



May 06, 2022

Chaco Energy

Matt Nelson

455 Sherman St

Denver

CO 80203

Project Name - Some State

Project Number - [none]

Attached are your analytical results for Some State received by Origins Laboratory, Inc. April 22, 2022. This project is associated with Origins project number Y204517-01.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Chaco Energy

455 Sherman St

Denver

CO

80203

Matt Nelson

Project Number: [none]

Project: Some State

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Some-State #1	Y204517-01	Water	April 21, 2022 14:30	04/22/2022 10:00

Origins Laboratory, Inc.



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Matt Nelson
Project Number: [none]
Project: Some State

ORIGINS

LABORATORY, INC

www.originslaboratory.com

4244917

page ☐ of ☐

Client:

Chloro Energy Company

Address:

155 S. Main St. #520

Denver, CO 80203

Telephone Number

Email Address:

Project Manager

Project Name

Project Number

Samples Collected By

John Brown

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	As-Sampled	Other			
Same State #1	4/21/2002	09:30	15	3	6	6							LOGS P. 11-12	1
														2
														3
														4
														5
														6
														7
														8
														9
														10
Relinquished By	Date	Time	Signature	Date	Time	Signature	Date	Time	Signature	Date	Time	Signature	Date	Time
John Brown	4/21/2002	16:00		4/21/2002	16:00		4/21/2002	16:00		4/21/2002	16:00		4/21/2002	16:00
Relinquished By	Date	Time	Signature	Date	Time	Signature	Date	Time	Signature	Date	Time	Signature	Date	Time

78.4

Date Results Needed

Origins Laboratory, Inc.

Byron

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Chaco Energy
455 Sherman St
Denver CO 80203

Matt Nelson
Project Number: [none]
Project: Some State

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y204517

Client: Chaco

Client Project ID: Some State

Checklist Completed by: SL

Date/time completed: 4/22/22

Shipped Via: AD
(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 28.4 °C 1 °C 1 °C (Describe) _____ °C

Thermometer ID: 1004

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"/>		
Is there ice present (document if blue ice is used)		<input checked="" type="checkbox"/>		
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>2 Z vials Broken</u>
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>Nitrate/Nitrite</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽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"/>			<u>H₂O₂/HCl</u>
Additional Comments (if any): <u>revised COC received via email from Matt Nelson on 4/25 JB</u>				

⁽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) JB Date/Time Reviewed 4-25-22

Origins Laboratory, Inc.

J. Bynon

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Chaco Energy
455 Sherman St
Denver CO 80203

Matt Nelson
Project Number: [none]
Project: Some State

Some-State #1
4/21/2022 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y204517-01 (Water)
Origins Laboratory, Inc.

Anions by IC 300.0

Chloride	261	31.2	mg/L	125	B2D2232	AHK	04/22/2022	04/23/2022	
Fluoride	8.02	1.00	"	10	"	AHK	"	04/23/2022	
Bromide	1.69	1.00	"	"	"	AHK	"	"	
Sulfate	3.57	0.250	"	1	"	AHK	"	04/23/2022	
Nitrate	ND	1.00	"	10	"	AHK	"	04/23/2022	
Nitrite	ND	0.100	"	1	"	AHK	"	04/23/2022	

DRO/ORO by EPA 8015D

Diesel (C10-C28)	6.46	5.00	mg/L	1	B2D2613	ZZZ	04/26/2022	04/26/2022	
Residual Range Organics (C28-C40)	ND	10.0	"	"	"	ZZZ	"	"	Ua

Surrogate: o-Terphenyl 65.8 % 50-150 " "

GBTEX + Naphthalene by EPA 8260D

Benzene	7.92	2.00	ug/L	1	B2D2304	ZZZ	04/23/2022	04/25/2022	
Ethylbenzene	117	2.00	"	"	"	ZZZ	"	"	
Toluene	153	2.00	"	"	"	ZZZ	"	"	
Naphthalene	87.9	10.0	"	"	"	ZZZ	"	"	
Gasoline Range Hydrocarbons	3570	200	"	"	"	ZZZ	"	"	
Xylenes, total	623	20.0	"	10	"	ZZZ	"	04/25/2022	

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " 04/25/2022
Surrogate: Toluene-d8 107 % 70-130 " " "

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Matt Nelson
Project Number: [none]
Project: Some State

Some-State #1
4/21/2022 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y204517-01 (Water)
Origins Laboratory, Inc.

GBTEX + Naphthalene by EPA 8260D

Surrogate: 4-Bromofluorobenzene	101 %	70-130			B2D23 04	04/23/2022	04/25/2022
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pH in Water by EPA 9040C

pH	8.19		pH Units	1	B2D2226	TCT	04/22/2022	04/22/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	3550	5.00	uS/cm	"	B2D2227	TCT	04/22/2022	04/22/2022
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Total Dissolved Solids by 2540C

Total Dissolved Solids	2400	5.00	mg/L	"	B2D2401	SCL	04/24/2022	04/25/2022
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Total Metals by EPA 200.8

Barium	1830	10.0	ug/L	1	B2D2206	CW	04/22/2022	04/25/2022
Boron	345	1.00	"	"	"	CW	"	04/29/2022
Cadmium	ND	0.100	"	"	"	CW	"	04/25/2022
Calcium	4150	100	"	"	"	CW	"	"
Iron	373	10.0	"	"	"	CW	"	"
Lead	3.66	0.100	"	"	"	CW	"	"
Magnesium	868	10.0	"	"	"	CW	"	"
Manganese	5.93	0.100	"	"	"	CW	"	"
Potassium	5370	100	"	"	"	CW	"	"

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Some-State #1
4/21/2022 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y204517-01 (Water)
Origins Laboratory, Inc.

Total Metals by EPA 200.8

Selenium	ND	0.100	ug/L	1	B2D2206	CW	04/22/2022	04/25/2022	
Sodium	995000	10000	"	100	"	CW	"	04/25/2022	
Strontium	274	1.00	"	1	"	CW	"	04/25/2022	

Total Suspended Solids by 2540D

Total Suspended Solids	13.0	5.00	mg/L	1	B2D2511	SCL	04/25/2022	04/25/2022	
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GEL Laboratories, LLC

Alkalinity by SM 2320B

Alkalinity, Total as CaCO ₃	1750	4.00	mg/L	1	2259171	HH2	04/21/2022	04/28/2022	
Bicarbonate alkalinity (CaCO ₃)	1750	4.00	"	"	"	HH2	"	"	
Carbonate alkalinity (CaCO ₃)	ND	4.00	"	"	"	HH2	"	"	U

Radium by EPA 903.1

Radium-226	1.47	1.00	pCi/L	1	2257443	LXP1	"	05/01/2022	
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Radium by EPA 904.0

Radium-228	2.47	3.00	pCi/L	1	2257446	JXC9	"	04/29/2022	
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Total Phosphorus by EPA 365.4

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Some-State #1
4/21/2022 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y204517-01 (Water)
GEL Laboratories, LLC

Total Phosphorus by EPA 365.4

Phosphorus, Total as P	2.50	0.0500	mg/L	1	2257666	KLP1	04/25/2022	04/27/2022
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Chaco Energy
455 Sherman St
Denver CO 80203

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Project Number: [none]
Project: Some State

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
Batch B2D2304 - EPA 5030B (Water)										
Blank (B2D2304-BLK1)					Prepared: 04/23/2022 Analyzed: 04/24/2022					
Benzene	ND	2.00	ug/L							Ua
Ethylbenzene	ND	2.00	"							Ua
Toluene	ND	2.00	"							Ua
Naphthalene	ND	10.0	"							Ua
1,2-Dichloroethane	ND	1.00	"							Ua
Gasoline Range Hydrocarbons	ND	200	"							Ua
Xylenes, total	ND	2.00	"							Ua
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.9	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
Batch B2D2304 - EPA 5030B (Water)										
LCS (B2D2304-BS1)					Prepared: 04/23/2022 Analyzed: 04/24/2022					
Benzene	41.8	2.00	ug/L	50.0		83.6	70-130			
Ethylbenzene	43.8	2.00	"	50.0		87.7	70-130			
m,p-Xylene	90.4	4.00	"	100		90.4	70-130			
o-Xylene	45.3	2.00	"	50.0		90.7	70-130			
Toluene	42.9	2.00	"	50.0		85.7	70-130			
Naphthalene	46.0	10.0	"	50.0		91.9	70-130			
1,2-Dichloroethane	47.5	1.00	"	50.0		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.8	70-130			

Origins Laboratory, Inc.



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Chaco Energy
455 Sherman St
Denver CO 80203

Matt Nelson
Project Number: [none]
Project: Some State

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 B2D2304 - EPA 5030B (Water)

Matrix Spike (B2D2304-MS1)		Source: Y204495-01			Prepared: 04/23/2022 Analyzed: 04/24/2022					
Benzene	41.8	2.00	ug/L	50.0	ND	83.6	70-130			
Ethylbenzene	41.4	2.00	"	50.0	ND	82.7	70-130			
m,p-Xylene	84.0	4.00	"	100	ND	84.0	70-130			
o-Xylene	43.6	2.00	"	50.0	ND	87.2	70-130			
Toluene	40.3	2.00	"	50.0	ND	80.6	70-130			
Naphthalene	45.1	10.0	"	50.0	0.780	88.6	70-130			
1,2-Dichloroethane	49.1	1.00	"	50.0	ND	98.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.9	70-130			

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Chaco Energy
455 Sherman St
Denver CO 80203

Matt Nelson
Project Number: [none]
Project: Some State

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
Batch B2D2304 - EPA 5030B (Water)										
Matrix Spike Dup (B2D2304-MSD1)		Source: Y204495-01			Prepared: 04/23/2022 Analyzed: 04/24/2022					
Benzene	43.6	2.00	ug/L	50.0	ND	87.2	70-130	4.22	20	
Ethylbenzene	43.6	2.00	"	50.0	ND	87.1	70-130	5.16	20	
m,p-Xylene	90.3	4.00	"	100	ND	90.3	70-130	7.19	20	
o-Xylene	45.7	2.00	"	50.0	ND	91.3	70-130	4.62	20	
Toluene	43.6	2.00	"	50.0	ND	87.3	70-130	7.93	20	
Naphthalene	47.2	10.0	"	50.0	0.780	92.9	70-130	4.68	20	
1,2-Dichloroethane	50.1	1.00	"	50.0	ND	100	70-130	1.98	20	
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.1	70-130			

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Denver CO 80203

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Project Number: [none]
Project: Some State

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 B2D2613 - EPA 3511 Mod.

Blank (B2D2613-BLK1)

Prepared: 04/26/2022 Analyzed: 04/26/2022

Diesel (C10-C28)	ND	5.00	mg/L							Ua
Residual Range Organics (C28-C40)	ND	10.0	"							Ua
Surrogate: o-Terphenyl	4.0		"	4.98		80.3	50-150			

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Denver CO 80203

Matt Nelson
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Project: Some State

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 B2D2613 - EPA 3511 Mod.

LCS (B2D2613-BS1)

Prepared: 04/26/2022 Analyzed: 04/26/2022

Diesel (C10-C28)	95.1	5.00	mg/L	100		95.1	70-130			
Residual Range Organics (C28-C40)	87.7	10.0	"	100		87.7	70-130			
Surrogate: o-Terphenyl	4.5		"	4.98		90.3	50-150			

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Project: Some State

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 B2D2613 - EPA 3511 Mod.

LCS Dup (B2D2613-BSD1)

Prepared: 04/26/2022 Analyzed: 04/26/2022

Diesel (C10-C28)	78.6	5.00	mg/L	100		78.6	70-130	19.0	20	
Residual Range Organics (C28-C40)	85.1	10.0	"	100		85.1	70-130	3.04	20	
Surrogate: o-Terphenyl	3.8		"	4.98		76.5	50-150			

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Matt Nelson
Project Number: [none]
Project: Some State

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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*** DEFAULT GENERAL METHOD *** - 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 B2D2206 - Default Prep Metals

Blank (B2D2206-BLK1)

Prepared: 04/22/2022 Analyzed: 04/25/2022

Barium	ND	10.0	ug/L
Boron	ND	1.00	"
Calcium	ND	100	"
Iron	ND	10.0	"
Magnesium	ND	10.0	"
Manganese	ND	0.100	"
Potassium	ND	100	"
Selenium	ND	0.100	"
Sodium	ND	100	"
Strontium	ND	1.00	"

LCS (B2D2206-BS1)

Prepared: 04/22/2022 Analyzed: 04/25/2022

Barium	10400	10.0	ug/L	10000	104	85-115
Boron	95.8	1.00	"	100	95.8	85-115
Calcium	9910	100	"	10000	99.1	85-115
Iron	10400	10.0	"	10000	104	85-115
Magnesium	10000	10.0	"	10000	100	85-115
Manganese	103	0.100	"	100	103	85-115
Potassium	10000	100	"	10000	100	85-115
Selenium	100	0.100	"	100	100	85-115
Sodium	9800	100	"	10000	98.0	85-115
Strontium	1060	1.00	"	1000	106	85-115

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*** DEFAULT GENERAL METHOD *** - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D2206 - Default Prep Metals										
LCS (B2D2206-BS1)					Prepared: 04/22/2022 Analyzed: 04/25/2022					
Matrix Spike (B2D2206-MS1)					Source: Y204463-01		Prepared: 04/22/2022 Analyzed: 04/25/2022			
Barium	20400	10.0	ug/L	20000	114	102	70-130			QM-07
Boron	218	1.00	"	200	158000	NR	70-130			
Calcium	135000	100	"	20000	114000	102	70-130			
Iron	19900	10.0	"	20000	15.8	99.3	70-130			
Magnesium	41300	10.0	"	20000	23000	91.2	70-130			
Manganese	221	0.100	"	200	2.46	109	70-130			
Potassium	27800	100	"	20000	8100	98.4	70-130			
Selenium	207	0.100	"	200	4.71	101	70-130			
Sodium	207000	100	"	20000	192000	76.5	70-130			
Strontium	2940	1.00	"	2000	923	101	70-130			
Matrix Spike Dup (B2D2206-MSD1)					Source: Y204463-01		Prepared: 04/22/2022 Analyzed: 04/25/2022			
Barium	20700	10.0	ug/L	20000	114	103	70-130	1.20	25	QM-07
Boron	203	1.00	"	200	158000	NR	70-130	7.25	25	
Calcium	131000	100	"	20000	114000	86.4	70-130	2.34	25	
Iron	20300	10.0	"	20000	15.8	101	70-130	2.00	25	
Magnesium	40900	10.0	"	20000	23000	89.0	70-130	1.06	25	
Manganese	206	0.100	"	200	2.46	102	70-130	6.99	25	
Potassium	27900	100	"	20000	8100	98.9	70-130	0.392	25	
Selenium	205	0.100	"	200	4.71	100	70-130	0.895	25	
Sodium	203000	100	"	20000	192000	54.4	70-130	2.15	25	QM-02
Strontium	2960	1.00	"	2000	923	102	70-130	0.829	25	

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Chaco Energy
455 Sherman St
Denver CO 80203

Matt Nelson
Project Number: [none]
Project: Some State

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 B2D2226 - NO PREP										
Duplicate (B2D2226-DUP1)		Source: Y204517-01			Prepared: 04/22/2022 Analyzed: 04/22/2022					
pH	8.18		pH Units		8.19			0.122	2.51	
Batch B2D2227 - NO PREP										
Blank (B2D2227-BLK1)		Prepared: 04/22/2022 Analyzed: 04/22/2022								
Specific Conductance (EC)	2.10	5.00	uS/cm							
Duplicate (B2D2227-DUP1)		Source: Y204517-01			Prepared: 04/22/2022 Analyzed: 04/22/2022					
Specific Conductance (EC)	3550	5.00	uS/cm		3550			0.0676	10	
Batch B2D2232 - Filter .45um non acidified										
Blank (B2D2232-BLK1)		Prepared: 04/22/2022 Analyzed: 04/23/2022								
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 (B2D2232-BS1)		Prepared: 04/22/2022 Analyzed: 04/23/2022								
Chloride	4.00	0.250	mg/L	4.00		100	90-110			
Fluoride	4.02	0.100	"	4.00		100	90-110			
Bromide	4.01	0.100	"	4.00		100	90-110			
Sulfate	4.03	0.250	"	4.00		101	90-110			
Nitrate	4.04	0.100	"	4.00		101	90-110			
Nitrite	4.02	0.100	"	4.00		101	90-110			

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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
Batch B2D2232 - Filter .45um non acidified										
Matrix Spike (B2D2232-MS1)		Source: Y204517-01			Prepared: 04/22/2022 Analyzed: 04/23/2022					
Chloride	769	31.2	mg/L	500	261	102	90-110			
Fluoride	520	12.5	"	500	8.02	102	90-110			
Bromide	510	12.5	"	500	1.69	102	90-110			
Sulfate	512	31.2	"	500	3.57	102	90-110			
Nitrate	508	12.5	"	500	ND	102	90-110			
Nitrite	506	12.5	"	500	ND	101	90-110			
Matrix Spike Dup (B2D2232-MSD1)		Source: Y204517-01			Prepared: 04/22/2022 Analyzed: 04/23/2022					
Chloride	766	31.2	mg/L	500	261	101	90-110	0.386	5	
Fluoride	522	12.5	"	500	8.02	103	90-110	0.317	5	
Bromide	511	12.5	"	500	1.69	102	90-110	0.223	5	
Sulfate	511	31.2	"	500	3.57	101	90-110	0.242	5	
Nitrate	510	12.5	"	500	ND	102	90-110	0.412	5	
Nitrite	503	12.5	"	500	ND	101	90-110	0.488	5	
Batch B2D2401 - NO PREP										
Blank (B2D2401-BLK1)		Prepared: 04/24/2022 Analyzed: 04/25/2022								
Total Dissolved Solids	ND	5.00	mg/L							
LCS (B2D2401-BS1)		Prepared: 04/24/2022 Analyzed: 04/25/2022								
Total Dissolved Solids	974	5.00	mg/L	1000		97.4	90-110			
LCS (B2D2401-BS2)		Prepared: 04/24/2022 Analyzed: 04/25/2022								
Total Dissolved Solids	970	5.00	mg/L	1000		97.0	90-110			
LCS (B2D2401-BS3)		Prepared: 04/24/2022 Analyzed: 04/25/2022								
Total Dissolved Solids	936	5.00	mg/L	1000		93.6	90-110			

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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
Batch B2D2401 - NO PREP										
Duplicate (B2D2401-DUP1)		Source: Y204495-13			Prepared: 04/24/2022 Analyzed: 04/25/2022					
Total Dissolved Solids	915	5.00	mg/L		924			0.979	10	
Batch B2D2511 - NO PREP										
Blank (B2D2511-BLK1)		Prepared: 04/25/2022 Analyzed: 04/25/2022								
Total Suspended Solids	ND	5.00	mg/L							
LCS (B2D2511-BS1)		Prepared: 04/25/2022 Analyzed: 04/25/2022								
Total Suspended Solids	96.0	5.00	mg/L	100		96.0	75-110			
Duplicate (B2D2511-DUP1)		Source: Y204514-01			Prepared: 04/25/2022 Analyzed: 04/25/2022					
Total Suspended Solids	4.00	5.00	mg/L		3.00			28.6	20	QR-05

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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 2259171 -										
LCS (1205077508-BKS)					Prepared: Analyzed: 04/28/2022					
Alkalinity, Total as CaCO ₃	107	4.00	mg/L	100		107	90-110			
DUP (1205077509 D)					Source: 577854003 Prepared: Analyzed: 04/28/2022					
Bicarbonate alkalinity (CaCO ₃)	163	4.00	mg/L		166		0-20	1.82	20	
Carbonate alkalinity (CaCO ₃)	96.0	4.00	"		94.0		0-20	2.11	20	
Alkalinity, Total as CaCO ₃	259	4.00	"		260		0-20	0.385	20	
MS (1205077510 S)					Source: 577854003 Prepared: Analyzed: 04/28/2022					
Alkalinity, Total as CaCO ₃	361	4.00	mg/L	100	260	101	80-120			

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Radium 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 2257443 -										
BLANK (1205074107-BLK)					Prepared: Analyzed: 05/01/2022					
Radium-226	0.0392	1.00	pCi/L				-			U
DUP (1205074108 D)					Source: 577441001 Prepared: Analyzed: 05/01/2022					
Radium-226	0.386	1.00	pCi/L		0.412		0-20	6.49	20	U
MS (1205074109 S)					Source: 577441001 Prepared: Analyzed: 05/01/2022					
Radium-226	124	1.00	pCi/L	134	0.412	92.7	75-125			
LCS (1205074110-BKS)					Prepared: Analyzed: 05/01/2022					
Radium-226	23.7	1.00	pCi/L	26.5		89.5	75-125			

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Radium 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 2257446 -										
BLANK (1205074119-BLK)					Prepared: Analyzed: 04/29/2022					
Radium-228	1.82	3.00	pCi/L				-			U
DUP (1205074120 D)					Source: 577441001 Prepared: Analyzed: 04/29/2022					
Radium-228	1.29	3.00	pCi/L		<		0-20	0	20	U
MS (1205074121 S)					Source: 577441001 Prepared: Analyzed: 04/29/2022					
Radium-228	285	3.00	pCi/L	277	<	103	75-125			
LCS (1205074122-BKS)					Prepared: Analyzed: 04/29/2022					
Radium-228	49.0	3.00	pCi/L	45.8		107	75-125			

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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 2257666 - EPA 365.4 Prep										
BLANK (1205074618-BLK)					Prepared: 04/25/2022 Analyzed: 04/27/2022					
Phosphorus, Total as P	ND	0.0500	mg/L				-			U
LCS (1205074619-BKS)					Prepared: 04/25/2022 Analyzed: 04/27/2022					
Phosphorus, Total as P	1.03	0.0500	mg/L	1.00		103	80-123			
DUP (1205074620 D)					Prepared: 04/25/2022 Analyzed: 04/27/2022					
		Source: 576501001								
Phosphorus, Total as P	4.32	0.200	mg/L		4.32		0-36	0	36	
MS (1205074621 S)					Prepared: 04/25/2022 Analyzed: 04/27/2022					
		Source: 576501001								
Phosphorus, Total as P	8.24	0.200	mg/L	4.00	4.32	98	66-140			

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Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

QR-05 Sample results fall below the RL. RPD results are insignificant for batch and are thus acceptable.

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

QM-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

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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