	2.61	0.300	"	"	"	BCD1	"	"	
Selenium	ND	0.00500	"	"	"	BCD1	"	"	U
Sodium	695	5.00	"	20	"	SKJ	"	12/22/2021	
Strontium	0.116	0.0100	"	1	"	SKJ	"	"	

Total Phosphorus by EPA 365.4

Phosphorus, Total as P	0.0726	0.0500	mg/L	1	2210359	KLP1	12/20/2021	12/21/2021	
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Total Suspended Solids by 2540D

Total Suspended Solids	20.0	5.00	mg/L	1	B1L1514	SCL	12/15/2021	12/16/2021	
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P.O. Box 13799

Denver CO 80201

Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L1608 - EPA 3511 Mod.

Blank (B1L1608-BLK1)

Prepared: 12/16/2021 Analyzed: 12/20/2021

Diesel (C10-C28)	ND	5.00	mg/L							Ua
Residual Range Organics (C28-C40)	ND	10.0	"							Ua
Surrogate: o-Terphenyl	1.8		"	4.98		35.4	50-150			J-02

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L1608 - EPA 3511 Mod.

LCS (B1L1608-BS1)

Prepared: 12/16/2021 Analyzed: 12/20/2021

Diesel (C10-C28)	115	5.00	mg/L	100		115	70-130			
Residual Range Organics (C28-C40)	104	10.0	"	100		104	70-130			
Surrogate: o-Terphenyl	2.1		"	4.98		43.1	50-150			J-02

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Project Number: [none]

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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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Batch B1L1608 - EPA 3511 Mod.

Matrix Spike (B1L1608-MS1)	Source: Y112324-01				Prepared: 12/16/2021 Analyzed: 12/20/2021					
Diesel (C10-C28)	224	5.00	mg/L	100	270	NR	70-130			QM-07
Residual Range Organics (C28-C40)	24.4	10.0	"	100	ND	24.4	70-130			QM-07
Surrogate: o-Terphenyl	0.78		"	4.98		15.6	50-150			QM-07, Ua

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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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Batch B1L1608 - EPA 3511 Mod.

Matrix Spike Dup (B1L1608-MSD1)	Source: Y112324-01		Prepared: 12/16/2021 Analyzed: 12/20/2021							
Diesel (C10-C28)	420	5.00	mg/L	100	270	150	70-130	61.0	20	QM-07
Residual Range Organics (C28-C40)	68.7	10.0	"	100	ND	68.7	70-130	95.1	20	QM-07
Surrogate: o-Terphenyl	6.4		"	4.98		128	50-150			QM-07

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L2012 - EPA 5030B (Water)

Blank (B1L2012-BLK1)

Prepared: 12/20/2021 Analyzed: 12/21/2021

Benzene	ND	2.00	ug/L							Ua
Ethylbenzene	ND	2.00	"							Ua
Toluene	ND	2.00	"							Ua
Naphthalene	ND	10.0	"							Ua
Xylenes, total	ND	2.00	"							Ua
Gasoline Range Hydrocarbons	ND	200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		88.4	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	70-130			

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L2012 - EPA 5030B (Water)

LCS (B1L2012-BS1)

Prepared: 12/20/2021 Analyzed: 12/21/2021

Benzene	47.1	2.00	ug/L	50.0		94.1	70-130			
Ethylbenzene	50.2	2.00	"	50.0		100	70-130			
m,p-Xylene	101	4.00	"	100		101	70-130			
o-Xylene	52.5	2.00	"	50.0		105	70-130			
Toluene	48.6	2.00	"	50.0		97.3	70-130			
Naphthalene	42.8	10.0	"	50.0		85.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.2	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.6	70-130			

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L2012 - EPA 5030B (Water)

Matrix Spike (B1L2012-MS1)	Source: Y112267-02			Prepared: 12/20/2021 Analyzed: 12/21/2021						
Benzene	28.6	2.00	ug/L	25.0	ND	114	70-130			
Ethylbenzene	30.8	2.00	"	25.0	ND	123	70-130			
m,p-Xylene	61.1	4.00	"	50.0	ND	122	70-130			
o-Xylene	30.8	2.00	"	25.0	ND	123	70-130			
Toluene	30.0	2.00	"	25.0	ND	120	70-130			
Naphthalene	21.8	10.0	"	25.0	1.36	81.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		89.6	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		96.8	70-130			

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L2012 - EPA 5030B (Water)

Matrix Spike Dup (B1L2012-MSD1)	Source: Y112267-02			Prepared: 12/20/2021 Analyzed: 12/21/2021						
Benzene	25.6	2.00	ug/L	25.0	ND	102	70-130	11.2	20	
Ethylbenzene	27.5	2.00	"	25.0	ND	110	70-130	11.2	20	
m,p-Xylene	54.9	4.00	"	50.0	ND	110	70-130	10.8	20	
o-Xylene	27.8	2.00	"	25.0	ND	111	70-130	10.1	20	
Toluene	26.7	2.00	"	25.0	ND	107	70-130	11.6	20	
Naphthalene	19.4	10.0	"	25.0	1.36	72.3	70-130	11.5	20	
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		88.4	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.4	70-130			

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Ryan Dornbos
Project Number: [none]
Project: HeimermanPit

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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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 B1L1506 - NO PREP

Duplicate (B1L1506-DUP1) Source: Y112349-01 Prepared: 12/15/2021 Analyzed: 12/15/2021

pH	8.20		pH Units		8.28			0.971	200	
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Batch B1L1507 - NO PREP

Blank (B1L1507-BLK1) Prepared: 12/15/2021 Analyzed: 12/15/2021

Specific Conductance (EC)	0.900	5.00	uS/cm							
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Duplicate (B1L1507-DUP1) Source: Y112349-01 Prepared: 12/15/2021 Analyzed: 12/15/2021

Specific Conductance (EC)	2490	5.00	uS/cm		2550			2.07	10	
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Batch B1L1514 - NO PREP

Blank (B1L1514-BLK1) Prepared: 12/15/2021 Analyzed: 12/16/2021

Total Suspended Solids	ND	5.00	mg/L							
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LCS (B1L1514-BS1) Prepared: 12/15/2021 Analyzed: 12/16/2021

Total Suspended Solids	95.0	5.00	mg/L	100	95.0	75-110				
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Duplicate (B1L1514-DUP1) Source: Y112299-01 Prepared: 12/15/2021 Analyzed: 12/16/2021

Total Suspended Solids	8.00	5.00	mg/L		7.00			13.3	20	
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Batch B1L1515 - Filter .45um non acidified

Blank (B1L1515-BLK1) Prepared: 12/15/2021 Analyzed: 12/16/2021

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 Denver CO 80201

Ryan Dornbos
 Project Number: [none]
 Project: HeimermanPit

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1L1515 - Filter .45um non acidified										
Blank (B1L1515-BLK1)										
					Prepared: 12/15/2021 Analyzed: 12/16/2021					
Chloride	ND	0.250	mg/L							
Fluoride	ND	0.100	"							
Bromide	ND	0.100	"							
Sulfate	ND	0.250	"							
Nitrate	ND	0.100	"							
Nitrite	ND	0.100	"							
LCS (B1L1515-BS1)										
					Prepared: 12/15/2021 Analyzed: 12/16/2021					
Chloride	3.99	0.250	mg/L	4.00		99.7	90-110			
Fluoride	3.97	0.100	"	4.00		99.2	90-110			
Bromide	3.98	0.100	"	4.00		99.5	90-110			
Sulfate	4.11	0.250	"	4.00		103	90-110			
Nitrate	4.12	0.100	"	4.00		103	90-110			
Nitrite	3.98	0.100	"	4.00		99.5	90-110			
Matrix Spike (B1L1515-MS1)										
			Source: Y112348-01			Prepared: 12/15/2021 Analyzed: 12/16/2021				
Chloride	713		mg/L	500	213	100	80-120			
Fluoride	504		"	500	5.54	99.8	80-120			
Bromide	503		"	500	1.22	100	80-120			
Sulfate	667		"	500	164	101	80-120			
Nitrate	514		"	500	0.00	103	80-120			
Nitrite	497		"	500	0.00	99.4	80-120			
Matrix Spike Dup (B1L1515-MSD1)										
			Source: Y112348-01			Prepared: 12/15/2021 Analyzed: 12/16/2021				
Chloride	713		mg/L	500	213	100	80-120	0.00	20	
Fluoride	502		"	500	5.54	99.3	80-120	0.509	20	
Bromide	500		"	500	1.22	99.8	80-120	0.546	20	

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St. Croix Operating, Inc.

P.O. Box 13799

Denver CO 80201

Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

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 B1L1515 - Filter .45um non acidified

Matrix Spike Dup (B1L1515-MSD1)

Source: Y112348-01

Prepared: 12/15/2021 Analyzed: 12/16/2021

Sulfate	671		mg/L	500	164	101	80-120	0.585	20	
Nitrate	517		"	500	0.00	103	80-120	0.579	20	
Nitrite	494		"	500	0.00	98.8	80-120	0.643	20	

Batch B1L2009 - NO PREP

Blank (B1L2009-BLK1)

Prepared: 12/20/2021 Analyzed: 12/21/2021

Total Dissolved Solids	ND	5.00	mg/L							
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LCS (B1L2009-BS1)

Prepared: 12/20/2021 Analyzed: 12/21/2021

Total Dissolved Solids	998	5.00	mg/L	1000		99.8	90-110			
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Duplicate (B1L2009-DUP1)

Source: Y112348-01

Prepared: 12/20/2021 Analyzed: 12/21/2021

Total Dissolved Solids	1760	5.00	mg/L		1740			1.20	10	
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P.O. Box 13799

Denver CO 80201

Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

Alkalinity by SM 2320B - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2209197 -										
LCS (1204981238-BKS)					Prepared: Analyzed: 12/23/2021					
Alkalinity, Total as CaCO3	107	4.00	mg/L	100		107	90-110			
DUP (1204981239 D)					Source: 564887001 Prepared: Analyzed: 12/23/2021					
Bicarbonate alkalinity (CaCO3)	437	4.00	mg/L		430		0-20	1.61	20	
Alkalinity, Total as CaCO3	459	4.00	"		450		0-20	1.98	20	
Carbonate alkalinity (CaCO3)	22.0	4.00	"		20.0		0-20	9.52	20	
MS (1204981240 S)					Source: 564887001 Prepared: Analyzed: 12/23/2021					
Alkalinity, Total as CaCO3	555	4.00	mg/L	100	450	0	80-120			

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

Radium 226 by EPA 903.1 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2210107 -										
BLANK (1204982713-BLK)					Prepared: Analyzed: 12/29/2021					
Radium-226	0.296	1.00	pCi/L				-			U
DUP (1204982714 D)					Source: 565203001 Prepared: Analyzed: 12/29/2021					
Radium-226	1.09	1.00	pCi/L		0.889		0-20	20.4	20	
MS (1204982715 S)					Source: 565203001 Prepared: Analyzed: 12/29/2021					
Radium-226	114	1.00	pCi/L	133	0.889	84.8	75-125			
LCS (1204982716-BKS)					Prepared: Analyzed: 12/29/2021					
Radium-226	27.4	1.00	pCi/L	26.6		103	75-125			

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Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

Radium 228 by EPA 904.0 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2210106 -										
BLANK (1204982709-BLK)					Prepared: Analyzed: 12/27/2021					
Radium-228	1.02	3.00	pCi/L				-			
DUP (1204982710 D)					Source: 565406001 Prepared: Analyzed: 12/27/2021					
Radium-228	0.429	1.50	pCi/L		<		0-20	0	20	U
MS (1204982711 S)					Source: 565406001 Prepared: Analyzed: 12/27/2021					
Radium-228	123	1.50	pCi/L	148	<	83.3	75-125			
LCS (1204982712-BKS)					Prepared: Analyzed: 12/27/2021					
Radium-228	34.6	3.00	pCi/L	39.2		88.2	75-125			

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 Denver CO 80201

Ryan Dornbos
 Project Number: [none]
 Project: HeimermanPit

Total Metals by 200.8 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2209145 - EPA 200.2

BLANK (1204981130-BLK)

Prepared: 12/16/2021 Analyzed: 12/21/2021

Potassium	ND	0.300	mg/L				-			U
Strontium	ND	0.0100	"				-			U
Iron	ND	0.100	"				-			U
Sodium	ND	0.250	"				-			U
Selenium	ND	0.00500	"				-			U
Magnesium	ND	0.0300	"				-			U
Manganese	ND	0.00500	"				-			U
Calcium	ND	0.200	"				-			U
Boron	ND	0.0150	"				-			U
Barium	ND	0.00400	"				-			U

LCS (1204981131-BKS)

Prepared: 12/16/2021 Analyzed: 12/21/2021

Iron	2.14	0.100	mg/L	2.00	107	85-115				
Sodium	2.02	0.250	"	2.00	101	85-115				
Boron	0.103	0.0150	"	0.100	103	85-115				
Selenium	0.0536	0.00500	"	0.0500	107	85-115				
Potassium	2.05	0.300	"	2.00	102	85-115				
Strontium	0.0540	0.0100	"	0.0500	108	85-115				
Magnesium	2.08	0.0300	"	2.00	104	85-115				
Barium	0.0540	0.00400	"	0.0500	108	85-115				
Calcium	2.14	0.200	"	2.00	107	85-115				
Manganese	0.0509	0.00500	"	0.0500	102	85-115				

DUP (1204981132 D)

Source: 565167001

Prepared: 12/16/2021 Analyzed: 12/21/2021

Magnesium	23.3	0.0300	mg/L		21.2	0-20	9.25	20		
Barium	0.0938	0.00400	"		0.0909	0-20	3.19	20		
Boron	0.227	0.0750	"		0.226	0-20	0.522	20		

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St. Croix Operating, Inc.
 P.O. Box 13799
 Denver CO 80201

Ryan Dornbos
 Project Number: [none]
 Project: HeimermanPit

Total Metals by 200.8 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2209145 - EPA 200.2

DUP (1204981132 D)		Source: 565167001			Prepared: 12/16/2021 Analyzed: 12/21/2021					
Iron	0.0603	0.100	mg/L		0.0609		0-20	1.07	20	J
Manganese	0.00119	0.00500	"		0.00113		0-20	5.01	20	J
Potassium	8.28	0.300	"		8.06		0-20	2.72	20	
Selenium	0.00166	0.00500	"		0.00157		0-20	5.69	20	J
Sodium	170	1.25	"		164		0-20	3.14	20	
Strontium	1.35	0.0500	"		1.34		0-20	1.21	20	
Calcium	210	0.200	"		206		0-20	2.07	20	
MS (1204981133 S)		Source: 565167001			Prepared: 12/16/2021 Analyzed: 12/21/2021					
Iron	2.13	0.100	mg/L	2.00	0.0609	103	75-125			
Barium	0.142	0.00400	"	0.0500	0.0909	103	75-125			
Calcium	209	0.200	"	2.00	206	0	75-125			
Magnesium	25.3	0.0300	"	2.00	21.2	0	75-125			
Manganese	0.0489	0.00500	"	0.0500	0.00113	95.5	75-125			
Potassium	10.1	0.300	"	2.00	8.06	0	75-125			
Selenium	0.0541	0.00500	"	0.0500	0.00157	105	75-125			
Sodium	165	1.25	"	2.00	164	0	75-125			
Strontium	1.36	0.0500	"	0.0500	1.34	0	75-125			
Boron	0.320	0.0750	"	0.100	0.226	94.6	75-125			

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Denver CO 80201

Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

Total Phosphorus by EPA 365.4 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2210359 - EPA 365.4 Prep										
BLANK (1204983200-BLK)					Prepared: 12/20/2021 Analyzed: 12/21/2021					
Phosphorus, Total as P	ND	0.0500	mg/L				-			U
LCS (1204983201-BKS)					Prepared: 12/20/2021 Analyzed: 12/21/2021					
Phosphorus, Total as P	1.09	0.0500	mg/L	1.00		109	80-123			
DUP (1204983202 D)					Prepared: 12/20/2021 Analyzed: 12/21/2021					
		Source: 564457001								
Phosphorus, Total as P	9.24	0.200	mg/L		8.88		0-36	3.97	36	
MS (1204983203 S)					Prepared: 12/20/2021 Analyzed: 12/21/2021					
		Source: 564457001								
Phosphorus, Total as P	13.3	0.200	mg/L	4.00	8.88	111	66-140			

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P.O. Box 13799

Denver CO 80201

Ryan Dornbos

Project Number: [none]

Project: HeimermanPit

Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

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

J-02 Reported value failed to meet established quality control criteria for the precision accuracy.

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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