

Additional Information

Formation Water Analysis
12/14/20



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03 November 2020

Dave Brown
DJR Operating
1 Road 3263
Aztec, NM 87410
RE: API

Enclosed are the results of analyses for samples received by the laboratory on 10/30/20 11:07.
If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Debbie Zufelt'. The script is cursive and fluid, with the first name 'Debbie' and last name 'Zufelt' clearly legible.

Debbie Zufelt
Reports Manager

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water.

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8.



DJR Operating
1 Road 3263
Aztec NM, 87410

Project: API
Project Name / Number: North Alamito WDW #1
Project Manager: Dave Brown

Reported:
11/03/20 15:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
North Alamito WDW #1	2010288-01	Water	10/29/20 15:30	10/30/20 11:07	

Green Analytical Laboratories

A handwritten signature in black ink that reads 'Debbie Zufelt'.

Debbie Zufelt, Reports Manager

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DJR Operating
1 Road 3263
Aztec NM, 87410Project: API
Project Name / Number: North Alamito WDW #1
Project Manager: Dave BrownReported:
11/03/20 15:47

North Alamito WDW #1

2010288-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Alkalinity, Bicarbonate as CaCO ₃ *	290	10.0	7.16	mg/L	5	10/30/20 14:00	2320 B		JDA
Alkalinity, Carbonate as CaCO ₃ *	<10.0	10.0		mg/L	5	10/30/20 14:00	2320 B		JDA
Alkalinity, Hydroxide as CaCO ₃ *	<10.0	10.0		mg/L	5	10/30/20 14:00	2320 B		JDA
Alkalinity, Total as CaCO ₃ *	290	10.0	7.16	mg/L	5	10/30/20 14:00	2320 B		JDA
Chloride*	2350	200	17.7	mg/L	200	11/02/20 12:04	EPA300.0		JDA
Conductivity*	19300	1.00		umho/cm @ 25.0°C	1	10/30/20 13:35	2510 B		JDA
pH*	7.40			pH Units	1	10/30/20 11:15	EPA150.1		JDA
Resistivity	51.8			ohm/cm	1	10/30/20 13:35	2510 B		JDA
Total Dissolved Solids*	13200	20.0		mg/L	2	10/30/20 14:29	EPA160.1		JDA
Specific Gravity	1.011	0.8000		No Unit	1	10/30/20 14:00	ASTM D1429-03		JDA
Sulfate*	5300	200	30.5	mg/L	200	11/02/20 12:04	EPA300.0		JDA

Total Recoverable Metals by ICP (E200.7)

Iron*	55.1	1.25	0.407	mg/L	25	11/03/20 11:33	EPA200.7		AES
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Dissolved Metals by ICP

Hardness	494	16.5	3.45	mg/L	25	11/03/20 14:30	2340 B		AES
Barium*	<0.500	0.500	0.039	mg/L	25	11/03/20 14:30	EPA200.7		AES
Calcium*	178	2.50	0.415	mg/L	25	11/03/20 14:30	EPA200.7		AES
Iron*	<1.25	1.25	0.460	mg/L	25	11/03/20 14:30	EPA200.7		AES
Magnesium*	12.0	2.50	0.587	mg/L	25	11/03/20 14:30	EPA200.7		AES
Manganese*	0.514	0.500	0.039	mg/L	25	11/03/20 14:30	EPA200.7		AES
Potassium*	1280	25.0	3.25	mg/L	25	11/03/20 14:30	EPA200.7		AES
Sodium*	3110	25.0	2.51	mg/L	25	11/03/20 14:30	EPA200.7		AES
Strontium*	8.44	2.50	0.104	mg/L	25	11/03/20 14:30	EPA200.7		AES

Cation/Anion Balance -98

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1 Road 3263
Aztec NM, 87410Project: API
Project Name / Number: North Alamito WDW #1
Project Manager: Dave BrownReported:
11/03/20 15:47

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B202316 - General Prep - Wet Chem

Blank (B202316-BLK1)

Prepared & Analyzed: 10/30/20

Total Dissolved Solids ND 10.0 mg/L

Duplicate (B202316-DUP1)

Source: 2010276-01

Prepared & Analyzed: 10/30/20

Total Dissolved Solids 415 10.0 mg/L 395 4.94 20

Reference (B202316-SRM1)

Prepared & Analyzed: 10/30/20

Total Dissolved Solids 340 10.0 mg/L 380 89.5 85-115

Batch B202317 - General Prep - Wet Chem

Blank (B202317-BLK1)

Prepared & Analyzed: 10/30/20

Alkalinity, Total as CaCO3 ND 10.0 mg/L

LCS (B202317-BS1)

Prepared & Analyzed: 10/30/20

Alkalinity, Total as CaCO3 105 10.0 mg/L 100 105 85-115

LCS Dup (B202317-BSD1)

Prepared & Analyzed: 10/30/20

Alkalinity, Total as CaCO3 96.0 10.0 mg/L 100 96.0 85-115 8.96 20

Batch B202318 - General Prep - Wet Chem

Duplicate (B202318-DUP1)

Source: 2010288-01

Prepared & Analyzed: 10/30/20

Specific Gravity 1.011 0.8000 No Unit 1.011 0.00 20

Batch B202324 - General Prep - Wet Chem

Blank (B202324-BLK1)

Prepared & Analyzed: 11/02/20

Chloride ND 1.00 mg/L

Sulfate ND 1.00 mg/L

LCS (B202324-BS1)

Prepared & Analyzed: 11/02/20

Chloride 23.4 1.00 mg/L 25.0 93.4 90-110

Sulfate 24.6 1.00 mg/L 25.0 98.3 90-110

LCS Dup (B202324-BSD1)

Prepared & Analyzed: 11/02/20

Chloride 24.4 1.00 mg/L 25.0 97.5 90-110 4.23 20

Sulfate 25.1 1.00 mg/L 25.0 100 90-110 1.95 20

Batch B202330 - General Prep - Wet Chem

Duplicate (B202330-DUP1)

Source: 2010288-01

Prepared & Analyzed: 10/30/20

Conductivity 19500 1.00 umho/cm @ 25.0°C 19300 0.774 20

Reference (B202330-SRM1)

Prepared & Analyzed: 10/30/20

Conductivity 623 1.00 umho/cm @ 25.0°C 599 104 90-110

Batch B202331 - General Prep - Wet Chem

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Debbie Zufelt, Reports Manager

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1 Road 3263
Aztec NM, 87410Project: API
Project Name / Number: North Alamito WDW #1
Project Manager: Dave BrownReported:
11/03/20 15:47**General Chemistry - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B202331 - General Prep - Wet Chem (Continued)**Duplicate (B202331-DUP1)** Source: 2010288-01 Prepared & Analyzed: 10/30/20

pH	7.43		pH Units	7.40				0.405	20	
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Reference (B202331-SRM1) Prepared & Analyzed: 10/30/20

pH	6.99		pH Units	7.00		99.9	98.57-101.42			
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Total Recoverable Metals by ICP (E200.7) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B202320 - Total Rec. 200.7/200.8/200.2**Blank (B202320-BLK1)** Prepared: 11/02/20 Analyzed: 11/03/20

Iron	ND	0.050	mg/L							
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LCS (B202320-BS1) Prepared: 11/02/20 Analyzed: 11/03/20

Iron	4.06	0.050	mg/L	4.00		102	85-115			
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LCS Dup (B202320-BSD1) Prepared: 11/02/20 Analyzed: 11/03/20

Iron	4.20	0.050	mg/L	4.00		105	85-115	3.29	20	
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Project Manager: Dave BrownReported:
11/03/20 15:47

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B202342 - Diss. 200.7/200.8

Blank (B202342-BLK1)

Prepared & Analyzed: 11/03/20

Barium	ND	0.020	mg/L
Calcium	ND	0.100	mg/L
Iron	ND	0.050	mg/L
Magnesium	ND	0.100	mg/L
Manganese	ND	0.020	mg/L
Potassium	ND	1.00	mg/L
Sodium	ND	1.00	mg/L
Strontium	ND	0.100	mg/L

LCS (B202342-BS1)

Prepared & Analyzed: 11/03/20

Barium	2.31	0.020	mg/L	2.50	92.5	85-115
Calcium	4.82	0.100	mg/L	5.00	96.4	85-115
Iron	4.70	0.050	mg/L	5.00	94.0	85-115
Magnesium	24.6	0.100	mg/L	25.0	98.6	85-115
Manganese	2.36	0.020	mg/L	2.50	94.4	85-115
Potassium	10.0	1.00	mg/L	10.0	100	85-115
Sodium	3.95	1.00	mg/L	4.05	97.6	85-115
Strontium	4.66	0.100	mg/L	5.00	93.3	85-115

LCS Dup (B202342-BSD1)

Prepared & Analyzed: 11/03/20

Barium	2.27	0.020	mg/L	2.50	90.6	85-115	2.02	20
Calcium	4.55	0.100	mg/L	5.00	91.1	85-115	5.72	20
Iron	4.48	0.050	mg/L	5.00	89.7	85-115	4.73	20
Magnesium	23.3	0.100	mg/L	25.0	93.4	85-115	5.45	20
Manganese	2.24	0.020	mg/L	2.50	89.5	85-115	5.27	20
Potassium	9.61	1.00	mg/L	10.0	96.1	85-115	4.02	20
Sodium	3.77	1.00	mg/L	4.05	93.2	85-115	4.68	20
Strontium	4.59	0.100	mg/L	5.00	91.9	85-115	1.55	20

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Aztec NM, 87410

Project: API
Project Name / Number: North Alamito WDW #1
Project Manager: Dave Brown

Reported:
11/03/20 15:47

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
*Results reported on as received basis unless designated as dry.
RPD Relative Percent Difference
LCS Laboratory Control Sample (Blank Spike)
RL Report Limit
MDL Method Detection Limit

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FORM-006
COC - Revision 6.0

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