GCC Energy

"Safety as a Value"

Telephone: 970.385.4528
Facsimile: 970.385.4638

GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326

March 26, 2018

State of Colorado
Division of Reclamation, Mining & Safety
1313 Sherman Street, Room 215
Denver, Colorado 80203-2273

Attn: Rob Zuber

Re: Field Well Water Analysis; King I & King II
1st Quarter 2018

Mr. Zuber:

Please find enclosed a copy of quarterly water analysis reports for the 1st quarter of 2018 for the following water monitoring locations:

- Wiltse Well
- #1 Up-gradient Monitoring Well
- #2 Down-gradient Monitoring Well
- Hay Gulch Irrigation Ditch, Down-gradient
- Hay Gulch Irrigation Ditch, Up-gradient
- MW-1-A, MW-1-C
- MW-3-MI, MW-3-A, MW-3-C
- MW-4-MI, MW-4-A, MW-4-C
- MW-HGA-4

This quarter MW-99-MI was a blind duplicate for MW-HGA-4.

Also enclosed are summary sheets for the above water monitoring locations which include field collection data.

Please call Tom Bird at (970) 385-4528 x 6503 if you have any questions or comments.

Sincerely,

Tom Bird
Manager, Coal Services
GCC Energy, LLC

75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

15 March 2018

Tom Bird
GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326

RE: GCC GW & SW Baseline

Enclosed are the results of analyses for samples received by the laboratory on 02/22/18 16:03.
If you need any further assistance, please feel free to contact me.

Sincerely,

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.

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Well #2 Downgradient	1802177-01	Water	02/22/18 12:02	02/22/18 16:03
Hay Gulch Ditch Downgradient	1802177-02	Water	02/22/18 11:08	02/22/18 16:03
MW-HGA-4	1802177-03	Water	02/22/18 14:05	02/22/18 16:03
MW-99	1802177-04	Water	02/22/18 13:55	02/22/18 16:03
Wiltse Well	1802177-05	Water	02/22/18 10:41	02/22/18 16:03
Hay Gulch Ditch Upgradient	1802177-06	Water	02/22/18 14:15	02/22/18 16:03
Well #1 Upgradient	1802177-07	Water	02/22/18 13:03	02/22/18 16:03

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Well #2 Downgradient

1802177-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**333**	10.0		mg/L	1	03/02/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	03/02/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	03/02/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**333**	10.0		mg/L	1	03/02/18	2320 B		JDU
Chloride*	**24.7**	1.00	0.143	mg/L	1	03/01/18	EPA300.0		JDA
Fluoride*	**0.244**	0.100	0.0160	mg/L	1	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**7.62**			pH Units	1	02/28/18	EPA150.1	H4	JDU
Total Dissolved Solids*	**515**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Sulfate*	**104**	5.00	0.782	mg/L	5	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**2.10**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.020	mg/L	1	03/01/18	EPA200.7		JDA
Calcium*	**70.1**	0.100	0.036	mg/L	1	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**412**	0.662	0.195	mg/L	1	03/01/18	2340 B		JDA
Iron*	**0.060**	0.050	0.014	mg/L	1	03/01/18	EPA200.7		JDA
Magnesium*	**57.4**	0.100	0.026	mg/L	1	03/01/18	EPA200.7		JDA
Potassium*	**1.76**	1.00	0.094	mg/L	1	03/01/18	EPA200.7		JDA
Silica (Si02)	**11.1**	1.07	0.298	mg/L	1	03/01/18	Calculation		JDA
Silicon	**5.19**	0.500	0.139	mg/L	1	03/01/18	EPA200.7		JDA
Sodium*	**19.4**	1.00	0.087	mg/L	1	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0010**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0056**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.304**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0024**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	**0.0012**	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0013**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	**0.0053**	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Well #2 Downgradient

1802177-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Hay Gulch Ditch Downgradient

1802177-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**259**	10.0		mg/L	1	03/02/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	03/02/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	03/02/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**265**	10.0		mg/L	1	03/02/18	2320 B		JDU
Chloride*	**23.1**	1.00	0.143	mg/L	1	03/01/18	EPA300.0		JDA
Fluoride*	**0.308**	0.100	0.0160	mg/L	1	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
Oil & Grease (HEM)	<5.00	5.00	0.763	mg/L	1	03/09/18	EPA1664 A		JDU
pH*	**8.17**			pH Units	1	02/28/18	EPA150.1	H4	JDU
SAR	**0.43**			No Unit	1	03/01/18	Calculation		JDA
Total Dissolved Solids*	**420**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Total Suspended Solids*	**49.5**	1.00		mg/L	0.5	02/27/18	EPA160.2		LLG
Sulfate*	**86.5**	5.00	0.782	mg/L	5	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**1.56**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.020	mg/L	1	03/01/18	EPA200.7		JDA
Calcium*	**75.4**	0.100	0.036	mg/L	1	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**329**	0.662	0.195	mg/L	1	03/01/18	2340 B		JDA
Iron*	<0.050	0.050	0.014	mg/L	1	03/01/18	EPA200.7		JDA
Magnesium*	**34.2**	0.100	0.026	mg/L	1	03/01/18	EPA200.7		JDA
Potassium*	**2.84**	1.00	0.094	mg/L	1	03/01/18	EPA200.7		JDA
Silica (Si02)	**10.7**	1.07	0.298	mg/L	1	03/01/18	Calculation		JDA
Silicon	**5.01**	0.500	0.139	mg/L	1	03/01/18	EPA200.7		JDA
Sodium*	**18.1**	1.00	0.087	mg/L	1	03/01/18	EPA200.7		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Hay Gulch Ditch Downgradient

1802177-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Metals by ICPMS									
Arsenic*	**0.0005**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0005**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.0962**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0010**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	**0.0011**	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0012**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	<0.0020	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA
Total Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00005	mg/L	1	03/09/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

MW-HGA-4

1802177-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**460**	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**460**	10.0		mg/L	5	03/02/18	2320 B		JDU
Chloride*	**8.43**	1.00	0.143	mg/L	1	03/01/18	EPA300.0		JDA
Fluoride*	**0.496**	0.100	0.0160	mg/L	1	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**7.58**			pH Units	1	02/28/18	EPA150.1	H4	JDU
Total Dissolved Solids*	**740**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Sulfate*	**222**	5.00	0.782	mg/L	5	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**4.56**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.020	mg/L	1	03/01/18	EPA200.7		JDA
Calcium*	**110**	0.100	0.036	mg/L	1	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**561**	0.662	0.195	mg/L	1	03/01/18	2340 B		JDA
Iron*	**7.60**	0.050	0.014	mg/L	1	03/01/18	EPA200.7		JDA
Magnesium*	**69.3**	0.100	0.026	mg/L	1	03/01/18	EPA200.7		JDA
Potassium*	**2.17**	1.00	0.094	mg/L	1	03/01/18	EPA200.7		JDA
Silica (Si02)	**15.8**	1.07	0.298	mg/L	1	03/01/18	Calculation		JDA
Silicon	**7.37**	0.500	0.139	mg/L	1	03/01/18	EPA200.7		JDA
Sodium*	**26.5**	1.00	0.087	mg/L	1	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0037**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0006**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**1.99**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0030**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	<0.0010	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0004**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	<0.0020	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

MW-HGA-4

1802177-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

MW-99

1802177-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**410**	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**410**	10.0		mg/L	5	03/02/18	2320 B		JDU
Chloride*	**8.19**	1.00	0.143	mg/L	1	03/01/18	EPA300.0		JDA
Fluoride*	**0.494**	0.100	0.0160	mg/L	1	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**6.34**			pH Units	1	02/28/18	EPA150.1	H4	JDU
Total Dissolved Solids*	**740**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Sulfate*	**214**	10.0	1.56	mg/L	10	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**4.49**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.020	mg/L	1	03/01/18	EPA200.7		JDA
Calcium*	**111**	0.100	0.036	mg/L	1	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**564**	0.662	0.195	mg/L	1	03/01/18	2340 B		JDA
Iron*	**7.69**	0.050	0.014	mg/L	1	03/01/18	EPA200.7		JDA
Magnesium*	**69.7**	0.100	0.026	mg/L	1	03/01/18	EPA200.7		JDA
Potassium*	**2.14**	1.00	0.094	mg/L	1	03/01/18	EPA200.7		JDA
Silica (Si02)	**15.8**	1.07	0.298	mg/L	1	03/01/18	Calculation		JDA
Silicon	**7.37**	0.500	0.139	mg/L	1	03/01/18	EPA200.7		JDA
Sodium*	**26.7**	1.00	0.087	mg/L	1	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0035**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0005**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**1.93**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0029**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	<0.0010	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0004**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	<0.0020	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

MW-99

1802177-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Wiltse Well

1802177-05 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**445**	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	03/02/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**445**	10.0		mg/L	5	03/02/18	2320 B		JDU
Chloride*	**66.7**	5.00	0.717	mg/L	5	03/01/18	EPA300.0		JDA
Fluoride*	<0.500	0.500	0.0798	mg/L	5	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	**2.26**	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**7.70**			pH Units	1	02/28/18	EPA150.1	H4	JDU
Total Dissolved Solids*	**1740**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Sulfate*	**832**	25.0	3.91	mg/L	25	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**3.37**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.040	mg/L	2	03/01/18	EPA200.7		JDA
Calcium*	**211**	0.200	0.072	mg/L	2	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**1090**	1.32	0.390	mg/L	2	03/01/18	2340 B		JDA
Iron*	**0.132**	0.100	0.028	mg/L	2	03/01/18	EPA200.7		JDA
Magnesium*	**136**	0.200	0.051	mg/L	2	03/01/18	EPA200.7		JDA
Potassium*	**4.73**	2.00	0.189	mg/L	2	03/01/18	EPA200.7		JDA
Silica (Si02)	**14.1**	2.14	0.596	mg/L	2	03/01/18	Calculation		JDA
Silicon	**6.58**	1.00	0.279	mg/L	2	03/01/18	EPA200.7		JDA
Sodium*	**80.4**	2.00	0.174	mg/L	2	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0009**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0020**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.845**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0020**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	**0.0027**	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0025**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	**0.0216**	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Wiltse Well

1802177-05 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Hay Gulch Ditch Upgradient

1802177-06 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**244**	10.0		mg/L	1	03/13/18	2320 B	H2	JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	03/13/18	2320 B	H2	JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	03/13/18	2320 B	H2	JDU
Alkalinity, Total as CaCO3*	**244**	10.0		mg/L	1	03/13/18	2320 B	H2	JDU
Chloride*	**46.7**	10.0	1.43	mg/L	10	03/01/18	EPA300.0		JDA
Fluoride*	**0.285**	0.100	0.0160	mg/L	1	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	**0.105**	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
Oil & Grease (HEM)	<5.00	5.00	0.763	mg/L	1	03/09/18	EPA1664 A		JDU
pH*	**8.39**			pH Units	1	02/28/18	EPA150.1	H4	JDU
SAR	**0.68**			No Unit	1	03/01/18	Calculation		JDA
Total Dissolved Solids*	**700**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Total Suspended Solids*	**6.01**	1.00		mg/L	0.5	02/27/18	EPA160.2		LLG
Sulfate*	**229**	10.0	1.56	mg/L	10	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**1.81**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.020	mg/L	1	03/01/18	EPA200.7		JDA
Calcium*	**87.3**	0.100	0.036	mg/L	1	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**489**	0.662	0.195	mg/L	1	03/01/18	2340 B		JDA
Iron*	<0.050	0.050	0.014	mg/L	1	03/01/18	EPA200.7		JDA
Magnesium*	**65.9**	0.100	0.026	mg/L	1	03/01/18	EPA200.7		JDA
Potassium*	**3.52**	1.00	0.094	mg/L	1	03/01/18	EPA200.7		JDA
Silica (Si02)	**11.0**	1.07	0.298	mg/L	1	03/01/18	Calculation		JDA
Silicon	**5.14**	0.500	0.139	mg/L	1	03/01/18	EPA200.7		JDA
Sodium*	**34.6**	1.00	0.087	mg/L	1	03/01/18	EPA200.7		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Hay Gulch Ditch Upgradient

1802177-06 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0004	mg/L	5	02/27/18	EPA200.8		JDA
Cadmium*	<0.0005	0.0005	0.0005	mg/L	5	02/27/18	EPA200.8		JDA
Copper*	**0.0007**	0.0005	0.0002	mg/L	5	02/27/18	EPA200.8		JDA
Lead*	<0.0025	0.0025	0.0001	mg/L	5	02/27/18	EPA200.8		JDA
Manganese*	**0.0049**	0.0025	0.0014	mg/L	5	02/27/18	EPA200.8		JDA
Molybdenum*	<0.0025	0.0025	0.0003	mg/L	5	02/27/18	EPA200.8		JDA
Selenium*	<0.0050	0.0050	0.0008	mg/L	5	02/27/18	EPA200.8		JDA
Uranium	**0.0013**	0.0005	0.00007	mg/L	5	02/27/18	EPA200.8		JDA
Zinc*	<0.0100	0.0100	0.0045	mg/L	5	02/27/18	EPA200.8		JDA
Total Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00005	mg/L	1	03/09/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Well #1 Upgradient

1802177-07 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**620**	10.0		mg/L	10	03/13/18	2320 B	H2	JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	03/13/18	2320 B	H2	JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	03/13/18	2320 B	H2	JDU
Alkalinity, Total as CaCO3*	**620**	10.0		mg/L	10	03/13/18	2320 B	H2	JDU
Chloride*	**4.30**	1.00	0.143	mg/L	1	03/01/18	EPA300.0		JDA
Fluoride*	**0.354**	0.100	0.0160	mg/L	1	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**7.75**			pH Units	1	02/28/18	EPA150.1	H4	JDU
Total Dissolved Solids*	**745**	10.0		mg/L	1	03/01/18	EPA160.1		LLG
Sulfate*	**106**	5.00	0.782	mg/L	5	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**3.37**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.020	mg/L	1	03/01/18	EPA200.7		JDA
Calcium*	**53.4**	0.100	0.036	mg/L	1	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**274**	0.662	0.195	mg/L	1	03/01/18	2340 B		JDA
Iron*	**1.44**	0.050	0.014	mg/L	1	03/01/18	EPA200.7		JDA
Magnesium*	**34.2**	0.100	0.026	mg/L	1	03/01/18	EPA200.7		JDA
Potassium*	**3.09**	1.00	0.094	mg/L	1	03/01/18	EPA200.7		JDA
Silica (Si02)	**13.4**	1.07	0.298	mg/L	1	03/01/18	Calculation		JDA
Silicon	**6.27**	0.500	0.139	mg/L	1	03/01/18	EPA200.7		JDA
Sodium*	**183**	1.00	0.087	mg/L	1	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0005**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0035**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.307**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	<0.0005	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	<0.0010	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0002**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	<0.0020	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Well #1 Upgradient

1802177-07 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802185 - General Prep - Wet Chem										
Duplicate (B802185-DUP2)		**Source: 1802177-07**		Prepared: 02/27/18 Analyzed: 02/28/18						
pH	7.77		pH Units		7.75			0.258	20	
Reference (B802185-SRM1)				Prepared: 02/27/18 Analyzed: 02/28/18						
pH	8.83		pH Units	9.05		97.6	97.8-102.2			
Batch B802187 - General Prep - Wet Chem										
Blank (B802187-BLK1)				Prepared & Analyzed: 02/28/18						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B802187-BS1)				Prepared & Analyzed: 02/28/18						
Total Organic Carbon	9.75	0.500	mg/L	10.0		97.5	85-115			
LCS Dup (B802187-BSD1)				Prepared & Analyzed: 02/28/18						
Total Organic Carbon	9.78	0.500	mg/L	10.0		97.8	85-115	0.338	20	
Batch B802199 - General Prep - Wet Chem										
Blank (B802199-BLK1)				Prepared & Analyzed: 02/27/18						
Total Suspended Solids	ND	2.00	mg/L							
Duplicate (B802199-DUP1)		**Source: 1802153-01**		Prepared & Analyzed: 02/27/18						
Total Suspended Solids	4.75	0.500	mg/L		4.00			17.1	20	
Reference (B802199-SRM1)				Prepared & Analyzed: 02/27/18						
Total Suspended Solids	105	2.00	mg/L	100		105	85-115			
Batch B802206 - General Prep - Wet Chem										
Blank (B802206-BLK1)				Prepared & Analyzed: 02/28/18						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B802206-BS1)				Prepared & Analyzed: 02/28/18						
Chloride	24.1	1.00	mg/L	25.0		96.2	90-110			
Fluoride	2.50	0.100	mg/L	2.50		100	90-110			
Sulfate	24.9	1.00	mg/L	25.0		99.8	90-110			
LCS Dup (B802206-BSD1)				Prepared & Analyzed: 02/28/18						
Chloride	23.9	1.00	mg/L	25.0		95.5	90-110	0.722	20	
Fluoride	2.49	0.100	mg/L	2.50		99.6	90-110	0.401	20	
Sulfate	24.8	1.00	mg/L	25.0		99.3	90-110	0.458	20	
Batch B802211 - General Prep - Wet Chem										
Blank (B802211-BLK1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	ND	0.020	mg/L							

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802211 - General Prep - Wet Chem (Continued)										
LCS (B802211-BS1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	0.973	0.020	mg/L	1.00		97.3	90-110			
LCS Dup (B802211-BSD1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	0.966	0.020	mg/L	1.00		96.6	90-110	0.712	20	
Batch B802214 - General Prep - Wet Chem										
Blank (B802214-BLK1)				Prepared: 02/28/18 Analyzed: 03/02/18						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B802214-BS1)				Prepared: 02/28/18 Analyzed: 03/02/18						
Alkalinity, Total as CaCO3	115	10.0	mg/L	100		115	85-115			
LCS Dup (B802214-BSD1)				Prepared: 02/28/18 Analyzed: 03/02/18						
Alkalinity, Total as CaCO3	114	10.0	mg/L	100		114	85-115	0.873	20	
Batch B802215 - General Prep - Wet Chem										
Blank (B802215-BLK1)				Prepared: 02/28/18 Analyzed: 03/13/18						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B802215-BS1)				Prepared: 02/28/18 Analyzed: 03/13/18						
Alkalinity, Total as CaCO3	100	10.0	mg/L	100		100	85-115			
LCS Dup (B802215-BSD1)				Prepared: 02/28/18 Analyzed: 03/13/18						
Alkalinity, Total as CaCO3	97.0	10.0	mg/L	100		97.0	85-115	3.05	20	
Batch B803007 - General Prep - Wet Chem										
Blank (B803007-BLK1)				Prepared & Analyzed: 03/01/18						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B803007-DUP1)		**Source: 1802177-01**		Prepared & Analyzed: 03/01/18						
Total Dissolved Solids	500	10.0	mg/L		515			2.95	20	
Reference (B803007-SRM1)				Prepared & Analyzed: 03/01/18						
Total Dissolved Solids	3430	10.0	mg/L	3440		99.7	85-115			
Batch B803078 - General Prep - Wet Chem										
Blank (B803078-BLK1)				Prepared & Analyzed: 03/07/18						
Oil & Grease (HEM)	ND	5.00	mg/L							
LCS (B803078-BS1)				Prepared: 03/07/18 Analyzed: 03/09/18						
Oil & Grease (HEM)	34.6	5.00	mg/L	40.0		86.5	85-115			
LCS Dup (B803078-BSD1)				Prepared: 03/07/18 Analyzed: 03/14/18						
Oil & Grease (HEM)	35.0	5.00	mg/L	40.0		87.5	85-115	1.15	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802203 - Diss. 200.7/200.8										
Blank (B802203-BLK1)				Prepared: 02/28/18 Analyzed: 03/01/18						
Aluminum	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B802203-BS1)				Prepared: 02/28/18 Analyzed: 03/01/18						
Aluminum	4.77	0.050	mg/L	5.00		95.5	85-115			
Calcium	4.71	0.100	mg/L	5.00		94.2	85-115			
Iron	4.71	0.050	mg/L	5.00		94.1	85-115			
Magnesium	24.0	0.100	mg/L	25.0		96.0	85-115			
Potassium	9.86	1.00	mg/L	10.0		98.6	85-115			
Silicon	4.93	0.500	mg/L	5.00		98.6	85-115			
Sodium	4.11	1.00	mg/L	4.05		101	85-115			
LCS Dup (B802203-BSD1)				Prepared: 02/28/18 Analyzed: 03/01/18						
Aluminum	4.74	0.050	mg/L	5.00		94.7	85-115	0.760	20	
Calcium	4.61	0.100	mg/L	5.00		92.1	85-115	2.19	20	
Iron	4.65	0.050	mg/L	5.00		93.0	85-115	1.27	20	
Magnesium	23.5	0.100	mg/L	25.0		94.1	85-115	1.98	20	
Potassium	9.60	1.00	mg/L	10.0		96.0	85-115	2.63	20	
Silicon	4.86	0.500	mg/L	5.00		97.2	85-115	1.51	20	
Sodium	4.01	1.00	mg/L	4.05		99.0	85-115	2.47	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802196 - Diss. 200.7/200.8										
Blank (B802196-BLK1)				Prepared & Analyzed: 02/27/18						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0001	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0005	mg/L							
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0001	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B802196-BS1)				Prepared & Analyzed: 02/27/18						
Arsenic	0.0460	0.0005	mg/L	0.0500		92.0	85-115			
Cadmium	0.0479	0.0001	mg/L	0.0500		95.8	85-115			
Copper	0.0475	0.0001	mg/L	0.0500		95.0	85-115			
Lead	0.0477	0.0005	mg/L	0.0500		95.4	85-115			
Manganese	0.0467	0.0005	mg/L	0.0500		93.4	85-115			
Molybdenum	0.0477	0.0005	mg/L	0.0500		95.5	85-115			
Selenium	0.233	0.0010	mg/L	0.250		93.0	85-115			
Uranium	0.0467	0.0001	mg/L	0.0500		93.3	85-115			
Zinc	0.0478	0.0020	mg/L	0.0500		95.6	85-115			
LCS Dup (B802196-BSD1)				Prepared & Analyzed: 02/27/18						
Arsenic	0.0502	0.0005	mg/L	0.0500		100	85-115	8.68	20	
Cadmium	0.0532	0.0001	mg/L	0.0500		106	85-115	10.5	20	
Copper	0.0541	0.0001	mg/L	0.0500		108	85-115	13.0	20	
Lead	0.0536	0.0005	mg/L	0.0500		107	85-115	11.6	20	
Manganese	0.0536	0.0005	mg/L	0.0500		107	85-115	13.8	20	
Molybdenum	0.0543	0.0005	mg/L	0.0500		109	85-115	12.8	20	
Selenium	0.260	0.0010	mg/L	0.250		104	85-115	11.1	20	
Uranium	0.0532	0.0001	mg/L	0.0500		106	85-115	13.1	20	
Zinc	0.0542	0.0020	mg/L	0.0500		108	85-115	12.6	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Total Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B803064 - EPA 245.1/7470										
Blank (B803064-BLK1)				Prepared & Analyzed: 03/09/18						
Mercury	ND	0.0002	mg/L							
LCS (B803064-BS1)				Prepared & Analyzed: 03/09/18						
Mercury	0.0020	0.0002	mg/L	0.00200		99.6	85-115			
LCS Dup (B803064-BSD1)				Prepared & Analyzed: 03/09/18						
Mercury	0.0021	0.0002	mg/L	0.00200		104	85-115	4.61	20	

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B803001 - EPA 245.1/7470										
Blank (B803001-BLK1)				Prepared: 03/01/18 Analyzed: 03/06/18						
Mercury	ND	0.0002	mg/L							
LCS (B803001-BS1)				Prepared: 03/01/18 Analyzed: 03/06/18						
Mercury	0.0021	0.0002	mg/L	0.00200		103	85-115			
LCS Dup (B803001-BSD1)				Prepared: 03/01/18 Analyzed: 03/06/18						
Mercury	0.0020	0.0002	mg/L	0.00200		100	85-115	2.27	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/15/18 16:51

Notes and Definitions

H4	pH analysis perfomed more than 48 hours after sampling.
H2	Sample analysis performed past hold time specified by the method.
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

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Green Analytical Laboratories
(970) 247-4220
Fax: (970) 247-4227
service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

Company Name:	GCC Energy, LLC
Project Manager:	Tom Bird
Address:	6473 CR 120
City:	Hesperus State: CO Zip: 81326
Phone #:	Email: TBird@gcc.com
Additional Report To:	LBucke@resourcehydrogeologic.com
Project Name:	
Project Number:	
Sampler Name (Print):	Jessica Lim

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax or Email:

ANALYSIS REQUEST: GCC SW Baseline; GCC GW Baseline

FOR LAB USE ONLY Lab I.D.	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	Other:	GCC SW Baseline	GCC GW Baseline
1802-177-01	Well #2 Downgradient	2/22	12:02	X						1	1		4					X
-06-~~07~~	Hay Gulch Ditch Upgradient	2/22	2:15		X					2	1		4				X	X
-03	MW-HGA-4	2/22	2:05	X						1	1	6	4					
-04	MW-99	2/22	1:55	X						1	1	6	4					
-05	WITSC WELL	2/22	10:41	X						1	1		4					X
-02-~~06~~	Hay Gulch Ditch Downgradient	2/22	11:08	X	X					2	1	1	4				X	X
-07	Well #1 Upgradient	2/22	1:03	X						1	1		4					X

PLEASE NOTE: GAL's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by GAL, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2/22 Time: 3:15	Received By: Michael McFarland
Relinquished By: Michael McFarland	Date: 2-22-18 Time: 1603	Received By: Dallin Zufelt
Relinquished By:	Date: Time:	Received By: #1 on ice

ADDITIONAL REMARKS:

Report to State? (Circle) Yes No

Delivered By: (Circle One)
Sampler - UPS - FedEx - Kangaroo - Other:

Temperature at reciept: 4.1/3.9°C
CHECKED BY: DZ

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Reliquished By:" as an acceptance of services and all applicable charges.

Project Information

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: **Debbie Zufelt**
Phone:(970) 385-4528
Fax:(970) 385-4638

King Coal
2/23/2018

Project Name:	GCC GW Baseline	**Invoice To:**	GCC Energy, LLC
Project Number:	GCC GW Baseline	**Invoice Bid:**	GCC GW Baseline
Client PM:	Tom Bird	**Invoice Manager:**	Tom Bird
Comments:	All Metals Are Field Filtered. Send Out Unpreserved Metals Bottles Per Request.		

Analysis	Comment
Manganese Dissolved by ICPMS	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Alkalinity, Bicarbonate	
Zinc Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPM	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Subcontract Analysis 1	TOC
Sulfate by IC	
Uranium Dissolved by ICPMS	
Lead Dissolved by ICPMS	
Hardness, diss subanalyses:	
Calcium Dissolved by ICP	
Magnesium Dissolved by ICP	
Silica Dissolved by ICP Package subanalyses:	
Silicon Dissolved by ICP	

Project Information

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: **Debbie Zufelt**
Phone:(970) 385-4528
Fax:(970) 385-4638

King Coal
2/23/2018

Project Name:	GCC SW Baseline	**Invoice To:**	GCC Energy, LLC
Project Number:	GCC SW Baseline	**Invoice Bid:**	GCC SW Baseline
Client PM:	Tom Bird	**Invoice Manager:**	Tom Bird
Comments:	All Metals Are Field Filtered. Send Out Unpreserved Metals Bottles Per Request.		

Analysis	Comment
Lead Dissolved by ICPMS	
Iron Dissolved by ICP	
Hardness, diss	
Fluoride by IC	
Alkalinity, Bicarbonate	
Chloride by IC	
Molybdenum Dissolved by ICPM	
Cadmium Dissolved by ICPMS	
Arsenic Dissolved by ICPMS	
Aluminum Dissolved by ICP	
Alkalinity, Total	
Alkalinity, Hydroxide	
Alkalinity, Carbonate	
Copper Dissolved by ICPMS	
Selenium Dissolved by ICPMS	
Uranium Dissolved by ICPMS	
Sulfate by IC	
Subcontract Analysis 1	TOC
Solids, Total Suspended (TSS)	
Solids, Total Dissolved (TDS)	
Sodium Dissolved by ICP	
Manganese Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Mercury Total by CVAA	
SAR	
Potassium Dissolved by ICP	
pH	
Oil & Grease	
Nitrate/Nitrite as N	
Zinc Dissolved by ICPMS	

Hardness, diss subanalyses:

Calcium Dissolved by ICP
Magnesium Dissolved by ICP

Silica Dissolved by ICP Package subanalyses:

Silicon Dissolved by ICP

75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

22 February 2018

Tom Bird
GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326

RE: GCC GW Baseline

Enclosed are the results of analyses for samples received by the laboratory on 02/09/18 15:18.
If you need any further assistance, please feel free to contact me.

Sincerely,

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.

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-A	1802093-01	Water	02/09/18 10:11	02/09/18 15:18
MW-1-C	1802093-02	Water	02/09/18 11:45	02/09/18 15:18

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

MW-1-A

1802093-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**415**	10.0		mg/L	5	02/14/18	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/14/18	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/14/18	2320 B		CMS
Alkalinity, Total as CaCO3*	**415**	10.0		mg/L	5	02/14/18	2320 B		CMS
Chloride*	**2.19**	1.00	0.143	mg/L	1	02/17/18	EPA300.0		JDA
Fluoride*	**0.240**	0.100	0.0160	mg/L	1	02/17/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/19/18	EPA353.2		LLG
pH*	**7.22**			pH Units	1	02/12/18	EPA150.1	H4	CMS
Total Dissolved Solids*	**1100**	10.0		mg/L	1	02/14/18	EPA160.1		LLG
Sulfate*	**518**	20.0	3.13	mg/L	20	02/19/18	EPA300.0		JDA
Total Organic Carbon*	**1.51**	0.500	0.0670	mg/L	1	02/15/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.100	mg/L	5	02/20/18	EPA200.7		JDA
Calcium*	**30.5**	0.500	0.179	mg/L	5	02/20/18	EPA200.7		JDA
Hardness as CaCO3	**159**	3.31	0.976	mg/L	5	02/20/18	2340 B		JDA
Iron*	**0.590**	0.250	0.070	mg/L	5	02/20/18	EPA200.7		JDA
Magnesium*	**20.1**	0.500	0.128	mg/L	5	02/20/18	EPA200.7		JDA
Potassium*	<5.00	5.00	0.472	mg/L	5	02/20/18	EPA200.7		JDA
Silica (Si02)	**11.2**	5.35	1.49	mg/L	5	02/20/18	Calculation		JDA
Silicon	**5.24**	2.50	0.697	mg/L	5	02/20/18	EPA200.7		JDA
Sodium*	**348**	5.00	0.435	mg/L	5	02/20/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0004	mg/L	5	02/21/18	EPA200.8		JDA
Cadmium*	<0.0005	0.0005	0.0005	mg/L	5	02/21/18	EPA200.8		JDA
Copper*	**0.0066**	0.0005	0.0002	mg/L	5	02/21/18	EPA200.8		JDA
Lead*	<0.0025	0.0025	0.0001	mg/L	5	02/21/18	EPA200.8		JDA
Manganese*	**0.0279**	0.0025	0.0014	mg/L	5	02/21/18	EPA200.8		JDA
Molybdenum*	<0.0025	0.0025	0.0003	mg/L	5	02/21/18	EPA200.8		JDA
Selenium*	<0.0050	0.0050	0.0008	mg/L	5	02/21/18	EPA200.8		JDA
Uranium	<0.0005	0.0005	0.00007	mg/L	5	02/21/18	EPA200.8		JDA
Zinc*	<0.0100	0.0100	0.0045	mg/L	5	02/21/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

MW-1-A

1802093-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	02/20/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

MW-1-C

1802093-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**570**	10.0		mg/L	5	02/14/18	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/14/18	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/14/18	2320 B		CMS
Alkalinity, Total as CaCO3*	**570**	10.0		mg/L	5	02/14/18	2320 B		CMS
Chloride*	**7.78**	5.00	0.717	mg/L	5	02/17/18	EPA300.0		JDA
Fluoride*	**1.03**	0.500	0.0798	mg/L	5	02/17/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/19/18	EPA353.2		LLG
pH*	**7.22**			pH Units	1	02/12/18	EPA150.1	H4	CMS
Total Dissolved Solids*	**2360**	10.0		mg/L	1	02/14/18	EPA160.1		LLG
Sulfate*	**1160**	50.0	7.82	mg/L	50	02/19/18	EPA300.0		JDA
Total Organic Carbon*	**2.21**	0.500	0.0670	mg/L	1	02/15/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.100	mg/L	5	02/20/18	EPA200.7		JDA
Calcium*	**219**	0.500	0.179	mg/L	5	02/20/18	EPA200.7		JDA
Hardness as CaCO3	**1190**	3.31	0.976	mg/L	5	02/20/18	2340 B		JDA
Iron*	<0.250	0.250	0.070	mg/L	5	02/20/18	EPA200.7		JDA
Magnesium*	**156**	0.500	0.128	mg/L	5	02/20/18	EPA200.7		JDA
Potassium*	<5.00	5.00	0.472	mg/L	5	02/20/18	EPA200.7		JDA
Silica (Si02)	**14.8**	5.35	1.49	mg/L	5	02/20/18	Calculation		JDA
Silicon	**6.94**	2.50	0.697	mg/L	5	02/20/18	EPA200.7		JDA
Sodium*	**260**	5.00	0.435	mg/L	5	02/20/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0004	mg/L	5	02/21/18	EPA200.8		JDA
Cadmium*	<0.0005	0.0005	0.0005	mg/L	5	02/21/18	EPA200.8		JDA
Copper*	**0.0052**	0.0005	0.0002	mg/L	5	02/21/18	EPA200.8		JDA
Lead*	<0.0025	0.0025	0.0001	mg/L	5	02/21/18	EPA200.8		JDA
Manganese*	**0.0989**	0.0025	0.0014	mg/L	5	02/21/18	EPA200.8		JDA
Molybdenum*	<0.0025	0.0025	0.0003	mg/L	5	02/21/18	EPA200.8		JDA
Selenium*	<0.0050	0.0050	0.0008	mg/L	5	02/21/18	EPA200.8		JDA
Uranium	**0.0024**	0.0005	0.00007	mg/L	5	02/21/18	EPA200.8		JDA
Zinc*	<0.0100	0.0100	0.0045	mg/L	5	02/21/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

MW-1-C

1802093-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	02/20/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802087 - General Prep - Wet Chem										
Duplicate (B802087-DUP2)		**Source: 1802099-01**		Prepared & Analyzed: 02/12/18						
pH	8.28		pH Units		8.27			0.121	20	
Reference (B802087-SRM1)				Prepared & Analyzed: 02/12/18						
pH	8.97		pH Units	9.05		99.1	97.8-102.2			
Batch B802103 - General Prep - Wet Chem										
Blank (B802103-BLK1)				Prepared & Analyzed: 02/14/18						
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B802103-BS1)				Prepared & Analyzed: 02/14/18						
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Total as CaCO3	104	10.0	mg/L	100		104	85-115			
LCS Dup (B802103-BSD1)				Prepared & Analyzed: 02/14/18						
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Total as CaCO3	99.0	10.0	mg/L	100		99.0	85-115	4.93	20	
Batch B802108 - General Prep - Wet Chem										
Blank (B802108-BLK1)				Prepared & Analyzed: 02/15/18						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B802108-BS1)				Prepared & Analyzed: 02/15/18						
Total Organic Carbon	9.94	0.500	mg/L	10.0		99.4	85-115			
LCS Dup (B802108-BSD1)				Prepared & Analyzed: 02/15/18						
Total Organic Carbon	10.0	0.500	mg/L	10.0		100	85-115	0.961	20	
Batch B802114 - General Prep - Wet Chem										
Blank (B802114-BLK1)				Prepared & Analyzed: 02/14/18						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B802114-DUP1)		**Source: 1802067-01**		Prepared & Analyzed: 02/14/18						
Total Dissolved Solids	380	10.0	mg/L		380			0.00	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802114 - General Prep - Wet Chem (Continued)										
Reference (B802114-SRM1)				Prepared & Analyzed: 02/14/18						
Total Dissolved Solids	555	10.0	mg/L	550		101	85-115			
Batch B802118 - General Prep - Wet Chem										
Blank (B802118-BLK1)				Prepared: 02/15/18 Analyzed: 02/16/18						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B802118-BS1)				Prepared: 02/15/18 Analyzed: 02/16/18						
Chloride	24.1	1.00	mg/L	25.0		96.3	90-110			
Fluoride	2.50	0.100	mg/L	2.50		100	90-110			
Sulfate	24.8	1.00	mg/L	25.0		99.4	90-110			
LCS Dup (B802118-BSD1)				Prepared: 02/15/18 Analyzed: 02/16/18						
Chloride	24.4	1.00	mg/L	25.0		97.7	90-110	1.44	20	
Fluoride	2.55	0.100	mg/L	2.50		102	90-110	1.74	20	
Sulfate	25.1	1.00	mg/L	25.0		100	90-110	0.982	20	
Batch B802140 - General Prep - Wet Chem										
Blank (B802140-BLK1)				Prepared & Analyzed: 02/19/18						
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B802140-BS1)				Prepared & Analyzed: 02/19/18						
Nitrate/Nitrite as N	0.974	0.020	mg/L	1.00		97.4	90-110			
LCS Dup (B802140-BSD1)				Prepared & Analyzed: 02/19/18						
Nitrate/Nitrite as N	0.976	0.020	mg/L	1.00		97.6	90-110	0.205	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802119 - Diss. 200.7/200.8										
Blank (B802119-BLK1)				Prepared: 02/15/18 Analyzed: 02/20/18						
Aluminum	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B802119-BS1)				Prepared: 02/15/18 Analyzed: 02/20/18						
Aluminum	4.82	0.050	mg/L	5.00		96.4	85-115			
Calcium	4.92	0.100	mg/L	5.00		98.4	85-115			
Iron	4.78	0.050	mg/L	5.00		95.6	85-115			
Magnesium	24.6	0.100	mg/L	25.0		98.3	85-115			
Potassium	9.90	1.00	mg/L	10.0		99.0	85-115			
Silicon	5.05	0.500	mg/L	5.00		101	85-115			
Sodium	3.96	1.00	mg/L	4.05		97.9	85-115			
LCS Dup (B802119-BSD1)				Prepared: 02/15/18 Analyzed: 02/20/18						
Aluminum	4.85	0.050	mg/L	5.00		97.0	85-115	0.659	20	
Calcium	4.87	0.100	mg/L	5.00		97.5	85-115	0.912	20	
Iron	4.79	0.050	mg/L	5.00		95.9	85-115	0.318	20	
Magnesium	24.5	0.100	mg/L	25.0		97.9	85-115	0.438	20	
Potassium	10.0	1.00	mg/L	10.0		100	85-115	1.36	20	
Silicon	5.08	0.500	mg/L	5.00		102	85-115	0.575	20	
Sodium	3.97	1.00	mg/L	4.05		97.9	85-115	0.0388	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802120 - Diss. 200.7/200.8										
Blank (B802120-BLK1)				Prepared: 02/15/18 Analyzed: 02/21/18						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0001	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0005	mg/L							
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0001	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B802120-BS1)				Prepared: 02/15/18 Analyzed: 02/21/18						
Arsenic	0.0472	0.0005	mg/L	0.0500		94.5	85-115			
Cadmium	0.0462	0.0001	mg/L	0.0500		92.4	85-115			
Copper	0.0469	0.0001	mg/L	0.0500		93.8	85-115			
Lead	0.0468	0.0005	mg/L	0.0500		93.6	85-115			
Manganese	0.0464	0.0005	mg/L	0.0500		92.7	85-115			
Molybdenum	0.0464	0.0005	mg/L	0.0500		92.9	85-115			
Selenium	0.232	0.0010	mg/L	0.250		92.6	85-115			
Uranium	0.0471	0.0001	mg/L	0.0500		94.3	85-115			
Zinc	0.0470	0.0020	mg/L	0.0500		94.0	85-115			
LCS Dup (B802120-BSD1)				Prepared: 02/15/18 Analyzed: 02/21/18						
Arsenic	0.0510	0.0005	mg/L	0.0500		102	85-115	7.68	20	
Cadmium	0.0499	0.0001	mg/L	0.0500		99.8	85-115	7.69	20	
Copper	0.0498	0.0001	mg/L	0.0500		99.6	85-115	6.00	20	
Lead	0.0497	0.0005	mg/L	0.0500		99.3	85-115	5.95	20	
Manganese	0.0492	0.0005	mg/L	0.0500		98.4	85-115	5.90	20	
Molybdenum	0.0500	0.0005	mg/L	0.0500		100	85-115	7.42	20	
Selenium	0.249	0.0010	mg/L	0.250		99.8	85-115	7.46	20	
Uranium	0.0507	0.0001	mg/L	0.0500		101	85-115	7.17	20	
Zinc	0.0495	0.0020	mg/L	0.0500		98.9	85-115	5.04	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802135 - EPA 245.1/7470										
Blank (B802135-BLK1)				Prepared: 02/19/18 Analyzed: 02/20/18						
Mercury	ND	0.0002	mg/L							
LCS (B802135-BS1)				Prepared: 02/19/18 Analyzed: 02/20/18						
Mercury	0.0022	0.0002	mg/L	0.00200		109	85-115			
LCS Dup (B802135-BSD1)				Prepared: 02/19/18 Analyzed: 02/20/18						
Mercury	0.0022	0.0002	mg/L	0.00200		111	85-115	2.00	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/22/18 10:59

Notes and Definitions

H4	pH analysis perfomed more than 48 hours after sampling.
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

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Green Analytical Laboratories
(970) 247-4220
Fax: (970) 247-4227
service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

Company Name: GCC Energy, LLC
Project Manager: Tom Bird
Address: 4473 C.R. 120
City: Hesperus State: CO Zip: 81326
Phone #: (970)385-4528 Email: TBird@gcc.com
Additional Report To: LBlack@sourcerockgeologic.com
Project Name:
Project Number:
Sampler Name (Print): Jessica Luna / Michael McFarland

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax or Email:

ANALYSIS REQUEST: GCC GW Baseline

FOR LAB USE ONLY Lab I.D.	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	Other:	ANALYSIS REQUEST: GCC GW Baseline
1802-093-01	MW-1-A	2/9/18	10:11am	X						1		1	4				X
-02	MW-1-C	2/9/18	11:45am	X						1		1	4				X

PLEASE NOTE: GAL's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by GAL., regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date:	Time:	Received By:
Jessica Luna	2/9/18	2:20pm	Michael McFarland
Michael McFarland	2-9-18	15:10	

Delivered By: (Circle One)
Sampler - UPS - FedEx - Kangaroo - Other:

Temperature at reciept: 5.1/4.9°C
CHECKED BY: JR

ADDITIONAL REMARKS:
Report to State? (Circle) Yes No

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Reliquished By:" as an acceptance of services and all applicable charges.

Project Information

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: **Debbie Zufelt**

Phone:(970) 385-4528
Fax:(970) 385-4638

King Coal
2/9/2018

Project Name:	GCC GW Baseline	**Invoice To:**	GCC Energy, LLC
Project Number:	GCC GW Baseline	**Invoice Bid:**	GCC GW Baseline
Client PM:	Tom Bird	**Invoice Manager:**	Tom Bird
Comments:	All Metals Are Field Filtered. Send Out Unpreserved Metals Bottles Per Request.		

Analysis	Comment
Manganese Dissolved by ICPMS	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Alkalinity, Bicarbonate	
Zinc Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPM	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Subcontract Analysis 1	TOC
Sulfate by IC	
Uranium Dissolved by ICPMS	
Lead Dissolved by ICPMS	
Hardness, diss subanalyses:	
Calcium Dissolved by ICP	
Magnesium Dissolved by ICP	
Silica Dissolved by ICP Package subanalyses:	
Silicon Dissolved by ICP	

75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

07 March 2018

Tom Bird
GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326

RE: GCC GW & SW Baseline

Enclosed are the results of analyses for samples received by the laboratory on 02/21/18 15:10.
If you need any further assistance, please feel free to contact me.

Sincerely,

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.

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4-MI	1802161-01	Water	02/21/18 09:07	02/21/18 15:10
MW-4-A	1802161-02	Water	02/21/18 09:42	02/21/18 15:10
MW-4-C	1802161-03	Water	02/21/18 10:06	02/21/18 15:10
MW-3-MI	1802161-04	Water	02/21/18 10:43	02/21/18 15:10
MW-3-A	1802161-05	Water	02/21/18 11:07	02/21/18 15:10
MW-3-C	1802161-06	Water	02/21/18 11:32	02/21/18 15:10

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-4-MI

1802161-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**875**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	**90.0**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**965**	10.0		mg/L	5	02/26/18	2320 B		JDU
Chloride*	**8.74**	5.00	0.717	mg/L	5	02/28/18	EPA300.0		JDA
Fluoride*	**5.02**	0.500	0.0798	mg/L	5	02/28/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**8.47**			pH Units	1	02/22/18	EPA150.1		JDU
Total Dissolved Solids*	**1220**	10.0		mg/L	1	02/28/18	EPA160.1		LLG
Sulfate*	**68.6**	5.00	0.782	mg/L	5	02/28/18	EPA300.0		JDA
Total Organic Carbon*	**9.54**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.040	mg/L	2	03/01/18	EPA200.7		JDA
Calcium*	**1.64**	0.200	0.072	mg/L	2	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**6.01**	1.32	0.390	mg/L	2	03/01/18	2340 B		JDA
Iron*	<0.100	0.100	0.028	mg/L	2	03/01/18	EPA200.7		JDA
Magnesium*	**0.465**	0.200	0.051	mg/L	2	03/01/18	EPA200.7		JDA
Potassium*	<2.00	2.00	0.189	mg/L	2	03/01/18	EPA200.7		JDA
Silica (Si02)	**8.30**	2.14	0.596	mg/L	2	03/01/18	Calculation		JDA
Silicon	**3.88**	1.00	0.279	mg/L	2	03/01/18	EPA200.7		JDA
Sodium*	**447**	2.00	0.174	mg/L	2	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0139**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0079**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.0080**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0151**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	<0.0010	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0183**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	<0.0020	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-4-MI

1802161-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-4-A

1802161-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**490**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	**40.0**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**530**	10.0		mg/L	5	02/26/18	2320 B		JDU
Chloride*	**10.0**	5.00	0.717	mg/L	5	02/28/18	EPA300.0		JDA
Fluoride*	<0.500	0.500	0.0798	mg/L	5	02/28/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**8.28**			pH Units	1	02/22/18	EPA150.1		JDU
Total Dissolved Solids*	**1490**	10.0		mg/L	1	02/28/18	EPA160.1		LLG
Sulfate*	**579**	25.0	3.91	mg/L	25	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**3.46**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.040	mg/L	2	03/01/18	EPA200.7		JDA
Calcium*	**1.81**	0.200	0.072	mg/L	2	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**7.73**	1.32	0.390	mg/L	2	03/01/18	2340 B		JDA
Iron*	<0.100	0.100	0.028	mg/L	2	03/01/18	EPA200.7		JDA
Magnesium*	**0.778**	0.200	0.051	mg/L	2	03/01/18	EPA200.7		JDA
Potassium*	<2.00	2.00	0.189	mg/L	2	03/01/18	EPA200.7		JDA
Silica (Si02)	**9.47**	2.14	0.596	mg/L	2	03/01/18	Calculation		JDA
Silicon	**4.43**	1.00	0.279	mg/L	2	03/01/18	EPA200.7		JDA
Sodium*	**507**	2.00	0.174	mg/L	2	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0019**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0124**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.0035**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0005**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	**0.0014**	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0003**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	**0.0022**	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-4-A

1802161-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-4-C

1802161-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**2600**	10.0		mg/L	10	02/26/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	02/26/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	02/26/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**2600**	10.0		mg/L	10	02/26/18	2320 B		JDU
Chloride*	**592**	20.0	2.87	mg/L	20	03/01/18	EPA300.0		JDA
Fluoride*	**2.53**	1.00	0.160	mg/L	10	02/28/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**7.84**			pH Units	1	02/22/18	EPA150.1		JDU
Total Dissolved Solids*	**3730**	20.0		mg/L	2	02/28/18	EPA160.1		LLG
Sulfate*	**34.5**	10.0	1.56	mg/L	10	02/28/18	EPA300.0		JDA
Total Organic Carbon*	**3.23**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.500	0.500	0.201	mg/L	10	03/01/18	EPA200.7		JDA
Calcium*	**6.32**	1.00	0.359	mg/L	10	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**26.5**	6.62	1.95	mg/L	10	03/01/18	2340 B		JDA
Iron*	<0.500	0.500	0.140	mg/L	10	03/01/18	EPA200.7		JDA
Magnesium*	**2.61**	1.00	0.256	mg/L	10	03/01/18	EPA200.7		JDA
Potassium*	<10.0	10.0	0.944	mg/L	10	03/01/18	EPA200.7		JDA
Silica (Si02)	<10.7	10.7	2.98	mg/L	10	03/01/18	Calculation		JDA
Silicon	<5.00	5.00	1.39	mg/L	10	03/01/18	EPA200.7		JDA
Sodium*	**1410**	10.0	0.870	mg/L	10	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0246**	0.0025	0.0004	mg/L	5	02/27/18	EPA200.8		JDA
Cadmium*	<0.0005	0.0005	0.0005	mg/L	5	02/27/18	EPA200.8		JDA
Copper*	**0.0482**	0.0005	0.0002	mg/L	5	02/27/18	EPA200.8		JDA
Lead*	<0.0025	0.0025	0.0001	mg/L	5	02/27/18	EPA200.8		JDA
Manganese*	**0.0647**	0.0025	0.0014	mg/L	5	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0086**	0.0025	0.0003	mg/L	5	02/27/18	EPA200.8		JDA
Selenium*	**0.0378**	0.0050	0.0008	mg/L	5	02/27/18	EPA200.8		JDA
Uranium	**0.0311**	0.0005	0.00007	mg/L	5	02/27/18	EPA200.8		JDA
Zinc*	<0.0100	0.0100	0.0045	mg/L	5	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-4-C

1802161-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-3-MI

1802161-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**600**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	**100**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**700**	10.0		mg/L	5	02/26/18	2320 B		JDU
Chloride*	**10.7**	5.00	0.717	mg/L	5	02/28/18	EPA300.0		JDA
Fluoride*	**1.30**	0.500	0.0798	mg/L	5	02/28/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**8.66**			pH Units	1	02/22/18	EPA150.1		JDU
Total Dissolved Solids*	**1170**	10.0		mg/L	1	02/28/18	EPA160.1		LLG
Sulfate*	**245**	10.0	1.56	mg/L	10	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**9.24**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.040	mg/L	2	03/01/18	EPA200.7		JDA
Calcium*	**2.22**	0.200	0.072	mg/L	2	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**9.92**	1.32	0.390	mg/L	2	03/01/18	2340 B		JDA
Iron*	<0.100	0.100	0.028	mg/L	2	03/01/18	EPA200.7		JDA
Magnesium*	**1.07**	0.200	0.051	mg/L	2	03/01/18	EPA200.7		JDA
Potassium*	<2.00	2.00	0.189	mg/L	2	03/01/18	EPA200.7		JDA
Silica (Si02)	**9.33**	2.14	0.596	mg/L	2	03/01/18	Calculation		JDA
Silicon	**4.36**	1.00	0.279	mg/L	2	03/01/18	EPA200.7		JDA
Sodium*	**459**	2.00	0.174	mg/L	2	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0160**	0.0005	0.00008	mg/L	1	02/27/18	EPA200.8		JDA
Cadmium*	<0.0001	0.0001	0.00009	mg/L	1	02/27/18	EPA200.8		JDA
Copper*	**0.0122**	0.0001	0.00003	mg/L	1	02/27/18	EPA200.8		JDA
Lead*	<0.0005	0.0005	0.00002	mg/L	1	02/27/18	EPA200.8		JDA
Manganese*	**0.0049**	0.0005	0.0003	mg/L	1	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0170**	0.0005	0.00006	mg/L	1	02/27/18	EPA200.8		JDA
Selenium*	**0.0010**	0.0010	0.0002	mg/L	1	02/27/18	EPA200.8		JDA
Uranium	**0.0125**	0.0001	0.00001	mg/L	1	02/27/18	EPA200.8		JDA
Zinc*	<0.0020	0.0020	0.0009	mg/L	1	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-3-MI

1802161-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-3-A

1802161-05 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**360**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	**70.0**	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/26/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**430**	10.0		mg/L	5	02/26/18	2320 B		JDU
Chloride*	**16.4**	5.00	0.717	mg/L	5	03/01/18	EPA300.0		JDA
Fluoride*	<0.500	0.500	0.0798	mg/L	5	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**8.45**			pH Units	1	02/22/18	EPA150.1		JDU
Total Dissolved Solids*	**1680**	10.0		mg/L	1	02/28/18	EPA160.1		LLG
Sulfate*	**812**	25.0	3.91	mg/L	25	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**5.32**	0.500	0.0670	mg/L	1	02/28/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.040	mg/L	2	03/01/18	EPA200.7		JDA
Calcium*	**3.33**	0.200	0.072	mg/L	2	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**11.5**	1.32	0.390	mg/L	2	03/01/18	2340 B		JDA
Iron*	<0.100	0.100	0.028	mg/L	2	03/01/18	EPA200.7		JDA
Magnesium*	**0.776**	0.200	0.051	mg/L	2	03/01/18	EPA200.7		JDA
Potassium*	<2.00	2.00	0.189	mg/L	2	03/01/18	EPA200.7		JDA
Silica (Si02)	**11.1**	2.14	0.596	mg/L	2	03/01/18	Calculation		JDA
Silicon	**5.18**	1.00	0.279	mg/L	2	03/01/18	EPA200.7		JDA
Sodium*	**562**	2.00	0.174	mg/L	2	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0004	mg/L	5	02/27/18	EPA200.8		JDA
Cadmium*	<0.0005	0.0005	0.0005	mg/L	5	02/27/18	EPA200.8		JDA
Copper*	**0.0236**	0.0005	0.0002	mg/L	5	02/27/18	EPA200.8		JDA
Lead*	<0.0025	0.0025	0.0001	mg/L	5	02/27/18	EPA200.8		JDA
Manganese*	**0.0232**	0.0025	0.0014	mg/L	5	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0065**	0.0025	0.0003	mg/L	5	02/27/18	EPA200.8		JDA
Selenium*	<0.0050	0.0050	0.0008	mg/L	5	02/27/18	EPA200.8		JDA
Uranium	**0.0030**	0.0005	0.00007	mg/L	5	02/27/18	EPA200.8		JDA
Zinc*	<0.0100	0.0100	0.0045	mg/L	5	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-3-A

1802161-05 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-3-C

1802161-06 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**1810**	10.0		mg/L	10	02/26/18	2320 B		JDU
Alkalinity, Carbonate as CaCO3*	**100**	10.0		mg/L	10	02/26/18	2320 B		JDU
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	02/26/18	2320 B		JDU
Alkalinity, Total as CaCO3*	**1910**	10.0		mg/L	10	02/26/18	2320 B		JDU
Chloride*	**549**	20.0	2.87	mg/L	20	03/01/18	EPA300.0		JDA
Fluoride*	**4.15**	1.00	0.160	mg/L	10	03/01/18	EPA300.0		JDA
Nitrate/Nitrite as N*	<0.020	0.020	0.011	mg/L	1	02/28/18	EPA353.2		LLG
pH*	**8.35**			pH Units	1	02/22/18	EPA150.1		JDU
Total Dissolved Solids*	**3540**	10.0		mg/L	1	02/28/18	EPA160.1		LLG
Sulfate*	<10.0	10.0	1.56	mg/L	10	03/01/18	EPA300.0		JDA
Total Organic Carbon*	**337**	10.0	1.34	mg/L	20	03/01/18	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	<0.500	0.500	0.201	mg/L	10	03/01/18	EPA200.7		JDA
Calcium*	**3.81**	1.00	0.359	mg/L	10	03/01/18	EPA200.7		JDA
Hardness as CaCO3	**16.1**	6.62	1.95	mg/L	10	03/01/18	2340 B		JDA
Iron*	<0.500	0.500	0.140	mg/L	10	03/01/18	EPA200.7		JDA
Magnesium*	**1.59**	1.00	0.256	mg/L	10	03/01/18	EPA200.7		JDA
Potassium*	<10.0	10.0	0.944	mg/L	10	03/01/18	EPA200.7		JDA
Silica (Si02)	<10.7	10.7	2.98	mg/L	10	03/01/18	Calculation		JDA
Silicon	<5.00	5.00	1.39	mg/L	10	03/01/18	EPA200.7		JDA
Sodium*	**1200**	10.0	0.870	mg/L	10	03/01/18	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	**0.0194**	0.0025	0.0004	mg/L	5	02/27/18	EPA200.8		JDA
Cadmium*	<0.0005	0.0005	0.0005	mg/L	5	02/27/18	EPA200.8		JDA
Copper*	**0.0409**	0.0005	0.0002	mg/L	5	02/27/18	EPA200.8		JDA
Lead*	<0.0025	0.0025	0.0001	mg/L	5	02/27/18	EPA200.8		JDA
Manganese*	**0.0307**	0.0025	0.0014	mg/L	5	02/27/18	EPA200.8		JDA
Molybdenum*	**0.0221**	0.0025	0.0003	mg/L	5	02/27/18	EPA200.8		JDA
Selenium*	**0.0383**	0.0050	0.0008	mg/L	5	02/27/18	EPA200.8		JDA
Uranium	**0.0091**	0.0005	0.00007	mg/L	5	02/27/18	EPA200.8		JDA
Zinc*	<0.0100	0.0100	0.0045	mg/L	5	02/27/18	EPA200.8		JDA

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

MW-3-C

1802161-06 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00009	mg/L	1	03/06/18	EPA245.1		LLG

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802158 - General Prep - Wet Chem										
Duplicate (B802158-DUP2)	**Source: 1802161-01**		Prepared: 02/21/18 Analyzed: 02/22/18							
pH	8.54		pH Units		8.47			0.823	20	
Reference (B802158-SRM1)			Prepared: 02/21/18 Analyzed: 02/22/18							
pH	8.97		pH Units	9.05		99.1	97.8-102.2			
Batch B802168 - General Prep - Wet Chem										
Blank (B802168-BLK1)			Prepared: 02/23/18 Analyzed: 02/26/18							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B802168-BS1)			Prepared: 02/23/18 Analyzed: 02/26/18							
Alkalinity, Total as CaCO3	110	10.0	mg/L	100		110	85-115			
LCS Dup (B802168-BSD1)			Prepared: 02/23/18 Analyzed: 02/26/18							
Alkalinity, Total as CaCO3	113	10.0	mg/L	100		113	85-115	2.69	20	
Batch B802187 - General Prep - Wet Chem										
Blank (B802187-BLK1)			Prepared & Analyzed: 02/28/18							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B802187-BS1)			Prepared & Analyzed: 02/28/18							
Total Organic Carbon	9.75	0.500	mg/L	10.0		97.5	85-115			
LCS Dup (B802187-BSD1)			Prepared & Analyzed: 02/28/18							
Total Organic Carbon	9.78	0.500	mg/L	10.0		97.8	85-115	0.338	20	
Batch B802200 - General Prep - Wet Chem										
Blank (B802200-BLK1)			Prepared & Analyzed: 02/28/18							
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B802200-DUP1)	**Source: 1802161-01**		Prepared & Analyzed: 02/28/18							
Total Dissolved Solids	1190	10.0	mg/L		1220			2.90	20	
Reference (B802200-SRM1)			Prepared & Analyzed: 02/28/18							
Total Dissolved Solids	3460	10.0	mg/L	3440		100	85-115			
Batch B802206 - General Prep - Wet Chem										
Blank (B802206-BLK1)			Prepared & Analyzed: 02/28/18							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802206 - General Prep - Wet Chem (Continued)										
LCS (B802206-BS1)				Prepared & Analyzed: 02/28/18						
Chloride	24.1	1.00	mg/L	25.0		96.2	90-110			
Fluoride	2.50	0.100	mg/L	2.50		100	90-110			
Sulfate	24.9	1.00	mg/L	25.0		99.8	90-110			
LCS Dup (B802206-BSD1)				Prepared & Analyzed: 02/28/18						
Chloride	23.9	1.00	mg/L	25.0		95.5	90-110	0.722	20	
Fluoride	2.49	0.100	mg/L	2.50		99.6	90-110	0.401	20	
Sulfate	24.8	1.00	mg/L	25.0		99.3	90-110	0.458	20	
Batch B802209 - General Prep - Wet Chem										
Blank (B802209-BLK1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B802209-BS1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	0.979	0.020	mg/L	1.00		97.9	90-110			
LCS Dup (B802209-BSD1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	0.978	0.020	mg/L	1.00		97.8	90-110	0.0817	20	
Batch B802210 - General Prep - Wet Chem										
Blank (B802210-BLK1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B802210-BS1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	0.971	0.020	mg/L	1.00		97.1	90-110			
LCS Dup (B802210-BSD1)				Prepared & Analyzed: 02/28/18						
Nitrate/Nitrite as N	0.971	0.020	mg/L	1.00		97.1	90-110	0.0515	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802203 - Diss. 200.7/200.8										
Blank (B802203-BLK1)				Prepared: 02/28/18 Analyzed: 03/01/18						
Aluminum	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B802203-BS1)				Prepared: 02/28/18 Analyzed: 03/01/18						
Aluminum	4.77	0.050	mg/L	5.00		95.5	85-115			
Calcium	4.71	0.100	mg/L	5.00		94.2	85-115			
Iron	4.71	0.050	mg/L	5.00		94.1	85-115			
Magnesium	24.0	0.100	mg/L	25.0		96.0	85-115			
Potassium	9.86	1.00	mg/L	10.0		98.6	85-115			
Silicon	4.93	0.500	mg/L	5.00		98.6	85-115			
Sodium	4.11	1.00	mg/L	4.05		101	85-115			
LCS Dup (B802203-BSD1)				Prepared: 02/28/18 Analyzed: 03/01/18						
Aluminum	4.74	0.050	mg/L	5.00		94.7	85-115	0.760	20	
Calcium	4.61	0.100	mg/L	5.00		92.1	85-115	2.19	20	
Iron	4.65	0.050	mg/L	5.00		93.0	85-115	1.27	20	
Magnesium	23.5	0.100	mg/L	25.0		94.1	85-115	1.98	20	
Potassium	9.60	1.00	mg/L	10.0		96.0	85-115	2.63	20	
Silicon	4.86	0.500	mg/L	5.00		97.2	85-115	1.51	20	
Sodium	4.01	1.00	mg/L	4.05		99.0	85-115	2.47	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B802196 - Diss. 200.7/200.8										
Blank (B802196-BLK1)				Prepared & Analyzed: 02/27/18						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0001	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0005	mg/L							
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0001	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B802196-BS1)				Prepared & Analyzed: 02/27/18						
Arsenic	0.0460	0.0005	mg/L	0.0500		92.0	85-115			
Cadmium	0.0479	0.0001	mg/L	0.0500		95.8	85-115			
Copper	0.0475	0.0001	mg/L	0.0500		95.0	85-115			
Lead	0.0477	0.0005	mg/L	0.0500		95.4	85-115			
Manganese	0.0467	0.0005	mg/L	0.0500		93.4	85-115			
Molybdenum	0.0477	0.0005	mg/L	0.0500		95.5	85-115			
Selenium	0.233	0.0010	mg/L	0.250		93.0	85-115			
Uranium	0.0467	0.0001	mg/L	0.0500		93.3	85-115			
Zinc	0.0478	0.0020	mg/L	0.0500		95.6	85-115			
LCS Dup (B802196-BSD1)				Prepared & Analyzed: 02/27/18						
Arsenic	0.0502	0.0005	mg/L	0.0500		100	85-115	8.68	20	
Cadmium	0.0532	0.0001	mg/L	0.0500		106	85-115	10.5	20	
Copper	0.0541	0.0001	mg/L	0.0500		108	85-115	13.0	20	
Lead	0.0536	0.0005	mg/L	0.0500		107	85-115	11.6	20	
Manganese	0.0536	0.0005	mg/L	0.0500		107	85-115	13.8	20	
Molybdenum	0.0543	0.0005	mg/L	0.0500		109	85-115	12.8	20	
Selenium	0.260	0.0010	mg/L	0.250		104	85-115	11.1	20	
Uranium	0.0532	0.0001	mg/L	0.0500		106	85-115	13.1	20	
Zinc	0.0542	0.0020	mg/L	0.0500		108	85-115	12.6	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B803001 - EPA 245.1/7470										
Blank (B803001-BLK1)				Prepared: 03/01/18 Analyzed: 03/06/18						
Mercury	ND	0.0002	mg/L							
LCS (B803001-BS1)				Prepared: 03/01/18 Analyzed: 03/06/18						
Mercury	0.0021	0.0002	mg/L	0.00200		103	85-115			
LCS Dup (B803001-BSD1)				Prepared: 03/01/18 Analyzed: 03/06/18						
Mercury	0.0020	0.0002	mg/L	0.00200		100	85-115	2.27	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/07/18 08:13

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

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Green Analytical Laboratories
(970) 247-4220
Fax: (970) 247-4227
service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

Company Name: GCC Energy	Bill to (if different):
Project Manager: TOM Bird	P.O. #:
Address: 6473 C.R. 120	Company:
City: Hesperus State: CO Zip: 81326	Attn:
Phone #: (970) 385-4528 Email: TBIRD@GCC.COM	Address:
Additional Report To: LBeck@resourcehydrogeologic.com	City:
Project Name:	State: Zip:
Project Number:	Phone #:
Sampler Name (Print): Jessica Luna	Fax or Email:

FOR LAB USE ONLY Lab I.D.	Sample Name or Location	Collected Date	Collected Time	Matrix (check one) GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER :	# of containers No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	Other:	ANALYSIS REQUEST GCC GW Baseline	GCC SW Baseline
1802-161-01	MW-4-MI	2/21/18	9:07	X						1		1	4				X	
-02	MW-4-A	2/21/18	9:42	X						1		1	4				X	
-03	MW-4-C	2/21/18	10:06	X						1		1	4				X	
-04	MW-3-MI	2/21/18	10:43	X						1		1	4				X	
-05	MW-3-A	2/21/18	11:07	X						1		1	4				X	
-06	MW-3-C	2/21/18	11:32	X						1		1	4				X	
-07	SW-MR-1	2/21/18	12:59		X					2	1	1	4					X

Relinquished By:	**Date:** 2/21/18	Received By:	ADDITIONAL REMARKS: Report to State? (Circle) Yes No
	Time: 2:09pm		
Relinquished By:	Date: 2/21/18	Received By:	
	Time: 1510		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - FedEx - Kangaroo - Other:

Temperature at reciept: 3.8/3.6°C

CHECKED BY: DZ

#1 on ice

† GAL cannot always accept verbal changes. Please fax or email written change requests.

* Chain of Custody must be signed in "Reliquished By:" as an acceptance of services and all applicable charges.

Project Information

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: **Debbie Zufelt**

Phone:(970) 385-4528
Fax:(970) 385-4638

King Coal
2/21/2018

Project Name:	GCC SW Baseline	**Invoice To:**	GCC Energy, LLC
Project Number:	GCC SW Baseline	**Invoice Bid:**	GCC SW Baseline
Client PM:	Tom Bird	**Invoice Manager:**	Tom Bird
Comments:	All Metals Are Field Filtered. Send Out Unpreserved Metals Bottles Per Request.		

Analysis	Comment
Lead Dissolved by ICPMS	
Iron Dissolved by ICP	
Hardness, diss	
Fluoride by IC	
Alkalinity, Bicarbonate	
Chloride by IC	
Molybdenum Dissolved by ICPM	
Cadmium Dissolved by ICPMS	
Arsenic Dissolved by ICPMS	
Aluminum Dissolved by ICP	
Alkalinity, Total	
Alkalinity, Hydroxide	
Alkalinity, Carbonate	
Copper Dissolved by ICPMS	
Selenium Dissolved by ICPMS	
Uranium Dissolved by ICPMS	
Sulfate by IC	
Subcontract Analysis 1	TOC
Solids, Total Suspended (TSS)	
Solids, Total Dissolved (TDS)	
Sodium Dissolved by ICP	
Manganese Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Mercury Total by CVAA	
SAR	
Potassium Dissolved by ICP	
pH	
Oil & Grease	
Nitrate/Nitrite as N	
Zinc Dissolved by ICPMS	
Hardness, diss subanalyses:	
Calcium Dissolved by ICP	
Magnesium Dissolved by ICP	
Silica Dissolved by ICP Package subanalyses:	
Silicon Dissolved by ICP	

Project Information

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: **Debbie Zufelt**
Phone:(970) 385-4528
Fax:(970) 385-4638

King Coal
2/21/2018

Project Name:	GCC GW Baseline	**Invoice To:**	GCC Energy, LLC
Project Number:	GCC GW Baseline	**Invoice Bid:**	GCC GW Baseline
Client PM:	Tom Bird	**Invoice Manager:**	Tom Bird
Comments:	All Metals Are Field Filtered. Send Out Unpreserved Metals Bottles Per Request.		

Analysis	Comment
Manganese Dissolved by ICPMS	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Alkalinity, Bicarbonate	
Zinc Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPM	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Subcontract Analysis 1	TOC
Sulfate by IC	
Uranium Dissolved by ICPMS	
Lead Dissolved by ICPMS	
Hardness, diss subanalyses:	
Calcium Dissolved by ICP	
Magnesium Dissolved by ICP	
Silica Dissolved by ICP Package subanalyses:	
Silicon Dissolved by ICP	

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch Upgradient																		
Year		2016										2017						2018
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2
Sample Date		3/31	4/22	5/26	6/23	7/20	8/25	9/21	10/19	11/29	12/13	1/26	2/27	3/22	6/28	9/21	11/28	2/22
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y
Field Parameters:																		
Flow Rate	***cfs***	0.70	0.99	1.22	1.56	0.99	0.99	1.07	0.95	NM	1.02	NM	0.82	0.28	2.69	NM	NM	NM
Temperature	***deg C***	9.8	20.9	11.3	21.1	20.8	16.8	14.93	16.39	5.86	6.97	1.52	4.73	10.69	20.21	19.72	8.78	4.74
pH	***SU***	7.75	8.27	7.95	8.15	8.24	8.26	8.47	8.19	8.79	8.58	8.2	8.69	8.77	8.88	8.39	7.60	7.9
Specific Conductance	***µS/cm***	247	323	197	141	189	207	233.2	210.2	257.9	233.7	686.6	455	453.5	106.2	549.4	868.30	1041
Oxygen Reduction Potential	***mV***	76.4	114.7	97.2	51.6	53.6	82.8	72.5	105.9	92.4	116.3	66.3	-12	-10.6	23.8	86.1	95.10	-164.1
Dissolved Oxygen	***mg/L***	8.12	6.35	8.03	5.96	6.48	6.86	7.2	4.73	6.71	6.1	10.59	8.96	6.89	4.79	6.73	9.26	9.35
Lab Analytical Results:																		
Hardness as CaCO3	***mg/L***	128			80.9			119		152				257	69.2	316	456	489
pH (Lab)	***SU***	8.17			8.04			8.16		8.19				8.06	8.06	8.22	8.31	8.39
Total Dissolved Solids (Lab)	***mg/L***	170			75			165		180				285	65.0	390	650	700
Total Suspended Solids	***mg/L***	30.0			117			17.0		4.8				2.50	63.5	2.00	5.75	6.01
Calcium	***mg/L***	33.5			24			33.0		38.4				53.6	20.8	64.9	86.6	87.3
Magnesium	***mg/L***	10.9			5.08			9.01		13.7				29.8	4.21	37.5	58.3	65.9
Sodium	***mg/L***	4.46			2.19			3.90		6				10.9	1.97	13.8	27.1	34.6
Potassium	***mg/L***	<1			<1			1.35		<1.00				<1.00	1.75	2.15	3.05	3.52
Alkalinity, Total	***mg/L***	160			65			98.0		118				185	55.0	177	305	244
Alkalinity, Bicarbonate	***mg/L***	160			65			94.0		118				185	55.0	161	285	244
Alkalinity, Carbonate	***mg/L***	<10			<10			<10		<10.0				<10.0	<10.0	16.0	20.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<10			<10			<10		<10.0				<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	***mg/L***	5.77			2.07			4.32		7.92				22.7	1.76	30.8	48.2	46.7
Fluoride	***mg/L***	0.213			0.208			0.223		0.208				0.215	0.195	0.265	0.283	0.285
Sulfate as SO4	***mg/L***	42.1			17.7			29.0		45.3				87.7	15.0	99.0	179	229
Total Organic Carbon (TOC)	***mg/L***	1.41			1.6			2.21		1.14				2.49	1.15	1.90	1.99	1.81
Oil & Grease	***mg/L***	<5			<5			<5		<5.00				<5.00	<5.00	<5.00	<5.00	<5.00
Nitrate/Nitrite as N	***mg/L***	<0.02			0.028			<0.020		<0.020				0.053	<0.020	0.045	0.088	0.105
Sodium Adsorption Ratio (SAR)	***no unit***	0.17			0.1			0.16		0.21				0.30	0.10	0.34	0.55	0.68
Aluminum	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050
Arsenic	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0005				0.0005	<0.0005	0.0009	0.0007	<0.0025
Cadmium	***mg/L***	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
Copper	***mg/L***	0.0006			0.0011			0.0011		0.0005				0.0008	0.0013	0.0006	0.0005	0.0007
Iron	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050
Lead	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
Manganese	***mg/L***	0.0059			0.0035			0.0043		0.0047				0.0070	0.0024	0.0098	0.0049	0.0049
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	***mg/L***	<0.0005			0.0009			0.0007		0.0008				0.0006	0.0009	0.0012	0.0008	<0.0025
Selenium	***mg/L***	<0.001			<0.001			<0.001		<0.0010				0.0023	<0.0010	<0.0010	0.0010	<0.0050
Silica (Si02)	***mg/L***	7.78			8.23			10.5		9.71				9.04	7.71	9.45	10.1	11.0
Silicon	***mg/L***	3.64			3.85			4.89		4.54				4.23	3.60	4.42	4.71	5.14
Uranium	***mg/L***	0.0002			0.0001			0.0002		0.0003				0.0003	0.0001	0.0006	0.0009	0.0013
Zinc	***mg/L***	<0.001			<0.001			<0.001		<0.0010				0.0022	<0.0020	<0.0040	<0.0020	<0.0100
Radium 226	***pCi/L***	<0.4			NA			NA		NA				NA	NA	NA	NA	NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA	NA	NA

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch Downgradient																		
Year		**2016**										**2017**						**2018**
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2
Sample Date		3/31	4/22	5/26	6/23	7/20	8/25	9/21	10/19	11/29	12/13	1/26	2/27	3/22	6/28	9/21	11/28	2/22
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	N	Y
Field Parameters:																		
Flow Rate	***cfs***	1.05	1.16	1.13	NM	1.06	1.14	NM	0.76	NM	NM	NM	0.79	0.25	0.341	NM		NM
Temperature	***deg C***	11.8	17.6	10.9	21.9	21.3	18.8	16.11	11.79	7.02	6.59	7.17	5.01	12.7	17.63	18.72		6.26
pH	***SU***	8.57	8.55	8.14	8.14	8.55	8.37	8.3	8.36	8.64	8.06	7.28	8.06	9.00	8.53	8.66		8.33
Specific Conductance	***µS/cm***	429	530	297	116	308	257	1182.9	420.1	421.4	727.7	677.9	987.4	16.9	114.3	163.5	dry	741.5
Oxygen Reduction Potential	***mV***	57.5	105.9	33.2	32.5	68.6	38.4	18.7	88.6	117.5	155.2	147.6	-15.5	137.8	185.3	48		51.6
Dissolved Oxygen	***mg/L***	7.85	7.65	8.71	5.99	6.73	5.56	6.81	7.09	6.54	7.21	7.62	9.82	5.58	6.44	7.13		9.76
Lab Analytical Results:																		
Hardness as CaCO3	***mg/L***	226			67.8			480		267				503	59.1	91.4		329
pH (Lab)	***SU***	8.42			8.13			8.25		8.24				8.15	7.98	7.98		8.17
Total Dissolved Solids (Lab)	***mg/L***	270			55			630		320				615	65.0	80.0		420
Total Suspended Solids	***mg/L***	27.3			18			4.20		12.4				12.7	3.00	<0.500		49.5
Calcium	***mg/L***	55.5			21.9			94.7		65.5				112	19.0	29.5		75.4
Magnesium	***mg/L***	21.1			3.15			59.1		25.2				54.6	2.86	4.31		34.2
Sodium	***mg/L***	8.69			1.57			16.8		10.7				22.5	1.49	2.37		18.1
Potassium	***mg/L***	1.49			<1			4.48		1.46				2.33	<1.00	<1.00		2.84
Alkalinity, Total	***mg/L***	220			59			220		225				320	47.0	85.0		265
Alkalinity, Bicarbonate	***mg/L***	220			59			140		155				320	47.0	85.0		259
Alkalinity, Carbonate	***mg/L***	<10			<10			80.0		70				<10.0	<10.0	<10.0		<10.0
Alkalinity, Hydroxide	***mg/L***	<10			<10			<10		<10.0				<10.0	<10.0	<10.0		<10.0
Chloride	***mg/L***	9.40			1.26			97.9		12				31.9	<1.00	1.54		23.1
Fluoride	***mg/L***	0.244			0.195			0.244		0.227				0.224	0.290	0.227		0.308
Sulfate as SO4	***mg/L***	68.1			13.5			144		89.5				204	11.3	17.9		86.5
Total Organic Carbon (TOC)	***mg/L***	1.53			1.4			3.48		1.65				2.31	2.16	0.932		1.56
Oil & Grease	***mg/L***	<5			<5			<5		<5.00				<5.00	<5.00	<5.00		<5.00
Nitrate/Nitrite as N	***mg/L***	<0.02			0.026			0.027		<0.020				<0.020	<0.020	<0.020		<0.020
Sodium Adsorption Ratio (SAR)	***no unit***	0.25			0.03			0.33		0.28				0.44	0.08	0.11		0.43
Aluminum	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		<0.050
Arsenic	***mg/L***	0.0005			<0.0005			0.0015		0.0006				0.0006	0.0005	0.0006		0.0005
Cadmium	***mg/L***	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001		<0.0001
Copper	***mg/L***	0.0004			0.0016			0.0012		0.0005				0.0004	0.0020	0.0013		0.0005
Iron	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		<0.050
Lead	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005		<0.0005
Manganese	***mg/L***	0.0039			0.0044			0.0059		0.0063				0.0112	0.0009	0.0010		0.0962
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002		<0.0002
Molybdenum	***mg/L***	<0.0005			0.0008			0.0013		0.0007				<0.0005	0.0009	0.0011		0.0010
Selenium	***mg/L***	<0.001			<0.001			0.0026		<0.0010				0.0022	<0.0010	<0.0010		0.0011
Silica (Si02)	***mg/L***	8.96			7.48			11.8		10.9				12.2	6.80	8.53		10.7
Silicon	***mg/L***	4.19			3.5			5.51		5.11				5.70	3.18	3.99		5.01
Uranium	***mg/L***	0.0004			0.0001			0.0006		0.0006				0.0009	0.0001	0.0002		0.0012
Zinc	***mg/L***	<0.001			0.0021			0.0013		0.0012				<0.0020	<0.0020	<0.0040		<0.0020
Radium 226	***pCi/L***	<0.4			NA			NA		NA				NA	NA	NA		NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA		NA

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

Well #1 Upgradient																		
Year		2016										2017						2018
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2
Sample Date		3/30	4/27	5/26	6/23	7/19	8/24	9/21	10/24	11/30	12/14	1/18	2/27	3/22	6/28	9/28	11/29	2/22
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y
Field Parameters:																		
Purge Flow Rate	gpm	1.5	7.9	7.1	5.8	7.1	7.4	6.83	7.47	9.26	7.52	7.7	7.54	8.16	6.95	7.08	7.46	7.15
Total Purged	gal	306	522	870	297	280	284	288	300	280	295	298	297	291	286	258.83	287.15	267.6
Depth to Water	ft bgs	4.40	5.07	4.60	4.95	5.55	6.30	6.03	5.73	5.69	5.08	4.3	3.8	3.82	4.5	5.51	5.50	5.4
Temperature	deg C	8.8	13.1	11.9	14.2	14.1	12.7	12.54	12.58	10.64	11.27	10.9	10.41	11.24	11.85	11.84	11.61	11.52
pH	SU	7.77	7.57	7.46	7.6	7.69	7.59	7.67	7.77	7.72	7.68	7.6	7.67	7.67	7.59	7.6	7.58	7.56
Specific Conductance	µS/cm	1224	1199	1284	1246	1226	1143	1175.5	1223.4	1279.6	1304.9	1391.5	1415.3	1351.2	1158.6	1162.3	1241.40	1278.7
Oxygen Reduction Potential	mV	-123.1	-162.2	-142.5	-185.4	-156.6	-196.8	-140.6	-148.9	-152.9	-141	-143.6	-125.6	-132.2	-201	-176.9	-213.20	-185.3
Lab Analytical Results:																		
Hardness as CaCO3	mg/L	230			306			216		271				391	277	215	280	274
pH (Lab)	SU	7.73			7.57			7.58		7.59				7.46	7.74	7.66	7.56	7.75
Total Dissolved Solids (Lab)	mg/L	760			745			735		725				775	725	705	790	745
Calcium	mg/L	44.0			59.7			42.4		51.7				75.7	54.0	41.6	55.6	53.4
Magnesium	mg/L	29.1			38.2			26.7		34.5				49.1	34.6	27.1	34.4	34.2
Sodium	mg/L	199			196			210		189				167	189	203	195	183
Potassium	mg/L	3.00			3.15			3.01		3.01				3.30	3.00	3.09	2.99	3.09
Alkalinity, Total	mg/L	610			660			620		615				640	585	670	625	620
Alkalinity, Bicarbonate	mg/L	570			660			620		615				640	585	670	625	620
Alkalinity, Carbonate	mg/L	40.0			<10			<10		<10.0				<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	4.33			6.12			4.30		4.44				4.53	4.32	6.21	4.39	4.30
Fluoride	mg/L	0.347			<0.5			0.353		0.337				0.337	0.362	<0.500	0.358	0.354
Sulfate as SO4	mg/L	90.1			108			83.8		117				156	97.4	74.0	101	106
Total Organic Carbon (TOC)	mg/L	2.54			3.3			2.8		3.18				3.84	5.82	2.84	3.33	3.37
Nitrate/Nitrite as N	mg/L	<0.02			<0.02			<0.02		<0.200				<0.020	<0.400	<0.400	<0.020	<0.020
Aluminum	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050
Arsenic	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				0.0009	<0.0005	<0.0005	<0.0005	0.0005
Cadmium	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Copper	mg/L	0.0035			0.003			0.0021		0.0041				0.0020	0.0020	0.0030	0.0027	0.0035
Iron	mg/L	1.20			1.51			0.946		1.64				2.01	1.34	0.101	1.44	1.44
Lead	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese	mg/L	0.267			0.344			0.221		0.312				0.491	0.315	0.202	0.311	0.307
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	<0.0005			<0.0005			<0.0005		0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Selenium	mg/L	<0.001			<0.001			<0.001		<0.0010				0.0245	<0.0010	<0.0010	<0.0010	<0.0010
Silica (Si02)	mg/L	13.8			15.2			14.8		12.9				14.2	14.9	14.3	14.7	13.4
Silicon	mg/L	6.45			7.12			6.94		6.05				6.64	6.94	6.68	6.86	6.27
Uranium	mg/L	<0.0001			0.0021			<0.0001		0.0002				0.0002	0.0001	0.0001	0.0001	0.0002
Zinc	mg/L	<0.001			<0.001			0.0023		0.0301				<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Radium 226	pCi/L	<0.4			NA			NA		NA				NA	NA	NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA	NA	NA

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

Well #2 Downgradient																		
Year		2016										2017						2018
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2
Sample Date		3/30	4/21	5/25	6/23	7/19	8/24	9/20	10/19	11/30	12/14	1/26	2/27	3/22	6/13	9/21	11/28	2/22
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y
Field Parameters:																		
Purge Flow Rate	gpm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	NM	7.2	2	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	7	6	7	7	6	6	6	6	6	6	8	8	6	8	8	6.00	6
Depth to Water	ft bgs	3.69	3.17	4.25	1.42	4.17	4.17	5.5	6.4	4.7	5	3.95	2.74	6.35	0.95	4.85	5.68	6.68
Temperature	deg C	6.3	10.1	13.5	18.4	19.8	14	14.13	13.29	10.36	12.4	6.98	4.44	8.43	17.05	12.13	11.66	9.81
pH	SU	7.58	7.6	7.6	7.64	7.68	7.73	7.53	7.66	7.66	7.71	7.57	7.68	7.78	7.56	7.66	7.52	7.59
Specific Conductance	µS/cm	899	867	804	600	369	815	876.5	881.1	903.8	871.9	907.5	1193.3	920.5	633.4	851.8	878.60	887
Oxygen Reduction Potential	mV	-9.4	-13.7	-35.7	-66.9	-112.1	-76.3	-88.3	-82	-72.7	-81.1	-66.8	-55.7	-67	-54.3	-53.7	-63.70	-44.9
Lab Analytical Results:																		
Hardness as CaCO3	mg/L	444			314			452		432				485	352	378	449	412
pH (Lab)	SU	7.63			7.66			7.48		7.55				7.72	7.6	7.51	7.51	7.62
Total Dissolved Solids (Lab)	mg/L	685			470			525		495				635	415	525	540	515
Calcium	mg/L	72.2			54.9			75.9		72.7				81.0	60.9	64.8	78.0	70.1
Magnesium	mg/L	63.9			43.1			63.8		60.8				68.7	48.5	52.6	61.8	57.4
Sodium	mg/L	22.2			16.5			19.8		20.7				21.8	16.1	17.0	20.1	19.4
Potassium	mg/L	2.04			2.1			2.16		2.05				1.94	2.22	1.64	2.19	1.76
Alkalinity, Total	mg/L	342			280			380		380				375	285	395	375	333
Alkalinity, Bicarbonate	mg/L	338			280			380		380				375	285	395	375	333
Alkalinity, Carbonate	mg/L	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0
Chloride	mg/L	35.8			6.8			27.4		26.2				23.3	7.11	19.0	23.4	24.7
Fluoride	mg/L	0.230			0.298			0.272		0.256				0.228	0.313	0.263	0.246	0.244
Sulfate as SO4	mg/L	129			70			114		117				153	75.2	98.4	94.7	104
Total Organic Carbon (TOC)	mg/L	3.34			14			2.64		3.4				3.52	3.56	2.61	2.25	2.10
Nitrate/Nitrite as N	mg/L	0.042			<0.02			<0.02		0.089				<0.020	<0.02	<0.020	<0.020	<0.020
Aluminum	mg/L	0.156			<0.05			<0.05		<0.050				<0.050	<0.05	<0.050	<0.050	<0.050
Arsenic	mg/L	0.0008			0.0015			0.0010		0.0013				0.0009	0.0017	0.0006	0.0011	0.0010
Cadmium	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Copper	mg/L	0.0004			0.0005			0.0003		0.0051				0.0007	0.0002	0.0004	0.0001	0.0056
Iron	mg/L	0.081			0.085			0.118		<0.050				0.213	<0.05	<0.050	0.074	0.060
Lead	mg/L	<0.0005			<0.0005			<0.0005		0.0078				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese	mg/L	0.497			0.54			0.354		0.359				0.384	0.259	0.307	0.309	0.304
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.0014			0.0022			0.0024		0.0025				0.0021	0.0025	0.0021	0.0020	0.0024
Selenium	mg/L	<0.001			<0.001			<0.001		0.0011				0.0045	<0.001	<0.0010	<0.0010	0.0012
Silica (Si02)	mg/L	11.6			14.7			12.8		11.9				10.9	15.5	13.0	13.3	11.1
Silicon	mg/L	5.42			6.89			5.97		5.55				5.12	7.23	6.08	6.20	5.19
Uranium	mg/L	0.0013			0.0007			0.0015		0.0016				0.0014	0.0008	0.0013	0.0013	0.0013
Zinc	mg/L	0.0034			<0.001			0.0010		0.0311				<0.0020	<0.002	<0.0040	<0.0020	0.0053
Radium 226	pCi/L	<0.4			NA			NA		NA				NA	NA	NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA	NA	NA

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*
2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*
3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

Wiltse Well																		
Year		2016										2017						2018
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2
Sample Date		3/31	4/27	5/25	6/23	7/19	8/24	9/20	10/24	11/29	12/13	1/18	2/27	3/21	6/13	9/28	11/28	2/22
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y
Field Parameters:																		
Purge Flow Rate	***gpm***	150	38.5	23.4	18.6	19.9	17.3	15.8	16.95	10.64	18.05	39.53	39.59	39.59	NM	18.32	23.48	11.92
Total Purged	***gal***	5850	4228	4229	3686	2844	2979	2637	2724	2992	2916	3595	3580	3560	2980	2712.36	2422.75	2699.54
Depth to Water	***ft bgs***	0.35	0.00	0.85	2.15	2.99	2.6	3.32	6.85	1.9	1.95	0.3	0	0	2.05	3.4	3.40	3.35
Temperature	***deg C***	6.7	8.8	10.4	10.7	11.5	12.1	11.47	10.95	9.11	8.79	7.56	7.2	7.53	10.34	11.29	9.69	8
pH	***SU***	7.22	7.32	7.34	7.26	7.26	7.24	7.22	7.22	7.32	7.29	7.2	7.17	7.12	7.41	7.27	7.30	7.26
Specific Conductance	***µS/cm***	2043	1633	1805	1768	1478	1602	1941.1	1937.3	2013.6	2035.6	2261.5	2276.3	2085.2	1869	2074.2	2189.80	2231.6
Oxygen Reduction Potential	***mV***	105.6	17.9	20.1	38.5	26.9	20	28.6	21.6	13.7	20.9	3.2	18.3	6	13.3	19.5	19.20	14.3
Lab Analytical Results:																		
Hardness as CaCO3	***mg/L***	990			1050			1030		963				1040	1060	1140	1150	1090
pH (Lab)	***SU***	7.22			7.34			7.29		7.36				7.22	7.46	7.30	7.33	7.70
Total Dissolved Solids (Lab)	***mg/L***	1580			1480			1520		1520				1480	1510	1680	1740	1740
Calcium	***mg/L***	197			208			206		186				205	211	219	226	211
Magnesium	***mg/L***	121			128			126		121				128	129	143	142	136
Sodium	***mg/L***	95.9			75.2			80.7		82.4				110	87.5	80.7	83.4	80.4
Potassium	***mg/L***	4.64			4.56			4.90		4.42				4.61	4.79	4.62	<5.00	4.73
Alkalinity, Total	***mg/L***	460			500			470		450				410	445	510	475	445
Alkalinity, Bicarbonate	***mg/L***	440			500			470		450				410	445	510	475	445
Alkalinity, Carbonate	***mg/L***	20.0			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0
Chloride	***mg/L***	81.0			76.3			62.3		70.1				72.5	72.5	68.7	68.9	66.7
Fluoride	***mg/L***	0.285			<0.5			<0.5		0.3				<0.500	0.332	<0.500	<0.500	<0.500
Sulfate as SO4	***mg/L***	671			595			656		676				731	702	779	772	832
Total Organic Carbon (TOC)	***mg/L***	3.54			4.1			3.15		3.02				3.40	3.54	3.34	3.26	3.37
Nitrate/Nitrite as N	***mg/L***	0.456			0.891			1.08		0.965				0.492	1.07	1.80	1.94	2.26
Aluminum	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.1	<0.050	<0.250	<0.100
Arsenic	***mg/L***	<0.0025			<0.0025			0.0005		0.0008				0.0009	0.0006	0.0005	0.0029	0.0009
Cadmium	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0001				<0.0001	<0.0001	<0.0001	<0.0005	<0.0001
Copper	***mg/L***	0.0018			0.0024			0.0020		0.0038				0.0023	0.0019	0.0025	0.0097	0.0020
Iron	***mg/L***	0.100			<0.05			0.060		0.136				0.286	0.161	<0.050	<0.250	0.132
Lead	***mg/L***	<0.0025			<0.0025			<0.0025		<0.0005				<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
Manganese	***mg/L***	0.673			0.857			0.756		0.608				0.440	0.797	0.881	4.50	0.845
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	***mg/L***	<0.0025			<0.0025			0.0017		0.0016				0.0016	0.0021	0.0021	0.0093	0.0020
Selenium	***mg/L***	<0.005			<0.005			0.0013		0.0023				0.0027	0.0019	0.0016	0.0087	0.0027
Silica (Si02)	***mg/L***	13.9			16.1			16.4		14.3				14.7	15.5	16.1	13.4	14.1
Silicon	***mg/L***	6.51			7.53			7.67		6.69				6.85	7.22	7.54	6.29	6.58
Uranium	***mg/L***	0.0029			0.0021			0.0023		0.0026				0.0024	0.0021	0.0021	0.0110	0.0025
Zinc	***mg/L***	0.0156			0.0364			0.0301		0.0269				0.0194	0.026	0.0208	0.0855	0.0216
Radium 226	***pCi/L***	0.7 +/- 0.1			NA			NA		NA				NA	NA	NA	NA	NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA	NA	NA

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

MW-HGA-4																
Year		2016	2017												2018	
Quarter		Q4	Q1			Q2			Q3			Q4			Q1	
Month		12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Sample Date		12/12	1/26	2/28	3/22	4/27	5/31	6/13	7/27	8/16	9/21	10/27	11/28	12/12	1/3	2/22
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	N	Y	N	Y	N	N	Y
Field Parameters:																
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.40	NM	0.1
Total Purged	gal	21	21	21	21	21	21	19.5	20	20	21	21	21	24	19	21
Depth to Water	ft bgs	0.73	0.57	0.6	0.83	0.94	2.06	2.53	3.25	2.65	3.31	3.31	1.76	4.31	1.37	0.55
Temperature	deg C	7.31	4.76	6.44	8.14	7.21	9.86	8.37	8.61	8.81	9	9.16	9.00	9.32	8.8	7.75
pH	SU	7.29	7.36	7.4	7.41	7.33	7.36	7.4	7.36	7.35	7.33	7.31	7.27	7.27	7.33	7.3
Specific Conductance	µS/cm	1284.3	1256.5	1201	1155.3	1152.7	1112.6	1055.1	1098.7	1049.7	1124.1	1072.30	1170.50	1159.90	1140.7	1154.1
Oxygen Reduction Potential	mV	-72.1	-86.6	-105.1	-104.4	-74.5	-91.3	-134.7	-137.6	-131	-139.5	-77.30	-157.90	-70.10	-96.6	-157.3
Lab Analytical Results:																
Hardness as CaCO3	mg/L	724			611			616			522		595			561
pH (Lab)	SU	7.30			7.17			7.31			7.25		7.21			7.58
Total Dissolved Solids (Lab)	mg/L	855			710			715			750		775			740
Calcium	mg/L	147			118			121			102		118			110
Magnesium	mg/L	86.7			76.7			76.6			64.9		72.8			69.3
Sodium	mg/L	19.5			27.4			28.6			24.9		27.2			26.5
Potassium	mg/L	2.02			2.13			2.11			1.75		2.21			2.17
Alkalinity, Total	mg/L	545			465			415			465		475			460
Alkalinity, Bicarbonate	mg/L	545			465			415			465		475			460
Alkalinity, Carbonate	mg/L	ND			<10.0			<10			<10.0		<10.0			<10.0
Alkalinity, Hydroxide	mg/L	ND			<10.0			<10			<10.0		<10.0			<10.0
Chloride	mg/L	10.9			8.75			7.95			8.96		8.74			8.43
Fluoride	mg/L	0.577			0.485			0.506			0.517		0.495			0.496
Sulfate as SO4	mg/L	240			229			192			205		204			222
Total Organic Carbon (TOC)	mg/L				4.54			4.35			4.69		4.79			4.56
Nitrate/Nitrite as N	mg/L	ND			<0.020			<0.02			<0.020		<0.100			<0.020
Aluminum	mg/L	0.423			<0.050			<0.05			<0.050		<0.050			<0.050
Arsenic	mg/L	0.0030			0.0029			0.0028			<0.0005		0.0035			0.0037
Cadmium	mg/L	ND			<0.0001			<0.0001			<0.0001		<0.0001			<0.0001
Copper	mg/L	0.0006			0.0008			0.0002			0.0004		0.0002			0.0006
Iron	mg/L	3.71			7.29			7.32			0.378		7.84			7.60
Lead	mg/L	ND			<0.0005			<0.0005			<0.0005		<0.0005			<0.0005
Manganese	mg/L	4.07			2.78			2.37			2.03		2.11			1.99
Mercury	mg/L	ND			<0.0002			<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0013			0.0024			0.0027			0.0028		0.0027			0.0030
Selenium	mg/L	ND			0.0030			<0.001			<0.0010		<0.0010			<0.0010
Silica (Si02)	mg/L	22.3			16.8			18			16.5		17.9			15.8
Silicon	mg/L	10.4			7.86			8.41			7.72		8.35			7.37
Uranium	mg/L	0.0010			0.0004			0.0004			0.0004		0.0004			0.0004
Zinc	mg/L	0.0039			0.0046			<0.002			<0.0040		<0.0020			<0.0020

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

MW-1-A											
Year		2017								2018	
Quarter		Q2	Q3				Q4			Q1	
Month		6	7	8	9	9	10	11	12	1	2
Sample Date		6/7	7/18	8/23	9/7	9/26	10/26	11/16	12/5	1/2	2/9
Lab Analysis (Y/N)		Y	N	N	N	Y	N	Y	N	N	Y
Field Parameters:											
Purge Flow Rate	gpm	NM	NM*	NM*	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	12.75	NM*	NM*	NM	NM	2	2	1	1.5	2
Depth to Water	ft bgs	215.42	NM*	215.92	215.54	216.33	216.31	216.47	216.58	216.21	216.47
Temperature	deg C	17.72	NM*	NM*	10.74	9.73	9.14	9.06	8.66	9.46	8.95
pH	SU	7.78	NM*	NM*	7.35	7.38	7.29	7.28	7.25	7.19	7.37
Specific Conductance	µS/cm	1362.4	NM*	NM*	1554.6	1563.2	1615.80	1650.40	1692.60	1699.6	1723
Oxygen Reduction Potential	mV	-34.6	NM*	NM*	-54.7	-46.5	-50.00	-48.30	-49.60	-44.6	-52.8
Lab Analytical Results:											
Hardness as CaCO3	mg/L	124				133		130			159
pH (Lab)	SU	7.74				7.35		7.33			7.22
Total Dissolved Solids (Lab)	mg/L	975				1080		1120			1100
Calcium	mg/L	24.7				25.8		24.9			30.5
Magnesium	mg/L	15.1				16.7		16.6			20.1
Sodium	mg/L	324				329		325			348
Potassium	mg/L	1.98				2.02		<5.00			<5.00
Alkalinity, Total	mg/L	375				450		380			415
Alkalinity, Bicarbonate	mg/L	375				450		380			415
Alkalinity, Carbonate	mg/L	<10.0				<10.0		<10.0			<10.0
Alkalinity, Hydroxide	mg/L	<10.0				<10.0		<10.0			<10.0
Chloride	mg/L	2.75				2.16		<5.00			2.19
Fluoride	mg/L	0.268				0.245		<0.500			0.240
Sulfate as SO4	mg/L	427				432		511			518
Total Organic Carbon (TOC)	mg/L	5.03				1.36		1.58			1.51
Nitrate/Nitrite as N	mg/L	<0.200				<0.400		<0.100			<0.020
Aluminum	mg/L	<0.050				<0.050		<0.250			<0.250
Arsenic	mg/L	<0.0005				<0.0005		<0.0025			<0.0025
Cadmium	mg/L	<0.0001				<0.0001		<0.0005			<0.0005
Copper	mg/L	0.0043				0.0057		0.0045			0.0066
Iron	mg/L	0.128				0.367		<0.250			0.590
Lead	mg/L	<0.0005				<0.0005		<0.0025			<0.0025
Manganese	mg/L	0.0260				0.0218		0.0259			0.0279
Mercury	mg/L	<0.0002				<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0007				0.0010		<0.0025			<0.0025
Selenium	mg/L	<0.0010				<0.0010		<0.0050			<0.0050
Silica (Si02)	mg/L	12.3				11.9		8.27			11.2
Silicon	mg/L	5.74				5.56		3.87			5.24
Uranium	mg/L	0.0004				0.0002		<0.0005			<0.0005
Zinc	mg/L	0.0270				0.0088		<0.0100			<0.0100

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

MW-1-MI											
Year		2017							2018		
Quarter		Q2	Q3			Q4			Q1		
Month		6	7	8	9	10	11	12	1	2	
Sample Date		6/7	7/18	8/23	9/26	10/26	11/16	12/5	1/2	2/9	
Lab Analysis (Y/N)		Y	N	N	N	N	N	N	N	N	
Field Parameters:											
Purge Flow Rate	gpm	NM	NM*	NM	NM	dry	dry	dry	dry	dry	
Total Purged	gal	19.5	NM*	<0.5gal	NM						
Depth to Water	ft bgs	259.99	NM*	258.29	258.34						
Temperature	deg C	15.8	NM*	11.83	21.73						
pH	SU	8	NM*	7.94	7.86						
Specific Conductance	µS/cm	2031.5	NM*	2137.1	2119.4						
Oxygen Reduction Potential	mV	160.5	NM*	65.7	61.4						
Lab Analytical Results:											
Hardness as CaCO3	mg/L	231									
pH (Lab)	SU	8.14									
Total Dissolved Solids (Lab)	mg/L	1520									
Calcium	mg/L	46.7									
Magnesium	mg/L	27.9									
Sodium	mg/L	470									
Potassium	mg/L	2.55									
Alkalinity, Total	mg/L	600									
Alkalinity, Bicarbonate	mg/L	600									
Alkalinity, Carbonate	mg/L	<10.0									
Alkalinity, Hydroxide	mg/L	<10.0									
Chloride	mg/L	7.69									
Fluoride	mg/L	1.14									
Sulfate as SO4	mg/L	739									
Total Organic Carbon (TOC)	mg/L	5.14									
Nitrate/Nitrite as N	mg/L	0.103									
Aluminum	mg/L	<0.050									
Arsenic	mg/L	0.0029									
Cadmium	mg/L	<0.0001									
Copper	mg/L	0.0067									
Iron	mg/L	<0.050									
Lead	mg/L	0.0010									
Manganese	mg/L	0.0445									
Mercury	mg/L	<0.0002									
Molybdenum	mg/L	0.0796									
Selenium	mg/L	0.0028									
Silica (Si02)	mg/L	11.6									
Silicon	mg/L	5.44									
Uranium	mg/L	0.0505									
Zinc	mg/L	1.52									

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

MW-1-C											
Year		2017								2018	
Quarter		Q2	Q3				Q4			Q1	
Month		6	7	8	9	9	10	11	12	1	2
Sample Date		6/7	7/18	8/23	9/7	9/26	10/26	11/16	12/5	1/2	2/9
Lab Analysis (Y/N)		Y	N	N	N	Y	N	Y	NM	N	Y
Field Parameters:											
Purge Flow Rate	**gpm**	NM	NM*	NM*	NM	NM	NM	NM	NM	MM	0.1
Total Purged	**gal**	5	NM*	NM*	NM	NM	1.00	1	1	1	1
Depth to Water	**ft bgs**	216.5	NM*	216.91	216.95	216.59	216.52	216.48	216.52	216.38	216.38
Temperature	**deg C**	15.96	NM*	NM*	NM	12.86	11.70	10.59	6.98	9.7	9.56
pH	**SU**	7.52	NM*	NM*	NM	7.17	7.16	7.15	7.17	7.11	7.19
Specific Conductance	**µS/cm**	2446.3	NM*	NM*	NM	2724.9	2737.80	2738.60	2777.60	2778.2	2737.7
Oxygen Reduction Potential	**mV**	74.3	NM*	NM*	NM	77.4	31.70	23.90	13.00	6.2	-4.3
Lab Analytical Results:											
Hardness as CaCO3	**mg/L**	498				1290		1180			1190
pH (Lab)	**SU**	8.35				7.36		7.34			7.22
Total Dissolved Solids (Lab)	**mg/L**	2020				2440		2360			2360
Calcium	**mg/L**	96.0				234		216			219
Magnesium	**mg/L**	62.8				172		155			156
Sodium	**mg/L**	506				242		253			260
Potassium	**mg/L**	11.4				3.81		<5.00			<5.00
Alkalinity, Total	**mg/L**	530				700		540			570
Alkalinity, Bicarbonate	**mg/L**	530				700		540			570
Alkalinity, Carbonate	**mg/L**	<10.0				<10.0		<10.0			<10.0
Alkalinity, Hydroxide	**mg/L**	<10.0				<10.0		<10.0			<10.0
Chloride	**mg/L**	24.2				6.97		8.03			7.78
Fluoride	**mg/L**	1.59				0.864		0.955			1.03
Sulfate as SO4	**mg/L**	1090				1350		1230			1160
Total Organic Carbon (TOC)	**mg/L**	4.56				2.84		2.12			2.21
Nitrate/Nitrite as N	**mg/L**	<2.00				<0.400		<0.100			<0.020
Aluminum	**mg/L**	<0.050				<0.050		<0.250			<0.250
Arsenic	**mg/L**	0.0029				0.0016		<0.0025			<0.0025
Cadmium	**mg/L**	<0.0001				<0.0001		<0.0005			<0.0005
Copper	**mg/L**	0.0088				0.0085		0.0036			0.0052
Iron	**mg/L**	<0.050				<0.050		<0.250			<0.250
Lead	**mg/L**	<0.0005				<0.0005		<0.0025			<0.0025
Manganese	**mg/L**	0.0744				0.0853		0.0959			0.0989
Mercury	**mg/L**	<0.0002				<0.0002		<0.0002			<0.0002
Molybdenum	**mg/L**	0.0164				0.0049		<0.0025			<0.0025
Selenium	**mg/L**	0.0136				0.0012		<0.0050			<0.0050
Silica (Si02)	**mg/L**	10.6				16.6		13.2			14.8
Silicon	**mg/L**	4.94				7.77		6.16			6.94
Uranium	**mg/L**	0.0500				0.0044		0.0028			0.0024
Zinc	**mg/L**	0.0293				0.0294		<0.0100			<0.0100

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

MW-2-A										
Year		2017							2018	
Quarter		Q1	Q2	Q3		Q4			Q1	
Month		3	6	7	8	10	11	12	1	2
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N
Field Parameters:										
Purge Flow Rate	gpm	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal									
Depth to Water	ft bgs									
Temperature	deg C									
pH	SU									
Specific Conductance	µS/cm									
Oxygen Reduction Potential	mV									
Lab Analytical Results:										
Hardness as CaCO3	mg/L									
pH (Lab)	SU									
Total Dissolved Solids (Lab)	mg/L									
Calcium	mg/L									
Magnesium	mg/L									
Sodium	mg/L									
Potassium	mg/L									
Alkalinity, Total	mg/L									
Alkalinity, Bicarbonate	mg/L									
Alkalinity, Carbonate	mg/L									
Alkalinity, Hydroxide	mg/L									
Chloride	mg/L									
Fluoride	mg/L									
Sulfate as SO4	mg/L									
Total Organic Carbon (TOC)	mg/L									
Nitrate/Nitrite as N	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Copper	mg/L									
Iron	mg/L									
Lead	mg/L									
Manganese	mg/L									
Mercury	mg/L									
Molybdenum	mg/L									
Selenium	mg/L									
Silica (Si02)	mg/L									
Silicon	mg/L									
Uranium	mg/L									
Zinc	mg/L									

Notes & Definitions:

Y/N	**yes or no**
gpm	**gallons per minute**
deg C	**degrees Celsius**
SU	**standard pH units**
µS/cm	**microsiemens per centimeter**
mV	**millivolts**
mg/L	**milligram per liter**
pCi/L	**picocuries per liter**
NM	**not measured (field)**
NA	**not analyzed (lab)**

1. *"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.*

2. *Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.*

3. *Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.*

GCC Energy Hydrologic Monitoring Data

MW-2-MI										
Year		2017							2018	
Quarter		Q1	Q2	Q3		Q4			Q1	
Month		3	6	7	8	10	11	12	1	2
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N
Field Parameters:										
Purge Flow Rate	gpm	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal									
Depth to Water	ft bgs									
Temperature	deg C									
pH	SU									
Specific Conductance	µS/cm									
Oxygen Reduction Potential	mV									
Lab Analytical Results:										
Hardness as CaCO3	mg/L									
pH (Lab)	SU									
Total Dissolved Solids (Lab)	mg/L									
Calcium	mg/L									
Magnesium	mg/L									
Sodium	mg/L									
Potassium	mg/L									
Alkalinity, Total	mg/L									
Alkalinity, Bicarbonate	mg/L									
Alkalinity, Carbonate	mg/L									
Alkalinity, Hydroxide	mg/L									
Chloride	mg/L									
Fluoride	mg/L									
Sulfate as SO4	mg/L									
Total Organic Carbon (TOC)	mg/L									
Nitrate/Nitrite as N	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Copper	mg/L									
Iron	mg/L									
Lead	mg/L									
Manganese	mg/L									
Mercury	mg/L									
Molybdenum	mg/L									
Selenium	mg/L									
Silica (Si02)	mg/L									
Silicon	mg/L									
Uranium	mg/L									
Zinc	mg/L									

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-2-C										
Year		2017							2018	
Quarter		Q1	Q2	Q3		Q4			Q1	
Month		3	6	7	8	10	11	12	1	2
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N
Field Parameters:										
Purge Flow Rate	gpm	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal									
Depth to Water	ft bgs									
Temperature	deg C									
pH	SU									
Specific Conductance	µS/cm									
Oxygen Reduction Potential	mV									
Lab Analytical Results:										
Hardness as CaCO3	mg/L									
pH (Lab)	SU									
Total Dissolved Solids (Lab)	mg/L									
Calcium	mg/L									
Magnesium	mg/L									
Sodium	mg/L									
Potassium	mg/L									
Alkalinity, Total	mg/L									
Alkalinity, Bicarbonate	mg/L									
Alkalinity, Carbonate	mg/L									
Alkalinity, Hydroxide	mg/L									
Chloride	mg/L									
Fluoride	mg/L									
Sulfate as SO4	mg/L									
Total Organic Carbon (TOC)	mg/L									
Nitrate/Nitrite as N	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Copper	mg/L									
Iron	mg/L									
Lead	mg/L									
Manganese	mg/L									
Mercury	mg/L									
Molybdenum	mg/L									
Selenium	mg/L									
Silica (Si02)	mg/L									
Silicon	mg/L									
Uranium	mg/L									
Zinc	mg/L									

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-3-A											
Year		2017								2018	
Quarter		Q1	Q2	Q3			Q4			Q1	
Month		3	6	7	8	9	10	11	12	1	2
Sample Date		3/27	6/30	7/18	8/24	9/28	10/27	11/17	12/7	1/3	2/21
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y
Field Parameters:											
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	30	2	NM	NM	NM	1	1	1	1.25	1.5
Depth to Water	ft bgs	297.35	298.24	297.45	298.24	298.11	298.12	298.01	298.05	298.37	298.04
Temperature	deg C	11.72	13.17	19.46	12.57	12.32	12.49	11.66	12.03	11.75	11.66
pH	SU	8.82	8.75	8.56	8.67	8.72	8.64	8.61	8.57	8.54	8.52
Specific Conductance	µS/cm	2535	2446	2115.4	2523.8	2469.5	2430.40	2482.70	2493.50	2528.4	2505.8
Oxygen Reduction Potential	mV	-269	-101.5	-55.3	-87.4	-142.3	-124.50	-125.60	-146.80	-120.3	-125.2
Lab Analytical Results:											
Hardness as CaCO3	mg/L	7.53	12.6			12.6		10.4			11.5
pH (Lab)	SU	8.63	8.69			8.53		8.29			8.45
Total Dissolved Solids (Lab)	mg/L	1630	1670			1630		1690			1680
Calcium	mg/L	2.00	3.67			3.63		3.27			3.33
Magnesium	mg/L	0.616	0.823			0.859		0.550			0.776
Sodium	mg/L	566	585			589		551			562
Potassium	mg/L	1.72	2.02			2.04		<5.00			<2.00
Alkalinity, Total	mg/L	530	470			500		490			430
Alkalinity, Bicarbonate	mg/L	380	470			440		460			360
Alkalinity, Carbonate	mg/L	150	<10.0			60.0		30.0			70.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0
Chloride	mg/L	16.1	17.4			18.5		16.9			16.4
Fluoride	mg/L	0.464	0.488			0.535		<0.500			<0.500
Sulfate as SO4	mg/L	729	802			840		730			812
Total Organic Carbon (TOC)	mg/L	3.52	10.0			7.26		6.07			5.32
Nitrate/Nitrite as N	mg/L	<0.100	<0.100			<0.020		<0.020			<0.020
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100
Arsenic	mg/L	0.0025	<0.0025			<0.0025		<0.0025			<0.0025
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0005
Copper	mg/L	0.0061	0.0081			0.0080		0.0079			0.0236
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100
Lead	mg/L	<0.0005	<0.0025			<0.0025		<0.0025			<0.0025
Manganese	mg/L	0.0042	0.0251			0.0194		0.0269			0.0232
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0005	0.0274			0.0091		0.0078			0.0065
Selenium	mg/L	0.0577	<0.0050			<0.0050		<0.0050			<0.0050
Silica (Si02)	mg/L	10.1	10.9			11.6		7.66			11.1
Silicon	mg/L	4.70	5.10			5.41		3.58			5.18
Uranium	mg/L	0.0002	0.0040			0.0051		0.0036			0.0030
Zinc	mg/L	0.0031	<0.0100			<0.0100		<0.0100			<0.0100

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-3-MI											
Year		2017								2018	
Quarter		Q1	Q2	Q3			Q4			Q1	
Month		3	6	7	8	9	10	11	12	1	2
Sample Date		3/27	6/30	7/18	8/16	9/28	10/27	11/17	12/7	1/3	2/21
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	0.1
Field Parameters:											
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	19	2	NM	NM	NM	1	1	1	1.25	1.5
Depth to Water	ft bgs	304.49	241.15	240.46	240.53	240.46	240.44	240.44	240.58	240.73	240.55
Temperature	deg C	10.03	12.55	22.02	12.88	11.04	12.05	11.69	11.67	11.92	11.29
pH	SU	9.34	8.94	8.46	8.9	8.74	8.90	8.86	8.86	8.84	8.83
Specific Conductance	µS/cm	1907	1698.6	1402.3	1598	1736.6	1728.60	1745.20	1786.40	1789.7	1810.3
Oxygen Reduction Potential	mV	-87	-54.5	-26.4	-108.2	-107.3	-113.80	-124.20	-163.10	-136	-131.4
Lab Analytical Results:											
Hardness as CaCO3	mg/L	4.85	8.73			9.02		7.75			9.92
pH (Lab)	SU	8.95	8.75			8.72		8.72			8.66
Total Dissolved Solids (Lab)	mg/L	1550	1120			1140		1080			1170
Calcium	mg/L	1.32	2.32			2.34		2.06			2.22
Magnesium	mg/L	0.374	0.714			0.775		0.632			1.07
Sodium	mg/L	420	430			440		411			459
Potassium	mg/L	2.15	2.21			1.93		<5.00			<2.00
Alkalinity, Total	mg/L	740	675			700		660			700
Alkalinity, Bicarbonate	mg/L	510	555			600		570			600
Alkalinity, Carbonate	mg/L	230	120			100		90.0			100
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0
Chloride	mg/L	8.66	10.1			10.7		10.6			10.7
Fluoride	mg/L	0.952	1.34			1.26		1.26			1.30
Sulfate as SO4	mg/L	165	241			247		254			245
Total Organic Carbon (TOC)	mg/L	8.34	14.8			10.9		10.3			9.24
Nitrate/Nitrite as N	mg/L	<0.020	<0.020			<0.020		<0.020			<0.020
Aluminum	mg/L	<0.050	0.102			<0.050		<0.250			<0.100
Arsenic	mg/L	0.0134	0.0167			0.0131		0.0135			0.0160
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0001
Copper	mg/L	0.0055	0.0058			0.0065		0.0059			0.0122
Iron	mg/L	<0.050	<0.100			<0.050		<0.250			<0.100
Lead	mg/L	0.0024	<0.0025			<0.0025		<0.0025			<0.0005
Manganese	mg/L	0.0022	0.0058			0.0033		0.0045			0.0049
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0061	0.0211			0.0148		0.0152			0.0170
Selenium	mg/L	0.0013	<0.0050			<0.0050		<0.0050			0.0010
Silica (Si02)	mg/L	7.97	8.18			9.05		5.35			9.33
Silicon	mg/L	3.73	3.82			4.23		2.50			4.36
Uranium	mg/L	0.0049	0.0084			0.0140		0.0124			0.0125
Zinc	mg/L	0.0405	<0.0100			<0.0100		<0.0100			<0.0020

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-3-C											
Year		2017								2018	
Quarter		Q1	Q2	Q3			Q4			Q1	
Month		3	6	7	8	9	10	11	12	1	2
Sample Date		3/27	6/30	7/27	8/24	9/28	10/27	11/17	12/7	1/3	2/21
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y
Field Parameters:											
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	20	2	NM	NM	NM	1	1	1	1.52	1.5
Depth to Water	ft bgs	304.21	296.3	296.93	296.87	297.43	297.46	297.43	297.35	297.01	296.66
Temperature	deg C	10.45	12.85	13.13	12.51	11.8	12.72	11.52	11.72	11.7	11.43
pH	SU	8.61	8.57	8.51	8.46	8.44	8.48	8.41	8.48	8.43	8.43
Specific Conductance	µS/cm	3549	3587.5	3814.8	4112.2	4350.8	4411.50	4659.20	4595.60	4923.4	4863.6
Oxygen Reduction Potential	mV	-129	-87.2	-137.5	-128.8	-149.9	-198.30	-200.70	-222.20	-187.9	-183.5
Lab Analytical Results:											
Hardness as CaCO3	mg/L	14.4	11.8			15.1		14.9			16.1
pH (Lab)	SU	8.5	8.48			8.35		8.28			8.35
Total Dissolved Solids (Lab)	mg/L	2130	2360			3070		3310			3540
Calcium	mg/L	3.60	2.87			3.50		3.58			3.81
Magnesium	mg/L	1.31	1.12			1.55		1.44			1.59
Sodium	mg/L	796	890			1100		1130			1200
Potassium	mg/L	3.47	3.24			4.01		<5.00			<10.0
Alkalinity, Total	mg/L	1490	1570			1690		1880			1910
Alkalinity, Bicarbonate	mg/L	1360	1480			1650		1830			1810
Alkalinity, Carbonate	mg/L	130	90.0			40.0		50.0			100
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0
Chloride	mg/L	182	330			477		506			549
Fluoride	mg/L	4.89	4.94			4.52		4.34			4.15
Sulfate as SO4	mg/L	73.4	73.5			46.4		24.5			<10.0
Total Organic Carbon (TOC)	mg/L	10.6	58.5			219		251			337
Nitrate/Nitrite as N	mg/L	<0.020	<0.400			<0.400		<0.020			<0.020
Aluminum	mg/L	<0.050	<0.100			<0.050		<0.250			<0.500
Arsenic	mg/L	0.0115	0.0088			0.0098		0.0091			0.0194
Cadmium	mg/L	<0.0001	<0.0010			<0.0010		<0.0005			<0.0005
Copper	mg/L	0.0109	0.0147			0.0174		0.0160			0.0409
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.500
Lead	mg/L	0.0085	<0.0050			<0.0050		<0.0025			<0.0025
Manganese	mg/L	0.0091	0.0188			0.0178		0.0202			0.0307
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0143	0.0291			0.0241		0.0241			0.0221
Selenium	mg/L	0.0233	0.0121			0.0149		0.0240			0.0383
Silica (Si02)	mg/L	7.82	8.86			9.16		6.01			<10.7
Silicon	mg/L	3.66	4.14			4.28		2.81			<5.00
Uranium	mg/L	0.0091	0.0102			0.0137		0.0100			0.0091
Zinc	mg/L	0.375	<0.0200			<0.0200		<0.0100			<0.0100

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-4-A											
Year		2017								2018	
Quarter		Q1	Q2	Q3			Q4			Q1	
Month		3	6	7	8	9	10	11	12	1	2
Sample Date		3/29	6/30	7/19	8/23	9/28	10/27	11/17	12/7	1/3	2/21
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y
Field Parameters:											
Purge Flow Rate	gpm	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.089
Total Purged	gal	19	2	1.5	0.5	1	1	1	1	1.25	1.5
Depth to Water	ft bgs	338.6	334.96	335.59	334.79	334.81	334.86	332.29	334.09	334.31	334.73
Temperature	deg C	15.61	16.83	25.5	17.63	11.91	11.56	10.82	10.13	10.87	9.82
pH	SU	8.61	8.29	8.55	7.98	8.41	8.32	8.38	8.32	8.33	8.37
Specific Conductance	µS/cm	2162.6	2052.9	1876.3	2095.6	2180.1	2164.50	2186.00	2261.40	2259.3	2266.8
Oxygen Reduction Potential	mV	28.6	54	60.2	61.7	-8.6	-27.00	-12.30	-51.80	-35.2	-75.9
Lab Analytical Results:											
Hardness as CaCO3	mg/L	9.16	9.85			7.77		7.11			7.73
pH (Lab)	SU	8.2	8.40			8.36		8.40			8.28
Total Dissolved Solids (Lab)	mg/L	1470	1470			1450		1500			1490
Calcium	mg/L	2.23	2.43			1.76		1.87			1.81
Magnesium	mg/L	0.871	0.916			0.823		0.591			0.778
Sodium	mg/L	515	537			513		511			507
Potassium	mg/L	1.57	1.75			1.63		<5.00			<2.00
Alkalinity, Total	mg/L	635	560			630		590			530
Alkalinity, Bicarbonate	mg/L	635	560			590		560			490
Alkalinity, Carbonate	mg/L	<10.0	<10.0			40.0		30.0			40.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0
Chloride	mg/L	9.56	9.66			10.3		10.3			10.0
Fluoride	mg/L	<0.400	<0.400			<0.500		<0.500			<0.500
Sulfate as SO4	mg/L	594	588			783		594			579
Total Organic Carbon (TOC)	mg/L	6.63	11.7			3.52		3.27			3.46
Nitrate/Nitrite as N	mg/L	0.035	<0.020			<0.020		<0.020			<0.020
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100
Arsenic	mg/L	0.0016	<0.0025			<0.0025		<0.0025			0.0019
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0001
Copper	mg/L	0.0053	0.0093			0.0076		0.0073			0.0124
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100
Lead	mg/L	0.0014	<0.0025			<0.0025		<0.0025			<0.0005
Manganese	mg/L	0.0044	0.0063			0.0044		0.0040			0.0035
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0009	0.0275			<0.0025		<0.0025			0.0005
Selenium	mg/L	0.0016	<0.0050			<0.0050		<0.0050			0.0014
Silica (Si02)	mg/L	10.2	10.6			9.99		6.85			9.47
Silicon	mg/L	4.75	4.97			4.67		3.20			4.43
Uranium	mg/L	0.0016	<0.0005			<0.0005		0.0005			0.0003
Zinc	mg/L	0.269	0.0319			<0.0100		<0.0100			0.0022

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-4-MI											
Year		2017								2018	
Quarter		Q1	Q2	Q3			Q4			Q1	
Month		3	6	7	8	9	10	11	12	1	2
Sample Date		3/30	6/16	7/27	8/23	9/28	10/27	11/17	12/7	1/3	2/21
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y
Field Parameters:											
Purge Flow Rate	gpm	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	0.5	6.5	NM	NM	1	1	1	1	1.28	1.5
Depth to Water	ft bgs	378.2	330.15	330.94	330.85	330.81	330.80	330.74	330.67	330.52	330.42
Temperature	deg C	14.97	14.64	12.86	12.5	11.37	10.73	11.31	11.35	11.15	10.96
pH	SU	9.08	8.91	8.78	8.79	8.76	8.76	8.73	8.67	8.62	8.48
Specific Conductance	µS/cm	1581.2	1667.9	1731.3	1708.4	1784.2	1794.30	1803.90	1832.50	1847.6	1856.4
Oxygen Reduction Potential	mV	155.2	64.7	9.8	35.2	-29.6	-37.30	-111.50	-89.20	-112.5	-151.3
Lab Analytical Results:											
Hardness as CaCO3	mg/L	5.43	8.71			7.07		4.20			6.01
pH (Lab)	SU	8.83	8.59			8.63		8.51			8.47
Total Dissolved Solids (Lab)	mg/L	1160	1170			1180		1180			1220
Calcium	mg/L	1.53	2.32			1.88		1.68			1.64
Magnesium	mg/L	0.392	0.707			0.579		<0.500			0.465
Sodium	mg/L	408	458			449		452			447
Potassium	mg/L	1.46	<2.00			1.73		<5.00			<2.00
Alkalinity, Total	mg/L	965	915			1100		985			965
Alkalinity, Bicarbonate	mg/L	775	825			880		885			875
Alkalinity, Carbonate	mg/L	190	90.0			220		100			90.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0
Chloride	mg/L	2.18	7.50			8.78		9.11			8.74
Fluoride	mg/L	4.72	5.02			5.09		5.10			5.02
Sulfate as SO4	mg/L	17.4	64.7			76.6		77.5			68.6
Total Organic Carbon (TOC)	mg/L	2.64	6.49			8.58		9.53			9.54
Nitrate/Nitrite as N	mg/L	<0.020	<0.020			<0.020		<0.020			<0.020
Aluminum	mg/L	<0.050	<0.100			<0.050		<0.250			<0.100
Arsenic	mg/L	0.0099	0.0220			0.0131		0.0122			0.0139
Cadmium	mg/L	<0.0001	<0.0001			<0.0005		<0.0005			<0.0001
Copper	mg/L	0.0059	0.0058			0.0071		0.0070			0.0079
Iron	mg/L	<0.050	<0.100			<0.050		<0.250			<0.100
Lead	mg/L	0.0010	<0.0005			<0.0025		<0.0025			<0.0005
Manganese	mg/L	0.0020	0.0066			0.0081		0.0124			0.0080
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0020	0.0160			0.0127		0.0134			0.0151
Selenium	mg/L	<0.0010	0.0012			<0.0050		<0.0050			<0.0010
Silica (Si02)	mg/L	7.27	8.01			8.80		<5.35			8.30
Silicon	mg/L	3.40	3.75			4.11		2.50			3.88
Uranium	mg/L	0.0043	0.0126			0.0184		0.0169			0.0183
Zinc	mg/L	0.113	0.0697			<0.0100		<0.0100			<0.0020

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-4-C											
Year		2017								2018	
Quarter		Q1	Q2	Q3			Q4			Q1	
Month		3	6	7	8	9	10	11	12	1	2
Sample Date		3/30	6/16	7/27	8/23	9/28	10/27	11/17	12/7	1/3	2/21
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y
Field Parameters:											
Purge Flow Rate	gpm	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1
Total Purged	gal	7	1.5	NM	NM	1	1	1	1	1.5	1.5
Depth to Water	ft bgs	328.33	314.05	309.87	306.86	303.96	303.80	302.47	304.80	282.35	281.3
Temperature	deg C	13.31	17.4	12.67	12.03	13.86	11.75	11.24	11.02	11.66	10.76
pH	SU	8.33	7.62	7.68	7.7	7.69	7.75	7.72	7.79	7.8	7.88
Specific Conductance	µS/cm	3791.7	5943.5	5996.7	5884.6	5813.3	5721.10	5781.70	5603.80	5834.1	5902.9
Oxygen Reduction Potential	mV	57.3	20.3	-101.5	-111.2	-103.7	-117.40	-109.00	-120.10	-123.8	-154.3
Lab Analytical Results:											
Hardness as CaCO3	mg/L	46.3	55.9			38.9		30.0			26.5
pH (Lab)	SU	7.61	7.77			7.79		7.98			7.84
Total Dissolved Solids (Lab)	mg/L	3230	4050			3750		3780			3730
Calcium	mg/L	13.6	13.7			9.15		7.45			6.32
Magnesium	mg/L	2.99	5.26			3.90		2.76			2.61
Sodium	mg/L	908	1510			1490		1400			1410
Potassium	mg/L	4.38	5.71			6.07		<10.0			<10.0
Alkalinity, Total	mg/L	1250	2360			2780		2680			2600
Alkalinity, Bicarbonate	mg/L	1250	2360			2780		2640			2600
Alkalinity, Carbonate	mg/L	<10.0	<10.0			<10.0		40.0			<10.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0
Chloride	mg/L	181	550			587		608			592
Fluoride	mg/L	1.29	2.04			2.17		2.43			2.53
Sulfate as SO4	mg/L	534	487			70.2		26.0			34.5
Total Organic Carbon (TOC)	mg/L	30	6.42			5.08		3.64			3.23
Nitrate/Nitrite as N	mg/L	<2.00	<0.500			<0.400		<0.100			<0.020
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.500			<0.500
Arsenic	mg/L	0.0059	0.0119			0.0128		0.0152			0.0246
Cadmium	mg/L	<0.0001	<0.0010			<0.0010		<0.0010			<0.0005
Copper	mg/L	0.0125	0.0243			0.0221		0.0208			0.0482
Iron	mg/L	<0.050	<0.050			<0.050		<0.500			<0.500
Lead	mg/L	<0.0005	<0.0050			<0.0050		<0.0050			<0.0025
Manganese	mg/L	0.0269	0.0772			0.0554		0.0571			0.0647
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002
Molybdenum	mg/L	0.0526	0.115			0.0138		0.0106			0.0086
Selenium	mg/L	0.0248	0.0231			0.0214		0.0269			0.0378
Silica (Si02)	mg/L	9.85	12.6			12.9		<10.7			<10.7
Silicon	mg/L	4.61	5.88			6.02		<5.00			<5.00
Uranium	mg/L	0.0297	0.121			0.0984		0.0545			0.0311
Zinc	mg/L	0.0156	0.0265			<0.0200		<0.0200			<0.0100

Notes & Definitions:

Y/N	yes or no
gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
pCi/L	picocuries per liter
NM	not measured (field)
NA	not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.